

Mercado el Milagro Retail Development
(Central Ave. / 98th St.)

Traffic Impact Study

November 15, 2019

F I N A L (Corrected)

Presented to:

City of Albuquerque
Transportation Development Section

NM Dept. of Transportation
District 3

Prepared for:

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**Mercado el Milagro
(Central Ave. / 98th St.)
Traffic Impact Study**

Executive Summary

The purpose of this study is to evaluate the transportation conditions before and after implementation of the proposed Mercado el Milagro, determine the impact of the development on the adjacent transportation system and recommend mitigation measures where necessary. This study is prepared to meet the requirements of the City of Albuquerque Transportation Development Section of the Planning Department associated with its review of the Mercado el Milagro. The New Mexico Department of Transportation will be involved in the review of the Traffic Impact Study with regard to the I-40 / 98th St. interchange and surrounding area of influence.

The proposed development is located at the southwest corner of Central Ave. / 98th St. The study area includes the intersections of Central Ave. / Unser Blvd., Central Ave. / 86th St., Central Ave. / 98th St., Tower Rd. / 98th St., I-40 N. Ramp / 98th St., I-40 S. Ramp / 98th St., Central Ave. / Bridge Blvd., and Sunset Gardens Rd. / 98th St., as well as four proposed driveways for the project.

The proposed project is to be developed as a multi-use commercial site. The anticipated implementation year for this site is the year 2024 and there is no horizon year analysis required. According to the Institute of Traffic Engineers' (ITE) trip generation rates, the weekday AM Peak Hour period is anticipated to generate approximately 319 entering trips and 269 exiting trips. During the weekday PM Peak Hour period, it is anticipated that it will generate approximately 303 entering trips and 295 exiting trips.

The development will be accessed via four proposed driveways for this parcel of land, one right-in, right-out driveway on Central Ave., two on 98th St. (one full access and one right-in, right-out), and one full access driveway on Sunset Gardens Rd. See the Appendix Page A-3 for more details regarding site design and access.

Analysis results by analysis year are included in the following tables:

Executive Summary Results Table

			2024 Conditions	
Intersection No. / Name	Signalization	Case	AM Peak	PM Peak
1 - Central Ave. / Unser Blvd.	Signalized	NO BUILD	D - 36.2	D - 51.6
		BUILD	D - 37.6	E - 56.2
2 - Central Ave. / 86th St.	Signalized	NO BUILD	C - 21.0	B - 13.2
		BUILD	B - 19.9	B - 12.6
3 - Central Ave. / 98th St.	Signalized	NO BUILD	D - 40.5	D - 51.0
		BUILD	D - 44.5	E - 65.1
		MIT BLD*	D - 36.4	C - 34.3
4 - Tower Rd. / 98th St.	Signalized	NO BUILD	C - 21.6	D - 38.8
		BUILD	C - 23	D - 39.9
5 - I-40 N. Ramp / 98th St.	Signalized	NO BUILD	C - 21.9	C - 23.5
		BUILD	C - 22.0	C - 24.5
6 - I-40 S. Ramp / 98th St.	Unsignalized	NO BUILD	C - 20.5	F - 140
		BUILD	C - 20.7	F - 159
7 - Central Ave. / Bridge Blvd.	Unsignalized	NO BUILD	B - 14.0	C - 16.2
		BUILD	C - 15.0	C - 17.5
8 - Sunset Gardens Rd. / 98th St.	Unsignalized	NO BUILD	C - 16.7	C - 18.2
		BUILD	C - 20.1	F - 88.0
9 - Driveway "A" / 98th St.	Unsignalized	NO BUILD	N/A	N/A
		BUILD	D - 27.0	D - 25.0
10. Driveway "B" / 98th St.	Unsignalized	NO BUILD	N/A	N/A
		BUILD	A - 9.9	C - 20.7
11. Sunset Gardens Rd. / Driveway "C"	Unsignalized	NO BUILD	N/A	N/A
		BUILD	A - 9.3	A - 9.5
12. Central Ave. / Driveway "D"	Unsignalized	NO BUILD	N/A	N/A
		BUILD	B - 12.1	B - 10.4

* - Mitigated condition for Central Ave. / 98th St. is proposed re-timing of the traffic signal.

NOTE: Unsignalized intersections / driveways are reported based on worst turning movement.

In summary, the proposed development does not have a significant adverse impact to the adjacent transportation system and the minimal impact to the transportation system can be mitigated by the recommended measures described in this report and summarized in the table above. In summary, the recommendations of this study are:

Recommendations

2024 Conditions:

- Optimize traffic signal phase splits for the traffic signal at Central Ave. / 98th St.
- All design and construction shall maintain adequate sight distances at driveways and intersections.

Access:

Driveway “A” on 98th St. should be a full access unsignalized driveway with a minimum of two exiting lanes (one for left turns and one for right turns) and one entering lane. A southbound right turn deceleration lane and a northbound left turn deceleration lane are warranted at Driveway “A”. Both have been recently constructed to meet City of Albuquerque requirements.

Driveway “B” on 98th St. should be a right-in, right-out unsignalized driveway with one entering lane and one exiting lane.

Driveway “C” on Sunset Gardens Rd. should be a full access unsignalized driveway with a minimum of one entering lane and one exiting lane.

Driveway “D” on Central Ave. should be a right-in, right-out unsignalized driveway with one entering lane and one exiting lane.

**Mercado el Milagro
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Contents

Executive Summary	i
Recommendations	iii
Introduction	1
Description of Proposed Development	2
Study Area Conditions	3
Analysis of Existing Conditions	4
Analysis of Implementation Year Conditions	5
Traffic Projections.....	5
Traffic Analysis	10
Impact Assessment	24
Access Design Specifications.....	24
Summary of Deficiencies, Anticipated Impacts, and Recommendations	24
APPENDIX.....	26

Mercado el Milagro (Central Ave. / 98th St.) Traffic Impact Study

Introduction

The purpose of this study is to evaluate the transportation conditions before and after implementation of the proposed Mercado el Milagro and determine the impact of the development on the adjacent transportation system. The recommendations of this study will provide measures to mitigate the impact of the development of the site plan on critical intersections and street segments. This study is prepared to meet the requirements of the City of Albuquerque Transportation Development Section of the Planning Department associated with its review of the Mercado el Milagro as shown on the plan on Page A-3 in the Appendix of this report. It is also prepared to address transportation mitigation issues at the New Mexico Department of Transportation's I-40 / 98th St. Interchange and the surrounding area of influence.

The proposed development is located at the southwest corner of Central Ave. / 98th St. in Albuquerque, New Mexico. If the property was to develop in a manner significantly different than the proposed plan considered in this report such that the number of generated trips is significantly greater, then an update to this study may be required by the City of Albuquerque Transportation Development Section of the Planning Dept.

Following is a vicinity map depicting the location of the proposed project:



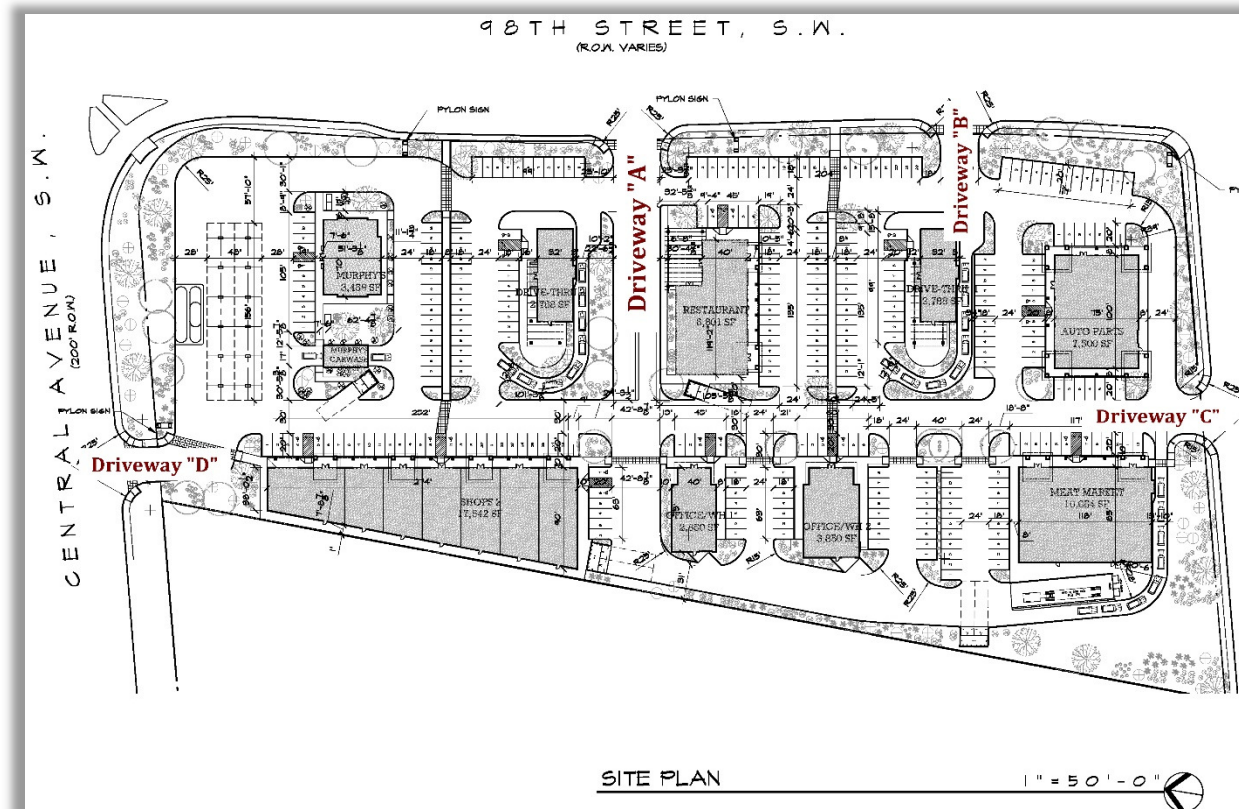
Description of Proposed Development

The proposed project is described as a retail commercial site at the southwest corner of Central Ave. / 98th St. The project lies in the city limits of Albuquerque, NM. The project will be required to comply with the requirements of the City of Albuquerque with regard to the overall development. This Traffic Impact Study includes the analysis of two ramps for Interstate 40 which are maintained by the New Mexico Department of Transportation. The project will be required to comply with the requirements of the City of Albuquerque with regard to the overall development and with the requirements of the New Mexico Department of Transportation with regard to transportation issues along the I-40 / 98th St. interchange and its area of influence.

This study will assume that the development will be constructed in one phase. This study will analyze an implementation year of 2024. No horizon year analysis is required.

The development will be accessed via four proposed pylon driveways for this parcel of land, which will be or are built as shown on the site plan.

Following is the proposed site development plan depicting driveway (access) locations (also, see Appendix Page A-3 for a more complete version of the proposed site development plan):



Study Area Conditions

A Traffic Impact Study Scoping Meeting was held with the City of Albuquerque Transportation Development Section of the Planning Department with staff (Ernest Armijo). During the exchange, it was determined that the study area would include the following list of intersections to be analyzed in the Traffic Impact Study:

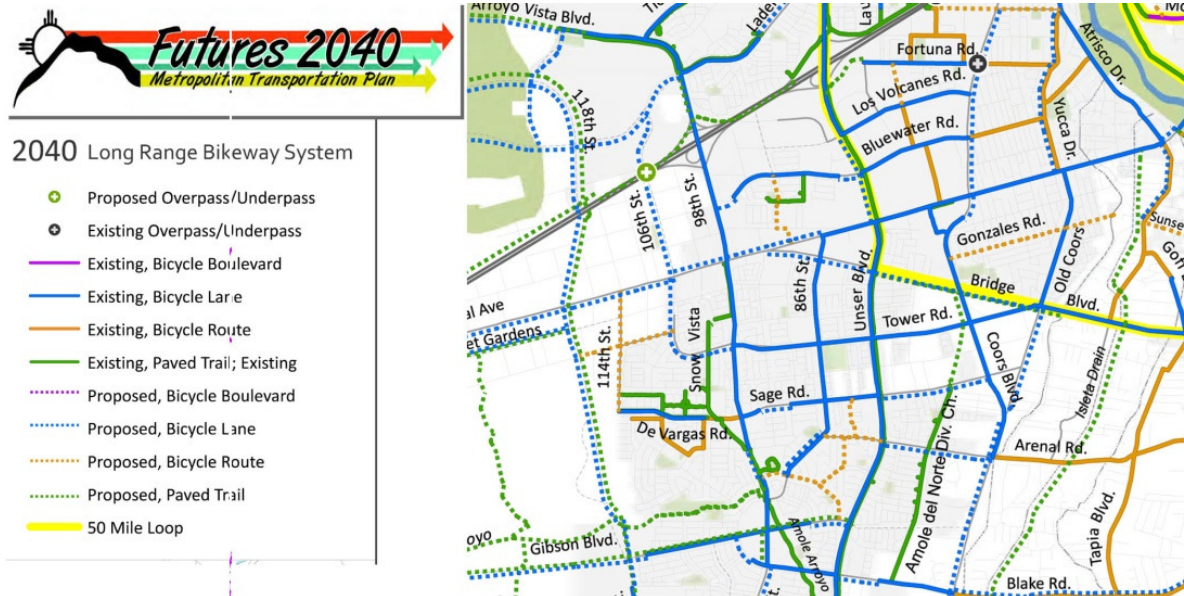
1. Central Ave. / Unser Blvd.
2. Central Ave. / 86th St.
3. Central Ave. / 98th St.
4. Tower Rd. / 98th St.
5. I-40 N. Ramp / 98th St.
6. I-40 S. Ramp / 98th St.
7. Central Ave. / Bridge Blvd.
8. Sunset Gardens Rd. / 98th St.
9. Driveway "A" / 98th St. (Full access)
10. Driveway "B" / 98th St. (Right-in, right-out access)
11. Sunset Gardens Rd. / Driveway "C" (Full access)
12. Central Ave. / Driveway "D" (Right-in, right-out access)

This scope of study was based on the assumption that the parcel in question would be developed as a retail commercial site similar to that shown on the proposed site plan.

There are no other known land development projects in the area which need to be incorporated into the background traffic model for this study. There are no known Transportation Improvement Program projects in the area that need to be considered in the Traffic Impact Study.

This project is served by public transit services in the area; specifically Routes #54 and #198. These routes run along Central Ave. from Unser Blvd. to 98th and south to either Bridge Blvd. or Dennis Chavez Blvd. See Appendix Pages A-124 thru A-125 for weekday & weekend times.

There are some existing & proposed designated routes in the project area on the Futures 2040 Metropolitan Transportation Plan (2040 Long Range Bikeway System) as shown on the following portion of the map.



There are pedestrian facilities in the project area – curb & gutter and sidewalks along the roads, as well as raised medians for pedestrians & bicyclists crossing against traffic at major intersections.

98th St. is classified as a Community Principal Arterial Roadway on the Mid-Region Council of Government's Futures 2040 Long Range Roadway System Map. It is a four-lane urban-type roadway with curb and gutter & sidewalks and some raised medians. The posted speed limit along 98th St. is 45 MPH.

Central Ave. is classified as Community Principal Arterial Roadway east of 98th St. & a Regional Principal Arterial Roadway west of 98th St. on the Mid-Region Council of Government's Futures 2040 Long Range Roadway System Map. Central Ave. is a four-lane roadway with curb & gutter and sidewalks; the posted speed limit is 55 MPH.

I-40 is an interstate highway with a posted speed limit of 65 MPH in the vicinity of 98th St.

Analysis of Existing Conditions

Due to the fact that the Implementation Year is just a few years in the future, no existing analysis was performed. Existing traffic volumes (turning movement counts) were collected at the intersections targeted for analysis in this study in February 2019 and are included on Appendix Pages A-113 thru A-123. Traffic counts (turning movement volumes) for the signalized intersection of the I-40 N. Ramp / 98th St. are adjusted for demand based on queueing at the end of each 15-minute count period.

Analysis of Implementation Year Conditions

Traffic Projections

Background traffic was taken from recent traffic counts (Appendix A-113 thru A-123) conducted for this project.

This study assumes that the development will be implemented in one phase with an implementation year of 2024.

Projected trips were calculated based on the Institute of Traffic Engineers (ITE) Trip Generation Manual (10th Edition). Trips for the development were determined based on land use defined on the Conceptual Site Development Plan on Page A-3 in the Appendix of this report. The following table summarized the trip generation rate for the project:

Mercado el Milagro (Central Ave. / 98th St.)

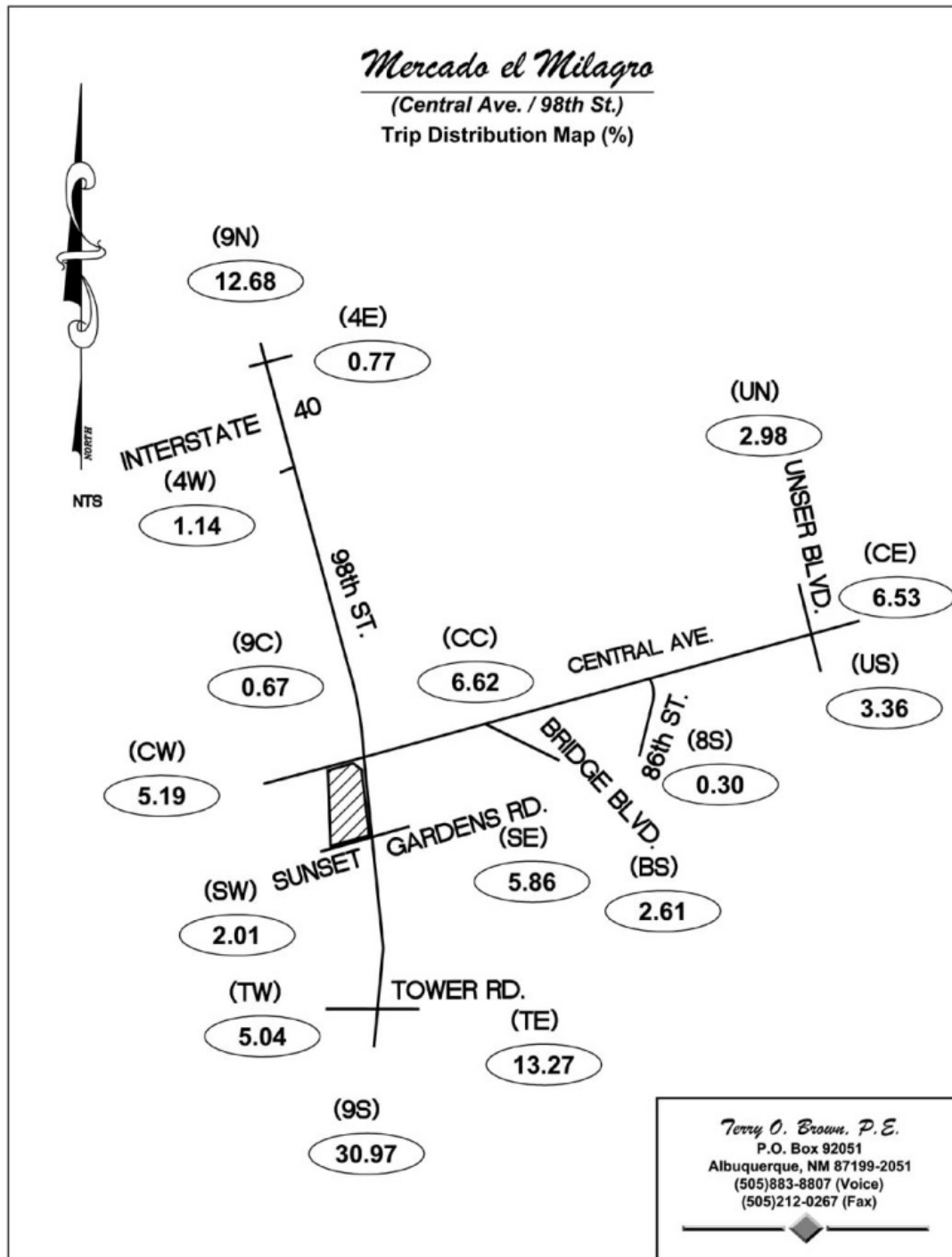
Trip Generation Data (ITE Trip Generation Manual - 10th Edition)

COMMENT	USE (ITE CODE)	24 HR VOL	A. M. PEAK HR.		P. M. PEAK HR.		
	DESCRIPTION		GROSS	ENTER	EXIT	ENTER	EXIT
Summary Sheet			Units				
Murphy's	Gasoline / Service Station w/ Convenience Market (945)	24	5,282	183	176	171	165
2 Restaurants	Fast Food Restaurant w/ Drive-Thru Window (934)	5.58	2,626	114	110	95	87
	High Turnover (Sit-Down) Restaurant (932)	3.00	337	16	13	18	11
	Automobile Parts Sales (843)	7.50	409	11	9	18	19
Meat Market	Supermarket (850)	10.05	1,925	23	15	71	69
Shops	Shopping Center (820)	12.06	1,427	98	60	55	59
Offices	Small Office Building (712)	6.70	108	11	2	5	11
	Subtotal		12,114	456	385	433	421
	Pass-By Trips	30%		-137	-116	-130	-126
	Total Primary Trips			319	269	303	295

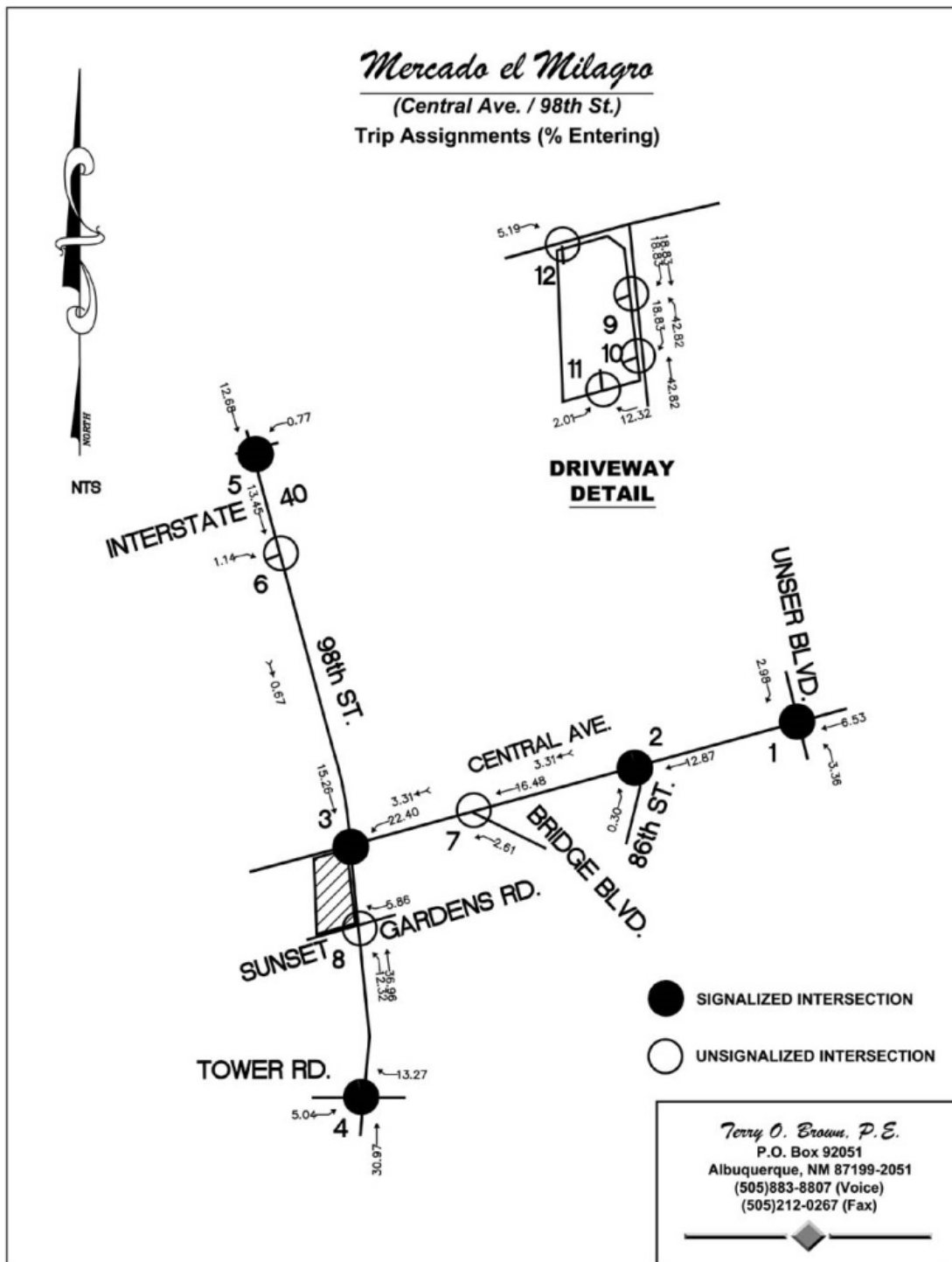
Pass-by trips of 30% were applied to this project. See Appendix Pages A-7 thru A-14 for more information regarding the trip generation.

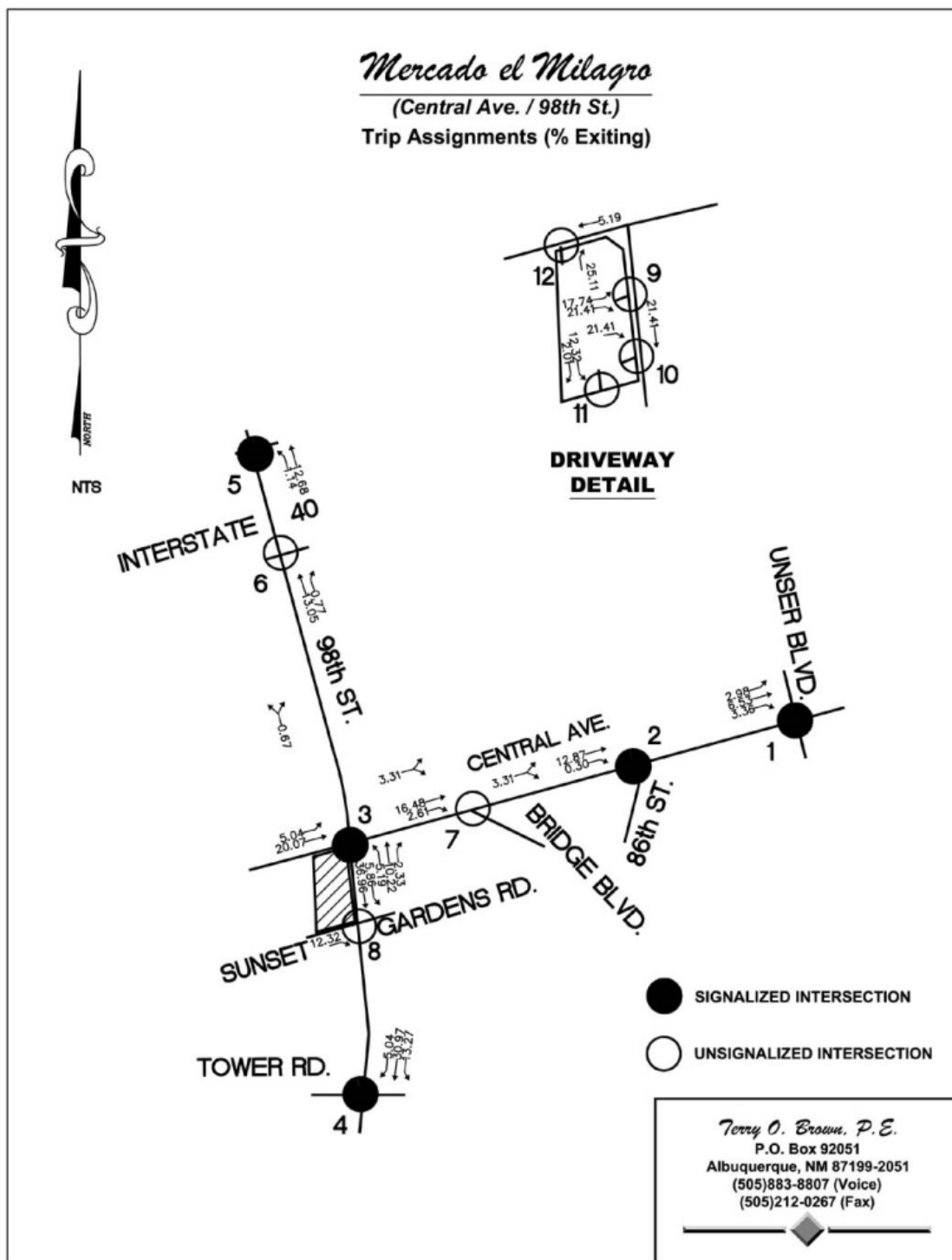
The Gravity Model was used to determine trip distribution where primary trips for the commercial land use development were distributed proportionally to the 2024 projected population of Data Analysis Subzones (DASZ) within a 2-mile radius. Population data for the years 2012 and 2040 were taken from the 2040 Socioeconomic Forecasts by Subareas for the Mid-Region of New Mexico supplied by the Mid-Region Council of Governments (MRCOG). Population data from the years 2012 and 2040 was interpolated linearly to obtain 2024 population data to utilize for this analysis. Population Subzones were grouped based on the most likely major street(s) or route(s) to the subject development. The trip distribution worksheets and associated map of data analysis subzones are shown in the Appendix on

Pages A-15 thru A-21. The commercial Trip Distribution map can be found below and on the map in the Appendix on Page A-22.



Trip assignments are first made on a percentage basis derived from data established in the trip distribution determination process and logical routing. Those percentages are then applied to the projected trips to determine individual traffic movements. Percentage trip assignments for commercial trips are shown below and in the Appendix on Pages A-23 thru A-24.





Background traffic growth rates were considered for each individual approach to an intersection that was targeted for analysis based on data from the 2008 through 2017 Traffic Flow maps prepared by the Mid-Region Council of Governments. Most of the Traffic Flow Data for those years taken from the MRCOG Traffic Flow Maps were Standard Data. The data from those years for each approach was plotted on a graph and a linear “regression trend line” calculated using the equation format $y=mx+b$. The growth rate was determined by calculating the average

volume increase per year during the time period considered and dividing that volume into the most recent AWDT used in the analysis from which future volumes will be calculated. The rate of growth of that trend line was utilized as the annual growth rate for each approach if that calculated rate appeared feasible. However, in every roadway segment considered in this analysis, the rate indicated either an inconsistent or a negative growth trend; therefore, the growth rate was considered to be a generic 0.5%. Historical Growth Rate Graphs with linear regression trend lines are shown in the Appendix on Pages A-26 thru A-42. The growth rate utilized for each approach to an intersection is printed at the top of the Turning Movement sheets for each intersection (Appendix Pages A-47 thru A-70). A growth rate map is on Page A-43 in the Appendix.

Traffic Analysis

A capacity analysis using existing traffic signal timing (see Appendix Pages A-71 thru A-112) was conducted for the Implementation Year (2024) NO BUILD and BUILD Conditions and the results are summarized as follows:

#1 – Central Ave. / Unser Blvd. - Pages A-71 thru A-112

The results of the 2024 analyses of the signalized intersection of Central Ave. / Unser Blvd. are summarized in the following tables:

Central Ave. / Unser Blvd. 2024 Conditions	EB (Central Ave.)			WB (Central Ave.)			NB (Unser Blvd.)			SB (Unser Blvd.)		
	L	T	R	L	T	R	L	T	R	L	T	R
Existing Lane Geometry	2	2>	0	1	2	1	1	2>	0	1	1	1
AM Peak Hour												
2024 NO BUILD Conditions Volumes	297	396	19	47	146	90	21	1,476	156	106	456	98
V/C Ratio	0.83	0.79	0.79	0.64	0.50	0.69	0.05	0.84	0.86	0.64	0.46	0.12
Level-of-Service	E	E	E	E	D	E	A	C	C	C	B	B
Control Delay (Seconds)	65.4	59.4	59.5	64.5	53.1	58.6	9.9	28.8	30.2	29.4	15.3	11.2
Intersection LOS	D - 36.2											
95th Percentile Queue (veh)	9.4	11.7	12.1	3.1	4.2	5.6	0.4	28.8	30.5	3.8	12.4	2.4
2024 BUILD Conditions Volumes	305	414	28	47	167	90	32	1,476	156	106	456	108
V/C Ratio	0.83	0.79	0.80	0.64	0.53	0.64	0.07	0.86	0.88	0.65	0.46	0.13
Level-of-Service	E	E	E	E	D	E	B	C	C	C	B	B
Control Delay (Seconds)	65.9	60.2	60.3	64.5	52.8	56.5	10.5	30.7	32.3	30.3	16.0	11.8
Intersection LOS	D - 37.6											
95th Percentile Queue (veh)	9.7	12.5	12.8	3.1	4.8	5.5	0.6	29.6	31.5	3.7	12.6	2.7

PM Peak Hour												
2024 NO BUILD Conditions Volumes	177	390	35	97	373	62	68	1,001	129	130	1,083	145
V/C Ratio	0.88	1.01	1.02	0.94	0.90	0.33	0.55	0.54	0.55	0.41	0.99	0.16
Level-of-Service	F	F	F	F	E	E	D	B	B	B	D	B
Control Delay (Seconds)	95.0	125.0	126.0	132.0	80.0	56.6	37.2	15.0	15.0	12.4	47.5	10.4
Intersection LOS	D - 51.6											
95th Percentile Queue (veh)	7.4	17.0	17.5	9.3	12.4	3.9	2.8	15.1	15.3	2.6	49.7	3.3
2024 BUILD Conditions Volumes	186	409	45	97	393	62	78	1,001	129	130	1,083	154
V/C Ratio	0.93	1.08	1.09	0.94	0.95	0.33	0.62	0.54	0.55	0.41	0.99	0.17
Level-of-Service	F	F	F	F	F	E	D	B	B	B	D	B
Control Delay (Seconds)	105.0	145.0	148.0	132.0	88.0	56.6	41.4	15.0	15.0	12.4	47.5	10.4
Intersection LOS	E - 56.2											
95th Percentile Queue (veh)	8.1	19.1	19.7	9.3	13.5	3.9	3.4	15.1	15.3	2.6	49.7	3.5

The intersection of Central Ave. / Unser Blvd. is currently under construction. This analysis shows that the impact resulting from development of the Mercado el Milagro development is minimal during the AM Peak Hour period and moderate during the 2024 PM Peak Hour period. The increase in overall intersection delay is 1.4 seconds for the 2024 AM Peak Hour analysis and

4.6 seconds during the 2024 PM Peak Hour analysis. It is assumed in this study that any significant capacity issues at the intersection will be remedied by the current ongoing construction.

The 95th Percentile Queues reported in the preceding table demonstrate that the impact of the proposed Mercado el Milagro development is no more than about 2 vehicle lengths for any turning movement. In most cases, it is less than one vehicle difference in queue length.

No recommendation is made for the signalized intersection of Central Ave. / Unser Blvd.

#2 – Central Ave. / 86th St. - Pages A-71 thru A-112

The results of the 2024 analyses of the full access signalized intersection of Central Ave. / 86th St. are summarized in the following tables:

Central Ave. / 86th St. 2024 Conditions	EB (Central Ave.)			WB (Central Ave.)			NB (86th St.)		
	L	T	R	L	T	R	L	T	R
Existing Lane Geometry		2>	0	1	2		1		1
AM Peak Hour									
2024 NO BUILD Conditions Volumes		436	3	80	127		37		310
V/C Ratio		0.21	0.21	0.13	0.05		0.10		0.79
Level-of-Service		B	B	A	A		D		D
Control Delay (Seconds)		10.7	10.7	6.9	0.0		37.5		45.9
Intersection LOS	C - 21.0								
95th Percentile Queue (veh)		4.9	5.1	1.2	0.0		1.7		14.5
2024 BUILD Conditions Volumes		471	4	80	168		38		310
V/C Ratio		0.23	0.23	0.13	0.07		0.10		0.79
Level-of-Service		B	B	A	A		D		D
Control Delay (Seconds)		10.9	10.8	7.0	0.1		37.5		45.9
Intersection LOS	B - 19.9								
95th Percentile Queue (veh)		5.3	5.6	1.2	0.0		1.7		14.5
PM Peak Hour									
2024 NO BUILD Conditions Volumes		373	19	158	315		34		175
V/C Ratio		0.16	0.16	0.21	0.12		0.16		0.68
Level-of-Service		A	A	A	A		D		D
Control Delay (Seconds)		6.4	6.4	3.9	0.1		50.6		53.3
Intersection LOS	B - 13.2								
95th Percentile Queue (veh)		3.3	3.4	1.7	0.0		1.9		9.8
2024 BUILD Conditions Volumes		411	20	158	354		35		175
V/C Ratio		0.18	0.18	0.22	0.13		0.16		0.68
Level-of-Service		A	A	A	A		D		D
Control Delay (Seconds)		6.5	6.5	4.0	0.1		50.6		53.2
Intersection LOS	B - 12.6								
95th Percentile Queue (veh)		3.7	3.8	1.7	0.0		2.0		9.8

The 2024 analysis of the intersection of Central Ave. / 86th St. demonstrates that the delays will be acceptable for all conditions analyzed in this report.

The 95th Percentile Queues reported in the preceding table demonstrate that the impact of the proposed Mercado el Milagro development is less than 1 vehicle length for any turning movement.

Therefore, no recommendations are made for the intersection of Central Ave. / 86th St.

#3 – Central Ave. / 98th St. - Pages A-71 thru A-112

The results of the 2024 analyses of the full access signalized intersection of Central Ave. / 98th St. are summarized in the following tables:

Central Ave. / 98th St. 2024 Conditions	EB (Central Ave.)			WB (Central Ave.)			NB (98th St.)			SB (98th St.)		
	L	T	R	L	T	R	L	T	R	L	T	R
Existing Lane Geometry	2	2	1	2	2	1	1	2	1	1	2	1
AM Peak Hour												
2024 NO BUILD Conditions Volumes	457	261	20	123	130	215	14	1,590	168	76	505	129
V/C Ratio	1.08	0.58		0.71	0.66		0.03	0.78		0.41	0.25	
Level-of-Service	F	D		E	E		A	C		C	B	
Control Delay (Seconds)	124.0	53.7	0.0	65.4	63.3	0.0	8.1	21.1	0.0	20.6	11.5	0.0
Intersection LOS	D - 40.5											
95th Percentile Queue (veh)	17.7	7.8	0.0	4.1	4.2	0.0	0.3	25.7	0.0	2.1	6.4	0.0
2024 BUILD Conditions Volumes	471	315	20	208	116	215	28	1,617	174	76	554	129
V/C Ratio	1.12	0.77		0.81	0.48		0.05	0.81		0.43	0.28	
Level-of-Service	F	E		E	E		A	C		C	B	
Control Delay (Seconds)	135.0	58.1	0.0	74.2	59.4	0.0	8.9	23.2	0.0	23.2	12.5	0.0
Intersection LOS	D - 44.5											
95th Percentile Queue (veh)	18.9	9.3	0.0	7.5	3.6	0.0	0.6	27.5	0.0	2.3	7.4	0.0
Mitigated Lane Geometry	2	2	1	2	2	1	1	2	1	1	2	1
2024 BUILD Conditions (MITIGATED) Volumes	471	315	20	208	116	215	28	1,617	174	76	554	129
V/C Ratio	0.91	0.72		0.80	0.66		0.06	0.82		0.44	0.28	
Level-of-Service	E	E		E	E		A	C		C	B	
Control Delay (Seconds)	73.5	56.8	0.0	67.5	64.5	0.0	9.4	24.5	0.0	24.4	13.1	0.0
Intersection LOS	D - 36.4											
95th Percentile Queue (veh)	14.6	9.3	0.0	7.1	3.8	0.0	0.6	28.3	0.0	2.4	7.6	0.0

PM Peak Hour

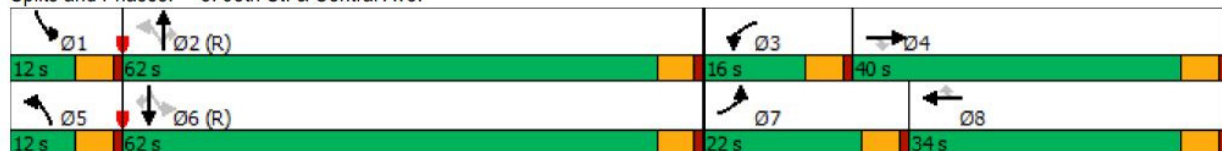
2024 NO BUILD Conditions Volumes	207	204	39	290	215	149	35	801	158	116	1,463	275
V/C Ratio	0.76	0.22		0.83	0.22		0.25	0.59		0.39	1.05	
Level-of-Service	D	C		E	C		C	C		C	F	
Control Delay (Seconds)	54.4	32.2	0.0	60.2	30.3	0.0	27.1	28.3	0.0	20.9	69.8	0.0
Intersection LOS	D - 51.0											
95th Percentile Queue (veh)	5.4	4.0	0.0	8.1	4.1	0.0	1.0	13.5	0.0	3.3	35.1	0.0
2024 BUILD Conditions Volumes	222	263	39	376	197	149	50	831	165	116	1,509	275
V/C Ratio	0.77	0.29		0.95	0.19		0.35	0.64		0.41	1.12	
Level-of-Service	E	C		E	C		C	C		C	F	
Control Delay (Seconds)	55.5	33.1	0.0	79.7	29.3	0.0	28.1	30.4	0.0	22.3	96.7	0.0
Intersection LOS	E - 65.1											
95th Percentile Queue (veh)	5.9	5.3	0.0	11.3	3.7	0.0	1.5	14.5	0.0	3.4	42.0	0.0
Mitigated Lane Geometry	2	2	1	2	2	1	1	2	1	1	2	1
2024 BUILD Conditions (MITIGATED) Volumes	222	263	39	376	197	149	50	831	165	116	1,509	275
V/C Ratio	0.78	0.52		0.87	0.30		0.28	0.49		0.32	0.88	
Level-of-Service	E	D		E	D		C	B		B	C	
Control Delay (Seconds)	57.1	47.2	0.0	62.0	39.4	0.0	22.5	19.6	0.0	14.5	31.2	0.0
Intersection LOS	C - 34.3											
95th Percentile Queue (veh)	6.1	6.5	0.0	10.1	4.4	0.0	1.1	11.7	0.0	2.6	25.7	0.0

The 2024 analysis of the intersection of Central Ave. / 98th St. demonstrates that the overall intersection delays will be marginally acceptable for all conditions analyzed in this report. Some specific turning movements are projected to be at Level-of-Service “F” for both the 2024 NO BUILD Condition and the 2024 BUILD Condition.

Since the project is located at the southwest corner of this intersection, it makes sense that the impact of the development is greatest at the Central Ave. / 98th St. intersection. There are no physical improvements that are readily apparent that can be made to the intersection to improve operation. However, since this project generates additional traffic volumes at the intersection, it is recommended that the City consider optimizing the traffic signal timing splits (maintaining the cycle length and offsets) in order to mitigate the impact of this development at the signal. The following diagrams demonstrate the existing versus the recommended new signal timing:

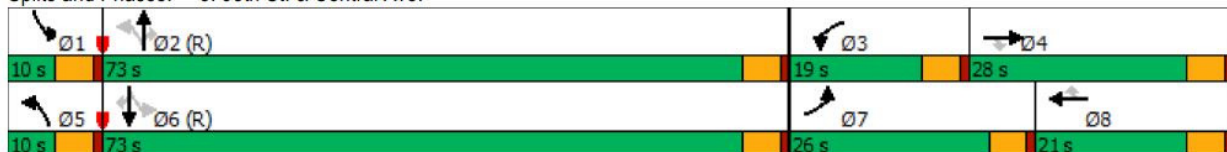
Existing AM Signal timing:

Splits and Phases: 3: 98th St. & Central Ave.



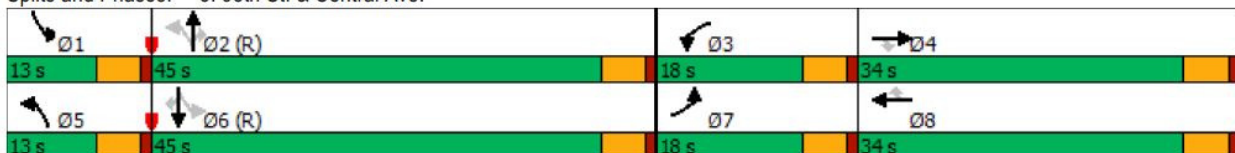
Proposed AM Signal timing:

Splits and Phases: 3: 98th St. & Central Ave.



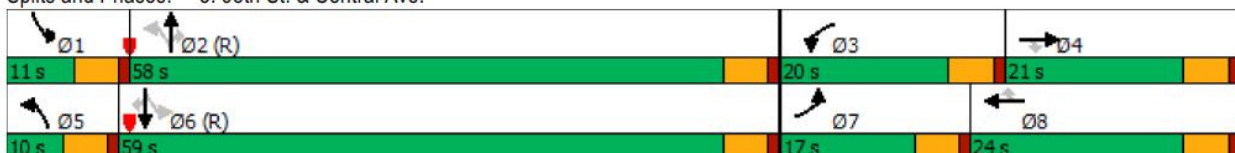
Existing PM Signal timing:

Splits and Phases: 3: 98th St. & Central Ave.



Proposed PM Signal timing:

Splits and Phases: 3: 98th St. & Central Ave.



Note that the recommended signal timing for both the AM and PM periods increase the green time for northbound and southbound thru traffic (the coordinated phases) so that it should not adversely affect the signal progression. The recommended change would not change the offsets for the signal and would increase the north-south green band.

#4 – Tower Rd. / 98th St. - Pages A-71 thru A-112

The results of the 2024 analyses of the full access signalized intersection of Tower Rd. / 98th St. are summarized in the following tables:

Tower Rd. / 98 th St. 2024 Conditions	EB (Tower Rd.)			WB (Tower Rd.)			NB (98 th St.)			SB (98 th St.)		
	L	T	R	L	T	R	L	T	R	L	T	R
Existing Lane Geometry	1	2>	0	1	2	1	1	2	1	1	2	1
AM Peak Hour												
2024 NO BUILD Conditions Volumes	213	120	79	49	48	128	35	1,503	38	50	556	54
V/C Ratio	0.73	0.30	0.32	0.23	0.07		0.07	0.72		0.24	0.26	0.06
Level-of-Service	D	D	D	D	D		A	B		B	B	A
Control Delay (Seconds)	54.8	44.1	44.4	49.8	41.7	0.0	7.3	17.5	0.0	14.7	10.4	8.8
Intersection LOS	C - 21.6											
95th Percentile Queue (veh)	12.1	5.4	5.4	2.8	1.2	0.0	0.6	22.2	0.0	1.0	6.7	1.1
2024 BUILD Conditions Volumes	229	120	79	49	48	170	35	1,602	38	86	639	68
V/C Ratio	0.74	0.28	0.30	0.22	0.07		0.08	0.78		0.46	0.31	0.07
Level-of-Service	E	D	D	D	D		A	C		C	B	A
Control Delay (Seconds)	55.1	42.8	43.1	48.2	40.4	0.0	8.0	20.3	0.0	21.5	11.5	9.5
Intersection LOS	C - 23.0											
95th Percentile Queue (veh)	12.9	5.3	5.3	2.8	1.2	0.0	0.7	25.7	0.0	2.6	8.1	1.5

PM Peak Hour												
2024 NO BUILD Conditions Volumes	94	45	12	60	111	51	70	814	44	107	1,195	176
V/C Ratio	0.52	0.13	0.14	0.29	0.26		0.22	0.36		0.22	0.52	0.17
Level-of-Service	D	D	D	D	D		A	A		A	A	A
Control Delay (Seconds)	50.4	42.5	42.6	46.0	43.3	0.0	6.6	7.5	0.0	5.1	9.2	6.5
Intersection LOS	B - 12.7											
95th Percentile Queue (veh)	5.0	1.3	1.4	3.0	2.6	0.0	0.8	7.2	0.0	1.2	11.2	2.7
2024 BUILD Conditions Volumes	109	45	12	60	111	91	70	908	44	146	1,286	191
V/C Ratio	0.56	0.12	0.13	0.27	0.23		0.25	0.41		0.33	0.57	0.19
Level-of-Service	D	D	D	D	D		A	A		A	B	A
Control Delay (Seconds)	49.9	41.3	41.3	44.6	42.0	0.0	7.9	8.5	0.0	6.3	10.5	7.1
Intersection LOS	B - 13.4											
95th Percentile Queue (veh)	5.8	1.3	1.4	2.9	2.6	0.0	0.8	8.5	0.0	1.8	12.9	3.2

The 2024 analysis of the intersection of Tower Rd. / 98th St. demonstrates that the overall intersection delays will be acceptable for all conditions analyzed in this report. There are no individual turning movements that are problematic.

The 95th Percentile Queuing calculations demonstrate minimal impact on queueing for most turning movements. Virtually all of the turning movements are impact by less than 2 vehicle lengths as a result of the proposed Mercado el Milagro development. The maximum impact is for the northbound thru movement which increases from 22.2 vehicles queueing to 25.7 vehicles queueing during the 2024 AM Peak Hour (3.5 vehicle increase queue length).

Therefore, no recommendations are made for the intersection of Tower Rd. / 98th St.

#5 – I-40 N. Ramp / 98th St. – Pages A-71 thru A-112

The results of the analysis of the full access signalized intersection of I-40 N. Ramp / 98th St. are summarized in the following table:

I-40 N. Ramp / 98th St. 2024 Conditions	WB (I-40 N. Ramp)			NB (98th St.)			SB (98th St.)		
	L	T	R	L	T	R	L	T	R
Existing Lane Geometry	1	<1	0	1	2	0	0	3>	0
AM Peak Hour									
2024 NO BUILD Conditions Volumes	479	1	0	82	588	0	0	559	0
V/C Ratio	0.38	0.00	0.00	0.19	0.32	0.00	0.00	0.24	0.00
Level-of-Service	C	A	A	B	B	A	A	C	A
Control Delay (Seconds)	30.2	0.0	0.0	16.2	16.6	0.0	0.0	21.1	0.0
Intersection LOS	C - 21.9								
95th Percentile Queue (veh)	9.8	0.0	0.0	2.3	8.8	0.0	0.0	6.4	0.0
2024 BUILD Conditions Volumes	482	1	0	85	622	0	0	599	0
V/C Ratio	0.38	0.00	0.00	0.20	0.34	0.00	0.00	0.26	0.00
Level-of-Service	C	A	A	B	B	A	A	C	A
Control Delay (Seconds)	30.2	0.0	0.0	16.4	16.9	0.0	0.0	21.4	0.0
Intersection LOS	C - 22.0								
95th Percentile Queue (veh)	9.9	0.0	0.0	2.5	9.3	0.0	0.0	7.1	0.0
PM Peak Hour									
2024 NO BUILD Conditions Volumes	1,504	1	0	85	308	0	0	399	0
V/C Ratio	0.70	0.00	0.00	0.36	0.35	0.00	0.00	0.51	0.00
Level-of-Service	B	A	A	D	C	A	A	D	A
Control Delay (Seconds)	14.5	0.0	0.0	35.2	33.9	0.0	0.0	45.8	0.0
Intersection LOS	C - 23.5								
95th Percentile Queue (veh)	17.9	0.0	0.0	3.6	6.6	0.0	0.0	6.6	0.0
2024 BUILD Conditions Volumes	1,507	1	0	88	345	0	0	437	0
V/C Ratio	0.70	0.00	0.00	0.39	0.39	0.00	0.00	0.57	0.00
Level-of-Service	B	A	A	D	C	A	A	D	A
Control Delay (Seconds)	14.5	0.0	0.0	35.5	34.5	0.0	0.0	47.3	0.0
Intersection LOS	C - 24.5								
95th Percentile Queue (veh)	18.0	0.0	0.0	3.8	7.5	0.0	0.0	7.4	0.0

The southbound right turn movement is a sweeping right turn ramp that by-passes the signalized intersection. Therefore, the southbound right turn movements and the associated operation of the movement is ignored with regard to the signalized movement.

The 2024 analysis of the intersection of I-40 N. Ramp / 98th St. demonstrates that the delays will be acceptable for all conditions analyzed in this report. Therefore, no recommendations are made for the intersection of I-40 N. Ramp / 98th St.

#6 – I-40 S. Ramp / 98th St. – Pages A-71 thru A-112

The results of the analysis of the full access unsignalized intersection of I-40 S. Ramp / 98th St. are summarized in the following table:

I-40 S. Ramp / 98th St. 2024 Conditions	EB (I-40 S. Ramp)			NB (98th St.)			SB (98th St.)		
	L	T	R	L	T	R	L	T	R
Existing Lane Geometry	1>		0	0	2			2	0
AM Peak Hour									
2024 NO BUILD Conditions Volumes	21		1	0	626			842	0
V/C Ratio	0.10								
Level-of-Service	C								
Control Delay (Seconds)	20.5								
Intersection LOS	TWSC								
95th Percentile Queue (veh)	0.3								
2024 BUILD Conditions Volumes	21		4	0	661			885	0
V/C Ratio	0.11								
Level-of-Service	C								
Control Delay (Seconds)	20.7								
Intersection LOS	TWSC								
95th Percentile Queue (veh)	0.4								
PM Peak Hour									
2024 NO BUILD Conditions Volumes	26		3	0	367			2,178	0
V/C Ratio	0.58								
Level-of-Service	F								
Control Delay (Seconds)	140.0								
Intersection LOS	TWSC								
95th Percentile Queue (veh)	2.3								
2024 BUILD Conditions Volumes	26		3	0	405			2,219	0
V/C Ratio	0.63								
Level-of-Service	F								
Control Delay (Seconds)	159.0								
Intersection LOS	TWSC								
95th Percentile Queue (veh)	2.5								

The 2024 analysis of the intersection of I-40 S. Ramp / 98th St. demonstrates that the delays will be excessive for the eastbound left turn lane on the ramp at 98th St. The forecast volumes for the eastbound left turn movement are 21 vehicles per hour for the 2024 AM Peak Hour period and 26 vehicles per hour for the 2024 PM Peak Hour period. The eastbound right turn movement volumes are even lower, and the eastbound right turn movement is facilitated with a right turn ramp and an add lane so that the movement does not stop and has no delay associated with an unsignalized intersection. Side street volumes that low will not meet any of the warrant criteria for a traffic signal. Therefore, no recommendations are made for the intersection of I-40 S. Ramp / 98th St.

#7 – Central Ave. / Bridge Blvd. – Pages A-71 thru A-112

The results of the analysis of the full access unsignalized intersection of Central Ave. / Bridge Blvd. are summarized in the following table:

Central Ave. / Bridge Blvd. 2024 Conditions	EB (Central Ave.)			WB (Central Ave.)			NB (Bridge Blvd.)			SB (Bridge Blvd.)		
	L	T	R	L	T	R	L	T	R	L	T	R
Existing Lane Geometry	0	<2	1	1	2>	0	0	<1	1	0	<1>	0
AM Peak Hour												
2024 NO BUILD Conditions Volumes	8	376	201	3	201	1	193	3	3	4	1	3
V/C Ratio	0.01			0.00				0.34	0.00		0.02	
Level-of-Service	A	A		A				B	A		B	
Control Delay (Seconds)	7.5	0.0		8.1				14.0	8.9		11.6	
Intersection LOS	TWSC											
95th Percentile Queue (veh)	0.0			0.0				1.5	0.0		0.0	
2024 BUILD Conditions Volumes	8	420	208	3	254	0	201	3	3	4	1	3
V/C Ratio	0.01			0.00				0.37	0.00		0.01	
Level-of-Service	A	A		A				C	A		B	
Control Delay (Seconds)	7.5	0.0		8.2				15.0	9.0		10.6	
Intersection LOS	TWSC											
95th Percentile Queue (veh)	0.0			0.0				1.7	0.0		0.0	

PM Peak Hour

2024 NO BUILD Conditions Volumes	1	336	235	4	439	1	216	1	4	3	2	1
V/C Ratio	0.00			0.00				0.43	0.01		0.01	
Level-of-Service	A	A		A				C	A		B	
Control Delay (Seconds)	7.7	0.0		8.3				16.2	8.8		12.2	
Intersection LOS	TWSC											
95th Percentile Queue (veh)	0.0			0.0				2.1	0.0		0.0	
2024 BUILD Conditions Volumes	1	385	243	4	489	1	224	1	4	3	2	1
V/C Ratio	0.00			0.00				0.47	0.01		0.01	
Level-of-Service	A	A		A				C	A		B	
Control Delay (Seconds)	7.7	0.0		8.4				17.5	8.9		12.6	
Intersection LOS	TWSC											
95th Percentile Queue (veh)	0.0			0.0				2.4	0.0		0.0	

The 2024 analysis of the intersection of Central Ave. / Bridge Blvd. demonstrates that the delays will be acceptable for all conditions analyzed in this report.

The impact to the 95th Percentile calculated queue lengths is minimal. The queuing increase is less than 1 vehicle for every turning movement at the intersection.

Therefore, no recommendations are made for the intersection of Central Ave. / Bridge Blvd.

#8 – Sunset Gardens Rd. / 98th St. – Pages A-71 thru A-112

The results of the analysis of the full access unsignalized intersection of Sunset Gardens Rd. / 98th St. are summarized in the following table:

Sunset Gardens / 98th St. 2024 Conditions	EB (Sunset Gardens)			WB (Sunset Gardens)			NB (98th St.)			SB (98th St.)		
	L	T	R	L	T	R	L	T	R	L	T	R
Existing Lane Geometry	0	<1>	0	0	<1>	0	1	2>	0	1	2>	0
AM Peak Hour												
2024 NO BUILD Conditions Volumes	27	4	25	4	2	41	17	1,690	17	7	622	9
V/C Ratio		0.15			0.14		0.01			0.01		
Level-of-Service		C			C		A			B		
Control Delay (Seconds)		16.3			16.7		7.9			11.5		
Intersection LOS	TWSC											
95th Percentile Queue (veh)		0.5			0.5		0.0			0.0		
2024 BUILD Conditions Volumes	27	4	58	4	2	60	56	1,808	17	23	721	9
V/C Ratio		0.25			0.22		0.05			0.05		
Level-of-Service		C			C		A			B		
Control Delay (Seconds)		17.8			20.1		8.2			12.7		
Intersection LOS	TWSC											
95th Percentile Queue (veh)		1.0			0.8		0.2			0.2		
PM Peak Hour												
2024 NO BUILD Conditions Volumes	14	1	27	5	6	23	26	977	7	31	1,611	43
V/C Ratio		0.14			0.09		0.04			0.03		
Level-of-Service		C			B		B			A		
Control Delay (Seconds)		18.2			14.8		11.0			8.7		
Intersection LOS	TWSC											
95th Percentile Queue (veh)		0.5			0.3		0.1			0.1		
2024 BUILD Conditions Volumes	110	1	63	5	6	41	63	1,089	7	48	1,720	43
V/C Ratio	0.71	0.19			0.15		0.12			0.06		
Level-of-Service		F			C		B			A		
Control Delay (Seconds)		88.0			16.4		12.6			9.1		
Intersection LOS	TWSC											
95th Percentile Queue (veh)	4.3	7.2			0.5		0.4			0.2		

The 2024 analysis of the intersection of Sunset Gardens Rd. / 98th St. demonstrates that the delays will be acceptable for all conditions analyzed in this report except the PM Peak Hour BUILD Condition. It should be noted that Driveway "A" (which is analyzed later in this report)

experiences excessive delays for the eastbound left turn movement during the PM Peak Hour period. Therefore, most of those eastbound left turn movements were also routed to the south to Sunset Gardens to allow the eastbound left turn traffic exiting the project to turn left from Sunset Gardens Rd. rather than Driveway "A" during the PM Peak period. As a result, the eastbound approach on Sunset Gardens is projected to experience long delays and a 95th Percentile queuing in the range of 7.2 vehicles during the PM Peak Hour. However, no recommendations are made for the intersection of Sunset Gardens Rd. / 98th St.

#9 – Driveway "A" / 98th St. – Pages A-71 thru A-112

The results of the analysis of the full access unsignalized intersection of Driveway "A" / 98th St. are summarized in the following table:

Driveway "A" / 98th St. 2024 Conditions	EB (Driveway "A")			NB (98th St.)			SB (98th St.)		
	L	T	R	L	T	R	L	T	R
Existing Lane Geometry									
AM Peak Hour									
Recommended Geometry	1>		0	1	2			2	1
2024 BUILD Conditions Volumes	105		93	160	1,749			615	153
V/C Ratio	0.57			0.16					
Level-of-Service	D			A					
Control Delay (Seconds)	27.0			9.0					
Intersection LOS	TWSC								
95th Percentile Queue (veh)	3.4			0.6					

PM Peak Hour									
Recommended Geometry	1>		0	1	2			2	1
2024 BUILD Conditions Volumes	89		126	155	969			1,818	88
V/C Ratio	0.42		0.42	0.35					
Level-of-Service	D		D	C					
Control Delay (Seconds)	25.0		25.0	16.9					
Intersection LOS	TWSC								
95th Percentile Queue (veh)	2.0		2.0	1.5					

The 2024 analysis of the intersection of Driveway "A" / 98th St. demonstrates that the delays will be acceptable for all conditions analyzed in this report except the eastbound exiting left turn movement during the 2024 PM Peak Hour period. Analysis for Driveway "A" considered the impact of adjacent traffic signal platooning effect on the operation of the Driveway. It also considered the eastbound left turn movement to be a staged left turn. Improvements were recently constructed to provide a new northbound left turn lane and a southbound right turn lane into the proposed new Driveway "A". Therefore, no recommendations are made for the intersection of Driveway "A" / 98th St.

#10 – Driveway “B” / 98th St. – Pages A-71 thru A-112

The results of the analysis of the right-in, right-out access unsignalized intersection of Driveway “B” / 98th St. are summarized in the following table:

Driveway "B" / 98th St. 2024 Conditions	EB (Driveway "B")			NB (98th St.)			SB (98th St.)		
	L	T	R	L	T	R	L	T	R
Existing Lane Geometry									
AM Peak Hour									
Recommended Geometry	0		1	0	2			2>	0
2024 BUILD Conditions Volumes	0		68	0	1,909			688	72
V/C Ratio			0.09						
Level-of-Service			A						
Control Delay (Seconds)			9.9						
Intersection LOS	TWSC								
95th Percentile Queue (veh)			0.3						

PM Peak Hour									
Recommended Geometry	0		1	0	2			2>	0
2024 BUILD Conditions Volumes	0		76	0	1,124			1,840	70
V/C Ratio			0.25						
Level-of-Service			C						
Control Delay (Seconds)			20.7						
Intersection LOS	TWSC								
95th Percentile Queue (veh)			1.0						

The 2024 analysis of the intersection of Driveway “B” / 98th St. demonstrates that the delays and calculated 95th Percentile queuing will be acceptable for all conditions analyzed in this report. Therefore, no recommendations are made for the intersection of Driveway “B” / 98th St.

#11 – Sunset Gardens Rd. / Driveway “C” - Pages A-71 thru A-112

The results of the 2024 analyses of the full access unsignalized intersection of Sunset Gardens Rd. / Driveway “C” are summarized in the following tables:

Sunset Gardens / Driveway “C” 2024 Conditions	EB (Sunset Gardens)			WB (Sunset Gardens)			SB (Driveway “C”)		
	L	T	R	L	T	R	L	T	R
Existing Lane Geometry									
AM Peak Hour									
Recommended Geometry	0	<1			1>	0	1>		0
2024 BUILD Conditions Volumes	6	56			28	39	33		5
V/C Ratio	0.00						0.05		
Level-of-Service	A	A					A		
Control Delay (Seconds)	7.4	0.0					9.3		
Intersection LOS	TWSC								
95th Percentile Queue (veh)	0.0						0.1		

PM Peak Hour									
Recommended Geometry	0	<1			1>	0	1>		0
2024 BUILD Conditions Volumes	6	42			75	37	36		6
V/C Ratio	0.00						0.05		
Level-of-Service	A	A					A		
Control Delay (Seconds)	7.5	0.0					9.5		
Intersection LOS	TWSC								
95th Percentile Queue (veh)	0.0						0.2		

The 2024 analysis of the intersection of Sunset Gardens Rd. / Driveway “C” demonstrates that the delays will be acceptable for all conditions analyzed in this report. Therefore, no recommendations are made for the intersection of Sunset Gardens Rd. / Driveway “C”

#12 – Central Ave. / Driveway “D” – Pages A-71 thru A-112

The results of the analysis of the right-in, right-out only unsignalized intersection of Central Ave. / Driveway “D” are summarized in the following table:

Central Ave. / Driveway “D” 2024 Conditions	EB (Central Ave.)			WB (Central Ave.)			NB (Driveway “D”)		
	L	T	R	L	T	R	L	T	R
Existing Lane Geometry									
AM Peak Hour									
Recommended Geometry		2>	0	0	2		0		1
2024 BUILD Conditions Volumes		722	33	0	287		0		82
V/C Ratio									0.15
Level-of-Service									B
Control Delay (Seconds)									12.1
Intersection LOS	TWSC								
95th Percentile Queue (veh)									0.5

PM Peak Hour									
Recommended Geometry		2>	0	0	2		0		1
2024 BUILD Conditions Volumes		434	32	0	540		0		89
V/C Ratio									0.12
Level-of-Service									B
Control Delay (Seconds)									10.4
Intersection LOS	TWSC								
95th Percentile Queue (veh)									0.4

The 2024 analysis of the intersection of Central Ave. / Driveway “D” demonstrates that the delays will be acceptable for all conditions analyzed in this report. Therefore, no recommendations are made for the intersection of Central Ave. / Driveway “D”.

Impact Assessment

The proposed development will have minimal adverse impact on the adjacent transportation system. The intersection of Central Ave. / 98th St. will be impacted moderately as the project is located at the southwest corner of this signalized intersection. The impact of this development on the intersection of Central Ave. / 98th St. can be mitigated.

Access Design Specifications

Sight distance at Driveway “A” is adequate. There are no vertical or horizontal curves along this portion of 98th St. and there are no structures that are blocking sight distance into and out of the driveway. Sight distance is also adequate at the secondary driveways (Driveway “B”, “C”, and “D”). Adequate sight distances should be maintained at all of the driveways proposed for this project as well as at the signalized intersection of Central Ave. / 98th St.

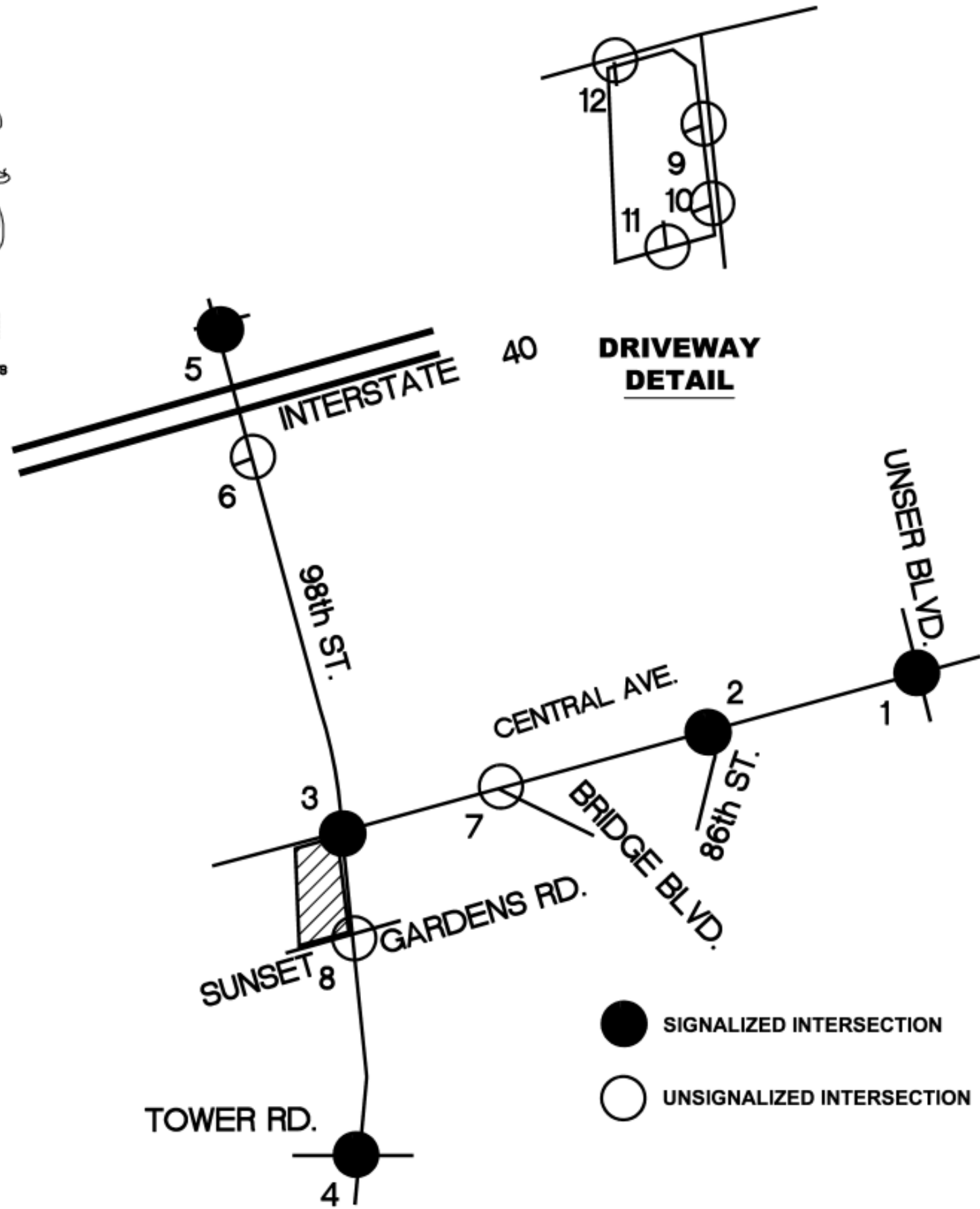
The proposed driveways for this project fall under the jurisdiction of the City of Albuquerque and, therefore, will be required to be designed and constructed to meet their regulatory criteria. A northbound left turn lane and a southbound right turn lane on 98th St. are warranted at Driveway “A”. Both auxiliary lanes have recently been constructed to meet the City of Albuquerque’s design criteria.

Driveway “A” on the west side of 98th St. is located approximately 525 feet south of the signalized intersection of Central Ave. / 98th St. (centerline to centerline) and approximately 510 feet north of the Sunset Gardens Rd. / 98th St. intersection (centerline to centerline). Driveway “B” on the west side of 98th St. is located approximately 285 feet south of Driveway “A” (centerline to centerline) and approximately 230 feet north of Sunset Gardens Rd. (centerline to centerline). Driveway “C” is located approximately 320 feet west of 98th St. (centerline to centerline). Driveway “D” is located approximately 400 feet west of 98th St. (centerline to centerline).

Summary of Deficiencies, Anticipated Impacts, and Recommendations

The existing 2024 analysis did not determine any significant deficiencies in the adjacent transportation system. The only moderate impact to the adjacent transportation system demonstrated in this study was at the signalized intersection of Central Ave. / 98th St. The impact resulting from the proposed Mercado el Milagro development can be mitigated by adjusting the signal timing split as discussed on Page 14 of this report.

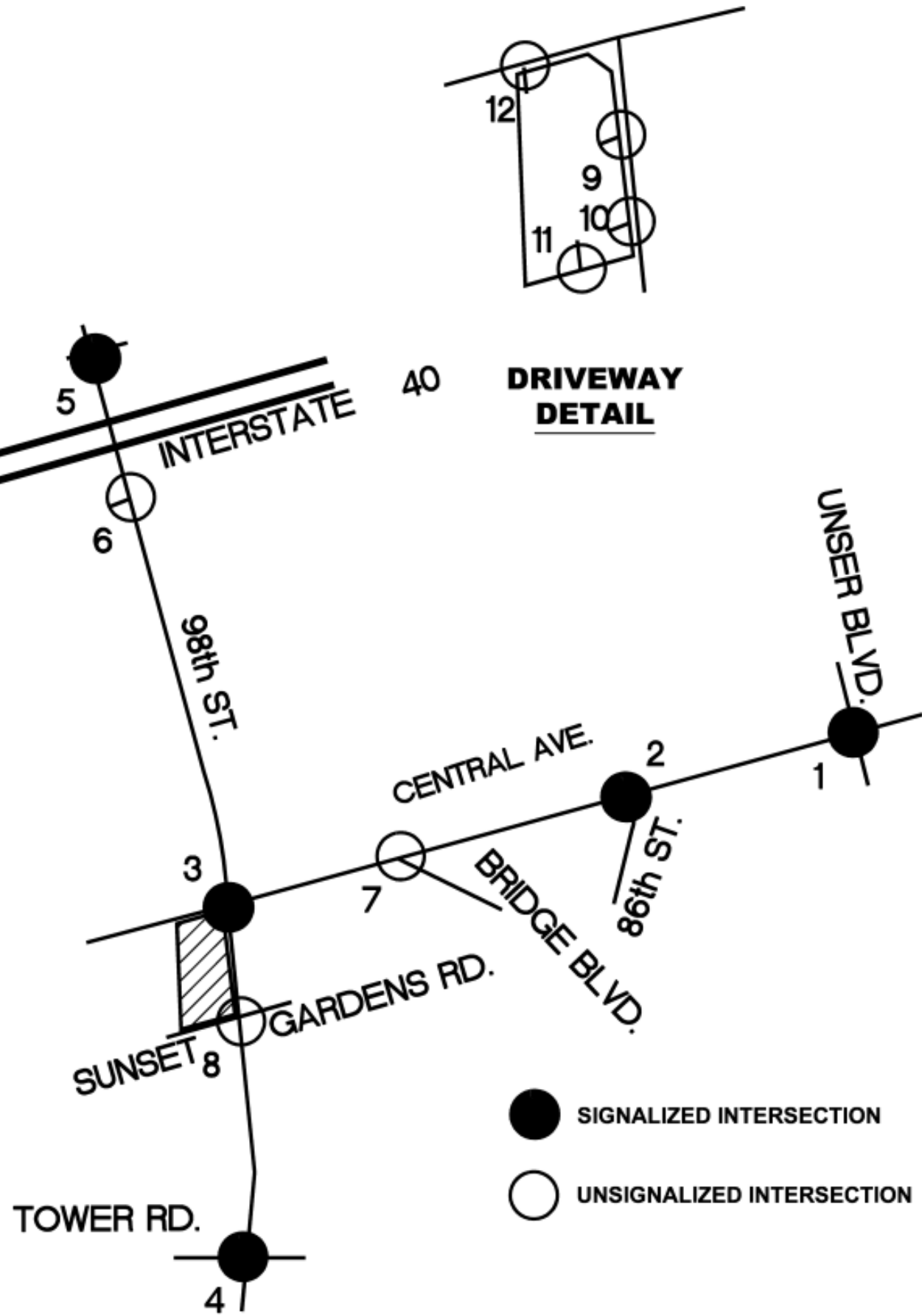
Recommended mitigation measures are explained at the end of the Executive Summary of this report. The following pages (Lanes / Volumes / Analysis Maps) summarize the results of the signalized and unsignalized intersection analysis in graphic format.



2024 NO BUILD Conditions	2024 BUILD Conditions	2024 BUILD Conditions (MITIGATED)
1: Unser Blvd. & Central Ave.	1: Unser Blvd. & Central Ave.	NO RECOMMENDATION
2: 86th St. & Central Ave.	2: 86th St. & Central Ave.	NO RECOMMENDATION
3: 98th St. & Central Ave.	3: 98th St. & Central Ave.	Re-Time Traffic Signal 3: 98th St. & Central Ave.
4: 98th St. & Tower Rd.	4: 98th St. & Tower Rd.	NO RECOMMENDATION

Mercado el Milagro
(Central Ave. / 98th St.)
LOS / Volume Analysis Map

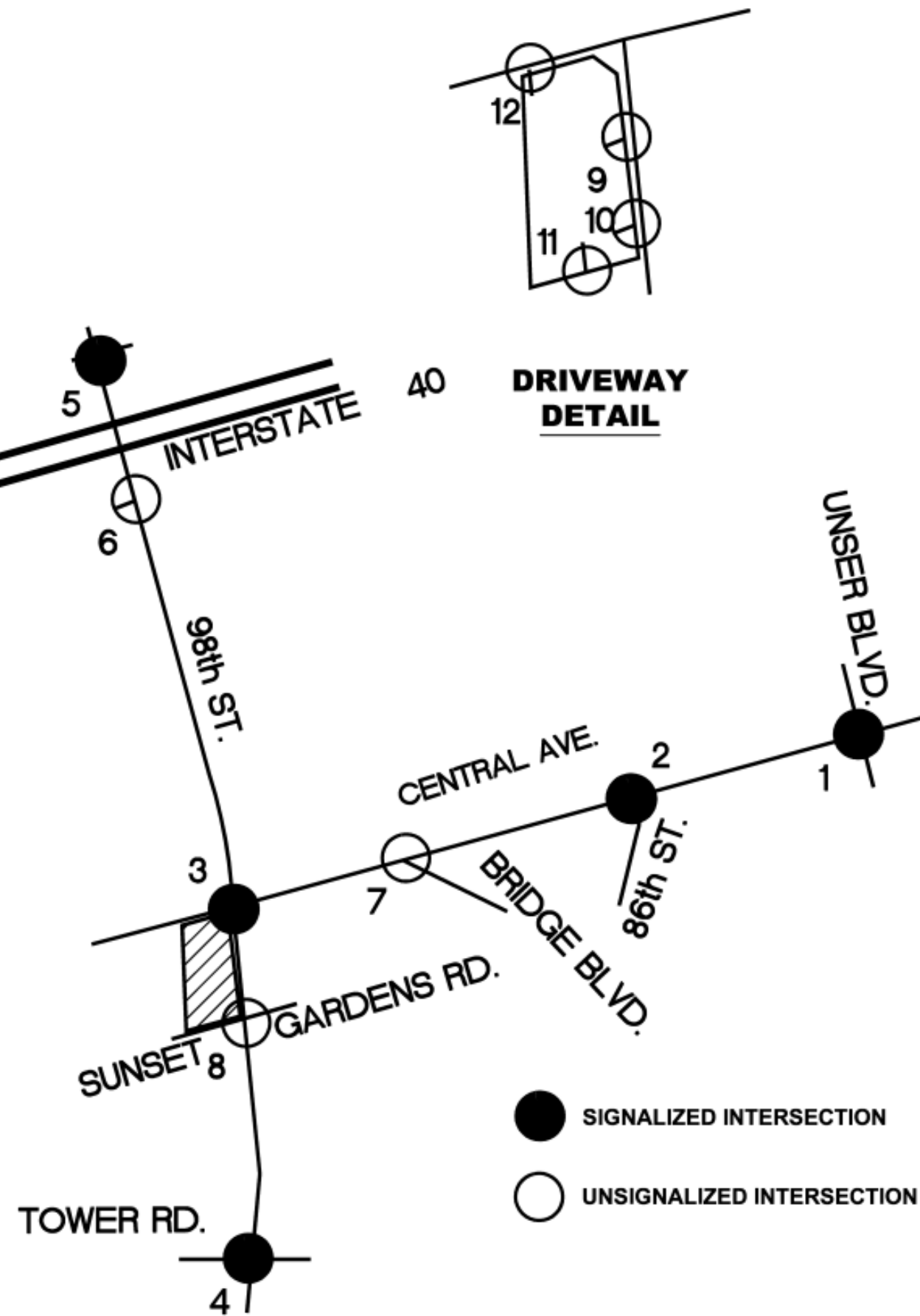
AM(PM)



2024 NO BUILD Conditions	2024 BUILD Conditions	2024 BUILD Conditions (MITIGATED)
		NO RECOMMENDATION
		NO RECOMMENDATION
		NO RECOMMENDATION
		NO RECOMMENDATION (PM Trips from Driveway "A" Re-Routed)
5: 98th St. & I-40 N. Ramp	5: 98th St. & I-40 N. Ramp	
6: 98th St. & I-40 S. Ramp	6: 98th St. & I-40 S. Ramp	
7: Bridge Blvd. & Central Ave.	7: Bridge Blvd. & Central Ave.	
8: 98th St. & Sunset Gardens Rd.	8: 98th St. & Sunset Gardens Rd.	

Mercado el Milagro
(Central Ave. / 98th St.)
LOS / Volume Analysis Map

AM(PM)



**DRIVEWAY
DETAIL**

2024 NO BUILD Conditions

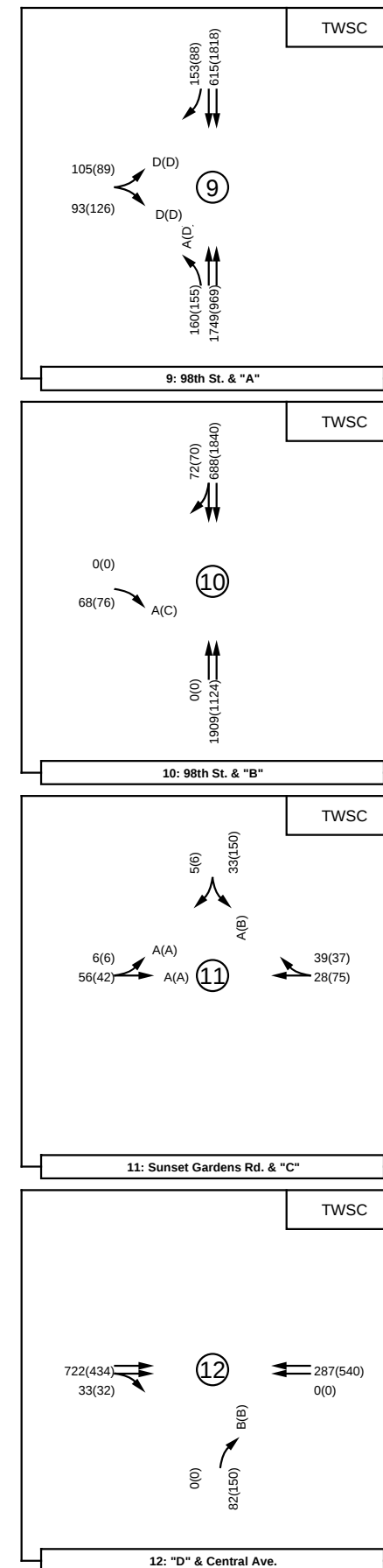
Driveway "A" does not exist
for NO BUILD Condition

Driveway "B" does not exist
for NO BUILD Condition

Driveway "C" does not exist
for NO BUILD Condition

Driveway "D" does not exist
for NO BUILD Condition

2024 BUILD Conditions



Mercado el Milagro
(Central Ave. / 98th St.)
LOS / Volume Analysis Map

AM(PM)

Appendix

<u>SITE INFORMATION</u>	
Vicinity Map	A-1
Aerial Map	A-2
Conceptual Site Development Plan	A-3
2040 Long Range Roadway System Map (from MRMPO)	A-4
2040 Long Range Bikeway System Map (from MRMPO)	A-5
2017 Traffic Flow Map	A-6
<u>TRIP GENERATION</u>	
Trip Generation Data Summary	A-7
Trip Generation Data Sheets	A-8 thru A-14
<u>TRIP DISTRIBUTION</u>	
DASZ Map - Trip Distribution Area	A-15
Trip Distribution Worksheets	A-16 thru A-21
Trip Distribution Map	A-22
Trip Assignments Map (% Entering)	A-23
Trip Assignments Map (% Exiting)	A-24
Passby Trip Assignments	A-25
<u>HISTORIC GROWTH RATE</u>	
Historic Growth Table	A-26
Historic Growth Trendline Charts	A-27 thru A-42
Growth Rate Map	A-43
<u>IMPLEMENTATION YEAR TURNING MOVEMENT COUNTS</u>	
Summary Table of Intersection Counts	A-44 thru A-46
Individual Intersection Turning Movement Counts Tables	A-47 thru A-70
<u>IMPLEMENTATION YEAR (2024) INTERSECTION ANALYSES</u>	
Intersection #1 - Signalized Intersection Analyses (Central Ave. / Unser Blvd.)	A-71 thru A-112
Intersection #2 - Signalized Intersection Analyses (Central Ave. / 86 th St.)	
Intersection #3 - Signalized Intersection Analysis (Central Ave. / 98 th St.)	
Intersection #4 - Signalized Intersection Analysis (Tower Rd. / 98 th St.)	
Intersection #5 - Signalized Intersection Analyses (I-40 N. Ramp / 98 th St.)	
Intersection #6 - Unsignalized Intersection Analysis (I-40 S. Ramp / 98 th St.)	
Intersection #7 - Unsignalized Intersection Analyses (Central Ave. / Bridge Blvd.)	
Intersection #8 - Unsignalized Intersection Analysis (Sunset Gardens Rd. / 98 th St.)	
Intersection #9 - Signalized Intersection Analyses (Driveway "A" / 98 th St.)	
Intersection #10 - Unsignalized Intersection Analysis (Driveway "B" / 98 th St.)	
Intersection #11 - Unsignalized Intersection Analyses (Sunset Gardens Rd. / Driveway "C")	
Intersection #12 - Unsignalized Intersection Analysis (Central Ave. / Driveway "D")	
<u>Miscellaneous Data</u>	
Traffic Count Data	A-113 thru A-123
ABQ Ride Route Schedules	A-124 thru A-125
City of Albuquerque Scoping Letter	A-126 thru A-128

APPENDIX



Mercado el Milagro

(Central Ave. / 98th St.)

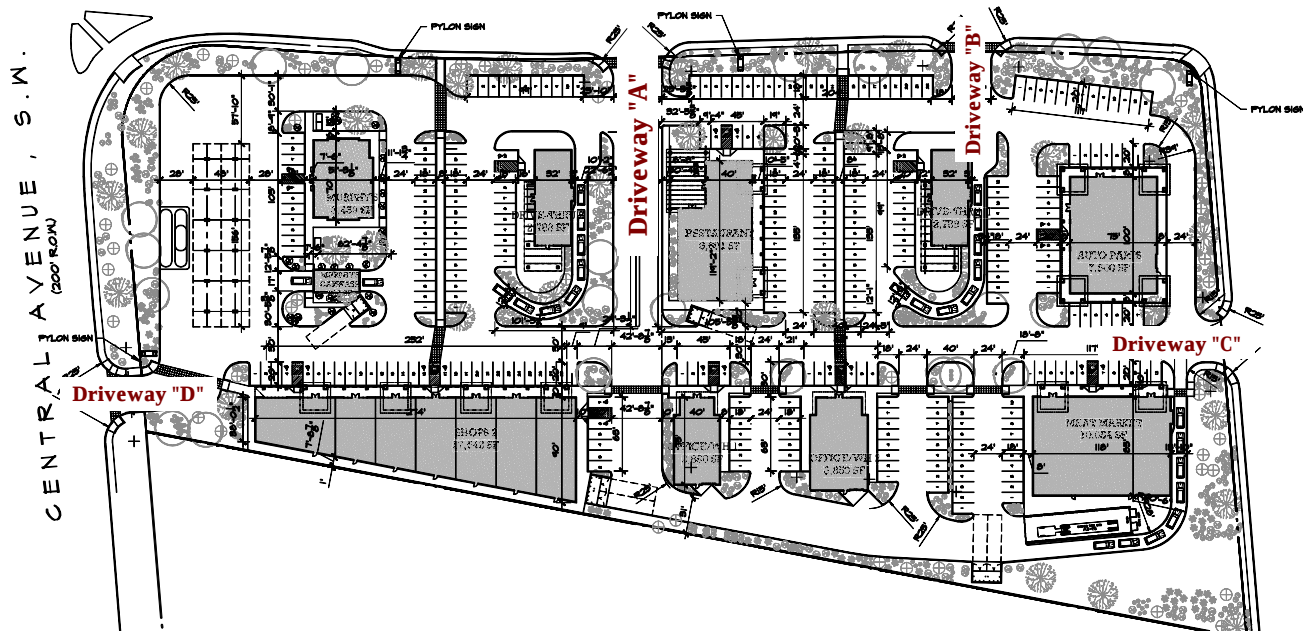
Aerial Map

MERCADO EL MILAGRO PETERSON PROPERTIES

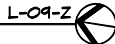
SITE PLAN

10000 CENTRAL AVENUE SW ALBUQUERQUE, NEW MEXICO 87121

98TH STREET, S.W.
(R.O.M. VARIES)

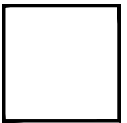
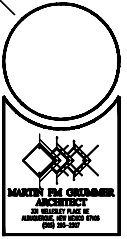


VICINITY MAP
NTS

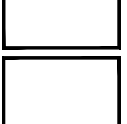


SITE PLAN

1" = 50'-0"



MERCADO EL MILAGRO
NEW SITE PLAN
10000 CENTRAL AVENUE SW
ALBUQUERQUE, NEW MEXICO 87121

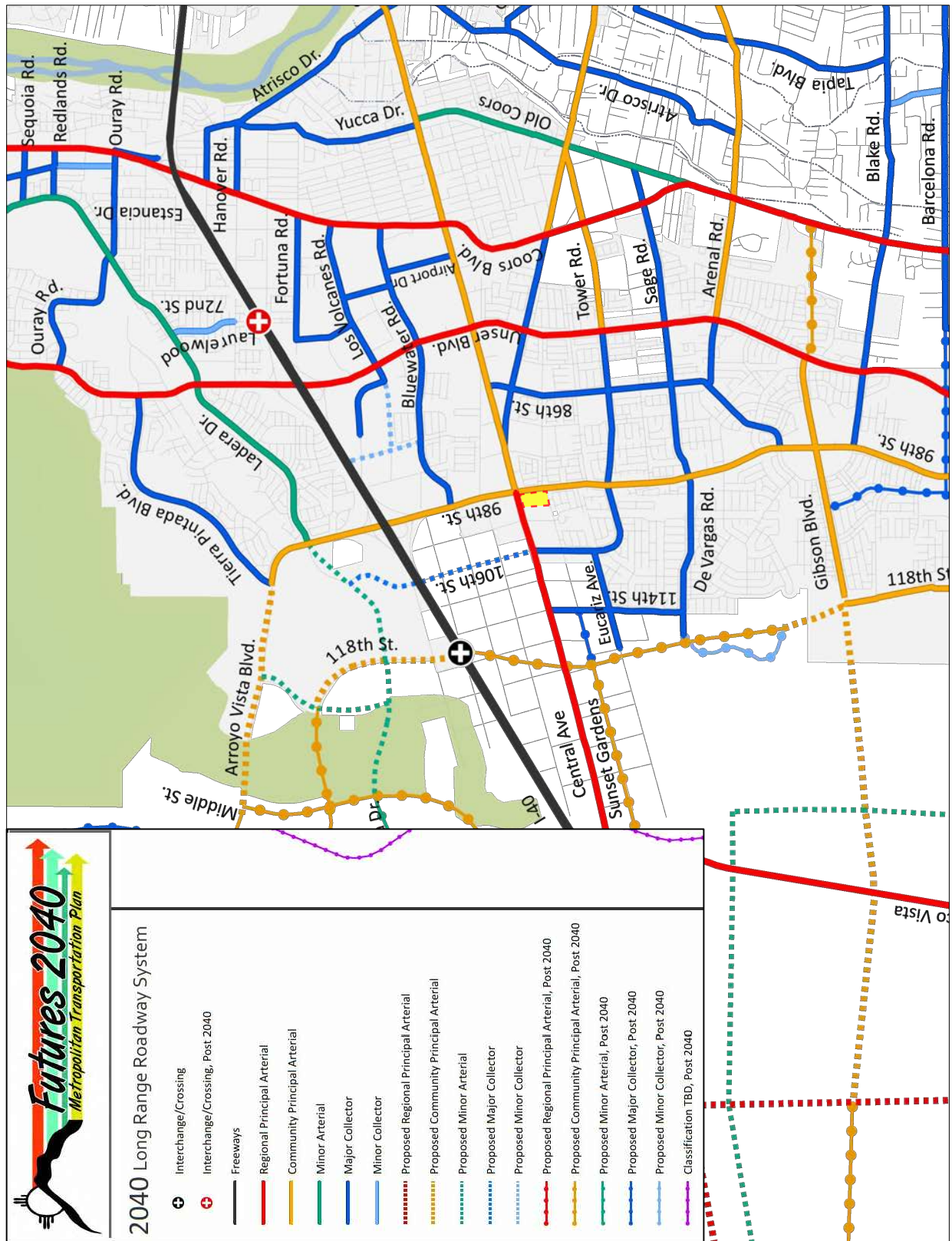


DATE: 14 JAN 19
DRAWN BY: MPM
CHECKED BY:
VERIFIED BY:

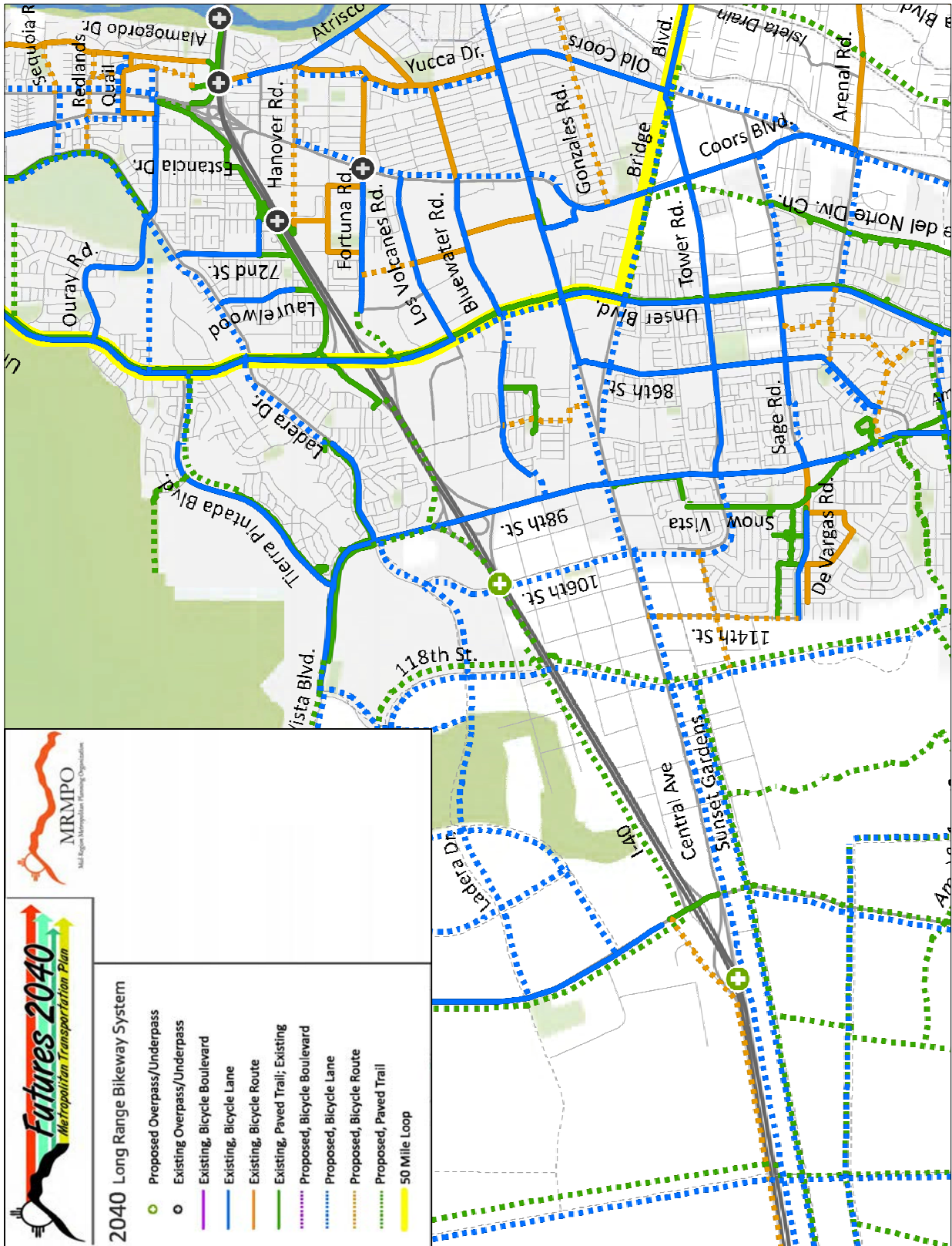
REVISIONS

SHEET NO:
A1.1

ALL DIMENSIONS ARE TO BE FIELD VERIFIED. IF THERE ARE DISCREPANCIES, PLEASE NOTIFY THE ARCHITECT. DRAWINGS ARE NOT TO BE SCALED. USE DIMENSIONS FOR ACCURACY.



Portion of Futures 2040 Long Range Roadway System
(from Mid-Region Council of Governments)



Portion of Futures 2040 Long Range Bikeway System
(from Mid-Region Council of Governments)

Mercado el Milagro (Central Ave. / 98th St.)

Trip Generation Data (ITE Trip Generation Manual - 10th Edition)

COMMENT	USE (ITE CODE)	DESCRIPTION	Units					
	24 HR VOL		A. M. PEAK HR.		P. M. PEAK HR.			
			GROSS	ENTER	EXIT	ENTER	EXIT	
Murphy's 2 Restaurants		Gasoline / Service Station w/ Convenience Market (945)	24	5,282	183	176	171	165
		Fast Food Restaurant w/ Drive-Thru Window (934)	5.58	2,626	114	110	95	87
		High Turnover (Sit-Down) Restaurant (932)	3.00	337	16	13	18	11
		Automobile Parts Sales (843)	7.50	409	11	9	18	19
Meat Market		Supermarket (850)	10.05	1,925	23	15	71	69
Shops		Shopping Center (820)	12.06	1,427	98	60	55	59
Offices		Small Office Building (712)	6.70	108	11	2	5	11
		Subtotal		12,114	456	385	433	421
		Pass-By Trips	30%		-137	-116	-130	-126
		Total Primary Trips			319	269	303	295

Mercado el Milagro (Central Ave. / 98th St.)
Trip Generation Data (ITE Trip Generation Manual - 10th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A.M. PEAK HOUR		P.M. PEAK HOUR	
		ENTER	EXIT	ENTER	EXIT
Units					
		GROSS			

Fueling Positions

ITE Trip Generation Equations:

Average Vehicle Trip Ends on a Weekday (24 HOUR TWO-WAY VOLUME)

T = 268.46 (X) + -1161
50% Enter, 50% Exit

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7am and 9am (A.M. PEAK HOUR)

T = 19 (X) + -96.53
51% Enter, 49% Exit

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR)

T = 13.99 (X) + 0
51% Enter, 49% Exit

Comments:

Murphy's

Based on ITE Trip Generation Manual - 10th Edition

Mercado el Milagro (Central Ave. / 98th St.)
Trip Generation Data (ITE Trip Generation Manual - 10th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A.M. PEAK HOUR		P.M. PEAK HOUR		
		ENTER	EXIT	ENTER	EXIT	
Fast Food Restaurant w/ Drive-Thru Window (934)						
Units						
5.58						
1,000 S.F.						
		2,626	114	110	95	87

ITE Trip Generation Equations:

Average Vehicle Trip Ends on a Weekday (24 HOUR TWO-WAY VOLUME)

T = 470.95 (X) + 0
50% Enter, 50% Exit

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7am and 9am (A.M. PEAK HOUR)

T = 40.19 (X) + 0
51% Enter, 49% Exit

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR)

T = 32.67 (X) + 0
52% Enter, 48% Exit

Comments:

2 Restaurants

Based on ITE Trip Generation Manual - 10th Edition

Mercado el Milagro (Central Ave. / 98th St.)
Trip Generation Data (ITE Trip Generation Manual - 10th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A.M. PEAK HOUR		P.M. PEAK HOUR		
		ENTER	EXIT	ENTER	EXIT	
Units						
		337	16	13	18	11

High Turnover (Sit-Down) Restaurant (932)

3.00

1,000 S.F.

ITE Trip Generation Equations:

Average Vehicle Trip Ends on a Weekday (24 HOUR TWO-WAY VOLUME)

$$T = \frac{112.18 (X) + 0}{50\% \text{ Enter, } 50\% \text{ Exit}}$$

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7am and 9am (A.M. PEAK HOUR)

$$T = \frac{9.94 (X) + 0}{55\% \text{ Enter, } 45\% \text{ Exit}}$$

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR)

$$T = \frac{9.77 (X) + 0}{62\% \text{ Enter, } 38\% \text{ Exit}}$$

Comments:

Tract No.

Based on ITE Trip Generation Manual - 10th Edition

Mercado el Milagro (Central Ave. / 98th St.)
Trip Generation Data (ITE Trip Generation Manual - 10th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A.M. PEAK HOUR		P.M. PEAK HOUR		
		ENTER	EXIT	ENTER	EXIT	
Units						
7.50						
1,000 S.F.						
Automobile Parts Sales (843)						
		409	11	9	18	19

ITE Trip Generation Equations:

Average Vehicle Trip Ends on a Weekday (24 HOUR TWO-WAY VOLUME)

$$T = \frac{71.62}{50\%} (X) + \frac{-127.66}{50\% \text{ Enter, } 50\% \text{ Exit}}$$

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7am and 9am (A.M. PEAK HOUR)

$$T = \frac{2.59}{55\% \text{ Enter, } 45\% \text{ Exit}} (X) + \frac{0}{0}$$

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR)

$$T = \frac{4.91}{48\% \text{ Enter, } 52\% \text{ Exit}} (X) + \frac{0}{0}$$

Comments:

Tract No.

Based on ITE Trip Generation Manual - 10th Edition

Mercado el Milagro (Central Ave. / 98th St.)
Trip Generation Data (ITE Trip Generation Manual - 10th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A.M. PEAK HOUR		P.M. PEAK HOUR	
		ENTER	EXIT	ENTER	EXIT
Supermarket (850)		1,925	23	15	71
Units		1,000 S.F.			
		10.05			

ITE Trip Generation Equations:

Average Vehicle Trip Ends on a Weekday (24 HOUR TWO-WAY VOLUME)

$$T = \frac{70.89}{50\%} (X) + \frac{1212.64}{50\% \text{ Enter, } 50\% \text{ Exit}}$$

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7am and 9am (A.M. PEAK HOUR)

$$T = \frac{3.82}{60\% \text{ Enter, } 40\% \text{ Exit}} (X) + \frac{0}{0}$$

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR)

$$Ln(T) = \frac{0.75}{51\% \text{ Enter, } 49\% \text{ Exit}} Ln(X) + \frac{3.21}{0}$$

Comments:

Meat Market

Based on ITE Trip Generation Manual - 10th Edition

*Mercado el Milagro (Central Ave. / 98th St.)
Trip Generation Data (ITE Trip Generation Manual - 10th Edition)*

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A.M. PEAK HOUR		P.M. PEAK HOUR			
		ENTER	EXIT	ENTER	EXIT		
Units							
12.06							
1,000 S.F.							
Shopping Center (820)		1,427	98	60	55	59	

ITE Trip Generation Equations:

Average Vehicle Trip Ends on a Weekday (24 HOUR TWO-WAY VOLUME)

$$\text{Ln(T)} = \begin{matrix} 0.68 \\ 50\% \end{matrix} \text{Ln(X)} + \begin{matrix} 5.57 \\ 50\% \end{matrix} \text{Exit}$$

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7am and 9am (A.M. PEAK HOUR)

$$\text{T} = \begin{matrix} 0.5 \\ 62\% \end{matrix} \text{(X)} + \begin{matrix} 151.78 \\ 38\% \end{matrix} \text{Exit}$$

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR)

$$\text{Ln(T)} = \begin{matrix} 0.74 \\ 48\% \end{matrix} \text{Ln(X)} + \begin{matrix} 2.89 \\ 52\% \end{matrix} \text{Exit}$$

Comments:

Shops

Based on ITE Trip Generation Manual - 10th Edition

Mercado el Milagro (Central Ave. / 98th St.)
Trip Generation Data (ITE Trip Generation Manual - 10th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A.M. PEAK HOUR		P.M. PEAK HOUR	
		ENTER	EXIT	ENTER	EXIT

Units

108	11	2	5	11
-----	----	---	---	----

Small Office Building (712)

6.70
1,000 S.F.

ITE Trip Generation Equations:

Average Vehicle Trip Ends on a Weekday (24 HOUR TWO-WAY VOLUME)

$$T = \frac{16.19}{50\%} (X) + \frac{0}{50\% \text{ Enter, } 50\% \text{ Exit}}$$

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7am and 9am (A.M. PEAK HOUR)

$$T = \frac{1.92}{83\%} (X) + \frac{0}{17\% \text{ Enter, } 17\% \text{ Exit}}$$

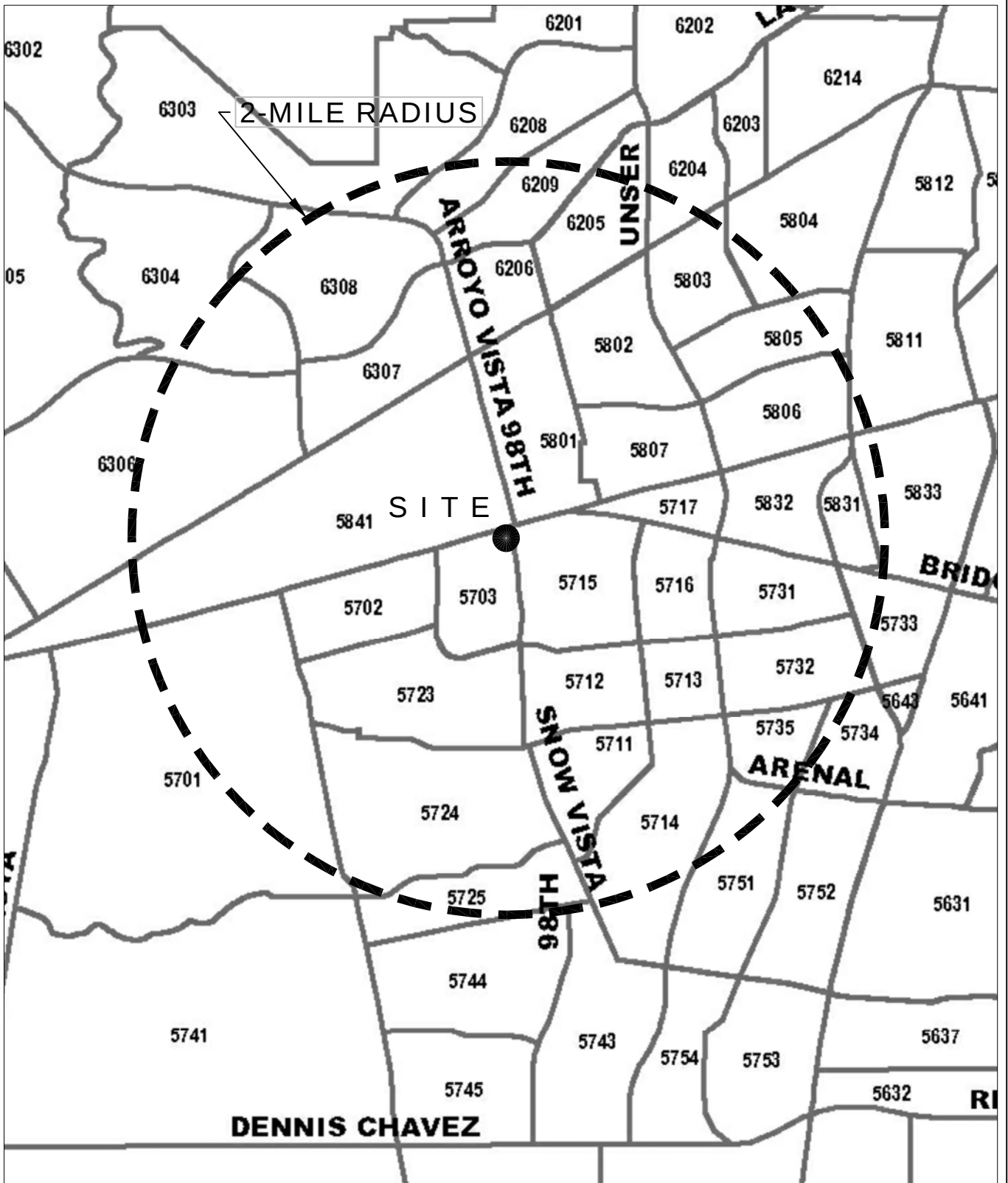
Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR)

$$T = \frac{2.45}{32\%} (X) + \frac{0}{68\% \text{ Enter, } 68\% \text{ Exit}}$$

Comments:

Offices

Based on ITE Trip Generation Manual - 10th Edition



DATA ANALYSIS SUBZONE (DASZ) MAP
Mercado el Milagro (Central Ave. / 98th St.)

Trip Distribution Table
Mercado el Milagro (Central Ave. / 98th St.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial Trips**

2012 and 2040 Data Taken from Mid-Region Council of Governments

2040 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

(9N) 98th St. North										(4E) Interstate 40 East				(UN) Unser Blvd. North			
DASZ #	% Sub Area in Study	2012 Population	2040 Population	Interpolated Population for the Year 2024	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population		
Boundary Specified on DASZ Map																	
5701	35%	1099	3972	2,330	816	1.49%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0		
5702	100%	28	105	61	61	0.11%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0		
5703	100%	2470	2412	2,445	2,445	4.46%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0		
5711	100%	1866	1827	1,849	1,849	3.38%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0		
5712	100%	2769	2324	2,578	2,578	4.71%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0		
5713	100%	995	859	937	937	1.71%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0		
5714	75%	5423	5000	5,242	3,932	7.18%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0		
5715	100%	4039	4232	4,122	4,122	7.52%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0		
5716	100%	2780	2608	2,706	2,706	4.94%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0		
5717	100%	6	1529	659	659	1.20%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0		
5723	100%	4569	5779	5,088	5,088	9.29%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0		
5724	100%	4793	5913	5,273	5,273	9.63%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0		
5725	65%	2332	2916	2,582	1,678	3.06%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0		
5731	100%	1330	1632	1,459	1,459	2.66%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0		
5732	95%	389	1086	688	654	1.19%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0		
5733	25%	100	94	97	24	0.04%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0		
5734	10%	961	1000	978	98	0.18%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0		
5735	100%	1721	1612	1,674	1,674	3.06%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0		
5751	20%	5698	4668	5,257	1,051	1.92%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0		
5801	100%	1452	3303	2,245	2,245	4.10%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0		
5802	100%	592	758	663	663	1.21%	0%	0.00%	0	0%	0.00%	0	100%	1.21%	663		
5803	95%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	100%	0.00%	0		
5804	10%	2474	3828	3,054	305	0.56%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0		
5805	90%	138	343	226	203	0.37%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0		
5806	100%	847	2144	1,403	1,403	2.56%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0		
5807	100%	1730	2227	1,943	1,943	3.55%	0%	0.00%	0	0%	0.00%	0	50%	1.77%	972		
5811	5%	4435	4231	4,348	217	0.40%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0		
5831	100%	668	671	669	669	1.22%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0		
5832	100%	1221	1808	1,473	1,473	2.69%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0		
5833	10%	3969	3511	3,773	377	0.69%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0		
5841	90%	161	269	207	186	0.34%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0		
6204	20%	1931	2366	2,117	423	0.77%	0%	100%	0	100%	0.77%	423	0%	0.00%	0		
6205	85%	2223	2133	2,184	1,856	3.39%	100%	3.39%	1,856	0%	0.00%	0	0%	0.00%	0		
6206	100%	1365	1735	1,524	1,524	2.78%	100%	2.78%	1,524	0%	0.00%	0	0%	0.00%	0		
6208	25%	1785	4155	2,801	700	1.28%	100%	1.28%	700	0%	0.00%	0	0%	0.00%	0		
6209	60%	1571	2055	1,778	1,067	1.95%	100%	1.95%	1,067	0%	0.00%	0	0%	0.00%	0		
6303	5%	0	2667	1,143	57	0.10%	100%	0.10%	57	0%	0.00%	0	0%	0.00%	0		
6304	30%	0	97	42	13	0.02%	100%	0.02%	13	0%	0.00%	0	0%	0.00%	0		
6306	45%	0	3224	1,382	622	1.14%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0		
6307	100%	0	1356	581	581	1.06%	100%	1.06%	581	0%	0.00%	0	0%	0.00%	0		
6308	90%	0	2980	1,277	1,149	2.10%	100%	2.10%	1,149	0%	0.00%	0	0%	0.00%	0		

Trip Distribution Table
Mercado el Milagro (Central Ave. / 98th St.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial**

2012 and 2040 Data Taken from Mid-Region Council of Governments

2040 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

DASZ #	% Sub Area in Study	2012		2040		Interpolated Population for the Year 2024	Population in Study	Percent Population	(CE) Central Ave. East			(US) Unser Blvd. South			(8S) 86th St. South		
		2012 Population	2040 Population	% Utilizing	% Population Utilizing				Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing
Boundary Specified on DASZ Map																	
5701	35%	1099	3972	2,330	816	1.49%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5702	100%	28	105	61	61	0.11%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5703	100%	2470	2412	2,445	2,445	4.46%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5711	100%	1866	1827	1,849	1,849	3.38%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5712	100%	2769	2324	2,578	2,578	4.71%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5713	100%	995	859	937	937	1.71%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5714	75%	5423	5000	5,242	3,932	7.18%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5715	100%	4039	4232	4,122	4,122	7.52%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5716	100%	2780	2608	2,706	2,706	4.94%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5717	100%	6	1529	659	659	1.20%	0.00%	0	0%	0.00%	0	50%	0.60%	330	25%	0.30%	165
5723	100%	4569	5779	5,088	5,088	9.29%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5724	100%	4793	5913	5,273	5,273	9.63%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5725	65%	2332	2916	2,582	1,678	3.06%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5731	100%	1330	1632	1,459	1,459	2.66%	0.00%	0	0%	0.00%	0	30%	0.80%	438	0%	0.00%	0
5732	95%	389	1086	688	654	1.19%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5733	25%	100	94	97	24	0.04%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5734	10%	961	1000	978	98	0.18%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5735	100%	1721	1612	1,674	1,674	3.06%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5751	20%	5698	4668	5,257	1,051	1.92%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5801	100%	1452	3303	2,245	2,245	4.10%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5802	100%	592	758	663	663	1.21%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5803	95%	0	0	0	0	0.00%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5804	10%	2474	3828	3,054	305	0.56%	0.56%	305	100%	0.56%	305	0%	0.00%	0	0%	0.00%	0
5805	90%	138	343	226	203	0.37%	0.37%	203	100%	0.37%	203	0%	0.00%	0	0%	0.00%	0
5806	100%	847	2144	1,403	1,403	2.56%	2.56%	1,403	100%	2.56%	1,403	0%	0.00%	0	0%	0.00%	0
5807	100%	1730	2227	1,943	1,943	3.55%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5811	5%	4435	4231	4,348	217	0.40%	0.40%	217	100%	0.40%	217	0%	0.00%	0	0%	0.00%	0
5831	100%	668	671	669	669	1.22%	0.61%	335	50%	0.61%	335	50%	0.61%	335	0%	0.00%	0
5832	100%	1221	1808	1,473	1,473	2.69%	1.34%	737	50%	1.34%	737	50%	1.34%	737	0%	0.00%	0
5833	10%	3969	3511	3,773	377	0.69%	0.69%	377	100%	0.69%	377	0%	0.00%	0	0%	0.00%	0
5841	90%	161	269	207	186	0.34%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6204	20%	1931	2366	2,117	423	0.77%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6205	85%	2223	2133	2,184	1,856	3.39%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6206	100%	1365	1735	1,524	1,524	2.78%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6208	25%	1785	4155	2,801	700	1.28%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6209	60%	1571	2055	1,778	1,067	1.95%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6303	5%	0	2667	1,143	57	0.10%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6304	30%	0	97	42	13	0.02%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6306	45%	0	3224	1,382	622	1.14%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6307	100%	0	1356	581	581	1.06%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6308	90%	0	2980	1,277	1,149	2.10%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0

Trip Distribution Table
Mercado el Milagro (Central Ave. / 98th St.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial**

2012 and 2040 Data Taken from Mid-Region Council of Governments

2040 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

DASZ #	% Sub Area in Study	2012		2040 Population	Interpolated Population for the Year 2024	Population in Study	Percent Population	(BS) Bridge Blvd. South			(SE) Sunset Gardens Rd. East			(TE) Towere Rd. East		
		2012 Population	2040 Population					% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
Boundary Specified on DASZ Map																
5701	35%	1099	3972	2,330	816		1.49%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5702	100%	28	105	61	61		0.11%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5703	100%	2470	2412	2,445	2,445		4.46%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5711	100%	1866	1827	1,849	1,849		3.38%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5712	100%	2769	2324	2,578	2,578		4.71%	0%	0.00%	0	0%	0.00%	0	50%	2.35%	1,289
5713	100%	995	859	937	937		1.71%	0%	0.00%	0	0%	0.00%	0	100%	1.71%	937
5714	75%	5423	5000	5,242	3,932		7.18%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5715	100%	4039	4232	4,122	4,122		7.52%	5%	0.38%	206	45%	3.39%	1,855	40%	3.01%	1,649
5716	100%	2780	2608	2,706	2,706		4.94%	20%	0.99%	541	50%	2.47%	1,353	30%	1.48%	812
5717	100%	6	1529	659	659		1.20%	25%	0.30%	165	0%	0.00%	0	0%	0.00%	0
5723	100%	4569	5779	5,088	5,088		9.29%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5724	100%	4793	5913	5,273	5,273		9.63%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5725	65%	2332	2916	2,582	1,678		3.06%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5731	100%	1330	1632	1,459	1,459		2.66%	35%	0.93%	511	0%	0.00%	0	35%	0.93%	511
5732	95%	389	1086	688	654		1.19%	0%	0.00%	0	0%	0.00%	0	100%	1.19%	654
5733	25%	100	94	97	24		0.04%	35%	0.02%	8	0%	0.00%	0	35%	0.02%	8
5734	10%	961	1000	978	98		0.18%	0%	0.00%	0	0%	0.00%	0	50%	0.09%	49
5735	100%	1721	1612	1,674	1,674		3.06%	0%	0.00%	0	0%	0.00%	0	50%	1.53%	837
5751	20%	5698	4668	5,257	1,051		1.92%	0%	0.00%	0	0%	0.00%	0	50%	0.96%	526
5801	100%	1452	3303	2,245	2,245		4.10%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5802	100%	592	758	663	663		1.21%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5803	95%	0	0	0	0		0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5804	10%	2474	3828	3,054	305		0.56%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5805	90%	138	343	226	203		0.37%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5806	100%	847	2144	1,403	1,403		2.56%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5807	100%	1730	2227	1,943	1,943		3.55%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5811	5%	4435	4231	4,348	217		0.40%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5831	100%	668	671	669	669		1.22%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5832	100%	1221	1808	1,473	1,473		2.69%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5833	10%	3969	3511	3,773	377		0.69%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5841	90%	161	269	207	186		0.34%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6204	20%	1931	2366	2,117	423		0.77%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6205	85%	2223	2133	2,184	1,856		3.39%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6206	100%	1365	1735	1,524	1,524		2.78%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6208	25%	1785	4155	2,801	700		1.28%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6209	60%	1571	2055	1,778	1,067		1.95%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6303	5%	0	2667	1,143	57		0.10%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6304	30%	0	97	42	13		0.02%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6306	45%	0	3224	1,382	622		1.14%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6307	100%	0	1356	581	581		1.06%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6308	90%	0	2980	1,277	1,149		2.10%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0

Trip Distribution Table
Mercado el Milagro (Central Ave. / 98th St.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial**

2012 and 2040 Data Taken from Mid-Region Council of Governments

2040 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

(9S) 98th St. South										(TW) Tower Rd. West			(SW) Sunset Gardens Rd. West		
DASZ #	% Sub Area in Study	2012 Population	2040 Population	Interpolated Population for the Year 2024	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	
Boundary Specified on DASZ Map															
5701	35%	1099	3972	2,330	816	1.49%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
5702	100%	28	105	61	61	0.11%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
5703	100%	2470	2412	2,445	2,445	4.46%	0%	0.00%	0	40%	1.79%	978	45%	2.01%	
5711	100%	1866	1827	1,849	1,849	3.38%	100%	3.38%	1,849	0%	0.00%	0	0%	0.00%	
5712	100%	2769	2324	2,578	2,578	4.71%	50%	2.35%	1,289	0%	0.00%	0	0%	0.00%	
5713	100%	995	859	937	937	1.71%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
5714	75%	5423	5000	5,242	3,932	7.18%	100%	7.18%	3,932	0%	0.00%	0	0%	0.00%	
5715	100%	4039	4232	4,122	4,122	7.52%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
5716	100%	2780	2608	2,706	2,706	4.94%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
5717	100%	6	1529	659	659	1.20%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
5723	100%	4569	5779	5,088	5,088	9.29%	30%	2.79%	1,526	35%	3.25%	1,781	0%	0.00%	
5724	100%	4793	5913	5,273	5,273	9.63%	100%	9.63%	5,273	0%	0.00%	0	0%	0.00%	
5725	65%	2332	2916	2,582	1,678	3.06%	100%	3.06%	1,678	0%	0.00%	0	0%	0.00%	
5731	100%	1330	1632	1,459	1,459	2.66%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
5732	95%	389	1086	688	654	1.19%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
5733	25%	100	94	97	24	0.04%	30%	0.01%	7	0%	0.00%	0	0%	0.00%	
5734	10%	961	1000	978	98	0.18%	50%	0.09%	49	0%	0.00%	0	0%	0.00%	
5735	100%	1721	1612	1,674	1,674	3.06%	50%	1.53%	837	0%	0.00%	0	0%	0.00%	
5751	20%	5698	4668	5,257	1,051	1.92%	50%	0.96%	526	0%	0.00%	0	0%	0.00%	
5801	100%	1452	3303	2,245	2,245	4.10%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
5802	100%	592	758	663	663	1.21%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
5803	95%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
5804	10%	2474	3828	3,054	305	0.56%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
5805	90%	138	343	226	203	0.37%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
5806	100%	847	2144	1,403	1,403	2.56%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
5807	100%	1730	2227	1,943	1,943	3.55%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
5811	5%	4435	4231	4,348	217	0.40%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
5831	100%	668	671	669	669	1.22%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
5832	100%	1221	1808	1,473	1,473	2.69%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
5833	10%	3969	3511	3,773	377	0.69%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
5841	90%	161	269	207	186	0.34%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
6204	20%	1931	2366	2,117	423	0.77%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
6205	85%	2223	2133	2,184	1,856	3.39%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
6206	100%	1365	1735	1,524	1,524	2.78%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
6208	25%	1785	4155	2,801	700	1.28%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
6209	60%	1571	2055	1,778	1,067	1.95%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
6303	5%	0	2667	1,143	57	0.10%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
6304	30%	0	97	42	13	0.02%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
6306	45%	0	3224	1,382	622	1.14%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
6307	100%	0	1356	581	581	1.06%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
6308	90%	0	2980	1,277	1,149	2.10%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	

Trip Distribution Table
Mercado el Milagro (Central Ave. / 98th St.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed**Retail Commercial**

2012 and 2040 Data Taken from *Mid-Region Council of Governments*
2040 Socioeconomic Forecasts by *Data Analysis Subzones for the Mid-Region of New Mexico*

										(CW) Central Ave. West			(4W) Interstate 40 West		
DASZ #	% Sub Area in Study	2012 Population	2040 Population	Interpolated Population for the Year	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population			
Boundary Specified on DASZ Map															
5701	35%	1099	3972	2,330	816	1.49%	100%	1.49%	816	0%	0.00%	0			
5702	100%	28	105	61	61	0.11%	100%	0.11%	61	0%	0.00%	0			
5703	100%	2470	2412	2,445	2,445	4.46%	0%	0.00%	0	0%	0.00%	0			
5711	100%	1866	1827	1,849	1,849	3.38%	0%	0.00%	0	0%	0.00%	0			
5712	100%	2769	2324	2,578	2,578	4.71%	0%	0.00%	0	0%	0.00%	0			
5713	100%	995	859	937	937	1.71%	0%	0.00%	0	0%	0.00%	0			
5714	75%	5423	5000	5,242	3,932	7.18%	0%	0.00%	0	0%	0.00%	0			
5715	100%	4039	4232	4,122	4,122	7.52%	0%	0.00%	0	0%	0.00%	0			
5716	100%	2780	2608	2,706	2,706	4.94%	0%	0.00%	0	0%	0.00%	0			
5717	100%	6	1529	659	659	1.20%	0%	0.00%	0	0%	0.00%	0			
5723	100%	4569	5779	5,088	5,088	9.29%	35%	3.25%	1,781	0%	0.00%	0			
5724	100%	4793	5913	5,273	5,273	9.63%	0%	0.00%	0	0%	0.00%	0			
5725	65%	2332	2916	2,582	1,678	3.06%	0%	0.00%	0	0%	0.00%	0			
5731	100%	1330	1632	1,459	1,459	2.66%	0%	0.00%	0	0%	0.00%	0			
5732	95%	389	1086	688	654	1.19%	0%	0.00%	0	0%	0.00%	0			
5733	25%	100	94	97	24	0.04%	0%	0.00%	0	0%	0.00%	0			
5734	10%	961	1000	978	98	0.18%	0%	0.00%	0	0%	0.00%	0			
5735	100%	1721	1612	1,674	1,674	3.06%	0%	0.00%	0	0%	0.00%	0			
5751	20%	5698	4668	5,257	1,051	1.92%	0%	0.00%	0	0%	0.00%	0			
5801	100%	1452	3303	2,245	2,245	4.10%	0%	0.00%	0	0%	0.00%	0			
5802	100%	592	758	663	663	1.21%	0%	0.00%	0	0%	0.00%	0			
5803	95%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0			
5804	10%	2474	3828	3,054	305	0.56%	0%	0.00%	0	0%	0.00%	0			
5805	90%	138	343	226	203	0.37%	0%	0.00%	0	0%	0.00%	0			
5806	100%	847	2144	1,403	1,403	2.56%	0%	0.00%	0	0%	0.00%	0			
5807	100%	1730	2227	1,943	1,943	3.55%	0%	0.00%	0	0%	0.00%	0			
5811	5%	4435	4231	4,348	217	0.40%	0%	0.00%	0	0%	0.00%	0			
5831	100%	668	671	669	669	1.22%	0%	0.00%	0	0%	0.00%	0			
5832	100%	1221	1808	1,473	1,473	2.69%	0%	0.00%	0	0%	0.00%	0			
5833	10%	3969	3511	3,773	377	0.69%	0%	0.00%	0	0%	0.00%	0			
5841	90%	161	269	207	186	0.34%	100%	0.34%	186	0%	0.00%	0			
6204	20%	1931	2366	2,117	423	0.77%	0%	0.00%	0	0%	0.00%	0			
6205	85%	2223	2133	2,184	1,856	3.39%	0%	0.00%	0	0%	0.00%	0			
6206	100%	1365	1735	1,524	1,524	2.78%	0%	0.00%	0	0%	0.00%	0			
6208	25%	1785	4155	2,801	700	1.28%	0%	0.00%	0	0%	0.00%	0			
6209	60%	1571	2055	1,778	1,067	1.95%	0%	0.00%	0	0%	0.00%	0			
6303	5%	0	2667	1,143	57	0.10%	0%	0.00%	0	0%	0.00%	0			
6304	30%	0	97	42	13	0.02%	0%	0.00%	0	0%	0.00%	0			
6306	45%	0	3224	1,382	622	1.14%	0%	0.00%	0	100%	1.14%	622			
6307	100%	0	1356	581	581	1.06%	0%	0.00%	0	0%	0.00%	0			
6308	90%	0	2980	1,277	1,149	2.10%	0%	0.00%	0	0%	0.00%	0			

Trip Distribution Table
Mercado el Milagro (Central Ave. / 98th St.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for ProposedRetail Commercial

2012 and 2040 Data Taken from Mid-Region Council of Governments
2040 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

							(9C) 98th St. Central			(CC) Central Ave. Central		
DASZ #	% Sub Area in Study	2012 Population	2040 Population	Interpolated Population for the Year	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
Boundary Specified on DASZ Map												
5701	35%	1099	3972	2,330	816	1.49%	0%	0.00%	0	0%	0.00%	0
5702	100%	28	105	61	61	0.11%	0%	0.00%	0	0%	0.00%	0
5703	100%	2470	2412	2,445	2,445	4.46%	15%	0.67%	367	0%	0.00%	0
5711	100%	1866	1827	1,849	1,849	3.38%	0%	0.00%	0	0%	0.00%	0
5712	100%	2769	2324	2,578	2,578	4.71%	0%	0.00%	0	0%	0.00%	0
5713	100%	995	859	937	937	1.71%	0%	0.00%	0	0%	0.00%	0
5714	75%	5423	5000	5,242	3,932	7.18%	0%	0.00%	0	0%	0.00%	0
5715	100%	4039	4232	4,122	4,122	7.52%	0%	0.00%	0	10%	0.75%	412
5716	100%	2780	2608	2,706	2,706	4.94%	0%	0.00%	0	0%	0.00%	0
5717	100%	6	1529	659	659	1.20%	0%	0.00%	0	0%	0.00%	0
5723	100%	4569	5779	5,088	5,088	9.29%	0%	0.00%	0	0%	0.00%	0
5724	100%	4793	5913	5,273	5,273	9.63%	0%	0.00%	0	0%	0.00%	0
5725	65%	2332	2916	2,582	1,678	3.06%	0%	0.00%	0	0%	0.00%	0
5731	100%	1330	1632	1,459	1,459	2.66%	0%	0.00%	0	0%	0.00%	0
5732	95%	389	1086	688	654	1.19%	0%	0.00%	0	0%	0.00%	0
5733	25%	100	94	97	24	0.04%	0%	0.00%	0	0%	0.00%	0
5734	10%	961	1000	978	98	0.18%	0%	0.00%	0	0%	0.00%	0
5735	100%	1721	1612	1,674	1,674	3.06%	0%	0.00%	0	0%	0.00%	0
5751	20%	5698	4668	5,257	1,051	1.92%	0%	0.00%	0	0%	0.00%	0
5801	100%	1452	3303	2,245	2,245	4.10%	0%	0.00%	0	100%	4.10%	2,245
5802	100%	592	758	663	663	1.21%	0%	0.00%	0	0%	0.00%	0
5803	95%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0
5804	10%	2474	3828	3,054	305	0.56%	0%	0.00%	0	0%	0.00%	0
5805	90%	138	343	226	203	0.37%	0%	0.00%	0	0%	0.00%	0
5806	100%	847	2144	1,403	1,403	2.56%	0%	0.00%	0	0%	0.00%	0
5807	100%	1730	2227	1,943	1,943	3.55%	0%	0.00%	0	50%	1.77%	972
5811	5%	4435	4231	4,348	217	0.40%	0%	0.00%	0	0%	0.00%	0
5831	100%	668	671	669	669	1.22%	0%	0.00%	0	0%	0.00%	0
5832	100%	1221	1808	1,473	1,473	2.69%	0%	0.00%	0	0%	0.00%	0
5833	10%	3969	3511	3,773	377	0.69%	0%	0.00%	0	0%	0.00%	0
5841	90%	161	269	207	186	0.34%	0%	0.00%	0	0%	0.00%	0
6204	20%	1931	2366	2,117	423	0.77%	0%	0.00%	0	0%	0.00%	0
6205	85%	2223	2133	2,184	1,856	3.39%	0%	0.00%	0	0%	0.00%	0
6206	100%	1365	1735	1,524	1,524	2.78%	0%	0.00%	0	0%	0.00%	0
6208	25%	1785	4155	2,801	700	1.28%	0%	0.00%	0	0%	0.00%	0
6209	60%	1571	2055	1,778	1,067	1.95%	0%	0.00%	0	0%	0.00%	0
6303	5%	0	2667	1,143	57	0.10%	0%	0.00%	0	0%	0.00%	0
6304	30%	0	97	42	13	0.02%	0%	0.00%	0	0%	0.00%	0
6306	45%	0	3224	1,382	622	1.14%	0%	0.00%	0	0%	0.00%	0
6307	100%	0	1356	581	581	1.06%	0%	0.00%	0	0%	0.00%	0
6308	90%	0	2980	1,277	1,149	2.10%	0%	0.00%	0	0%	0.00%	0
							80,858	100.00%	367	0.67%		3,629 6.62%

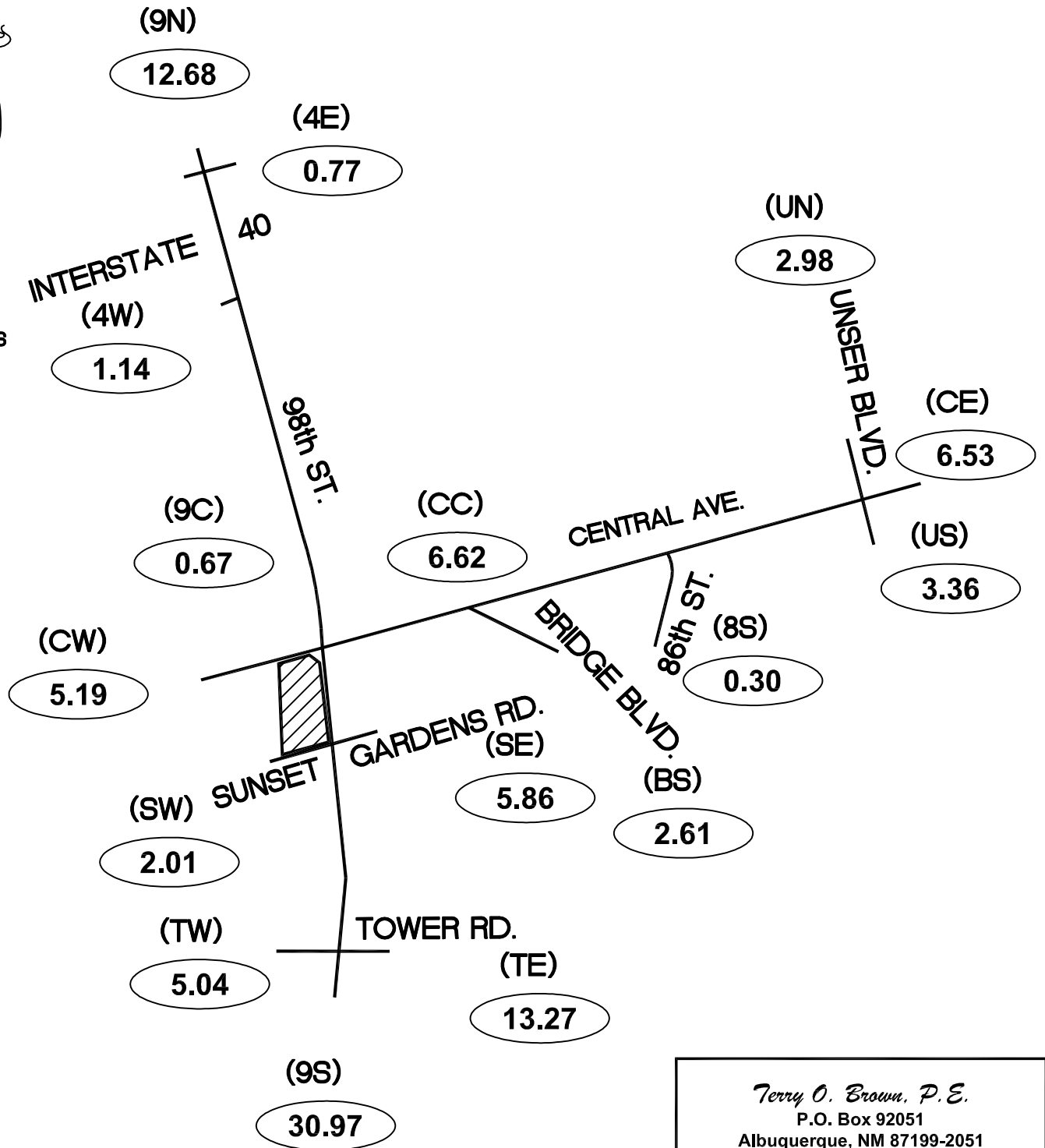
Mercado el Milagro

(Central Ave. / 98th St.)

Trip Distribution Map (%)



NTS



Terry O. Brown, P.E.

P.O. Box 92051
Albuquerque, NM 87199-2051
(505)883-8807 (Voice)
(505)212-0267 (Fax)

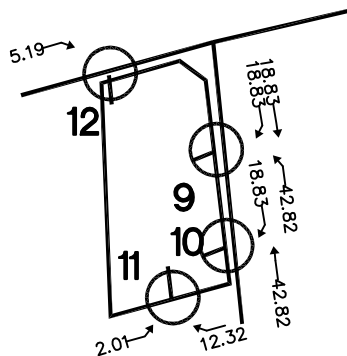
Mercado el Milagro

(Central Ave. / 98th St.)

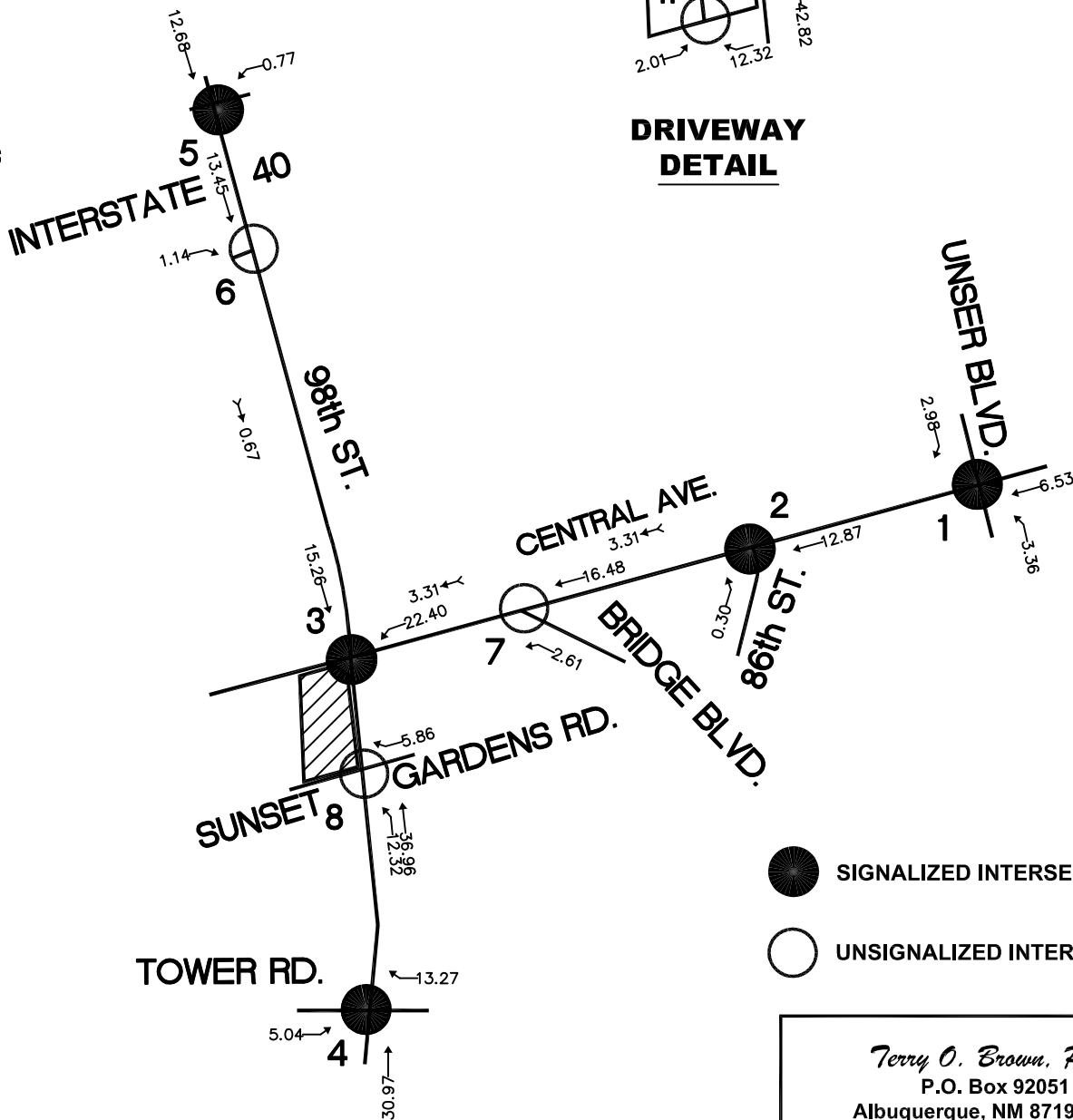
Trip Assignments (% Entering)



NTS



**DRIVEWAY
DETAIL**



SIGNALIZED INTERSECTION



UNSIGNALIZED INTERSECTION

Terry O. Brown, P.E.

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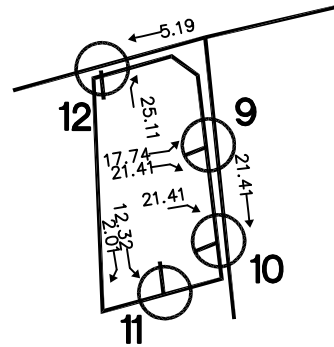
Mercado el Milagro

(Central Ave. / 98th St.)

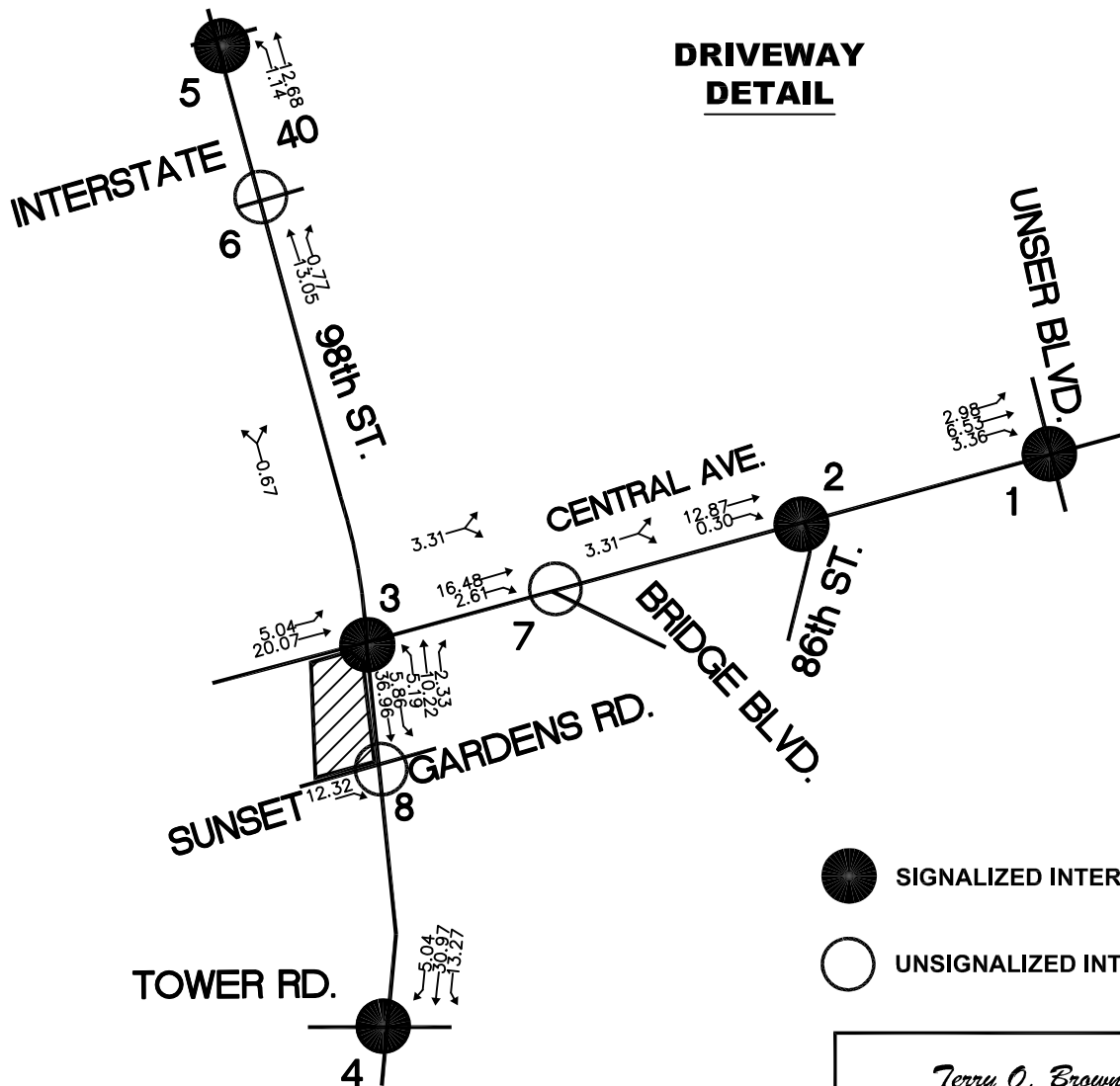
Trip Assignments (% Exiting)



NTS



**DRIVEWAY
DETAIL**



SIGNALIZED INTERSECTION



UNSIGNALIZED INTERSECTION

Terry O. Brown, P.E.
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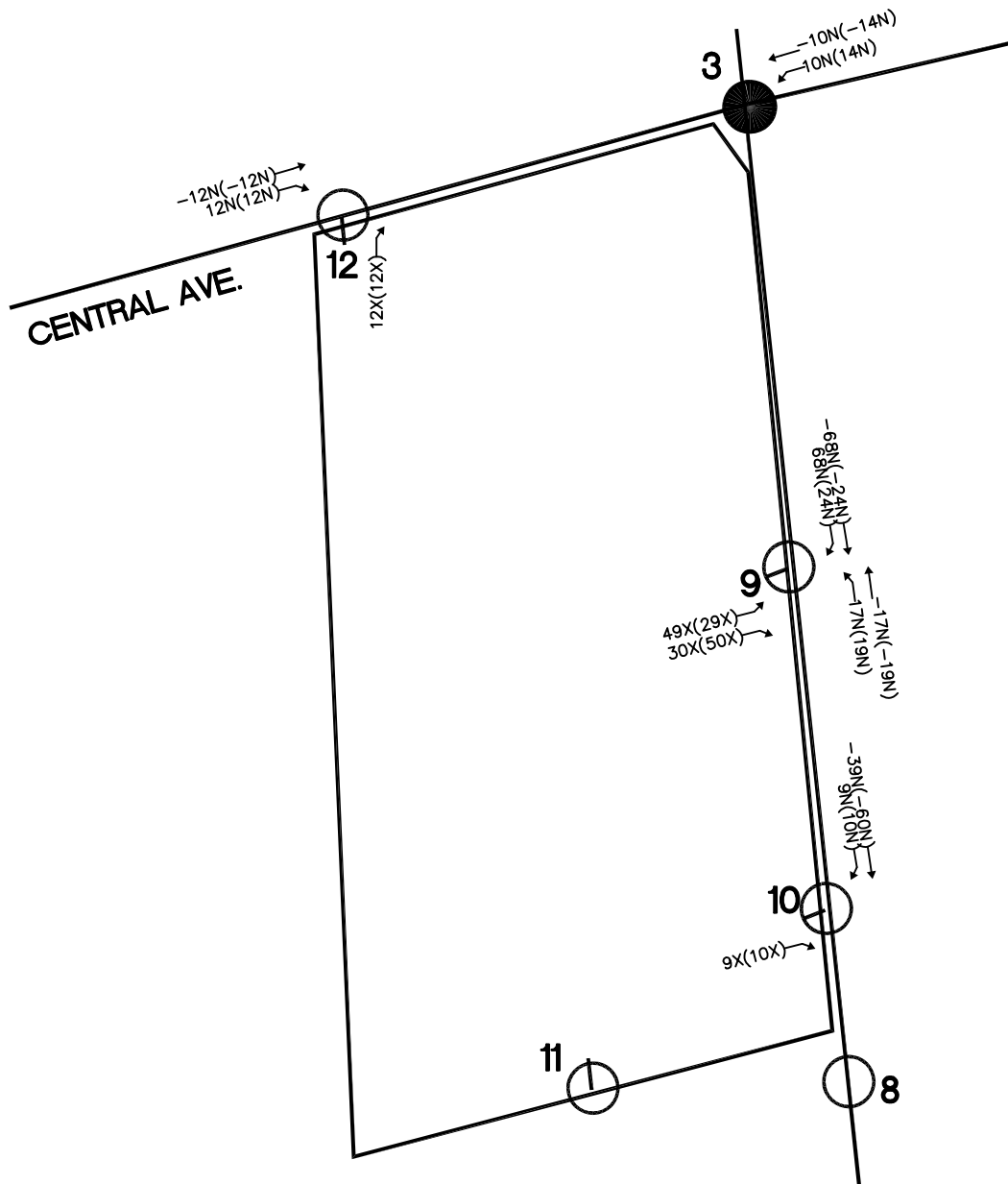
Mercado el Milagro

(Central Ave. / 98th St.)

Passby Trip Assignments (% eNtering, eXiting)



NTS



SIGNALIZED INTERSECTION



UNSIGNALIZED INTERSECTION

SUNSET GARDENS RD.

Terry O. Brown, P.E.

P.O. Box 92051

Albuquerque, NM 87199-2051

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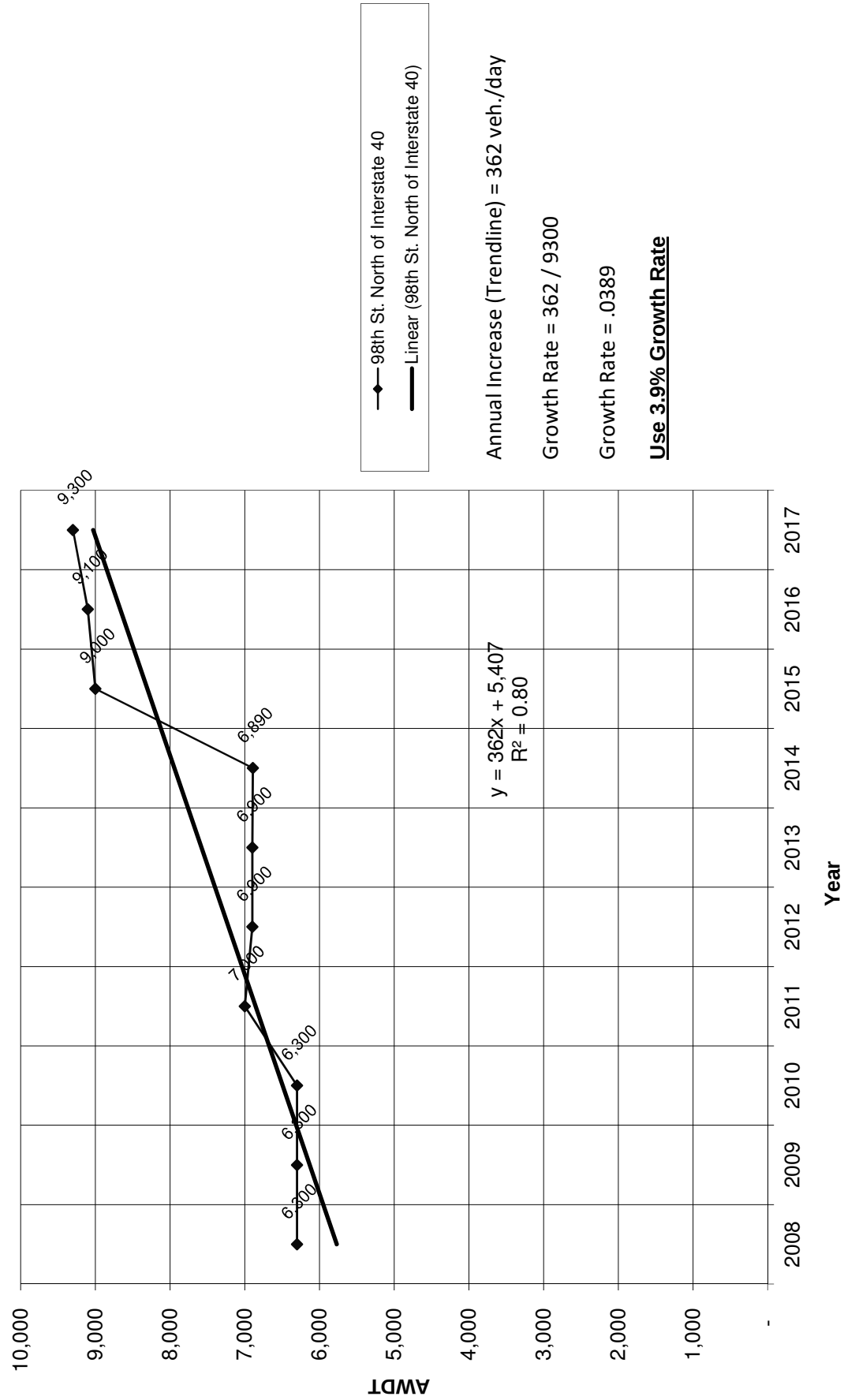


Mercado el Milagro (Central Ave. / 98th St.)
Historic Growth Rate Table

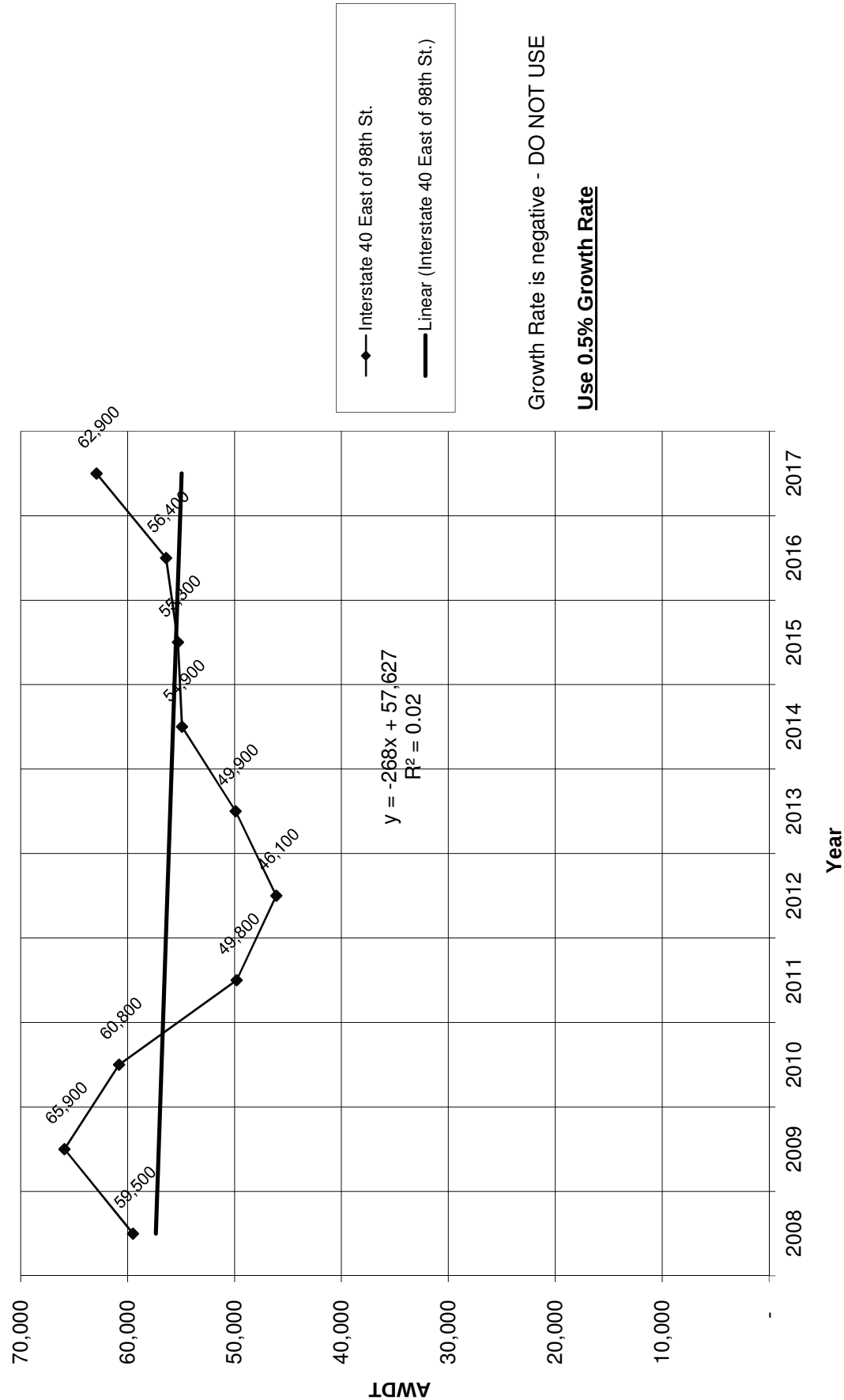
Traffic Flows from MRCOG Map

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
98th St. North of Interstate 40	6,300	6,300	6,300	7,000	6,900	6,900	6,890	9,000	9,100	9,300
Interstate 40 East of 98th St.	59,500	65,900	60,800	49,800	46,100	49,900	54,900	55,300	56,400	62,900
Central Ave. btwn 98th St. & Bridge Blvd.	14,700	14,700	14,500	14,200	14,800	15,400	15,440	15,800	17,300	18,300
Central Ave. btwn Bridge Blvd. & 86th St.	1	1	1	1	1	1	10,840	11,100	12,000	14,800
Central Ave. btwn 86th St. & Unser Blvd.	22,600	22,600	21,800	21,500	18,200	17,700	17,740	18,200	17,700	18,700
Unser Blvd. North of Central Ave.	31,800	31,800	21,300	21,000	29,900	25,800	26,310	26,400	29,200	25,700
Central Ave. East of Unser Blvd.	24,700	19,800	16,700	18,000	15,000	17,600	15,720	23,200	23,700	25,300
Unser Blvd. South of Central Ave.	9,400	7,200	15,300	15,100	18,100	23,600	23,640	24,200	23,400	24,700
Bridge Blvd. South of Central Ave.	2,200	2,200	2,200	3,000	2,900	3,000	5,210	5,600	5,800	3,400
98th St. btwn Central Ave. & Tower Rd.	37,500	37,400	36,900	29,300	28,800	28,300	28,470	29,200	30,300	27,800
Tower Rd. East of 98th St.	5,600	5,600	5,500	5,900	5,800	5,700	5,690	5,800	6,100	6,100
98th St. South of Tower Rd.	18,000	23,400	23,400	23,100	23,000	21,700	21,690	22,200	23,700	25,000
Tower Rd. West of 98th St.	6,300	6,300	6,200	6,600	6,500	6,400	6,580	6,700	7,000	6,200
Central Ave. West of 98th St.	7,900	7,900	7,800	7,600	7,500	10,700	10,700	11,000	8,100	8,600
98th St. North of Central Ave.	27,400	26,600	26,200	25,900	31,000	30,500	30,490	34,700	36,000	37,900
Interstate 40 West of 98th St.	27,700	34,400	34,900	26,400	28,200	21,900	30,000	32,900	32,500	35,400

Historic Growth Chart 98th St. North of Interstate 40 (2008-2017)

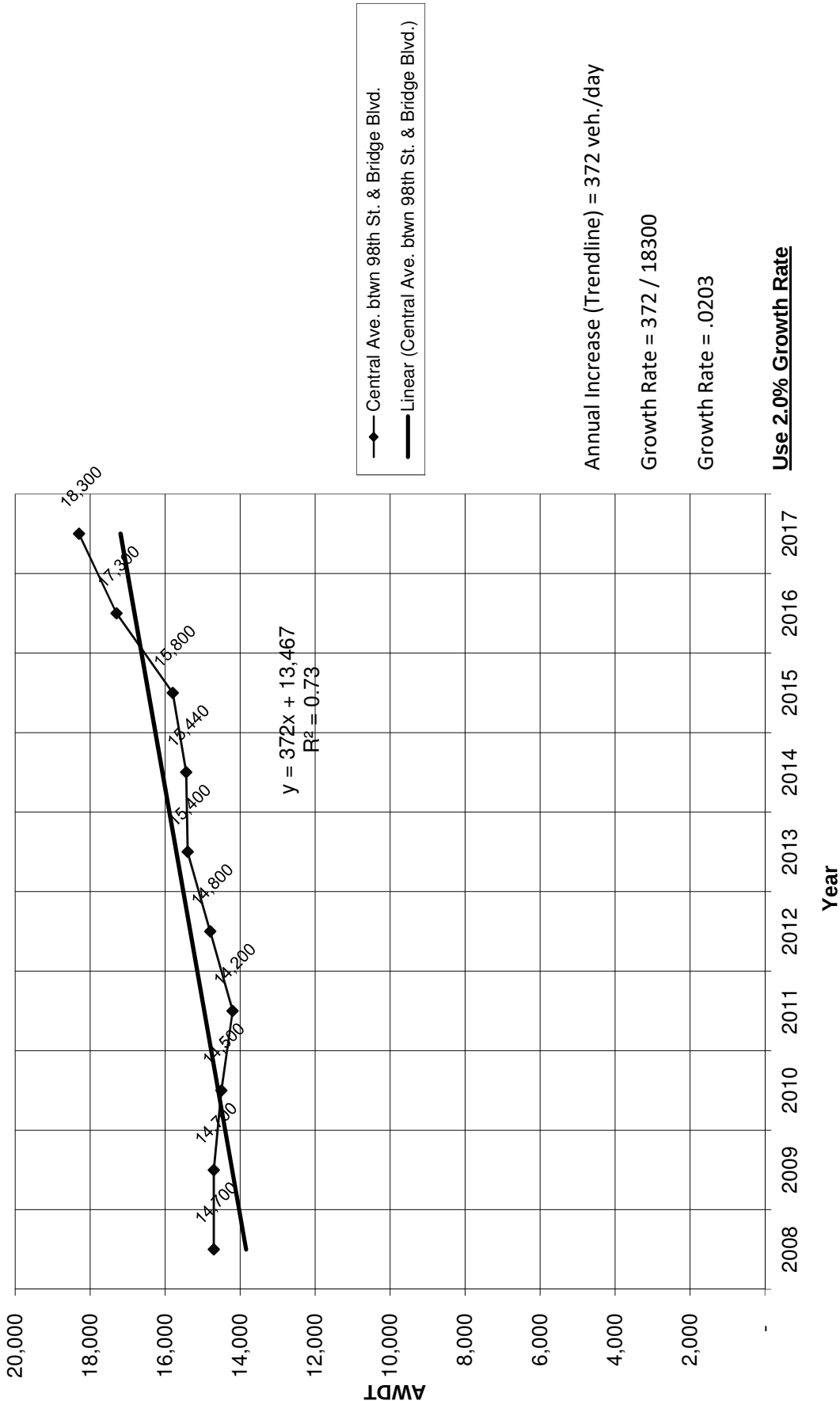


Historic Growth Chart Interstate 40 East of 98th St. (2008-2017)

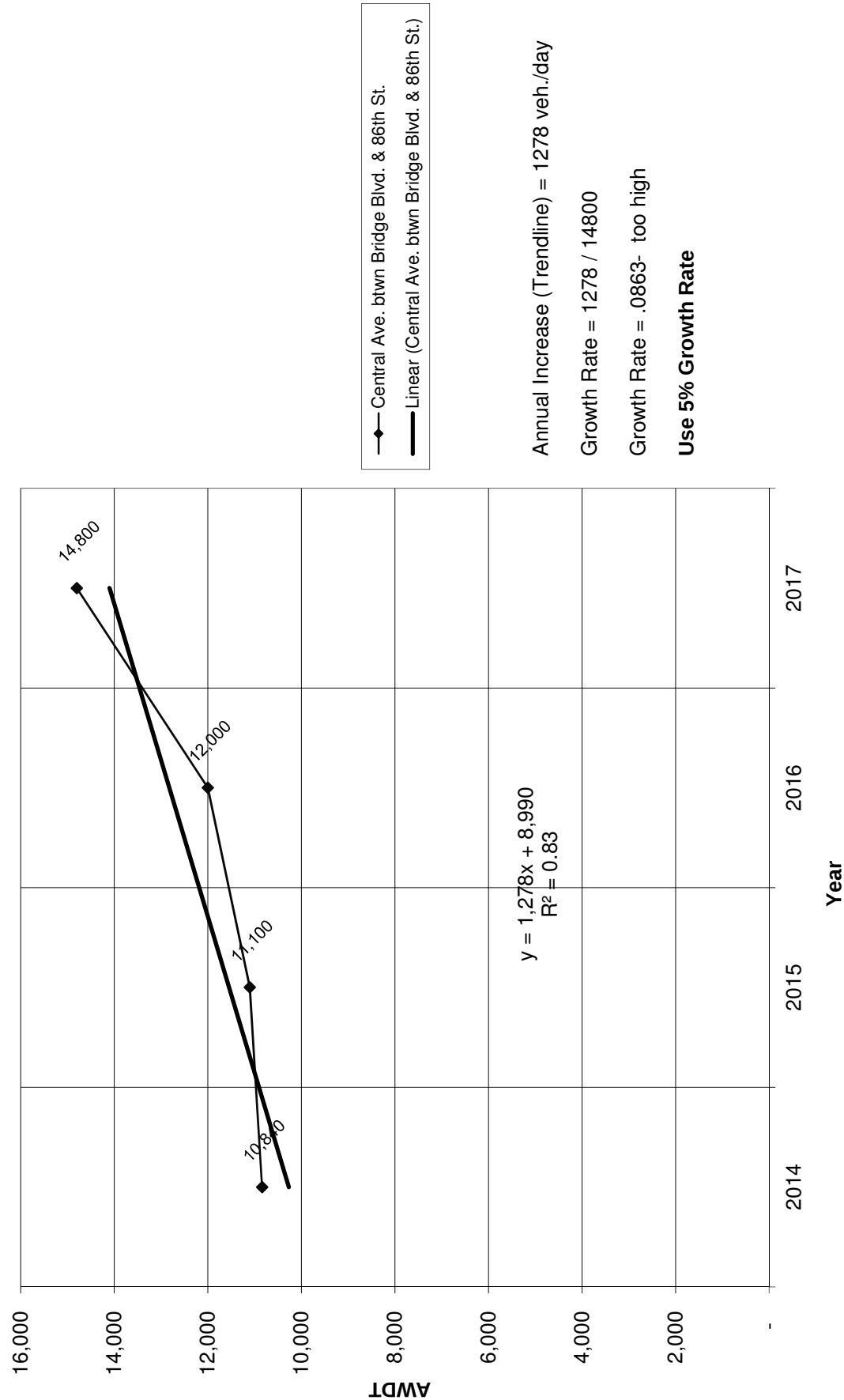


Growth Rate is negative - DO NOT USE
Use 0.5% Growth Rate

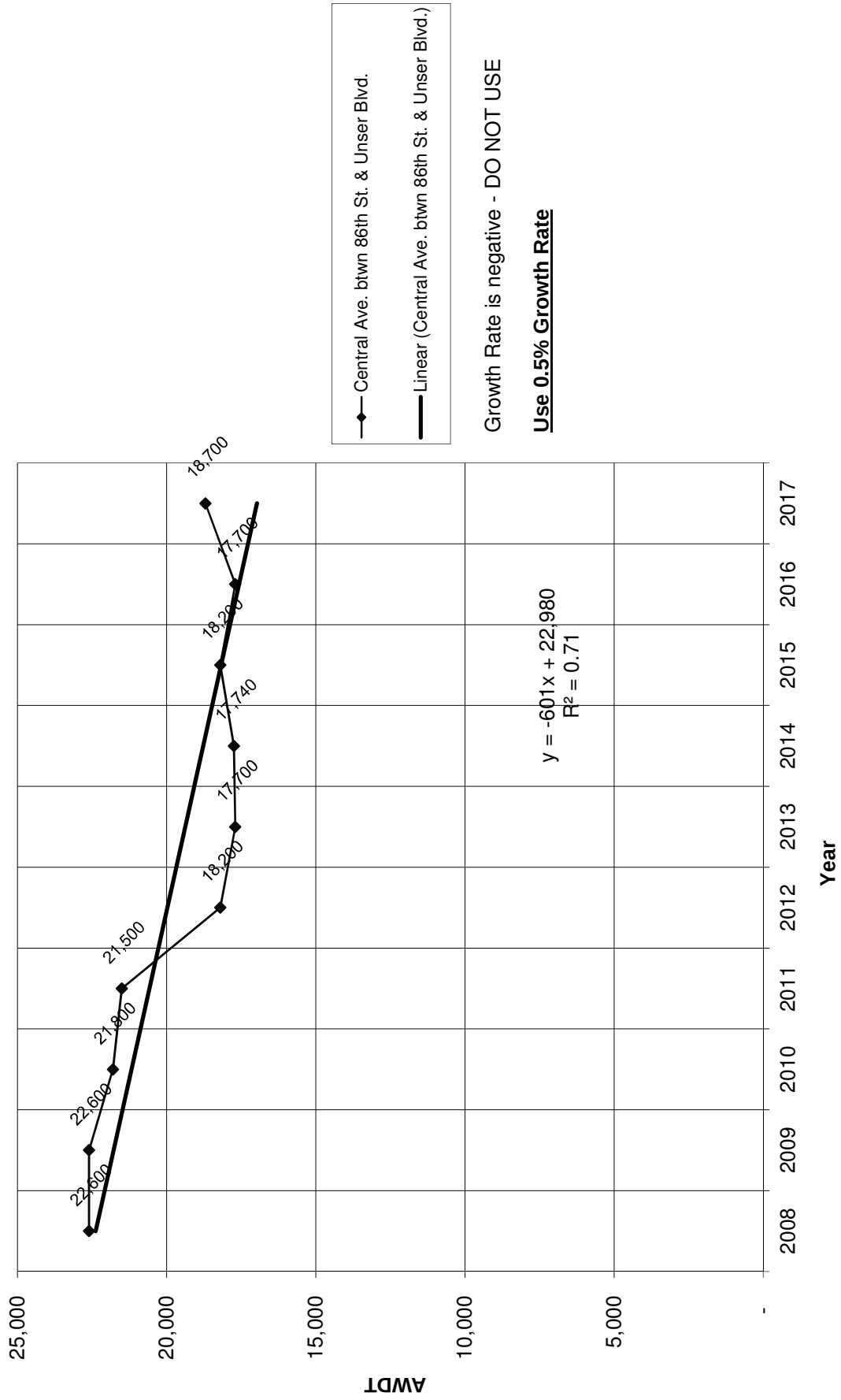
Historic Growth Chart Central Ave. btwn 98th St. & Bridge Blvd. (2008-2017)



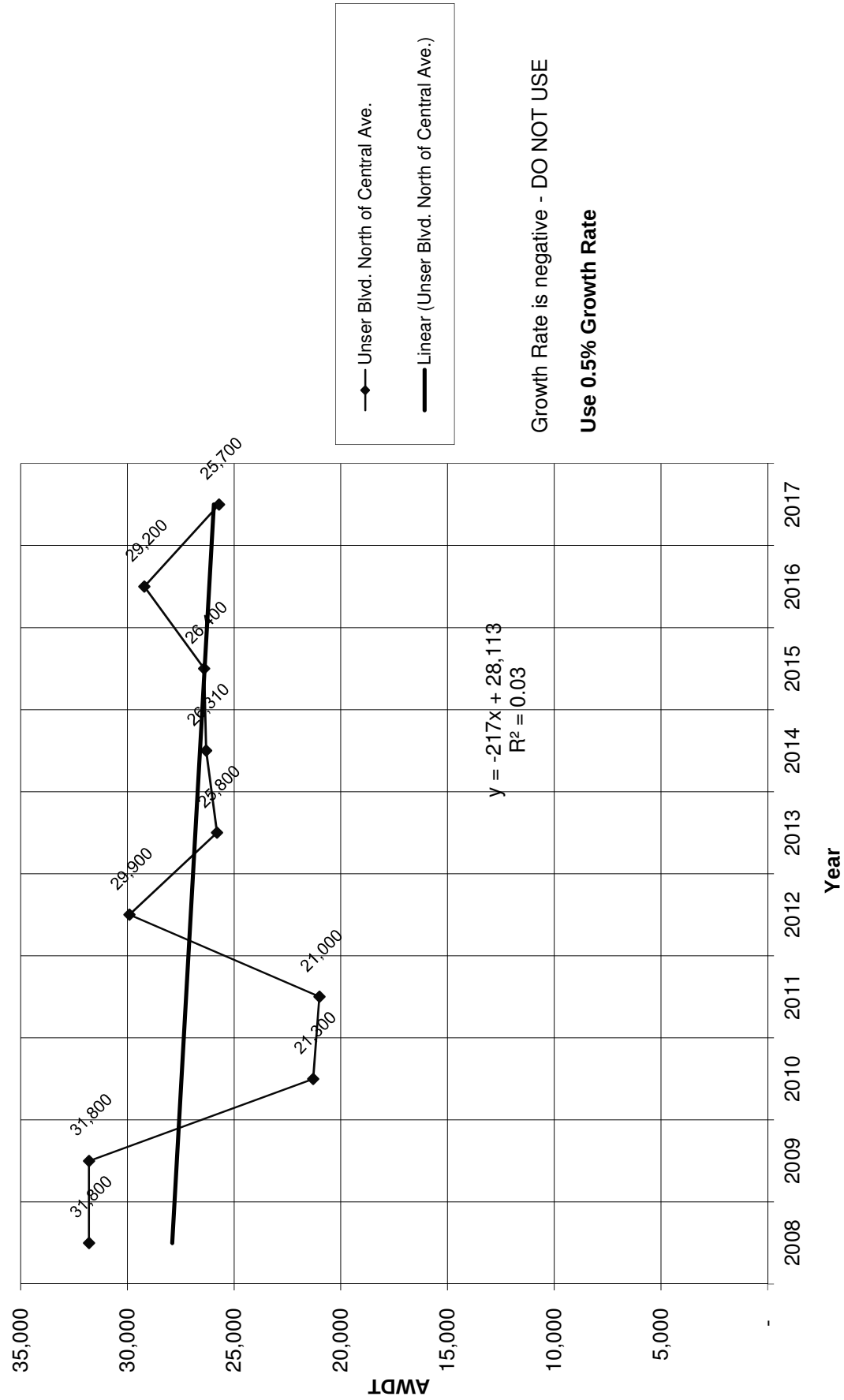
Historic Growth Chart Central Ave. btwn Bridge Blvd. & 86th St.. (2014-2017)



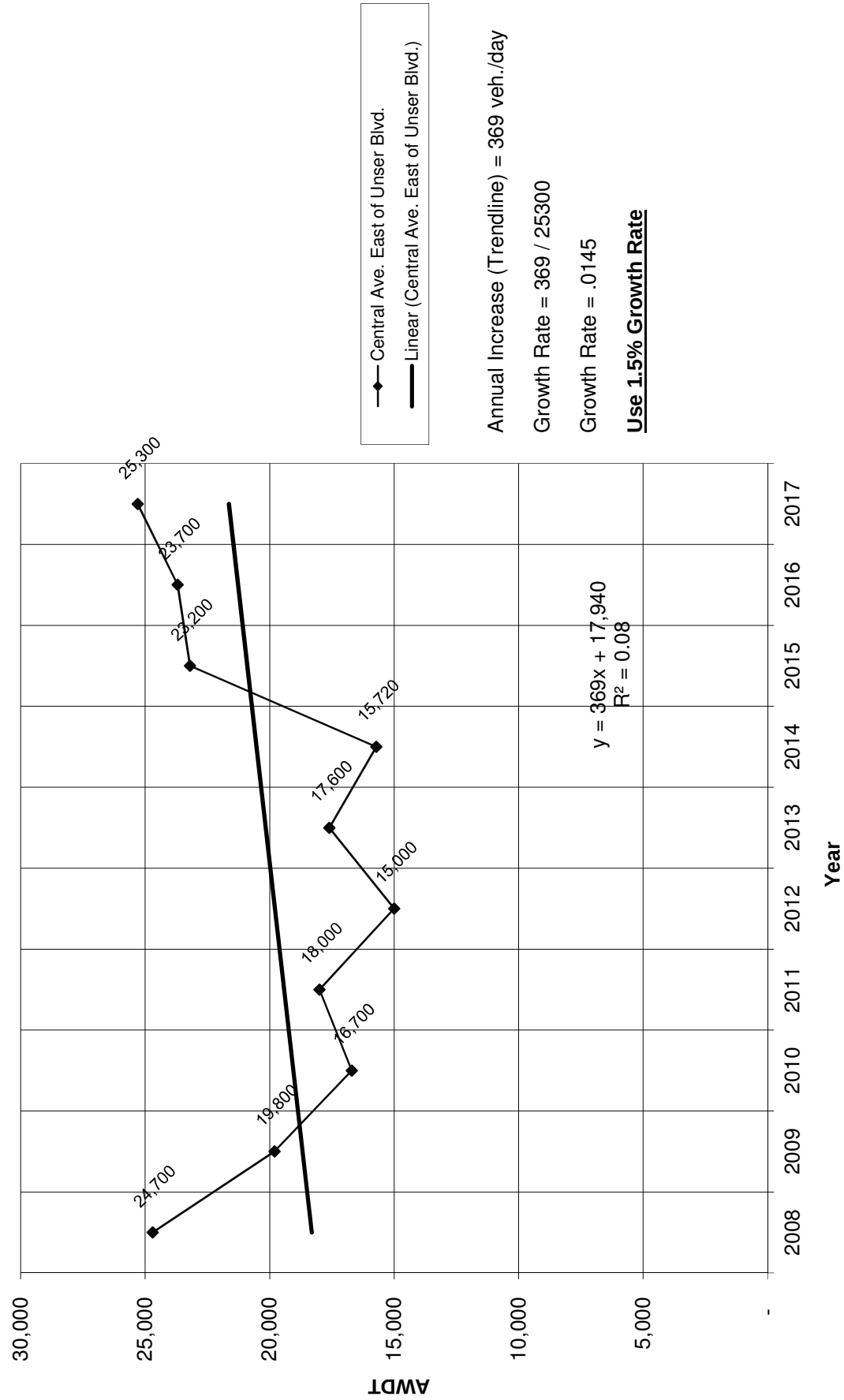
Historic Growth Chart Central Ave btwn 86th St. & Unser Blvd. (2008-2017)



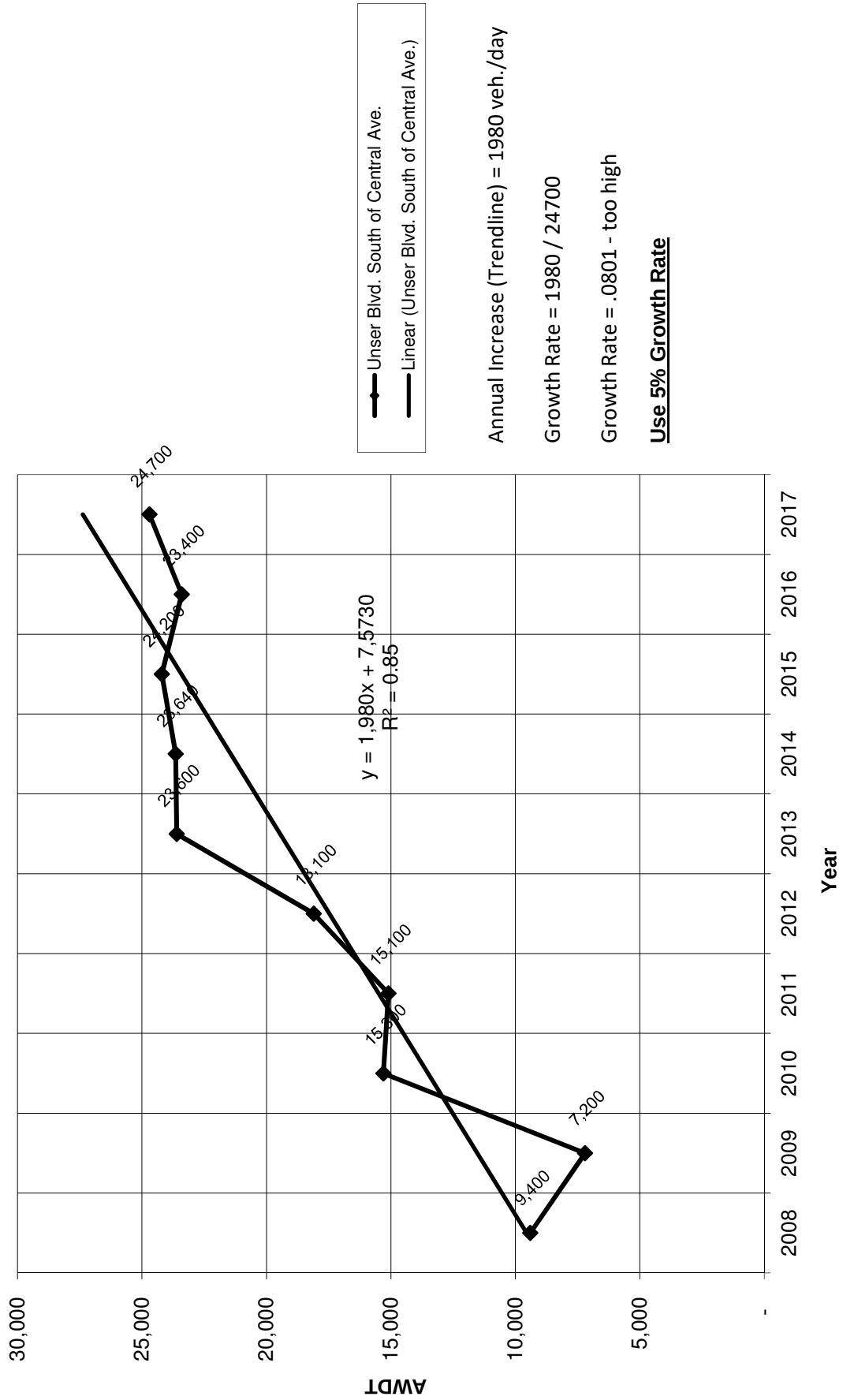
Historic Growth Chart Unser Blvd. North of Central Ave. (2008-2017)



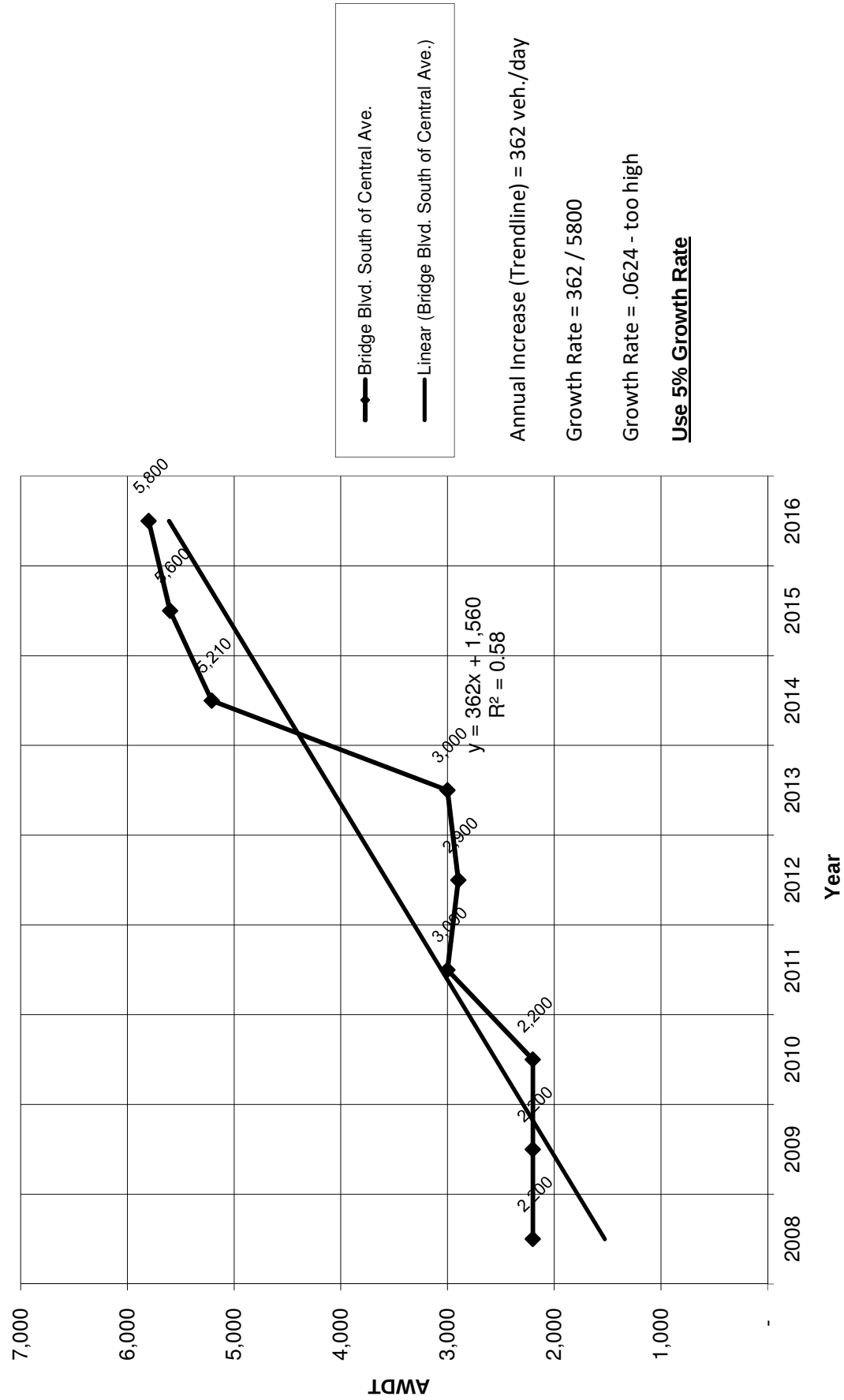
Historic Growth Chart Central Ave. East of Unser Blvd. (2008-2017)



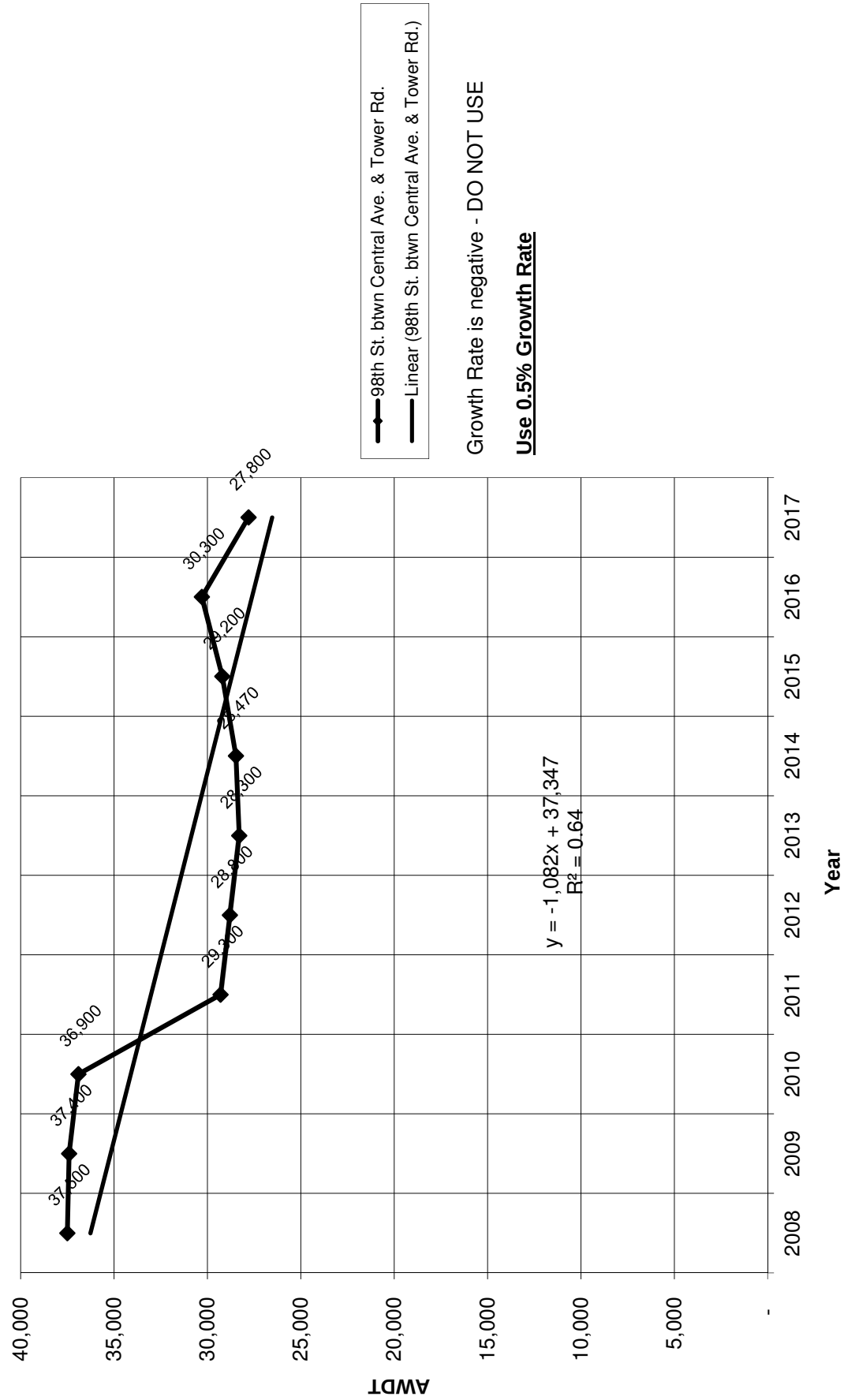
Historic Growth Chart Unser Blvd. South of Central Ave. (2008-2017)



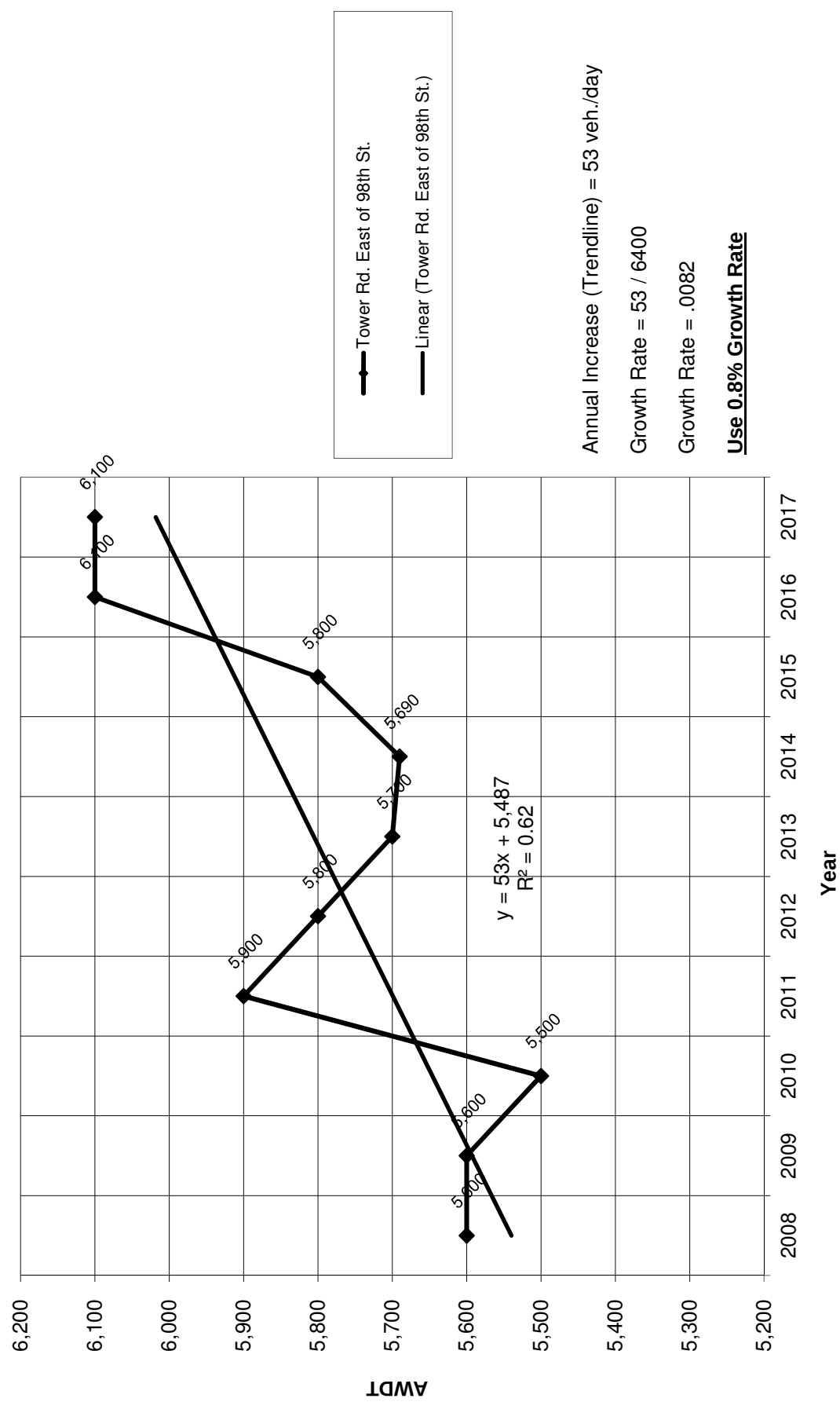
Historic Growth Chart Bridge Blvd. South of Central Ave. (2008-2016)



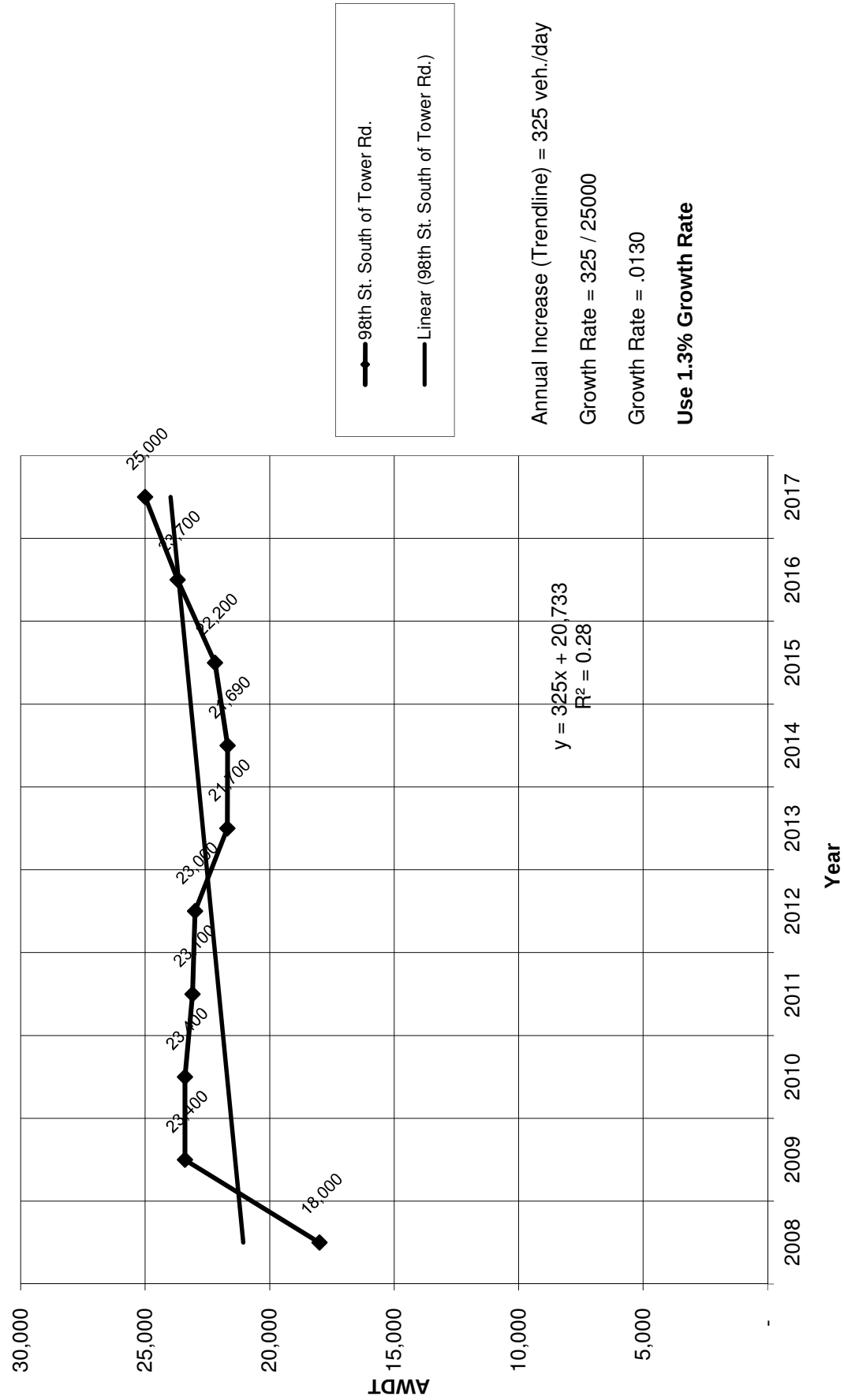
Historic Growth Chart 98th St. btwn Central Ave. & Tower Rd. (2008-2017)



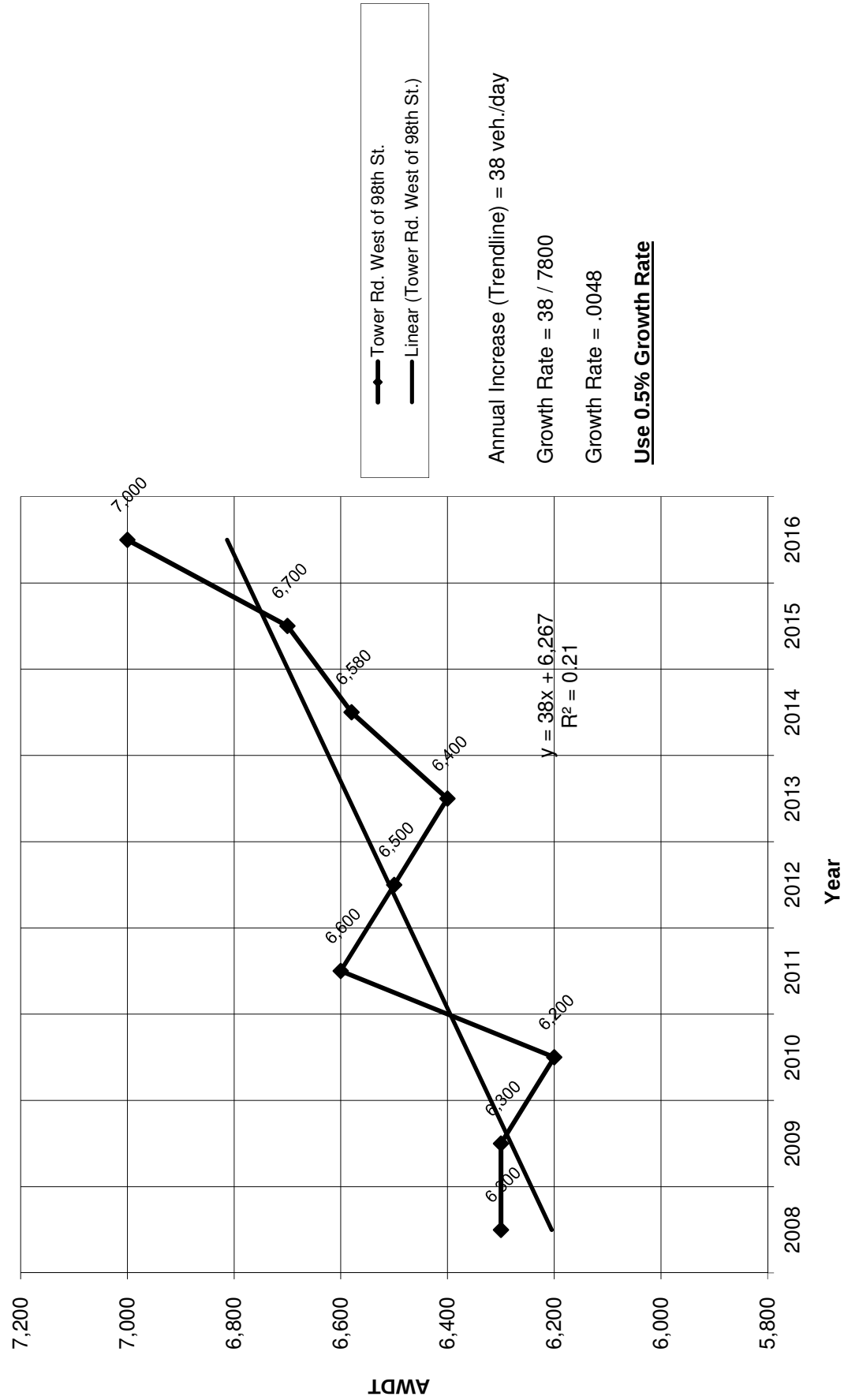
Historic Growth Chart Tower Rd. East of 98th St. (2008-2017)



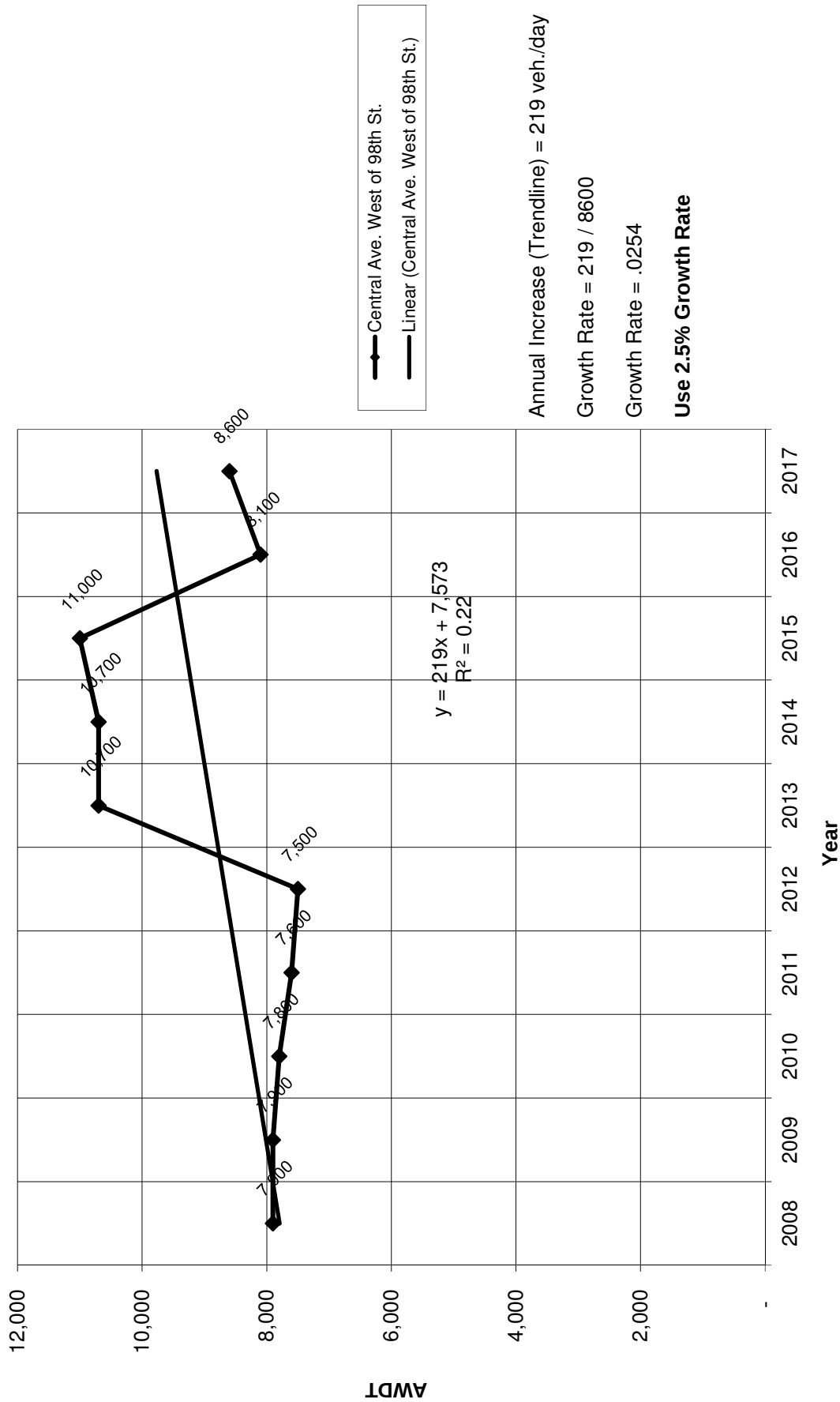
Historic Growth Chart 98th St. South of Tower Rd. (2008-2017)



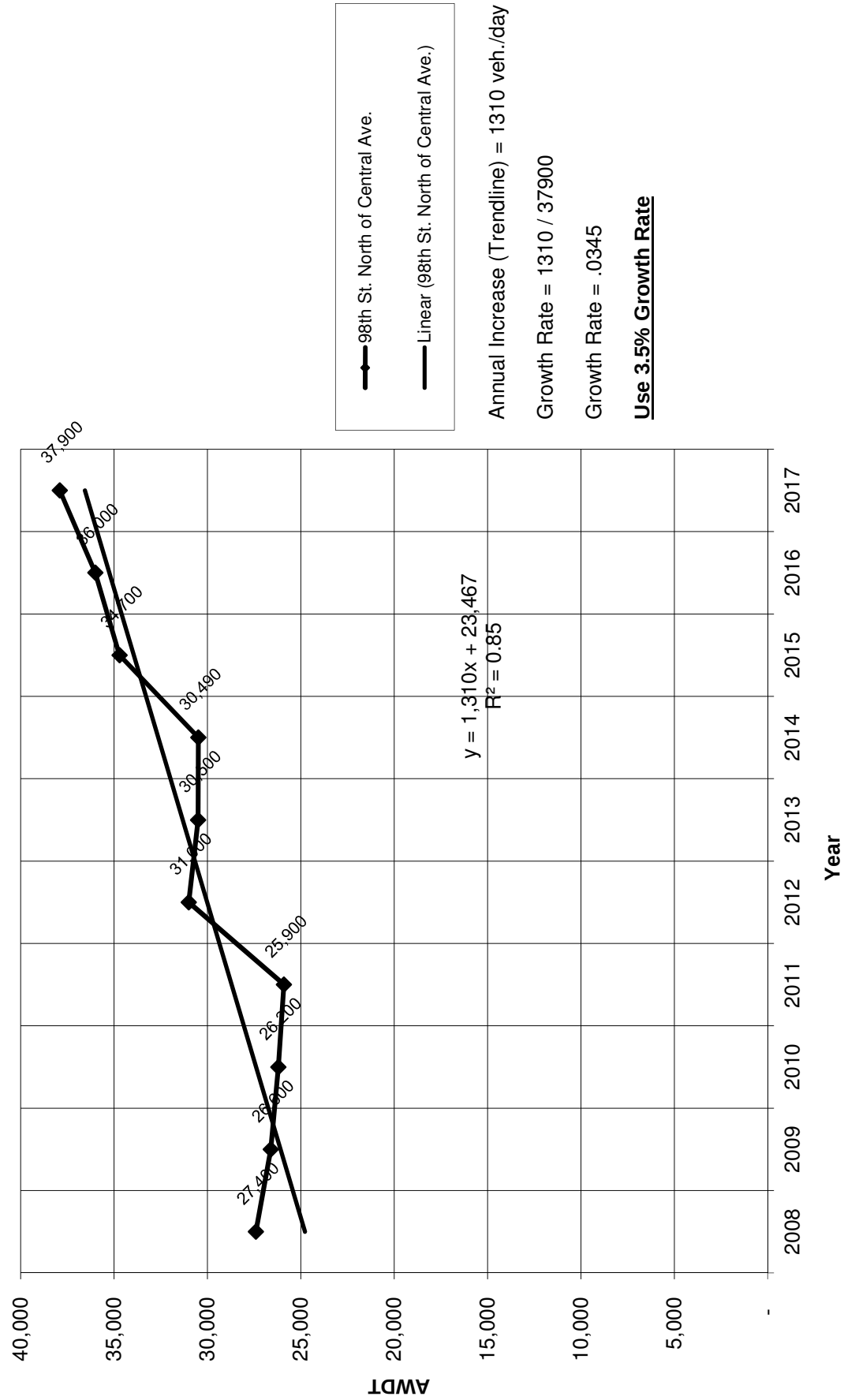
Historic Growth Chart Tower Rd. West of 98th St. (2008-2017)



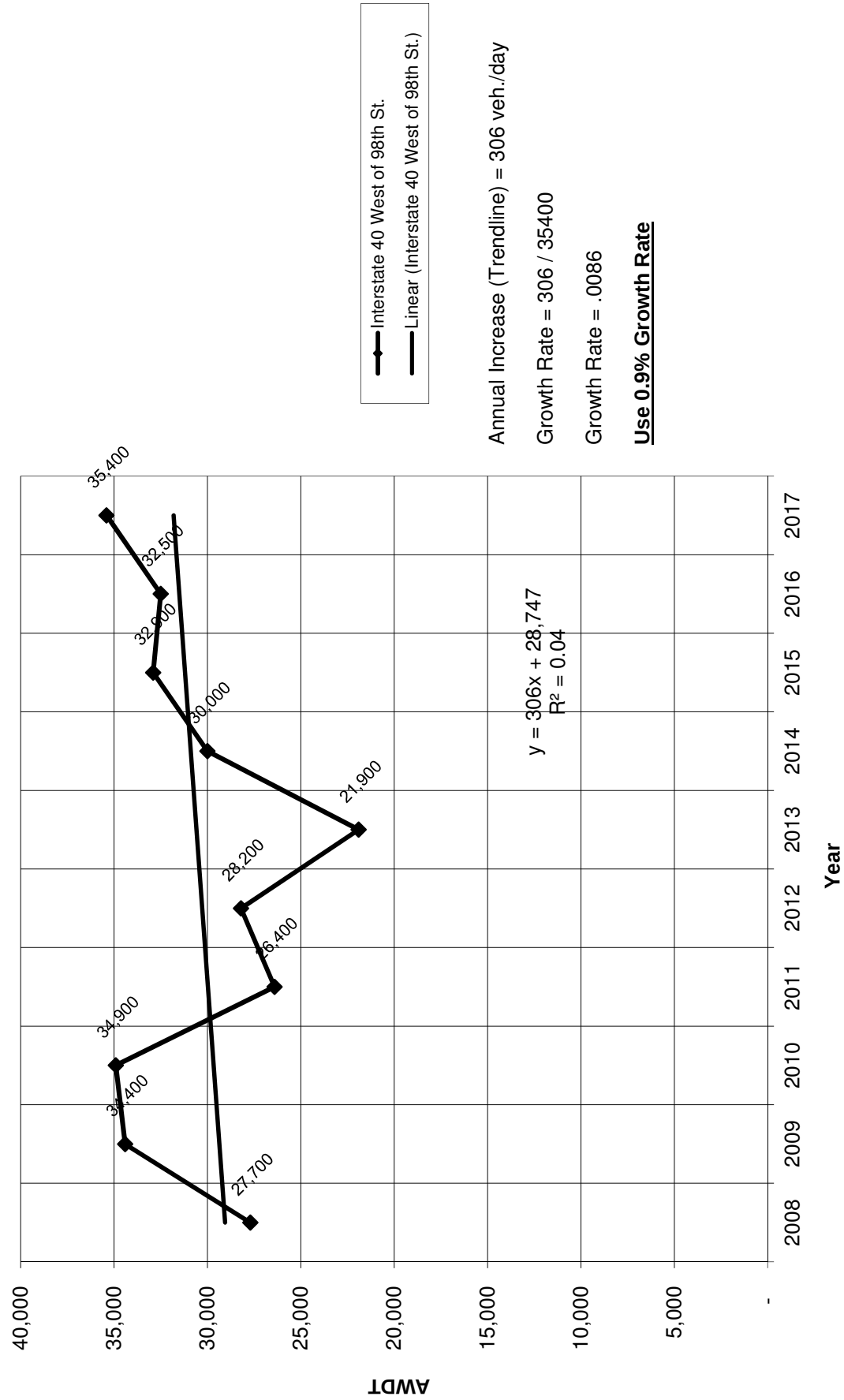
Historic Growth Chart Central Ave. West of 98th St. (2008-2017)



Historic Growth Chart 98th St. North of Central Ave. (2008-2017)



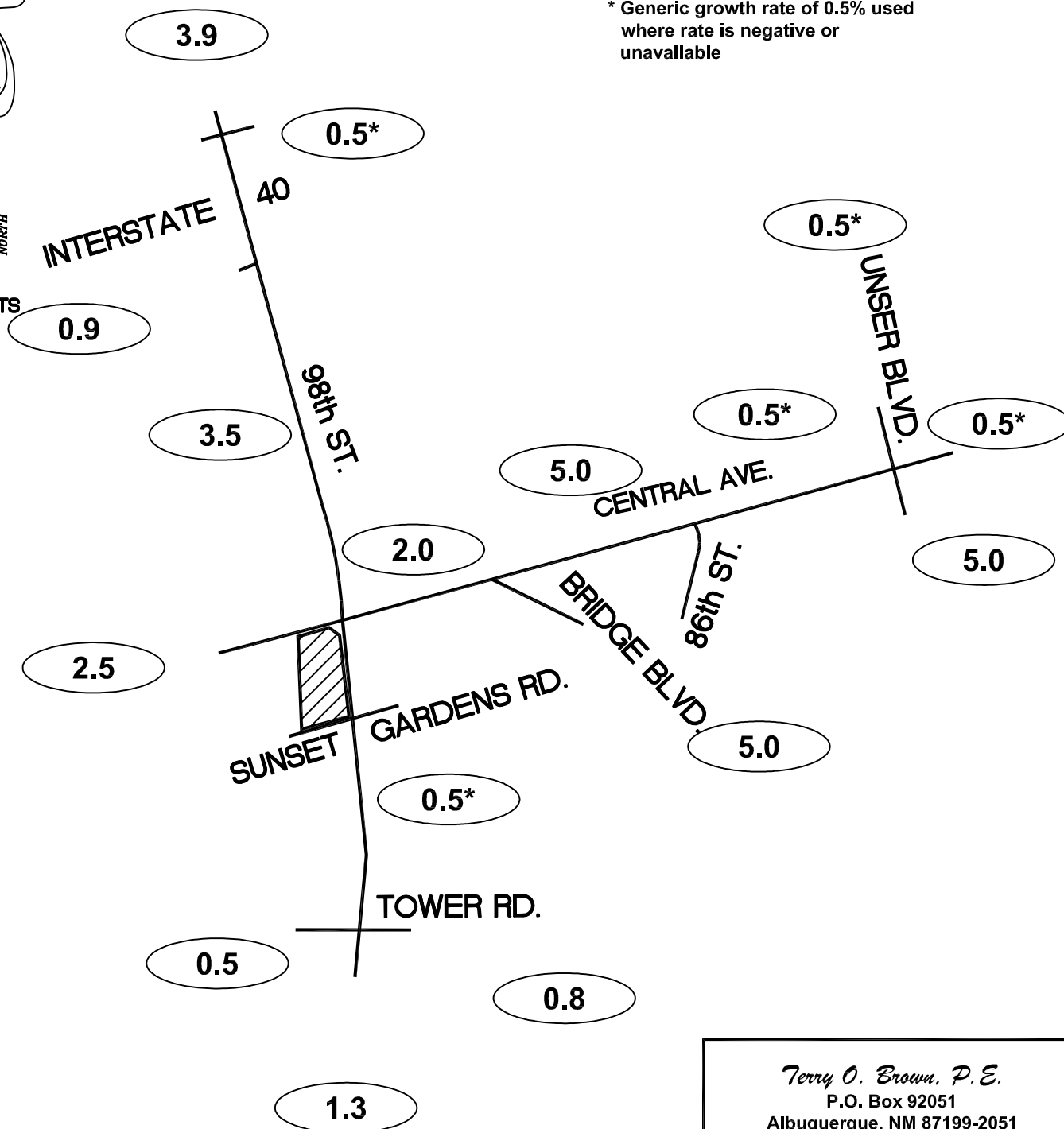
Historic Growth Chart Interstate 40 West of 98th St. (2008-2017)



Annual Increase (Trendline) = 306 veh./day
Growth Rate = 306 / 35400
Growth Rate = .0086
Use 0.9% Growth Rate

Growth Rate Map (%)

NTS



(505)212-0267 (Fax)

Mercado el Milagro (Central Ave. / 98th St.)

Projected Turning Movements SUMMARY

PROPOSED DEVELOPMENT (2024) - 100% Development

INTERSECTION: Summary

Central Ave. / Unser Blvd.

(1)

11.0% Truck

Existing (2019)

2024 (NO BUILD - A.M.)

2024 (BUILD - A.M.)

0.92			0.92			0.92			0.92			PHF
Eastbound (Central Ave.)			Westbound (Central Ave.)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
289	386	18	44	136	84	17	1,192	126	104	445	95	
297	396	19	47	146	90	21	1,476	156	106	456	98	
305	414	28	47	167	90	32	1,476	156	106	456	108	

Existing (2019)

2024 (NO BUILD - P.M.)

2024 (BUILD - P.M.)

0.95			0.95			0.95			0.95			PHF
Eastbound (Central Ave.)			Westbound (Central Ave.)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
173	381	34	90	347	58	55	809	104	127	1,056	142	
177	390	35	97	373	62	68	1,001	129	130	1,083	145	
186	409	45	97	393	62	78	1,001	129	130	1,083	154	

Central Ave. / 86th St.

(2)

11.0% Truck

Existing (2019)

2024 (NO BUILD - A.M.)

2024 (BUILD - A.M.)

0.95			0.95			0.95			0.95			PHF
Eastbound (Central Ave.)			Westbound (Central Ave.)			Northbound (86th St.)			Southbound (86th St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	349	2	78	124	0	36	0	302	0	0	0	
0	436	3	80	127	0	37	0	310	0	0	0	
0	471	4	80	168	0	38	0	310	0	0	0	

Existing (2019)

2024 (NO BUILD - P.M.)

2024 (BUILD - P.M.)

0.95			0.95			0.95			0.95			PHF
Eastbound (Central Ave.)			Westbound (Central Ave.)			Northbound (86th St.)			Southbound (86th St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	298	15	154	307	0	33	0	171	0	0	0	
0	373	19	158	315	0	34	0	175	0	0	0	
0	411	20	158	354	0	35	0	175	0	0	0	

Central Ave. / 98th St.

(3)

11.0% Truck

Existing (2019)

2024 (NO BUILD - A.M.)

2024 (BUILD - A.M.)

0.94			0.94			0.94			0.94			PHF
Eastbound (Central Ave.)			Westbound (Central Ave.)			Northbound (98th St.)			Southbound (98th St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
406	232	18	112	118	195	14	1,551	164	65	430	110	
457	261	20	123	130	215	14	1,590	168	76	505	129	
471	315	20	208	116	215	28	1,617	174	76	554	129	

Existing (2019)

2024 (NO BUILD - P.M.)

2024 (BUILD - P.M.)

0.98			0.98			0.98			0.98			PHF
Eastbound (Central Ave.)			Westbound (Central Ave.)			Northbound (98th St.)			Southbound (98th St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
184	181	35	264	195	135	34	781	154	99	1,245	234	
207	204	39	290	215	149	35	801	158	116	1,463	275	
222	263	39	376	197	149	50	831	165	116	1,509	275	

Tower Rd. / 98th St.

(4)

11.0% Truck

Existing (2019)

2024 (NO BUILD - A.M.)

2024 (BUILD - A.M.)

0.93			0.93			0.93			0.93			PHF
Eastbound (Tower Rd.)			Westbound (Tower Rd.)			Northbound (98th St.)			Southbound (98th St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
208	117	77	47	46	123	33	1,411	36	49	542	53	
213	120	79	49	48	128	35	1,503	38	50	556	54	
229	120	79	49	48	170	35	1,602	38	86	639	68	

Existing (2019)

2024 (NO BUILD - P.M.)

2024 (BUILD - P.M.)

0.94			0.94			0.94			0.94			PHF
Eastbound (Tower Rd.)			Westbound (Tower Rd.)			Northbound (98th St.)			Southbound (98th St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
92	44	12	58	107	49	66	764	41	104	1,166	172	
94	45	12	60	111	51	70	814	44	107	1,195	176	
109	45	12	60	111	91	70	908	44	146	1,286	191	

Mercado el Milagro (Central Ave. / 98th St.)

Projected Turning Movements SUMMARY

PROPOSED DEVELOPMENT (2024) - 100% Development

INTERSECTION:

Summary

I-40 N. Ramp / 98th St.

(5)

11.0% Truck

Existing (2019)

2024 (NO BUILD - A.M.)

2024 (BUILD - A.M.)

0.96			0.96			0.96			0.96			PHF
Eastbound (I-40 N. Ramp)			Westbound (I-40 N. Ramp)			Northbound (98th St.)			Southbound (98th St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	467	1	0	70	500	0	0	468	0	
0	0	0	479	1	0	82	588	0	0	559	0	
0	0	0	482	1	0	85	622	0	0	599	0	

Existing (2019)

2024 (NO BUILD - P.M.)

2024 (BUILD - P.M.)

0.94			0.94			0.94			0.94			PHF
Eastbound (I-40 N. Ramp)			Westbound (I-40 N. Ramp)			Northbound (98th St.)			Southbound (98th St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	1,467	1	0	72	262	0	0	334	1	
0	0	0	1,504	1	0	85	308	0	0	399	1	
0	0	0	1,507	1	0	88	345	0	0	437	1	

I-40 S. Ramp / 98th St.

(6)

11.0% Truck

Existing (2019)

2024 (NO BUILD - A.M.)

2024 (BUILD - A.M.)

0.86			0.86			0.86			0.86			PHF
Eastbound (I-40 S. Ramp)			Westbound (I-40 S. Ramp)			Northbound (98th St.)			Southbound (98th St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
20	0	0	0	0	0	0	533	0	0	705	0	
21	0	0	0	0	0	0	626	0	0	842	0	
21	0	4	0	0	0	0	661	2	0	885	0	

Existing (2019)

2024 (NO BUILD - P.M.)

2024 (BUILD - P.M.)

0.92			0.92			0.92			0.92			PHF
Eastbound (I-40 S. Ramp)			Westbound (I-40 S. Ramp)			Northbound (98th St.)			Southbound (98th St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
25	0	0	0	0	0	0	312	0	0	1,823	0	
26	0	0	0	0	0	0	367	0	0	2,178	0	
26	0	3	0	0	0	0	405	2	0	2,219	0	

Central Ave. / Bridge Blvd.

(7)

11.0% Truck

Existing (2019)

2024 (NO BUILD - A.M.)

2024 (BUILD - A.M.)

0.95			0.95			0.95			0.95			PHF
Eastbound (Central Ave.)			Westbound (Central Ave.)			Northbound (Bridge Blvd.)			Southbound (Bridge Blvd.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7	342	183	2	161	0	154	2	2	4	1	3	
8	376	201	3	201	0	193	3	3	4	1	3	
8	420	208	3	254	0	201	3	3	4	1	3	

Existing (2019)

2024 (NO BUILD - P.M.)

2024 (BUILD - P.M.)

0.91			0.91			0.91			0.91			PHF
Eastbound (Central Ave.)			Westbound (Central Ave.)			Northbound (Bridge Blvd.)			Southbound (Bridge Blvd.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	305	214	3	351	1	173	1	3	3	2	1	
1	336	235	4	439	1	216	1	4	3	2	1	
1	385	243	4	489	1	224	1	4	3	2	1	

Sunset Gardens Rd. / 98th St.

(8)

11.0% Truck

Existing (2019)

2024 (NO BUILD - A.M.)

2024 (BUILD - A.M.)

0.96			0.96			0.96			0.96			PHF
Eastbound (Sunset Gardens Rd.)			Westbound (Sunset Gardens Rd.)			Northbound (98th St.)			Southbound (98th St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
26	4	24	4	2	40	17	1,649	17	7	607	9	
27	4	25	4	2	41	17	1,690	17	7	622	9	
27	4	58	4	2	60	56	1,808	17	23	721	9	

Existing (2019)

2024 (NO BUILD - P.M.)

2024 (BUILD - P.M.)

0.94			0.94			0.94			0.94			PHF
Eastbound (Sunset Gardens Rd.)			Westbound (Sunset Gardens Rd.)			Northbound (98th St.)			Southbound (98th St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
14	1	26	5	6	22	25	953	7	30	1,572	42	
14	1	27	5	6	23	26	977	7	31	1,611	43	
14	1	63	5	6	41	63	1,089	7	48	1,720	43	

Mercado el Milagro (Central Ave. / 98th St.)

Projected Turning Movements SUMMARY

PROPOSED DEVELOPMENT (2024) - 100% Development

INTERSECTION :

Summary

Driveway "A" / 98th St.

(9)

11.0% Truck

Existing (2019)

2024 (NO BUILD - A.M.)

2024 (BUILD - A.M.)

0.94			0.94			0.94			0.94			PHF
Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbound (98th St.)			Southbound (98th St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1,772	0	0	648	0	0
105	0	93	0	0	0	160	1,749	0	0	615	153	

Existing (2019)

2024 (NO BUILD - P.M.)

2024 (BUILD - P.M.)

0.98			0.98			0.98			0.98			PHF
Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbound (98th St.)			Southbound (98th St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	994	0	0	1,792	0	0
89	0	126	0	0	0	155	969	0	0	1,818	88	

Driveway "B" / 98th St.

(10)

11.0% Truck

Existing (2019)

2024 (NO BUILD - A.M.)

2024 (BUILD - A.M.)

0.94			0.94			0.94			0.94			PHF
Eastbound (Driveway "B")			Westbound (Driveway "B")			Northbound (98th St.)			Southbound (98th St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1,772	0	0	648	0	0
0	0	68	0	0	0	0	1,909	0	0	688	72	

Existing (2019)

2024 (NO BUILD - P.M.)

2024 (BUILD - P.M.)

0.98			0.98			0.98			0.98			PHF
Eastbound (Driveway "B")			Westbound (Driveway "B")			Northbound (98th St.)			Southbound (98th St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	994	0	0	1,792	0	0
0	0	76	0	0	0	0	1,124	0	0	1,840	70	

Sunset Gardens Rd. / Driveway "C"

(11)

11.0% Truck

Existing (2019)

2024 (NO BUILD - A.M.)

2024 (BUILD - A.M.)

0.94			0.94			0.94			0.94			PHF
Eastbound (Sunset Gardens Rd.)			Westbound (Sunset Gardens Rd.)			Northbound (Driveway "C")			Southbound (Driveway "C")			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	0	0	0	0	0	0	0	0
0	56	0	0	28	0	0	0	0	0	0	0	0
6	56	0	0	28	39	0	0	0	33	0	5	

Existing (2019)

2024 (NO BUILD - P.M.)

2024 (BUILD - P.M.)

0.98			0.98			0.98			0.98			PHF
Eastbound (Sunset Gardens Rd.)			Westbound (Sunset Gardens Rd.)			Northbound (Driveway "C")			Southbound (Driveway "C")			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	0	0	0	0	0	0	0	0
0	42	0	0	75	0	0	0	0	0	0	0	0
6	42	0	0	75	37	0	0	0	36	0	6	

Central Ave. / Driveway "D"

(12)

11.0% Truck

Existing (2019)

2024 (NO BUILD - A.M.)

2024 (BUILD - A.M.)

0.94			0.94			0.94			0.94			PHF
Eastbound (Central Ave.)			Westbound (Central Ave.)			Northbound (Driveway "D")			Southbound (Driveway "D")			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	0	0	0	0	0	0	0	0
0	738	0	0	273	0	0	0	0	0	0	0	0
0	722	33	0	287	0	0	0	82	0	0	0	0

Existing (2019)

2024 (NO BUILD - P.M.)

2024 (BUILD - P.M.)

0.98			0.98			0.98			0.98			PHF
Eastbound (Central Ave.)			Westbound (Central Ave.)			Northbound (Driveway "D")			Southbound (Driveway "D")			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	0	0	0	0	0	0	0	0
0	450	0	0	525	0	0	0	0	0	0	0	0
0	434	32	0	540	0	0	0	89	0	0	0	0

Mercado el Milagro (Central Ave. / 98th St.)
 Projected Turning Movements Worksheet
Central Ave. / Unser Blvd.

INTERSECTION : E-W Street: **Central Ave.** (1)
 N-S Street: **Unser Blvd.**

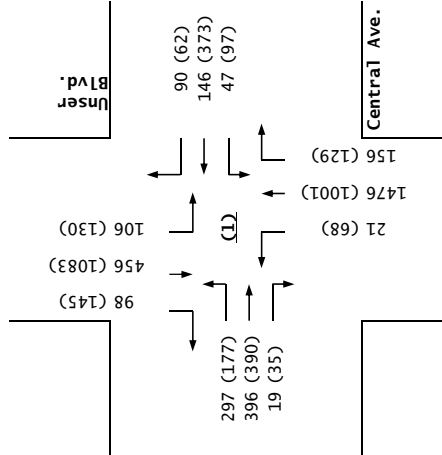
Year of Existing Counts 2018
 Horizon Year 2024

	0.50%			1.50%			5.00%			0.50%		
	Eastbound (Central Ave.)			Westbound (Central Ave.)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	288	384	18	43	134	83	16	1,135	120	103	443	95
Background Traffic Growth	9	12	1	4	12	7	5	341	36	3	13	3
Subtotal (NO BUILD - A.M.)	297	396	19	47	146	90	21	1,476	156	106	456	98
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	6.53%	0.00%	3.36%	0.00%	0.00%	0.00%	0.00%	2.98%
Percent Commercial Trips Generated(Exiting)	2.98%	6.53%	3.36%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	8	18	9	0	21	0	11	0	0	0	0	10
Total AM Peak Hour BUILD Volumes	305	414	28	47	167	90	32	1,476	156	106	456	108

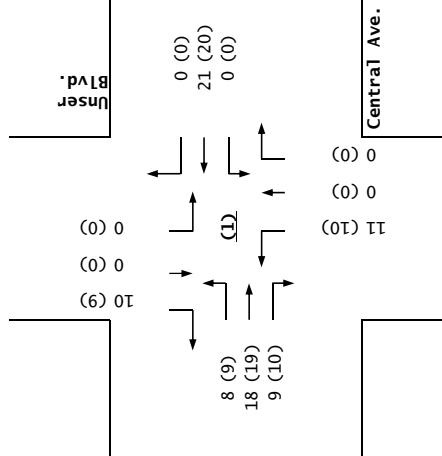
	Eastbound (Central Ave.)			Westbound (Central Ave.)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	172	379	34	89	342	57	52	770	99	126	1,051	141
Background Traffic Growth	5	11	1	8	31	5	16	231	30	4	32	4
Subtotal (NO BUILD - P.M.)	177	390	35	97	373	62	68	1,001	129	130	1,083	145
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	6.53%	0.00%	3.36%	0.00%	0.00%	0.00%	0.00%	2.98%
Percent Commercial Trips Generated(Exiting)	2.98%	6.53%	3.36%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	9	19	10	0	20	0	10	0	0	0	0	9
Total PM Peak Hour BUILD Volumes	186	409	45	97	393	62	78	1,001	129	130	1,083	154

Number of Commercial Trips Generated	Entering	Exiting	A.M.	100% Commercial Development
	319	269		
	303	295	P.M.	

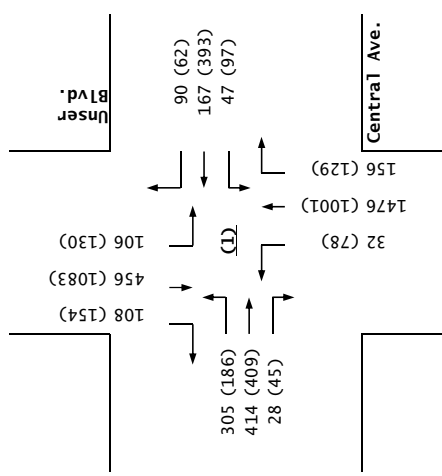
2024
NO BUILD



Trips



2024
BUILD



Central Ave. / Unser Blvd.

Mercado el Milagro (Central Ave. / 98th St.)
 Projected Turning Movements Worksheet
Central Ave. / 86th St.

INTERSECTION : E-W Street: **Central Ave.** (2)
 N-S Street: **86th St.**

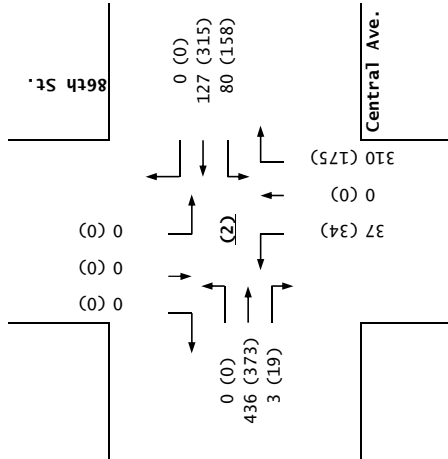
Year of Existing Counts 2019
 Horizon Year 2024

	5.00%			0.50%			0.50%			0.50%		
	Eastbound (Central Ave.)			Westbound (Central Ave.)			Northbound (86th St.)			Southbound (86th St.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	349	2	78	124	0	36	0	302	0	0	0
Background Traffic Growth	0	87	1	2	3	0	1	0	8	0	0	0
Subtotal (NO BUILD - A.M.)	0	436	3	80	127	0	37	0	310	0	0	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	12.87%	0.00%	0.30%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	12.87%	0.30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	35	1	0	41	0	1	0	0	0	0	0
Total AM Peak Hour BUILD Volumes	0	471	4	80	168	0	38	0	310	0	0	0

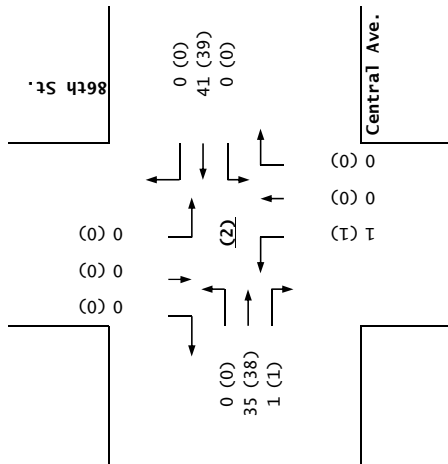
	5.00%			0.50%			0.50%			0.50%		
	Eastbound (Central Ave.)			Westbound (Central Ave.)			Northbound (86th St.)			Southbound (86th St.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	298	15	154	307	0	33	0	171	0	0	0
Background Traffic Growth	0	75	4	4	8	0	1	0	4	0	0	0
Subtotal (NO BUILD - P.M.)	0	373	19	158	315	0	34	0	175	0	0	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	12.87%	0.00%	0.30%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	12.87%	0.30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	38	1	0	39	0	1	0	0	0	0	0
Total PM Peak Hour BUILD Volumes	0	411	20	158	354	0	35	0	175	0	0	0

Number of Commercial Trips Generated	Entering	Exiting	A.M.	100% Commercial Development
	319	269		
	303	295	P.M.	

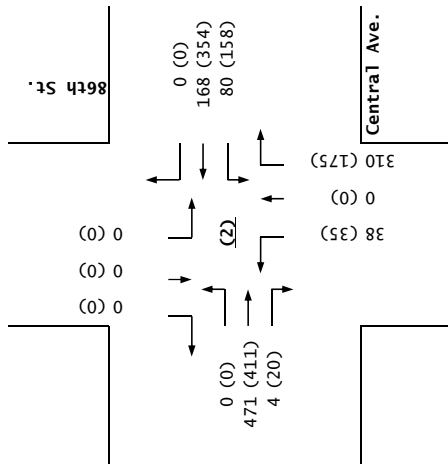
2024
NO BUILD



Trips



2024
BUILD



Central Ave. / 86th St.

Mercado el Milagro (Central Ave. / 98th St.)
 Projected Turning Movements Worksheet
Central Ave. / 98th St.

INTERSECTION : E-W Street: **Central Ave.** (3)
 N-S Street: **98th St.**

Year of Existing Counts: 2019
 Horizon Year: 2024

Growth Rates

	2.50%			2.00%			0.50%			3.50%		
	Eastbound (Central Ave.)			Westbound (Central Ave.)			Northbound (98th St.)			Southbound (98th St.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	406	232	18	112	118	195	14	1,551	164	65	430	110
Background Traffic Growth	51	29	2	11	12	20	0	39	4	11	75	19
Subtotal (NO BUILD - A.M.)	457	261	20	123	130	215	14	1,590	168	76	505	129
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	22.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	15.26%	0.00%
Percent Commercial Trips Generated(Exiting)	5.04%	20.07%	0.00%	0.00%	0.00%	0.00%	5.19%	10.22%	2.33%	0.00%	0.00%	0.00%
Total Trips Generated	14	54	0	71	0	0	14	27	6	0	49	0
Subtotal AM Pk Hr. BUILD Volumes	471	315	20	194	130	215	28	1,617	174	76	554	129
Pass-by Trip Adjustments	0	0	0	14	-14	0	0	0	0	0	0	0
Total AM Peak Hour BUILD Volumes	471	315	20	208	116	215	28	1,617	174	76	554	129

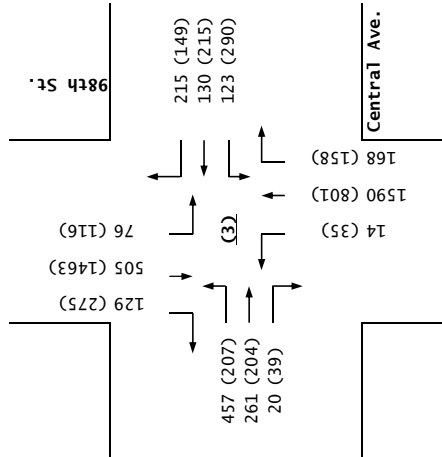
	2.50%			2.00%			0.50%			3.50%		
	Eastbound (Central Ave.)			Westbound (Central Ave.)			Northbound (98th St.)			Southbound (98th St.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	184	181	35	264	195	135	34	781	154	99	1,245	234
Background Traffic Growth	23	23	4	26	20	14	1	20	4	17	218	41
Subtotal (NO BUILD - P.M.)	207	204	39	290	215	149	35	801	158	116	1,463	275
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	22.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	15.26%	0.00%
Percent Commercial Trips Generated(Exiting)	5.04%	20.07%	0.00%	0.00%	0.00%	0.00%	5.19%	10.22%	2.33%	0.00%	0.00%	0.00%
Total Trips Generated	15	59	0	68	0	0	15	30	7	0	46	0
Subtotal PM Pk Hr. BUILD Volumes	222	263	39	358	215	149	50	831	165	116	1,509	275
Pass-by Trip Adjustments	0	0	0	18	-18	0	0	0	0	0	0	0
Total PM Peak Hour BUILD Volumes	222	263	39	376	197	149	50	831	165	116	1,509	275

1,600 (Demand)

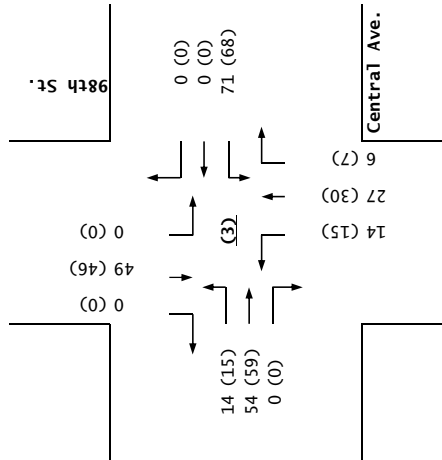
Number of Commercial Trips Generated

Entering	319	269	A.M.	100% Commercial Development
Exiting	303	295	P.M.	

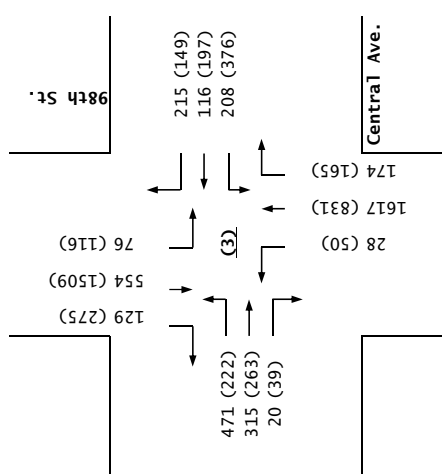
2024
NO BUILD



Trips



2024
BUILD



Mercado el Milagro (Central Ave. / 98th St.)
 Projected Turning Movements Worksheet
Tower Rd. / 98th St.

INTERSECTION : E-W Street: **Tower Rd.** (4)
 N-S Street: **98th St.**

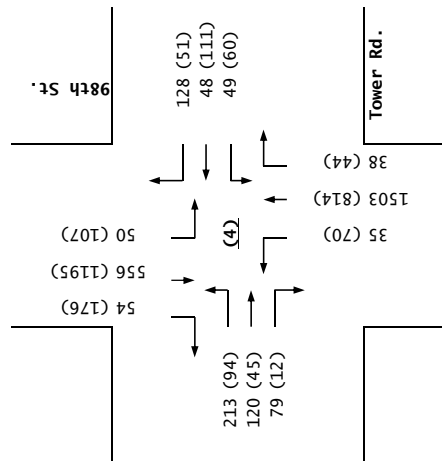
Year of Existing Counts 2019
 Horizon Year 2024

	0.50%			0.80%			1.30%			0.50%		
	Eastbound (Tower Rd.)			Westbound (Tower Rd.)			Northbound (98th St.)			Southbound (98th St.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	208	117	77	47	46	123	33	1,411	36	49	542	53
Background Traffic Growth	5	3	2	2	2	5	2	92	2	1	14	1
Subtotal (NO BUILD - A.M.)	213	120	79	49	48	128	35	1,503	38	50	556	54
Percent Commercial Trips Generated(Entering)	5.04%	0.00%	0.00%	0.00%	0.00%	13.27%	0.00%	30.97%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	13.27%	30.97%	5.04%
Total Trips Generated	16	0	0	0	0	42	0	99	0	36	83	14
Total AM Peak Hour BUILD Volumes	229	120	79	49	48	170	35	1,602	38	86	639	68

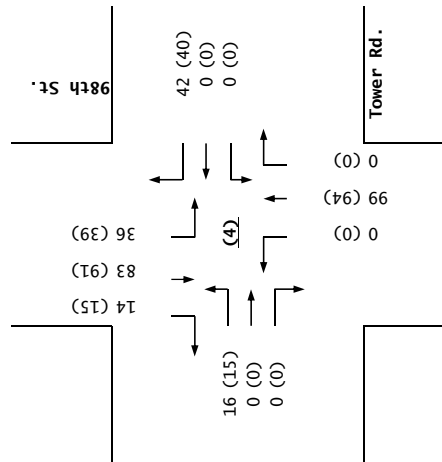
	Eastbound (Tower Rd.)			Westbound (Tower Rd.)			Northbound (98th St.)			Southbound (98th St.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	92	44	12	58	107	49	66	764	41	104	1,166	172
Background Traffic Growth	2	1	0	2	4	2	4	50	3	3	29	4
Subtotal (NO BUILD - P.M.)	94	45	12	60	111	51	70	814	44	107	1,195	176
Percent Commercial Trips Generated(Entering)	5.04%	0.00%	0.00%	0.00%	0.00%	13.27%	0.00%	30.97%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	13.27%	30.97%	5.04%
Total Trips Generated	15	0	0	0	0	40	0	94	0	39	91	15
Total PM Peak Hour BUILD Volumes	109	45	12	60	111	91	70	908	44	146	1,286	191

Number of Commercial Trips Generated	Entering	Exiting	A.M.	100% Commercial Development
	319	269		
	303	295	P.M.	

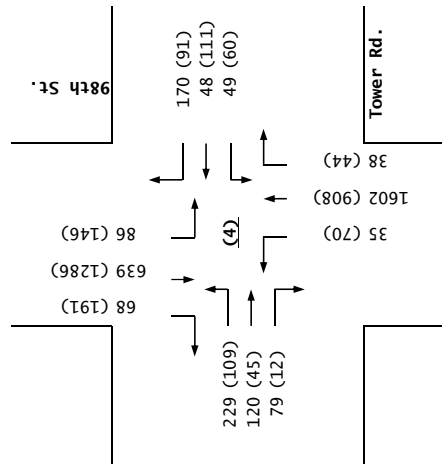
2024
NO BUILD



Trips



2024
BUILD



Tower Rd. / 98th St.

Mercado el Milagro (Central Ave. / 98th St.)
 Projected Turning Movements Worksheet
I-40 N. Ramp / 98th St.

INTERSECTION : E-W Street: **I-40 N. Ramp** (5)
 N-S Street: **98th St.**

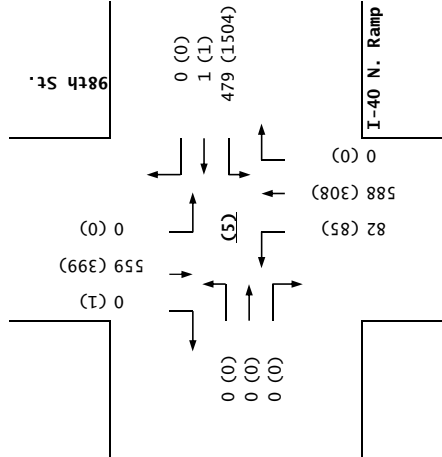
Year of Existing Counts 2019
 Horizon Year 2024

	0.90%			0.50%			3.50%			3.90%		
	Eastbound (I-40 N. Ramp)			Westbound (I-40 N. Ramp)			Northbound (98th St.)			Southbound (98th St.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	467	1	0	70	500	0	0	468	0
Background Traffic Growth	0	0	0	12	0	0	12	88	0	0	91	0
Subtotal (NO BUILD - A.M.)	0	0	0	479	1	0	82	588	0	0	559	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	1.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12.68%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.14%	12.68%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	0	3	0	0	3	34	0	0	40	0
Total AM Peak Hour BUILD Volumes	0	0	0	482	1	0	85	622	0	0	599	0

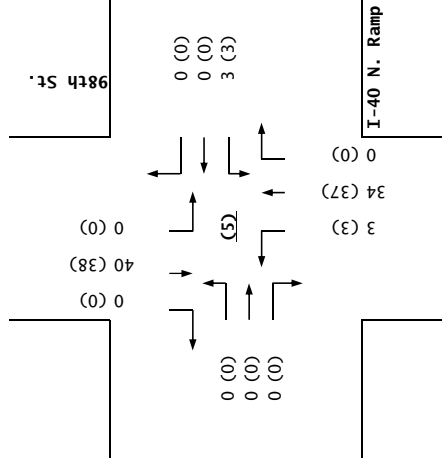
	Eastbound (I-40 N. Ramp)			Westbound (I-40 N. Ramp)			Northbound (98th St.)			Southbound (98th St.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	1,467	1	0	72	262	0	0	334	1
Background Traffic Growth	0	0	0	37	0	0	13	46	0	0	65	0
Subtotal (NO BUILD - P.M.)	0	0	0	1,504	1	0	85	308	0	0	399	1
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	1.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12.68%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.14%	12.68%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	0	3	0	0	3	37	0	0	38	0
Total PM Peak Hour BUILD Volumes	0	0	0	1,507	1	0	88	345	0	0	437	1

Number of Commercial Trips Generated	Entering	Exiting	A.M.	100% Commercial Development
	319	269		
	303	295	P.M.	

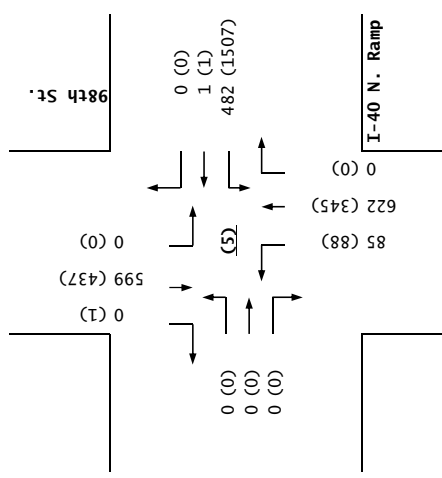
2024
NO BUILD



Trips



2024
BUILD



I-40 N. Ramp / 98th St.

Mercado el Milagro (Central Ave. / 98th St.)
 Projected Turning Movements Worksheet
I-40 S. Ramp / 98th St.

INTERSECTION : E-W Street: **I-40 S. Ramp** (6)
 N-S Street: **98th St.**

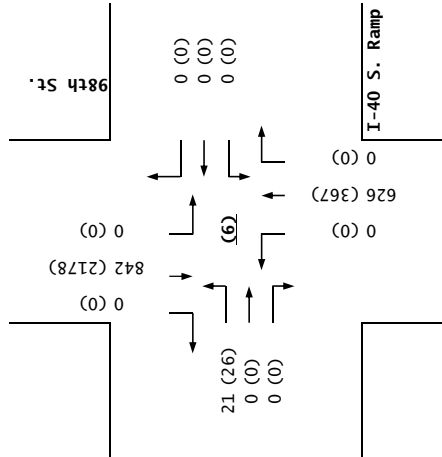
Year of Existing Counts: 2019
 Horizon Year: 2024

	0.90%			0.50%			3.50%			3.90%		
	Eastbound (I-40 S. Ramp)			Westbound (I-40 S. Ramp)			Northbound (98th St.)			Southbound (98th St.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	20	0	0	0	0	0	0	533	0	0	705	0
Background Traffic Growth	1	0	0	0	0	0	0	93	0	0	137	0
Subtotal (NO BUILD - A.M.)	21	0	0	0	0	0	0	626	0	0	842	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	1.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	13.45%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	13.05%	0.77%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	4	0	0	0	0	35	2	0	43	0
Total AM Peak Hour BUILD Volumes	21	0	4	0	0	0	0	661	2	0	885	0

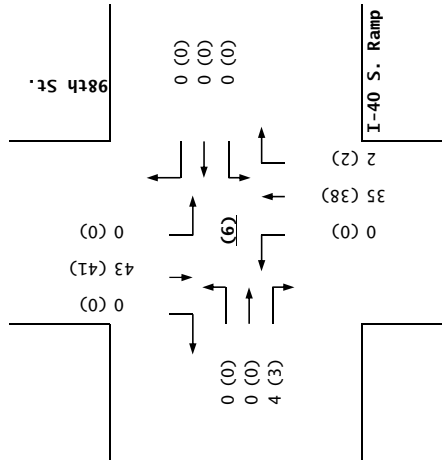
	Eastbound (I-40 S. Ramp)			Westbound (I-40 S. Ramp)			Northbound (98th St.)			Southbound (98th St.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	25	0	0	0	0	0	0	312	0	0	1,823	0
Background Traffic Growth	1	0	0	0	0	0	0	55	0	0	355	0
Subtotal (NO BUILD - P.M.)	26	0	0	0	0	0	0	367	0	0	2,178	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	1.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	13.45%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	13.05%	0.77%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	3	0	0	0	0	38	2	0	41	0
Total PM Peak Hour BUILD Volumes	26	0	3	0	0	0	0	405	2	0	2,219	0

Number of Commercial Trips Generated	Entering	Exiting	A.M.	100% Commercial Development
	319	269		
	303	295	P.M.	

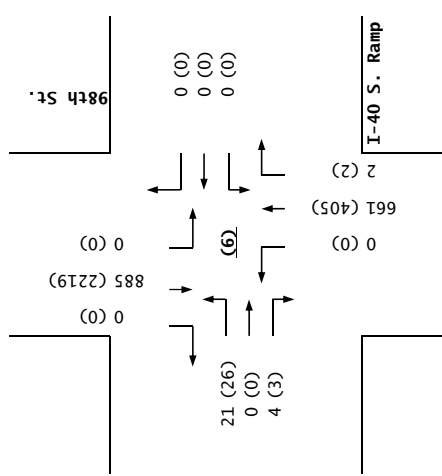
2024
NO BUILD



Trips



2024
BUILD



I-40 S. Ramp / 98th St.

Mercado el Milagro (Central Ave. / 98th St.)
 Projected Turning Movements Worksheet
Central Ave. / Bridge Blvd.

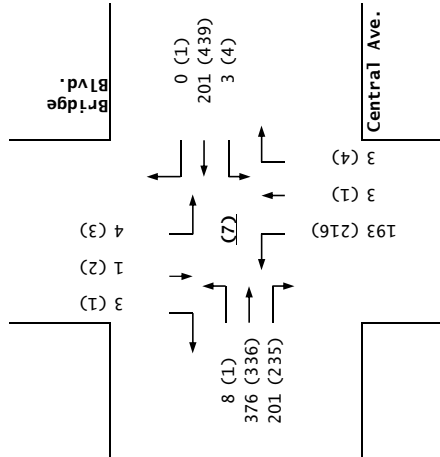
INTERSECTION : E-W Street: **Central Ave.** (7)
 N-S Street: **Bridge Blvd.**
 Year of Existing Counts: 2019
 Horizon Year: 2024
 Growth Rates: 2.00% 5.00% 5.00% 0.50%

	Eastbound (Central Ave.)			Westbound (Central Ave.)			Northbound (Bridge Blvd.)			Southbound (Bridge Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	7	342	183	2	161	0	154	2	2	4	1	3
Background Traffic Growth	1	34	18	1	40	0	39	1	1	0	0	0
Subtotal (NO BUILD - A.M.)	8	376	201	3	201	0	193	3	3	4	1	3
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	16.48%	0.00%	2.61%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	16.48%	2.61%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	44	7	0	53	0	8	0	0	0	0	0
Total AM Peak Hour BUILD Volumes	8	420	208	3	254	0	201	3	3	4	1	3

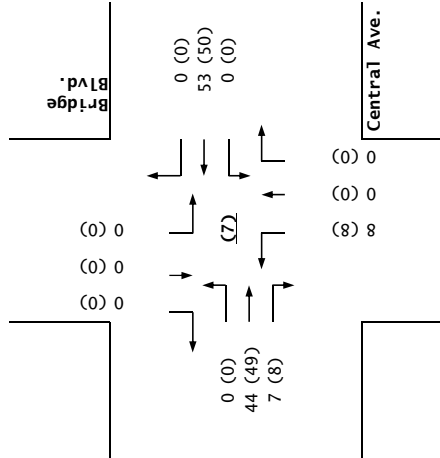
	Eastbound (Central Ave.)			Westbound (Central Ave.)			Northbound (Bridge Blvd.)			Southbound (Bridge Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	1	305	214	3	351	1	173	1	3	3	2	1
Background Traffic Growth	0	31	21	1	88	0	43	0	1	0	0	0
Subtotal (NO BUILD - P.M.)	1	336	235	4	439	1	216	1	4	3	2	1
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	16.48%	0.00%	2.61%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	16.48%	2.61%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	49	8	0	50	0	8	0	0	0	0	0
Total PM Peak Hour BUILD Volumes	1	385	243	4	489	1	224	1	4	3	2	1

Number of Commercial Trips Generated: Entering 319, Exiting 269 A.M. 100% Commercial Development
 303, 295 P.M.

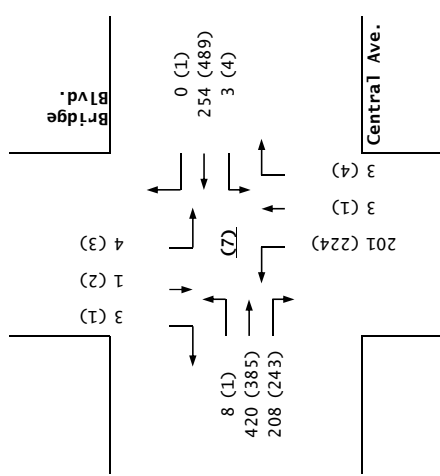
2024
NO BUILD



2024
BUILT



2024
BUILT



Mercado el Milagro (Central Ave. / 98th St.)

Projected Turning Movements Worksheet

Sunset Gardens Rd. / 98th St.INTERSECTION : E-W Street: **Sunset Gardens Rd.** (8)N-S Street: **98th St.**

Year of Existing Counts 2019

Horizon Year 2024

Growth Rates

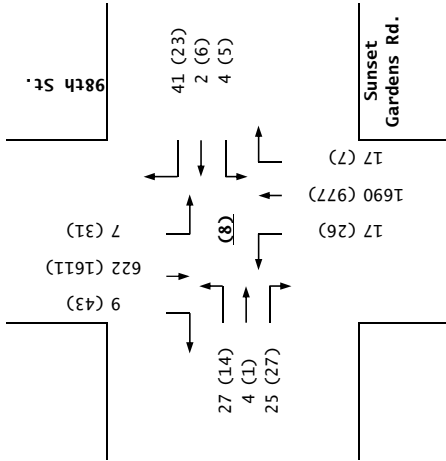
	0.50%			0.50%			0.50%			0.50%		
	Eastbound (Sunset Gardens Rd.)			Westbound (Sunset Gardens Rd.)			Northbound (98th St.)			Southbound (98th St.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	26	4	24	4	2	40	17	1,649	17	7	607	9
Background Traffic Growth	1	0	1	0	0	1	0	41	0	0	15	0
Subtotal (NO BUILD - A.M.)	27	4	25	4	2	41	17	1,690	17	7	622	9
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	5.86%	12.32%	36.96%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	12.32%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.86%	36.96%	0.00%
Total Trips Generated	0	0	33	0	0	19	39	118	0	16	99	0
Total AM Peak Hour BUILD Volumes	27	4	58	4	2	60	56	1,808	17	23	721	9

	Eastbound (Sunset Gardens Rd.)			Westbound (Sunset Gardens Rd.)			Northbound (98th St.)			Southbound (98th St.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	14	1	26	5	6	22	25	953	7	30	1,572	42
Background Traffic Growth	0	0	1	0	0	1	1	24	0	1	39	1
Subtotal (NO BUILD - P.M.)	14	1	27	5	6	23	26	977	7	31	1,611	43
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	5.86%	12.32%	36.96%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	12.32%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.86%	36.96%	0.00%
Total Trips Generated	0	0	36	0	0	18	37	112	0	17	109	0
Total PM Peak Hour BUILD Volumes	14	1	63	5	6	41	63	1,089	7	48	1,720	43

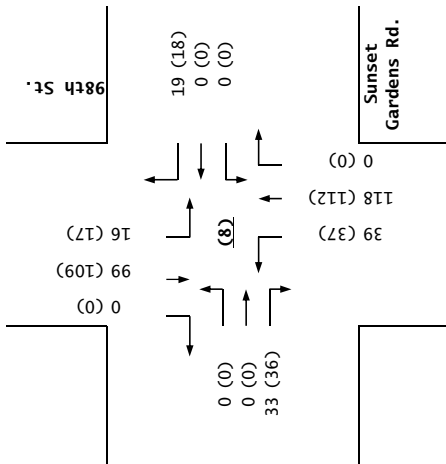
Number of Commercial Trips Generated

Entering	319	Exiting	269	A.M.	100% Commercial Development
	303		295	P.M.	

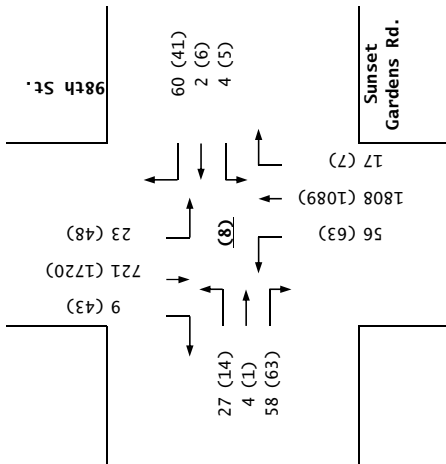
2024
NO BUILD



Trips



2024
BUILD



Sunset Gardens Rd. / 98th St.

Mercado el Milagro (Central Ave. / 98th St.)

Projected Turning Movements Worksheet

Driveway "A" / 98th St.

INTERSECTION: E-W Street: **Driveway "A"** (9)

N-S Street: **98th St.**

Year of Existing Counts 2019

Horizon Year 2024

Growth Rates

	0.50%			0.50%			0.50%			0.50%		
	Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbound (98th St.)			Southbound (98th St.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - A.M.)	0	0	0	0	0	0	0	1,772	0	0	648	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	42.82%	0.00%	0.00%	0.00%	18.83%	18.83%
Percent Commercial Trips Generated(Exiting)	17.74%	0.00%	21.41%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	48	0	58	0	0	0	137	0	0	0	60	60
Subtotal AM Pk Hr. BUILD Volumes	48	0	58	0	0	0	137	1,772	0	0	708	60
Pass-by Trip Adjustments	57	0	35	0	0	0	23	-23	0	0	-93	93
Total AM Peak Hour BUILD Volumes	105	0	93	0	0	0	160	1,749	0	0	615	153

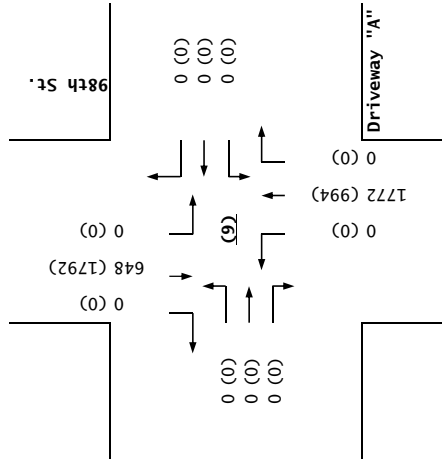
	Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbound (98th St.)			Southbound (98th St.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - P.M.)	0	0	0	0	0	0	0	994	0	0	1,792	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	42.82%	0.00%	0.00%	0.00%	18.83%	18.83%
Percent Commercial Trips Generated(Exiting)	17.74%	0.00%	21.41%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	52	0	63	0	0	0	130	0	0	0	57	57
Subtotal PM Pk Hr. BUILD Volumes	52	0	63	0	0	0	130	994	0	0	1,849	57
Pass-by Trip Adjustments	37	0	63	0	0	0	25	-25	0	0	-31	31
Total PM Peak Hour BUILD Volumes	89	0	126	0	0	0	155	969	0	0	1,818	88

Number of Commercial Trips Generated	Entering	Exiting	A.M.	100% Commercial Development
	319	269		
	303	295	P.M.	

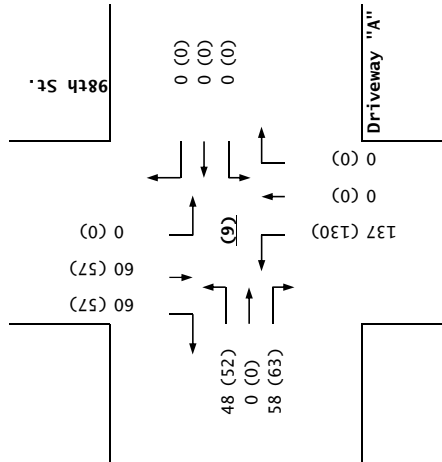
Pass-by Trip Calculations:

		Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbound (98th St.)			Southbound (98th St.)		
AM Pass-by Trips		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	17.00%	-17.00%	0.00%	0.00%	-68.00%	68.00%
Percent Entering		0	0	0	0	0	0	23	-23	0	0	-93	93
Volume Entering		49.00%	0.00%	30.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Exiting		57	0	35	0	0	0	0	0	0	0	0	0
Volume Exiting		57	0	35	0	0	0	23	-23	0	0	-93	93
Net AM Passby Trips		57	0	35	0	0	0	23	-23	0	0	-93	93
PM Pass-by Trips		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	19.00%	-19.00%	0.00%	0.00%	-24.00%	24.00%
Percent Entering		0	0	0	0	0	0	25	-25	0	0	-31	31
Volume Entering		29.00%	0.00%	50.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Exiting		37	0	63	0	0	0	0	0	0	0	0	0
Volume Exiting		37	0	63	0	0	0	25	-25	0	0	-31	31
Net PM Passby Trips		37	0	63	0	0	0	25	-25	0	0	-31	31
Pass-by Trips		137	116	AM	130	126	PM						

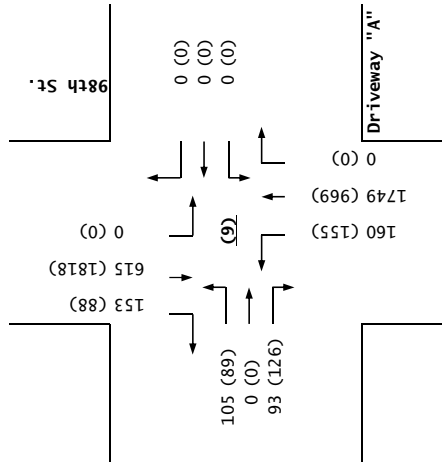
2024
NO BUILD



Trips



2024
BUILD



Driveway "A" / 98th St.

Mercado el Milagro (Central Ave. / 98th St.)

Projected Turning Movements Worksheet

Driveway "B" / 98th St.

INTERSECTION: E-W Street: **Driveway "B"** (10)

N-S Street: **98th St.**

Year of Existing Counts 2019

Horizon Year 2024

Growth Rates

	0.50%			0.50%			0.50%			0.50%		
	Eastbound (Driveway "B")			Westbound (Driveway "B")			Northbound (98th St.)			Southbound (98th St.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - A.M.)	0	0	0	0	0	0	0	1,772	0	0	648	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	42.82%	0.00%	0.00%	0.00%	18.83%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	21.41%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	21.41%	0.00%
Total Trips Generated	0	0	58	0	0	0	0	137	0	0	58	60
Subtotal AM Pk Hr. BUILD Volumes	0	0	58	0	0	0	0	1,909	0	0	706	60
Pass-by Trip Adjustments	0	0	10	0	0	0	0	0	0	0	-18	12
Total AM Peak Hour BUILD Volumes	0	0	68	0	0	0	0	1,909	0	0	688	72

	Eastbound (Driveway "B")			Westbound (Driveway "B")			Northbound (98th St.)			Southbound (98th St.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - P.M.)	0	0	0	0	0	0	0	994	0	0	1,792	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	42.82%	0.00%	0.00%	0.00%	18.83%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	21.41%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	21.41%	0.00%
Total Trips Generated	0	0	63	0	0	0	0	130	0	0	63	57
Subtotal PM Pk Hr. BUILD Volumes	0	0	63	0	0	0	0	1,124	0	0	1,855	57
Pass-by Trip Adjustments	0	0	13	0	0	0	0	0	0	0	-15	13
Total PM Peak Hour BUILD Volumes	0	0	76	0	0	0	0	1,124	0	0	1,840	70

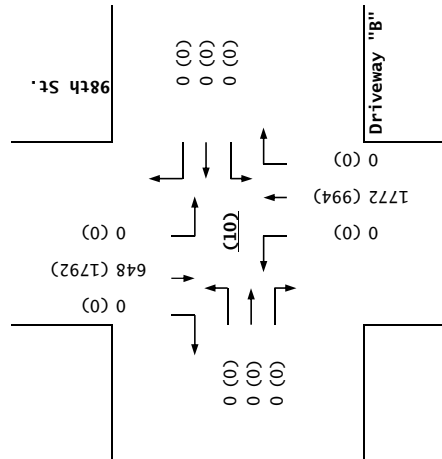
Number of Commercial Trips Generated

Entering	319	Exiting	269	A.M.	100% Commercial Development
	303		295	P.M.	

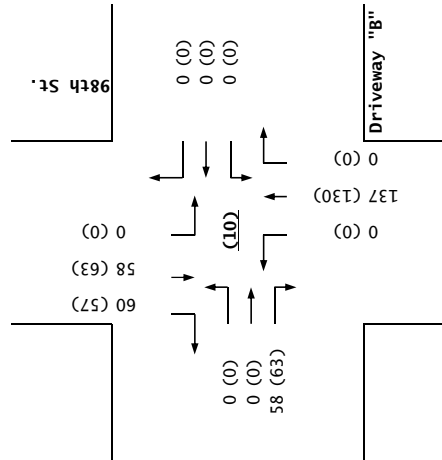
Pass-by Trip Calculations:

AM Pass-by Trips		Eastbound (Driveway "B")			Westbound (Driveway "B")			Northbound (98th St.)			Southbound (98th St.)		
Percent Entering		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	-39.00%	9.00%
Volume Entering		0	0	0	0	0	0	0	0	0	0	-53	12
Percent Exiting		0.00%	0.00%	9.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	30.00%	0.00%
Volume Exiting		0	0	10	0	0	0	0	0	0	0	35	0
Net AM Passby Trips		0	0	10	0	0	0	0	0	0	0	-18	12
PM Pass-by Trips		Eastbound (Driveway "B")			Westbound (Driveway "B")			Northbound (98th St.)			Southbound (98th St.)		
Percent Entering		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	-60.00%	10.00%
Volume Entering		0	0	0	0	0	0	0	0	0	0	-78	13
Percent Exiting		0.00%	0.00%	10.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%	0.00%
Volume Exiting		0	0	13	0	0	0	0	0	0	0	63	0
Net PM Passby Trips		0	0	13	0	0	0	0	0	0	0	-15	13
Pass-by Trips		137	116	AM	130	126	PM						

2024
NO BUILD

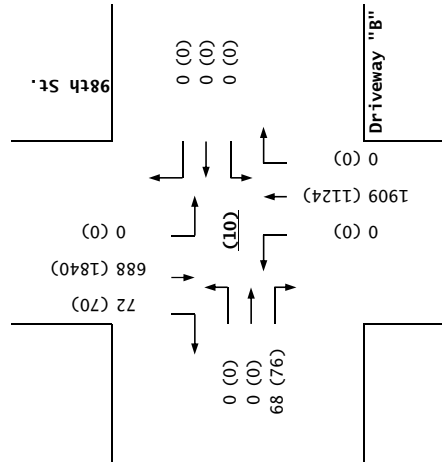


Trips



Driveway "B" / 98th St.

2024
BUILD



Mercado el Milagro (Central Ave. / 98th St.)
 Projected Turning Movements Worksheet
Sunset Gardens Rd. / Driveway "C"

INTERSECTION : E-W Street: **Sunset Gardens Rd.** (11)
 N-S Street: **Driveway "C"**

Year of Existing Counts 2019
 Horizon Year 2024

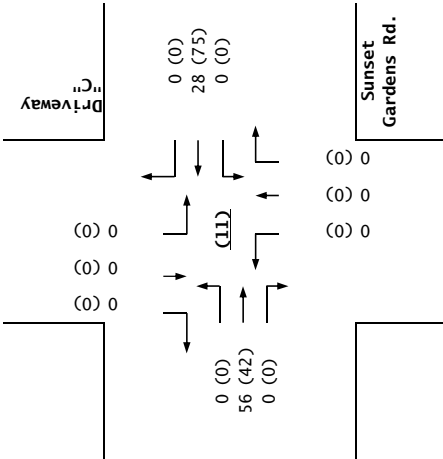
	0.50%			0.50%			0.50%			0.50%		
	Eastbound (Sunset Gardens Rd.)			Westbound (Sunset Gardens Rd.)			Northbound (Driveway "C")			Southbound (Driveway "C")		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - A.M.)	0	56	0	0	28	0	0	0	0	0	0	0
Percent Commercial Trips Generated(Entering)	2.01%	0.00%	0.00%	0.00%	0.00%	12.32%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12.32%	0.00%	2.01%
Total Trips Generated	6	0	0	0	0	39	0	0	0	33	0	5
Total AM Peak Hour BUILD Volumes	6	56	0	0	28	39	0	0	0	33	0	5

	0.50%			0.50%			0.50%			0.50%		
	Eastbound (Sunset Gardens Rd.)			Westbound (Sunset Gardens Rd.)			Northbound (Driveway "C")			Southbound (Driveway "C")		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - P.M.)	0	42	0	0	75	0	0	0	0	0	0	0
Percent Commercial Trips Generated(Entering)	2.01%	0.00%	0.00%	0.00%	0.00%	12.32%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12.32%	0.00%	2.01%
Total Trips Generated	6	0	0	0	0	37	0	0	0	36	0	6
Total PM Peak Hour BUILD Volumes	6	42	0	0	75	37	0	0	0	36	0	6

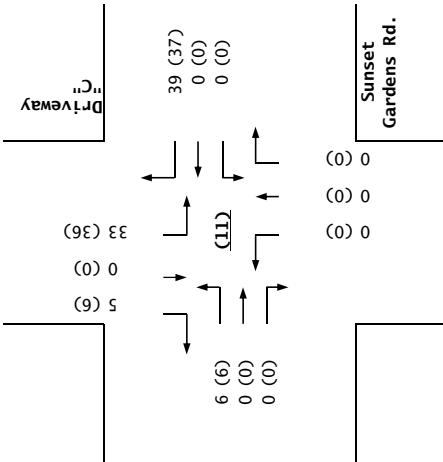
Number of Commercial Trips Generated

Entering	319	Exiting	269	A.M.	100% Commercial Development
	303		295	P.M.	

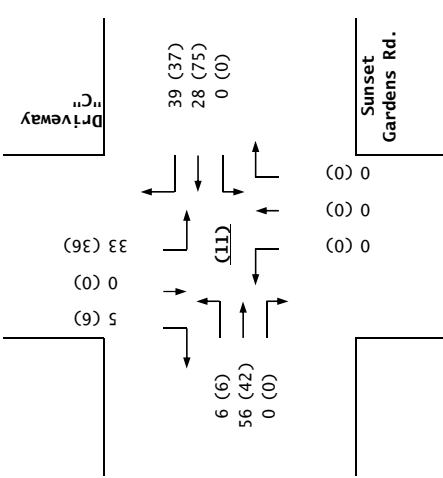
2024
NO BUILD



Trips



2024
BUILD



Sunset Gardens Rd. / Driveway "C"

Mercado el Milagro (Central Ave. / 98th St.)

Projected Turning Movements Worksheet

Central Ave. / Driveway "D"**INTERSECTION :**E-W Street: **Central Ave.**

(12)

N-S Street: **Driveway "D"**

Year of Existing Counts

2019

Horizon Year

2024

Growth Rates

	0.50%			0.50%			0.50%			0.50%		
	Eastbound (Central Ave.)			Westbound (Central Ave.)			Northbound (Driveway "D")			Southbound (Driveway "D")		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - A.M.)	0	738	0	0	273	0	0	0	0	0	0	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	5.19%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	5.19%	0.00%	0.00%	0.00%	25.11%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	17	0	14	0	0	0	68	0	0	0
Subtotal AM Pk Hr. BUILD Volumes	0	738	17	0	287	0	0	0	68	0	0	0
Pass-by Trip Adjustments	0	-16	16	0	0	0	0	0	14	0	0	0
Total AM Peak Hour BUILD Volumes	0	722	33	0	287	0	0	0	82	0	0	0

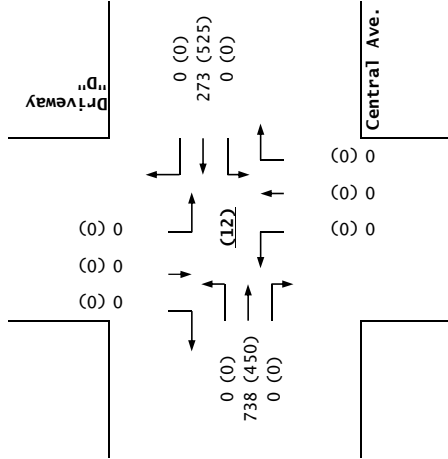
	Eastbound (Central Ave.)			Westbound (Central Ave.)			Northbound (Driveway "D")			Southbound (Driveway "D")		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - P.M.)	0	450	0	0	525	0	0	0	0	0	0	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	5.19%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	5.19%	0.00%	0.00%	0.00%	25.11%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	16	0	15	0	0	0	74	0	0	0
Subtotal PM Pk Hr. BUILD Volumes	0	450	16	0	540	0	0	0	74	0	0	0
Pass-by Trip Adjustments	0	-16	16	0	0	0	0	0	15	0	0	0
Total PM Peak Hour BUILD Volumes	0	434	32	0	540	0	0	0	89	0	0	0

Number of Commercial Trips Generated	Entering	Exiting	A.M.	100% Commercial Development
	319	269		
	303	295	P.M.	

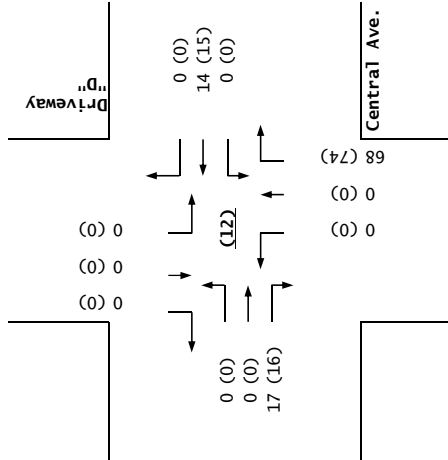
Pass-by Trip Calculations:

		Eastbound (Central Ave.)			Westbound (Central Ave.)			Northbound (Driveway "D")			Southbound (Driveway "D")		
AM Pass-by Trips		0.00%	-12.00%	12.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Entering		0	-16	16	0	0	0	0	0	0	0	0	0
Volume Entering		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12.00%	0.00%	0.00%	0.00%
Percent Exiting		0	0	0	0	0	0	0	0	14	0	0	0
Volume Exiting		0	0	0	0	0	0	0	0	14	0	0	0
Net AM Passby Trips		0	-16	16	0	0	0	0	0	14	0	0	0
PM Pass-by Trips		0.00%	-12.00%	12.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Entering		0	-16	16	0	0	0	0	0	0	0	0	0
Volume Entering		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12.00%	0.00%	0.00%	0.00%
Percent Exiting		0	0	0	0	0	0	0	0	15	0	0	0
Volume Exiting		0	0	0	0	0	0	0	0	15	0	0	0
Net PM Passby Trips		0	-16	16	0	0	0	0	0	15	0	0	0
Pass-by Trips		Entering	Exiting		Entering	Exiting		Entering	Exiting		Entering	Exiting	
		137	116	AM	130	126	PM						

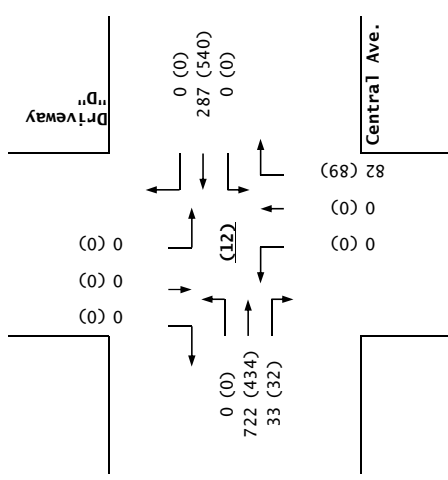
2024
NO BUILD



Trips



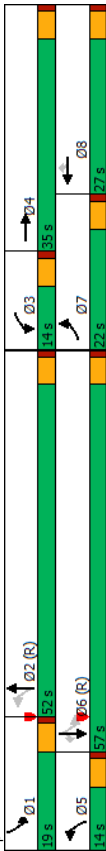
2024
BUILD



Central Ave. / Driveway "D"

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔
Traffic Volume (vph)	297	396	47	146	90	21	1476	106
Future Volume (vph)	297	396	47	146	90	21	1476	106
Turn Type	Prot	NA	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases	7	4	3	8	5	2	1	6
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0
Minimum Split (s)	22.0	35.0	14.0	27.0	14.0	52.0	19.0	57.0
Total Split (%)	18.3%	29.2%	11.7%	22.5%	11.7%	43.3%	15.8%	47.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Min	Min	Min	Min	Min	Min	Min	Min
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	15.5	21.0	8.0	13.4	67.7	61.5	74.0	64.9
Actuated g/C Ratio	0.13	0.18	0.07	0.11	0.56	0.51	0.62	0.54
v/c Ratio	0.73	0.74	0.44	0.41	0.31	0.05	1.00	0.57
Control Delay	61.3	54.6	51.8	3.8	10.5	51.2	29.5	20.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.3	54.6	51.8	3.8	10.5	51.2	29.5	20.7
LOS	E	D	E	D	A	B	D	C
Approach Delay	57.4	38.8					50.7	19.2
Approach LOS	E	D					D	B
Intersection Summary								
Cycle Length: 120								
Actuated Cycle Length: 120								
Offset: 117.6 (96%), Referenced to phase 2: NBT and 6: SBT, Start of Green								
Natural Cycle: 100								
Control Type: Actuated-Coordinated								
Maximum v/c Ratio: 1.00								
Intersection Signal Delay: 44.8								
Intersection Capacity Utilization 84.0%								
Analysis Period (min) 15								

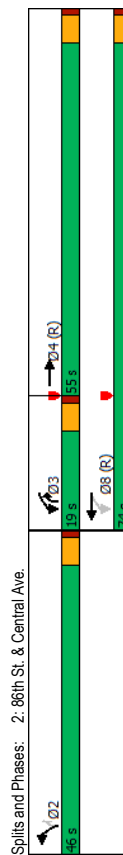
Splits and Phases: 1: Unsers Blvd. & Central Ave.



Movement	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔
Traffic Volume (veh/h)	297	396	19	47	146	90	21	1476
Future Volume (veh/h)	297	396	19	47	146	90	21	1476
Initial Q (Obs), veh	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/in	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	323	430	21	51	159	98	23	1604
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3
Cap, veh/h	390	545	27	80	320	143	487	1884
Arrive On Green	0.04	0.05	0.05	0.05	0.09	0.04	0.58	0.04
Sat Flow, veh/h	3428	3422	167	1767	1572	1767	3220	1767
Grip Volume(v), veh/h	323	221	230	51	159	98	23	869
Grip Sat Flow(s), veh/h/in	1714	1763	1826	1767	1763	1572	1767	1763
Q Serve(g, s), s	11.2	14.9	14.9	3.4	5.2	7.3	0.6	48.4
Cycle Q Clear(g, c), s	11.2	14.9	14.9	3.4	5.2	7.3	0.6	48.4
Prop In Lane	1.00	0.09	1.00	1.00	1.00	1.00	0.19	1.00
Lane Grip Cap(c), veh/h	390	281	291	80	320	143	487	1031
V/C Ratio(X)	0.83	0.79	0.79	0.64	0.50	0.69	0.05	0.84
Avail Cap(c, a), veh/h	486	441	456	133	646	288	546	1031
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.93	0.93	0.93	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.6	54.8	54.9	56.3	51.9	52.9	9.8	20.4
Incr Delay (d2), s/veh	8.8	4.6	4.6	8.2	1.2	5.7	0.0	8.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/h	9.4	11.7	12.1	3.1	4.2	5.6	0.4	28.8
Unsig. Movement Delay, s/veh	65.4	59.4	59.5	64.5	53.1	58.6	9.9	28.8
LnGrp Delay(d), s/veh	65.4	59.4	59.5	64.5	53.1	58.6	9.9	28.8
LnGrp LOS	E	E	E	E	D	E	A	C
Approach Vol, veh/h	774	619	308	308	1797	292	718	17.0
Approach Delay, s/veh	61.9	56.8	30.8	30.8	17.0	29.2	71.8	17.0
Approach LOS	E	E	E	E	C	C	B	B
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	75.2	10.4	24.1	10.0	75.5	18.7	15.9
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	14.0	47.0	9.0	30.0	9.0	52.0	17.0	22.0
Max Q Clear Time (g, c+11), s	5.1	52.7	5.4	16.9	2.6	20.1	13.2	9.3
Green Ext Time (p, c), s	0.2	0.0	0.0	2.2	0.0	3.9	0.4	1.0
Intersection Summary								
HCM 6th Ctrl Delay								
HCM 6th LOS								

2: 86th St. & Central Ave.

Lane Group		EBT	WBL	WBT	NBL	NBR
Lane Configurations	↕↕	↕	↕↕	↕↕	↕	↕
Traffic Volume (vph)	436	80	127	37	310	
Future Volume (vph)	436	80	127	37	310	
Turn Type	NA	pm-pt	NA	Prot	pm-ov	
Protected Phases	4	3	8	2	3	
Permitted Phases	4	3	8	2	3	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	21.0	10.0	21.0	21.0	10.0	
Total Split (s)	55.0	19.0	74.0	46.0	19.0	
Total Split (%)	45.8%	15.8%	61.7%	38.3%	15.8%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lag/Lag	Lag	Lead	Lead	Lead	Lead	
Lead-Lag Optimize?						
Recall Mode	C-Max	Min	C-Max	Min	Min	
Act Effrd Green (s)	89.4	101.8	101.8	8.2	20.6	
Actuated g/C Ratio	0.74	0.85	0.85	0.07	0.17	
v/c Ratio	0.18	0.11	0.05	0.33	0.67	
Control Delay	5.1	1.8	0.9	59.8	17.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	5.1	1.8	0.9	59.8	17.6	
LOS	A	A	A	E	B	
Approach Delay	5.1		1.3	22.1		
Approach LOS	A		A	C		
Intersection Summary						
Cycle Length: 120						
Actuated Cycle Length: 120						
Offset: 93.6 (78%), Referenced to phase 4EBT and 8WBTL, Start of Green						
Natural Cycle: 55						
Control Type: Actuated-Coordinated						
Maximum v/c Ratio: 0.67						
Intersection Signal Delay: 10.2						
Intersection Capacity Utilization 39.7%						
Analysis Period (min) 15						
Intersection LOS: B						
ICU Level of Service A						



2: 86th St. & Central Ave.

Movement									
EBT	EBR	WBL	WBT	NBL	NBR				
↕↕	↕	↕	↕↕	↕	↕				
Lane Configurations									
Traffic Volume (veh/h)	436	3	80	127	37	310			
Future Volume (veh/h)	436	3	80	127	37	310			
Initial Q (Qb), veh	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No		No		No				
Adj Sat Flow, veh/h/s	1856	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	459	3	84	134	39	326			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh. %	3	3	3	3	3	3			
Cap, veh/h	2205	14	648	2459	388	410			
Arrive On Green	0.61	0.61	0.08	1.00	0.22	0.22			
Sat Flow, veh/h	3683	23	1767	3618	1767	1572			
Gp Volume(v), veh/h	225	237	84	134	39	326			
Gp Sat Flow(s), veh/h/s	1763	1851	1767	1763	1767	1572			
Q Serve(g, s)	6.8	6.8	2.0	0.0	2.1	23.2			
Cycle Q Clear(g, c), s	6.8	6.8	2.0	0.0	2.1	23.2			
Prop In Lane	0.01	1.00	1.00	1.00	1.00	1.00			
Lane Gp Cap(c), veh/h	1082	1137	648	2459	388	410			
V/C Ratio(X)	0.21	0.21	0.13	0.05	0.10	0.79			
Avail Cap(c, a), veh/h	1082	1137	781	2459	604	603			
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00			
Upstream Filter(l)	1.00	1.00	0.97	0.97	1.00	1.00			
Uniform Delay (d), s/veh	10.2	10.2	6.8	0.0	37.4	41.3			
Incr Delay (d2), s/veh	0.4	0.4	0.1	0.0	0.1	4.5			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0			
%ile Back(Q95%),veh/ln	4.9	5.1	1.2	0.0	1.7	14.5			
Unsig. Movement Delay, s/veh	10.7	10.7	6.9	0.0	37.5	45.9			
LnGp Delay(d) s/veh	B	B	A	A	D	D			
LnGp LOS									
Approach Vol, veh/h	462		218		365				
Approach Delay, s/veh	10.7		2.7		45.0				
Approach LOS	B		A		D				
Timer - Assigned Phs		2	3	4		8			
Phs Duration (G-Y+Rc), s	31.3	10.0	78.7			88.7			
Change Period (Y+Rc), s	5.0	5.0	5.0			5.0			
Max Green Setting (Gmax), s	41.0	14.0	50.0			69.0			
Max Q Clear Time (g_c+1), s	25.2	4.0	8.8			2.0			
Green Ext Time (p_c), s	1.1	0.1	3.0			0.9			
Intersection Summary									
HCM 6th Ctrl Delay	21.0								
HCM 6th LOS	C								

Timings
3: 98th St. & Central Ave.

Terry O. Brown, PE
04/23/2019

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔
Traffic Volume (vph)	457	261	20	123	130	215	14	1590	168	76	505	129
Future Volume (vph)	457	261	20	123	130	215	14	1590	168	76	505	129
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		8	2	2	6	1	6
Permitted Phases	7	4	4	3	8	8	5	2	2	1	6	6
Detector Phase												
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	21.0	10.0	21.0	21.0	10.0	21.0	21.0	10.0	21.0	21.0
Total Split (s)	22.0	40.0	40.0	16.0	34.0	34.0	12.0	62.0	62.0	12.0	62.0	62.0
Total Split (%)	16.9%	30.8%	12.3%	26.2%	26.2%	26.2%	9.2%	47.7%	47.7%	9.2%	47.7%	47.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	17.0	21.3	21.3	9.8	14.1	14.1	76.7	70.8	70.8	81.1	73.0	73.0
Actuated g/C Ratio	0.13	0.16	0.16	0.08	0.11	0.11	0.59	0.54	0.54	0.62	0.56	0.56
v/c Ratio	1.09	0.49	0.06	0.51	0.36	0.77	0.03	0.89	0.19	0.49	0.27	0.15
Control Delay	122.5	51.6	0.3	64.8	54.9	38.2	16.0	34.4	10.7	34.6	16.3	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	122.5	51.6	0.3	64.8	54.9	38.2	16.0	34.4	10.7	34.6	16.3	5.9
LOS	F	D	A	E	D	D	B	C	B	C	B	A
Approach Delay	94.1											
Approach LOS	F											
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 39 (30%), Referenced to phase 2:NBT.L and 6:SBT.L. Start of Green												
Natural Cycle: 100												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 1.09												
Intersection Signal Delay: 43.7												
Intersection Capacity Utilization 82.8%												
Analysis Period (min) 15												
Splits and Phases: 3: 98th St. & Central Ave.												

2024 AM Peak NOBUILD Conditions - Existing Geometry
Synchro 10 Report
2024ANX.syn

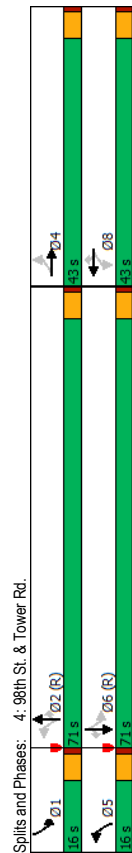
HCM 6th Signalized Intersection Summary
3: 98th St. & Central Ave.

Terry O. Brown, PE
04/23/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔
Traffic Volume (veh/h)	457	261	20	123	130	215	14	1590	168	76	505	129
Future Volume (veh/h)	457	261	20	123	130	215	14	1590	168	76	505	129
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	486	278	0	131	138	0	15	1691	0	81	537	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	448	481	185	210	185	210	596	2177	200	2177	200	2177
Arrive On Green	0.13	0.14	0.00	0.05	0.06	0.00	0.04	0.62	0.00	0.04	0.62	0.00
Sat Flow, veh/h	3428	3526	1572	3428	3526	1572	1767	3526	1572	1767	3526	1572
Gvp Volume(v), veh/h	486	278	0	131	138	0	15	1691	0	81	537	0
Gvp Sat Flow(s), veh/h/ln	1714	1763	1572	1714	1763	1572	1767	1767	1572	1767	1763	1572
Q Serv(g, s), s	17.0	9.6	0.0	4.9	5.0	0.0	0.4	45.8	0.0	2.1	8.9	0.0
Cycle Q Clear(g, c), s	17.0	9.6	0.0	4.9	5.0	0.0	0.4	45.8	0.0	2.1	8.9	0.0
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	448	481	185	210	185	210	596	2177	200	2177	200	2177
V/C Ratio(X)	1.08	0.58	0.71	0.66	0.71	0.66	0.03	0.78	0.41	0.25	0.41	0.25
Avail Cap(c, a), veh/h	448	949	290	786	290	786	623	2177	227	2177	227	2177
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(f)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	56.5	52.6	0.0	60.5	59.8	0.0	8.1	18.3	0.0	19.3	11.2	0.0
Incr Delay (d2), s/veh	67.0	1.1	0.0	4.9	3.5	0.0	0.0	2.8	0.0	1.3	0.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	17.7	7.8	0.0	4.1	4.2	0.0	0.3	25.7	0.0	2.1	6.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	123.5	53.7	0.0	65.4	63.3	0.0	8.1	21.1	0.0	20.6	11.5	0.0
LnGrp LOS	F	D	E	E	E	A	C	C	A	C	B	B
Approach Vol, veh/h	764											
Approach Delay, s/veh	98.1											
Approach LOS	F											
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	85.3	12.0	22.7	10.0	85.3	22.0	12.7				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	57.0	11.0	35.0	7.0	57.0	17.0	29.0				
Max Q Clear Time (g, c+1), s	4.1	47.8	6.9	11.6	2.4	10.9	19.0	7.0				
Green Ext Time (p, c), s	0.0	7.1	0.1	1.8	0.0	4.2	0.0	0.8				
Intersection Summary												
HCM 6th Ctrl Delay	40.5											
HCM 6th LOS	D											
Notes	Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.											

2024 AM Peak NOBUILD Conditions - Existing Geometry
Synchro 10 Report
2024ANX.syn

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	213	120	49	48	128	35	1503	38	50	556
Future Volume (vph)	213	120	49	48	128	35	1503	38	50	556
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	4	4	8	8	5	2	2	6	6	6
Permitted Phases	4	4	8	8	5	2	2	6	6	6
Detector Phase	4	4	8	8	5	2	2	6	6	6
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Minimum Split (s)	43.0	43.0	43.0	43.0	16.0	71.0	16.0	71.0	71.0	71.0
Total Split (%)	33.1%	33.1%	33.1%	33.1%	12.3%	54.6%	12.3%	54.6%	54.6%	54.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	28.0	28.0	28.0	28.0	86.6	80.2	80.2	87.5	80.6	80.6
Actuated g/C Ratio	0.22	0.22	0.22	0.22	0.67	0.62	0.62	0.67	0.62	0.62
v/c Ratio	0.80	0.28	0.23	0.07	0.31	0.07	0.75	0.04	0.30	0.28
Control Delay	68.0	24.6	41.8	37.6	7.5	7.8	22.2	1.9	9.0	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.0	24.6	41.8	37.6	7.5	7.8	22.2	1.9	9.0	10.3
LOS	E	C	D	D	A	A	C	A	A	B
Approach Delay	47.0	21.4			21.4				9.8	
Approach LOS	D	C			C				A	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	213	120	79	49	48	128	35	1503	38	50	556	54
Future Volume (veh/h)	213	120	79	49	48	128	35	1503	38	50	556	54
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/in	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	229	129	85	53	52	0	38	1616	0	54	598	58
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	315	431	266	229	725		561	2258		228	2258	1007
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.00	0.04	0.64	0.00	0.04	0.64	0.64
Sat Flow, veh/h	1342	2094	1291	1158	3526	1572	1767	3526	1572	1767	3526	1572
Grip Volume(v), veh/h	229	107	107	53	52	0	38	1616	0	54	598	58
Grip Sat Flow(s)/veh/h	1342	1763	1623	1158	1763	1572	1767	1763	1572	1767	1763	1572
Q Serve(g, s), s	21.6	6.7	7.3	5.3	1.5	0.0	0.9	39.6	0.0	1.3	9.5	1.8
Cycle Q Clear(g, c), s	23.1	6.7	7.3	12.6	1.5	0.0	0.9	39.6	0.0	1.3	9.5	1.8
Prop In Lane	1.00	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grip Cap(c), veh/h	315	363	334	229	725		561	2258		228	2258	1007
V/C Ratio(X)	0.73	0.30	0.32	0.23	0.07	0.07	0.72	0.72	0.24	0.26	0.06	0.06
Avail Cap(c, a), veh/h	432	515	474	329	1031		642	2258		309	2258	1007
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(i)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.9	43.7	43.9	49.2	41.6	0.0	7.2	15.5	0.0	14.2	10.1	8.7
Incr Delay (d2), s/veh	3.9	0.4	0.5	0.5	0.0	0.0	0.1	2.0	0.0	0.5	0.3	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%) veh/h	12.1	5.4	5.4	2.8	1.2	0.0	0.6	22.2	0.0	1.0	6.7	1.1
Unsig. Movement Delay, s/veh	54.8	44.1	44.4	49.8	41.7	0.0	7.3	17.5	0.0	14.7	10.4	8.8
LnGrip Delay(d), s/veh	54.8	44.1	44.4	49.8	41.7	0.0	7.3	17.5	0.0	14.7	10.4	8.8
LnGrip LOS	D	D	D	D	D	D	A	B	A	B	B	A
Approach Vol, veh/h	443			105				1654				710
Approach Delay, s/veh	49.7			45.7				17.3				10.6
Approach LOS	D			D				B				B
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	88.3		31.7	10.0	88.3		31.7				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	11.0	66.0		38.0	11.0	66.0		38.0				
Max Q Clear Time (g, c+11), s	3.3	41.6		25.1	2.9	11.5		14.6				
Green Ext Time (p, c), s	0.0	14.4		1.6	0.0	5.0		0.4				
Intersection Summary												
HCM 6th Ctrl Delay				21.6								
HCM 6th LOS				C								
Notes												
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

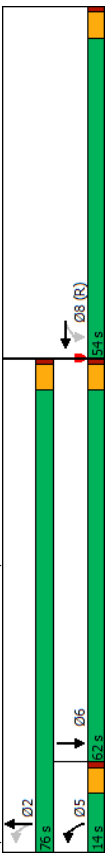
Timings

5: 98th St. & I-40 N. Ramp

Terry O. Brown, PE

04/23/2019

Lane Group	WBL	WBT	NBL	NBT	SBT
Lane Configurations	↔	↔	↔	↔	↔
Traffic Volume (vph)	479	1	82	588	559
Future Volume (vph)	479	1	82	588	559
Turn Type	Perm	NA	pm+pt	NA	NA
Protected Phases	8	5	2	2	6
Permitted Phases	8	8	5	2	6
Detector Phase	8	8	5	2	6
Switch Phase	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	21.0	21.0	10.0	21.0	21.0
Minimum Split (s)	54.0	54.0	14.0	76.0	62.0
Total Split (s)	41.5%	41.5%	10.8%	58.5%	47.7%
Total Split (%)	4.0	4.0	4.0	4.0	4.0
Yellow Time (s)	1.0	1.0	1.0	1.0	1.0
All-Red Time (s)	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	5.0	5.0	5.0	5.0	5.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?					
Recall Mode	C-Max	C-Max	Min	Max	Max
Act Effct Green (s)	49.0	49.0	71.0	71.0	58.0
Actuated g/C Ratio	0.38	0.38	0.55	0.55	0.45
v/c Ratio	0.40	0.40	0.20	0.32	0.26
Control Delay	32.1	32.1	8.4	10.5	23.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	32.1	32.1	8.4	10.5	23.1
LOS	C	C	A	B	C
Approach Delay	32.1	32.1	10.2	23.1	
Approach LOS	C	C	B	C	
Intersection Summary					
Cycle Length: 130					
Actuated Cycle Length: 130					
Offset: 128.7 (99%), Referenced to phase 8:WBL, Start of Green					
Natural Cycle: 55					
Control Type: Actuated-Coordinated					
Maximum v/c Ratio: 0.40					
Intersection Signal Delay: 20.6					
Intersection Capacity Utilization 111.6%					
ICU Level of Service H					
Analysis Period (min) 15					



HCM 6th Signalized Intersection Summary

5: 98th St. & I-40 N. Ramp

Terry O. Brown, PE

04/23/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	479	1	0	82	588	0	0	559	1
Future Volume (veh/h)	0	0	0	479	1	0	82	588	0	0	559	1
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/in				1856	1856	0	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				500	0	0	85	612	0	0	582	1
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh. %				3	3	0	3	3	0	0	3	3
Cap. veh/h				1332	699	0	457	1925	0	0	2443	4
Arrive On Green				0.38	0.00	0.00	0.04	0.55	0.00	0.00	0.47	0.47
Sat Flow, veh/h				3534	1856	0	1767	3618	0	0	5389	9
Gp Volume(v), veh/h				500	0	0	85	612	0	0	376	207
Gp Sat Flow(s), veh/h/in				1767	1856	0	1767	1763	0	0	1689	1854
Q Serve(g.s), s				13.3	0.0	0.0	3.1	12.4	0.0	0.0	8.7	8.7
Cycle Q Clear(g.c), s				13.3	0.0	0.0	3.1	12.4	0.0	0.0	8.7	8.7
Prop In Lane				1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Lane Gp Cap(c), veh/h				1332	699	0	457	1925	0	0	1580	867
V/C Ratio(X)				0.38	0.00	0.00	0.19	0.32	0.00	0.00	0.24	0.24
Avail Cap(c.a), veh/h				1332	699	0	509	1925	0	0	1580	867
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				29.4	0.0	0.0	16.0	16.2	0.0	0.0	20.7	20.7
Incr Delay (d2), s/veh				0.8	0.0	0.0	0.2	0.4	0.0	0.0	0.4	0.6
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/h				9.8	0.0	0.0	2.3	8.8	0.0	0.0	6.4	7.1
Unsig. Movement Delay, s/veh				30.2	0.0	0.0	16.2	16.6	0.0	0.0	21.1	21.4
LnGp Delay(d), s/veh				C	A	A	B	B	A	A	C	C
LnGp LOS				C	A	A	B	B	A	A	C	C
Approach Vol, veh/h				500				697			583	
Approach Delay, s/veh				30.2				16.6			21.2	
Approach LOS				C				B			C	
Timer - Assigned Phs				2		5	6	8				
Phs Duration (G+Y+Rc), s				76.0		10.2	65.8	54.0				
Change Period (Y+Rc), s				5.0		5.0	5.0	5.0				
Max Green Setting (Gmax), s				71.0		9.0	57.0	49.0				
Max Q Clear Time (g_c+1), s				14.4		5.1	10.7	15.3				
Green Ext Time (p_c), s				4.9		0.1	4.2	1.9				
Intersection Summary												
HCM 6th Ctrl Delay				21.9								
HCM 6th LOS				C								
Notes												
User approved volume balancing among the lanes for turning movement.												

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	1	0	626	842	0
Future Vol, veh/h	21	1	0	626	842	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	24	1	0	728	979	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1343	490	-	0	-	0
Stage 1	979	-	-	-	-	-
Stage 2	364	-	-	-	-	-
Critical Hdwy	6.86	6.96	-	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	-	-	-	-
Pot Cap-1 Maneuver	142	521	0	-	-	0
Stage 1	322	-	0	-	-	0
Stage 2	671	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	142	521	-	-	-	-
Mov Cap-2 Maneuver	252	-	-	-	-	-
Stage 1	322	-	-	-	-	-
Stage 2	671	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	20.5	0		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT EBLn1		SBT			
Capacity (veh/h)	- 258		-			
HCM Lane V/C Ratio	- 0.099		-			
HCM Control Delay (s)	- 20.5		-			
HCM Lane LOS	- C		-			
HCM 95th %tile Q(veh)	- 0.3		-			

Intersection												
Int Delay, s/veh	2.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕	↗	↖	↕↕			↕	↗		↕↕	
Traffic Vol, veh/h	8	376	201	3	201	1	193	3	3	4	1	3
Future Vol, veh/h	8	376	201	3	201	1	193	3	3	4	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	0	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	8	396	212	3	212	1	203	3	3	4	1	3
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	213	0	0	608	0	0	525	631	198	435	843	107
Stage 1	-	-	-	-	-	-	412	412	-	219	219	-
Stage 2	-	-	-	-	-	-	113	219	-	216	624	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.23	-	-	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	1462	-	-	1152	-	-	*433	*394	*928	*502	297	*1020
Stage 1	-	-	-	-	-	-	*876	*767	-	*893	798	-
Stage 2	-	-	-	-	-	-	*962	*798	-	*876	606	-
Platoon blocked, %	1	-	-	1	-	-			1			1
Mov Cap-1 Maneuver	1462	-	-	1152	-	-	*427	*389	*928	*493	293	*1020
Mov Cap-2 Maneuver	-	-	-	-	-	-	*608	*531	-	*493	293	-
Stage 1	-	-	-	-	-	-	*868	*761	-	*885	795	-
Stage 2	-	-	-	-	-	-	*955	*795	-	*861	600	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.1			13.9			11.6		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	607	928	1462	-	-	1152	-	-	553			
HCM Lane V/C Ratio	0.34	0.003	0.006	-	-	0.003	-	-	0.015			
HCM Control Delay (s)	14	8.9	7.5	0	-	8.1	-	-	11.6			
HCM Lane LOS	B	A	A	A	-	A	-	-	B			
HCM 95th %tile Q(veh)	1.5	0	0	-	-	0	-	-	0			
Notes												
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon												

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	27	4	25	4	2	41	17	1690	17	7	622	9
Future Vol, veh/h	27	4	25	4	2	41	17	1690	17	7	622	9
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	-	-	-	-	-	-	150	-	-	130	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	28	4	26	4	2	43	18	1760	18	7	648	9

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1584	2481	329	2145	2476	889	657	0	0	1778	0	0
Stage 1	667	667	-	1805	1805	-	-	-	-	-	-	-
Stage 2	917	1814	-	340	671	-	-	-	-	-	-	-
Critical Hdwy	7.56	6.56	6.96	7.56	6.56	6.96	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	3.53	4.03	3.33	2.23	-	-	2.23	-	-
Pot Cap-1 Maneuver	*301	*51	*832	*253	*52	*377	*1244	-	-	*564	-	-
Stage 1	*785	*688	-	*356	*312	-	-	-	-	-	-	-
Stage 2	*356	*312	-	*785	*688	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	1	-	-	1	-	-
Mov Cap-1 Maneuver	*260	*49	*832	*236	*50	*377	*1244	-	-	*564	-	-
Mov Cap-2 Maneuver	*273	*209	-	*301	*211	-	-	-	-	-	-	-
Stage 1	*774	*680	-	*351	*308	-	-	-	-	-	-	-
Stage 2	*309	*308	-	*747	*680	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	16.3		16.7		0.1		0.1	
HCM LOS	C		C					

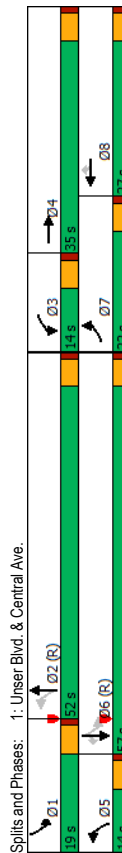
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	* 1244	-	-	378 357	* 564	-	-
HCM Lane V/C Ratio	0.014	-	-	0.154 0.137	0.013	-	-
HCM Control Delay (s)	7.9	-	-	16.3 16.7	11.5	-	-
HCM Lane LOS	A	-	-	C C	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5 0.5	0	-	-

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Timings
1: Unser Blvd. & Central Ave.
Terry O. Brown, PE
04/23/2019

HCM 6th Signalized Intersection Summary
1: Unser Blvd. & Central Ave.

Lane Group									
EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
	305	414	47	167	90	32	1476	106	456
	Future Volume (vph)								
305	414	47	167	90	32	1476	106	456	108
Future Volume (vph)									
Prot	NA	Prot	NA	Perm	pm-pt	NA	pm-pt	NA	Perm
Protected Phases									
7	4	3	8	8	5	2	1	6	
Permitted Phases									
7	4	3	8	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)									
5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)									
10.0	21.0	10.0	21.0	21.0	10.0	21.0	10.0	21.0	21.0
Total Split (s)									
22.0	35.0	14.0	27.0	27.0	14.0	52.0	19.0	57.0	57.0
Total Split (%)									
18.3%	29.2%	11.7%	22.5%	22.5%	11.7%	43.3%	15.8%	47.5%	47.5%
Yellow Time (s)									
4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)									
1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)									
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)									
5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead-Lag									
Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?									
Recall Mode									
Min	Min	Min	Min	Min	Min	C-Max	Min	C-Max	C-Max
15.7	22.3	8.0	14.6	14.6	66.7	60.2	72.5	63.2	63.2
Act Effrd Green (s)									
0.13	0.19	0.07	0.12	0.12	0.56	0.50	0.60	0.53	0.53
Actuated g/C Ratio									
0.75	0.74	0.44	0.43	0.30	0.08	1.02	0.57	0.51	0.13
v/c Ratio									
62.2	53.7	65.4	51.1	3.5	11.2	57.5	29.7	22.1	1.5
Control Delay									
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay									
62.2	53.7	65.4	51.1	3.5	11.2	57.5	29.7	22.1	1.5
Total Delay									
E	D	E	D	A	B	E	C	C	A
LOS									
Approach Delay									
57.2	39.2			D	56.6			20.0	
Intersection LOS									
E									
C									
Intersection Summary									
Cycle Length: 120									
Actuated Cycle Length: 120									
Offset: 117.8 (96%), Referenced to phase 2/NBTL and 6/SBTL, Start of Green									
Natural Cycle 100									
Control Type: Actuated-Coordinated									
Maximum v/c Ratio: 1.02									
Intersection Signal Delay: 47.9									
Intersection Capacity Utilization 84.8%									
Analysis Period (min): 15									
Intersection LOS: D									
ICU Level of Service E									



2024 AM Peak BUILD Conditions - Existing Geometry

2024 AM Peak BUILD Conditions - Existing Geometry

	EBT	WBL	WBT	NBL	NBR	
Lane Group	EBT	WBL	WBT	NBL	NBR	
Lane Configurations	↔↔	↔	↔↔	↔	↔	
Traffic Volume (vph)	471	80	168	38	310	
Future Volume (vph)	NA	80	168	38	310	
Turn Type	NA	pm+pt	NA	Prot	pm+ov	
Protected Phases	4	3	8	2	3	
Permitted Phases	4	3	8	2	3	
Detector Phase	4	3	8	2	3	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	21.0	10.0	21.0	21.0	10.0	
Total Split (s)	55.0	19.0	74.0	46.0	19.0	
Total Split (%)	45.8%	15.8%	61.7%	38.3%	15.8%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lead			Lead	
Lead-Lag Optimize?						
Recall Mode	C-Max	Min	C-Max	Min	Min	
Act Effct Green (s)	88.3	101.8	101.8	8.2	21.7	
Actuated g/C Ratio	0.74	0.85	0.85	0.07	0.18	
v/c Ratio	0.19	0.11	0.06	0.34	0.89	
Control Delay	5.6	1.9	1.1	60.0	21.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	5.6	1.9	1.1	60.0	21.2	
LOS	A	A	A	E	C	
Approach Delay	5.6		1.4	25.4		
Approach LOS	A		A	C		
Intersection Summary						
Cycle Length: 120						
Actuated Cycle Length: 120						
Offset: 93.6 (78%), Referenced to phase 4:EBT and 8:WBL, Start of Green						
Natural Cycle: 55						
Control Type: Actuated-Coordinated						
Maximum v/c Ratio: 0.69						
Intersection Signal Delay: 11.1						
Intersection Capacity Utilization 40.7%						
Analysis Period (min) 15						
Splits and Phases: 2: 86th St. & Central Ave.						
	02	03	04	05	06	
	56.5	19.5	55.5	74.5		

	EBT	EBR	WBL	WBT	NBL	NBR	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	↔↔	↔	↔	↔↔	↔	↔	
Traffic Volume (veh/h)	471	4	80	168	38	310	
Future Volume (veh/h)	471	4	80	168	38	310	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No	No	No	No	No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	
Adj Flow Rate, veh/h	496	4	84	177	40	326	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	
Percent Heavy Veh. %	3	3	3	3	3	3	
Cap. veh/h	2201	18	625	2459	388	410	
Arrive On Green	0.61	0.61	0.08	1.00	0.22	0.22	
Sat Flow, veh/h	3677	29	1767	3618	1767	1572	
Grip Volume(v), veh/h	244	256	84	177	40	326	
Grip Sat Flow(s),veh/h/ln	1763	1850	1767	1763	1767	1572	
Q Serve(g.s), s	7.4	7.4	2.0	0.0	2.2	23.2	
Cycle Q Clear(g.c), s	7.4	7.4	2.0	0.0	2.2	23.2	
Prop In Lane	0.02	1.00			1.00	1.00	
Lane Grip Cap(c), veh/h	1062	1136	625	2459	388	410	
V/C Ratio(X)	0.23	0.23	0.13	0.07	0.10	0.79	
Avail Cap(c.a), veh/h	1062	1136	758	2459	604	603	
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00	
Upstream Filter(l)	1.00	1.00	0.97	0.97	1.00	1.00	
Uniform Delay (d), s/veh	10.4	10.4	6.9	0.0	37.4	41.3	
Incr Delay (d2), s/veh	0.5	0.5	0.1	0.1	0.1	4.5	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(95%),veh/ln	5.3	5.6	1.2	0.0	1.7	14.5	
Unsig. Movement Delay, s/veh							
LnGrip Delay(d),s/veh	10.9	10.8	7.0	0.1	37.5	45.9	
LnGrip LOS	B	B	A	A	D	D	
Approach Vol, veh/h	500			261	366		
Approach Delay, s/veh	10.8			2.3	45.0		
Approach LOS	B			A	D		
Timer - Assigned Phs	2	3	4			8	
Phs Duration (G+Y+Rc), s	31.3	10.0	78.7			88.7	
Change Period (Y+Rc), s	5.0	5.0	5.0			5.0	
Max Green Setting (Gmax), s	41.0	14.0	50.0			69.0	
Max Q Clear Time (g_c+1), s	25.2	4.0	9.4			2.0	
Green Ext Time (p_c), s	1.1	0.1	3.3			1.3	
Intersection Summary							
HCM 6th Ctrl Delay			19.9				
HCM 6th LOS			B				

Timings
3: 98th St. & Central Ave.

HCM 6th Signalized Intersection Summary
3: 98th St. & Central Ave.

Terry O. Brown, PE
04/23/2019

2024 AM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report
2024ABX.syn

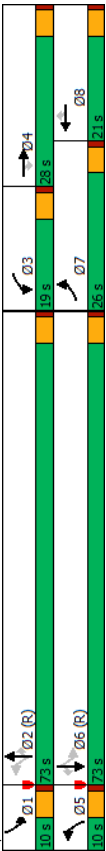
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	←	←	←	←	←	←	←	←	←	←	←	←
Traffic Volume (vph)	471	315	20	208	116	215	28	1617	174	76	564	129
Future Volume (vph)	471	315	20	208	116	215	28	1617	174	76	564	129
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	7	4	4	4	3	8	8	2	2	2	6	6
Detector Phase												
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	21.0	10.0	21.0	21.0	10.0	21.0	21.0	10.0	21.0	21.0
Total Split (s)	22.0	40.0	40.0	16.0	34.0	34.0	12.0	62.0	62.0	12.0	62.0	62.0
Total Lost Time (s)	16.9%	30.8%	12.3%	26.2%	9.2%	47.7%	9.2%	47.7%	47.7%	9.2%	47.7%	47.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	17.0	20.2	10.9	14.1	14.1	77.1	70.8	70.8	80.7	72.6	72.6	72.6
Actuated g/C Ratio	0.13	0.16	0.16	0.08	0.11	0.11	0.59	0.54	0.54	0.62	0.56	0.56
v/c Ratio	1.13	0.61	0.06	0.78	0.32	0.77	0.06	0.90	0.20	0.49	0.30	0.15
Control Delay	133.0	55.5	0.3	77.4	54.1	38.2	15.8	37.7	11.8	35.4	16.5	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	133.0	55.5	0.3	77.4	54.1	38.2	15.8	37.7	11.8	35.4	16.5	5.6
LOS	F	E	A	E	D	D	B	D	B	D	B	A
Approach Delay												
Approach LOS												
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 39 (30%), Referenced to phase 2:NBT and 6:SBTL - Start of Green												
Natural Cycle: 110												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 1.13												
Intersection Signal Delay: 47.6												
Intersection Capacity Utilization 83.9%												
Analysis Period (min) 15												
Splits and Phases: 3: 98th St. & Central Ave.												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	←	←	←	←	←	←	←	←	←	←	←	←
Traffic Volume (veh/h)	471	315	20	208	116	215	28	1617	174	76	564	129
Future Volume (veh/h)	471	315	20	208	116	215	28	1617	174	76	564	129
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	501	335	0	221	123	0	30	1720	0	81	589	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	448	436	272	254	254	555	2132	187	2132	187	2132	187
Arrive On Green	0.13	0.12	0.00	0.08	0.07	0.00	0.04	0.60	0.00	0.04	0.60	0.00
Sat Flow, veh/h	3428	3526	1572	3428	3526	1572	1767	3526	1572	1767	3526	1572
Grip Volume(v), veh/h	501	335	0	221	123	0	30	1720	0	81	589	0
Grip Sat Flow(s), veh/h/ln	1714	1763	1572	1714	1763	1572	1767	1763	1572	1767	1763	1572
Q Serve(g, s), s	17.0	12.0	0.0	8.2	4.4	0.0	0.8	48.9	0.0	2.2	10.3	0.0
Cycle Q Clear(g, c), s	17.0	12.0	0.0	8.2	4.4	0.0	0.8	48.9	0.0	2.2	10.3	0.0
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grip Cap(c), veh/h	448	436	272	254	254	555	2132	187	2132	187	2132	187
V/C Ratio(X)	1.12	0.77	0.81	0.81	0.48	0.05	0.81	0.43	0.28	0.43	0.28	0.28
Avail Cap(c, a), veh/h	448	949	290	786	786	582	2132	215	2132	215	2132	215
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.5	55.2	0.0	58.9	58.0	0.0	8.8	19.8	0.0	21.6	12.2	0.0
Incr Delay (d2), s/veh	78.6	2.9	0.0	15.3	1.4	0.0	3.4	0.0	1.6	0.3	0.0	0.0
Incr Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	18.9	9.3	0.0	7.5	3.6	0.0	0.6	27.5	0.0	2.3	7.4	0.0
Unsig. Movement Delay, s/veh	135.1	58.1	0.0	74.2	59.4	0.0	8.9	23.2	0.0	23.2	12.5	0.0
LnGrip Delay(d), s/veh	F	E	E	E	E	A	C	C	C	C	B	B
LnGrip LOS												
Approach Vol, veh/h	836	A	A	344	A	1750	A	670	A	670	A	A
Approach Delay, s/veh	104.2	F	F	68.9	E	23.0	C	13.8	C	13.8	C	C
Approach LOS												
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	83.6	15.3	21.1	10.0	83.6	22.0	14.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	57.0	11.0	35.0	7.0	57.0	17.0	29.0				
Max Q Clear Time (g, c+11), s	4.2	50.9	10.2	14.0	2.8	12.3	19.0	6.4				
Green Ext Time (p, c), s	0.0	5.0	0.1	2.1	0.0	4.6	0.0	0.7				
Intersection Summary												
HCM 6th Ctrl Delay												
HCM 6th LOS												
Notes												
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

2024 AM Peak BUILD Conditions - Existing Geometry
Synchro 10 Report
2024ABX.syn

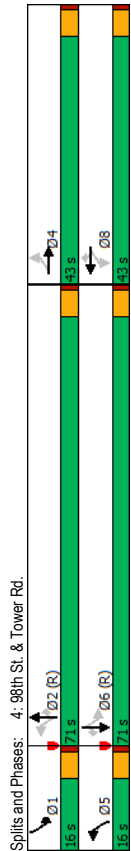
2024 AM Peak BUILD Conditions - Existing Geometry
Synchro 10 Report
2024ABX.syn

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	471	315	20	208	116	215	28	1617	174	76	564
Future Volume (vph)	471	315	20	208	116	215	28	1617	174	76	564
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	7	4		3	8		5	2		1	6
Permitted Phases	7	4	4	4	3	8	8	2	2	6	6
Detector Phase	7	4	4	4	3	8	8	5	2	1	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	21.0	10.0	21.0	21.0	10.0	21.0	21.0	10.0	21.0
Total Split (s)	26.0	28.0	28.0	19.0	21.0	21.0	10.0	73.0	73.0	10.0	73.0
Total Split (%)	20.0%	21.5%	21.5%	14.6%	16.2%	16.2%	7.7%	56.2%	56.2%	7.7%	56.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	20.8	20.5	12.8	12.5	76.0	70.5	70.5	77.5	71.2	71.2	71.2
Actuated g/C Ratio	0.16	0.16	0.16	0.10	0.10	0.58	0.54	0.54	0.60	0.55	0.55
v/c Ratio	0.92	0.61	0.06	0.66	0.37	0.82	0.06	0.91	0.20	0.58	0.31
Control Delay	77.2	55.7	0.3	66.4	57.2	44.9	14.6	32.6	8.6	44.7	19.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.2	55.7	0.3	66.4	57.2	44.9	14.6	32.6	8.6	44.7	19.1
LOS	E	E	A	E	E	D	B	C	A	D	B
Approach Delay	66.9										19.5
Approach LOS	E							C			B
Intersection Summary											
Cycle Length: 130											
Actuated Cycle Length: 130											
Offset: 39 (30%), Referenced to phase 2:NBL and 6:SBLT - Start of Green											
Natural Cycle: 110											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.92											
Intersection Signal Delay: 39.1											
Intersection Capacity Utilization 83.9%											
Analysis Period (min) 15											



Mitigation Recommendation - optimize signal timing splits

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	229	120	49	48	170	35	1602	38	86	639
Future Volume (vph)	229	120	49	48	170	35	1602	38	86	639
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	4	4	8	8	5	2	2	6	6	6
Permitted Phases	4	4	8	8	5	2	2	6	6	6
Detector Phase	4	4	8	8	5	2	2	6	6	6
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Minimum Split (s)	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0
Total Split (s)	33.1%	33.1%	33.1%	33.1%	33.1%	33.1%	33.1%	33.1%	33.1%	33.1%
Total Split (%)	33.1%	33.1%	33.1%	33.1%	33.1%	33.1%	33.1%	33.1%	33.1%	33.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
Recall Mode	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2
Act Effct Green (s)	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Actuated g/C Ratio	0.83	0.27	0.22	0.07	0.38	0.08	0.82	0.04	0.55	0.32
v/c Ratio	69.3	24.0	40.7	36.8	9.5	8.3	26.9	2.0	31.1	10.9
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	69.3	24.0	40.7	36.8	9.5	8.3	26.9	2.0	31.1	10.9
Total Delay	E	C	D	D	A	A	C	A	C	B
LOS	48.2	20.2	C	C	C	C	C	C	C	B
Approach Delay	D	D	C	C	C	C	C	C	C	B
Approach LOS	D	D	C	C	C	C	C	C	C	B
Intersection Summary										
Cycle Length: 130										
Actuated Cycle Length: 130										
Offset: 5.2 (4%), Referenced to Phase 2:NBT and 6:SBTL Start of Green										
Natural Cycle: 80										
Control Type: Actuated-Coordinated										
Maximum v/c Ratio: 0.83										
Intersection Signal Delay: 25.1										
Intersection Capacity Utilization 82.6%										
Analysis Period (min) 15										



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	229	120	79	49	48	170	35	1602	38	86	639	68
Future Volume (veh/h)	229	120	79	49	48	170	35	1602	38	86	639	68
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/in	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	246	129	85	53	52	0	38	1723	0	92	687	73
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	332	456	281	244	767	500	2216	200	2216	988	687	73
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.00	0.04	0.63	0.00	0.04	0.63	0.63
Sat Flow, veh/h	1342	2094	1231	1158	3526	1572	1767	3526	1572	1767	3526	1572
Grip Volume(v), veh/h	246	107	107	53	52	0	38	1723	0	92	687	73
Grip Sat Flow(s), veh/h/in	1342	1763	1623	1158	1763	1572	1767	1763	1572	1767	1763	1572
Q Serve(g, s), s	23.2	6.6	7.2	5.2	1.5	0.0	1.0	46.2	0.0	2.4	11.7	2.4
Cycle Q Clear(g, c), s	24.7	6.6	7.2	12.4	1.5	0.0	1.0	46.2	0.0	2.4	11.7	2.4
Prop In Lane	1.00	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	332	384	353	244	767	500	2216	200	2216	988	687	73
V/C Ratio(X)	0.74	0.28	0.30	0.22	0.07	0.08	0.78	0.46	0.31	0.07	0.63	0.07
Avail Cap(c, a), veh/h	432	515	474	330	1031	582	2216	281	2216	988	687	73
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.2	42.4	42.6	47.8	40.4	0.0	7.9	17.5	0.0	19.8	11.1	9.4
Incr Delay (d2), s/veh	4.9	0.4	0.5	0.4	0.0	0.0	0.1	2.8	0.0	1.6	0.4	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/in	12.9	5.3	5.3	2.8	1.2	0.0	0.7	25.7	0.0	2.6	8.1	1.5
Unsig. Movement Delay, s/veh	55.1	42.8	43.1	48.2	40.4	0.0	8.0	20.3	0.0	21.5	11.5	9.5
LnGrp Delay(d),s/veh	E	D	D	D	D	A	C	C	B	A	B	A
LnGrp LOS	460	460	460	460	460	105	A	1761	A	852	12.4	12.4
Approach Vol, veh/h	460	460	460	460	460	460	460	460	460	460	460	460
Approach Delay, s/veh	49.4	49.4	49.4	49.4	49.4	49.4	49.4	49.4	49.4	49.4	49.4	49.4
Approach LOS	D	D	D	D	D	D	C	C	B	B	B	B
Timer - Assigned Phs	1	2	4	5	6	8						
Phs Duration (G+Y+Rc), s	10.0	86.7	33.3	10.0	86.7	33.3						
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0						
Max Green Setting (Gmax), s	11.0	66.0	38.0	11.0	66.0	38.0						
Max Q Clear Time (g, c+11), s	4.4	48.2	26.7	3.0	13.7	14.4						
Green Ext Time (p, c), s	0.1	12.4	1.6	0.0	5.9	0.4						
Intersection Summary												
HCM 6th Ctrl Delay	23.0											
HCM 6th LOS	C											
Notes												

Timings
5: 98th St. & I-40 N. Ramp

Terry O. Brown, PE
04/23/2019

Lane Group	WBL	WBT	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	482	1	85	622	599
Future Volume (vph)	482	1	85	622	599
Turn Type	Perm	NA	pin+pt	NA	NA
Protected Phases		8	5	2	6
Permitted Phases	8	8	2		
Detector Phase	8	8	5	2	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	10.0	21.0	21.0
Total Split (s)	54.0	54.0	14.0	76.0	62.0
Total Split (%)	41.5%	41.5%	10.8%	58.5%	47.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead				
Lead-Lag Optimize?	Lag				
Recall Mode	C-Max	C-Max	Min	Max	Max
Act Effct Green (s)	49.0	49.0	71.0	71.0	57.9
Actuated g/C Ratio	0.38	0.38	0.55	0.55	0.45
v/c Ratio	0.40	0.40	0.22	0.34	0.28
Control Delay	32.1	32.1	8.5	10.7	23.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	32.1	32.1	8.5	10.7	23.4
LOS	C	C	A	B	C
Approach Delay		32.1		10.4	23.4
Approach LOS		C		B	C
Intersection Summary					
Cycle Length: 130					
Actuated Cycle Length: 130					
Offset: 128.7 (99%) Referenced to phase 8:WBT, Start of Green					
Natural Cycle 55					
Control Type: Actuated-Coordinated					
Maximum v/c Ratio: 0.40					
Intersection Signal Delay: 20.6					
Intersection Capacity Utilization 111.9%					
Analysis Period (min) 15					
				Intersection LOS: C	
				ICU Level of Service H	



HCM 6th Signalized Intersection Summary
5: 98th St. & I-40 N. Ramp

Terry O. Brown, PE
04/23/2019

[illegible]

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	4	0	661	885	0
Future Vol, veh/h	21	4	0	661	885	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	24	5	0	769	1029	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1414	515	-	0	-	0
Stage 1	1029	-	-	-	-	-
Stage 2	385	-	-	-	-	-
Critical Hdwy	6.86	6.96	-	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	-	-	-	-
Pot Cap-1 Maneuver	127	502	0	-	-	0
Stage 1	303	-	0	-	-	0
Stage 2	654	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	127	502	-	-	-	-
Mov Cap-2 Maneuver	236	-	-	-	-	-
Stage 1	303	-	-	-	-	-
Stage 2	654	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	20.7	0		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT EBLn1		SBT			
Capacity (veh/h)	- 258		-			
HCM Lane V/C Ratio	- 0.113		-			
HCM Control Delay (s)	- 20.7		-			
HCM Lane LOS	- C		-			
HCM 95th %tile Q(veh)	- 0.4		-			

Intersection												
Int Delay, s/veh	2.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕	↗	↖	↕↕			↗	↖		↕↕	
Traffic Vol, veh/h	8	420	208	3	254	0	201	3	3	4	1	3
Future Vol, veh/h	8	420	208	3	254	0	201	3	3	4	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	0	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	8	442	219	3	267	0	212	3	3	4	1	3
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	267	0	0	661	0	0	598	731	221	512	950	134
Stage 1	-	-	-	-	-	-	458	458	-	273	273	-
Stage 2	-	-	-	-	-	-	140	273	-	239	677	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.23	-	-	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	1447	-	-	1132	-	-	*384	*345	*904	*443	257	*994
Stage 1	-	-	-	-	-	-	*853	*748	-	*891	792	-
Stage 2	-	-	-	-	-	-	*937	*792	-	*853	596	-
Platoon blocked, %	1	-	-	1	-	-			1			1
Mov Cap-1 Maneuver	1447	-	-	1132	-	-	*379	*341	*904	*435	254	*994
Mov Cap-2 Maneuver	-	-	-	-	-	-	*575	*503	-	*590	420	-
Stage 1	-	-	-	-	-	-	*846	*741	-	*883	790	-
Stage 2	-	-	-	-	-	-	*931	*790	-	*839	591	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.1			14.9			10.6		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	574	904	1447	-	-	1132	-	-	657			
HCM Lane V/C Ratio	0.374	0.003	0.006	-	-	0.003	-	-	0.013			
HCM Control Delay (s)	15	9	7.5	0	-	8.2	-	-	10.6			
HCM Lane LOS	C	A	A	A	-	A	-	-	B			
HCM 95th %tile Q(veh)	1.7	0	0	-	-	0	-	-	0			
Notes												
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon												

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	27	4	58	4	2	60	56	1808	17	23	721	9
Future Vol, veh/h	27	4	58	4	2	60	56	1808	17	23	721	9
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	-	-	-	-	-	-	150	-	-	130	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	28	4	60	4	2	63	58	1883	18	24	751	9

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1863	2821	380	2434	2816	951	760	0	0	1901	0	0
Stage 1	804	804	-	2008	2008	-	-	-	-	-	-	-
Stage 2	1059	2017	-	426	808	-	-	-	-	-	-	-
Critical Hdwy	7.56	6.56	6.96	7.56	6.56	6.96	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	3.53	4.03	3.33	2.23	-	-	2.23	-	-
Pot Cap-1 Maneuver	*298	*10	*785	*51	*10	*329	*1173	-	-	*492	-	-
Stage 1	*740	*649	-	*311	*272	-	-	-	-	-	-	-
Stage 2	*311	*272	-	*740	*649	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	1	-	-	1	-	-
Mov Cap-1 Maneuver	*221	*9	*785	*43	*9	*329	*1173	-	-	*492	-	-
Mov Cap-2 Maneuver	*194	*159	-	*197	*165	-	-	-	-	-	-	-
Stage 1	*704	*617	-	*295	*259	-	-	-	-	-	-	-
Stage 2	*237	*259	-	*646	*617	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	17.8		20.1		0.2		0.4	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	* 1173	-	-	374	307	* 492	-
HCM Lane V/C Ratio	0.05	-	-	0.248	0.224	0.049	-
HCM Control Delay (s)	8.2	-	-	17.8	20.1	12.7	-
HCM Lane LOS	A	-	-	C	C	B	-
HCM 95th %tile Q(veh)	0.2	-	-	1	0.8	0.2	-

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	105	93	160	1749	615	153
Future Vol, veh/h	105	93	160	1749	615	153
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	167
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	112	99	170	1861	654	163
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1925	327	817	0	-	0
Stage 1	654	-	-	-	-	-
Stage 2	1271	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	*133	*832	1078	-	-	-
Stage 1	*786	-	-	-	-	-
Stage 2	*334	-	-	-	-	-
Platoon blocked, %	1	1	1	-	-	-
Mov Cap-1 Maneuver	*112	*832	1078	-	-	-
Mov Cap-2 Maneuver	*247	-	-	-	-	-
Stage 1	*662	-	-	-	-	-
Stage 2	*334	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	27		0.8		0	
HCM LOS	D					
Minor Lane/Major Mvmt		NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		1078	-	369	-	-
HCM Lane V/C Ratio		0.158	-	0.571	-	-
HCM Control Delay (s)		9	-	27	-	-
HCM Lane LOS		A	-	D	-	-
HCM 95th %tile Q(veh)		0.6	-	3.4	-	-
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↕↕	↕↗	
Traffic Vol, veh/h	0	68	0	1909	688	72
Future Vol, veh/h	0	68	0	1909	688	72
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	72	0	2031	732	77
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	405	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	*809	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %		1		-	-	-
Mov Cap-1 Maneuver	-	*809	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	9.9		0		0	
HCM LOS	A					
Minor Lane/Major Mvmt	NBT EBLn1		SBT		SBR	
Capacity (veh/h)	- 809		-		-	
HCM Lane V/C Ratio	- 0.089		-		-	
HCM Control Delay (s)	- 9.9		-		-	
HCM Lane LOS	- A		-		-	
HCM 95th %tile Q(veh)	- 0.3		-		-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	56	28	39	33	5
Future Vol, veh/h	6	56	28	39	33	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	6	60	30	41	35	5
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	71	0	-	0	123	51
Stage 1	-	-	-	-	51	-
Stage 2	-	-	-	-	72	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1523	-	-	-	870	1014
Stage 1	-	-	-	-	969	-
Stage 2	-	-	-	-	948	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1523	-	-	-	867	1014
Mov Cap-2 Maneuver	-	-	-	-	867	-
Stage 1	-	-	-	-	965	-
Stage 2	-	-	-	-	948	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.7	0		9.3		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1523	-	-	-	884	
HCM Lane V/C Ratio	0.004	-	-	-	0.046	
HCM Control Delay (s)	7.4	0	-	-	9.3	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

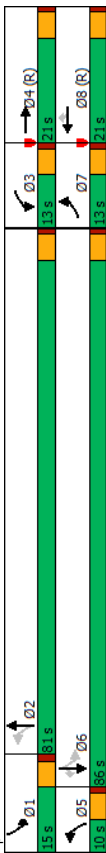
Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↱			↑↑		↱
Traffic Vol, veh/h	722	33	0	287	0	82
Future Vol, veh/h	722	33	0	287	0	82
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	768	35	0	305	0	87
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	402
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.33
Pot Cap-1 Maneuver	-	-	0	-	0	595
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	595
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		12.1	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	595	-	-	-		
HCM Lane V/C Ratio	0.147	-	-	-		
HCM Control Delay (s)	12.1	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile Q(veh)	0.5	-	-	-		

Timings
1: Unsers Blvd. & Central Ave.

Terry O. Brown, PE
04/23/2019

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔
Traffic Volume (vph)	177	390	97	373	62	68	1001	130	1083
Future Volume (vph)	177	390	97	373	62	68	1001	130	1083
Turn Type	Prot	NA	Prot	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8	5	2	1	6	6
Permitted Phases	7	4	3	8	8	5	2	1	6
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	21.0
Minimum Split (s)	13.0	21.0	13.0	21.0	10.0	81.0	15.0	86.0	86.0
Total Split (%)	10.0%	16.2%	10.0%	16.2%	7.7%	62.3%	11.5%	66.2%	66.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Min	C-Max	Max	C-Max	Min	Min	Min	Min	Min
Recall Mode	8.0	16.0	8.0	16.0	82.4	77.4	89.6	81.0	81.0
Act Effct Green (s)	0.06	0.12	0.06	0.12	0.63	0.60	0.69	0.62	0.62
Actuated g/C Ratio	0.89	1.04	0.95	0.91	0.23	0.58	0.46	0.99	0.15
v/c Ratio	96.9	106.1	135.5	82.4	4.7	34.8	17.5	11.5	49.5
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	96.9	106.1	135.5	82.4	4.7	34.8	17.5	11.5	49.5
Total Delay	F	F	F	F	A	C	B	B	A
Approach Delay	103.4	F	F	83.0	F	F	18.5	40.7	D
Approach LOS	F	F	F	F	B	B	B	B	D
Intersection Summary									
Cycle Length: 130									
Actuated Cycle Length: 130									
Offset: 10.4 (8%), Referenced to phase 4:EBT and 8:WBT, Start of Green									
Natural Cycle: 120									
Control Type: Actuated-Coordinated									
Maximum v/c Ratio: 1.04									
Intersection Signal Delay: 49.8									
Intersection Capacity Utilization 95.1%									
Analysis Period (min) 15									

Splits and Phases: 1: Unsers Blvd. & Central Ave.



2024 PM Peak NOBUILD Conditions - Existing Geometry
Synchro 10 Report
2024PNX.syn

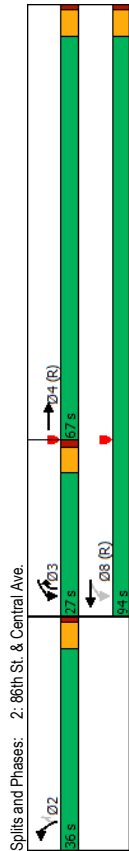
HCM 6th Signalized Intersection Summary
1: Unsers Blvd. & Central Ave.

Terry O. Brown, PE
04/23/2019

Movement	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔
Traffic Volume (veh/h)	177	390	97	373	62	68	1001	129	1083
Future Volume (veh/h)	177	390	97	373	62	68	1001	129	1083
Initial Q (Obs), veh	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/in	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	186	411	37	102	393	65	72	1054	136
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3
Cap, veh/h	211	406	36	109	438	195	132	1934	249
Arrive On Green	0.02	0.04	0.04	0.06	0.12	0.12	0.04	0.62	0.04
Sat Flow, veh/h	3428	3272	293	1767	1767	1767	3141	405	1767
Grip Volume(v), veh/h	186	221	102	393	65	72	591	599	137
Grip Sat Flow(s), veh/h/in	1714	1763	1803	1767	1763	1572	1767	1763	1767
Q Serve(g, s), s	7.0	16.1	16.1	7.5	14.3	4.9	1.9	25.2	25.3
Cycle Q Clear(g, c), s	7.0	16.1	16.1	7.5	14.3	4.9	1.9	25.2	25.3
Prop In Lane	1.00	0.16	1.00	1.00	1.00	1.00	0.23	1.00	1.00
Lane Grip Cap(c), veh/h	211	219	224	109	438	195	132	1085	1098
V/C Ratio(X)	0.88	1.01	1.02	0.94	0.33	0.55	0.54	0.55	0.41
Avail Cap(c, a), veh/h	211	219	224	109	438	195	132	1085	1098
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.98	0.98	0.98	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.2	62.3	62.3	60.8	52.0	32.6	14.4	14.5	11.6
Incr Delay (d2), s/veh	31.8	62.3	63.9	70.8	23.9	4.5	4.6	0.6	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/h	7.4	17.0	17.5	9.3	12.4	3.9	2.8	15.1	15.3
Unsig. Movement Delay, s/veh	95.0	124.7	126.2	131.5	80.0	56.6	37.2	15.0	12.4
LnGrip Delay(d), s/veh	F	F	F	F	E	E	D	B	B
LnGrip LOS	F	F	F	F	E	E	D	B	B
Approach Vol, veh/h	634	116.5	560	86.7	1262	163	402	1430	402
Approach Delay, s/veh	116.5	86.7	560	86.7	1262	163	402	1430	402
Approach LOS	F	F	F	F	E	E	D	B	B
Timer - Assigned Phs	1	2	3	4	5	6	7	8	
Phs Duration (G+Y+Rc), s	10.8	85.0	13.0	21.1	10.0	85.9	13.0	21.1	
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Max Green Setting (Gmax), s	10.0	76.0	8.0	16.0	5.0	81.0	8.0	16.0	
Max Q Clear Time (g, c+1), s	5.7	27.3	9.5	18.1	3.9	80.3	9.0	16.3	
Green Ext Time (p, c), s	0.1	11.1	0.0	0.0	0.0	0.6	0.0	0.0	
Intersection Summary									
HCM 6th Ctrl Delay	51.6								
HCM 6th LOS	D								

2024 PM Peak NOBUILD Conditions - Existing Geometry
Synchro 10 Report
2024PNX.syn

	EBT	WBL	WBT	NBL	NBR
Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Configurations	↔↔	↔	↔↔	↔	↔
Traffic Volume (vph)	373	158	315	34	175
Future Volume (vph)	373	158	315	34	175
Turn Type	NA	pm+pt	NA	Prot	pm+ov
Protected Phases	4	3	8	2	3
Permitted Phases		8	8	2	2
Detector Phase	4	3	8	2	3
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	10.0	21.0	21.0	10.0
Total Split (s)	67.0	27.0	94.0	36.0	27.0
Total Split (%)	51.5%	20.8%	72.3%	27.7%	20.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead			Lead
Lead-Lag Optimize?					
Recall Mode	C-Max	Min	C-Max	Min	Min
Act Effct Green (s)	99.4	111.9	111.9	8.1	20.6
Actuated g/C Ratio	0.76	0.86	0.86	0.06	0.16
v/c Ratio	0.16	0.20	0.11	0.33	0.46
Control Delay	4.4	2.2	0.6	65.5	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	4.4	2.2	0.6	65.5	10.1
LOS	A	A	A	E	B
Approach Delay	4.4		1.1	19.1	
Approach LOS	A		A	B	
Intersection Summary					
Cycle Length: 130					
Actuated Cycle Length: 130					
Offset: 76.7 (59%), Referenced to phase 4:EBT and 8:WBL, Start of Green					
Natural Cycle: 55					
Control Type: Actuated-Coordinated					
Maximum v/c Ratio: 0.46					
Intersection Signal Delay: 5.8					
Intersection Capacity Utilization 36.3%					
Analysis Period (min) 15					



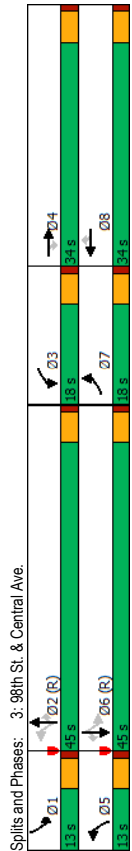
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔↔	↔	↔	↔↔	↔	↔
Traffic Volume (veh/h)	373	19	158	315	34	175
Future Volume (veh/h)	373	19	158	315	34	175
Initial Q (Ob), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	393	20	166	332	36	184
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	2429	123	783	2798	229	272
Arrive On Green	0.71	0.71	0.09	1.00	0.13	0.13
Sat Flow, veh/h	3507	173	1767	3618	1767	1572
Gp Volume(v), veh/h	202	211	166	332	36	184
Gp Sat Flow(s),veh/h/ln	1763	1824	1767	1763	1767	1572
Q Serve(g.s), s	4.9	4.9	3.3	0.0	2.4	14.2
Cycle Q Clear(g.c), s	4.9	4.9	3.3	0.0	2.4	14.2
Prop In Lane	0.09	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	1254	1298	783	2798	229	272
V/C Ratio(X)	0.16	0.16	0.21	0.12	0.16	0.68
Avail Cap(c,a), veh/h	1254	1298	1005	2798	421	444
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	0.67	0.67	1.00	1.00
Uniform Delay (d), s/veh	6.1	6.1	3.8	0.0	50.3	50.3
Incr Delay (d2), s/veh	0.3	0.3	0.1	0.1	0.3	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.3	3.4	1.7	0.0	1.9	9.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.4	6.4	3.9	0.1	50.6	53.3
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	413			498	220	
Approach Delay, s/veh	6.4			1.3	52.8	
Approach LOS	A			A	D	
Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		21.8	10.7	97.5		108.2
Change Period (Y+Rc), s		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s		31.0	22.0	62.0		89.0
Max Q Clear Time (g_c+1), s		16.2	5.3	6.9		2.0
Green Ext Time (p_c), s		0.6	0.4	2.7		2.5
Intersection Summary						
HCM 6th Ctrl Delay			13.2			
HCM 6th LOS			B			

Timings
3: 98th St. & Central Ave.

Terry O. Brown, PE
04/23/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Configurations	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Traffic Volume (vph)	207	204	39	290	215	149	35	801	158	116	1463
Future Volume (vph)	207	204	39	290	215	149	35	801	158	116	1463
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	7	4		3	8		5	2	2	6	6
Permitted Phases	7	4	4	3	8	8	5	2	2	1	6
Detector Phase											
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	21.0	10.0	21.0	21.0	10.0	21.0	21.0	10.0	21.0
Total Split (s)	18.0	34.0	34.0	18.0	34.0	34.0	13.0	45.0	45.0	13.0	45.0
Total Split (%)	16.4%	30.9%	30.9%	16.4%	30.9%	30.9%	11.8%	40.9%	40.9%	11.8%	40.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?											
Recall Mode	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	C-Max
Act Effct Green (s)	11.5	29.4	12.6	30.5	30.5	46.9	40.3	40.3	49.1	41.3	41.3
Actuated g/C Ratio	0.10	0.27	0.27	0.11	0.28	0.28	0.43	0.37	0.37	0.45	0.38
v/c Ratio	0.59	0.22	0.08	0.76	0.23	0.28	0.21	0.64	0.24	0.46	1.13
Control Delay	54.0	32.3	0.3	60.7	31.8	6.5	16.4	25.2	2.6	25.4	106.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.0	32.3	0.3	60.7	31.8	6.5	16.4	25.2	2.6	25.4	106.9
LOS	D	C	A	E	C	A	B	C	A	C	F
Approach Delay											
Approach LOS											
Intersection Summary											
Cycle Length: 110											
Actuated Cycle Length: 110											
Offset: 19.8 (18%), Referenced to Phase 2:NBTL and 6:SBTL, Start of Green											
Natural Cycle: 90											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 1.13											
Intersection Signal Delay: 58.2											
Intersection Capacity Utilization 75.2%											
Analysis Period (min) 15											



2024 PM Peak NOBUILD Conditions - Existing Geometry
Synchro 10 Report
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HCM 6th Signalized Intersection Summary
3: 98th St. & Central Ave.

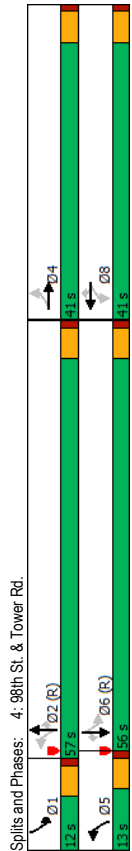
Terry O. Brown, PE
04/23/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Configurations	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Traffic Volume (veh/h)	207	204	39	290	215	149	35	801	158	116	1463
Future Volume (veh/h)	207	204	39	290	215	149	35	801	158	116	1463
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	211	208	0	296	219	0	36	817	0	118	1493
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	277	929	358	1013	146	1382	306	1426	306	1426	1426
Arrive On Green	0.08	0.26	0.00	0.10	0.29	0.00	0.05	0.39	0.00	0.06	0.40
Sat Flow, veh/h	3428	3526	1572	3428	3526	1572	1767	3526	1572	1767	3526
Grip Volume(v), veh/h	211	208	0	296	219	0	36	817	0	118	1493
Grip Sat Flow(s), veh/h/ln	1714	1763	1572	1714	1763	1572	1767	1763	1572	1767	1763
Q Serve(g, s), s	6.6	5.1	0.0	9.3	5.2	0.0	1.3	20.2	0.0	4.3	44.5
Cycle Q Clear(g, c), s	6.6	5.1	0.0	9.3	5.2	0.0	1.3	20.2	0.0	4.3	44.5
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grip Cap(c), veh/h	277	929	358	1013	146	1382	306	1426	306	1426	1426
V/C Ratio(X)	0.76	0.22	0.83	0.22	0.25	0.59	0.39	1.05	0.39	1.05	1.05
Avail Cap(c, a), veh/h	405	929	405	1013	194	1382	333	1426	333	1426	1426
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.5	31.7	0.0	48.3	29.8	0.0	26.2	26.5	0.0	20.1	32.7
Incr Delay (d2), s/veh	4.9	0.6	0.0	12.0	0.5	0.0	0.9	1.9	0.0	0.8	37.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	5.4	4.0	0.0	8.1	4.1	0.0	1.0	13.5	0.0	3.3	35.1
Unsig. Movement Delay, s/veh	54.4	32.2	0.0	60.2	30.3	0.0	27.1	28.3	0.0	20.9	69.8
LnGrip Delay(d), s/veh											
LnGrip LOS	D	C	C	E	C	C	C	C	A	C	F
Approach Vol, veh/h			419	A	515	A	853	A	1611	A	1611
Approach Delay, s/veh			43.4		47.5		28.3		66.2		66.2
Approach LOS			D		D		C		E		E
Timer - Assigned Phs	1	2	3	4	5	6	7	8			
Phs Duration (G+Y+Rc), s	11.4	48.1	16.5	34.0	10.0	49.5	13.9	36.6			
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0			
Max Green Setting (Gmax), s	8.0	40.0	13.0	29.0	8.0	40.0	13.0	29.0			
Max Q Clear Time (g, c+11), s	6.3	22.2	11.3	7.1	3.3	46.5	8.6	7.2			
Green Ext Time (p, c), s	0.0	5.5	0.2	1.2	0.0	0.0	0.3	1.3			
Intersection Summary											
HCM 6th Ctrl Delay			51.0								
HCM 6th LOS			D								
Notes											
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.											

2024 PM Peak NOBUILD Conditions - Existing Geometry
Synchro 10 Report
2024PNX.syn

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	94	45	60	111	51	70	814	44	107	1195
Future Volume (vph)	94	45	60	111	51	70	814	44	107	1195
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	4	4	8	8	5	2	2	6	6	6
Permitted Phases	4	4	8	8	5	2	2	6	6	6
Detector Phase	4	4	8	8	5	2	2	6	6	6
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	21.0	21.0	21.0	21.0	10.0	21.0	21.0	10.0	21.0	21.0
Minimum Split (s)	41.0	41.0	41.0	41.0	13.0	57.0	12.0	56.0	56.0	56.0
Total Split (%)	37.3%	37.3%	37.3%	37.3%	11.8%	51.8%	10.9%	50.9%	50.9%	50.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lag
Lead-Lag Optimize?	Min	Min	Min	Min	Min	Min	Min	Min	Min	C-Max
Recall Mode	14.2	14.2	14.2	14.2	80.2	73.5	81.4	74.1	74.1	C-Max
Act Effct Green (s)	0.13	0.13	0.13	0.13	0.73	0.67	0.74	0.67	0.67	0.67
Actuated g/C Ratio	0.62	0.14	0.38	0.26	0.21	0.23	0.37	0.04	0.24	0.54
v/c Ratio	60.9	33.1	48.4	43.0	8.2	5.5	9.4	1.2	3.7	6.5
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	60.9	33.1	48.4	43.0	8.2	5.5	9.4	1.2	3.7	6.5
Total Delay	E	C	D	A	A	A	A	A	A	A
LOS	E	C	D	A	A	A	A	A	A	A
Approach Delay	50.4	36.5			8.7				5.7	
Approach LOS	D	D			A				A	
Intersection Summary										
Cycle Length: 110										
Actuated Cycle Length: 110										
Offset: 82.5 (75%), Referenced to Phase 2:NBTL and 6:SBTL, Start of Green										
Natural Cycle: 60										
Control Type: Actuated-Coordinated										
Maximum v/c Ratio: 0.62										
Intersection Signal Delay: 11.6										
Intersection Capacity Utilization 61.6%										
Analysis Period (min) 15										



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	94	45	12	60	111	51	70	814	44	107	1195	176
Future Volume (veh/h)	94	45	12	60	111	51	70	814	44	107	1195	176
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	100	48	13	64	118	51	74	866	44	114	1271	187
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh. %	3	3	3	3	3	3	3	3	3	3	3	3
Cap. veh/h	193	362	94	218	462	330	2423	517	2423	1081	187	187
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.00	0.05	0.69	0.00	0.05	0.69	0.69
Sat Flow, veh/h	1284	2768	720	1331	3526	1572	1767	3526	1572	1767	3526	1572
Grip Volume(v), veh/h	100	30	31	64	118	0	74	866	0	114	1271	187
Grip Sat Flow(s), veh/h/ln	1284	1763	1726	1331	1763	1572	1767	1763	1572	1767	1763	1572
Q Serve(g, s), s	8.5	1.6	1.8	4.9	3.3	0.0	1.3	11.2	0.0	2.0	19.4	4.6
Cycle Q Clear(g, c), s	11.8	1.6	1.8	6.7	3.3	0.0	1.3	11.2	0.0	2.0	19.4	4.6
Prop In Lane	1.00	0.42	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grip Cap(c), veh/h	193	231	226	218	462	330	2423	517	2423	1081	187	187
V/C Ratio(X)	0.52	0.13	0.14	0.29	0.26	0.22	0.36	0.22	0.36	0.22	0.52	0.17
Avail Cap(c, a), veh/h	441	577	565	480	1154	379	2423	549	2423	1081	187	187
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.3	42.3	42.3	45.3	43.0	0.0	6.3	7.1	0.0	4.9	8.4	6.1
Incr Delay (d2), s/veh	2.1	0.3	0.3	0.7	0.3	0.0	0.3	0.4	0.0	0.2	0.8	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	5.0	1.3	1.4	3.0	2.6	0.0	0.8	7.2	0.0	1.2	11.2	2.7
Unsig. Movement Delay, s/veh	50.4	42.5	42.6	46.0	43.3	0.0	6.6	7.5	0.0	5.1	9.2	6.5
LnGrip Delay(d), s/veh	D	D	D	D	D	A	A	A	A	A	A	A
LnGrip LOS	D	D	D	D	D	A	A	A	A	A	A	A
Approach Vol, veh/h	161					182		940		1572		
Approach Delay, s/veh	47.4					44.2		7.5		8.6		
Approach LOS	D					D		A		A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	80.6		19.4	10.0	80.6		19.4				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	52.0		36.0	8.0	51.0		36.0				
Max Q Clear Time (g, c+11), s	4.0	13.2		13.8	3.3	21.4		8.7				
Green Ext Time (p, c), s	0.1	7.4		0.6	0.1	12.6		0.9				
Intersection Summary												
HCM 6th Ctrl Delay						12.7						
HCM 6th LOS						B						
Notes												
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

Timings

5: 98th St. & I-40 N. Ramp

Terry O. Brown, PE

04/23/2019

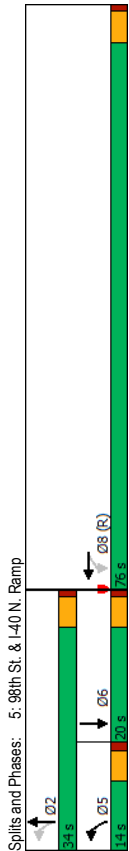
HCM 6th Signalized Intersection Summary

5: 98th St. & I-40 N. Ramp

Terry O. Brown, PE

04/23/2019

Lane Group	WBL	WBT	NBL	NBT	SBT
Lane Configurations	↔	↔	↔	↔	↔
Traffic Volume (vph)	1504	1	85	308	399
Future Volume (vph)	1504	1	85	308	399
Turn Type	Perm	NA	pm+pt	NA	NA
Protected Phases	8	5	2	2	6
Permitted Phases	8	8	5	2	6
Detector Phase	8	8	5	2	6
Switch Phase	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	21.0	21.0	10.0	21.0	21.0
Minimum Split (s)	76.0	76.0	14.0	34.0	20.0
Total Split (s)	69.1%	69.1%	12.7%	30.9%	18.2%
Total Split (%)	4.0	4.0	4.0	4.0	4.0
Yellow Time (s)	1.0	1.0	1.0	1.0	1.0
All-Red Time (s)	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	5.0	5.0	5.0	5.0	5.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	C-Max	C-Max	Min	Max	Max
Recall Mode	71.0	71.0	29.0	29.0	15.6
Act Effct Green (s)	0.65	0.65	0.26	0.26	0.14
Actuated g/C Ratio	0.74	0.74	0.39	0.35	0.59
v/c Ratio	18.8	18.8	43.3	39.3	48.3
Control Delay	0.0	0.0	0.0	0.0	0.0
Queue Delay	18.8	18.8	43.3	39.3	48.3
Total Delay	B	B	D	D	D
LOS	B	B	D	D	D
Approach Delay	18.8	18.8	40.1	48.3	
Approach LOS	B	B	D	D	
Intersection Summary					
Cycle Length: 110					
Actuated Cycle Length: 110					
Offset: 50.6 (46%), Referenced to phase 8:WBT, Start of Green					
Natural Cycle: 75					
Control Type: Actuated-Coordinated					
Maximum v/c Ratio: 0.74					
Intersection Signal Delay: 27.6					
Intersection Capacity Utilization 107.6%					
Analysis Period (min) 15					



2024 PM Peak NOBUILD Conditions - Existing Geometry

Synchro 10 Report

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	1504	1	0	85	308	0	0	399	1
Future Volume (veh/h)	0	0	0	1504	1	0	85	308	0	0	399	1
Initial Q (Ob), veh												
Ped-Bike Adj(A_pbT)	1.00			1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00			1.00		1.00	1.00		1.00	1.00		1.00
Work Zone On Approach				No			No				No	
Adj Sat Flow, veh/h/ln	1856			1856		1856	1856		1856	1856		1856
Adj Flow Rate, veh/h	1601			1601		1601	1601		1601	1601		1601
Peak Hour Factor	0.94			0.94		0.94	0.94		0.94	0.94		0.94
Percent Heavy Veh, %	3			3		3	3		3	3		3
Cap, veh/h	2281			2281		2281	2281		2281	2281		2281
Arrive On Green	0.65			0.00		0.00	0.06		0.26	0.00		0.16
Sat Flow, veh/h	3534			1856		1856	1767		3618	0		5385
Gp Volume(v), veh/h	1601			0		0	90		328	0		274
Gp Sat Flow(s), veh/h/ln	1767			1856		1767	1763		0	0		1689
Q Serve(g, s), s	32.3			0.0		0.0	4.5		8.3	0.0		8.2
Cycle Q Clear(g, c), s	32.3			0.0		0.0	4.5		8.3	0.0		8.2
Prop In Lane	1.00			0.00		0.00	1.00		0.00	0.00		0.01
Lane Gp Cap(c), veh/h	2281			1198		0	251		929	0		536
V/C Ratio(X)	0.70			0.00		0.00	0.36		0.35	0.00		0.51
Avail Cap(c, a), veh/h	2281			1198		0	290		929	0		536
HCM Platoon Ratio	1.00			1.00		1.00	1.00		1.00	1.00		1.00
Upstream Filter(l)	1.00			0.00		0.00	1.00		1.00	0.00		1.00
Uniform Delay (d), s/veh	12.6			0.0		0.0	34.3		32.9	0.0		42.4
Incr Delay (d2), s/veh	1.8			0.0		0.0	0.9		1.1	0.0		3.5
Initial Q Delay(d3), s/veh	0.0			0.0		0.0	0.0		0.0	0.0		0.0
%ile BackOfQ(95%), veh/ln	17.9			0.0		0.0	3.6		6.6	0.0		7.6
Unsig. Movement Delay, s/veh	14.5			0.0		0.0	35.2		33.9	0.0		45.8
LnGp Delay(d), s/veh	B			A		A	D		C	A		D
LnGp LOS	B			A		A	D		C	A		D
Approach Vol, veh/h	1601			1601		1601	418		418	425		425
Approach Delay, s/veh	14.5			14.5		14.5	34.2		34.2	46.8		46.8
Approach LOS	B			B		B	C		C	D		D
Timer - Assigned Phs	2			5		6	8		8			
Phs Duration (G+Y+Rc), s	34.0			11.5		22.5	76.0		76.0			
Change Period (Y+Rc), s	5.0			5.0		5.0	5.0		5.0			
Max Green Setting (Gmax), s	29.0			9.0		15.0	71.0		71.0			
Max Q Clear Time (g, c+1), s	10.3			6.5		10.2	34.3		34.3			
Green Ext Time (p, c), s	2.0			0.0		1.1	9.0		9.0			
Intersection Summary												
HCM 6th Ctrl Delay	23.5			23.5								
HCM 6th LOS	C			C								
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

2024 PM Peak NOBUILD Conditions - Existing Geometry

Synchro 10 Report

2024PNX.syn

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	26	3	0	367	2178	0
Future Vol, veh/h	26	3	0	367	2178	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	28	3	0	399	2367	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	2567	1184	-	0	-	0
Stage 1	2367	-	-	-	-	-
Stage 2	200	-	-	-	-	-
Critical Hdwy	6.86	6.96	-	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	-	-	-	-
Pot Cap-1 Maneuver	~ 21	180	0	-	-	0
Stage 1	56	-	0	-	-	0
Stage 2	811	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	~ 21	180	-	-	-	-
Mov Cap-2 Maneuver	50	-	-	-	-	-
Stage 1	56	-	-	-	-	-
Stage 2	811	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	140.1	0		0		
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT			
Capacity (veh/h)	-	54	-			
HCM Lane V/C Ratio	-	0.584	-			
HCM Control Delay (s)	-	140.1	-			
HCM Lane LOS	-	F	-			
HCM 95th %tile Q(veh)	-	2.3	-			
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕	↗	↖	↕↕			↖	↗		↕↕	
Traffic Vol, veh/h	1	336	235	4	439	1	216	1	4	3	2	1
Future Vol, veh/h	1	336	235	4	439	1	216	1	4	3	2	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	0	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	1	369	258	4	482	1	237	1	4	3	2	1
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	483	0	0	627	0	0	621	862	185	678	1120	242
Stage 1	-	-	-	-	-	-	371	371	-	491	491	-
Stage 2	-	-	-	-	-	-	250	491	-	187	629	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.23	-	-	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	*1352	-	-	1085	-	-	*370	289	*958	*336	204	*904
Stage 1	-	-	-	-	-	-	*861	764	-	*847	744	-
Stage 2	-	-	-	-	-	-	*853	744	-	*903	571	-
Platoon blocked, %	1	-	-	1	-	-			1			1
Mov Cap-1 Maneuver	*1352	-	-	1085	-	-	*367	288	*958	*333	203	*904
Mov Cap-2 Maneuver	-	-	-	-	-	-	*557	474	-	*549	383	-
Stage 1	-	-	-	-	-	-	*860	763	-	*847	741	-
Stage 2	-	-	-	-	-	-	*847	741	-	*897	570	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			16.1			12.2		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	557	958	*1352	-	-	1085	-	-	509			
HCM Lane V/C Ratio	0.428	0.005	0.001	-	-	0.004	-	-	0.013			
HCM Control Delay (s)	16.2	8.8	7.7	0	-	8.3	-	-	12.2			
HCM Lane LOS	C	A	A	A	-	A	-	-	B			
HCM 95th %tile Q(veh)	2.1	0	0	-	-	0	-	-	0			
Notes												
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon												

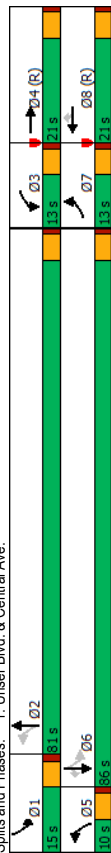
Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↵	↕↵		↵	↕↵	
Traffic Vol, veh/h	14	1	27	5	6	23	26	977	7	31	1611	43
Future Vol, veh/h	14	1	27	5	6	23	26	977	7	31	1611	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	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	-	-	-	-	-	-	150	-	-	130	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	15	1	29	5	6	24	28	1039	7	33	1714	46
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	2382	2905	880	2023	2925	523	1760	0	0	1046	0	0
Stage 1	1803	1803	-	1099	1099	-	-	-	-	-	-	-
Stage 2	579	1102	-	924	1826	-	-	-	-	-	-	-
Critical Hdwy	7.56	6.56	6.96	7.56	6.56	6.96	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	3.53	4.03	3.33	2.23	-	-	2.23	-	-
Pot Cap-1 Maneuver	*52	*7	*420	*317	*~ 6	*674	*627	-	-	*1008	-	-
Stage 1	*396	*347	-	*636	*558	-	-	-	-	-	-	-
Stage 2	*636	*558	-	*396	*347	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	1	-	-	1	-	-
Mov Cap-1 Maneuver	*46	*6	*420	*277	*~ 6	*674	*627	-	-	*1008	-	-
Mov Cap-2 Maneuver	*224	*186	-	*293	*180	-	-	-	-	-	-	-
Stage 1	*378	*335	-	*608	*532	-	-	-	-	-	-	-
Stage 2	*579	*532	-	*356	*335	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	18.2		14.8			0.3			0.2			
HCM LOS	C		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	* 627	-	-	318	402	* 1008	-	-				
HCM Lane V/C Ratio	0.044	-	-	0.141	0.09	0.033	-	-				
HCM Control Delay (s)	11	-	-	18.2	14.8	8.7	-	-				
HCM Lane LOS	B	-	-	C	B	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.3	0.1	-	-				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined			*: All major volume in platoon				

Timings
1: Unsers Blvd. & Central Ave.

Terry O. Brown, PE
04/23/2019

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔
Traffic Volume (vph)	186	409	97	393	62	78	1001	130	1083
Future Volume (vph)	186	409	97	393	62	78	1001	130	1083
Turn Type	Prot	NA	Prot	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8	5	2	1	6	6
Permitted Phases	7	4	3	8	8	5	2	1	6
Detector Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Switch Phase	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	21.0
Minimum Split (s)	13.0	21.0	13.0	21.0	10.0	81.0	15.0	86.0	86.0
Total Split (%)	10.0%	16.2%	10.0%	16.2%	7.7%	62.3%	11.5%	66.2%	66.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Min	C-Max	Max	C-Max	Min	Min	Min	Min	Min
Recall Mode	8.0	16.0	8.0	16.0	82.4	77.4	89.6	81.0	81.0
Act Effct Green (s)	0.06	0.12	0.06	0.12	0.63	0.60	0.69	0.62	0.62
Actuated g/C Ratio	0.94	1.11	0.95	0.96	0.23	0.66	0.58	0.46	0.99
v/c Ratio	105.8	125.4	135.5	91.1	4.7	43.3	17.5	11.5	49.5
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	105.8	125.4	135.5	91.1	4.7	43.3	17.5	11.5	49.5
Total Delay	F	F	F	F	A	D	B	D	A
Approach Delay	119.7	89.2	F	F	19.2	B	D	40.5	
Approach LOS	F	F	F	F	B	D			
Intersection Summary									
Cycle Length: 130									
Actuated Cycle Length: 130									
Offset: 10.4 (8%), Referenced to phase 4:EBT and 8:WBT, Start of Green									
Natural Cycle: 120									
Control Type: Actuated-Coordinated									
Maximum v/c Ratio: 1.11									
Intersection Signal Delay: 54.2									
Intersection Capacity Utilization 96.1%									
Analysis Period (min) 15									

Splits and Phases: 1: Unsers Blvd. & Central Ave.



2024 PM Peak BUILD Conditions - Existing Geometry
Synchro 10 Report
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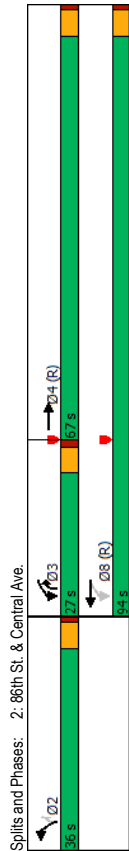
HCM 6th Signalized Intersection Summary
1: Unsers Blvd. & Central Ave.

Terry O. Brown, PE
04/23/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔	↔↔↔
Traffic Volume (veh/h)	186	409	45	97	393	62	78	1001	129	130	1083	154
Future Volume (veh/h)	186	409	45	97	393	62	78	1001	129	130	1083	154
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	196	431	47	102	414	65	82	1054	136	137	1140	162
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	211	398	43	109	438	195	132	1934	249	331	1154	978
Arrive On Green	0.02	0.04	0.04	0.06	0.12	0.12	0.04	0.62	0.62	0.04	0.62	0.62
Sat Flow, veh/h	3428	3208	348	1767	3526	1572	1767	3141	405	1767	1856	1572
Grip Volume(v), veh/h	196	236	242	102	414	65	82	591	599	137	1140	162
Grip Sat Flow(s), veh/h/ln	1714	1763	1793	1767	1763	1572	1767	1763	1767	1856	1572	1572
Q Serve(g, s), s	7.4	16.1	16.1	7.5	15.2	4.9	2.2	25.2	25.3	3.7	78.3	5.6
Cycle Q Clear(g, c), s	7.4	16.1	16.1	7.5	15.2	4.9	2.2	25.2	25.3	3.7	78.3	5.6
Prop In Lane	1.00	0.19	1.00	1.00	1.00	1.00	1.00	0.23	1.00	1.00	1.00	1.00
Lane Grip Cap(c), veh/h	211	219	222	109	438	195	132	1085	1098	331	1154	978
V/C Ratio(X)	0.93	1.08	1.09	0.94	0.95	0.33	0.62	0.54	0.55	0.41	0.89	0.17
Avail Cap(c, a), veh/h	211	219	222	109	438	195	132	1085	1098	388	1156	980
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.98	0.98	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.4	62.3	62.3	60.8	56.5	52.0	32.7	14.4	14.5	11.6	24.1	10.4
Incr Delay (d2), s/veh	42.0	82.7	85.2	70.8	31.5	4.5	8.8	0.6	0.6	0.8	23.4	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	8.1	19.1	19.7	9.3	13.5	3.9	3.4	15.1	15.3	2.6	49.7	3.5
Unsig. Movement Delay, s/veh	105.4	145.0	147.5	131.5	88.0	56.6	41.4	15.0	15.0	12.4	47.5	10.4
LnGrip Delay(d), s/veh	F	F	F	F	F	F	F	B	B	B	D	B
LnGrip LOS	F	F	F	F	F	F	F	B	B	B	D	B
Approach Vol, veh/h	674	1344	581	581	1272	16.7	40.0	1439	40.0	1439	40.0	1439
Approach Delay, s/veh	134.4	92.1	F	F	F	F	F	1272	16.7	40.0	1439	40.0
Approach LOS	F	F	F	F	F	F	F	B	B	B	D	D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.8	85.0	13.0	21.1	10.0	85.9	13.0	21.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	76.0	8.0	16.0	5.0	81.0	8.0	16.0				
Max Q Clear Time (g, c+1), s	5.7	27.3	9.5	18.1	4.2	80.3	9.4	17.2				
Green Ext Time (p, c), s	0.1	11.1	0.0	0.0	0.0	0.6	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay	56.2											
HCM 6th LOS	E											

2024 PM Peak BUILD Conditions - Existing Geometry
Synchro 10 Report
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	EBT	WBL	WBT	NBL	NBR
Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Configurations	↔↔	↔	↔↔	↔	↔
Traffic Volume (vph)	411	158	354	35	175
Future Volume (vph)	411	158	354	35	175
Turn Type	NA	pm+pt	NA	Prot	pm+ov
Protected Phases	4	3	8	2	3
Permitted Phases		8	8	2	2
Detector Phase	4	3	8	2	3
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	10.0	21.0	21.0	10.0
Total Split (s)	67.0	27.0	94.0	36.0	27.0
Total Split (%)	51.5%	20.8%	72.3%	27.7%	20.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?					
Recall Mode	C-Max	Min	C-Max	Min	Min
Act Effct Green (s)	99.3	111.8	111.8	8.2	20.7
Actuated g/C Ratio	0.76	0.86	0.86	0.06	0.16
v/c Ratio	0.17	0.21	0.12	0.34	0.46
Control Delay	4.5	2.3	0.6	65.7	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	4.5	2.3	0.6	65.7	10.1
LOS	A	A	A	E	B
Approach Delay	4.5		1.1	19.4	
Approach LOS	A		A	B	



	EBT	EBR	WBL	WBT	NBL	NBR
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔↔	↔	↔	↔↔	↔	↔
Traffic Volume (veh/h)	411	20	158	354	35	175
Future Volume (veh/h)	411	20	158	354	35	175
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	433	21	166	373	37	184
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	2435	118	755	2798	229	272
Arrive On Green	0.71	0.71	0.09	1.00	0.13	0.13
Sat Flow, veh/h	3516	166	1767	3618	1767	1572
Gp Volume(v), veh/h	222	232	166	373	37	184
Gp Sat Flow(s), veh/h/ln	1763	1826	1767	1763	1767	1572
Q Serve(g, s), s	5.4	5.4	3.3	0.0	2.4	14.2
Cycle Q Clear(g, c), s	5.4	5.4	3.3	0.0	2.4	14.2
Prop In Lane	0.09	1.00	1.00	1.00	1.00	1.00
Lane Gp Cap(c), veh/h	1254	1299	755	2798	229	272
V/C Ratio(X)	0.18	0.18	0.22	0.13	0.16	0.68
Avail Cap(c, a), veh/h	1254	1299	977	2798	421	444
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	0.62	0.62	1.00	1.00
Uniform Delay (d), s/veh	6.2	6.2	3.9	0.0	50.3	50.3
Incr Delay (d2), s/veh	0.3	0.3	0.1	0.1	0.3	2.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	3.7	3.8	1.7	0.0	2.0	9.8
Unsig. Movement Delay, s/veh						
LnGp Delay(d), s/veh	6.5	6.5	4.0	0.1	50.6	53.2
LnGp LOS	A	A	A	A	D	D
Approach Vol, veh/h	454			539	221	
Approach Delay, s/veh	6.5			1.3	52.8	
Approach LOS	A			A	D	
Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		21.8	10.7	97.5		108.2
Change Period (Y+Rc), s		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s		31.0	22.0	62.0		89.0
Max Q Clear Time (g_c+1), s		16.2	5.3	7.4		2.0
Green Ext Time (p_c), s		0.6	0.4	3.0		2.8
Intersection Summary						
HCM 6th Ctrl Delay			12.6			
HCM 6th LOS			B			

Timings
3: 98th St. & Central Ave.

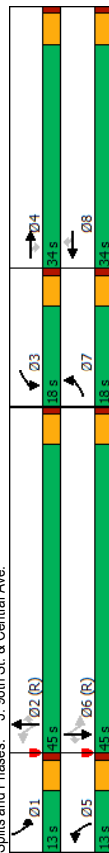
HCM 6th Signalized Intersection Summary
3: 98th St. & Central Ave.

Terry O. Brown, PE
04/23/2019

Terry O. Brown, PE
04/23/2019

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	←	←	←	←	←	←	←	←	←	←	←	←
Traffic Volume (vph)	222	263	39	376	197	149	50	831	165	116	1509	275
Future Volume (vph)	222	263	39	376	197	149	50	831	165	116	1509	275
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		2	1	6
Permitted Phases	7	4	4	3	8	8	5	2	2	1	6	6
Detector Phase												
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	21.0	10.0	21.0	21.0	10.0	21.0	21.0	10.0	21.0	21.0
Total Split (s)	18.0	34.0	34.0	18.0	34.0	34.0	13.0	45.0	45.0	13.0	45.0	45.0
Total Split (%)	16.4%	30.9%	30.9%	16.4%	30.9%	30.9%	11.8%	40.9%	40.9%	11.8%	40.9%	40.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Act Effct Green (s)	11.8	29.0	13.0	30.2	30.2	47.3	40.3	40.3	48.7	41.0	41.0	41.0
Actuated g/C Ratio	0.11	0.26	0.26	0.12	0.27	0.27	0.43	0.37	0.37	0.44	0.37	0.37
v/c Ratio	0.62	0.29	0.08	0.96	0.21	0.28	0.29	0.66	0.25	0.48	1.18	0.43
Control Delay	54.8	33.3	0.3	84.4	31.8	6.6	20.8	26.7	3.5	25.4	124.1	22.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.8	33.3	0.3	84.4	31.8	6.6	20.8	26.7	3.5	25.4	124.1	22.6
LOS	D	C	A	F	C	A	C	C	A	C	F	C
Approach Delay	40.0											
Approach LOS	D											
Intersection Summary												
Cycle Length: 110												
Actuated Cycle Length: 110												
Offset: 19.8 (18%), Referenced to phase 2:NBT, 6:SBTL, Start of Green												
Natural Cycle: 90												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 1.18												
Intersection Signal Delay: 66.8												
Intersection Capacity Utilization 80.5%												
Analysis Period (min) 15												

Splits and Phases: 3: 98th St. & Central Ave.

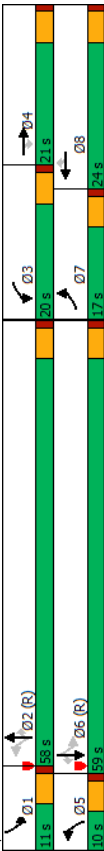


2024 PM Peak BUILD Conditions - Existing Geometry
Synchro 10 Report
2024PBX.syn

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	←	←	←	←	←	←	←	←	←	←	←	←
Traffic Volume (veh/h)	222	263	39	376	197	149	50	831	165	116	1509	275
Future Volume (veh/h)	222	263	39	376	197	149	50	831	165	116	1509	275
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	227	268	0	384	201	0	51	848	0	118	1540	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	293	929	405	1045	1045	1045	146	1331	286	1378	1378	1378
Arrive On Green	0.09	0.26	0.00	0.12	0.30	0.00	0.05	0.38	0.00	0.06	0.39	0.00
Sat Flow, veh/h	3428	3526	1572	3428	3526	1572	1767	3526	1572	1767	3526	1572
Grip Volume(v), veh/h	227	268	0	384	201	0	51	848	0	118	1540	0
Grip Sat Flow(s), veh/h/ln	1714	1763	1572	1714	1763	1572	1767	1763	1572	1767	1763	1572
Q Serve(g, s), s	7.1	6.7	0.0	12.2	4.7	0.0	1.9	21.7	0.0	4.4	43.0	0.0
Cycle Q Clear(g, c), s	7.1	6.7	0.0	12.2	4.7	0.0	1.9	21.7	0.0	4.4	43.0	0.0
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grip Cap(c), veh/h	293	929	405	1045	1045	1045	146	1331	286	1378	1378	1378
V/C Ratio(X)	0.77	0.29	0.05	0.95	0.19	0.35	0.64	0.41	0.12	0.41	1.12	0.12
Avail Cap(c, a), veh/h	405	929	405	1045	1045	1045	194	1331	310	1378	1378	1378
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	32.3	0.0	48.2	28.9	0.0	26.7	28.1	0.0	21.3	33.5	0.0
Incr Delay (d2), s/veh	6.2	0.8	0.0	31.6	0.4	0.0	1.4	2.3	0.0	1.0	63.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%) veh/ln	5.9	5.3	0.0	11.3	3.7	0.0	1.5	14.5	0.0	3.4	42.0	0.0
Unsig. Movement Delay, s/veh	55.5	33.1	0.0	79.7	29.3	0.0	28.1	30.4	0.0	22.3	96.7	0.0
LnGrip Delay(d), s/veh	E	C	E	E	C	C	C	C	C	C	F	F
LnGrip LOS	E	C	E	E	C	C	C	C	C	C	F	F
Approach Vol, veh/h	495	A	585	A	585	A	899	A	1658	A	1658	A
Approach Delay, s/veh	43.3		62.4		62.4		30.3		91.4		91.4	
Approach LOS	D		E		E		C		F		F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.5	46.5	18.0	34.0	10.0	48.0	14.4	37.6				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	8.0	40.0	13.0	29.0	8.0	40.0	13.0	29.0				
Max Q Clear Time (g, c+1), s	6.4	23.7	14.2	8.7	3.9	45.0	9.1	6.7				
Green Ext Time (p, c), s	0.0	5.5	0.0	1.6	0.0	0.0	0.3	1.2				
Intersection Summary												
HCM 6th Ctrl Delay												
HCM 6th LOS												
Notes												
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

2024 PM Peak BUILD Conditions - Existing Geometry
Synchro 10 Report
2024PBX.syn

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	222	263	39	376	197	149	50	831	165	116	1509	275
Future Volume (vph)	222	263	39	376	197	149	50	831	165	116	1509	275
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	7	4	4	3	8	8	5	2	2	1	6	6
Detector Phase												
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	21.0	10.0	21.0	21.0	10.0	21.0	21.0	10.0	21.0	21.0
Total Split (s)	17.0	21.0	21.0	20.0	24.0	24.0	10.0	58.0	52.0	11.0	59.0	59.0
Total Lost Time (s)	15.5%	19.1%	19.1%	18.2%	21.8%	21.8%	9.1%	52.7%	10.0%	53.6%	53.6%	53.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Act Effct Green (s)	11.3	16.3	14.7	19.7	19.7	19.7	58.0	53.0	53.0	60.0	54.0	54.0
Actuated g/C Ratio	0.10	0.15	0.15	0.13	0.18	0.18	0.53	0.48	0.48	0.55	0.49	0.49
v/c Ratio	0.65	0.52	0.12	0.85	0.32	0.38	0.35	0.50	0.20	0.38	0.90	0.34
Control Delay	56.8	47.3	0.7	64.4	41.2	9.3	19.7	16.3	1.7	17.3	36.4	15.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.8	47.3	0.7	64.4	41.2	9.3	19.7	16.3	1.7	17.3	36.4	15.3
LOS	E	D	A	E	D	A	B	B	A	B	D	B
Approach Delay	47.9			46.7			14.1				32.2	
Approach LOS	D			D			B				C	
Intersection Summary												
Cycle Length: 110												
Actuated Cycle Length: 110												
Offset: 19.8 (18%), Referenced to phase 2:NBT/L and 6:SBTL, Start of Green												
Natural Cycle: 90												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.90												
Intersection Signal Delay: 32.2												
Intersection Capacity Utilization 80.5%												
Analysis Period (min) 15												



Mitigation Recommendation - optimize signal timing splits

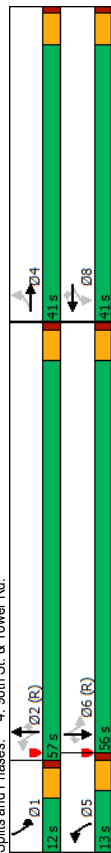
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	222	263	39	376	197	149	50	831	165	116	1509	275
Future Volume (veh/h)	222	263	39	376	197	149	50	831	165	116	1509	275
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	227	268	0	384	201	0	51	848	0	118	1540	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	291	513	444	669	182	1736	369	1755				
Arrive On Green	0.08	0.15	0.00	0.13	0.19	0.00	0.05	0.49	0.00	0.05	0.50	0.00
Sat Flow, veh/h	3428	3526	1572	3428	3526	1572	1767	3526	1572	1767	3526	1572
Grip Volume(v), veh/h	227	268	0	384	201	0	51	848	0	118	1540	0
Grip Sat Flow(s), veh/h/ln	1714	1763	1572	1714	1763	1572	1767	1763	1572	1767	1763	1572
Q Serve(g, s), s	7.1	7.7	0.0	12.1	5.4	0.0	1.5	17.7	0.0	3.6	42.8	0.0
Cycle Q Clear(g, c), s	7.1	7.7	0.0	12.1	5.4	0.0	1.5	17.7	0.0	3.6	42.8	0.0
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grip Cap(c), veh/h	291	513	444	669	182	1736	369	1755				
V/C Ratio(X)	0.78	0.52	0.00	0.87	0.30	0.28	0.49	0.32	0.88			
Avail Cap(c, a), veh/h	374	513	467	669	182	1736	376	1755				
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	43.5	0.0	46.9	38.3	0.0	21.7	18.7	0.0	14.0	24.6	0.0
Incr Delay (d2), s/veh	7.8	3.8	0.0	15.1	1.1	0.0	0.8	1.0	0.0	0.5	6.6	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%) veh/ln	6.1	6.5	0.0	10.1	4.4	0.0	1.1	11.7	0.0	2.6	25.7	0.0
Unsig. Movement Delay, s/veh	57.1	47.2	0.0	62.0	39.4	0.0	22.5	19.6	0.0	14.5	31.2	0.0
LnGrip Delay(d), s/veh	E	D		E	D		C	B		B	C	
LnGrip LOS												
Approach Vol, veh/h	495	A		585	A		899	A		1658	A	
Approach Delay, s/veh	51.8			54.3			19.8			30.0		
Approach LOS	D			D			B			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.6	59.2	19.2	21.0	10.0	59.8	14.3	25.9				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	6.0	53.0	15.0	16.0	5.0	54.0	12.0	19.0				
Max Q Clear Time (g, c+11), s	5.6	19.7	14.1	9.7	3.5	44.8	9.1	7.4				
Green Ext Time (p, c), s	0.0	7.0	0.2	0.8	0.0	6.7	0.2	0.9				
Intersection Summary												
HCM 6th Ctrl Delay	34.3											
HCM 6th LOS	C											
Notes												
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

Timings
4: 98th St. & Tower Rd.

Terry O. Brown, PE
04/23/2019

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	109	45	60	111	91	70	908	44	146	1286
Future Volume (vph)	109	45	60	111	91	70	908	44	146	1286
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	Perm	NA	Perm
Protected Phases	4	4	8	8	5	2	2	1	6	6
Permitted Phases	4	4	8	8	5	2	2	1	6	6
Detector Phase	4	4	8	8	5	2	2	1	6	6
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	21.0	21.0	21.0	21.0	10.0	21.0	21.0	10.0	21.0	21.0
Minimum Split (s)	41.0	41.0	41.0	41.0	13.0	57.0	12.0	56.0	56.0	56.0
Total Split (%)	37.3%	37.3%	37.3%	37.3%	11.8%	51.8%	10.9%	50.9%	50.9%	50.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead Lag Lead Lag Lead Lag Lead Lag Lead Lag									
Lead-Lag Optimize?	Lead Lag Lead Lag Lead Lag Lead Lag Lead Lag									
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	15.6	15.6	15.6	15.6	78.0	71.2	71.2	80.7	72.5	72.5
Actuated g/C Ratio	0.14	0.14	0.14	0.14	0.71	0.65	0.65	0.73	0.66	0.66
v/c Ratio	0.66	0.12	0.34	0.32	0.26	0.43	0.05	0.36	0.59	0.19
Control Delay	60.9	31.9	45.6	41.4	10.5	6.6	11.1	1.4	5.9	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.9	31.9	45.6	41.4	10.5	6.6	11.1	1.4	5.9	8.4
LOS	E	C	D	D	B	A	B	A	A	A
Approach Delay	50.9	31.6	31.6	31.6	10.4	10.4	10.4	7.5	7.5	7.5
Approach LOS	D	C	C	C	B	B	B	A	A	A
Intersection Summary										
Cycle Length: 110										
Actuated Cycle Length: 110										
Offset: 82.5 (75%), Referenced to phase 2:NBT and 6:SBTL, Start of Green										
Natural Cycle: 60										
Control Type: Actuated-Coordinated										
Maximum v/c Ratio: 0.66										
Intersection Signal Delay: 12.9										
Intersection Capacity Utilization 64.9%										
Analysis Period (min) 15										

Splits and Phases: 4: 98th St. & Tower Rd.



2024 PM Peak BUILD Conditions - Existing Geometry
Synchro 10 Report
2024PBX.syn

HCM 6th Signalized Intersection Summary
4: 98th St. & Tower Rd.

Terry O. Brown, PE
04/23/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	109	45	12	60	111	91	70	908	44	146	1286	191
Future Volume (veh/h)	109	45	12	60	111	91	70	908	44	146	1286	191
Initial Q (Q ₀), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/in	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	116	48	13	64	118	0	74	966	0	155	1368	203
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh. %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	209	396	103	235	505	298	2379	465	2380	1061	1061	1061
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.00	0.05	0.67	0.00	0.05	0.67	0.67
Sat Flow, veh/h	1264	2768	720	1331	3526	1572	1767	3526	1572	1767	3526	1572
Grip Volume(v), veh/h	116	30	31	64	118	0	74	966	0	155	1368	203
Grip Sat Flow(s), veh/h/in	1264	1763	1726	1331	1763	1572	1767	1763	1572	1767	1763	1572
Q Serve(g, s), s	9.9	1.6	1.7	4.8	3.3	0.0	1.3	13.5	0.0	3.0	22.7	5.3
Cycle Q Clear(g, c), s	13.1	1.6	1.7	6.6	3.3	0.0	1.3	13.5	0.0	3.0	22.7	5.3
Prop In Lane	1.00	0.42	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	209	252	247	235	505	298	2379	465	2380	1061	1061	1061
V/C Ratio(X)	0.56	0.12	0.13	0.27	0.23	0.25	0.41	0.33	0.57	0.19	0.19	0.19
Avail Cap(c, a), veh/h	442	577	565	480	1154	346	2379	496	2380	1061	1061	1061
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.6	41.1	41.1	44.0	41.8	0.0	7.5	8.0	0.0	5.8	9.5	6.7
Incr Delay (d2), s/veh	2.3	0.2	0.2	0.6	0.2	0.0	0.4	0.5	0.0	0.4	1.0	0.4
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/h	5.8	1.3	1.4	2.9	2.6	0.0	0.8	8.5	0.0	1.8	12.9	3.2
Unsig. Movement Delay, s/veh	49.9	41.3	41.3	44.6	42.0	0.0	7.9	8.5	0.0	6.3	10.5	7.1
LnGrp Delay(d), s/veh	49.9	41.3	41.3	44.6	42.0	0.0	7.9	8.5	0.0	6.3	10.5	7.1
LnGrp LOS	D	D	D	D	D	A	A	A	A	A	B	A
Approach Vol, veh/h	177	46.9	182	42.9	182	A	1040	A	1726	A	1726	A
Approach Delay, s/veh	46.9	46.9	42.9	42.9	42.9	A	8.5	8.5	9.7	9.7	9.7	A
Approach LOS	D	D	D	D	D	A	A	A	A	A	A	A
Timer - Assigned Phs	1	2	4	5	6	8	8	8	8	8	8	8
Phs Duration (G+Y+Rc), s	10.0	79.2	20.8	10.0	79.2	20.8	20.8	20.8	20.8	20.8	20.8	20.8
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	7.0	52.0	36.0	8.0	51.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0
Max Q Clear Time (g, c+1), s	5.0	15.5	15.1	3.3	24.7	8.6	8.6	8.6	8.6	8.6	8.6	8.6
Green Ext Time (p, c), s	0.1	8.5	0.6	0.0	13.2	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Intersection Summary												
HCM 6th Ctrl Delay	13.4											
HCM 6th LOS	B											
Notes	Signalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.											

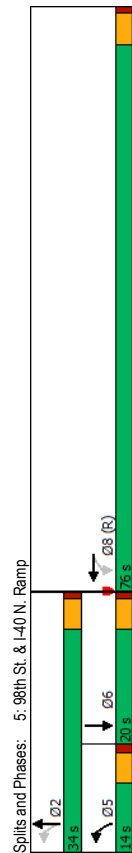
2024 PM Peak BUILD Conditions - Existing Geometry
Synchro 10 Report
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Timings 5: 98th St. & I-40 N. Ramp

Terry O. Brown, PE

04/23/2019

Lane Group	WBL	WBT	NBL	NBT	SBT
Lane Configurations	1507	1	88	345	437
Traffic Volume (vph)	1507	1	88	345	437
Future Volume (vph)	1507	1	88	345	437
Turn Type	Perm	NA	pm-pt	NA	NA
Protected Phases	8	5	2	2	6
Permitted Phases	8	8	5	2	6
Detector Phase	8	8	5	2	6
Switch Phase	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	21.0	21.0	10.0	21.0	21.0
Minimum Split (s)	76.0	76.0	14.0	34.0	20.0
Total Split (s)	69.1%	69.1%	12.7%	30.9%	18.2%
Total Split (%)	4.0	4.0	4.0	4.0	4.0
Yellow Time (s)	1.0	1.0	1.0	1.0	1.0
All-Red Time (s)	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	5.0	5.0	5.0	5.0	5.0
Total Lost Time (s)	Lead	Lead	Lead	Lag	Lag
Lead/Lag	C-Max	C-Max	Min	Max	Max
Recall Mode	71.0	71.0	29.0	29.0	15.6
Act Effct Green (s)	0.65	0.65	0.26	0.26	0.14
Actuated g/C Ratio	0.75	0.75	0.43	0.40	0.85
v/c Ratio	18.8	18.8	44.7	40.5	49.7
Control Delay	0.0	0.0	0.0	0.0	0.0
Queue Delay	18.8	18.8	44.7	40.5	49.7
Total Delay	B	B	D	D	D
LOS	B	B	D	D	D
Approach Delay	18.8	18.8	41.3	49.7	49.7
Approach LOS	B	B	D	D	D



2024 PM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report

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HCM 6th Signalized Intersection Summary 5: 98th St. & I-40 N. Ramp

Terry O. Brown, PE

04/23/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Configurations	0	0	0	1507	1	0	88	345	0	0	437
Traffic Volume (veh/h)	0	0	0	1507	1	0	88	345	0	0	437
Future Volume (veh/h)	0	0	0	1507	1	0	88	345	0	0	437
Initial Q (Ob), veh	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus Adj	No	No	No	No	No	No	No	No	No	No	No
Work Zone On Approach	1856	1856	0	1856	1856	0	1856	1856	0	0	1856
Adj Sat Flow, veh/h/in	1604	1604	0	1604	1604	0	1604	1604	0	0	1604
Adj Flow Rate, veh/h	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Peak Hour Factor	3	3	3	3	3	3	3	3	3	3	3
Percent Heavy Veh, %	2281	2281	1198	2281	2281	1198	2281	2281	1198	2281	1198
Cap, veh/h	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
Arrive On Green	3534	3534	1856	3534	3534	1856	3534	3534	1856	3534	1856
Sat Flow, veh/h	1604	1604	0	1604	1604	0	1604	1604	0	0	1604
Gp Volume(v), veh/h	1767	1767	1856	1767	1767	1856	1767	1767	1856	1767	1856
Gp Sat Flow(s), veh/h/in	32.4	32.4	0.0	32.4	32.4	0.0	32.4	32.4	0.0	32.4	32.4
Q Serve(g, s), s	32.4	32.4	0.0	32.4	32.4	0.0	32.4	32.4	0.0	32.4	32.4
Cycle Q Clear(g, c), s	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop In Lane	2281	2281	1198	2281	2281	1198	2281	2281	1198	2281	1198
Lane Gp Cap(c), veh/h	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
V/C Ratio(X)	2281	2281	1198	2281	2281	1198	2281	2281	1198	2281	1198
Avail Cap(c, a), veh/h	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	12.7	12.7	0.0	12.7	12.7	0.0	12.7	12.7	0.0	12.7	12.7
Uniform Delay (d), s/veh	1.8	1.8	0.0	1.8	1.8	0.0	1.8	1.8	0.0	1.8	1.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	18.0	18.0	0.0	18.0	18.0	0.0	18.0	18.0	0.0	18.0	18.0
%ile BackOfQ(95%), veh/in	Unsig. Movement Delay, s/veh	Unsig. Movement Delay, s/veh	Unsig. Movement Delay, s/veh	Unsig. Movement Delay, s/veh	Unsig. Movement Delay, s/veh	Unsig. Movement Delay, s/veh	Unsig. Movement Delay, s/veh	Unsig. Movement Delay, s/veh	Unsig. Movement Delay, s/veh	Unsig. Movement Delay, s/veh	Unsig. Movement Delay, s/veh
LnGp Delay(d), s/veh	14.5	14.5	0.0	14.5	14.5	0.0	14.5	14.5	0.0	14.5	14.5
LnGp LOS	B	B	A	B	B	A	B	B	A	B	B
Approach Vol, veh/h	1604	1604	1604	1604	1604	1604	1604	1604	1604	1604	1604
Approach Delay, s/veh	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5
Approach LOS	B	B	C	B	B	C	B	B	C	B	B
Timer - Assigned Phs	2	2	5	2	2	5	2	2	5	2	2
Phs Duration (G+Y+Rc), s	34.0	34.0	11.8	34.0	34.0	11.8	34.0	34.0	11.8	34.0	34.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	29.0	29.0	9.0	29.0	29.0	9.0	29.0	29.0	9.0	29.0	29.0
Max Q Clear Time (g, c+1), s	11.4	11.4	6.7	11.4	11.4	6.7	11.4	11.4	6.7	11.4	11.4
Green Ext Time (p, c), s	2.2	2.2	0.0	2.2	2.2	0.0	2.2	2.2	0.0	2.2	2.2
Intersection Summary	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5
HCM 6th Ctrl Delay	C	C	C	C	C	C	C	C	C	C	C
HCM 6th LOS	C	C	C	C	C	C	C	C	C	C	C
Notes	User approved pedestrian interval to be less than phase max green. User approved volume balancing among the lanes for turning movement.										

2024 PM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report

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Intersection						
Int Delay, s/veh	1.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	26	3	0	405	2219	0
Future Vol, veh/h	26	3	0	405	2219	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	28	3	0	440	2412	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	2632	1206	-	0	-	0
Stage 1	2412	-	-	-	-	-
Stage 2	220	-	-	-	-	-
Critical Hdwy	6.86	6.96	-	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	-	-	-	-
Pot Cap-1 Maneuver	~ 19	174	0	-	-	0
Stage 1	52	-	0	-	-	0
Stage 2	793	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	~ 19	174	-	-	-	-
Mov Cap-2 Maneuver	46	-	-	-	-	-
Stage 1	52	-	-	-	-	-
Stage 2	793	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	159.2	0		0		
HCM LOS	F					
Minor Lane/Major Mvmt	NBT EBLn1		SBT			
Capacity (veh/h)	-		50			
HCM Lane V/C Ratio	-		0.63			
HCM Control Delay (s)	-		159.2			
HCM Lane LOS	-		F			
HCM 95th %tile Q(veh)	-		2.5			
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕	↗	↗	↕↕			↕	↗		↕↕	
Traffic Vol, veh/h	1	385	243	4	489	1	224	1	4	3	2	1
Future Vol, veh/h	1	385	243	4	489	1	224	1	4	3	2	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	0	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	1	423	267	4	537	1	246	1	4	3	2	1
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	538	0	0	690	0	0	703	971	212	760	1238	269
Stage 1	-	-	-	-	-	-	425	425	-	546	546	-
Stage 2	-	-	-	-	-	-	278	546	-	214	692	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.23	-	-	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	*1316	-	-	1061	-	-	*322	*250	*929	*293	*173	*880
Stage 1	-	-	-	-	-	-	*866	*762	-	*831	*728	-
Stage 2	-	-	-	-	-	-	*831	*728	-	*877	*558	-
Platoon blocked, %	1	-	-	1	-	-			1			1
Mov Cap-1 Maneuver	*1316	-	-	1061	-	-	*319	*249	*929	*290	*172	*880
Mov Cap-2 Maneuver	-	-	-	-	-	-	*531	*452	-	*519	*363	-
Stage 1	-	-	-	-	-	-	*866	*761	-	*830	*725	-
Stage 2	-	-	-	-	-	-	*824	*725	-	*870	*558	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			17.3			12.6		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	531	929	*1316	-	-	1061	-	-	483			
HCM Lane V/C Ratio	0.466	0.005	0.001	-	-	0.004	-	-	0.014			
HCM Control Delay (s)	17.5	8.9	7.7	0	-	8.4	-	-	12.6			
HCM Lane LOS	C	A	A	A	-	A	-	-	B			
HCM 95th %tile Q(veh)	2.4	0	0	-	-	0	-	-	0			
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined				*: All major volume in platoon				

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	110	1	63	5	6	41	63	1089	7	48	1720	43
Future Vol, veh/h	110	1	63	5	6	41	63	1089	7	48	1720	43
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	-	-	-	-	-	150	-	-	130	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	117	1	67	5	6	44	67	1159	7	51	1830	46
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	2672	3255	938	2315	3275	583	1876	0	0	1166	0	0
Stage 1	1955	1955	-	1297	1297	-	-	-	-	-	-	-
Stage 2	717	1300	-	1018	1978	-	-	-	-	-	-	-
Critical Hdwy	7.56	6.56	6.96	7.56	6.56	6.96	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	3.53	4.03	3.33	2.23	-	-	2.23	-	-
Pot Cap-1 Maneuver	*~ 17	*~ 0	*363	*231	*~ 0	*618	*543	-	-	*924	-	-
Stage 1	*342	*300	-	*565	*499	-	-	-	-	-	-	-
Stage 2	*583	*496	-	*342	*300	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	1	-	-	1	-	-
Mov Cap-1 Maneuver	*~ 14	*0	*363	*164	*0	*618	*543	-	-	*924	-	-
Mov Cap-2 Maneuver	*165	*149	-	*176	*132	-	-	-	-	-	-	-
Stage 1	*300	*284	-	*495	*437	-	-	-	-	-	-	-
Stage 2	*468	*435	-	*263	*284	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	49		16.4			0.7			0.2			
HCM LOS	E		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	* 543	-	-	165	355	371	* 924	-	-			
HCM Lane V/C Ratio	0.123	-	-	0.709	0.192	0.149	0.055	-	-			
HCM Control Delay (s)	12.6	-	-	67.4	17.5	16.4	9.1	-	-			
HCM Lane LOS	B	-	-	F	C	C	A	-	-			
HCM 95th %tile Q(veh)	0.4	-	-	4.3	0.7	0.5	0.2	-	-			
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

Intersection						
Int Delay, s/veh	23					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	89	126	155	969	1818	88
Future Vol, veh/h	89	126	155	969	1818	88
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	100	-	-	167
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	91	129	158	989	1855	90
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	2666	928	1945	0	-	0
Stage 1	1855	-	-	-	-	-
Stage 2	811	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	~ 18	268	293	-	-	-
Stage 1	108	-	-	-	-	-
Stage 2	395	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 8	268	293	-	-	-
Mov Cap-2 Maneuver	~ 42	-	-	-	-	-
Stage 1	~ 50	-	-	-	-	-
Stage 2	395	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s\$	324.8	4.2		0		
HCM LOS	F					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	293	-	42	268	-	-
HCM Lane V/C Ratio	0.54	-	2.162	0.48	-	-
HCM Control Delay (s)	30.8	-\$ 741.8		30.2	-	-
HCM Lane LOS	D	-	F	D	-	-
HCM 95th %tile Q(veh)	3	-	9.6	2.4	-	-
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↕↕	↕↗	
Traffic Vol, veh/h	0	76	0	1124	1840	70
Future Vol, veh/h	0	76	0	1124	1840	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	78	0	1147	1878	71
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	-	975	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	*306	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %		1		-	-	-
Mov Cap-1 Maneuver	-	*306	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	20.7	0		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	306	-	-		
HCM Lane V/C Ratio	-	0.253	-	-		
HCM Control Delay (s)	-	20.7	-	-		
HCM Lane LOS	-	C	-	-		
HCM 95th %tile Q(veh)	-	1	-	-		
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Intersection						
Int Delay, s/veh	5.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	42	75	37	150	6
Future Vol, veh/h	6	42	75	37	150	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	6	43	77	38	153	6
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	115	0	-	0	151	96
Stage 1	-	-	-	-	96	-
Stage 2	-	-	-	-	55	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1468	-	-	-	838	958
Stage 1	-	-	-	-	925	-
Stage 2	-	-	-	-	965	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1468	-	-	-	835	958
Mov Cap-2 Maneuver	-	-	-	-	835	-
Stage 1	-	-	-	-	921	-
Stage 2	-	-	-	-	965	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.9	0		10.3		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1468	-	-	-	839	
HCM Lane V/C Ratio	0.004	-	-	-	0.19	
HCM Control Delay (s)	7.5	0	-	-	10.3	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.7	

Intersection						
Int Delay, s/veh	1.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↱			↑↑		↱
Traffic Vol, veh/h	434	32	0	540	0	150
Future Vol, veh/h	434	32	0	540	0	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	443	33	0	551	0	153
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	238
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.33
Pot Cap-1 Maneuver	-	-	0	-	0	760
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	760
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		10.9	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	760	-	-	-		
HCM Lane V/C Ratio	0.201	-	-	-		
HCM Control Delay (s)	10.9	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile Q(veh)	0.7	-	-	-		

Traffic Count Data Sheet

Year Counts Taken:

2018

E-W Street:

Central Av.

Speed Limit (Central Av.)=

55 MPH

N-S Street:

Unser Bd.

Speed Limit (Unser Bd.)=

35 MPH

Signalized

7/12/18

Begin Time	End Time	Eastbound (Central Av.)			Westbound (Central Av.)			Northbound (Unser Bd.)			Southbound (Unser Bd.)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	64	93	3	5	26	14	4	253	20	14	69	26
7:15 AM	7:30 AM	71	104	2	4	29	19	6	327	31	26	92	25
7:30 AM	7:45 AM	93	91	7	15	27	22	2	300	27	22	110	16
7:45 AM	8:00 AM	48	95	6	11	41	16	5	303	40	39	137	37
8:00 AM	8:15 AM	76	94	3	13	37	26	3	205	22	16	104	17
8:15 AM	8:30 AM	46	66	3	9	41	13	2	226	17	27	108	23
8:30 AM	8:45 AM	56	76	3	12	44	21	11	192	16	25	93	18
8:45 AM	9:00 AM	52	78	5	8	42	9	4	185	48	28	103	22
AM Peak Hour Volumes		288	384	18	43	134	83	16	1135	120	103	443	95
% of Total Traffic		10.1%	13.4%	0.6%	1.5%	4.7%	2.9%	0.6%	39.6%	4.2%	3.6%	15.5%	3.3%
% Directional		Intersection											
AM Peak Hour Factor		0.92											
		0.86											
		0.90											

Begin Time	End Time	Eastbound (Central Av.)			Westbound (Central Av.)			Northbound (Unser Bd.)			Southbound (Unser Bd.)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	44	71	6	19	78	13	10	141	20	47	259	37
4:15 PM	4:30 PM	43	79	6	36	79	18	3	142	25	25	271	29
4:30 PM	4:45 PM	48	89	5	27	88	11	9	202	22	26	269	27
4:45 PM	5:00 PM	38	96	14	18	91	13	14	220	29	35	265	36
5:00 PM	5:15 PM	45	94	4	23	82	14	15	173	21	30	263	38
5:15 PM	5:30 PM	41	100	11	21	81	19	14	175	27	35	254	40
5:30 PM	5:45 PM	67	90	11	24	85	14	12	201	24	24	244	36
5:45 PM	6:00 PM	36	103	7	24	81	12	12	161	23	33	272	36
PM Peak Hour Volumes		172	379	34	89	342	57	52	770	99	126	1051	141
% of Total Traffic		5.2%	11.4%	1.0%	2.7%	10.3%	1.7%	1.6%	23.2%	3.0%	3.8%	31.7%	4.3%
% Directional		Intersection											
PM Peak Hour Factor		0.95											
		0.97											
		0.96											
		0.88											

Traffic Count Data Sheet

Year Counts Taken:

2019

E-W Street:

Central Ave.

Signalized

Speed Limit (Central Ave.)=

55

MPH

N-S Street:

86th St.

Signalized

Speed Limit (86th St.)=

35

MPH

2/7/19

Begin Time	End Time	Eastbound (Central Ave.)			Westbound (Central Ave.)			Northbound (86th St.)			Southbound (86th St.)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	0	99	0	19	25	0	8	0	84	0	0	0
7:15 AM	7:30 AM	0	82	0	26	28	0	9	0	76	1	0	0
7:30 AM	7:45 AM	0	78	2	19	36	0	7	0	71	2	0	0
7:45 AM	8:00 AM	0	90	0	14	35	0	12	0	71	1	0	0
8:00 AM	8:15 AM	0	66	2	25	57	0	5	0	52	0	0	0
8:15 AM	8:30 AM	0	73	2	21	47	0	3	0	61	0	0	0
8:30 AM	8:45 AM	0	76	1	25	40	0	4	0	59	0	0	0
8:45 AM	9:00 AM	0	70	1	14	51	0	5	0	56	0	0	0
AM Peak Hour Volumes		0	349	2	78	124	0	36	0	302	4	0	0
% of Total Traffic		0.0%	39.0%	0.2%	8.7%	13.9%	0.0%	4.0%	0.0%	33.7%	0.0%	0.0%	0.0%
% Directional			39.2%			22.6%			37.8%				
AM Peak Hour Factor			0.89			0.92			0.92				
		Intersection 0.95											

Begin Time	End Time	Eastbound (Central Ave.)			Westbound (Central Ave.)			Northbound (86th St.)			Southbound (86th St.)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	1	71	4	32	76	0	7	0	37	1	0	1
4:15 PM	4:30 PM	1	72	5	35	82	1	7	0	39	0	0	0
4:30 PM	4:45 PM	0	89	4	35	78	0	10	0	43	0	0	0
4:45 PM	5:00 PM	0	68	5	48	73	0	7	0	48	0	0	0
5:00 PM	5:15 PM	0	69	1	36	74	0	9	0	41	0	0	0
5:15 PM	5:30 PM	0	71	3	36	67	0	7	0	40	0	0	1
5:30 PM	5:45 PM	1	59	2	36	77	0	8	0	53	0	0	0
5:45 PM	6:00 PM	2	76	2	33	77	0	11	0	47	0	0	0
PM Peak Hour Volumes		1	298	15	154	307	1	33	0	171	0	0	0
% of Total Traffic		0.1%	30.4%	1.5%	15.7%	31.3%	0.1%	3.4%	0.0%	17.4%	0.0%	0.0%	0.0%
% Directional			32.0%			47.1%			20.8%				
PM Peak Hour Factor			0.84			0.95			0.93				
		Intersection 0.95											

Traffic Count Data Sheet

Year Counts Taken: **2019** E-W Street: **Central Ave.** MPH **55**
 N-S Street: **98th St.** MPH **45**
 Speed Limit (Central Ave.)=
 Speed Limit (98th St.)=
2/7/19

Signalized

Begin Time	End Time	Eastbound (Central Ave.)			Westbound (Central Ave.)			Northbound (98th St.)			Southbound (98th St.)		
		L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians
7:00 AM	7:15 AM	98	44	0	0	29	26	32	0	3	365	46	0
	7:15 AM	124	67	6	0	21	27	53	0	4	410	35	0
	7:30 AM	96	60	7	0	28	27	76	0	0	381	30	0
	7:45 AM	88	61	5	0	34	38	34	0	7	395	53	1
	8:00 AM	72	42	3	0	38	39	46	0	4	292	49	1
	8:15 AM	46	33	7	0	45	46	39	0	4	297	34	1
	8:30 AM	48	28	5	0	34	14	44	0	5	299	38	0
	8:45 AM	22	24	1	0	11	19	24	0	4	145	22	0
AM Peak Hour Volumes		406	232	18	0	112	118	195	0	14	1551	164	1
% of Total Traffic		11.9%	6.8%	0.5%		3.3%	3.5%	5.7%		0.4%	45.4%	4.8%	
% Directional			19.2%				12.4%				50.6%		
AM Peak Hour Factor			0.83				0.81				0.95		0.91

Begin Time	End Time	Eastbound (Central Ave.)			Westbound (Central Ave.)			Northbound (98th St.)			Southbound (98th St.)		
		L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians
4:00 PM	4:15 PM	43	55	8	0	57	40	31	1	9	207	39	0
	4:15 PM	54	37	13	0	79	54	29	0	8	173	39	0
	4:30 PM	43	40	6	0	58	49	36	0	9	199	41	0
	4:45 PM	44	49	8	0	70	52	39	4	8	202	35	0
	5:00 PM	52	55	11	2	71	57	42	0	14	189	31	1
	5:15 PM	46	57	14	0	75	54	36	0	9	174	26	0
	5:30 PM	36	28	8	1	48	56	42	0	4	200	33	0
	5:45 PM	18	16	3	0	19	22	8	0	1	73	11	0
PM Peak Hour Volumes		184	181	35	0	264	195	135	5	34	781	154	0
% of Total Traffic		5.2%	5.1%	1.0%		7.4%	5.5%	3.8%		1.0%	22.0%	4.3%	
% Directional			11.3%				16.8%				27.3%		
PM Peak Hour Factor			0.94				0.92				0.95		0.98

Traffic Count Data Sheet

Year Counts Taken:

2019

E-W Street:

Tower Rd.

Speed Limit (Tower Rd.)=

35 MPH

N-S Street:

98th St.

Speed Limit (98th St.)=

45 MPH

Signalized

2/7/19

Begin Time	End Time	Eastbound (Tower Rd.)			Westbound (Tower Rd.)			Northbound (98th St.)			Southbound (98th St.)		
		L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians
7:00 AM	7:15 AM	75	33	18	0	12	6	20	0	7	351	11	0
	7:15 AM	47	25	22	0	7	7	25	1	7	400	9	0
	7:30 AM	50	42	23	0	16	9	42	0	8	371	9	0
	7:45 AM	36	17	14	0	12	24	36	0	11	289	7	0
	8:00 AM	27	8	13	0	4	7	20	0	14	259	9	0
	8:15 AM	30	11	11	0	7	11	27	0	10	228	12	0
	8:30 AM	19	11	12	0	9	9	18	0	11	219	8	0
	8:45 AM	21	15	15	0	12	14	22	0	9	222	11	0
AM Peak Hour Volumes		208	117	77	0	47	46	123	1	33	1411	36	0
% of Total Traffic		7.6%	4.3%	2.8%		1.7%	1.7%	4.5%		1.2%	51.4%	1.3%	
% Directional			14.7%				7.9%				54.0%		
AM Peak Hour Factor			0.80				0.75		Intersection		0.89		0.90

Begin Time	End Time	Eastbound (Tower Rd.)			Westbound (Tower Rd.)			Northbound (98th St.)			Southbound (98th St.)		
		L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians
4:00 PM	4:15 PM	22	7	4	0	18	31	13	0	16	174	13	0
	4:15 PM	20	10	3	0	11	22	16	0	14	233	12	0
	4:30 PM	25	15	1	0	18	31	11	0	22	190	11	0
	4:45 PM	25	12	4	0	11	23	9	0	14	167	5	0
	5:00 PM	26	22	4	0	16	21	14	0	22	160	5	0
	5:15 PM	34	12	10	0	14	27	17	0	15	196	14	0
	5:30 PM	19	17	8	0	19	30	16	0	17	198	10	0
	5:45 PM	4	5	0	0	4	4	2	0	1	35	2	0
	6:00 PM	92	44	12	0	58	107	49	0	66	764	41	0
PM Peak Hour Volumes		3.4%	1.6%	0.4%		2.2%	4.0%	1.8%		2.5%	28.6%	1.5%	
% of Total Traffic			5.5%				8.0%				32.6%		
% Directional									Intersection		0.84		0.94
PM Peak Hour Factor			0.90				0.86		0.94				

Traffic Count Data Sheet

Year Counts Taken: **2019** E-W Street: **I-40 N. Ramp** Speed Limit (I-40 N. Ramp)= **45** MPH
 N-S Street: **98th St.** Speed Limit (98th St.)= **45** MPH
2/18/19

Signalized

Begin Time	End Time	Eastbound (I-40 N. Ramp)			Westbound (I-40 N. Ramp)			Northbound (98th St.)			Southbound (98th St.)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	0	0	0	123	0	0	13	69	0	0	161	0
7:15 AM	7:30 AM	0	0	0	138	1	1	14	118	0	0	118	0
7:30 AM	7:45 AM	0	0	0	97	0	0	21	140	0	0	106	0
7:45 AM	8:00 AM	0	0	0	109	0	0	21	166	7	0	82	0
8:00 AM	8:15 AM	0	0	0	93	0	0	6	111	0	0	76	0
8:15 AM	8:30 AM	0	0	0	98	0	0	11	88	0	0	94	0
8:30 AM	8:45 AM	0	0	0	107	0	0	17	141	0	0	126	0
8:45 AM	9:00 AM	0	0	0	118	0	0	10	60	0	0	104	0
AM Peak Hour Volumes		0	0	0	467	1	1	69	493	7	0	467	0
Percent Approach		#DIV/0!	#DIV/0!	#DIV/0!	99.6%	0.2%	0.2%	12.1%	86.6%	1.2%	0.0%	100.0%	0.0%

Intersection

0.96

AM Peak Hour Factor

#DIV/0!

0.84

0.73

0.73

Begin Time	End Time	Eastbound (I-40 N. Ramp)			Westbound (I-40 N. Ramp)			Northbound (98th St.)			Southbound (98th St.)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	0	0	0	340	0	0	22	67	0	1	135	1
4:15 PM	4:30 PM	0	0	0	386	1	0	19	69	0	0	73	0
4:30 PM	4:45 PM	0	0	0	376	0	0	12	70	0	0	58	0
4:45 PM	5:00 PM	0	0	0	355	0	0	19	55	0	0	67	0
5:00 PM	5:15 PM	0	0	0	309	0	0	21	74	0	0	80	0
5:15 PM	5:30 PM	0	0	0	341	2	0	10	81	0	0	98	0
5:30 PM	5:45 PM	0	0	0	348	0	0	21	79	0	0	72	0
5:45 PM	6:00 PM	0	0	0	364	1	0	15	72	0	0	69	0
PM Peak Hour Volumes		0	0	0	1457	1	0	72	261	0	1	333	1
Percent Approach		#DIV/0!	#DIV/0!	#DIV/0!	99.9%	0.1%	0.0%	21.6%	78.4%	0.0%	0.0%	99.7%	0.3%

Intersection

0.94

PM Peak Hour Factor

#DIV/0!

0.94

0.94

0.61

Turning Movement Demand Worksheet:

Laneage:	0	0	0	2	1	0	1	2	0	0	3	0					
Lane Length (Ft.):	0	0	0	750	750	0	95	999	0	0	999	0					
Lane Capacity (veh.)	0	0	0	60	30	0	3	78	0	0	117	0					
% Turns	#DIV/0!	#DIV/0!	#DIV/0!	99.6%	0.2%	0.2%	12.1%	86.6%	1.2%	0.0%	100.0%	0.0%					
Begin Time	Eastbound (I-40 N. Ramp)				Westbound (I-40 N. Ramp)				Northbound (98th St.)				Southbound (98th St.)				Video Time
End Time	L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians	
7:00 AM	7:15 AM	0	0	0	123	0	0	0	13	69	0	0	0	161	0	0	
End of Period Queue	#DIV/0!	#DIV/0!	#DIV/0!	0	0	0	0	0	1	10	0	0	0	5	0	0	3-10:00
15-Minute Demand	#DIV/0!	#DIV/0!	#DIV/0!	123	0	0	0	0	14	79	0	0	0	166	0	0	
7:15 AM	7:30 AM	0	0	0	138	1	1	0	14	118	0	0	0	118	0	0	
End of Period Queue	#DIV/0!	#DIV/0!	#DIV/0!	0	0	0	0	0	1	7	0	0	0	5	0	0	4-10:00
Distributed Queue	#DIV/0!	#DIV/0!	#DIV/0!	0	0	0	0	0	1	7	0	0	0	5	0	0	
Prev. Queue Credit	#DIV/0!	#DIV/0!	#DIV/0!	0	0	0	0	0	-1	-10	0	0	0	-5	0	0	
15-Minute Demand	#DIV/0!	#DIV/0!	#DIV/0!	138	1	1	0	0	14	115	0	0	0	118	0	0	
7:30 AM	7:45 AM	0	0	0	97	0	0	0	21	140	0	0	0	106	0	0	
End of Period Queue	#DIV/0!	#DIV/0!	#DIV/0!	0	0	0	0	0	1	8	0	0	0	1	0	0	5-10:00
Distributed Queue	#DIV/0!	#DIV/0!	#DIV/0!	0	0	0	0	0	1	8	0	0	0	1	0	0	
Prev. Queue Credit	#DIV/0!	#DIV/0!	#DIV/0!	0	0	0	0	0	-1	-7	0	0	0	-5	0	0	
15-Minute Demand	#DIV/0!	#DIV/0!	#DIV/0!	97	0	0	0	0	21	141	0	0	0	102	0	0	
7:45 AM	8:00 AM	0	0	0	109	0	0	0	21	166	7	0	0	82	0	0	
End of Period Queue	#DIV/0!	#DIV/0!	#DIV/0!	0	0	0	0	0	1	7	0	0	0	1	0	0	6-10:00
Distributed Queue	#DIV/0!	#DIV/0!	#DIV/0!	0	0	0	0	0	-1	-8	0	0	0	-1	0	0	
Prev. Queue Credit	#DIV/0!	#DIV/0!	#DIV/0!	0	0	0	0	0	-1	-8	0	0	0	-1	0	0	
15-Minute Demand	#DIV/0!	#DIV/0!	#DIV/0!	109	0	0	0	0	21	165	7	0	0	82	0	0	
8:00 AM	8:15 AM	0	0	0	93	0	0	0	6	111	0	0	0	76	0	0	
End of Period Queue	#DIV/0!	#DIV/0!	#DIV/0!	4	0	0	0	0	0	0	0	0	0	0	0	0	7-10:00
Distributed Queue	#DIV/0!	#DIV/0!	#DIV/0!	0	0	0	0	0	-1	-7	0	0	0	-1	0	0	
Prev. Queue Credit	#DIV/0!	#DIV/0!	#DIV/0!	0	0	0	0	0	-1	-7	0	0	0	-1	0	0	
15-Minute Demand	#DIV/0!	#DIV/0!	#DIV/0!	97	0	0	0	0	5	104	0	0	0	75	0	0	
8:15 AM	8:30 AM	0	0	0	98	0	0	0	11	88	0	0	0	94	0	0	
End of Period Queue	#DIV/0!	#DIV/0!	#DIV/0!	12	0	0	0	0	0	0	0	0	0	0	0	0	8-10:00
Distributed Queue	#DIV/0!	#DIV/0!	#DIV/0!	-4	0	0	0	0	0	0	0	0	0	0	0	0	
Prev. Queue Credit	#DIV/0!	#DIV/0!	#DIV/0!	-4	0	0	0	0	0	0	0	0	0	0	0	0	
15-Minute Demand	#DIV/0!	#DIV/0!	#DIV/0!	106	0	0	0	0	11	88	0	0	0	94	0	0	
8:30 AM	8:45 AM	0	0	0	107	0	0	0	17	141	0	0	0	126	0	0	
End of Period Queue	#DIV/0!	#DIV/0!	#DIV/0!	6	0	0	0	0	0	0	0	0	0	0	0	0	9-10:00
Distributed Queue	#DIV/0!	#DIV/0!	#DIV/0!	-12	0	0	0	0	0	0	0	0	0	0	0	0	
Prev. Queue Credit	#DIV/0!	#DIV/0!	#DIV/0!	-12	0	0	0	0	0	0	0	0	0	0	0	0	
15-Minute Demand	#DIV/0!	#DIV/0!	#DIV/0!	101	0	0	0	0	17	141	0	0	0	126	0	0	
8:45 AM	9:00 AM	0	0	0	118	0	0	0	10	60	0	0	0	104	0	0	
End of Period Queue	#DIV/0!	#DIV/0!	#DIV/0!	10	0	0	0	0	0	0	0	0	0	0	0	0	10-10:00
Distributed Queue	#DIV/0!	#DIV/0!	#DIV/0!	-6	0	0	0	0	0	0	0	0	0	0	0	0	
Prev. Queue Credit	#DIV/0!	#DIV/0!	#DIV/0!	-6	0	0	0	0	0	0	0	0	0	0	0	0	
15-Minute Demand	#DIV/0!	#DIV/0!	#DIV/0!	122	0	0	0	0	10	60	0	0	0	104	0	0	

Turning Movement Demand Worksheet:

Laneage:	0	0	0	2	1	0	1	2	0	0	3	0
Lane Length (Ft.):	0	0	0	750	750	0	95	999	0	0	999	0
Lane Capacity (veh.)	0	0	0	60	30	0	3	78	0	0	117	0
% Turns	#DIV/0!	#DIV/0!	#DIV/0!	99.9%	0.1%	0.0%	21.6%	78.4%	0.0%	0.0%	99.7%	0.3%
Begin Time	Eastbound (I-40 N. Ramp)			Westbound (I-40 N. Ramp)			Northbound (98th St.)			Southbound (98th St.)		
End Time	L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians
4:00 PM	0	0	0		340	0	0		22	67	0	
End of Period Queue	0	0	0		5	0	0		12	0	0	
Distributed Queue	#DIV/0!	#DIV/0!	#DIV/0!		5	0	0		3	9	0	
15-Minute Demand	#DIV/0!	#DIV/0!	#DIV/0!		345	0	0		25	76	0	
4:15 PM	0	0	0		386	1	0		19	69	0	
End of Period Queue	0	0	0		3	0	0		2	0	0	
Distributed Queue	#DIV/0!	#DIV/0!	#DIV/0!		3	0	0		0	2	0	
Prev. Queue Credit	#DIV/0!	#DIV/0!	#DIV/0!		-5	0	0		-3	-9	0	
15-Minute Demand	#DIV/0!	#DIV/0!	#DIV/0!	0	384	1	0	0	16	62	0	0
4:30 PM	0	0	0		376	0	0		12	70	0	
End of Period Queue	0	0	0		14	0	0		0	0	0	
Distributed Queue	#DIV/0!	#DIV/0!	#DIV/0!		14	0	0		0	0	0	
Prev. Queue Credit	#DIV/0!	#DIV/0!	#DIV/0!		-3	0	0		0	-2	0	
15-Minute Demand	#DIV/0!	#DIV/0!	#DIV/0!	0	387	0	0	0	12	68	0	0
4:45 PM	0	0	0		355	0	0		19	55	0	
End of Period Queue	0	0	0		10	0	0		1	0	0	
Distributed Queue	#DIV/0!	#DIV/0!	#DIV/0!		10	0	0		0	1	0	
Prev. Queue Credit	#DIV/0!	#DIV/0!	#DIV/0!		-14	0	0		0	0	0	
15-Minute Demand	#DIV/0!	#DIV/0!	#DIV/0!	0	351	0	0	0	19	56	0	0
5:00 PM	0	0	0		309	0	0		21	74	0	
End of Period Queue	0	0	0		8	0	0		2	0	0	
Distributed Queue	#DIV/0!	#DIV/0!	#DIV/0!		8	0	0		0	2	0	
Prev. Queue Credit	#DIV/0!	#DIV/0!	#DIV/0!		-10	0	0		0	-1	0	
15-Minute Demand	#DIV/0!	#DIV/0!	#DIV/0!	0	307	0	0	0	21	75	0	0
5:15 PM	0	0	0		341	2	0		10	81	0	
End of Period Queue	0	0	0		8	0	0		4	0	0	
Distributed Queue	#DIV/0!	#DIV/0!	#DIV/0!		8	0	0		1	3	0	
Prev. Queue Credit	#DIV/0!	#DIV/0!	#DIV/0!		-8	0	0		0	-2	0	
15-Minute Demand	#DIV/0!	#DIV/0!	#DIV/0!	0	341	2	0	0	11	82	0	0
5:30 PM	0	0	0		348	0	0		21	79	0	
End of Period Queue	0	0	0		0	0	0		5	0	0	
Distributed Queue	#DIV/0!	#DIV/0!	#DIV/0!		0	0	0		1	4	0	
Prev. Queue Credit	#DIV/0!	#DIV/0!	#DIV/0!		-8	0	0		-1	-3	0	
15-Minute Demand	#DIV/0!	#DIV/0!	#DIV/0!	0	340	0	0	0	21	80	0	0
5:45 PM	0	0	0		364	1	0		15	72	0	
End of Period Queue	0	0	0		16	0	0		3	0	0	
Distributed Queue	#DIV/0!	#DIV/0!	#DIV/0!		16	0	0		1	2	0	
Prev. Queue Credit	#DIV/0!	#DIV/0!	#DIV/0!		0	0	0		-1	-4	0	
15-Minute Demand	#DIV/0!	#DIV/0!	#DIV/0!	0	380	1	0	0	15	70	0	0

Traffic Count Data Sheet (Demand Adjusted)

Year Counts Taken:

2019

E-W Street:

I-40 N. Ramp
98th St.

Speed Limit (I-40 N. Ramp)=

45 MPH

Speed Limit (98th St.)=

45 MPH

Signalized

2/18/19

Begin Time	End Time	Eastbound (I-40 N. Ramp)			Westbound (I-40 N. Ramp)			Northbound (98th St.)			Southbound (98th St.)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	0	0	0	123	0	0	14	79	0	0	166	0
7:15 AM	7:30 AM	0	0	0	138	1	1	14	115	0	0	118	0
7:30 AM	7:45 AM	0	0	0	97	0	0	21	141	0	0	102	0
7:45 AM	8:00 AM	0	0	0	109	0	0	21	165	7	0	82	0
8:00 AM	8:15 AM				97	0	0	5	104	0	0	75	0
8:15 AM	8:30 AM				106	0	0	11	88	0	0	94	0
8:30 AM	8:45 AM				101	0	0	17	141	0	0	126	0
8:45 AM	9:00 AM				122	0	0	10	60	0	0	104	0
AM Peak Hour Volumes		0	0	0	467	1	1	70	500	7	0	468	0
Percent Approach		#DIV/0!	#DIV/0!	#DIV/0!	99.6%	0.2%	0.2%	12.1%	86.7%	1.2%	0.0%	100.0%	0.0%

0.0%

0.0%

1.2%

12.1%

0.2%

0.2%

#DIV/0!

#DIV/0!

#DIV/0!

Intersection

0.84

0.98

0.75

0.70

Begin Time	End Time	Eastbound (I-40 N. Ramp)			Westbound (I-40 N. Ramp)			Northbound (98th St.)			Southbound (98th St.)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	0	0	0	345	0	0	25	76	0	1	146	1
4:15 PM	4:30 PM	0	0	0	384	1	0	16	62	0	0	65	0
4:30 PM	4:45 PM	0	0	0	387	0	0	12	68	0	0	55	0
4:45 PM	5:00 PM	0	0	0	351	0	0	19	56	0	0	68	0
5:00 PM	5:15 PM				307	0	0	21	75	0	0	80	0
5:15 PM	5:30 PM				341	2	0	11	82	0	0	98	0
5:30 PM	5:45 PM				340	0	0	21	80	0	0	79	0
5:45 PM	6:00 PM				390	1	0	15	70	0	0	66	0
PM Peak Hour Volumes		0	0	0	1467	1	0	72	262	0	1	334	1
Percent Approach		#DIV/0!	#DIV/0!	#DIV/0!	99.9%	0.1%	0.0%	21.6%	78.4%	0.0%	0.0%	99.7%	0.3%

0.0%

0.0%

0.0%

21.6%

0.0%

0.1%

#DIV/0!

#DIV/0!

#DIV/0!

Intersection

0.95

0.90

0.83

0.57

AM Peak Hour Raw Count	0	0	0	0	467	1	1	0	493	7	0	467	0
% Change	N/A	N/A	N/A	N/A	0.0%	0.0%	0.0%	N/A	1.4%	0.0%	N/A	0.2%	N/A
AM Peak Hour Raw Count	0	0	0	0	1457	1	0	72	261	0	1	333	1
% Change	N/A	N/A	N/A	N/A	0.7%	0.0%	N/A	0.0%	0.4%	N/A	0.0%	0.3%	0.0%

Traffic Count Data Sheet

Year Counts Taken: **2019** E-W Street: **I-40 S. Ramp** Speed Limit (I-40 S. Ramp)= **30** MPH
 N-S Street: **98th St.** Speed Limit (98th St.)= **45** MPH
2/7/19

Signalized

Begin Time	End Time	Eastbound (I-40 S. Ramp)			Westbound (I-40 S. Ramp)			Northbound (98th St.)			Southbound (98th St.)		
		L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians
7:00 AM	7:15 AM	5	0	0	0	0	0	0	0	0	174	0	0
7:15 AM	7:30 AM	7	0	0	0	0	0	0	0	0	193	0	0
7:30 AM	7:45 AM	5	0	0	0	0	0	0	0	0	159	0	0
7:45 AM	8:00 AM	3	0	0	0	0	0	0	0	0	179	0	0
8:00 AM	8:15 AM	5	0	0	0	0	0	0	0	0	136	0	0
8:15 AM	8:30 AM	7	0	0	0	0	0	0	0	0	159	0	0
8:30 AM	8:45 AM	18	0	0	0	0	0	0	0	0	177	0	0
8:45 AM	9:00 AM	4	0	0	0	0	0	0	0	0	186	0	0
AM Peak Hour Volumes		20	0	0	0	0	0	0	0	0	705	0	0
% of Total Traffic		1.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	56.0%	0.0%	0.0%
% Directional		1.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	56.0%	0.0%	0.0%
AM Peak Hour Factor		0.71			Intersection 0.86			0.73			0.91		

Begin Time	End Time	Eastbound (I-40 S. Ramp)			Westbound (I-40 S. Ramp)			Northbound (98th St.)			Southbound (98th St.)		
		L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians
4:00 PM	4:15 PM	3	0	0	0	0	0	0	0	0	497	0	0
4:15 PM	4:30 PM	5	0	0	0	0	0	0	0	0	461	0	0
4:30 PM	4:45 PM	8	0	0	0	0	0	0	0	0	454	0	0
4:45 PM	5:00 PM	9	0	0	0	0	0	0	0	0	411	0	0
5:00 PM	5:15 PM	4	0	0	0	0	0	0	0	0	431	0	0
5:15 PM	5:30 PM	12	0	0	0	0	0	0	0	0	418	0	0
5:30 PM	5:45 PM	9	0	0	0	0	0	0	0	0	422	0	0
5:45 PM	6:00 PM	5	0	0	0	0	0	0	0	0	428	0	0
PM Peak Hour Volumes		25	0	0	0	0	0	0	1	0	1823	0	0
% of Total Traffic		1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	84.4%	0.0%	0.0%
% Directional		1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	84.4%	0.0%	0.0%
PM Peak Hour Factor		0.69			Intersection 0.92			0.87			0.92		

Traffic Count Data Sheet

Year Counts Taken:

2019

E-W Street:

Central Ave.
Bridge Blvd.

N-S Street:

Speed Limit (Central Ave.)=

Speed Limit (Bridge Blvd.)=

55 MPH

40 MPH

2/7/19

Unsignalized

Begin Time	End Time	Eastbound (Central Ave.)				Westbound (Central Ave.)				Northbound (Bridge Blvd.)				Southbound (Bridge Blvd.)			
		L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians
7:00 AM	7:15 AM	2	100	42	0	1	35	0	0	35	0	1	0	0	0	2	0
	7:15 AM	1	79	44	0	0	39	0	0	41	0	0	0	1	0	0	0
	7:30 AM	2	80	58	0	1	43	0	0	41	1	0	0	1	0	0	1
	7:45 AM	2	83	39	0	0	44	0	0	37	1	1	0	2	1	1	0
	8:00 AM	1	61	27	0	3	64	1	0	28	0	1	0	0	1	2	0
	8:15 AM	0	68	39	0	3	49	0	0	28	0	1	0	0	1	1	0
	8:30 AM	1	76	30	0	1	48	0	0	36	0	0	0	1	0	0	0
	8:45 AM	0	71	39	0	1	50	0	0	36	0	2	0	1	0	0	0
AM Peak Hour Volumes		7	342	183	0	2	161	0	0	154	2	2	0	4	1	3	1
% of Total Traffic		0.8%	39.7%	21.3%		0.2%	18.7%	0.0%		17.9%	0.2%	0.2%		0.5%	0.1%	0.3%	
% Directional			61.8%				18.9%				18.4%				0.9%		
AM Peak Hour Factor			0.92				0.93				0.94				0.50		
		Intersection 0.95															

Begin Time	End Time	Eastbound (Central Ave.)				Westbound (Central Ave.)				Northbound (Bridge Blvd.)				Southbound (Bridge Blvd.)			
		L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians
4:00 PM	4:15 PM	0	75	40	1	0	78	0	0	28	2	0	0	0	0	1	0
	4:15 PM	0	77	39	0	2	91	0	0	40	1	0	0	2	2	0	0
	4:30 PM	1	90	68	0	0	89	0	0	39	0	2	0	1	0	0	0
	4:45 PM	0	65	47	0	1	85	1	0	48	0	1	0	0	0	1	0
	5:00 PM	0	73	60	0	0	86	0	0	46	0	0	0	0	0	0	0
	5:15 PM	0	75	46	0	1	80	1	0	43	1	2	0	0	0	0	0
	5:30 PM	0	65	54	0	1	80	0	0	48	3	0	0	1	3	0	0
	5:45 PM	1	80	53	0	0	92	3	0	43	0	0	0	0	1	1	0
PM Peak Hour Volumes		1	305	214	0	3	351	1	0	173	1	3	0	3	2	1	0
% of Total Traffic		0.1%	28.8%	20.2%		0.3%	33.2%	0.1%		16.4%	0.1%	0.3%		0.3%	0.2%	0.1%	
% Directional			49.1%				33.6%				16.7%				0.6%		
PM Peak Hour Factor			0.82				0.95				0.90				0.38		
		Intersection 0.91															

Traffic Count Data Sheet

Year Counts Taken: **2019** E-W Street: **Sunset Gardens** Speed Limit (Sunset Gardens)= **25** MPH
 N-S Street: **98th St.** Speed Limit (98th St.)= **45** MPH
2/8/19

Unsignalized

Begin Time	End Time	Eastbound (Sunset Gardens)			Westbound (Sunset Gardens)			Northbound (98th St.)			Southbound (98th St.)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	11	1	4	1	1	12	2	443	3	1	145	0
7:15 AM	7:30 AM	6	1	7	1	0	13	4	411	4	1	161	3
7:30 AM	7:45 AM	3	2	12	1	0	7	2	431	8	4	147	3
7:45 AM	8:00 AM	6	0	1	1	1	8	9	364	2	1	154	3
8:00 AM	8:15 AM	4	1	4	0	0	10	2	337	2	5	149	3
8:15 AM	8:30 AM	4	1	3	0	0	4	1	330	3	3	144	4
8:30 AM	8:45 AM	8	1	3	3	0	11	5	341	3	5	139	2
8:45 AM	9:00 AM	8	1	2	0	0	8	4	290	1	5	163	6
AM Peak Hour Volumes		26	4	24	4	2	40	17	1649	17	7	607	9
% of Total Traffic		1.1%	0.2%	1.0%	0.2%	0.1%	1.7%	0.7%	68.5%	0.7%	0.3%	25.2%	0.4%
% Directional			2.2%			1.9%			69.9%			25.9%	
AM Peak Hour Factor			0.79			0.82			0.94			0.94	

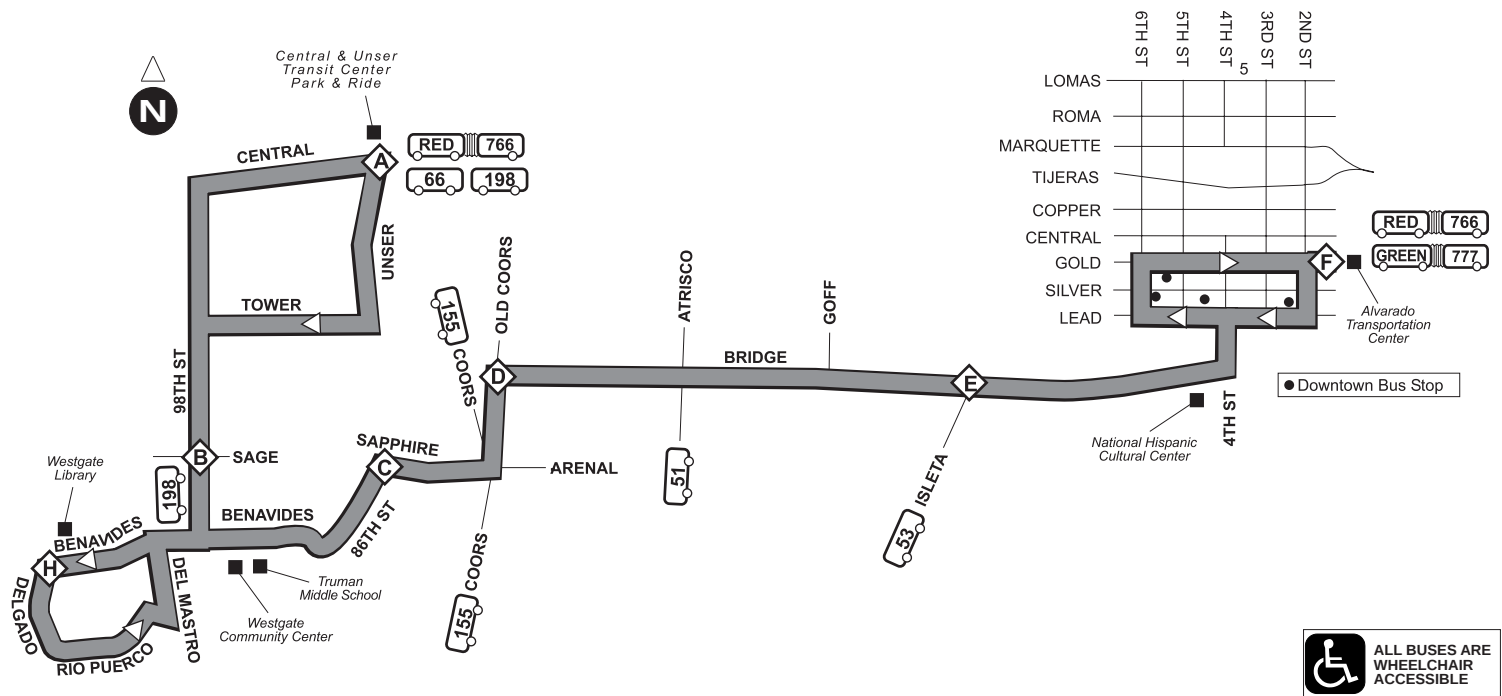
Intersection
0.96

Begin Time	End Time	Eastbound (Sunset Gardens)			Westbound (Sunset Gardens)			Northbound (98th St.)			Southbound (98th St.)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	3	0	6	1	0	4	8	260	1	10	409	10
4:15 PM	4:30 PM	2	2	8	2	1	8	4	211	4	9	385	4
4:30 PM	4:45 PM	4	1	5	0	0	9	5	230	1	7	395	7
4:45 PM	5:00 PM	2	0	5	3	0	8	8	210	2	1	378	12
5:00 PM	5:15 PM	4	0	9	0	1	2	3	241	1	0	396	9
5:15 PM	5:30 PM	4	1	7	2	4	3	4	253	2	0	423	11
5:30 PM	5:45 PM	4	0	5	1	0	9	10	249	2	0	375	10
5:45 PM	6:00 PM	3	0	4	1	1	6	7	240	1	0	362	7
PM Peak Hour Volumes		14	1	26	5	6	22	25	953	7	30	1572	42
% of Total Traffic		0.5%	0.0%	1.0%	0.2%	0.2%	0.8%	0.9%	35.2%	0.3%	1.1%	58.1%	1.6%
% Directional			1.5%			1.2%			36.4%			60.8%	
PM Peak Hour Factor			0.79			0.75			0.94			0.94	

Intersection
0.94

Route / Ruta 54 Bridge Blvd. / Westgate

Effective: May 12, 2018



Route 54 - Weekday Eastbound

A	B	C	D	E	F
5:40a	5:46a	5:50a	5:58a	6:04a	6:13a
6:38a	6:44a	6:48a	6:56a	7:03a	7:13a
7:24a	7:32a	7:37a	7:46a	7:54a	8:04a
8:10a	8:18a	8:23a	8:32a	8:40a	8:50a
8:59a	9:05a	9:09a	9:17a	9:23a	9:32a
9:46a	9:52a	9:56a	10:04a	10:10a	10:19a
10:31a	10:37a	10:41a	10:49a	10:55a	11:04a
11:16a	11:22a	11:26a	11:34a	11:40a	11:49a
12:01p	12:07p	12:11p	12:19p	12:25p	12:34p
12:46p	12:52p	12:56p	1:04p	1:10p	1:19p
1:31p	1:37p	1:41p	1:49p	1:56p	2:05p
2:18p	2:24p	2:28p	2:36p	2:43p	2:52p
3:07p	3:13p	3:17p	3:25p	3:32p	3:43p
3:52p	4:00p	4:06p	4:14p	4:21p	4:32p
4:38p	4:46p	4:53p	5:03p	5:10p	5:21p
5:19p	5:27p	5:34p	5:44p	5:51p	6:02p
5:57p	6:05p	6:12p	6:22p	6:29p	6:39p
6:46p	6:52p	6:56p	7:04p	7:10p	7:18p
8:13p	8:19p	8:23p	8:31p	8:37p	8:45p

Route 54 - Weekday Westbound

F	E	D	C	G	B	A
5:47a	5:55a	6:01a	6:08a	6:16a	6:22a	6:28a
6:32a	6:40a	6:46a	6:53a	7:01a	7:07a	7:13a
7:21a	7:29a	7:36a	7:44a	7:52a	7:58a	8:04a
8:10a	8:18a	8:25a	8:33a	8:41a	8:47a	8:53a
9:00a	9:08a	9:14a	9:22a	9:30a	9:36a	9:42a
9:45a	9:53a	9:59a	10:07a	10:15a	10:21a	10:27a
10:30a	10:38a	10:44a	10:52a	11:00a	11:06a	11:12a
11:15a	11:23a	11:29a	11:37a	11:45a	11:51a	11:57a
12:00p	12:08p	12:14p	12:22p	12:30p	12:36p	12:42p
12:45p	12:53p	12:59p	1:07p	1:15p	1:21p	1:27p
1:30p	1:38p	1:44p	1:52p	2:00p	2:08p	2:14p
2:15p	2:23p	2:33p	2:41p	2:49p	2:57p	3:03p
3:00p	3:08p	3:18p	3:26p	3:34p	3:42p	3:48p
3:40p	3:48p	3:58p	4:06p	4:14p	4:23p	4:29p
4:20p	4:28p	4:39p	4:47p	4:55p	5:04p	5:10p
5:05p	5:13p	5:24p	5:32p	5:40p	5:49p	5:55p
5:50p	5:58p	6:09p	6:17p	6:25p	6:32p	6:38p
6:43p	6:51p	7:00p	7:08p	7:16p	7:23p	7:29p
7:25p	7:33p	7:39p	7:47p	7:55p	8:02p	8:08p
8:15p	8:23p	8:29p	8:36p	8:44p	8:50p	8:56p
9:07p	9:15p	9:21p	9:28p	9:36p	9:42p	9:48p

Route 54 - Saturday Eastbound

6:00a	6:08a	6:13a	6:18a	6:25a	6:40a
7:00a	7:08a	7:13a	7:18a	7:25a	7:40a
8:00a	8:08a	8:13a	8:18a	8:25a	8:40a
9:00a	9:08a	9:13a	9:18a	9:25a	9:40a
10:00a	10:08a	10:13a	10:18a	10:25a	10:40a
11:00a	11:08a	11:13a	11:18a	11:25a	11:40a
12:00p	12:08p	12:13p	12:18p	12:25p	12:40p
1:00p	1:08p	1:13p	1:18p	1:25p	1:40p
2:00p	2:08p	2:13p	2:18p	2:25p	2:40p
3:00p	3:08p	3:13p	3:18p	3:25p	3:40p
4:00p	4:08p	4:13p	4:18p	4:25p	4:40p
5:00p	5:08p	5:13p	5:18p	5:25p	5:40p
6:00p	6:08p	6:13p	6:18p	6:25p	6:40p
7:00p	7:08p	7:13p	7:18p	7:25p	7:40p
8:00p	8:08p	8:13p	8:18p	8:25p	8:40p
9:00p	9:08p	9:13p	9:18p	9:25p	9:40p

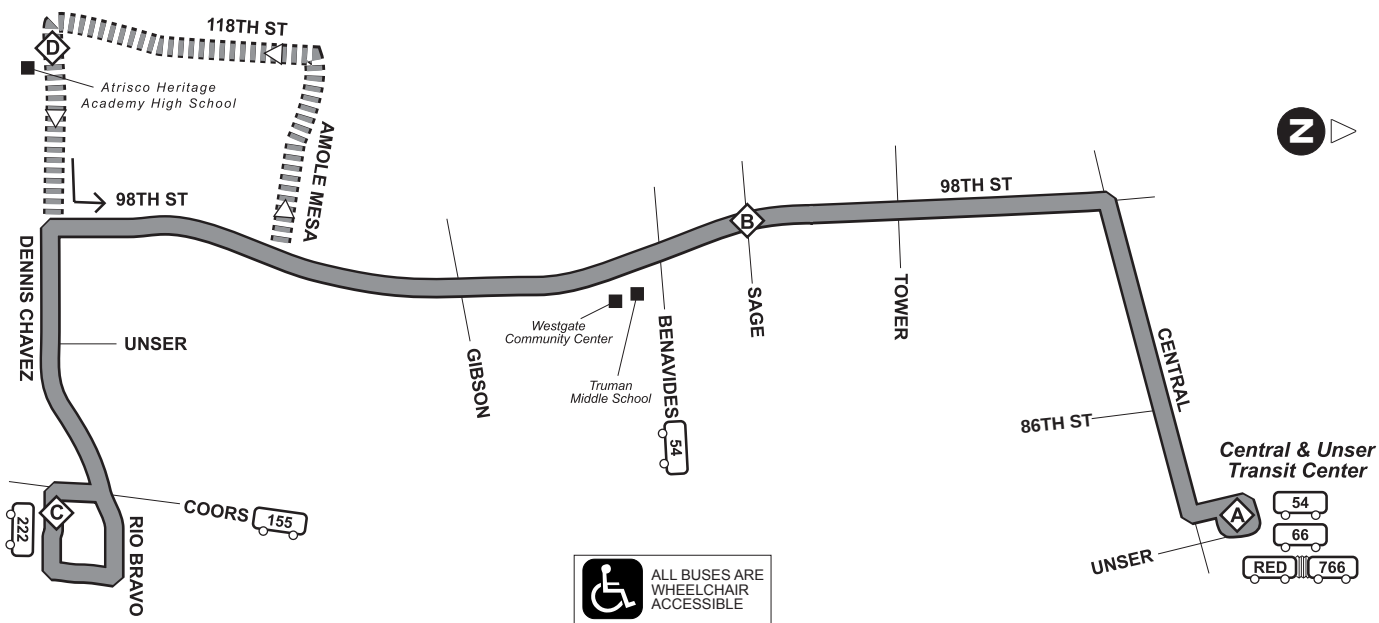
Route 54 - Saturday Westbound

7:00a	7:09a	7:15a	7:21a	7:28a	7:34a	7:40a
8:00a	8:09a	8:15a	8:21a	8:28a	8:34a	8:40a
9:00a	9:09a	9:15a	9:21a	9:28a	9:34a	9:40a
10:00a	10:09a	10:15a	10:21a	10:28a	10:34a	10:40a
11:00a	11:09a	11:15a	11:21a	11:28a	11:34a	11:40a
12:00p	12:09p	12:15p	12:21p	12:28p	12:34p	12:40p
1:00p	1:09p	1:15p	1:21p	1:28p	1:34p	1:40p
2:00p	2:09p	2:15p	2:21p	2:28p	2:34p	2:40p
3:00p	3:09p	3:15p	3:21p	3:28p	3:34p	3:40p
4:00p	4:09p	4:15p	4:21p	4:28p	4:34p	4:40p
5:00p	5:09p	5:15p	5:21p	5:28p	5:34p	5:40p
6:12p	6:21p	6:27p	6:33p	6:40p	6:46p	6:52p
7:10p	7:19p	7:25p	7:31p	7:38p	7:44p	7:50p
8:00p	8:09p	8:15p	8:21p	8:28p	8:34p	8:40p
9:00p	9:09p	9:15p	9:21p	9:28p	9:34p	9:40p

Route / Ruta 198

98th Street / Dennis Chavez

Effective: January 7, 2017



Route 198 - Northbound

Route 198 - Southbound

Weekday

Saturday

Weekday

Saturday

ATRISCO HERITAGE ACADEMY H.S.	COORS & RIO BRAVO	98TH & SAGE	CENTRAL & UNSER TRANSIT CENTER P&R
D	C	B	A
.....	6:20a	6:29a	6:36a
6:53a	.....	6:58a	7:05a
.....	7:26a	7:36a	7:43a
.....	8:01a	8:10a	8:17a
.....	8:30a	8:39a	8:46a
.....	9:00a	9:09a	9:16a
.....	9:30a	9:39a	9:46a
.....	10:00a	10:09a	10:16a
.....	10:30a	10:39a	10:46a
.....	11:00a	11:09a	11:16a
.....	11:30a	11:39a	11:46a
.....	12:00p	12:09p	12:16p
.....	12:31p	12:40p	12:47p
.....	1:02p	1:11p	1:18p
.....	1:33p	1:42p	1:49p
.....	2:03p	2:12p	2:19p
.....	2:33p	2:42p	2:49p
3:07p	.....	3:12p	3:19p
.....	3:33p	3:42p	3:49p
.....	4:07p	4:16p	4:23p
.....	4:41p	4:50p	4:57p
5:10p	.....	5:15p	5:22p
.....	5:37p	5:46p	5:52p
.....	6:08p	6:17p	6:23p
.....	6:36p	6:45p	6:51p
.....	7:03p	7:11p	7:17p
.....	7:31p	7:39p	7:45p
.....	8:06p	8:14p	8:20p
.....	8:51p	8:59p	9:05p
.....	9:33p	9:41p	9:47p
.....	10:23p	10:31p	10:37p

COORS & RIO BRAVO	98TH & SAGE	CENTRAL & UNSER TRANSIT CENTER P&R
C	B	A
6:47a	6:55a	7:01a
7:19a	7:27a	7:33a
7:50a	7:58a	8:04a
8:22a	8:30a	8:36a
8:51a	8:59a	9:05a
9:22a	9:30a	9:37a
9:55a	10:03a	10:10a
10:27a	10:35a	10:42a
10:59a	11:07a	11:14a
11:31a	11:39a	11:46a
12:03p	12:11p	12:18p
12:38p	12:46p	12:53p
1:10p	1:18p	1:25p
1:43p	1:51p	1:58p
2:15p	2:23p	2:30p
2:47p	2:55p	3:02p
3:19p	3:27p	3:34p
3:53p	4:01p	4:08p
4:25p	4:33p	4:40p
4:58p	5:06p	5:13p
5:30p	5:38p	5:45p
6:01p	6:09p	6:16p
6:33p	6:41p	6:48p
7:04p	7:12p	7:19p
7:35p	7:43p	7:50p
8:12p	8:20p	8:27p
8:56p	9:04p	9:11p
9:41p	9:49p	9:56p

Sunday

6:47a	6:55a	7:01a
7:19a	7:27a	7:33a
7:50a	7:58a	8:04a
8:22a	8:30a	8:36a
8:51a	8:59a	9:05a
9:22a	9:30a	9:37a
9:55a	10:03a	10:10a
10:27a	10:35a	10:42a
10:59a	11:07a	11:14a
11:31a	11:39a	11:46a
12:03p	12:11p	12:18p
12:38p	12:46p	12:53p
1:10p	1:18p	1:25p
1:43p	1:51p	1:58p
2:15p	2:23p	2:30p
2:47p	2:55p	3:02p
3:19p	3:27p	3:34p
3:53p	4:01p	4:08p
4:25p	4:33p	4:40p
4:58p	5:06p	5:13p
5:30p	5:38p	5:45p

CENTRAL & UNSER TRANSIT CENTER P&R	98TH & SAGE	COORS & RIO BRAVO	ATRISCO HERITAGE ACADEMY H.S.
A	B	C	D
6:03a	6:07a	6:17a	.....
6:36a	6:40a	.....	6:50a
7:06a	7:11a	7:22a	.....
7:39a	7:44a	7:55a	.....
8:10a	8:15a	8:25a	.....
8:40a	8:45a	8:55a	.....
9:10a	9:15a	9:25a	.....
9:40a	9:45a	9:55a	.....
10:10a	10:15a	10:25a	.....
10:40a	10:45a	10:55a	.....
11:13a	11:18a	11:28a	.....
11:43a	11:48a	11:58a	.....
12:13p	12:18p	12:29p	.....
12:44p	12:49p	1:00p	.....
1:15p	1:20p	1:31p	.....
1:45p	1:50p	2:01p	.....
2:14p	2:20p	2:31p	.....
2:48p	2:54p	.....	3:04p
3:13p	3:19p	3:31p	.....
3:45p	3:51p	4:03p	.....
4:19p	4:25p	4:37p	.....
4:43p	4:49p	.....	4:59p
5:13p	5:19p	5:31p	.....
5:43p	5:49p	6:01p	.....
6:13p	6:19p	6:30p	.....
6:40p	6:46p	6:57p	.....
7:10p	7:16p	7:27p	.....
7:47p	7:53p	8:04p	.....
8:32p	8:38p	8:49p	.....
9:11p	9:17p	9:28p	.....
10:05p	10:10p	10:21p	.....

Sunday

6:30a	6:35a	6:45a
7:01a	7:06a	7:16a
7:31a	7:36a	7:46a
8:02a	8:07a	8:17a
8:33a	8:38a	8:48a
9:04a	9:09a	9:19a
9:36a	9:41a	9:52a
10:08a	10:13a	10:24a
10:40a	10:45a	10:56a
11:12a	11:17a	11:28a
11:44a	11:49a	12:00p
12:18p	12:24p	12:35p
12:50p	12:56p	1:07p
1:22p	1:29p	1:40p
1:54p	2:01p	2:12p
2:26p	2:33p	2:44p
2:58p	3:05p	3:16p
3:32p	3:39p	3:50p
4:04p	4:11p	4:22p
4:37p	4:44p	4:55p
5:09p	5:16p	5:27p

SCOPE OF TRAFFIC IMPACT STUDY (TIS)

TO: Terry Brown

MEETING DATE: January 22, 2019

ATTENDEES: Consultant Team; COA Transportation Development Review

PROJECT: Mercado el Milagro, L-09

REQUESTED CITY ACTION: ☐ Zone Change ☒ Site Development Plan

☐ Subdivision ☒ Building Permit ☐ Sector Plan ☐ Sector Plan Amendment

☐ Curb Cut Permit ☐ Conditional Use ☐ Annexation ☐ Site Plan Amendment

ASSOCIATED APPLICATION: Retail commercial development with shops, restaurants and minimal office space.

SCOPE OF REPORT:

The Traffic Impact Study should follow the standard report format, which is outlined in the DPM. The following supplemental information is provided for the preparation of this specific study.

1. Trip Generation - Use Trip Generation Manual, 10th Edition.
Local data may be used for certain land use types as determined by staff.
Consultant to provide.

2. Appropriate study area:
Signalized Intersections;
 - a. I-40 and 98th St. Ramps
 - b. Central and 98th
 - c. Central and Unser
 - d. Central and 86th
 - e. Central and Bridge
 - f. Tower and 98th

Unsignalized Intersections;

- a. Intersection 1
- b. Intersection 2

Driveway Intersections: all site drives.

3. Intersection turning movement counts
Study Time – 7-9 a.m. peak hour, 4-6 p.m. peak hour
Consultant to provide for all intersections listed above.

4. Type of intersection progression and factors to be used.
Type III arrival type (see “2016 Highway Capacity Manual” or equivalent as approved by staff). Unless otherwise justified, peak hour factors and % heavy commercial should be

taken directly from the MRCOG turning movement data provided or as calculated from current count data by consultant.

5. Boundaries of area to be used for trip distribution.

City Wide - residential, office or industrial;

2 mile radius – commercial;

Interstate or to be determined by consultant - motel/hotel

APS district boundary mapping for each school and bus routes

6. Basis for trip distribution.

Residential – Use inverse relationship based upon distance and employment. Use employment data from 2040 Socioeconomic Forecasts, MRCOG – See MRCOG website for most current data.

Office/Industrial - Use inverse relationship based upon distance and population. Use population data from 2040 Socioeconomic Forecasts, MRCOG – See MRCOG website for most current data.

Commercial - Use relationship based upon population. Use population data from 2040 Socioeconomic Forecasts, MRCOG – See MRCOG website for most current data.

Residential - $T_s = (T_t) (S_e / D) / (S_e / D)$

T_s = Development to Individual Subarea Trips

T_t = Total Trips

S_e = Subarea Employment

D = Distance from Development to Subarea

Office/Industrial - $T_s = (T_t) (S_p / D) / (S_p / D)$

T_s = Development to Individual Subarea Trips

T_t = Total Trips

S_p = Subarea Population

D = Distance from Development to Subarea

Commercial -

$T_s = (T_t) (S_p) / (S_p)$

T_s = Development to Individual Subarea Trips

T_t = Total Trips

S_p = Subarea Population

7. Traffic Assignment. Logical routing on the major street system.

8. Proposed developments which have been approved but not constructed that are to be Included in the analyses. Projects in the area include:

a. N/A

9. Method of intersection capacity analysis - planning or operational (see “2016 Highway Capacity Manual” or equivalent [i.e. HCS, Synchro, Teapac, etc.] as approved by staff). Must use latest version of design software and/or current edition of design manual.

Implementation Year: 2024

10. Traffic conditions for analysis:
 - a. Existing analysis X yes no - year (2019);
 - b. Phase implementation year(s) without proposed development – 2024
 - c. Phase implementation year(s) with proposed development – 2024
 - d. Project completion year without proposed development – XXXX
 - e. Project completion year with proposed development – XXXX
 - f. Other –
11. Background traffic growth.
Method: use 10-year historical growth based on standard data from the MRCOG Traffic Flow Maps. Minimum growth rate to be used is 1/2%.
12. Planned (programmed) traffic improvements.
List planned CIP improvements in study area and projected project implementation year:
 - a. Project – Location (Implementation Year)
13. Items to be included in the study:
 - a. Intersection analysis.
 - b. Signal progression - An analysis is required if the driveway analysis indicates a traffic signal is possibly warranted. Analysis Method:
 - c. Arterial LOS analysis;
 - d. Recommended street, intersection and signal improvements.
 - e. Site design features such as turning lanes, median cuts, queuing requirements and site circulation, including driveway signalization and visibility.
 - f. Transportation system impacts.
 - g. Other mitigating measures.
 - h. Accident analyses yes no; Location(s):
 - i. Weaving analyses yes no; Location(s):
14. Other:

SUBMITTAL REQUIREMENTS:

1. Number of copies of report required
 - a. 1 paper copy
 - b. 1 digital copy
2. Submittal Fee – \$1300 for up to 3 reviews

The Traffic Impact Study for this development proposal, project name, shall be performed in accordance with the above criteria. If there are any questions regarding the above items, please contact me at 924-3633.

Ernest Armijo
Ernest Armijo, P.E.
Senior Engineer for
Transportation Development Section

2-15-19
Date