SUMMIT

LAND MANAGEMENT

MERCADO COURTYARDS
Scottsdale, Arizona

REVISED Traffic Impact Analysis

October 2022

Prepared for:
CALIBER DEVELOPMENT COMPANY

For Submittal to:
CITY OF SCOTTSDALE

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Introduction

Caliber Development Company is planning to develop 273 multi-family homes on approximately 8 acres, as part of the Mercado Courtyards, in the City of Scottsdale, east of 92nd Street, south of Shea Boulevard. The Mercado Courtyards consists of an existing 30,000-square-foot retail center and new apartments.

Results

The proposed Mercado Courtyards apartments are anticipated to generate; as a total of both directions; 1,413 daily vehicles; 92 morning peak hourly vehicles; and 123 evening peak hourly vehicles. This traffic is in addition to the existing 30,000 square feet of retail within the Mercado Courtyards that currently is estimated to generate; as a total of both directions; 2,651 daily vehicles; 167 morning peak hourly vehicles; and 223 evening peak hourly vehicles. (The existing retail traffic is included in the current April 2021 traffic counts.)

The existing 13,000 square feet of medical office will be removed. This building is estimated to generate; as a total of both directions; 452 daily vehicles, 36 morning peak hourly vehicles; and 45 evening peak hourly vehicles.

The existing vacant 58,000 square feet of medical office will be removed. If occupied, this building would generate an estimated; as a total of both directions; 2,141 daily vehicles, 161 morning peak hourly vehicles; and 201 evening peak hourly vehicles.

A total of 200,000 square feet of medical office could be constructed on the entire 8-acre property. If constructed and occupied, this building would generate an estimated; as a total of both directions; 7,596 daily vehicles, 556 morning peak hourly vehicles; and 692 evening peak hourly vehicles.

The proposed Mercado Courtyards, compared to the existing medical office building (that will be removed) and the existing vacant medical office building, is anticipated to generate; as a total of both directions; 911 fewer daily vehicles; 88 fewer morning peak hourly vehicles; and 99 fewer evening peak hourly vehicles.

The proposed Mercado Courtyards, compared to a possible 200,000 square-foot medical office building, is anticipated to generate; as a total of both directions; 6,183 fewer daily vehicles; 464 fewer morning peak hourly vehicles; and 569 fewer evening peak hourly vehicles.

Comparing the traffic flow at the 92nd / Shea intersection with existing 2021 traffic volumes and with future 2024 traffic volumes without the Mercado Courtyards; of the 34 possible levels-of-service during the two (2) peak hours; none of the levels-of-service diminish.

Comparing the traffic flow at the 92nd / Mountain View intersection with existing 2021 traffic volumes and with future 2024 traffic volumes without the Mercado Courtyards; of the 34 possible levels-of-service during the two (2) peak hours; all levels-of-service remain unchanged.

Comparing the traffic flow at the 92nd / Shea intersection without and with the Mercado Courtyards; of the 34 possible levels-of-service during the two (2) peak hours; one level-of-service diminishes. During the morning peak hour, the northbound right-turn average delay changes from 34.8 seconds which is a “C” to 35.0 seconds which is a “D”.

Comparing the traffic flow at the 92nd / Mountain View intersection without and with the Mercado Courtyards; of the 34 possible levels-of-service during the two (2) peak hours; all levels-of-service remain unchanged.

At the three stop-controlled intersections of 92nd / North, 92nd / Cochise, and 92nd / Ironwood; currently during the two peak hours; the northbound and southbound left-turns are “A” or “B”. Of the 24 eastbound and westbound turning movement levels-of-service in the two peak hours currently: 7 are “B”, 5 are “C”, 2 are “D”, 2 are “E”, and 8 are “F”. Of the 12 eastbound and westbound approaches: 0 are “A”, 0 are “B”, 3 are “C”, 3 are “D”, 4 are “E”, and 2 are “F”.

At the three unsignalized intersections, with ambient 2024 traffic, the northbound and southbound left-turns remain at “A” or “B”. Of the 24 eastbound and westbound turning movement levels-of-service in the two (2) peak hours; 4 are “A”, 4 are “B”, 4 are “C”, 4 are “D”, 3 are “E”, and 5 are “F”. Of the 12 eastbound and westbound approaches; 0 are “A”, 0 are “B”, 7 are “C”, 3 are “D”, and 2 are “E”. Because the existing peak hour factors vary from 0.25 to 0.92; and the ambient 2024 peak hour factors are all 0.92; some of the levels-of-service appear to improve from 2021 to 2024.

At the three unsignalized intersections, in 2024 with Mercado Courtyards traffic, the northbound and southbound left-turns remain at “A” or “B”. Of the 24 eastbound and westbound turning movement levels-of-service in the two (2) peak hours; 3 are “A”, 6 are “B”, 3 are “C”, 4 are “D”, 3 are “E”, and 5 are “F”. Of the 12 eastbound and westbound approaches; 0 are “A”, 0 are “B”, 6 are “C”, 4 are “D”, and 2 are “E”.

A traffic signal is warranted and appropriate at the 92nd / Cochise intersection with 2024 plus the Mercado Courtyards traffic volumes. **Figure 1** indicates the levels-of-service in 2024 with the Mercado Courtyards with the existing stop control, with a signal with a 120-second cycle length, and with a signal with a 60-second cycle length.

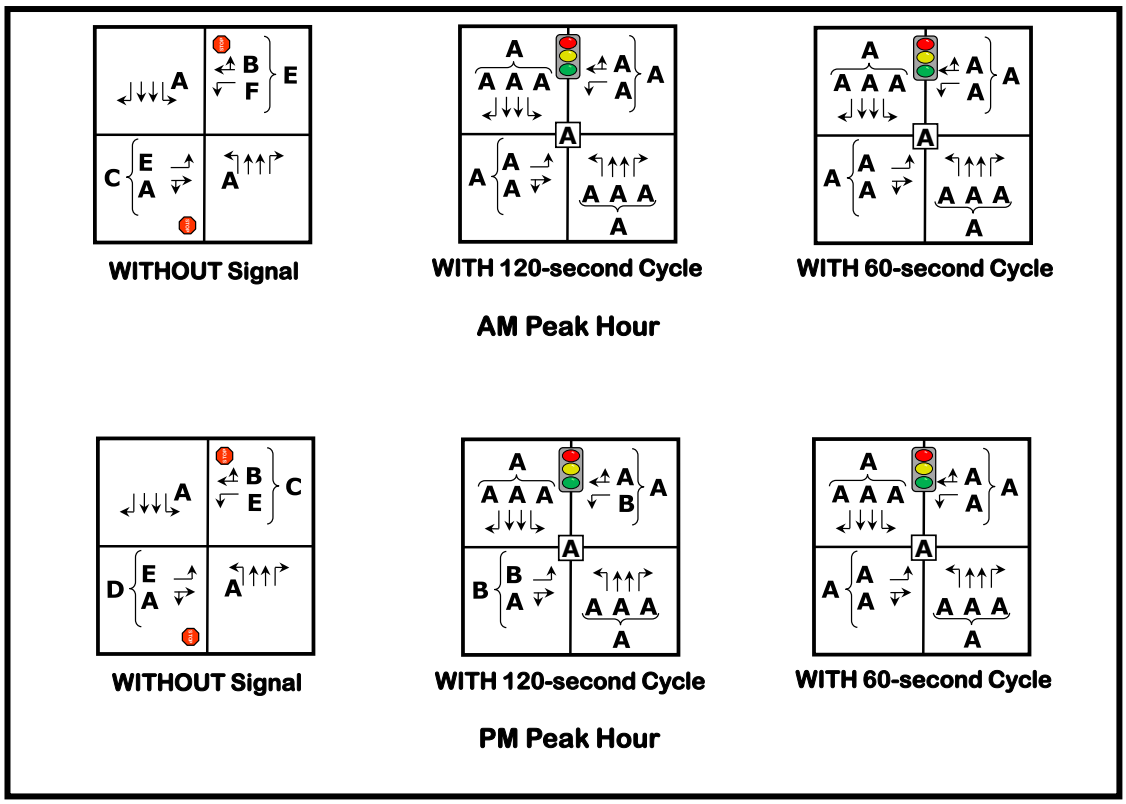


Figure 1: 2024 with Site Level-of-Service at 92nd / Cochise without and with Signal

A traffic signal at the 92nd / Cochise intersection would improve the operation of both directions of Cochise Drive without diminishing the operation of either direction of 92nd Street, comparing the existing stop sign condition to the with Mercado Courtyards signal condition. Both east and west of 92nd Street, North Lane and Cochise Drive are directly connected apart from 92nd Street. On the west side of 92nd Street, Cochise Drive and Ironwood Lane are directly connected apart from 92nd Street. Therefore, drivers who wish to turn onto 92nd Street from west of 92nd Street at either North Lane or Ironwood Lane, could do so at either a stop sign or a signal. Drivers who wish to turn onto 92nd Street from east of 92nd Street at North Lane can also do so at either a stop sign or a signal.

Furthermore, a signal at Cochise, which is also the apartment access and retail left-turn access, would allow residents of the apartment complex who work at HonorHealth or the adjacent medical office buildings to walk across 92nd Street at a signal-protected intersection. This traffic signal would also aid HonorHealth and medical office employees west of 92nd Street either driving or walking to the businesses and restaurants east of 92nd Street.

Recommendations without Mercado Courtyards Apartments

No improvements are necessary with the current and ambient 2024 operation at the five (5) study intersections.

Recommendations with Mercado Courtyards Apartments

A traffic signal is warranted and should be installed at the 92nd / Cochise intersection with 2024 traffic volumes plus Mercado Courtyards traffic volumes.

The City of Scottsdale minimum turn lane lengths are 150 feet for turn lanes on arterial streets and 100 feet for turn lanes on streets that intersect arterial streets. Therefore, the 92nd / Cochise intersection should have a 150-foot long northbound right-turn lane, a 150-foot long southbound left-turn lane, a 100-foot long westbound left-turn lane, and a 100-foot long westbound shared-straight-right-turn lane.

Introduction

Caliber Development Company is planning to develop 273 multi-family homes on approximately 8 acres as part of the Mercado Courtyards. The Mercado Courtyards consists of an existing 30,000-square-foot retail center and new apartments. The project is located in the City of Scottsdale, adjacent to and east of 92nd Street, approximately one-quarter mile south of Shea Boulevard and one-quarter-mile north of Mountain View Road. The project site is depicted in **Figure 2**.

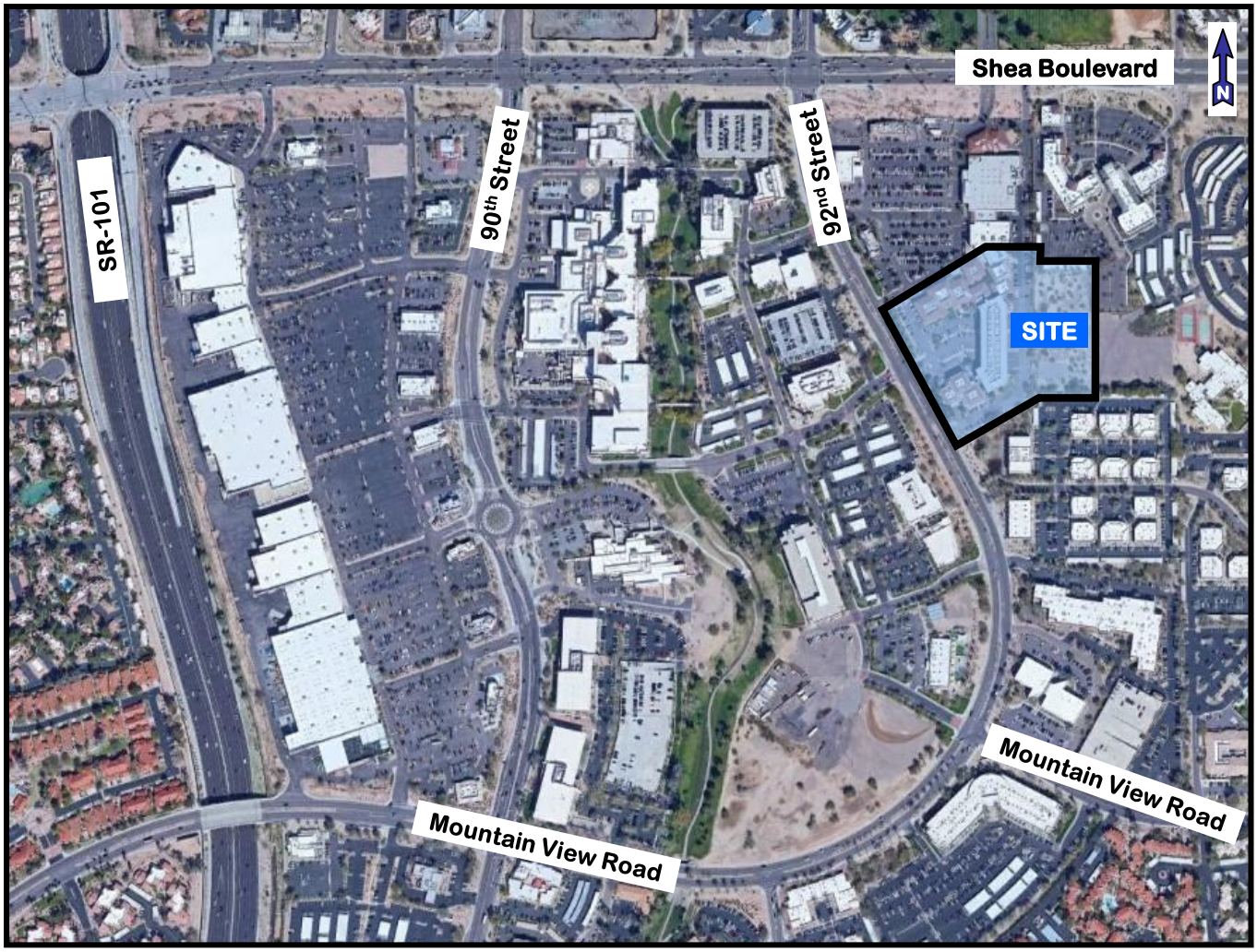


Figure 2: General Vicinity Map with Aerial Photograph

Current Site Land Use and Surrounding Land Use

The site currently consists of an occupied retail building (that will remain), an abandoned medical office building (that will be removed), an occupied medical building (that will be removed), and two (2) acres of vacant land. The existing 30,000-square-foot retail building will remain unchanged. The abandoned medical office building, the occupied medical building, and two acres of vacant land will be converted to apartments. **Figure 3** provides an aerial photograph of the Mercado Courtyards site – identifying the three (3) existing buildings.

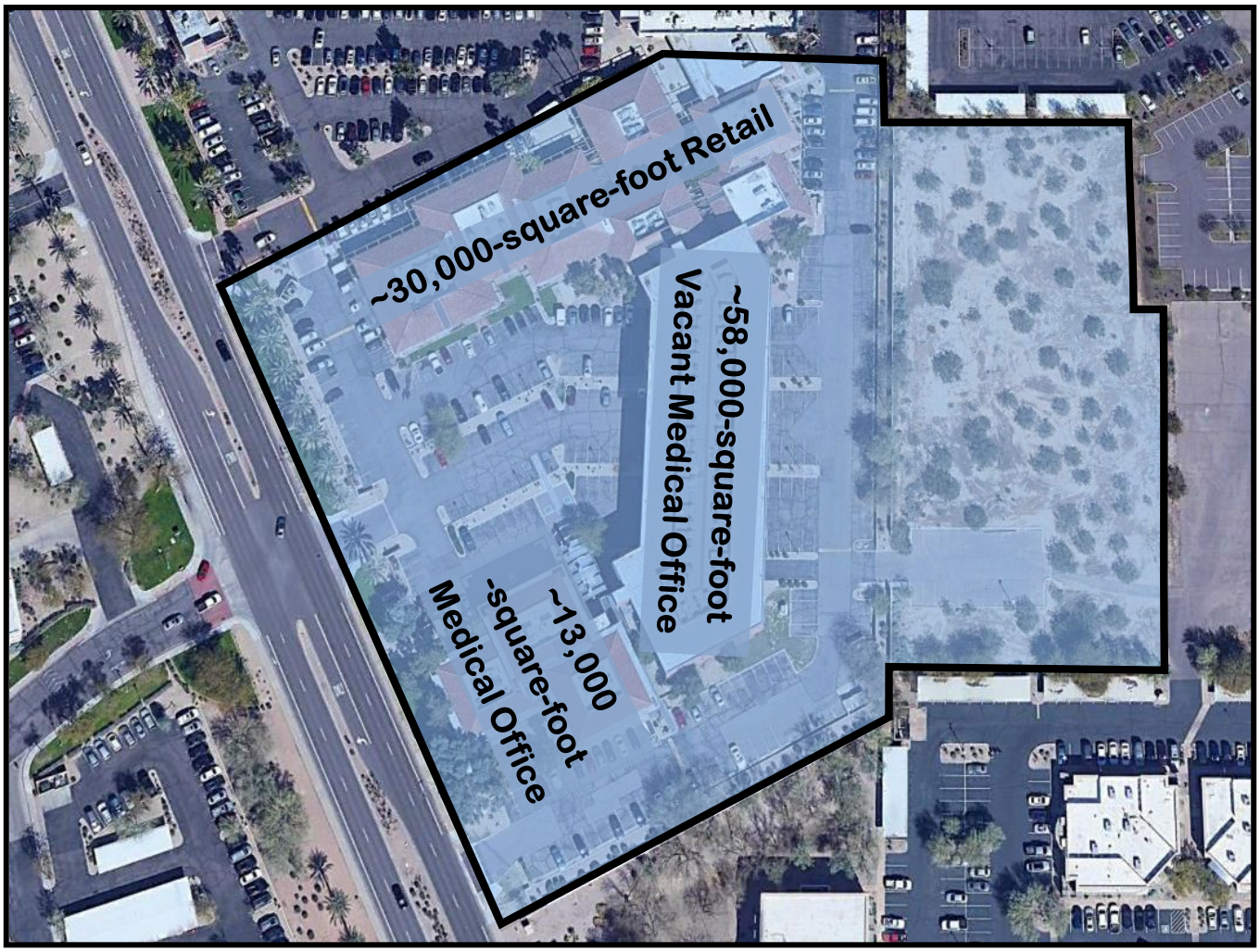


Figure 3: Mercado Courtyards Site

The property is east of the HonorHealth Shea medical campus and south of a commercial area. **Figure 4** provides a street map of the general vicinity.

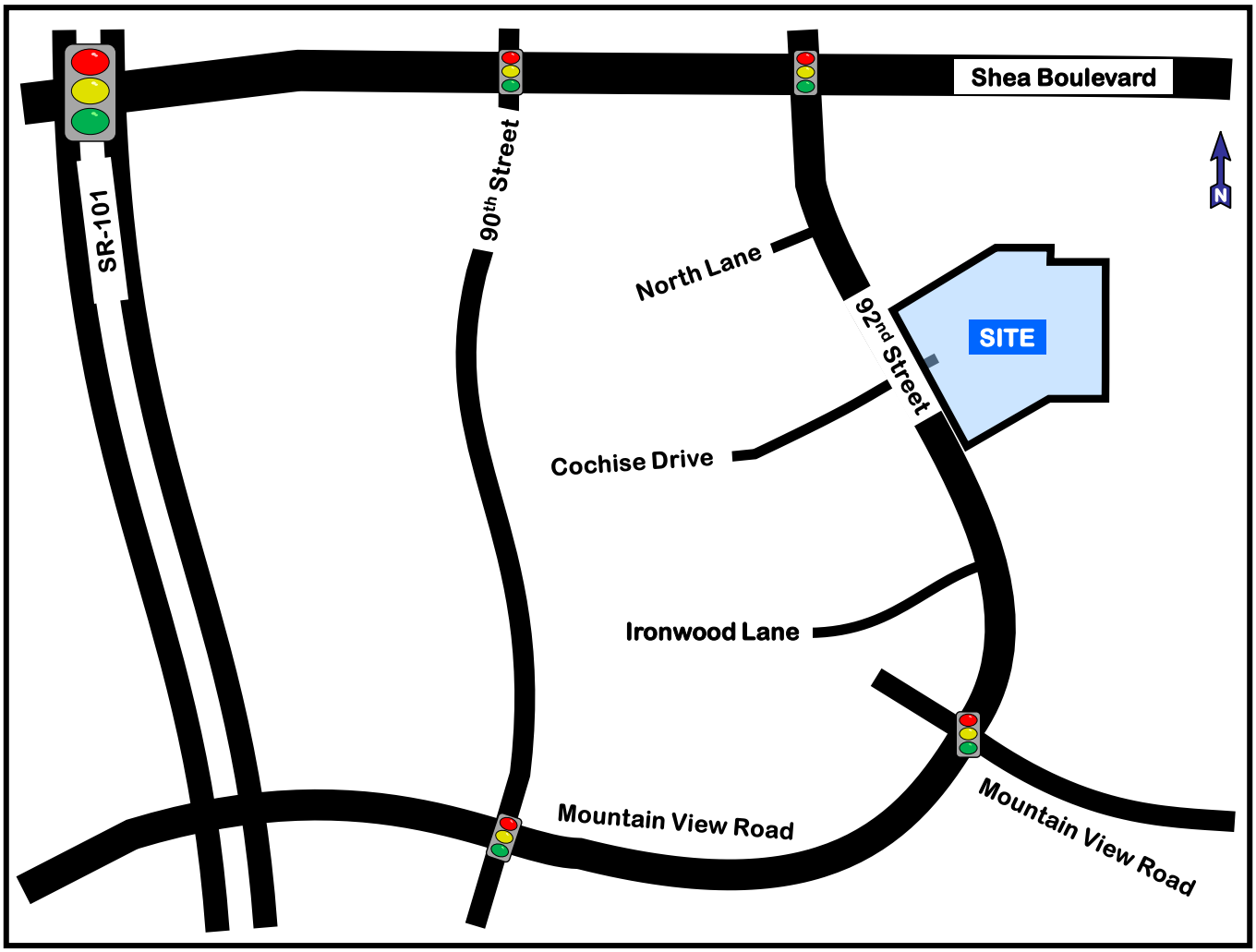


Figure 4: General Vicinity Street Map

Scope of Study

Seven (7) purposes exist for this analysis:

- ❖ Evaluate existing traffic conditions.
- ❖ Evaluate recent historic traffic collisions.
- ❖ Estimate and evaluate future ambient 2024 traffic volumes.
- ❖ Estimate new traffic generated by proposed Mercado Courtyards residential community.
- ❖ Distribute and assign new traffic to adjacent intersections.
- ❖ Evaluate 2024 with Mercado Courtyards traffic conditions.
- ❖ Determine need for modified traffic control.

The five (5) study intersections are:

- 92nd Street and Shea Boulevard
- 92nd Street and North Lane
- 92nd Street and Cochise Drive (primary Mercado Courtyards access)
- 92nd Street and Ironwood Lane
- 92nd Street and Mountain View Road

Surrounding Transportation System

The Mercado Courtyards will use 92nd Street for access to either Shea Boulevard or Mountain View Road. The apartments will share access on Cochise Drive with the commercial property to the north, which includes the 30,000-square-foot retail center that is part of the Mercado Courtyards.

The posted speed limit on 92nd Street adjacent to the Mercado Courtyards is 35 miles-per-hour. **Figure 5** depicts the existing lane configuration and traffic control at the intersections in the vicinity of the proposed Mercado Courtyards. The primary access for the Mercado Courtyards is Cochise Drive. As indicated in **Figure 2**, Cochise Drive connects to North Lane both east and west of 92nd Street.

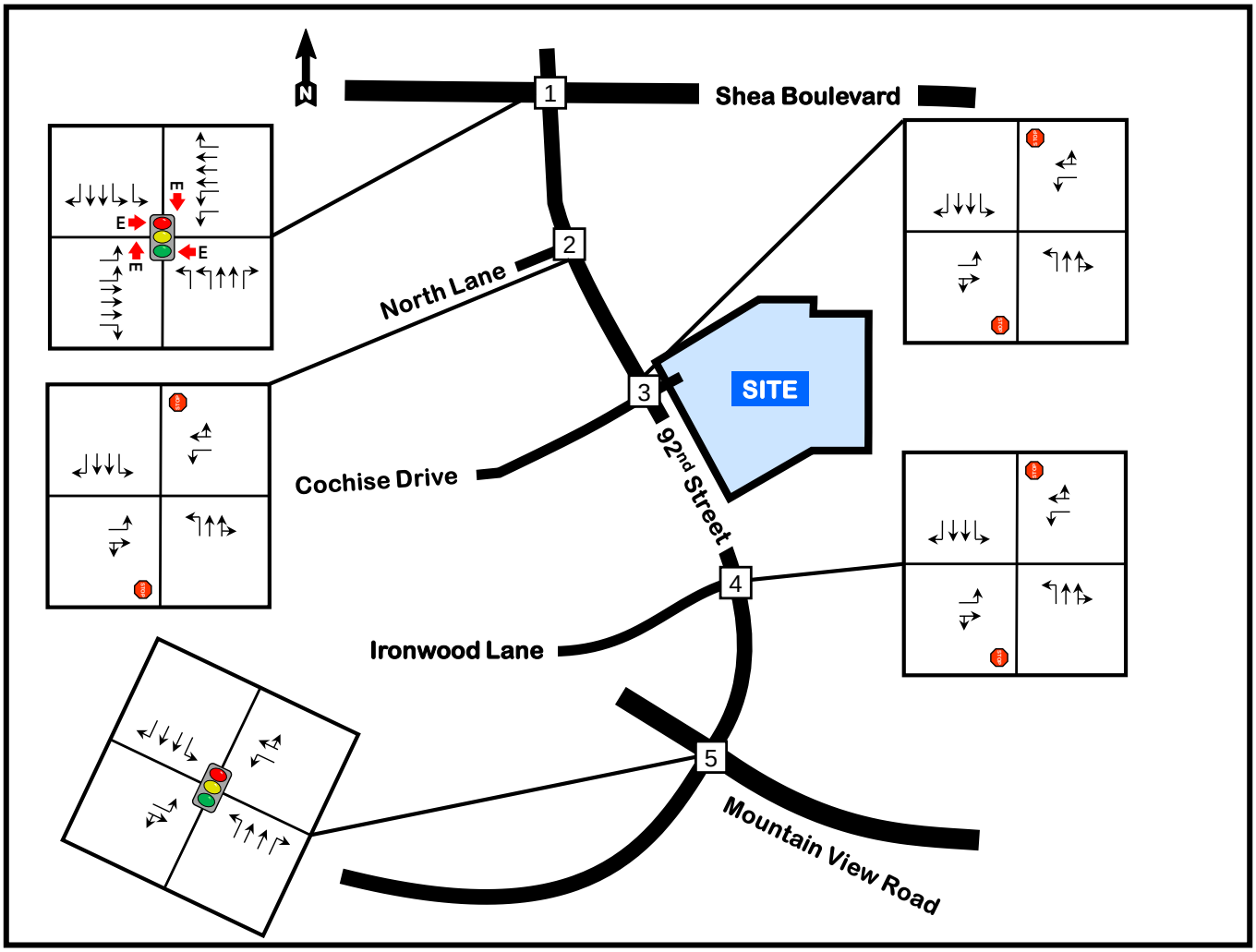


Figure 5: Intersection Existing Lane Configurations

Existing Traffic Volumes

Traffic counts were obtained on 27 April 2021. **Appendix A** provides the turning movement counts for 24 hours in 15-minute increments for the five (5) study intersections. **Figure 6** provides the 2021 weekday approach and departure volumes at these intersections. **Figure 7** provides the 2021 morning and evening peak hour approach and departure volumes at these intersections.

The traffic volumes in both figures include the traffic generated by the existing 30,000-square-foot retail center, which is part of the Mercado Courtyards.

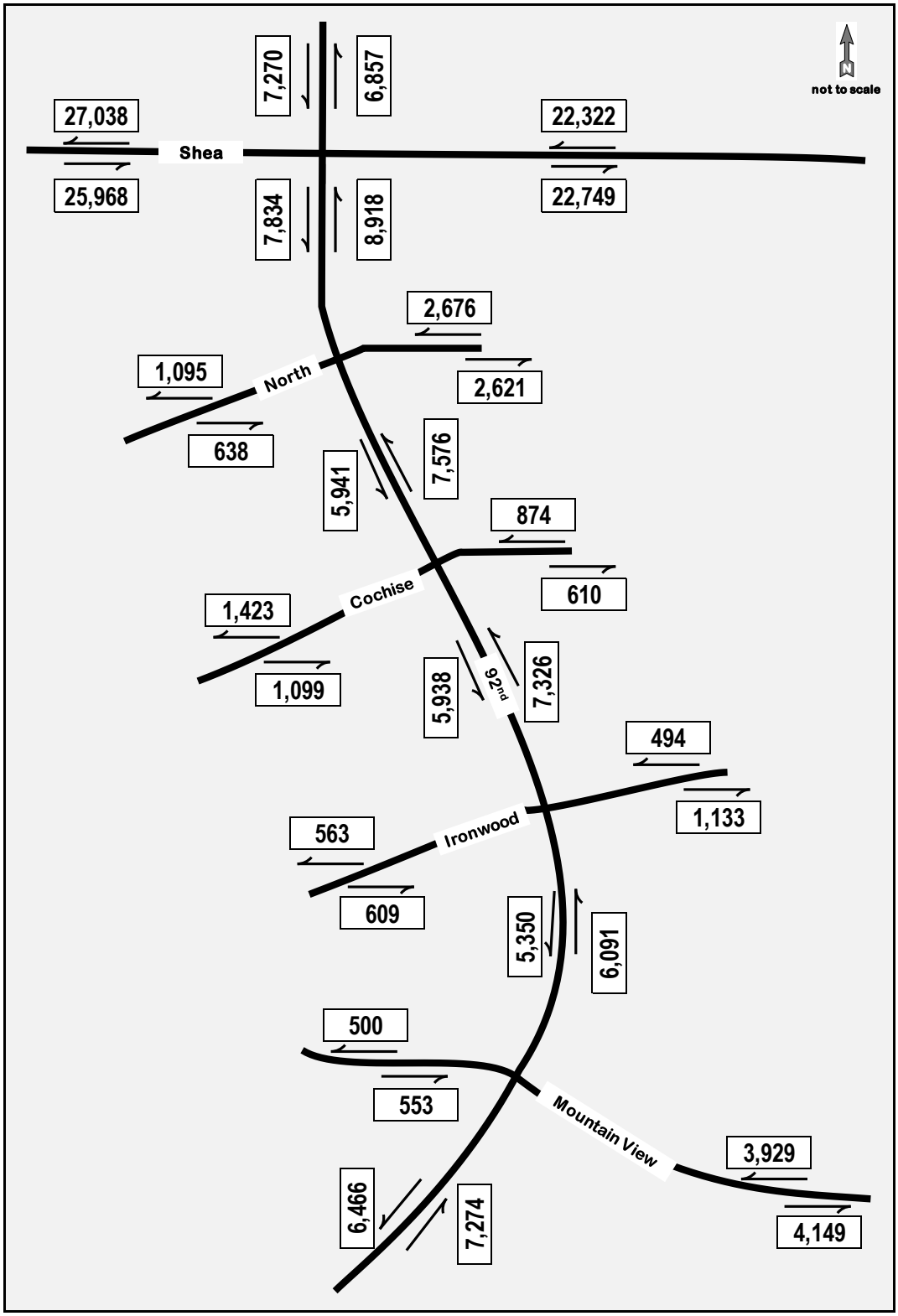
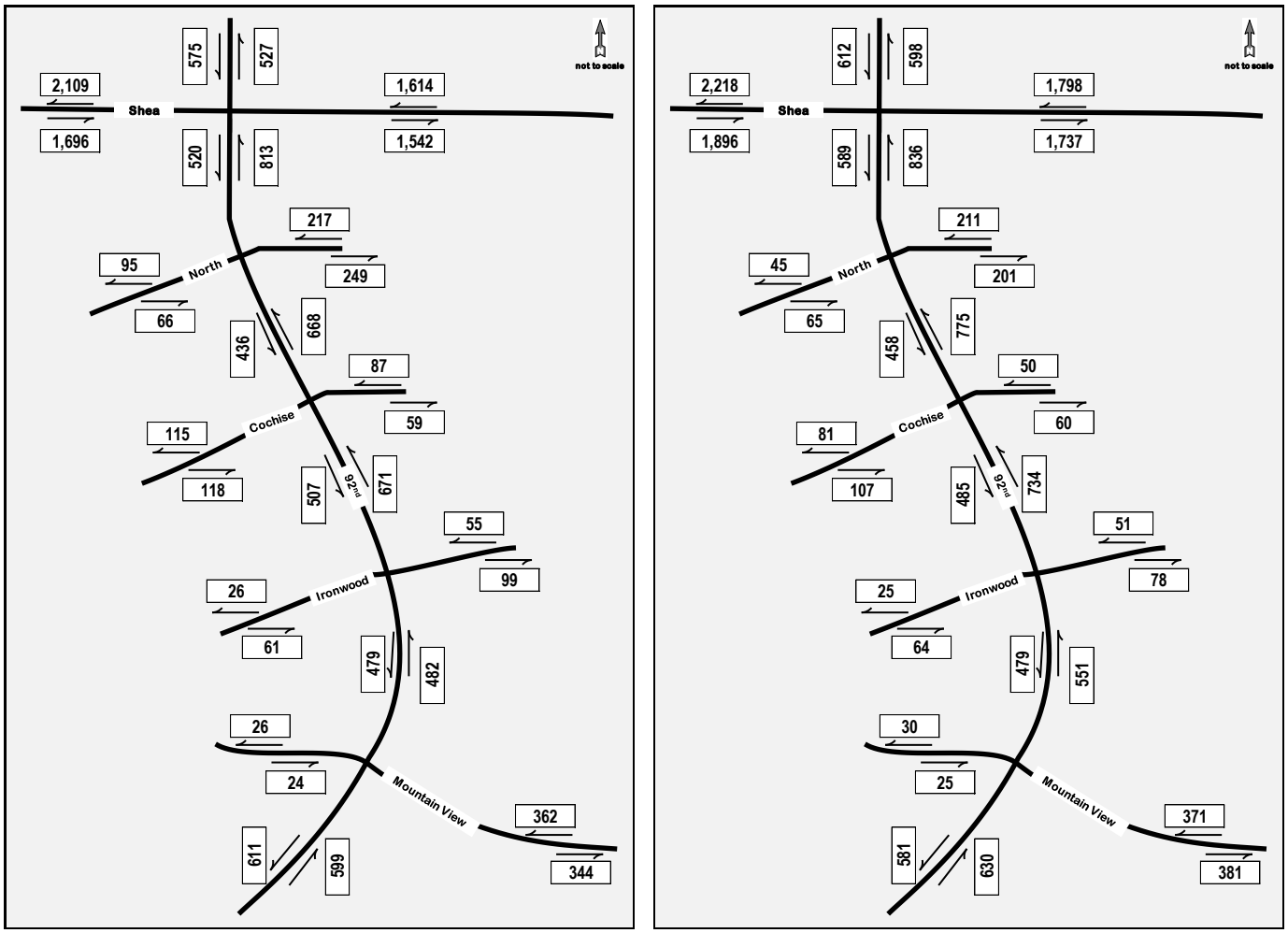


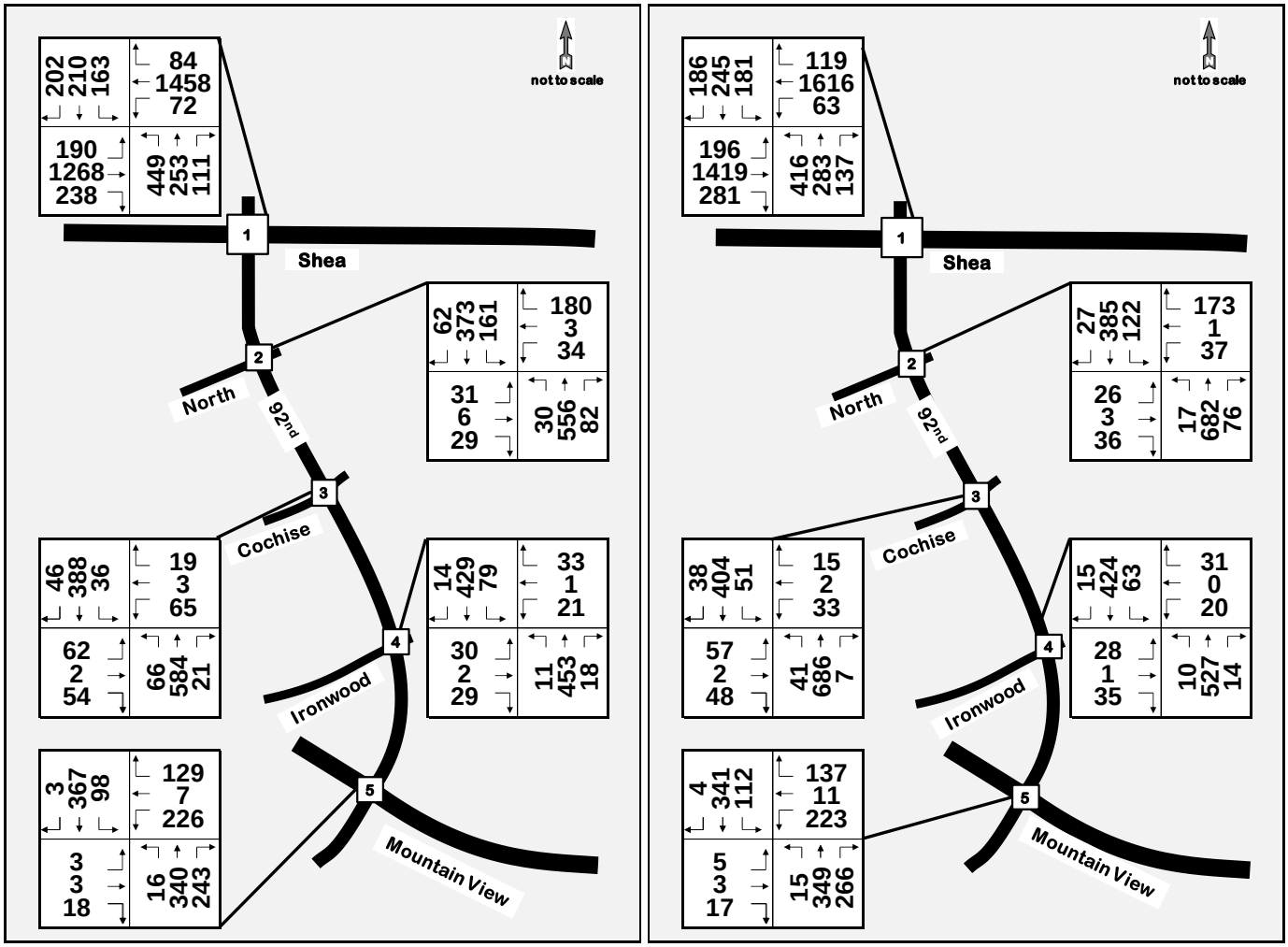
Figure 6: 2021 Weekday Approach and Departure Volumes



Morning Peak Hour **Evening Peak Hour**

Figure 7: 2021 Peak Hour Approach and Departure Volumes

Figure 8 provides the 2021 morning and evening peak hour turning volumes at these intersections. These counts include the traffic generated by the existing 30,000-square-foot retail center, which is part of the Mercado Courtyards. (**Figure 8** includes left-turn volumes that are the sum of the left-turning and u-turning vehicles.)



Morning Peak Hour **Evening Peak Hour**

Figure 8: 2021 Peak Hour Turning Volumes

The historic daily traffic volumes at the intersection of 92nd Street and Shea Boulevard were compared to the 2021 counts as indicated in **Table 1**. The 2016 and 2018 volumes were obtained from the City of Scottsdale 2018 Traffic Volume and Collision Report. The 2021 daily volumes are provided in **Appendix A**.

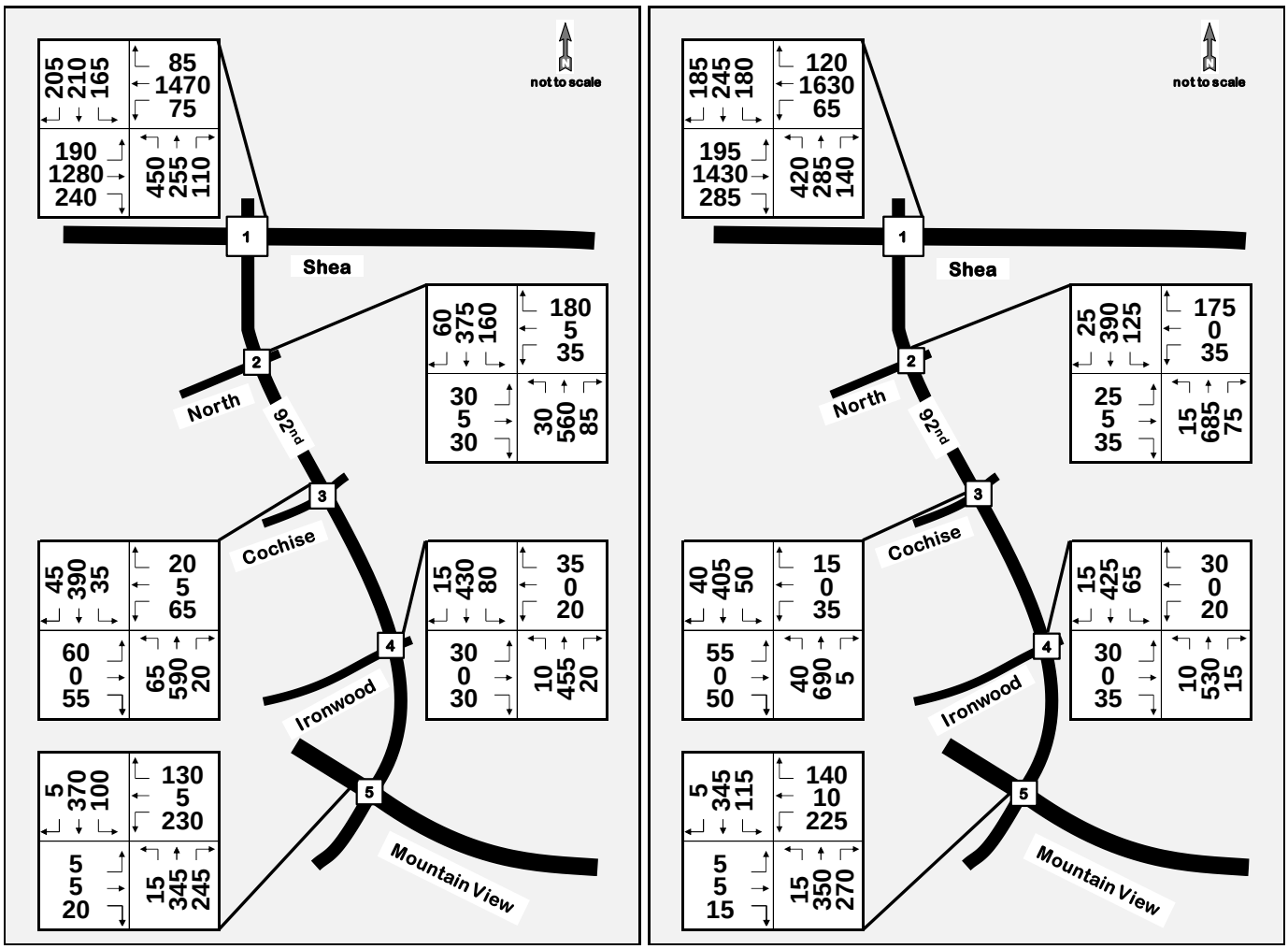
Table 1: 2016, 2018, and 2021 Daily Volumes at 92nd and Shea

Street Segment	2016	2018	2021
92nd, north of Shea	14,700	17,200	14,027
92nd, south of Shea	15,000	14,400	16,250
Shea, west of 92nd	55,500	58,300	53,006
Shea, east of 92nd	43,100	45,200	45,071

These data indicate that the traffic volumes are generally consistent for the five-year period between 2016 and 2021.

Future 2024 Ambient Traffic Volumes

The Mercado Courtyards apartments are anticipated to be available for residents in 2024. To determine future ambient 2024 traffic volumes, a 0.25% exponential annual increase was applied to each 2021 turning volume. This annual increase has been utilized in this portion of Scottsdale recently. To emphasize the estimation of these volumes, they were approximated to the nearest 5 vehicles-per-hour for each turning movement. **Figure 9** provides the ambient 2024 morning and evening peak hour turning volumes at the study intersections.



Morning Peak Hour **Evening Peak Hour**

Figure 9: Ambient 2024 Peak Hour Turning Volumes

The ambient 2024 approach and departure volumes were determined by summing the appropriate turning movement volumes for each of the weekday, morning peak hour, and evening peak hour. **Figure 10** provides the ambient 2024 weekday approach and departure volumes. **Figure 11** provides the ambient 2024 weekday approach and departure volumes.

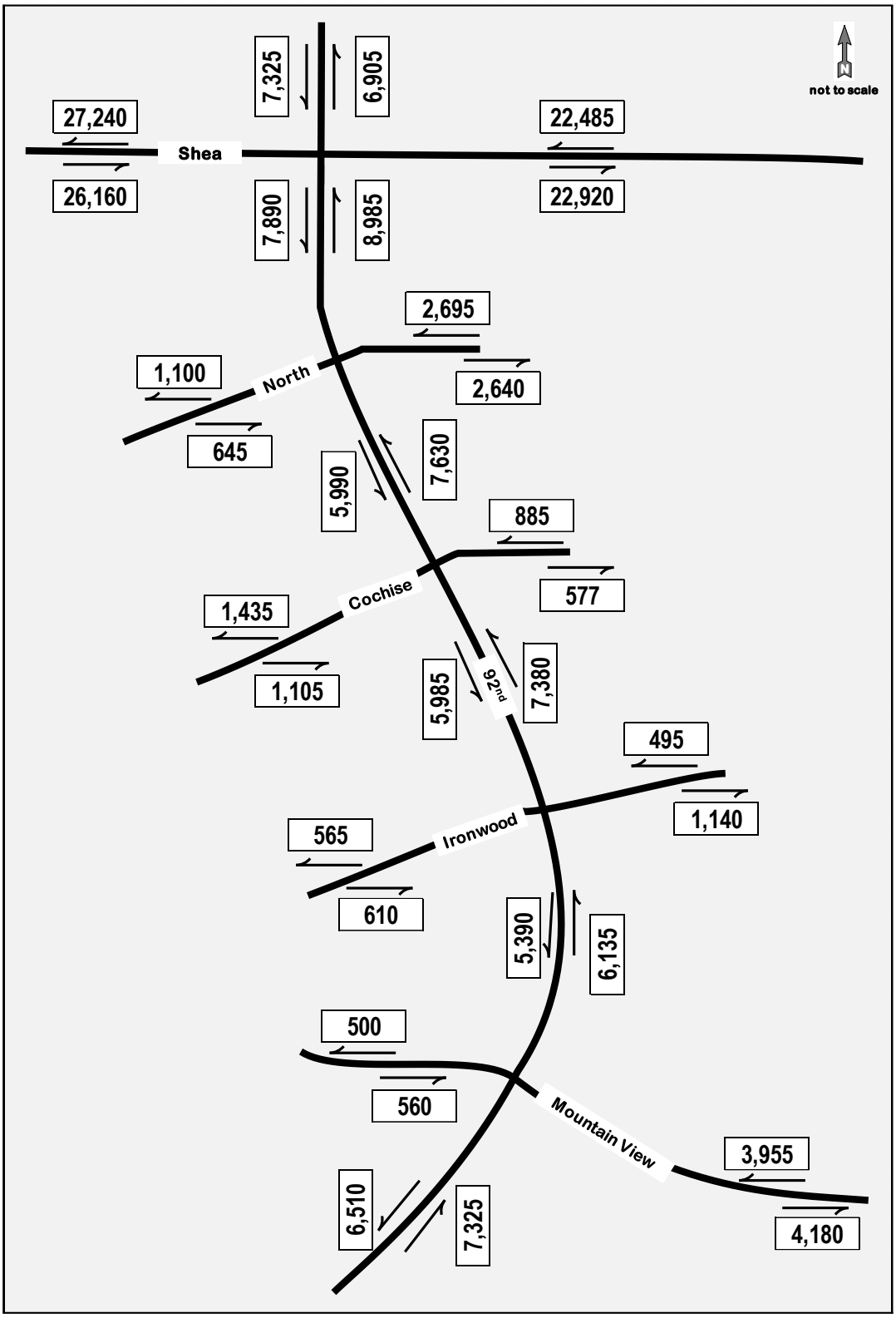
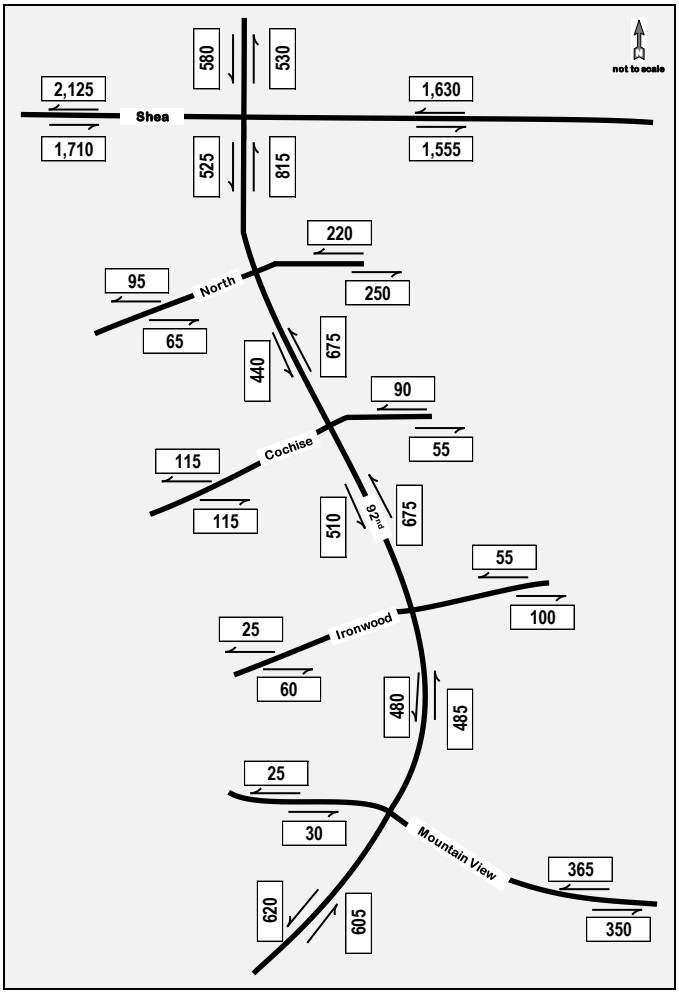
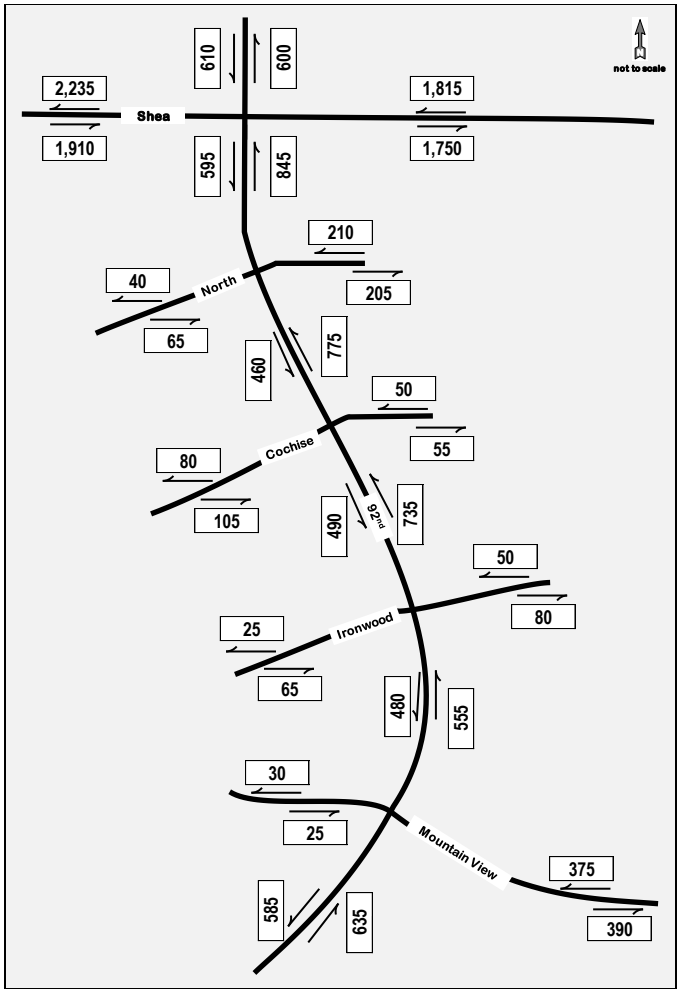


Figure 10: Ambient 2024 Weekday Approach and Departure Volumes





Morning Peak Hour **Evening Peak Hour**

Figure 11: Ambient 2024 Peak Hour Approach and Departure Volumes

Existing and Ambient Level-of-Service Analysis

The ability of a transportation system to transmit the transportation demand is characterized as its level-of-service (LOS). Level-of-service is a rating system from "A" representing the most preferred operation to "F" representing the least preferred operation. Typically, levels-of-service "C" and "D" provide an optimal balance between traffic operation and street system expenditures.

The appropriate reference for level-of-service analysis and calculation is the *Highway Capacity Manual*, published by the Transportation Research Board. This manual considers average delay as the measure to determine level-of-service at intersections. For signalized intersections and multi-way stop intersections, the delay and level-of-service are calculated for the entire intersection, each approach, and each turning movement. For two-way intersections, the delay and level-of-service are determined only for each stopped approach and for left-turns from the uncontrolled approach. **Table 2** provides a diagram depicting level-of-service and delay criteria for intersections.

Table 2: Intersection Level-of-Service Criteria

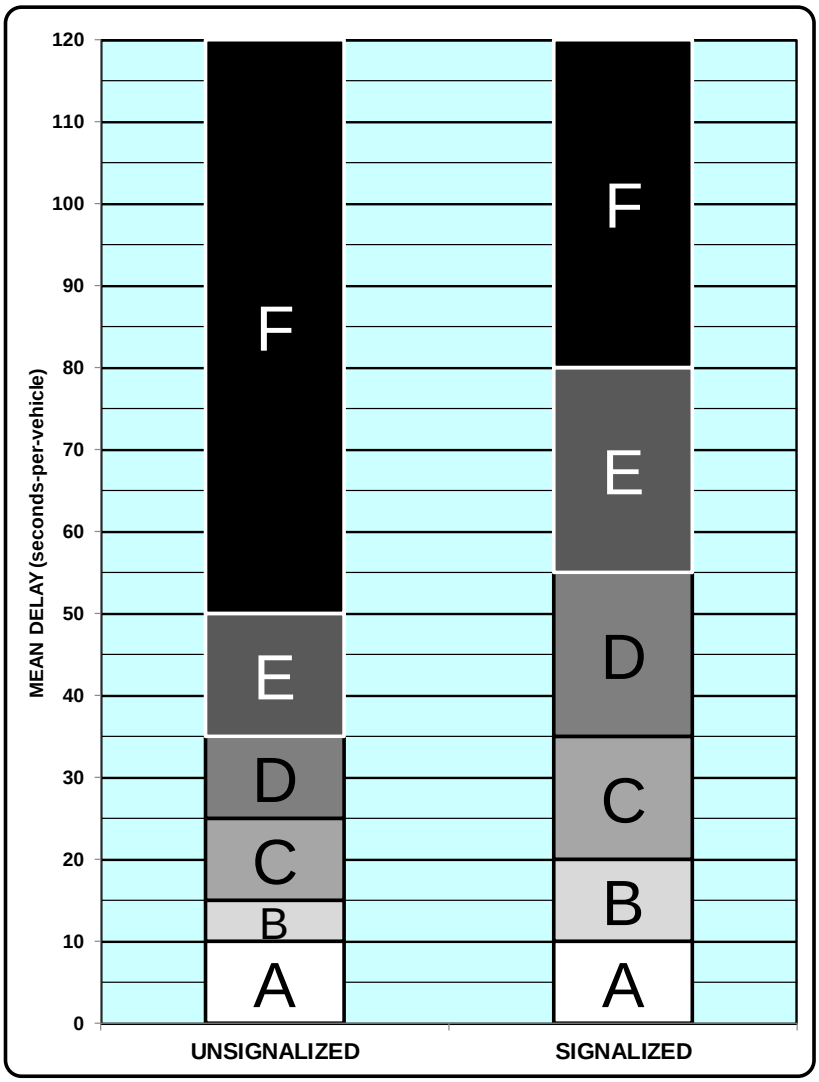


Table 3 provides the levels-of-service for the study intersections for the existing 2021 and ambient 2024 conditions. The complete results are provided in **Appendix B**.

Figure 12 and **Figure 13** respectively provide the existing 2021 level-of-service for movement, approach, and intersection for morning and evening peak hour conditions. **Figure 14** and **Figure 15,** respectively provide the morning and evening peak hour 2024 level-of-service for movement, approach, and intersection. The highlighted cells indicate those levels-of-service that change from the existing 2021 to the ambient 2024 values. Synchro was utilized for this analysis.

For both the 92nd / Shea and 92nd / Mountain View intersections, the existing cycle length of 120 seconds and the existing phase lengths were utilized.

Table 3: Level-of-Service – without Mercado Courtyards – Signalized Intersections

	MORNING				EVENING			
	EXISTING 2021		AMBIENT 2024		EXISTING 2021		AMBIENT 2024	
	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS
92nd & Shea								
Intersection	65.9	E	57.4	E	35.7	D	35.4	D
Northbound	228.5	F	197.1	F	42.5	D	43.0	D
Left	383.7	F	329.1	F	48.8	D	49.9	D
Through	34.7	C	34.5	C	36.8	D	35.9	D
Right	35.9	D	34.8	**C**	37.8	D	36.8	D
Southbound	43.0	D	42.4	D	63.9	E	61.9	E
Left	52.3	D	50.0	D	54.9	D	54.8	D
Through	35.6	D	35.3	D	45.7	D	44.9	D
Right	43.9	D	43.5	D	99.0	F	91.9	F
Eastbound	32.9	C	28.0	C	26.5	C	26.4	C
Left	123.1	F	94.8	F	51.3	D	51.9	D
Through	20.9	C	20.1	C	24.2	C	24.1	C
Right	18.5	B	16.3	B	21.3	C	20.8	C
Westbound	24.5	C	23.6	C	32.0	C	32.2	C
Left	48.9	D	47.4	D	53.6	D	52.7	D
Through	23.3	C	22.8	C	31.5	C	32.2	C
Right	16.9	B	16.3	B	20.3	C	20.6	C
92nd & Mountain View								
Intersection	15.0	B	13.3	B	15.5	B	15.6	B
Northbound	7.9	A	6.4	A	8.1	A	8.2	A
Left	8.9	A	6.8	A	8.5	A	8.6	A
Through	7.4	A	6.0	A	7.5	A	7.6	A
Right	8.6	A	6.9	A	8.9	A	9.0	A
Southbound	8.3	A	6.5	A	8.6	A	8.7	A
Left	10.7	B	8.3	B	11.5	B	11.5	B
Through	7.6	A	6.0	A	7.5	A	7.6	A
Right	6.5	A	5.2	A	6.6	A	6.7	A
Eastbound	26.6	C	27.2	C	27.8	C	27.7	C
Left	31.0	C	31.6	C	32.3	C	32.3	C
Through	0.0	A	0.0	A	0.0	A	0.0	A
Right	25.3	C	26.4	C	25.2	C	25.1	C
Westbound	32.5	C	32.6	C	32.4	C	32.4	C
Left	34.9	C	34.6	C	34.8	C	34.8	C
Through	0.0	A	0.0	A	0.0	A	0.0	A
Right	28.1	C	29.2	C	28.7	C	28.6	C

Table 4: Level-of-Service – without Mercado Courtyards – Unsignalized Intersections

	MORNING				EVENING			
	EXISTING 2021		AMBIENT 2024		EXISTING 2021		AMBIENT 2024	
	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS
92nd & North								
Northbound Left	8.5	A	8.4	A	8.4	A	8.3	A
Southbound Left	10.1	B	10.0	B	10.5	B	10.6	B
Eastbound	67.5	F	39.9	**E**	41.8	E	33.2	**D**
Left	123.5	F	68.2	F	80.7	F	61.4	F
Through and Right	18.3	C	15.6	C	13.6	B	15.6	**C**
Westbound	33.1	D	23.5	**C**	37.2	E	25.2	**D**
Left	108.7	F	67.2	F	114.6	F	79.3	F
Through and Right	18.1	C	15.2	C	16.5	C	14.4	**B**
92nd & Cochise								
Northbound Left	8.7	A	8.5	A	8.6	A	8.5	A
Southbound Left	9.2	A	9.1	A	9.8	A	9.5	A
Eastbound	41.2	E	23.5	**C**	34.2	D	23.6	**C**
Left	62.0	F	35.9	**E**	55.5	F	36.1	**E**
Through and Right	12.0	B	9.9	**A**	12.2	B	9.9	**A**
Westbound	58.3	F	41.0	**E**	41.0	E	34.5	**D**
Left	75.5	F	50.8	F	61.0	F	44.6	**E**
Through and Right	15.1	C	15.4	C	19.6	C	11.0	**B**
92nd & Ironwood								
Northbound Left	8.4	A	8.4	A	8.4	A	8.4	A
Southbound Left	8.9	A	8.8	A	9.2	A	9.0	A
Eastbound	26.4	D	18.1	**C**	22.5	C	17.3	C
Left	38.9	E	26.2	**D**	34.3	D	26.0	D
Through and Right	12.2	B	9.9	**A**	11.9	B	9.9	**A**
Westbound	19.8	C	15.7	C	21.7	C	17.2	C
Left	34.4	D	25.6	D	36.1	E	27.4	**D**
Through and Right	12.1	B	10.1	B	10.6	B	10.4	B

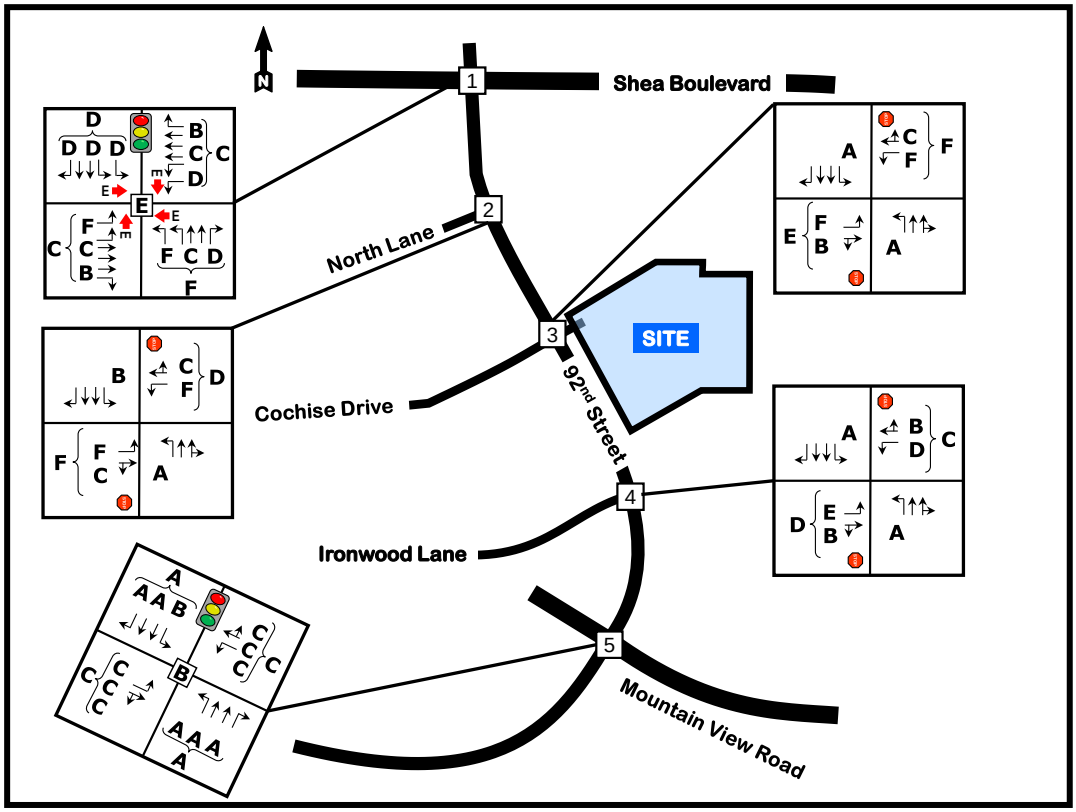


Figure 12: Existing 2021 Level-of-Service AM Peak Hour

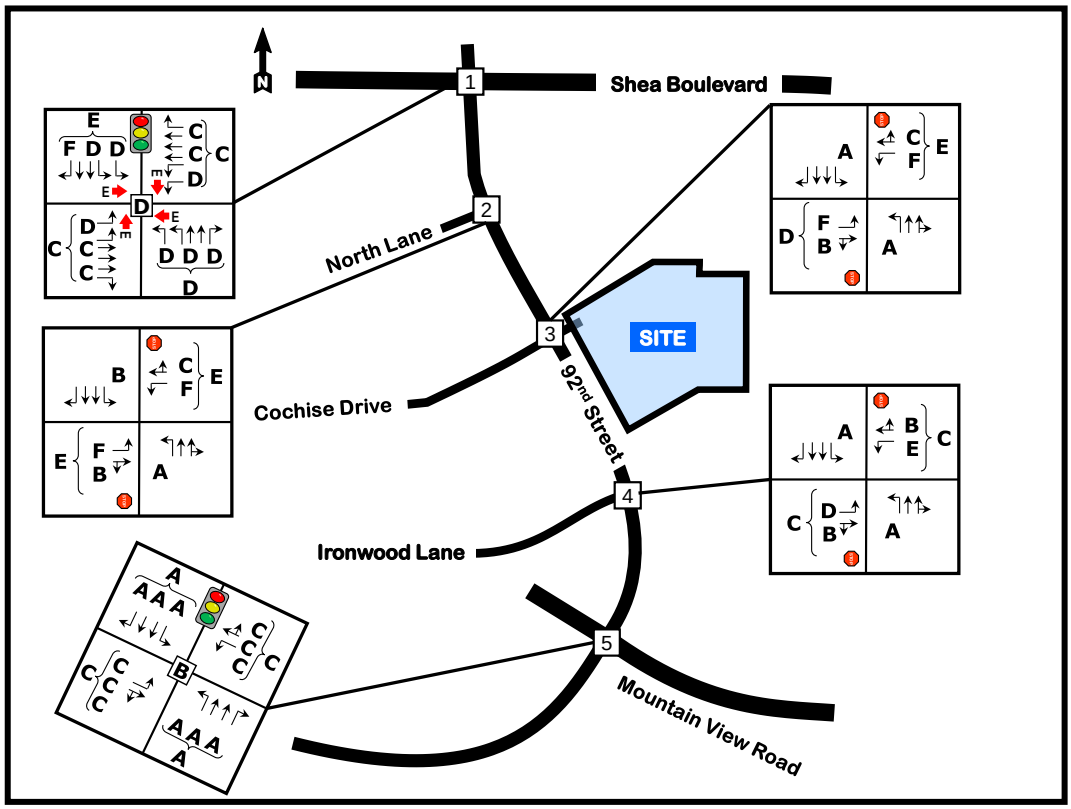


Figure 13: Existing 2021 Level-of-Service PM Peak Hour

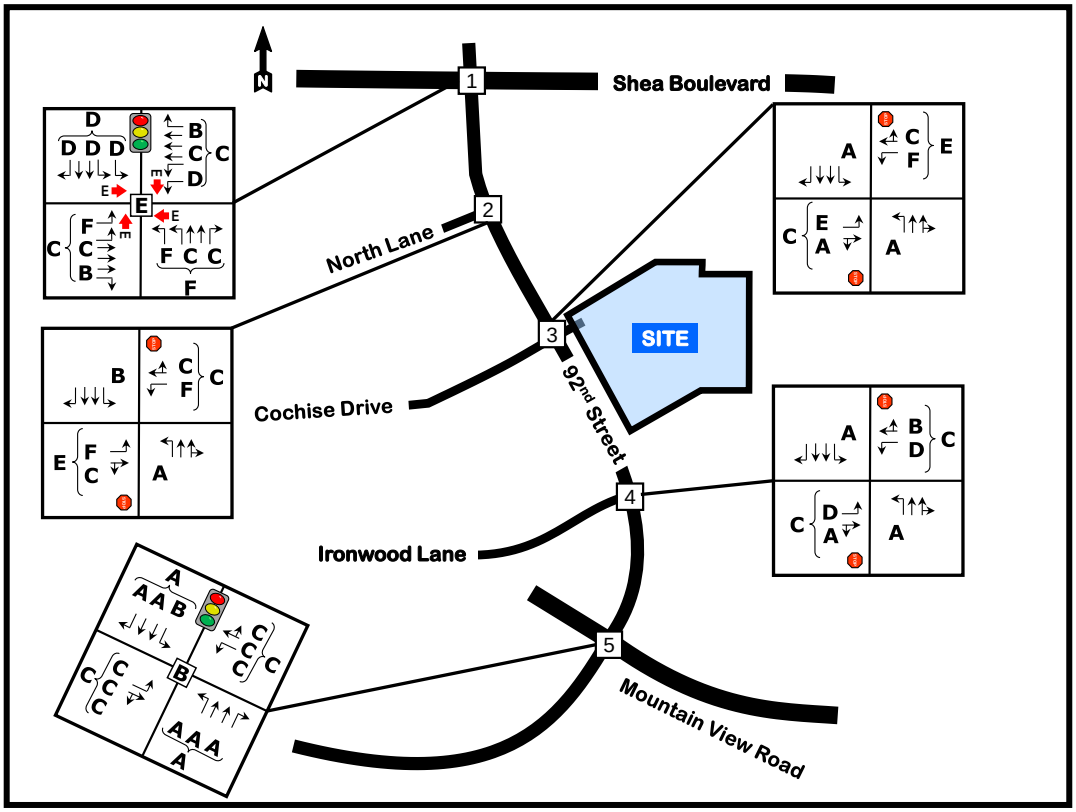


Figure 14: Ambient 2024 Level-of-Service AM Peak Hour

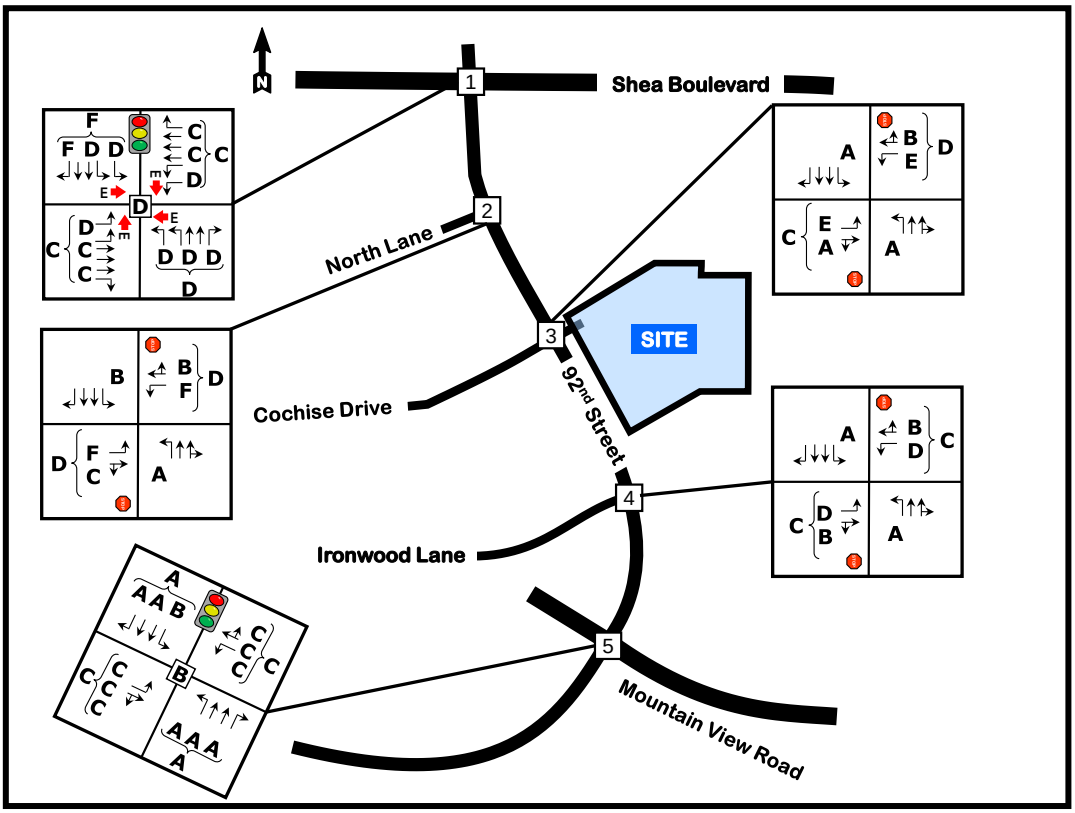


Figure 15: Ambient 2024 Level-of-Service PM Peak Hour

Collision Analysis

Collision data for the five (5) study intersections and the intervening segments for years 2018, 2019, and 2020; were requested and received from the City of Scottsdale. **Appendix C** provides the complete collision data. **Table 5** through **Table 9** summarize the collision data for each intersection separately.

Table 5: Collision History Summary: 92nd Street and Shea Boulevard

MANNER OF COLLISION	TOTAL	ONLY SHEA	ONLY 92nd	BOTH SHEA AND 92nd
Rear-end	41	36	4	1
Angle, not Left-turn	11	4	4	3
Side-swipe, Same Direction	10	6	1	3
Other	3	0	3	0
Left-turn	2	1	0	1
Head-on	1	0	1	0
Rear-to-rear	1	1	0	0
Single Vehicle	1	0	0	1
TOTAL	70	48	13	9

Approximately 69% of the total collisions at the 92nd / Shea intersection involve vehicles only on Shea Boulevard, with approximately 88% of the rear-end collisions at the 92nd / Shea intersection involving vehicles only on Shea Boulevard.

Of the 70 collisions, 19 occurred in 2020, 22 in 2019, and 29 in 2018.

Table 6: Collision History Summary: 92nd Street and North Lane

MANNER OF COLLISION	TOTAL	ONLY NORTH	ONLY 92nd	BOTH NORTH AND 92nd
Angle, not Left-turn	3	0	2	1
Left-turn	3	0	0	3
TOTAL	6	0	2	4

None of the total collisions at the 92nd / North intersection involve vehicles only on North Boulevard. Of the 6 collisions at the 92nd Street and North Lane intersection, 2 occurred in 2020, 1 in 2019, and 3 in 2018.

Table 7: Collision History Summary: 92nd Street and Cochise Drive

MANNER OF COLLISION	TOTAL	ONLY COCHISE	ONLY 92nd	BOTH COCHISE AND 92nd
Rear-end	4	4	0	0
Angle, not Left-turn	2	1	1	0
Left-turn	1	1	0	0
Side-swipe, Same Direction	1	1	0	0
TOTAL	8	7	1	0

Approximately 88% of the total collisions at the 92nd / Cochise intersection involve vehicles only on Cochise Boulevard, with 100% of the rear-end collisions at the 92nd / Cochise intersection involving vehicles only on Cochise Boulevard. Of the 8 collisions at the 92nd Street and Cochise Drive intersection, 2 occurred in 2020, 4 in 2019, and 2 in 2018.

Table 8: Collision History Summary: 92nd Street and Ironwood Lane

MANNER OF COLLISION	TOTAL	ONLY IRONWOOD	ONLY 92nd	BOTH IRONWOOD AND 92nd
Rear-end	1	0	1	0
Angle, not Left-turn	1	0	1	0
Left-turn	2	0	1	1
TOTAL	4	0	3	1

None of the total collisions at the 92nd / Ironwood intersection involved vehicles only on Ironwood Boulevard. Of the 4 collisions at the 92nd Street and Ironwood Lane intersection, 1 occurred in 2020, 1 in 2019, and 2 in 2018.

Table 9: Collision History Summary: 92nd Street and Mountain View Road

MANNER OF COLLISION	TOTAL	ONLY MOUNTAIN VIEW	ONLY 92nd	BOTH MOUNTAIN VIEW AND 92nd
Angle, not Left-turn	1	0	0	1
Left-turn	2	0	2	0
TOTAL	3	0	2	1

None of the total collisions at the 92nd / Mountain View intersection involve vehicles only on Mountain View Boulevard. All collisions at the 92nd Street and Mountain View Road intersection occurred in 2018.

The collision history of these five (5) intersections on 92nd Street does not suggest that the Mercado Courtyards should provide roadway improvements to prevent these collisions.

Proposed Mercado Courtyards Apartments Estimated Trip Generation

The estimated trip generation for the proposed Mercado Courtyards residential community was determined through the procedures and data contained within the Institute of Transportation Engineers *Trip Generation Manual*, *10th Edition*, published in 2017. This document provides traffic volume data from existing developments throughout the United States and Canada, from 1980 through 2016, that can be utilized to estimate trips from proposed developments. The traffic data are provided for 176 land use categories separated into 10 major land use categories. The estimated traffic volume is dependent upon independent variables defined by the characteristics and size of each land use category. Data are typically provided for five (5) weekday time periods and four (4) weekend time periods.

For comparison purposes, trip generation was estimated for the existing 30,000-square-foot retail center, that is part of the Caliber Development Company Mixed Use Project. This traffic is included in the April 2021 traffic counts. The shopping center land use, code 820, was utilized for this calculation. **Appendix D.1** provides the retail trip generation calculations. The existing 30,000-square-foot retail center, that is part of the Caliber Development Company Mixed Use Project and will remain, is estimated to generate; as a total of both directions; 3,752 daily; 177 morning peak hourly; and 325 evening peak hourly vehicles.

The traffic volumes generated by the retail businesses already exist, and are included in the existing traffic counts. This retail will continue to exist, and therefore these volumes will continue to occur. This retail has front doors and parking both north and south of the buildings. Therefore, it has direct access to both Cochise Drive and a right-turn-in-right-turn-out driveway north of Cochise Drive, as well as North Lane. Thereby, it is difficult to assign this retail traffic to the three (3) accesses.

This retail traffic volume was not included in the site traffic volume added to the existing traffic volume.

Appendix D.2 provides the existing operating medical office trip generation calculations. The existing 13,000-square-foot medical office will be removed, and is estimated to thereby reduce; as a total of both directions; 592 daily, 47 morning peak hourly, and 60 evening peak hourly vehicles. (This existing traffic for both the retail and medical office is included in the current April 2021 traffic counts.)

For information purposes, **Appendix D.3** provides the existing vacant medical office trip generation calculations. The existing 58,000-square-foot vacant medical office building; will be removed; and if fully occupied is estimated to generate; as a total of both directions; 2,141 daily, 161 morning peak hourly, and 201 evening peak hourly vehicles.

Also for information purposes, the trip generation was estimated for a possible 200,000-square-foot medical office building on the 8-acre property. The medical office land use, code 720, was utilized for this calculation. **Appendix D.4** provides the medical trip generation calculations. A possible 200,000-square-foot medical office is estimated to generate; as a total of both directions; 7,596 daily, 556 morning peak hourly, and 692 evening peak hourly vehicles.

The multi-family housing mid-rise land use, code 221, was utilized for to estimate the traffic volume generated by the apartment portion of the Mercado Courtyards.

The *10th Edition* of the *Trip Generation Manual* allows filtering of the proxy data to ensure that the proxy data statistical values correspond to the Mercado Courtyards Mixed Use Apartments. **Figure 16** was created from *Trip Generation Manual* multi-family home data, and provides the proxy data coordinates of multi-family housing development sizes and daily trip generation rates. The trip generation rates vary from a low of 1.27 trips-per-home to a high of 12.50 trips-per-home, with an average of 5.44 trips-per-home. This graph reveals the wide dispersion of trip generation rates – particularly the high trip rates for multi-family housing developments with fewer than 250 homes.

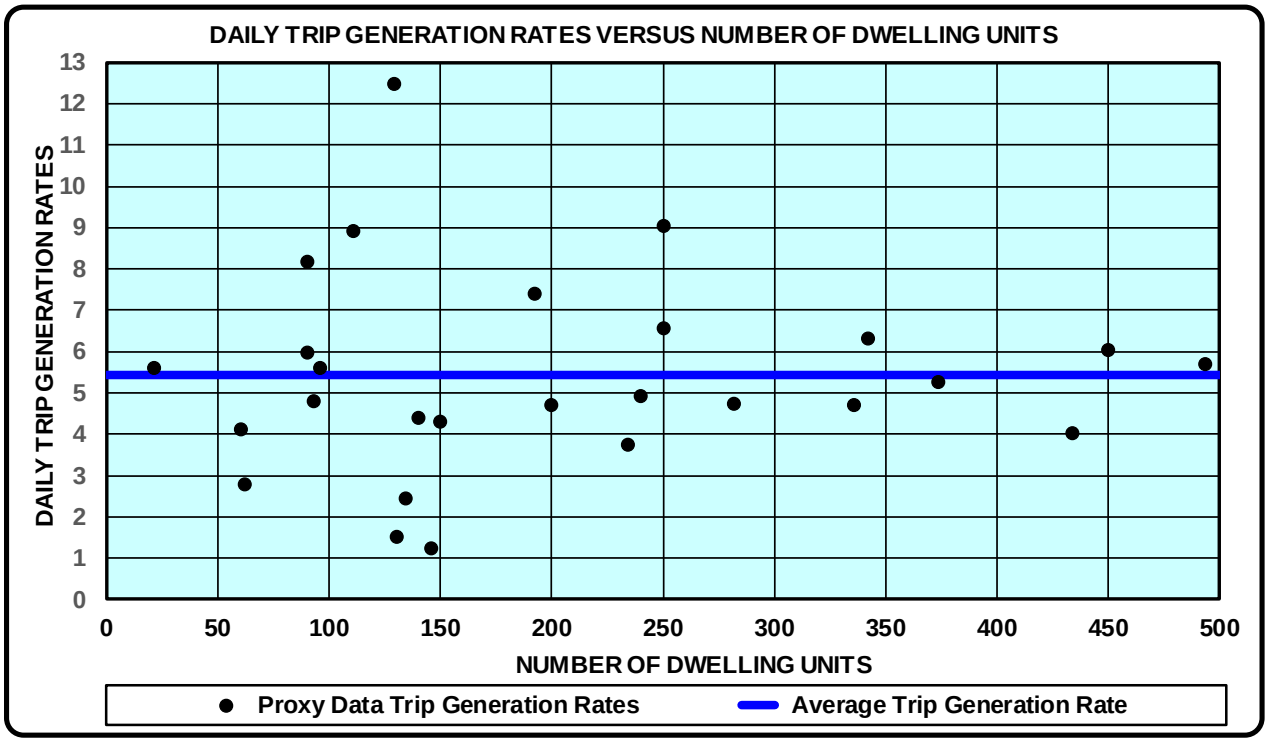


Figure 16: Multi-Family Mid-Rise Proxy Trip Data for Day

A critical aspect of trip generation data is statistical consistency. For the entire proxy data for the multi-family mid-rise land use code, statistical discrepancies exist with the proxy data. The *Trip Generation Manual* methodology provides both average rates and regression equations. The *Trip Generation Manual* data includes lowest, highest, and average trip generation rates, and also standard deviation. Average rates for all mathematical data often are skewed by disproportionately small or large rates. Utilizing an average rate to represent an entire data set assumes a normal distribution.
In a statistically normal data distribution, the average rate plus or minus one standard deviation includes 68.27% of the data. The average rate plus or minus two standard deviations includes 95.45% of the data. The average rate plus or minus three standard deviations includes 99.73% of the data. If a data set has a large percentage of data that is more than the average rate plus or minus one, two, or three standard deviations; the data set cannot be identified as a normal distribution. If a data set is not a normal distribution, then the average rate does not validly represent the data set.

The *Trip Generation Manual* proxy data for the multi-family mid-rise category was examined for statistical consistency. A comparison of the maximum or minimum rates to the average rate plus or minus two or three standard deviations indicates the potential excessive influence of specific rates much greater or lower than the remainder of the data. If the maximum trip generation rate exceeds the average rate plus two or three standard deviations, then the average rate may be skewed high. If the minimum trip generation rate is less than the average rate minus two or three standard deviations, then the average rate may be skewed low.

An outlier is a data point that is either more than the average rate plus two or three standard deviations, or less than the average rate minus two or three standard deviations. **Figure 17** identifies the outliers in the proxy trip generation data for the multi-family mid-rise category.

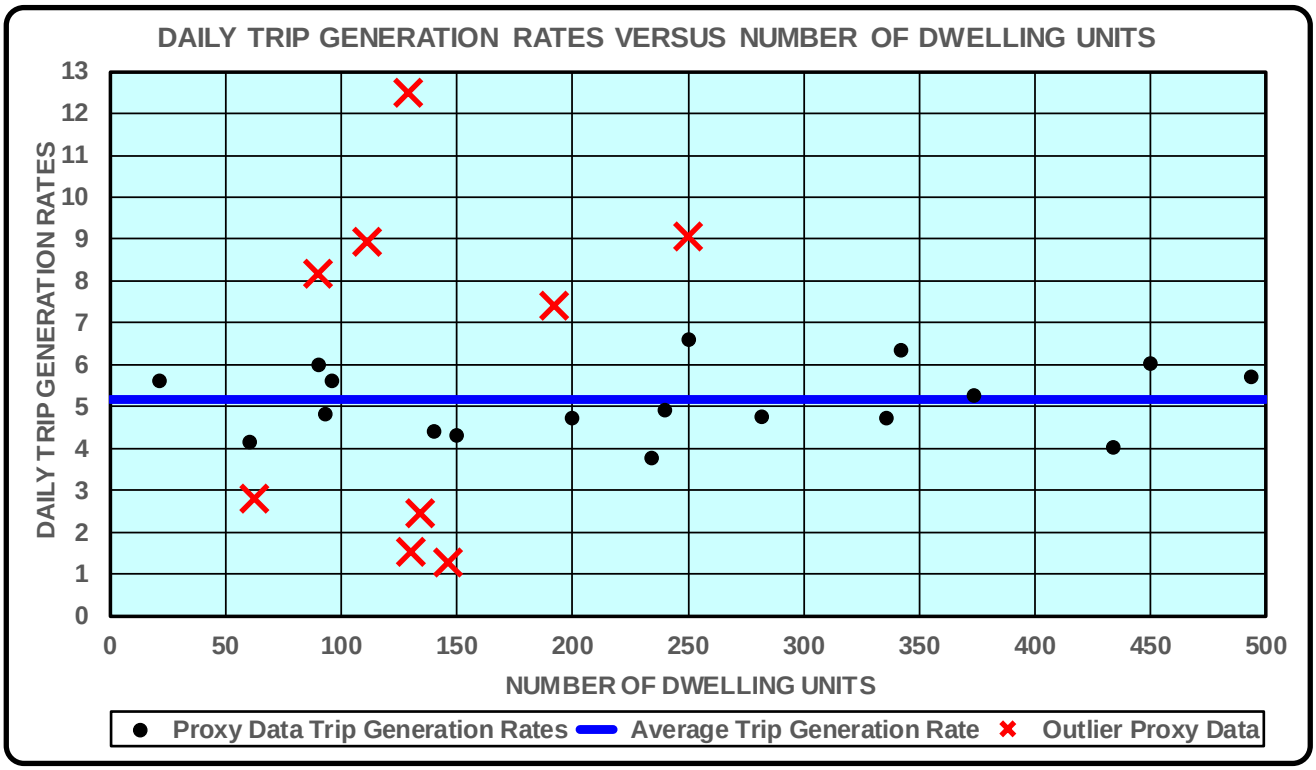


Figure 17: Multi-Family Mid-Rise Proxy Trip Data for Day WITHOUT Outliers

The *Trip Generation Manual* website was utilized to identify the data coordinates of specific land use size and trips. From these data, each individual site trip generation rate was determined. Data with trip

generation rates more than the average rate plus three times the standard deviation were eliminated. Data with trip generation rates less than the average rate minus three times the standard deviation were also eliminated. This process ensured that the remaining data is statistically consistent and can be defined as the average rate.

Table 10 provides the trip generation rate statistical consistency results that identified the outliers indicated in **Figure 17**. The acceptable relationships between the minimum or maximum trip generation rates and the average rate minus or plus three times the standard deviation are highlighted in bold italics.

Table 10: Multi-Family Proxy Data Statistical Consistency for Day

Statistic	Complete Data	Filtered Data
Number of Data Points	27	18
Average Size	204.81	238.11
Average less 3 Standard Deviations	1.21	3.53
Minimum Trip Generation Rate	***1.27***	***3.76***
Average Trip Generation Rate	5.44	5.17
Maximum Trip Generation Rate	12.50	***6.59***
Average plus 3 Standard Deviations	9.67	6.82
Standard Deviation	1.41	0.55

Typically, plus or minus two standard deviations are utilized for statistical consistency determination. However, for this data set, a two standard deviation requirement resulted in the elimination of too many data points. Therefore, plus or minus three standard deviations were utilized.

This same process was repeated for the morning and evening peak hour of adjacent street. **Table 11** provides the statistical consistency test for the morning peak hour of adjacent street proxy data. For the morning peak hour of adjacent street, four proxy data points rates were eliminated. **Figure 18** and **Figure 19** provide the graphs for the morning peak hour of adjacent street proxy data respectively for full data and for data without outliers.

Table 11: Multi-Family Proxy Data Statistical Consistency for Morning Peak Hour

Statistic	Complete Data	Filtered Data
Number of Data Points	53	49
Average Size	206.68	213.27
Average less 3 Standard Deviations	-0.02	0.09
Minimum Trip Generation Rate	***0.06***	***0.10***
Average Trip Generation Rate	0.36	.034
Maximum Trip Generation Rate	1.61	***0.57***
Average plus 3 Standard Deviations	0.74	0.58
Standard Deviation	0.19	0.12

Figure 20 and **Figure 21** provide the graphs for the evening peak hour of adjacent street proxy data respectively for full data and for data without outliers. **Table 12** provides the statistical consistency test for the evening peak hour of adjacent street proxy data. For the evening peak hour of adjacent street, seven proxy data points rates were eliminated.

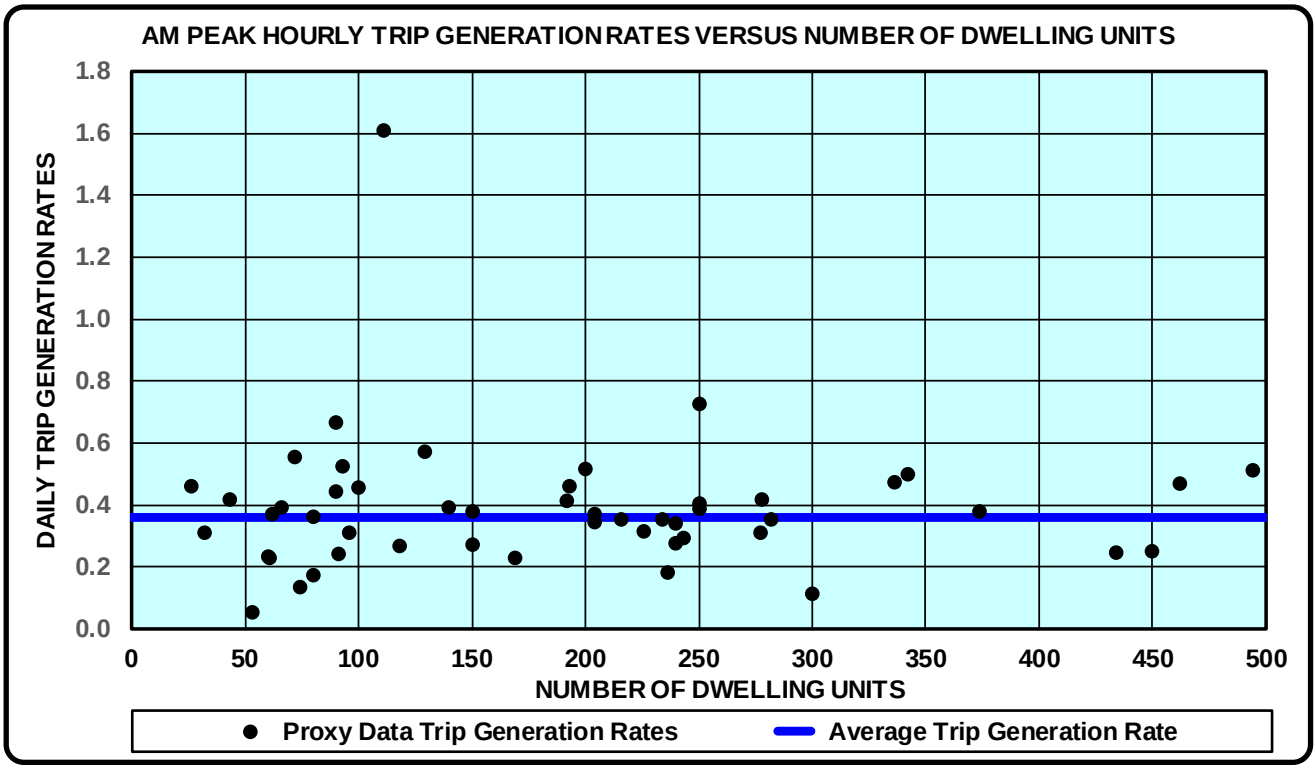


Figure 18: Multi-Family Mid-Rise Proxy Trip Data for AM Peak Hour

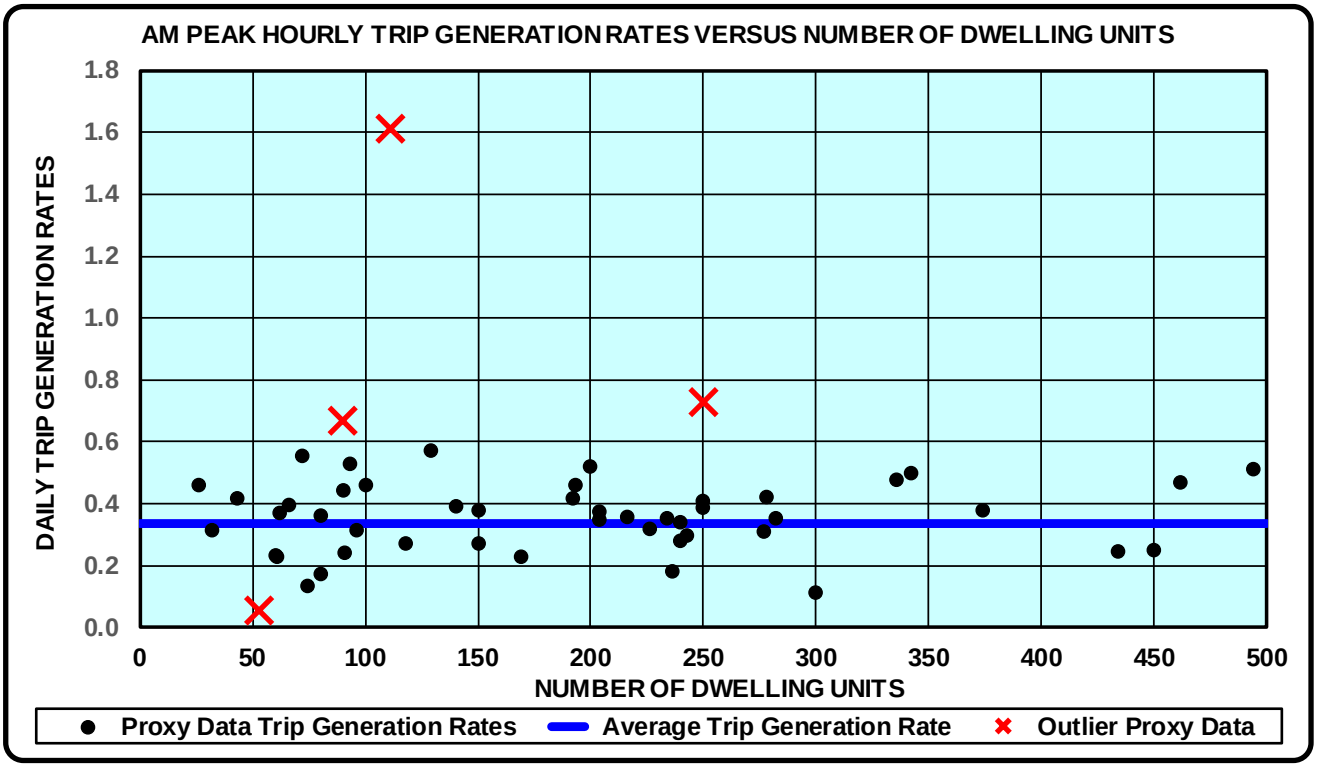


Figure 19: Multi-Family Mid-Rise Proxy Trip Data for AM Peak Hour WITHOUT Outliers

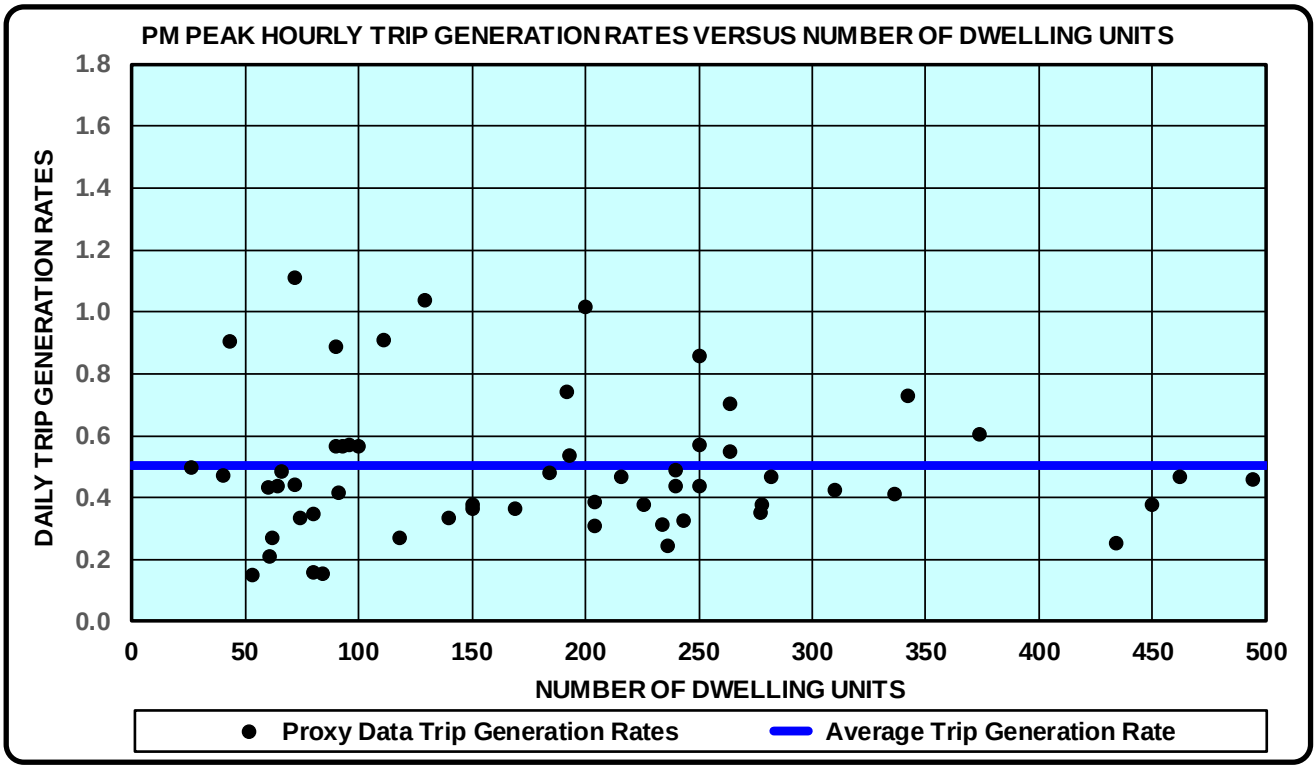


Figure 20: Multi-Family Mid-Rise Proxy Trip Data for PM Peak Hour

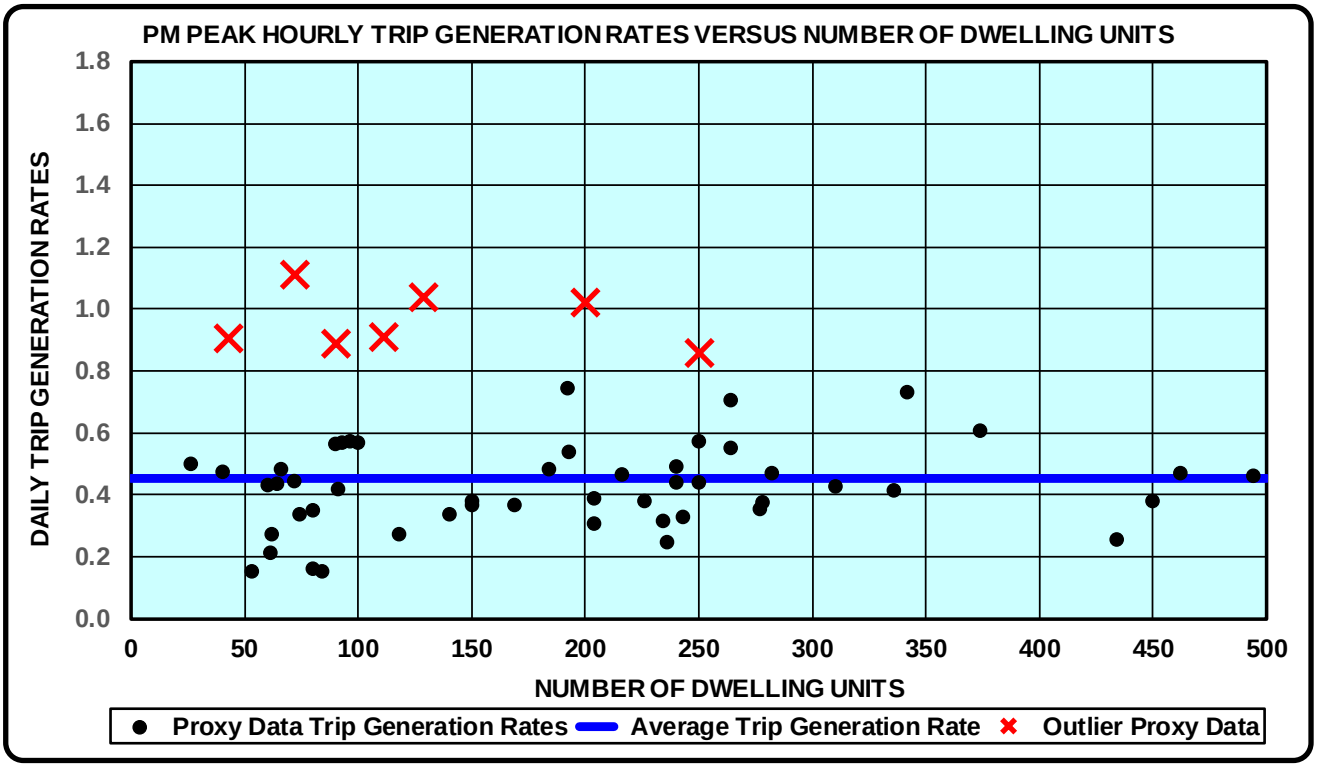


Figure 21: Multi-Family Mid-Rise Proxy Trip Data for PM Peak Hour WITHOUT Outliers

Table 12: Multi-Family Proxy Data Statistical Consistency for Evening Peak Hour

Statistic	Complete Data	Filtered Data
Number of Data Points	53	46
Average Size	165.15	170.83
Average less 3 Standard Deviations	0.10	0.08
Minimum Trip Generation Rate	***0.15***	***0.15***
Average Trip Generation Rate	0.50	0.45
Maximum Trip Generation Rate	1.11	***0.74***
Average plus 3 Standard Deviations	0.91	0.82
Standard Deviation	0.20	0.18

Appendix D.5 provides the complete multi-family trip generation calculations. Two (2) separate calculations are provided: full proxy data and filtered proxy data with statistical consistency. **Table 13** provides both the full proxy data average trip generation rates and the average rates without the outliers in the proxy data. **Table 14** provides the resulting estimated trip generation for both the full proxy data and without the proxy data outliers. The estimated trip generation without the outliers was utilized for this analysis.

Table 13: Average Trip Generation Rates for Multi-Family Mid-Rise

	FULL ITE DATA	WITHOUT OUTLIERS
WEEKDAY DAILY	5.44	5.17
AM PEAK HOUR STREET	0.36	0.34
PM PEAK HOUR STREET	0.44	0.45

Table 14: Estimated Trip Generation for Mercado Courtyards Apartments

	FULL ITE DATA			WITHOUT OUTLIERS		
	ENTERING	EXITING	TOTAL	ENTERING	EXITING	TOTAL
WEEKDAY DAILY	743	742	1,485	707	706	1,413
AM PEAK HOUR STREET	25	73	98	24	68	92
PM PEAK HOUR STREET	73	47	120	75	48	123

Table 15 provides a comparison of the estimated trip generation for the existing medical office and the proposed apartments.

Table 15: Trip Generation Comparison of Existing Medical to Proposed Apartments

	EXISTING MEDICAL			NEW RESIDENTIAL		
	ENTERING	EXITING	TOTAL	ENTERING	EXITING	TOTAL
WEEKDAY DAILY	3,798	3,798	7,596	707	706	1,413
AM PEAK HOUR STREET	323	91	414	24	68	92
PM PEAK HOUR STREET	194	498	692	75	48	123

Proposed Mercado Courtyards Apartments Estimated Traffic Assignment

To estimate distribution of the traffic generated by the Mercado Courtyards apartments, the 2021 turning volumes at the 92nd Street intersections with North Lane, Cochise Drive, and Ironwood Lane were utilized. The portion of traffic approaching and departing by direction for each intersection and their average was determined and are provided in **Table 16** through **Table 19**.

Table 16: Directional Percentages at 92nd / North Intersection

	AM PEAK				
	WEST	EAST	SOUTH	NORTH	TOTAL
APPROACH - FROM	**4%**	**14%**	**43%**	**39%**	**100%**
DEPARTURE - TO	**6%**	**16%**	**29%**	**49%**	**100%**
	PM PEAK				
	WEST	EAST	SOUTH	NORTH	TOTAL
APPROACH - FROM	**4%**	**13%**	**49%**	**34%**	**100%**
DEPARTURE - TO	**2%**	**13%**	**29%**	**56%**	**100%**
	DAY				
	WEST	EAST	SOUTH	NORTH	TOTAL
APPROACH - FROM	**3%**	**14%**	**29%**	**54%**	**100%**
DEPARTURE - TO	**16%**	**4%**	**51%**	**29%**	**100%**

Table 17: Directional Percentages at 92nd / Cochise Intersection

	AM PEAK				
	WEST	EAST	SOUTH	NORTH	TOTAL
APPROACH - FROM	**9%**	**6%**	**50%**	**35%**	**100%**
DEPARTURE - TO	**7%**	**3%**	**39%**	**51%**	**100%**
	PM PEAK				
	WEST	EAST	SOUTH	NORTH	TOTAL
APPROACH - FROM	**8%**	**4%**	**53%**	**35%**	**100%**
DEPARTURE - TO	**5%**	**2%**	**36%**	**57%**	**100%**
	DAY				
	WEST	EAST	SOUTH	NORTH	TOTAL
APPROACH - FROM	**6%**	**2%**	**37%**	**55%**	**100%**
DEPARTURE - TO	**6%**	**8%**	**53%**	**33%**	**100%**

Table 18: Directional Percentages at 92nd / Ironwood Intersection

	AM PEAK				
	WEST	EAST	SOUTH	NORTH	TOTAL
APPROACH - FROM	**5%**	**5%**	**43%**	**47%**	**100%**
DEPARTURE - TO	**2%**	**7%**	**43%**	**48%**	**100%**
	PM PEAK				
	WEST	EAST	SOUTH	NORTH	TOTAL
APPROACH - FROM	**5%**	**4%**	**47%**	**44%**	**100%**
DEPARTURE - TO	**2%**	**5%**	**41%**	**52%**	**100%**
	DAY				
	WEST	EAST	SOUTH	NORTH	TOTAL
APPROACH - FROM	**2%**	**5%**	**42%**	**51%**	**100%**
DEPARTURE - TO	**4%**	**5%**	**50%**	**41%**	**100%**

Table 19: Three-Intersection Average Directional Percentages

	AM PEAK				
	WEST	EAST	SOUTH	NORTH	TOTAL
APPROACH - FROM			**41%**	**59%**	**100%**
DEPARTURE - TO			**46%**	**54%**	**100%**
	PM PEAK				
	WEST	EAST	SOUTH	NORTH	TOTAL
APPROACH - FROM			**42%**	**58%**	**100%**
DEPARTURE - TO			**23%**	**77%**	**100%**
	DAY				
	WEST	EAST	SOUTH	NORTH	TOTAL
APPROACH - FROM			**46%**	**54%**	**100%**
DEPARTURE - TO			**56%**	**44%**	**100%**

The trip distribution percentages were then applied to the Mercado Courtyards apartments traffic volumes to determine the turning movements at the five (5) study intersections. **Figure 22** provides the Mercado Courtyards apartments weekday approach and departure volumes. **Figure 23** provides the Mercado Courtyards apartments weekday approach and departure volumes.

A right-turn-in-and-right-turn-out access exists east of 92nd Street, south of Cochise Drive and north of Ironwood Lane. This existing access will be utilized with the Mercado Courtyards apartments. However, no apartment traffic was assigned to this access for this analysis.

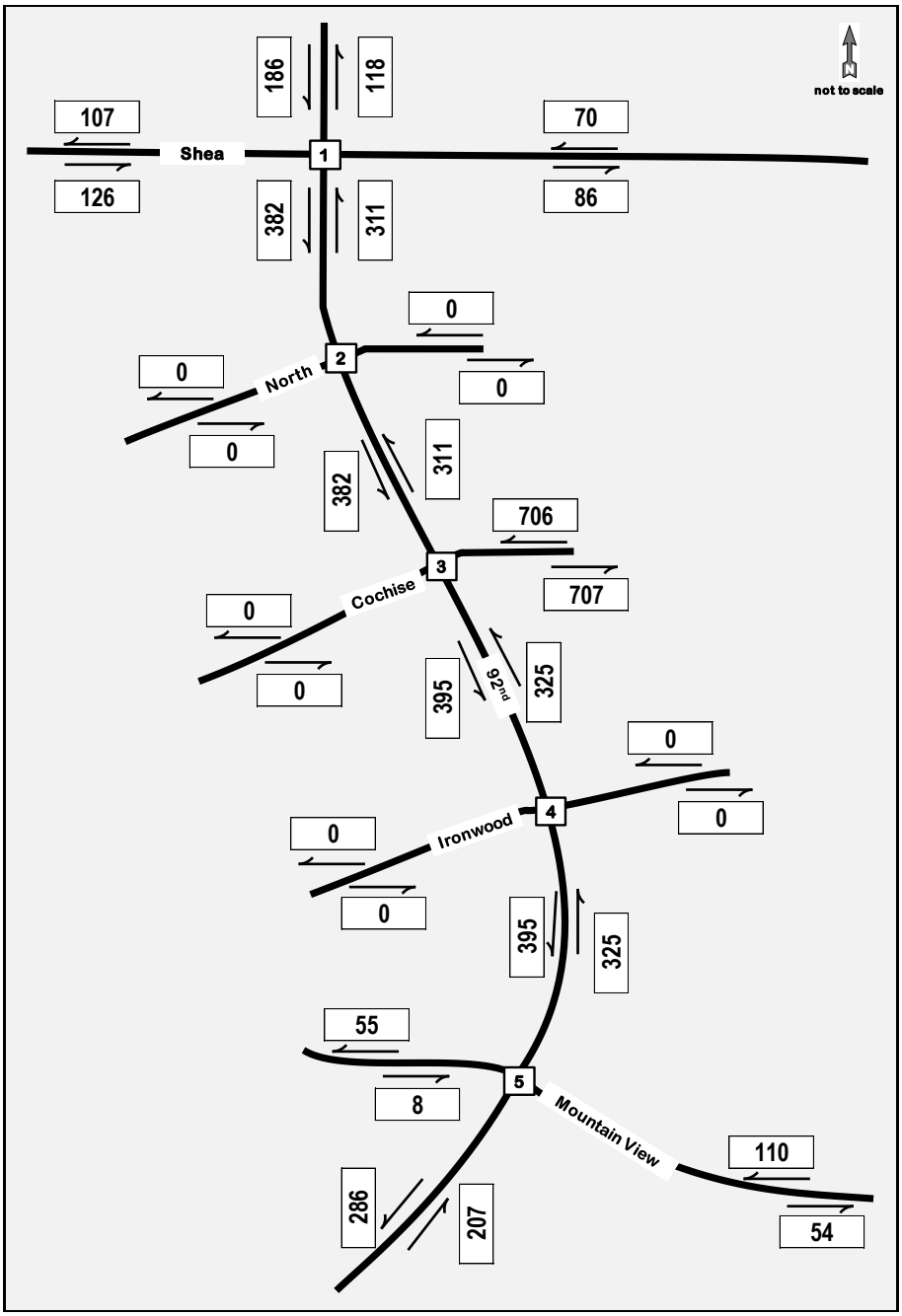
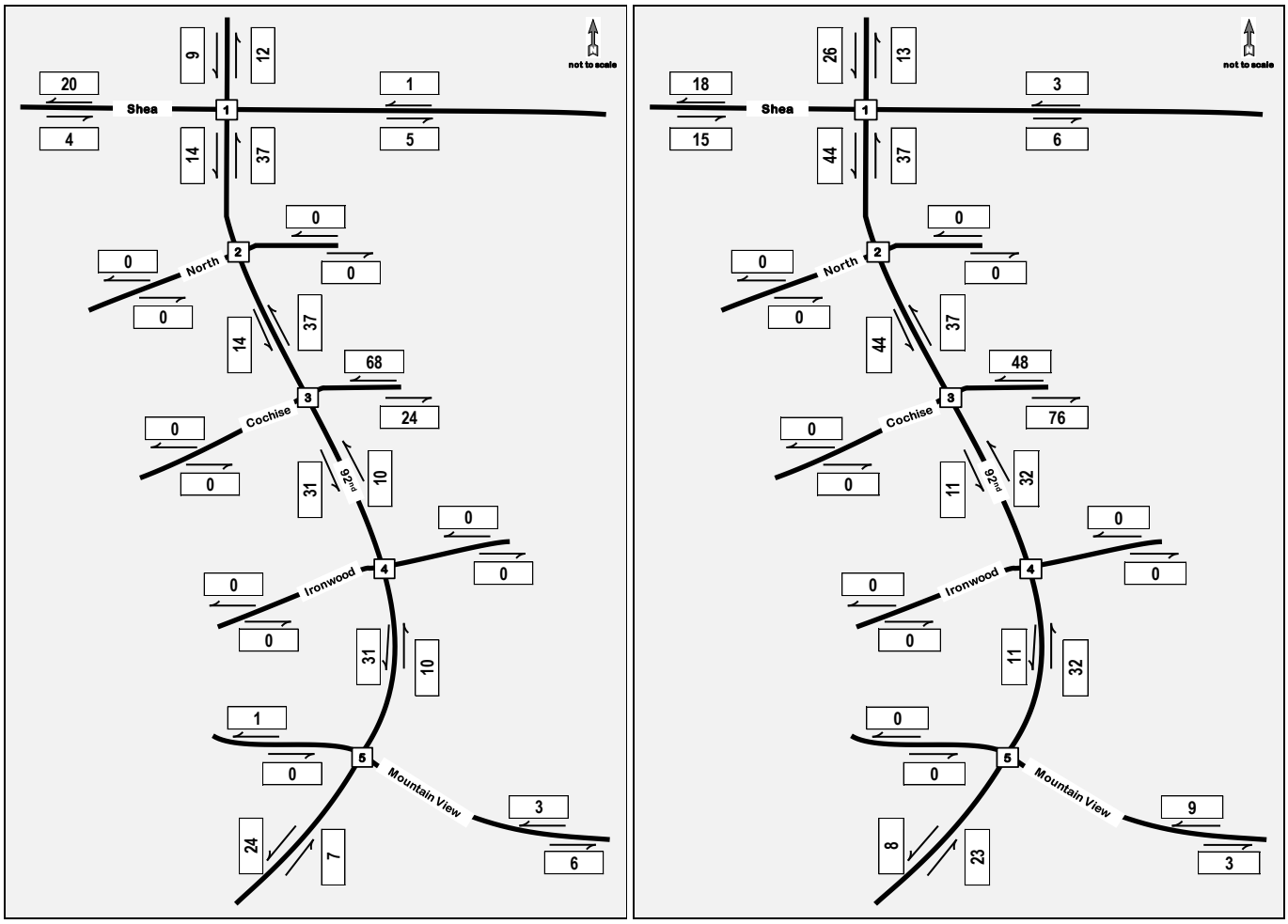


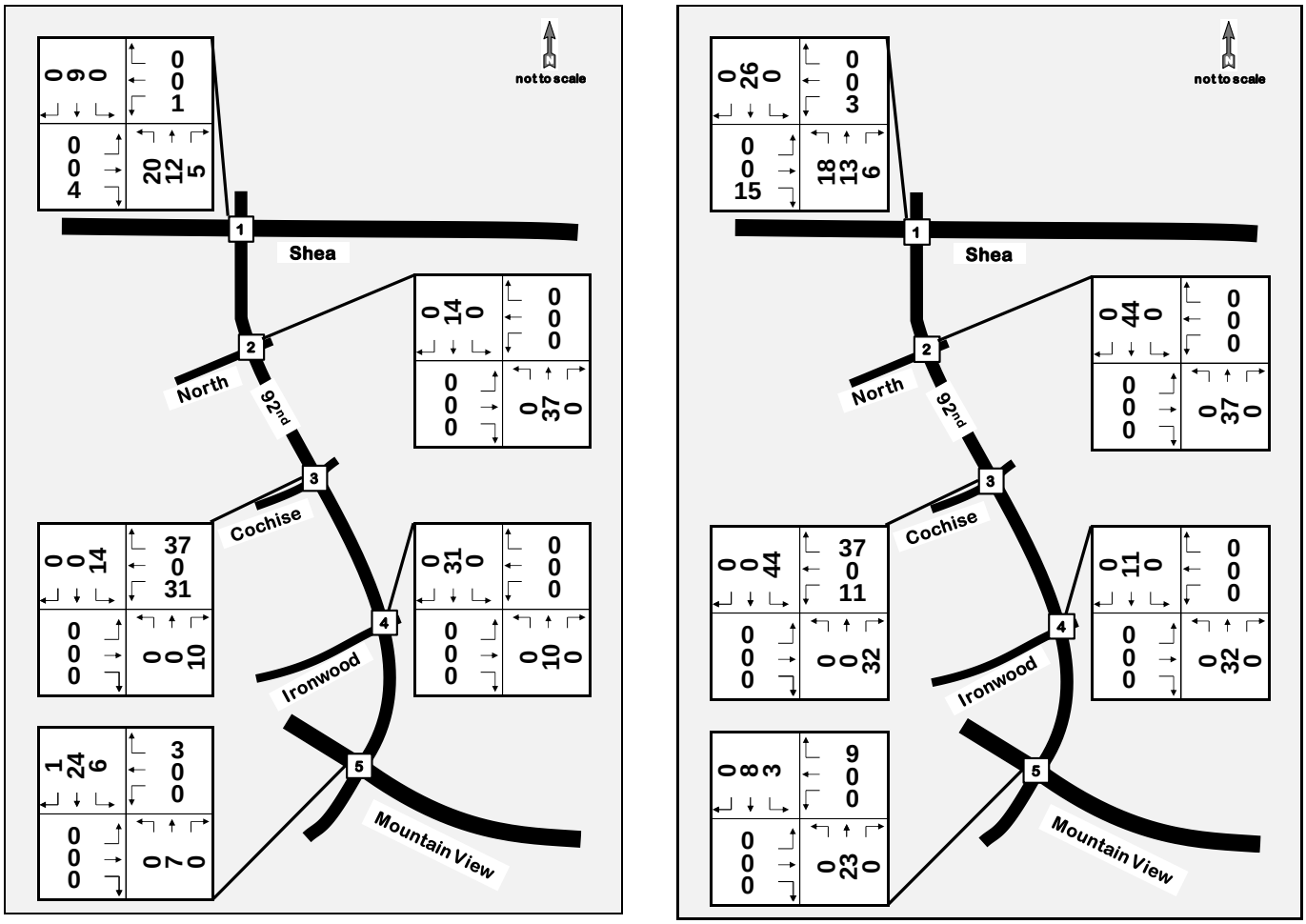
Figure 22: Mercado Courtyards Apartments Weekday Approach and Departure Volumes



Morning Peak Hour **Evening Peak Hour**

Figure 23: Mercado Courtyards Apartments Peak Hour Approach and Departure Volumes

Figure 24 provides the Mercado Courtyards apartments turning movement traffic for the morning and evening peak hours.



Morning Peak Hour **Evening Peak Hour**

Figure 24: Mercado Courtyards Apartments Turning Volumes

Existing Medical Office Traffic

The existing medical office building on the Mercado Courtyards property, indicated in **Figure 25**, will be removed. The existing retail on the Mercado Courtyards property will be retained. Therefore, the existing medical office building traffic must be subtracted from the ambient 2024 traffic.

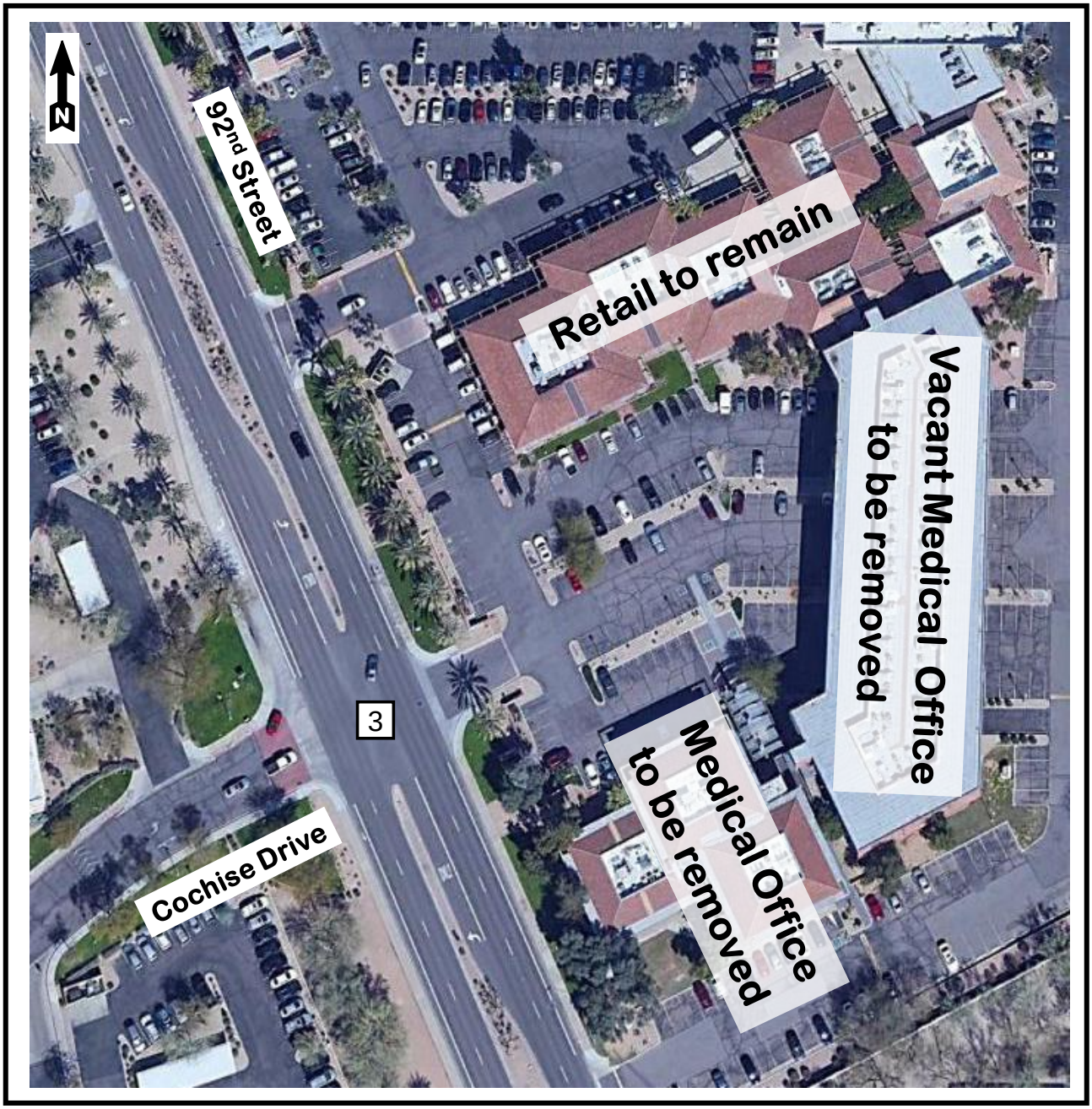
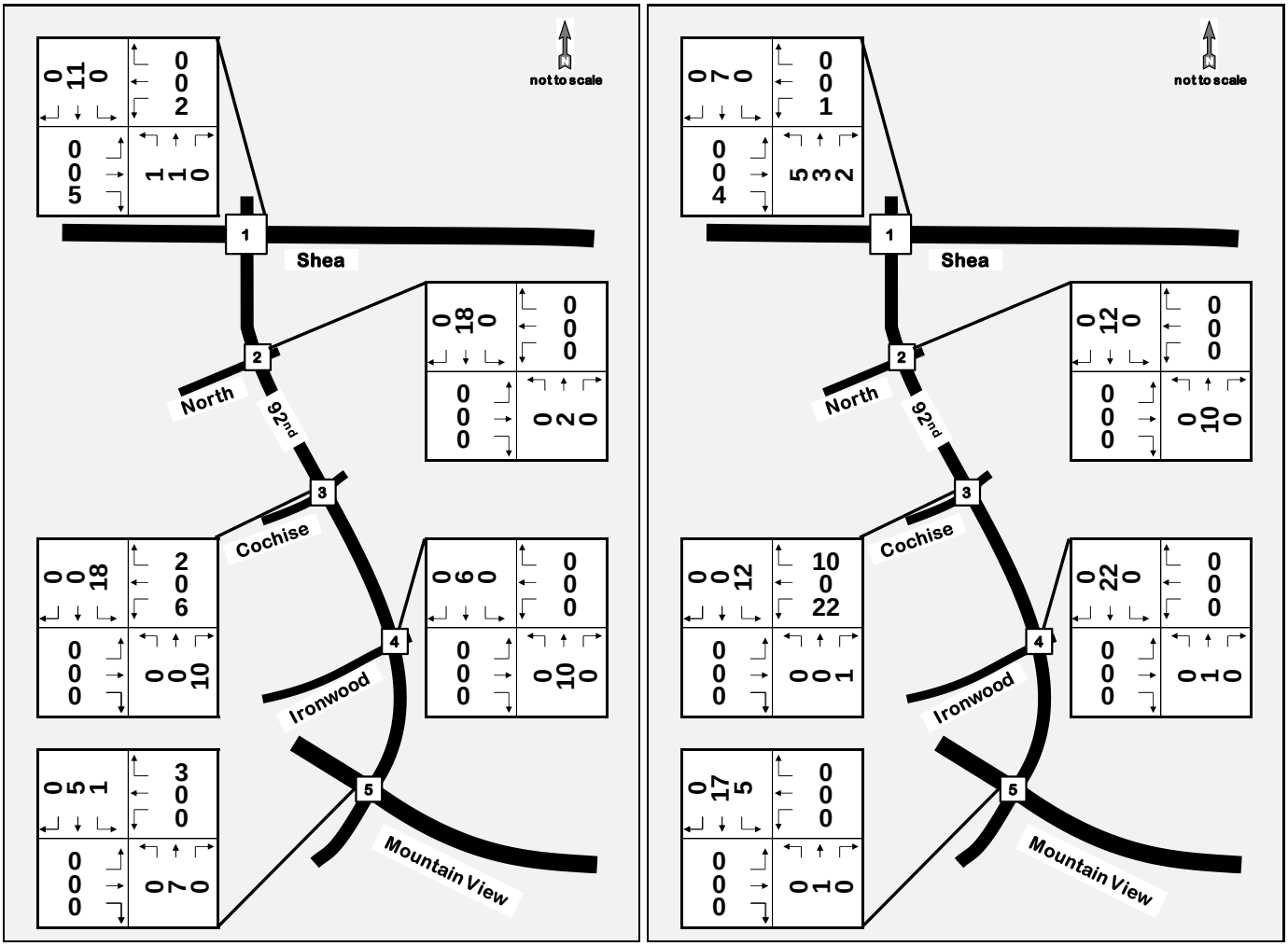


Figure 25: Existing Medical Office to be Removed

The entering traffic turning movements were estimated utilizing the existing percentage of northbound right-turns and southbound left-turns. The exiting traffic turning movements were estimated utilizing the existing percentage of westbound right-turns and westbound left-turns. These traffic volumes were distributed to the other four (4) study intersections. The resulting peak hour turning movement traffic volumes for all five (5) study intersections are summarized in **Figure 26**. The resulting day approach traffic volumes for all five (5) study intersections are summarized in **Figure 27**. These traffic volumes were subtracted from the ambient 2024 peak hour and day traffic volumes at the study intersections.



Morning Peak Hour **Evening Peak Hour**

Figure 26: Turning Movements for Existing Medical Office to be Removed

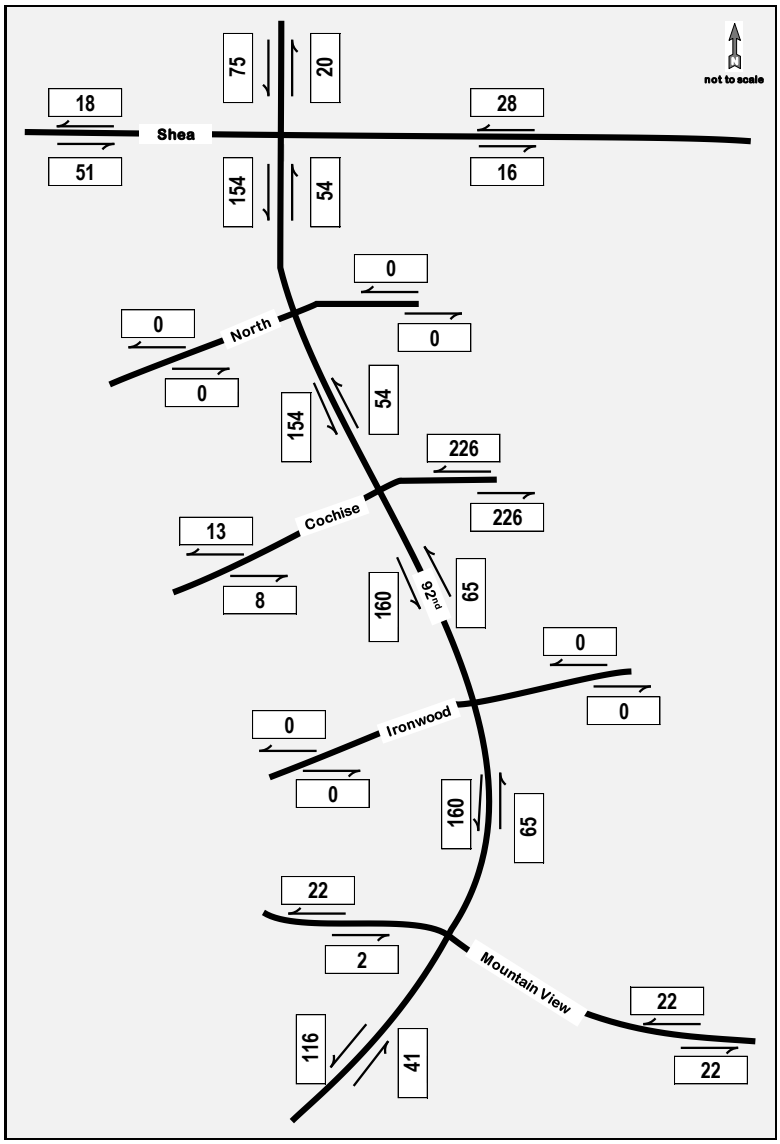


Figure 27: Day Approach and Departure Volumes for Existing Medical Office to be Removed

Figure 28 provides the Mercado Courtyards apartments plus 2024 weekday approach and departure volumes. **Figure 29** provides the Mercado Courtyards apartments plus 2024 peak hour approach and departure volumes. **Figure 30** provides the Mercado Courtyards apartments plus the ambient 2024 turning movement traffic volumes. These traffic volumes subtract the existing medical office building traffic.

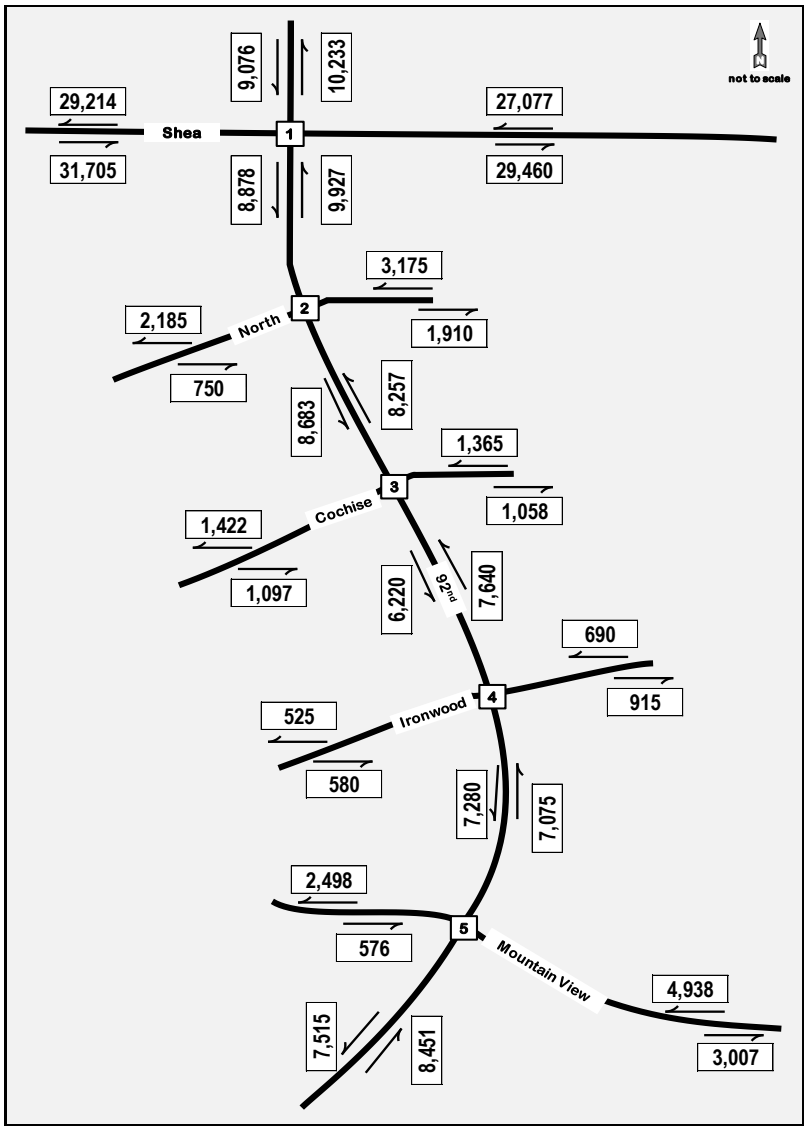
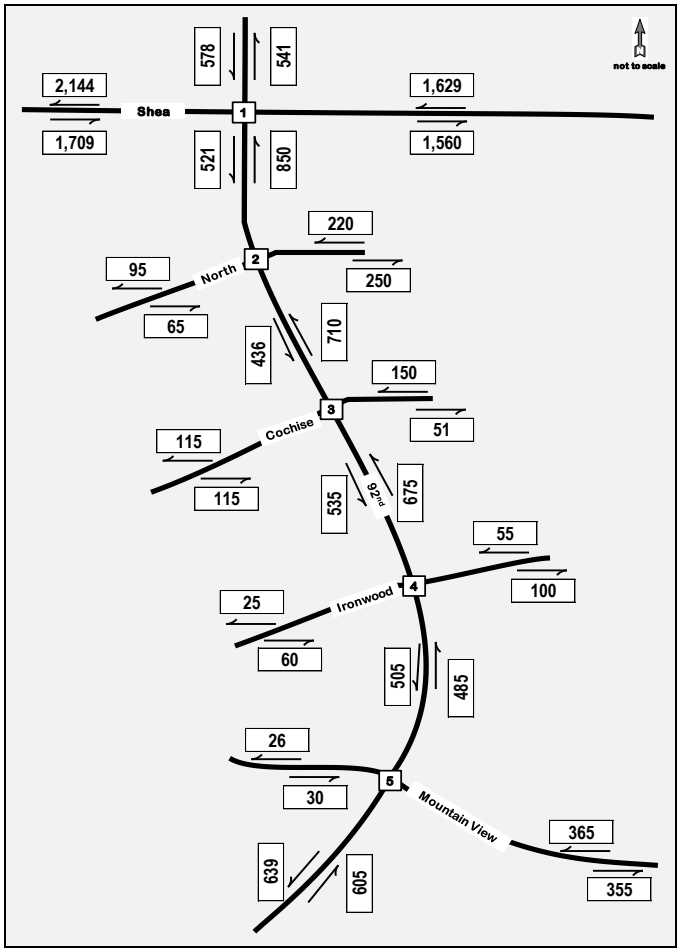
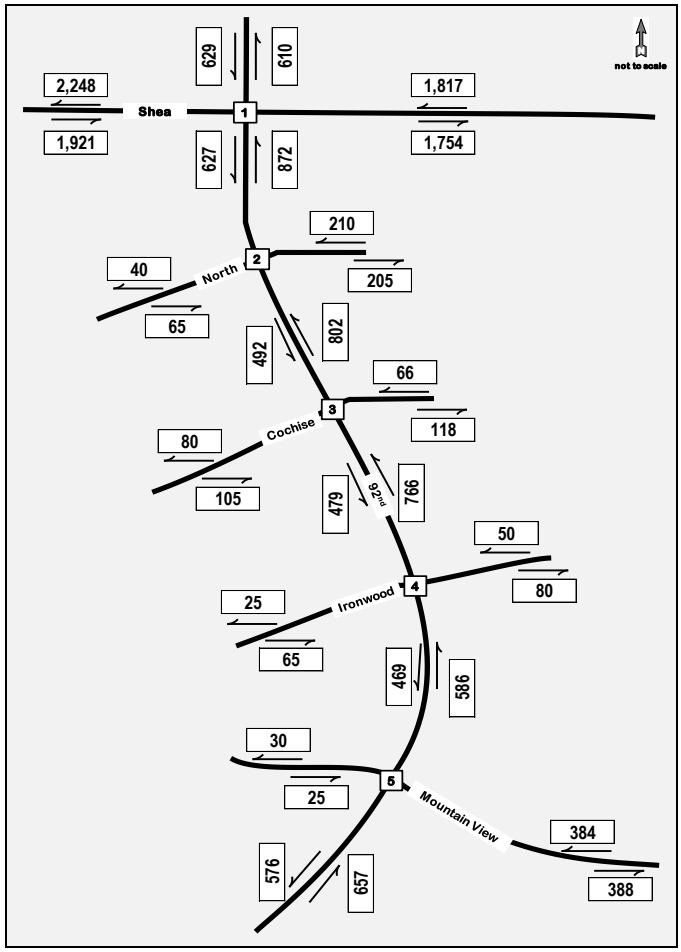


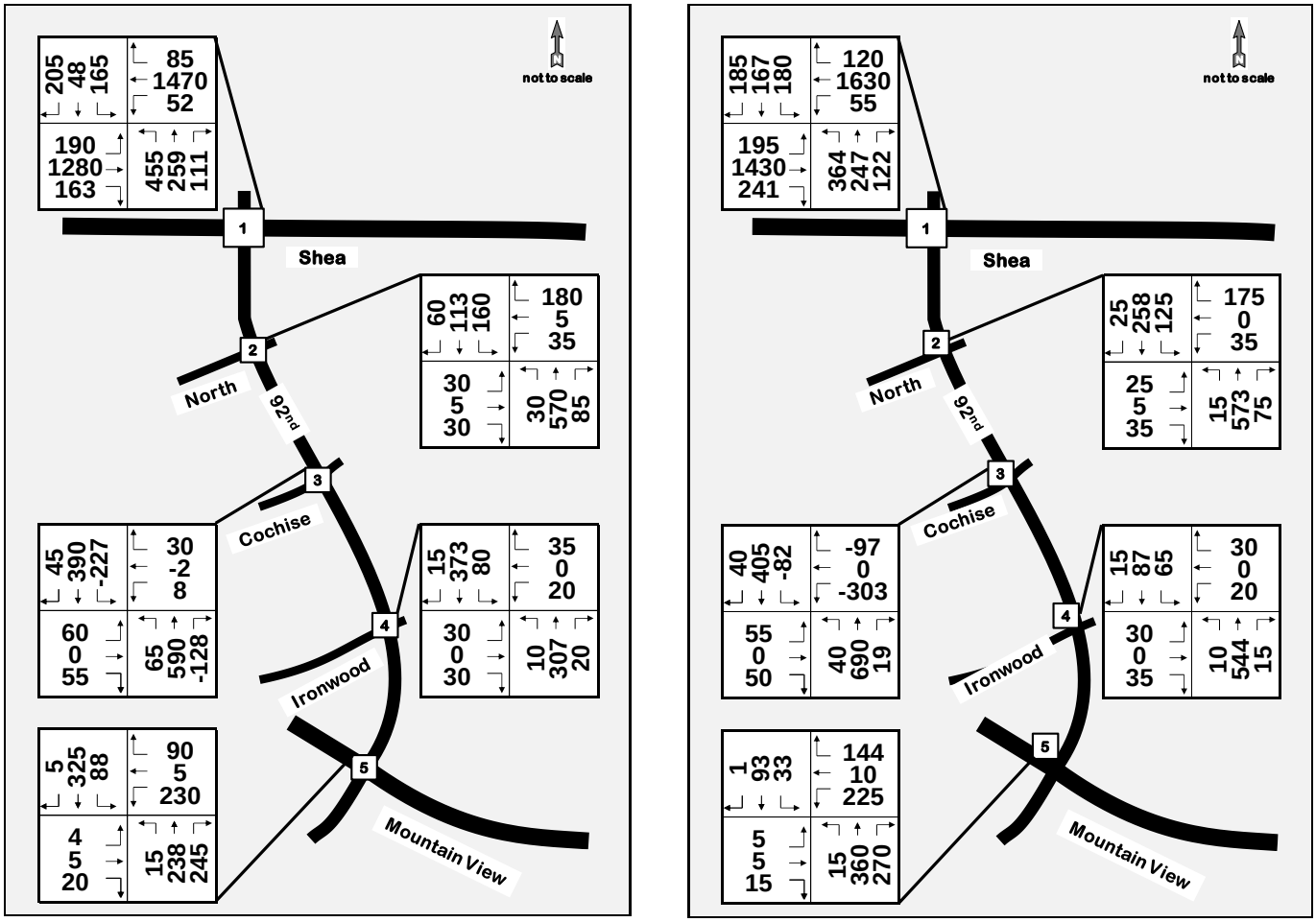
Figure 28: 2024 with Mercado Courtyards Apartments Weekday Approach and Departure Volumes





Morning Peak Hour **Evening Peak Hour**

Figure 29: 2024 with Mercado Courtyards Apartments Peak Hour Approach and Departure Volumes



Morning Peak Hour **Evening Peak Hour**

Figure 30: 2024 with Mercado Courtyards Apartments Turning Volumes

92nd and Cochise Traffic Signal Warrants

The intersection of 92nd Street and Cochise Drive was analyzed to determine if traffic signal warrants are satisfied with existing 2021 and ambient 2024 traffic data, and with 2024 and the Mercado Courtyards apartments traffic data.

The *Manual on Uniform Traffic Control Devices* (MUTCD) as published by the United States Department of Transportation is the reference for determining the need for traffic signal installation throughout the United States. This document establishes nine (9) separate, related sets of criteria termed “warrants”. The warrants most frequently utilized for typical intersections are Warrant 1A, Minimum Vehicular Volume; 1B, Interruption of Continuous Traffic; Combination of 1A and 1B; 2, Four-Hour Vehicular Volumes; and 3B, Peak Hour Volume.

Signal warrant analyses require a minimum of eight (8) hours of approach volumes, with a suggested minimum of 16 hours. For the existing 2021 traffic counts, 24 hours of approach volumes are available. For the 2024 and the site conditions, assumptions are necessary to determine 24 hours of approach volumes.

To analyze the signal warrants for existing 2021 and ambient 2024 without the Mercado Courtyards apartments, the 92nd / Cochise westbound, northbound, and southbound approach traffic volumes must be reduced by removing the medical office building traffic. The existing 30,000-square-foot retail will remain; while the existing 13,000-square-foot medical office building will be removed.

To separate the retail traffic from the medical office traffic, trip generation was accomplished for both the 30,000-square-foot retail and the 13,000-square-foot medical office building. These trip generation calculations are provided in **Appendix D.1** and **Appendix D.2.** The percentage of the estimated retail trip generation of the sum of the estimated retail trip generation and the estimated medical office trip generation was determined separately for the weekday day, weekday morning peak hour of adjacent street. and evening peak hour of adjacent street. **Table 20** provides the resulting percentages.

Table 20: Portion of Existing 92nd and Cochise Counts Attributed to Retail that Will Remain

	RETAIL	MEDICAL OFFICE	RETAIL PORTION
WEEKDAY DAILY	2,651	452	85%
AM PEAK HOUR STREET	167	36	82%
PM PEAK HOUR STREET	223	46	83%

The retail percentages were applied to the westbound approach volumes. The medical office percentages were applied to the northbound right-turns and to the southbound left-turns. The peak hour of adjacent street percentages were applied respectively to the peak morning (10:00 to 11:00) and the peak evening (3:00 to 4:00) hourly volumes. The daily percentage was applied to the remaining hourly volumes. The resulting volumes were then assumed to continue to occur into the future, including ambient 2024, and after occupancy of the Mercado Courtyards apartments. **Table 21** and **Table 22** respectively provide the westbound Cochise Drive, and the northbound and southbound 92nd Street approach volumes.

Table 21: Westbound Cochise Volumes

BEGIN TIME	WESTBOUND ALL COUNT	WESTBOUND ALL RETAIL
12:00 AM	1	1
1:00 AM	0	0
2:00 AM	0	0
3:00 AM	0	0
4:00 AM	4	3
5:00 AM	6	5
6:00 AM	28	24
7:00 AM	46	39
8:00 AM	53	45
9:00 AM	77	66
10:00 AM	**71**	**58**
11:00 AM	83	71
12:00 PM	85	73
1:00 PM	87	74
2:00 PM	48	41
3:00 PM	**49**	**41**
4:00 PM	71	61
5:00 PM	55	47
6:00 PM	45	38
7:00 PM	30	26
8:00 PM	16	14
9:00 PM	16	14
10:00 PM	2	2
11:00 PM	1	1

Table 22: Existing 92nd Approach Volumes that Will Remain

BEGIN TIME	NORTHBOUND RIGHT COUNT	NORTHBOUND RIGHT MEDICAL	NORTHBOUND ALL COUNT	NORTHBOUND ALL WITHOUT MEDICAL
12:00 AM	0	0	6	6
1:00 AM	0	0	8	8
2:00 AM	0	0	5	5
3:00 AM	0	0	2	2
4:00 AM	0	0	19	19
5:00 AM	2	0	68	68
6:00 AM	2	0	172	172
7:00 AM	6	1	339	338
8:00 AM	11	2	476	474
9:00 AM	23	3	514	511
10:00 AM	**21**	**4**	536	532
11:00 AM	20	3	659	656
12:00 PM	21	3	628	625
1:00 PM	17	2	558	556
2:00 PM	8	1	582	581
3:00 PM	**7**	**1**	684	683
4:00 PM	5	1	701	700
5:00 PM	11	2	566	564
6:00 PM	6	1	353	352
7:00 PM	3	0	203	203
8:00 PM	0	0	116	116
9:00 PM	0	0	79	79
10:00 PM	0	0	36	36
11:00 PM	0	0	16	16

BEGIN TIME	SOUTHBOUND LEFT COUNT	SOUTHBOUND LEFT MEDICAL	SOUTHBOUND ALL COUNT	SOUTHBOUND ALL WITHOUT MEDICAL
12:00 AM	1	0	6	6
1:00 AM	0	0	2	2
2:00 AM	0	0	5	5
3:00 AM	0	0	9	9
4:00 AM	1	0	23	23
5:00 AM	3	0	91	91
6:00 AM	4	1	263	262
7:00 AM	21	3	490	487
8:00 AM	28	4	609	605
9:00 AM	41	6	490	484
10:00 AM	**18**	**3**	481	478
11:00 AM	16	2	455	453
12:00 PM	32	5	501	496
1:00 PM	18	3	474	471
2:00 PM	15	2	463	461
3:00 PM	**24**	**4**	500	496
4:00 PM	20	3	384	381
5:00 PM	9	1	324	323
6:00 PM	5	1	210	209
7:00 PM	3	0	153	153
8:00 PM	0	0	73	73
9:00 PM	1	0	64	64
10:00 PM	0	0	26	26
11:00 PM	0	0	15	15

Table 23 provides the 2021 hourly volumes and the corresponding percentage of daily traffic arriving in each hour for each approach to the 92nd Street and Cochise Drive intersection. These percentages were applied to the ambient 2024 approach daily volumes to determine the 24-hour hourly volumes.

Table 23: Hourly Volumes and Hourly Factors for 92nd and Cochise

BEGIN TIME	APPROACH VOLUMES					PORTION OF DAY			
	TOTAL	EB	WB	NB	SB	EB	WB	NB	SB
12:00 AM	13	0	1	6	6	0.0%	0.1%	0.1%	0.1%
1:00 AM	11	1	0	8	2	0.1%	0.0%	0.1%	0.0%
2:00 AM	12	2	0	5	5	0.2%	0.0%	0.1%	0.1%
3:00 AM	11	0	0	2	9	0.0%	0.0%	0.0%	0.1%
4:00 AM	50	4	4	19	23	0.4%	0.5%	0.3%	0.4%
5:00 AM	171	6	6	68	91	0.5%	0.7%	0.9%	1.5%
6:00 AM	473	10	28	172	263	0.9%	3.2%	2.3%	4.3%
7:00 AM	927	52	46	339	490	4.7%	5.3%	4.6%	8.0%
8:00 AM	1,180	42	53	476	609	3.8%	6.1%	6.5%	10.0%
9:00 AM	1,164	83	77	514	490	7.6%	8.8%	7.0%	8.0%
10:00 AM	1,175	87	71	536	481	7.9%	8.1%	7.3%	7.9%
11:00 AM	1,306	109	83	659	455	9.9%	9.5%	9.0%	7.4%
12:00 PM	1,306	92	85	628	501	8.4%	9.7%	8.6%	8.2%
1:00 PM	1,189	70	87	558	474	6.4%	10.0%	7.6%	7.8%
2:00 PM	1,194	101	48	582	463	9.2%	5.5%	8.0%	7.6%
3:00 PM	1,339	106	49	684	500	9.6%	5.6%	9.3%	8.2%
4:00 PM	1,270	114	71	701	384	10.4%	8.1%	9.6%	6.3%
5:00 PM	1,028	83	55	566	324	7.6%	6.3%	7.7%	5.3%
6:00 PM	652	50	45	347	210	4.5%	5.1%	4.7%	3.4%
7:00 PM	446	60	30	203	153	5.5%	3.4%	2.8%	2.5%
8:00 PM	214	9	16	116	73	0.8%	1.8%	1.6%	1.2%
9:00 PM	167	8	16	79	64	0.7%	1.8%	1.1%	1.0%
10:00 PM	70	6	2	36	26	0.5%	0.2%	0.5%	0.4%
11:00 PM	36	4	1	16	15	0.4%	0.1%	0.2%	0.2%
TOTAL	15,404	1,099	874	7,320	6,111	100%	100%	100%	100%

The signal warrant analysis was repeated with the Mercado Courtyards apartments. Signal warrant analysis require hourly volumes. The trip generation process only provides daily and peak hourly volumes. Therefore, assumptions are necessary for the remaining hours of the day.

Table 24 provides the estimated hourly volume percentages for the Mercado Courtyards apartments. The bold percentages in the “ESTIMATED” column are the trip generation percentages of the actual trip generation rates of peak hour of adjacent street and peak hour of generator for both the morning and evening periods. The “EXISTING” columns are the percentages of the hourly traffic counts on Cochise Drive at 92nd Street. These percentages were considered to aid in the estimation for the apartment hourly percentages of the day.

Table 24: Estimated Hourly Percentages of Daily Traffic for Mercado Courtyards Apartments

BEGIN TIME	ESTIMATED WB		EXISTING EB	EXISTING WB
12:00 AM	0.0%		0.0%	0.0%
1:00 AM	0.0%		0.0%	0.0%
2:00 AM	0.0%		0.0%	0.0%
3:00 AM	0.0%		0.0%	0.0%
4:00 AM	4.0%		0.5%	0.5%
5:00 AM	6.0%		0.5%	0.5%
6:00 AM	8.0%		1.0%	3.0%
7:00 AM	**10.0%**		4.5%	5.5%
8:00 AM	**8.5%**		4.0%	6.0%
9:00 AM	6.0%		7.5%	9.0%
10:00 AM	4.0%		8.0%	8.0%
11:00 AM	6.0%		10.0%	9.5%
12:00 PM	6.0%		8.5%	10.0%
1:00 PM	5.0%		6.5%	10.0%
2:00 PM	4.0%		9.0%	5.5%
3:00 PM	5.0%		9.5%	5.5%
4:00 PM	**6.0%**		10.5%	8.0%
5:00 PM	**6.5%**		7.5%	6.5%
6:00 PM	6.0%		4.5%	5.0%
7:00 PM	4.0%		5.5%	3.5%
8:00 PM	3.0%		1.0%	2.0%
9:00 PM	2.0%		0.5%	2.0%
10:00 PM	0.0%		0.5%	0.0%
11:00 PM	0.0%		0.5%	0.0%
TOTAL	100.0%		100.0%	100.0%

The Manual on Uniform Traffic Control Devices, in Section 4C.01, on page 436, line 09, states, (emphasis added):

> *"Engineering judgment should also be used in applying various traffic signal warrants to cases where approaches consist of one lane plus one left-turn or right-turn lane. The site-specific traffic characteristic should dictate whether an approach is considered as one lane or two lanes. For example, for an approach with one lane for through and right-turning traffic plus a left-turn lane, if engineering judgment indicates that it should be considered a one-lane approach because the traffic using the left-turn lane is minor, the total traffic volume approaching the intersection should be applied against the signal warrants as a one-lane approach.* ***The approach should be considered two lanes if approximately half of the traffic on the approach turns left*** *and the left-turn lane is of sufficient length to accommodate all left-turn vehicles.*

The eastbound approach on Cochise Drive at 92nd Street current 2021 daily volume consists of 385 left-turning vehicles, 31 straight vehicles, and 478 right-turning vehicles. Therefore, 43% turn left and 57% are straight or right-turning. These percentages are approximately half of the approach traffic, and therefore the eastbound approach should be considered as two lanes.

The westbound approach on Cochise Drive at 92nd Street current 2021 daily volume consists of 383 left-turning vehicles, 37 straight vehicles, and 164 right-turning vehicles. Therefore, 66% turn left and 19% are straight or right-turning. The left-turn percentage is greater than one-half of the approach traffic, and therefore the westbound approach should be considered as one lane.

Table 25 provides the 2021 approach traffic volumes at the intersection of 92nd Street and Cochise Drive. These volumes exclude the existing medical office building entering and exiting traffic that will be demolished, and include the existing retail that is part of the Mercado Courtyards.

For the existing 2021 and ambient 2024 signal warrant analyses, the eastbound approach volumes exceed the westbound approach volumes for all except 3 of the 14 hours of 6:00 to 7:00 AM through 7:00 to 8:00 PM. Therefore, the minor street will be analyzed as two lanes.

Table 25: 92nd / Cochise Approach Volumes 2021

	INTERSECTION APPROACH TRAFFIC VOLUMES			
TIME	**NORTHBOUND**	**SOUTHBOUND**	**EASTBOUND**	**WESTBOUND**
1:00 AM	**6**	**6**	**0**	**1**
2:00 AM	**8**	**2**	**1**	**0**
3:00 AM	**5**	**5**	**2**	**0**
4:00 AM	**2**	**9**	**0**	**0**
5:00 AM	**19**	**23**	**4**	**4**
6:00 AM	**68**	**90**	**6**	**6**
7:00 AM	**172**	**262**	**10**	**28**
8:00 AM	**338**	**486**	**52**	**46**
9:00 AM	**474**	**604**	**42**	**53**
10:00 AM	**510**	**483**	**83**	**77**
11:00 AM	**531**	**477**	**87**	**71**
12:00 PM	**655**	**452**	**109**	**83**
1:00 PM	**624**	**495**	**92**	**85**
2:00 PM	**555**	**471**	**70**	**87**
3:00 PM	**581**	**460**	**101**	**48**
4:00 PM	**683**	**495**	**106**	**49**
5:00 PM	**700**	**380**	**114**	**71**
6:00 PM	**564**	**322**	**83**	**55**
7:00 PM	**352**	**209**	**50**	**45**
8:00 PM	**202**	**152**	**60**	**30**
9:00 PM	**116**	**73**	**9**	**16**
10:00 PM	**79**	**64**	**8**	**16**
11:00 PM	**36**	**26**	**6**	**2**
12:00 AM	**16**	**15**	**4**	**1**
TOTAL	7,296	6,061	1,099	874

Table 26 provides the approach traffic volumes at the intersection of 92nd Street and Cochise Drive for ambient 2024. These volumes also exclude the existing medical office building entering and exiting traffic, and include the existing retail that is part of the Mercado Courtyards.

Table 26: 92nd / Cochise Approach Volumes Ambient 2024

	INTERSECTION APPROACH TRAFFIC VOLUMES			
TIME	**NORTHBOUND**	**SOUTHBOUND**	**EASTBOUND**	**WESTBOUND**
1:00 AM	**6**	**6**	**0**	**1**
2:00 AM	**8**	**2**	**1**	**0**
3:00 AM	**5**	**5**	**2**	**0**
4:00 AM	**2**	**9**	**0**	**0**
5:00 AM	**19**	**23**	**4**	**4**
6:00 AM	**69**	**91**	**6**	**6**
7:00 AM	**173**	**263**	**10**	**28**
8:00 AM	**342**	**491**	**52**	**47**
9:00 AM	**480**	**610**	**42**	**54**
10:00 AM	**518**	**491**	**83**	**78**
11:00 AM	**540**	**482**	**87**	**72**
12:00 PM	**664**	**456**	**110**	**84**
1:00 PM	**633**	**502**	**93**	**86**
2:00 PM	**563**	**475**	**70**	**88**
3:00 PM	**587**	**464**	**102**	**49**
4:00 PM	**690**	**501**	**107**	**50**
5:00 PM	**707**	**385**	**115**	**72**
6:00 PM	**571**	**325**	**83**	**56**
7:00 PM	**350**	**210**	**50**	**46**
8:00 PM	**205**	**153**	**60**	**30**
9:00 PM	**117**	**73**	**9**	**16**
10:00 PM	**80**	**64**	**8**	**16**
11:00 PM	**36**	**26**	**6**	**2**
12:00 AM	**16**	**15**	**4**	**1**
TOTAL	7,381	6,122	1,104	886

Table 27 provides the approach traffic volumes at the intersection of 92nd Street and Cochise Drive for 2024 with the entire Mercado Courtyards. These volumes exclude the existing medical office building entering and exiting traffic. These volumes include the existing retail that will remain, and include the new apartments.

Table 27: 92nd / Cochise Approach Volumes 2024 with Mercado Courtyards Apartments

	INTERSECTION APPROACH TRAFFIC VOLUMES			
TIME	NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND
1:00 AM	**6**	**6**	**0**	**1**
2:00 AM	**8**	**2**	**1**	**0**
3:00 AM	**5**	**5**	**2**	**0**
4:00 AM	**2**	**9**	**0**	**0**
5:00 AM	**22**	**27**	**4**	**32**
6:00 AM	**73**	**96**	**6**	**47**
7:00 AM	**185**	**277**	**10**	**83**
8:00 AM	**355**	**509**	**52**	**113**
9:00 AM	**493**	**628**	**42**	**105**
10:00 AM	**550**	**533**	**83**	**102**
11:00 AM	**571**	**517**	**87**	**83**
12:00 PM	**698**	**494**	**110**	**110**
1:00 PM	**664**	**541**	**93**	**111**
2:00 PM	**593**	**511**	**70**	**109**
3:00 PM	**615**	**499**	**102**	**70**
4:00 PM	**721**	**541**	**107**	**79**
5:00 PM	**741**	**428**	**115**	**109**
6:00 PM	**603**	**361**	**83**	**93**
7:00 PM	**368**	**230**	**50**	**83**
8:00 PM	**216**	**165**	**60**	**56**
9:00 PM	**124**	**81**	**9**	**37**
10:00 PM	**83**	**68**	**8**	**30**
11:00 PM	**36**	**26**	**6**	**2**
12:00 AM	**16**	**15**	**4**	**1**
TOTAL	7,748	6,569	1,104	1,456

For comparison purposes, the signal warrant analyses for the 2024 with Mercado Courtyards apartments was completed considering Cochise Drive as both one lane and as two lanes.

The complete signal warrant analyses for all four conditions are provided in **Appendix E** and summarized in **Table 28**.

Table 28: Signal Warrant Results Summary (number of satisfying hours)

CONDITIONS	#1A	#1B	#1A and 1B	#2	#3B
Existing 2021 (2-lane Minor)	0 of 8	4 of 8	0 of 8	0 of 4	0 of 1
Ambient 2024 (2-lane Minor)	0 of 8	4 of 8	0 of 8	0 of 4	0 of 1
2024 with Site (1-lane Minor)	0 of 8	10 of 8	0 of 8	4 of 4	0 of 1
2024 with Site (2-lane Minor)	0 of 8	8 of 8	0 of 8	0 of 4	0 of 1

These results reveal that warrant #1B and #2 are satisfied by the estimated traffic volumes considering Cochise Drive as a one-lane. Considering Cochise Drive as a two-lane approach, only warrant #1B is satisfied.

Typically, traffic signals are discouraged at locations less than one-half mile from other traffic signals. Cochise Drive is approximately one-quarter mile from both Shea Boulevard and Mountain View Road. A traffic signal at the 92nd / Cochise intersection would improve the operation of both directions of Cochise Drive without diminishing the operation of either direction of 92nd Street, comparing the existing stop sign condition to the with Mercado Courtyards signal condition.

Both east and west of 92nd Street, North Lane and Cochise Drive are directly connected apart from 92nd Street. On the west side of 92nd Street, Cochise Drive and Ironwood Lane are directly connected apart from 92nd Street. Therefore, drivers who wish to turn onto 92nd Street from west of 92nd Street at either North Lane or Ironwood Lane, could do so at either a stop sign or a signal. Drivers who wish to turn onto 92nd Street from east of 92nd Street at North Lane can also do so at either a stop sign or a signal.

Furthermore, a signal at Cochise, which is also the apartment access and retail left-turn access, would allow residents of the apartment complex who work at HonorHealth or the adjacent medical office buildings to walk across 92nd Street at a signal-protected intersection. This traffic signal would also aid HonorHealth and medical office employees west of 92nd Street either driving or walking to the businesses and restaurants east of 92nd Street.

In the years 2018, 2019, and 2020; four (4) rear-end collisions of eastbound or westbound vehicles occurred at the 92nd Street and Cochise Drive intersection. These rear-end collision may have been caused by driver impatience or uncertainty because of the stop signs. A traffic signal may alleviate these collisions.

92nd and Cochise Turn Lane Requirements

In accordance with the City of Scottsdale Design Standards and Policies Manual, Section 5-3.206, a northbound right-turn is required on 92nd Street at Cochise Drive, and separate left-turn lane and shared straight-and-right-turn lane are required on Cochise Drive at 92nd Street.

Level-of-Service Analysis with Mercado Courtyards Apartments

The Highway Capacity Manual technique for determining levels-of-service was utilized for the future traffic volumes with the proposed Mercado Courtyards apartments.

Figure 31 and **Figure 32** respectively provide morning and evening peak hour movement, approach, and intersection levels-of-service for 2024 with the Mercado Courtyards apartments. The highlighted cells indicate the levels-of-service that changed between the ambient 2024 and the 2024 with the Mercado Courtyards apartments. Synchro was utilized for this analysis. The complete results are provided in **Appendix F.1**. For both the 92nd / Shea and 92nd / Mountain View intersections, the existing cycle length of 120 seconds and the phase lengths were utilized. For these analyses, the existing stop control on Cochise Drive at 92nd Street was utilized.

Table 29: Level-of-Service – without and with Mercado Courtyards Apartments – Signalized Intersections

	MORNING						EVENING					
	EXISTING 2021		AMBIENT 2024		2024 WITH SITE		EXISTING 2021		AMBIENT 2024		2024 WITH SITE	
	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS
92nd & Shea												
Intersection	65.9	E	57.4	E	61.4	E	35.7	D	35.4	D	35.3	D
Northbound	228.5	F	197.1	F	213.7	F	42.5	D	43.0	D	42.9	D
Left	383.7	F	329.1	F	359.1	F	48.8	D	49.9	D	49.7	D
Through	34.7	C	34.5	C	34.6	C	36.8	D	35.9	D	35.9	D
Right	35.9	D	34.8	C	35.0	**D**	37.8	D	36.8	D	36.8	D
Southbound	43.0	D	42.4	D	42.4	D	63.9	E	61.9	E	61.5	E
Left	52.3	D	50.0	D	49.9	D	54.9	D	54.8	D	54.6	D
Through	35.6	D	35.3	D	35.3	D	45.7	D	44.9	D	45.4	D
Right	43.9	D	43.5	D	43.5	D	99.0	F	91.9	F	91.2	F
Eastbound	32.9	C	28.0	C	28.0	C	26.5	C	26.4	C	26.4	C
Left	123.1	F	94.8	F	94.7	F	51.3	D	51.9	D	51.7	D
Through	20.9	C	20.1	C	20.1	C	24.2	C	24.1	C	24.0	C
Right	18.5	B	16.3	B	17.5	B	21.3	C	20.8	C	20.9	C
Westbound	24.5	C	23.6	C	23.6	C	32.0	C	32.2	C	32.0	C
Left	48.9	D	47.4	D	47.3	D	53.6	D	52.7	D	52.6	D
Through	23.3	C	22.8	C	22.8	C	31.5	C	32.2	C	32.0	C
Right	16.9	B	16.3	B	16.3	B	20.3	C	20.6	C	20.5	C
92nd & Mountain View												
Intersection	15.0	B	13.3	B	12.5	B	13.3	B	15.6	B	12.8	B
Northbound	7.9	A	6.4	A	6.3	A	6.3	A	8.2	A	6.3	A
Left	8.9	A	6.8	A	6.8	A	6.8	A	8.6	A	6.4	A
Through	7.4	A	6.0	A	6.0	A	5.9	A	7.6	A	5.8	A
Right	8.6	A	6.9	A	6.9	A	6.8	A	9.0	A	6.9	A
Southbound	8.3	A	6.5	A	6.5	A	6.5	A	8.7	A	6.5	A
Left	10.7	B	8.3	A	8.4	A	8.2	A	8.5	A	8.6	A
Through	7.6	A	6.0	A	6.1	A	6.0	A	7.6	A	5.7	A
Right	6.5	A	5.2	A	5.2	A	5.2	A	6.7	A	5.0	A
Eastbound	26.6	C	27.2	C	25.1	C	27.2	C	27.7	C	26.0	C
Left	31.0	C	31.6	C	29.1	C	31.3	C	32.3	C	30.9	C
Through	25.3	C	26.4	C	24.4	C	26.4	C	25.1	C	24.8	C
Right	25.3	C	26.4	C	24.4	C	26.4	C	25.1	C	24.8	C
Westbound	32.5	C	32.6	C	30.1	C	32.7	C	32.4	C	30.6	C
Left	34.9	C	34.6	C	31.9	C	34.7	C	34.8	C	32.2	C
Through	28.1	C	29.2	C	27.0	C	29.1	C	28.6	C	28.4	C
Right	28.1	C	29.2	C	27.0	C	29.1	C	28.6	C	28.4	C

Table 30: Level-of-Service – without and with Mercado Courtyards Apartments – Unsignalized Intersections

	MORNING						EVENING					
	EXISTING 2021		AMBIENT 2024		2024 WITH SITE		EXISTING 2021		AMBIENT 2024		2024 WITH SITE	
	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS
92nd & North												
Northbound Left	8.5	A	8.4	A	8.4	A	8.4	A	8.3	A	8.4	A
Southbound Left	10.1	B	10.0	B	10.2	B	10.5	B	10.6	B	10.6	B
Eastbound	67.5	F	39.9	E	42.2	E	41.8	E	33.2	D	34.0	D
Left	123.5	F	68.2	F	72.8	F	80.7	F	61.4	F	63.2	F
Through and Right	18.3	C	15.6	C	15.9	C	13.6	B	15.6	C	15.7	C
Westbound	33.1	D	23.5	C	25.3	**D**	37.2	E	25.2	D	25.1	D
Left	108.7	F	67.2	F	74.0	F	114.6	F	79.3	F	79.3	F
Through and Right	18.1	C	15.2	C	15.8	C	16.5	C	14.4	B	14.3	B
92nd & Cochise	AS STOP SIGNS ON COCHISE (WITHOUT SIGNAL)											
Northbound Left	8.7	A	8.5	A	8.5	A	8.6	A	8.5	A	8.5	A
Southbound Left	9.2	A	9.1	A	9.1	A	9.8	A	9.5	A	9.9	A
Eastbound	41.2	E	23.5	C	24.8	C	34.2	D	23.6	C	29.4	**D**
Left	62.0	F	35.9	E	38.5	E	55.5	F	36.1	E	47.2	E
Through and Right	12.0	B	9.9	A	9.9	A	12.2	B	9.9	A	9.9	A
Westbound	58.3	F	41.0	E	46.6	E	41.0	E	34.5	D	24.4	**C**
Left	75.5	F	50.8	F	70.0	F	61.0	F	44.6	E	47.6	E
Through and Right	15.1	C	15.4	C	13.0	**B**	19.6	C	11.0	B	11.2	B
92nd & Ironwood												
Northbound Left	8.4	A	8.4	A	8.5	A	8.4	A	8.4	A	8.3	A
Southbound Left	8.9	A	8.8	A	8.8	A	9.2	A	9.0	A	9.1	A
Eastbound	26.4	D	18.1	C	18.7	C	9.2	A	9.0	A	17.5	**C**
Left	38.9	E	26.2	D	27.4	D	34.3	D	26.0	D	26.3	D
Through and Right	12.2	B	9.9	A	10.0	**B**	11.9	B	9.9	A	9.9	A
Westbound	19.8	C	15.7	C	15.7	C	21.7	C	17.2	C	17.7	C
Left	34.4	D	25.6	D	25.8	D	36.1	E	27.4	D	28.6	D
Through and Right	12.1	B	10.1	B	10.0	B	10.6	B	10.4	B	10.5	B

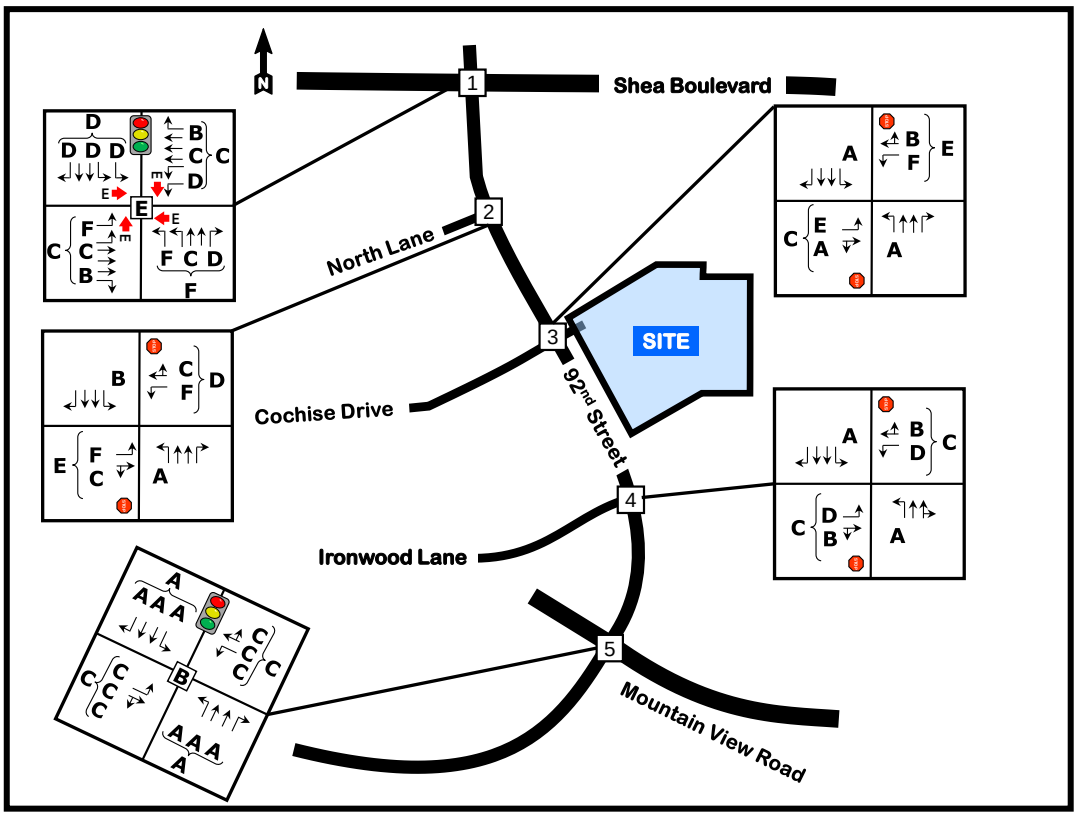


Figure 31: 2024 with Mercado Courtyards Apartments Level-of-Service AM Peak Hour

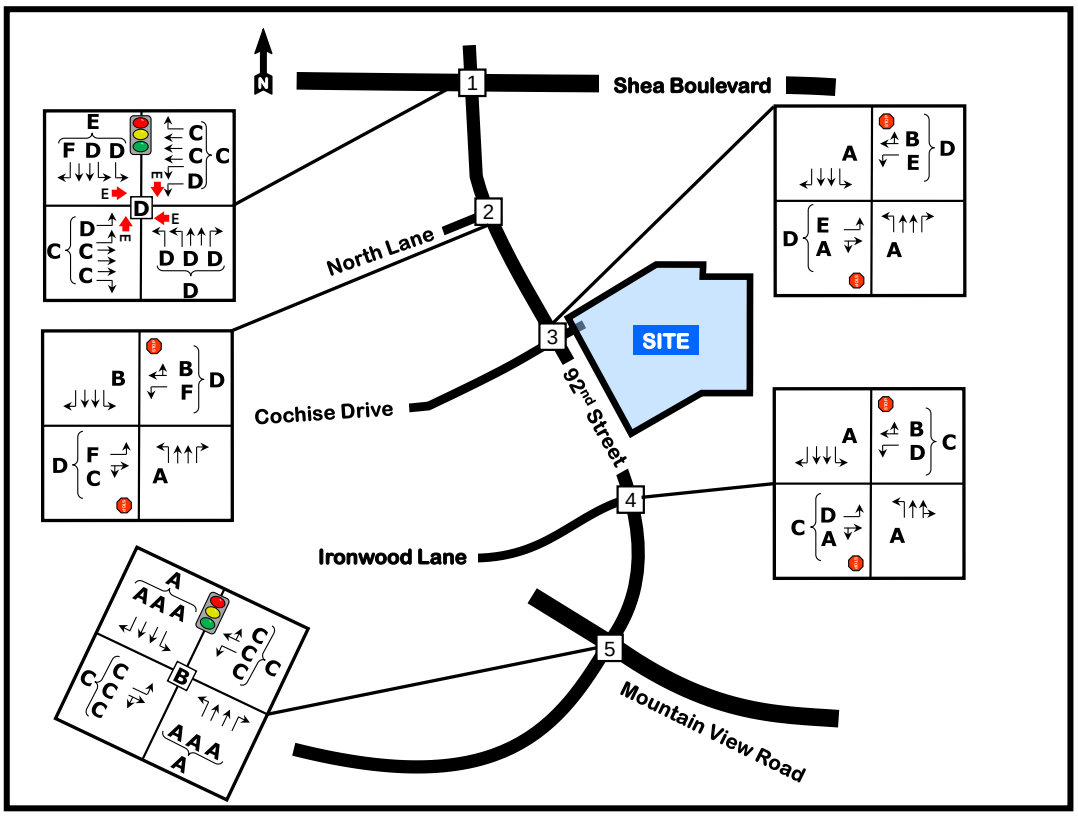


Figure 32: 2024 with Mercado Courtyards Apartments Level-of-Service PM Peak Hour

The level-of-service analyses were repeated with a traffic signal at the 92nd / Cochise intersection. The complete results are provided in **Appendix F.2**. These level-of service results without and with a signal at the 92nd / Cochise intersection are indicated in **Figure 33** for the morning and evening peak hours. Results are provided for both 120-second and 60-second cycle lengths. A 120-second cycle length is consistent with the cycle length at both 92nd / Shea and 92nd / Mountain View. A 60-second cycle length (one-half the adjacent signal 120-second cycle) often can accommodate traffic flow progression with traffic signal coordination.

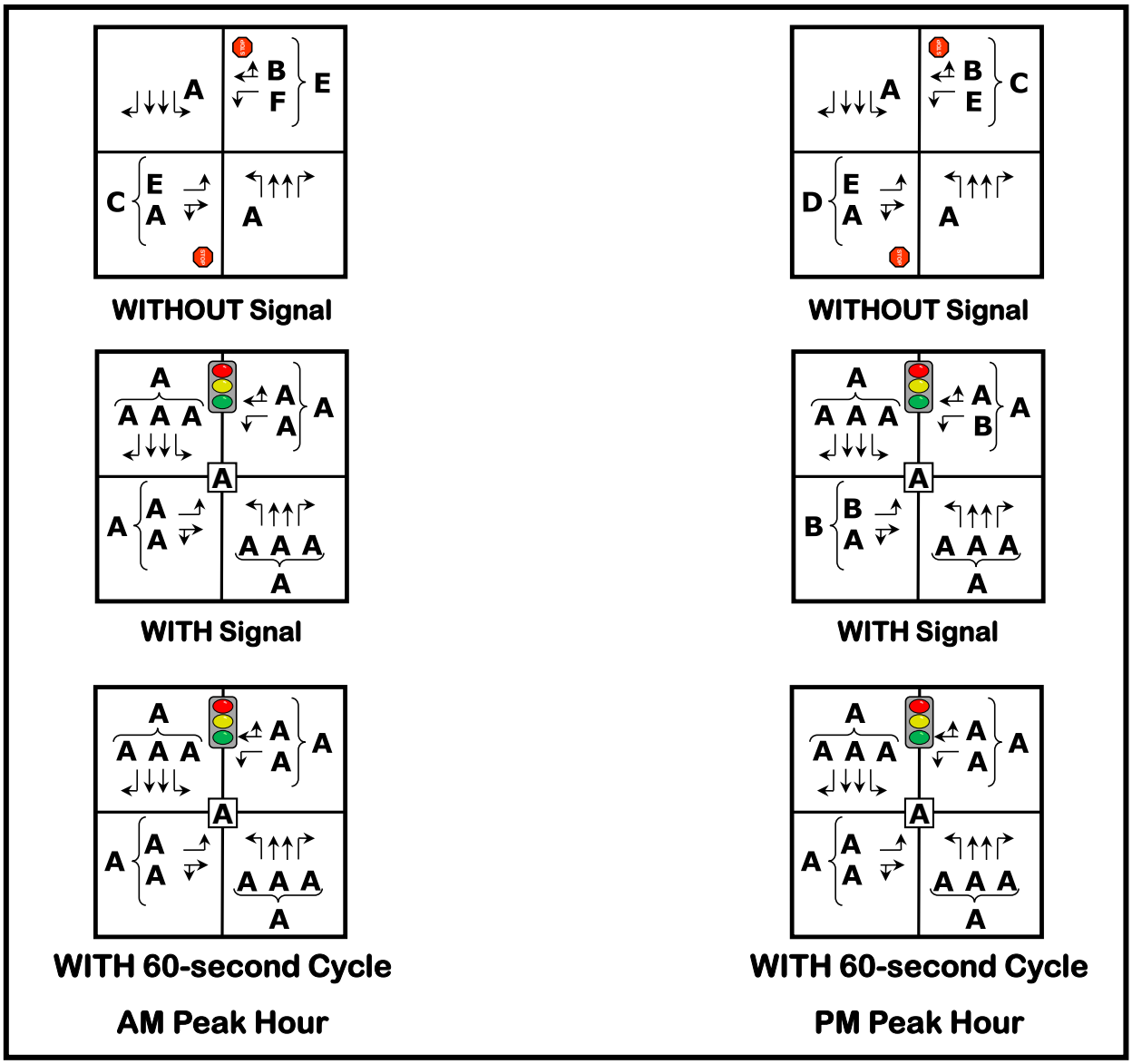


Figure 33: 2024 with Site, without and with Cochise Signal and 120 or 60 second Cycle

92nd and Cochise Turn Lane Lengths

The Maricopa County Department of Transportation Traffic Impact Study requirements include suggestions for turn lane lengths on pages 10 and 11. At signalized intersections, the suggested turn lane storage length is sufficient to accommodate twice the number of vehicles that would arrive during a signal cycle length. **Table 31** provides the calculated turn lane lengths using this Maricopa County suggestion for all turns on all four (4) approaches during each peak hour.

Table 31: 92nd and Cochise Suggested Turn Lane Lengths

AM Peak Hour

	120-second Cycle		60-second Cycle	
	VOLUME	LENGTH	VOLUME	LENGTH
Northbound				
Left	65	108	65	54
Right	20	33	20	17
Eastbound				
Left	60	100	60	50
Right	55	92	55	46
Southbound				
Left	31	52	31	26
Right	45	75	45	38
Westbound				
Left	60	100	60	50
Right	55	92	55	46

PM Peak Hour

	120-second Cycle		60-second Cycle	
	VOLUME	LENGTH	VOLUME	LENGTH
Northbound				
Left	40	67	40	33
Right	36	60	36	30
Eastbound				
Left	55	92	55	46
Right	50	83	50	42
Southbound				
Left	82	137	82	68
Right	40	67	40	33
Westbound				
Left	55	92	55	46
Right	50	83	50	42

The northbound and eastbound turn lane lengths do not serve the Mercado Courtyards property. The southbound and westbound turn lane lengths serve the Mercado Courtyards property. The 60-second cycle length was utilized, and all lengths are approximated to the nearest greater multiple of 20 feet. The maximum southbound left-turn length requirement is 80 feet. The maximum northbound right-turn length requirement is 60 feet. The maximum westbound left-turn lane length requirement is also 60 feet. The maximum westbound right-turn lane length requirement is also 60 feet.

Figure 34 depicts the lengths of the existing 92nd Street southbound and northbound left-turn lanes at Cochise Drive. The existing southbound left-turn lane is 85 feet, and therefore accommodates the required left-turn storage lane length.

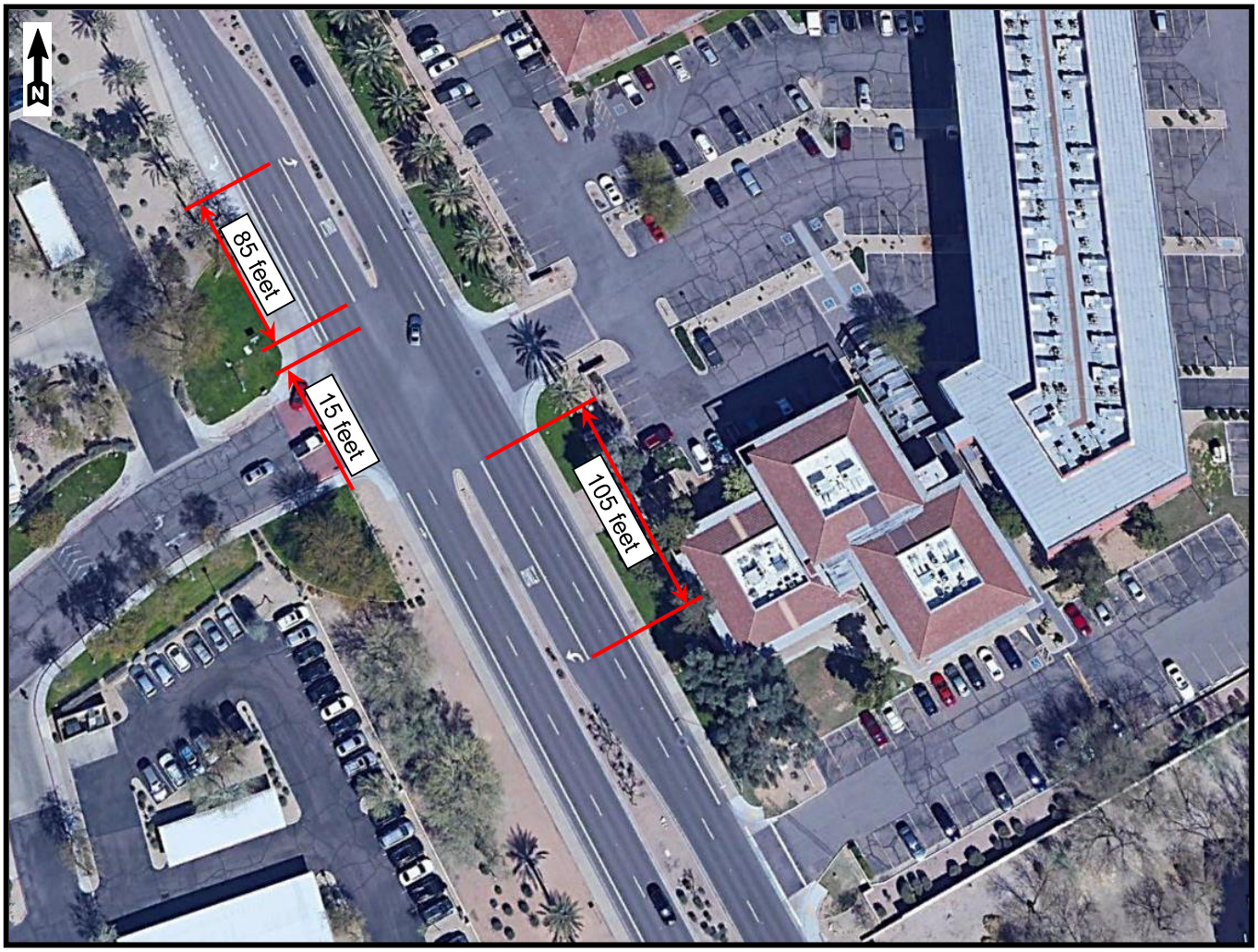


Figure 34: Existing 92nd and Cochise Intersection Left-turn Lane Lengths

92nd and Shea Operational Improvements

City of Scottsdale Traffic Engineering has requested recommendations for improvements to the operation of the 92nd / Shea intersection. The Mercado Courtyards apartments do not diminish the 92nd / Shea intersection level-of-service for 33 of the 34 separate intersection, approaches, and movements. With estimated 2024 traffic volumes, all of these 33 levels-of-service remain the same with the apartments as they are without the apartments. Only the northbound right turn in the morning peak hour diminishes from “C” to “D” during the morning peak hour.

Levels of-service “C” and “D” indicate a proper balance between the number of vehicles and the resources devoted to the transportation system. Levels-of-service “E” and “F” indicate that the number of vehicles exceeds the capacity of the transportation system. Levels-of-service “A” and “B” indicate that too many resources are provided for the number of vehicles that use the transportation system.

Table 32 provides the level-of-service comparison for 2024 traffic volumes without and with the Mercado Courtyards apartments. The bold highlight indicates the intersection, approaches, and movements that remain unchanged with the Mercado Courtyards apartments.

Table 32: 92nd and Shea 2024 Levels-of-Service Without and With Mercado Courtyards Apartments

	2024 AM PEAK HOUR		2024 PM PEAK HOUR	
APROACH AND MOVEMENT	Without	With	Without	With
Intersection	E	E	D	D
Northbound	F	F	D	D
Northbound Left	F	F	D	D
Northbound Through	C	C	D	D
Northbound Right	C	D	D	D
Southbound	D	D	E	E
Southbound Left	D	D	D	D
Southbound Through	D	D	D	D
Southbound Right	D	D	F	F
Eastbound	C	C	C	C
Eastbound Left	F	F	D	D
Eastbound Through	C	C	C	C
Eastbound Right	B	B	C	C
Westbound	C	C	C	C
Westbound Left	D	D	D	D
Westbound Through	C	C	C	C
Westbound Right	B	B	C	C

Pursuant to the City of Scottsdale request to identify possible signal timing improvements to benefit travel at the 92nd / Shea intersection, three (3) potential signal timing modifications were examined. One potential modification is to provide a dedicated right-turn arrow for the southbound approach. This right-turn arrow would allow a southbound right-turn green simultaneous with the eastbound left-turn green arrow.

Another possible modification is to optimize the 92nd / Shea signal timing to minimize the total delay of all vehicles traveling through the intersection. A third potential modification is to provide a dedicated right-turn arrow for the southbound approach and optimize the 92nd / Shea signal timing. Because Shea Boulevard signals are coordinated, the cycle length of 120 seconds was retained, and only the phase lengths were optimized. The complete level-of-service analyses results for the three (3) possible signal timing modifications are provided in **Appendix F.3**.

Table 33 provides level-of-service for the morning peak hour for the existing signal phasing, including only a southbound right-turn arrow, only optimizing the signal timing, and including a southbound right-turn arrow and optimizing signal timing. **Table 34** provides level-of-service for the evening peak hour for the four (4) signal timing configurations.

Table 35 summarizes each number of levels-of-service for the intersection, approaches, and movements for the four (4) different signal timing possibilities. **Table 36** summarizes the intersection delay for the four (4) different signal timing possibilities.

Figure 35 graphically depicts the intersection, approaches, and movements level-of-service for the four (4) different signal timing possibilities.

Table 33: 92nd and Shea 2024 with Site LOS Comparing Existing to Modified Signal Timing: AM

MOVEMENT	EXISTING	RIGHT-TURN	OPTIMIZED ONLY	OPTIMIZED ARROW
Intersection	E	C	D	D
Northbound	F	D	D	D
Northbound Left	F	D	D	D
Northbound Through	C	C	C	C
Northbound Right	C	D	C	C
Southbound	D	D	D	D
Southbound Left	D	D	D	D
Southbound Through	D	D	C	C
Southbound Right	D	D	D	C
Eastbound	C	C	C	C
Eastbound Left	F	E	E	E
Eastbound Through	C	C	C	C
Eastbound Right	B	C	C	C
Westbound	C	C	D	C
Westbound Left	D	D	D	D
Westbound Through	C	C	D	D
Westbound Right	B	C	C	C

Table 34: 92nd and Shea 2024 with Site LOS Comparing Existing to Modified Signal Timing: PM

MOVEMENT	EXISTING	RIGHT-TURN	OPTIMIZED ONLY	OPTIMIZED ARROW
Intersection	D	C	D	D
Northbound	D	D	D	D
Northbound Left	D	D	E	E
Northbound Through	D	D	C	C
Northbound Right	D	D	C	C
Southbound	E	D	D	D
Southbound Left	D	D	D	D
Southbound Through	D	D	C	C
Southbound Right	F	D	D	C
Eastbound	C	C	C	C
Eastbound Left	D	D	E	E
Eastbound Through	C	C	C	C
Eastbound Right	C	C	C	C
Westbound	C	C	C	C
Westbound Left	D	D	D	D
Westbound Through	C	C	D	D
Westbound Right	C	C	C	B

Table 35: 92nd and Shea 2024 with Site LOS Summary Comparison Both Peak Hours

OPERATION	B	C	D	E	F
Existing Timing	2	11	15	2	4
With SB Right-turn Arrow	0	16	17	1	0
Optimized	0	15	16	3	0
Optimized With SB Arrow	1	17	13	3	0

Table 36: 92nd and Shea 2024 with Site Intersection Average Delay Summary Comparison

PEAK HOUR	EXISTING	RIGHT-TURN	OPTIMIZED ONLY	OPTIMIZED ARROW
Morning	61.4	34.5	36.6	35.2
Evening	35.3	33.4	37.4	36.0

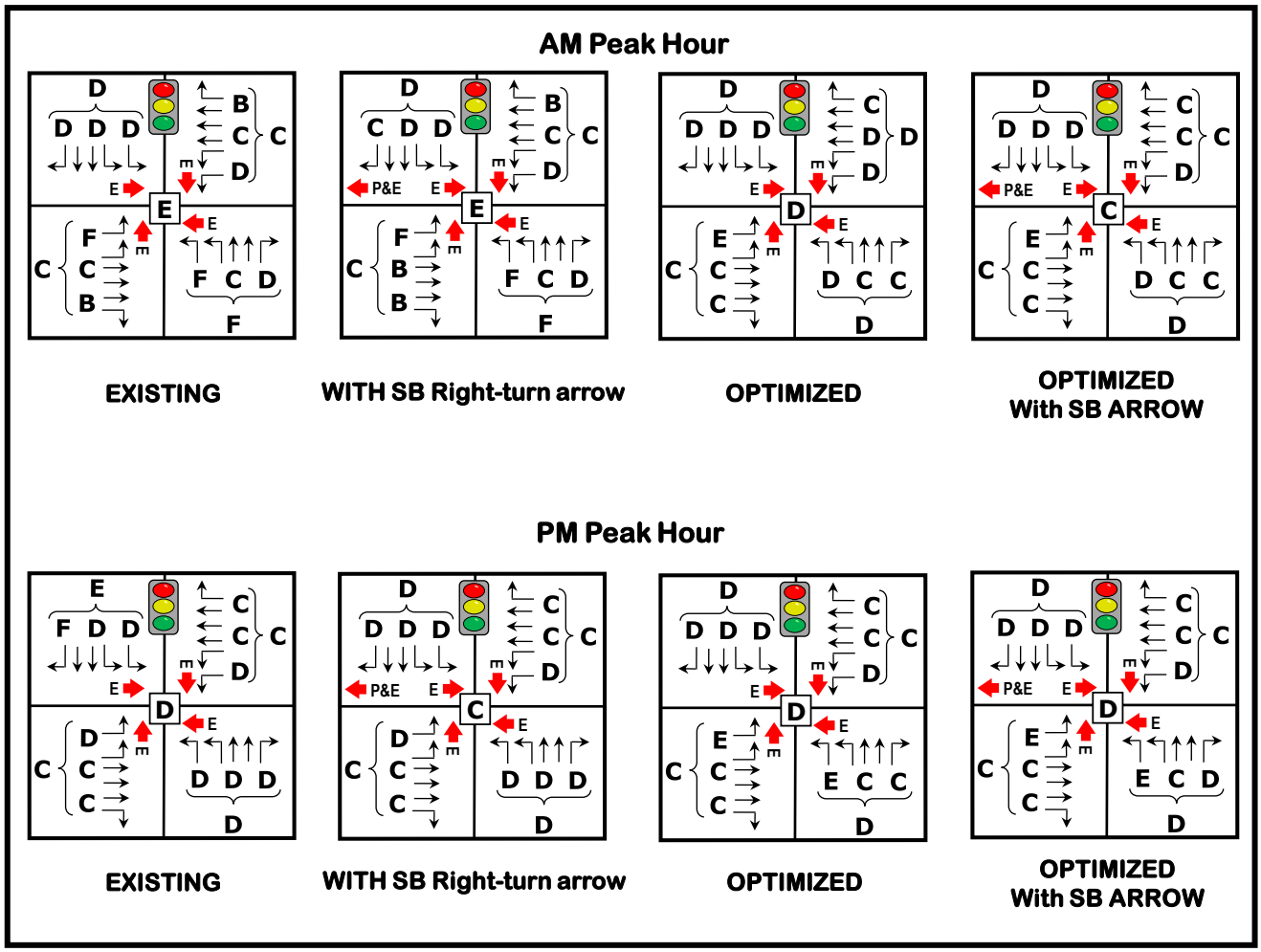


Figure 35: 2024 with Site, Level-of-Service for Different Signal Timing

For the 2024 with Mercado Courtyards apartments traffic volumes, comparing the existing signal timing at the 92nd / Shea intersection with three (3) other signal timing possibilities, the delay decreased, and the level-of-service could be improved.

Including a southbound 92nd Street right-turn arrow during the morning peak hour improves the intersection from “E” to “C”, the northbound through approach from “F” to “D”, the eastbound left-turn movement from “F” to “E”, the northbound right-turn movement from “D” to “C”, and the northbound left-turn movement from “F” to “D”. However, both the eastbound and westbound right-turns diminish from “B” to “C”. In the evening peak hour, the intersection improves from “D” to “C”, the southbound right-turn movement improves from “F” to “D”, and the southbound approach improves from “E” to “D”.

However, the City of Scottsdale policy for right-turn arrows is to prohibit U-turns for the corresponding left-turn movement. Therefore, if a southbound right-turn arrow is utilized, eastbound-to-westbound u-turns would be prohibited. The benefit of the right-turn arrow may or may not be greater than the detriment of prohibiting the u-turns.

Only optimizing the signal timing for the 92nd / Shea intersection, compared to the existing signal timing during the morning peak hour, the intersection improves from “E” to “D”, the northbound approach improves from “F” to “D”, the southbound through improves from “D” to “C”, the eastbound left-turn improves from “F”, to “E”, the northbound left-turn improves from “F” to “D”, and the northbound right-turn improves from “D” to “C”. However, the westbound approach diminishes from “C” to “D”, the westbound through diminishes from “D” to “C”, and both the eastbound and westbound right-turns diminish from “B” to “C”. During the evening peak hour, the southbound approach improves from “E” to “D”, the southbound right-turn movement improves from “F” to “D”, and the northbound through and right-turn improve from “D” to “C”. However, both the eastbound and northbound left-turns diminish from “D” to “E”.

Including both a southbound right-turn arrow and optimizing the signal timing was compared to only optimizing the signal timing. During the morning peak hour, the westbound approach improves from “D” to “C”, and the southbound right-turn improves from “D” to “C”. During the evening peak hour, the westbound right-turn improves from “C” to “B”, and the southbound right-turn improves from “D” to “C”.

Signal timing at a high-volume critical intersection within a high-volume critical corridor, such as 92nd Street and Shea Boulevard, is complex. The combination of benefits and detriments must be thoughtful analyzed. Importantly, the ramifications to the entire signal system must be evaluated prior to modifying signal timing at one intersection.

Results and Conclusions

The proposed Mercado Courtyards apartments are anticipated to generate; as a total of both directions; 1,413 daily vehicles; 92 morning peak hourly vehicles; and 123 evening peak hourly vehicles. This traffic is in addition to the existing 30,000 square feet of retail within the Mercado Courtyards that currently is estimated to generate; as a total of both directions; 2,651 daily vehicles; 167 morning peak hourly vehicles; and 223 evening peak hourly vehicles. (The existing retail traffic is included in the current April 2021 traffic counts.)

The existing 13,000 square feet of medical office will be removed. This building is estimated to generate; as a total of both directions; 452 daily vehicles, 36 morning peak hourly vehicles; and 45 evening peak hourly vehicles.

The existing vacant 58,000 square feet of office will be removed. If occupied, this building would generate an estimated; as a total of both directions; 626 daily vehicles, 81 morning peak hourly vehicles; and 68 evening peak hourly vehicles.

A total of 200,000 square feet of medical office could be constructed on the entire 8-acre property. If constructed and occupied, this building would generate an estimated; as a total of both directions; 7,596 daily vehicles, 556 morning peak hourly vehicles; and 692 evening peak hourly vehicles.

The proposed Mercado Courtyards, compared to the existing medical office building (that will be removed) and the existing vacant medical office building, is anticipated to generate; as a total of both directions; 911 fewer daily vehicles; 88 fewer morning peak hourly vehicles; and 99 fewer evening peak hourly vehicles.

The proposed Mercado Courtyards, compared to a possible 200,000 square-foot medical office building, is anticipated to generate; as a total of both directions; 6,183 fewer daily vehicles; 464 fewer morning peak hourly vehicles; and 569 fewer evening peak hourly vehicles.

Comparing the traffic flow at the 92nd / Shea intersection with existing 2021 traffic volumes and with future 2024 traffic volumes without the Mercado Courtyards; of the 34 possible levels-of-service during the two (2) peak hours; none of the levels-of-service diminish.

Comparing the traffic flow at the 92nd / Mountain View intersection with existing 2021 traffic volumes and with future 2024 traffic volumes without the Mercado Courtyards; of the 34 possible levels-of-service during the two (2) peak hours; all levels-of-service remain unchanged.

Comparing the traffic flow at the 92nd / Shea intersection without and with the Mercado Courtyards; of the 34 possible levels-of-service during the two (2) peak hours; one level-of-service diminishes. During the morning peak hour, the northbound right-turn average delay changes from 34.8 seconds which is a “C” to 35.0 seconds which is a “D”.

Comparing the traffic flow at the 92nd / Mountain View intersection without and with the Mercado Courtyards; of the 34 possible levels-of-service during the two (2) peak hours; all levels-of-service remain unchanged.

The level-of-service comparisons for the three (3) unsignalized intersections are provided in **Table 37**.

Table 37: Unsignalized Intersections LOS Without and With Mercado Courtyards Apartments

	AM PEAK HOUR			PM PEAK HOUR		
	2021	2024		2021	2024	
APROACH AND MOVEMENT	Existing	Without	With	Existing	Without	With
92nd and North						
Northbound Left	A	A	A	A	A	A
Southbound Left	B	B	B	B	B	B
Eastbound	F	F	E	E	D	D
Eastbound Left	F	F	F	F	F	F
Eastbound Through and Right	C	C	C	B	C	C
Westbound	D	C	D	E	D	D
Westbound Left	F	F	F	F	F	F
Westbound Through and Right	C	C	C	C	B	B
92nd and Cochise						
Northbound Left	A	A	A	A	A	A
Southbound Left	A	A	A	A	A	A
Eastbound	E	C	C	D	C	D
Eastbound Left	F	E	E	F	E	E
Eastbound Through and Right	B	A	A	B	A	A
Westbound	F	F	E	E	D	D
Westbound Left	F	F	F	F	E	E
Westbound Through and Right	C	C	B	B	B	B
92nd and Ironwood						
Northbound Left	A	A	A	A	A	A
Southbound Left	A	A	A	A	A	A
Eastbound	D	C	C	A	A	C
Eastbound Left	E	D	D	D	D	D
Eastbound Through and Right	B	A	B	B	A	A
Westbound	C	C	C	C	C	C
Westbound Left	D	D	D	E	D	D
Westbound Through and Right	B	B	B	B	B	B

A traffic signal is warranted and appropriate at the 92nd / Cochise intersection with 2024 plus the Mercado Courtyards traffic volumes.

At the Cochise intersection, during the morning peak hour, comparing the existing stop sign operation to the proposed 2024 with Mercado Courtyards and a signal, the westbound left-turn delay decreases from 50.8 to 9.3 seconds, a change from level-of-service “E” to “A”. The eastbound left-turn delay decreases from 35.9 to 9.1 seconds, also changing the level-of-service from “E” to “A”. During the evening peak hour, the westbound delay changes from 44.6 to 9.6 seconds, from “E” to “A”, and the eastbound delay decreases from 36.1 to 9.8 seconds, from “E” to “A”.

Comparing the 2024 traffic, at the Cochise intersection, with the Mercado Courtyards, during the morning peak hour, the traffic signal reduces the delay for westbound left-turns from 70.0 seconds as a stop sign to 9.3 seconds as a signal, which changed the level-of-service from “F” to “A”. The eastbound left-turn delay reduced from 38.5 seconds to 9.1 seconds as a signal, which changed the level-of-service from “E” to “A”. During the evening peak hour, the westbound left-turn delay decreased from 47.6 to 9.3 seconds which changed the level-of-service from “E” to “A”, and the eastbound left-turn delay decreased from 47.2 to 9.1 seconds, also changed from “E” to “A”.

At the Cochise intersection, without a traffic signal, during the morning peak hour, the westbound approach average delay increased from 23.5 to 25.1 seconds, changing the level-of-service from “C” to “D”. During the evening peak hour, the eastbound approach average delay increased from 23.6 to 31.6 seconds, changing the level-of-service from “C” to “D”.

Comparing the 2024 traffic, without and with the Mercado Courtyards, at the 92nd / North and 92nd / Ironwood unsignalized intersections, of the 16 approach and movement levels-of-service in the two (2) peak hours; thirteen (13) remained unchanged. And three (3 diminish.

A traffic signal at the 92nd / Cochise intersection would improve the operation of both directions of Cochise Drive without diminishing the operation of either direction of 92nd Street, comparing the existing stop sign condition to the with Mercado Courtyards signal condition. Both east and west of 92nd Street, North Lane and Cochise Drive are directly connected apart from 92nd Street. On the west side of 92nd Street, Cochise Drive and Ironwood Lane are directly connected apart from 92nd Street. Therefore, drivers who wish to turn onto 92nd Street from west of 92nd Street at either North Lane or Ironwood Lane, could do so at either a stop sign or a signal. Drivers who wish to turn onto 92nd Street from east of 92nd Street at North Lane can also do so at either a stop sign or a signal.

Furthermore, a signal at Cochise, which is also the apartment access and retail left-turn access, would allow residents of the apartment complex who work at HonorHealth or the adjacent medical office buildings to walk across 92nd Street at a signal-protected intersection. This traffic signal would also aid HonorHealth and medical office employees west of 92nd Street either driving or walking to the businesses and restaurants east of 92nd Street.

Recommendations without Mercado Courtyards Apartments

No improvements are necessary with the current and ambient 2024 operation at the five (5) study intersections.

Recommendations with Mercado Courtyards Apartments

A traffic signal is warranted at the 92nd / Cochise intersection with 2024 traffic volumes plus Mercado Courtyards traffic volumes. The 92nd / Cochise intersection should have a northbound right-turn lane, a westbound left-turn lane, and a westbound shared-through-right-turn lane.

The City of Scottsdale minimum turn lane lengths are 150 feet for turn lanes on arterial streets and 100 feet for turn lanes on streets that intersect arterial streets. Therefore, the 92nd / Cochise intersection should have a 150-foot long northbound right-turn lane, a 150-foot long southbound left-turn lane, a 100-foot long westbound left-turn lane, and a 100-foot long westbound shared-straight-right-turn lane.

SUMMIT
LAND MANAGEMENT

Appendix A

Existing Traffic Counts

IRONWOOD 92 PARTNERS

SHEA BOULEVARD and 92nd STREET - THURSDAY 04/22/2021

EXISTING MIDNIGHT TO NOON 12-HOUR TURNING MOVEMENT COUNTS

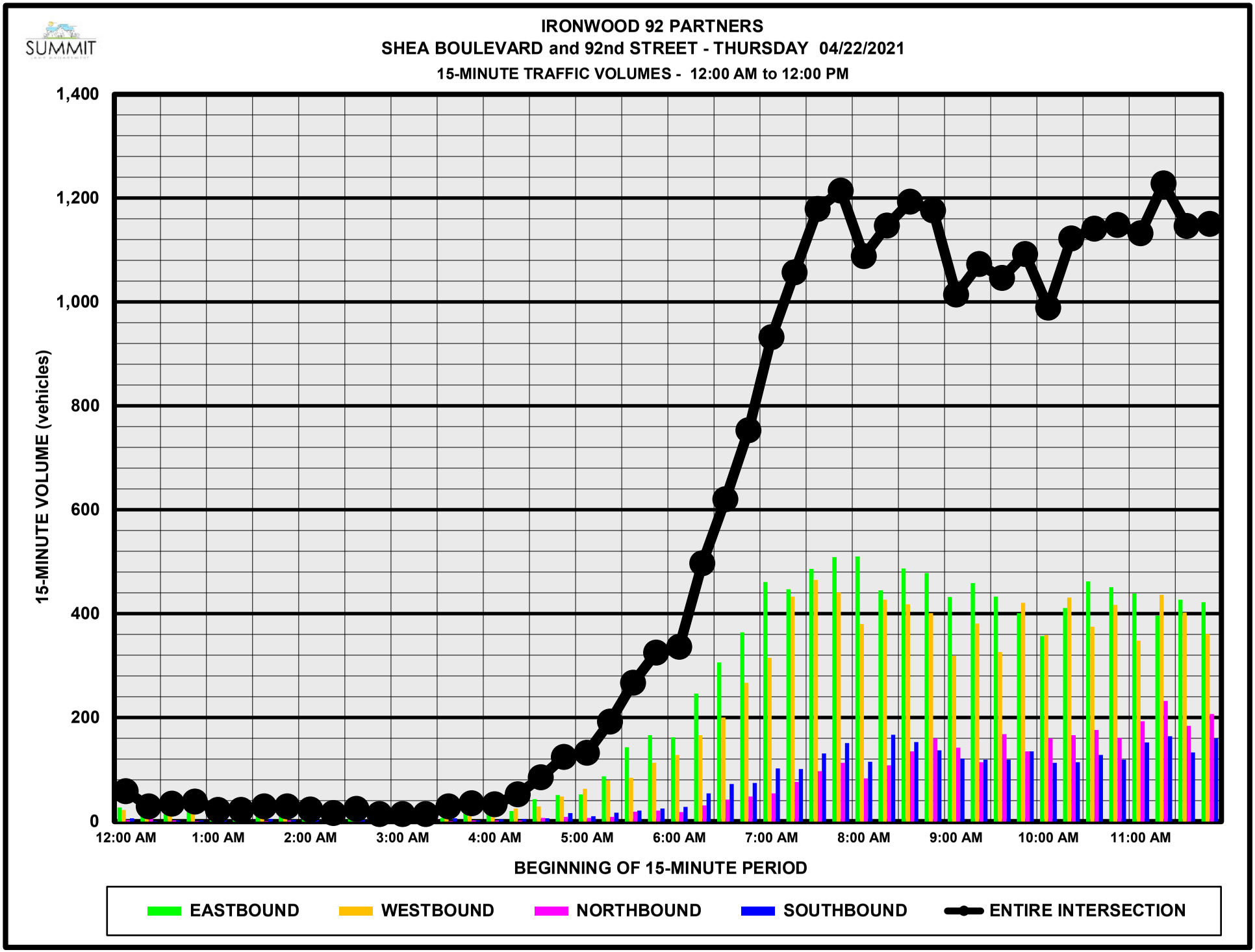
BEGIN TIME	SHEA BOULEVARD EASTBOUND					SHEA BOULEVARD WESTBOUND					92nd STREET NORTHBOUND					92nd STREET SOUTHBOUND					ALL TOTAL	60 MIN. TOTAL
	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL		
12:00 AM	0	3	21	3	27	0	0	22	0	22	0	1	2	0	3	0	2	0	4	6	58	159
12:15 AM	0	2	10	0	12	0	0	11	0	11	0	3	2	0	5	0	0	0	1	1	29	123
12:30 AM	0	0	14	0	14	0	0	14	2	16	0	1	1	0	2	0	1	0	1	2	34	116
12:45 AM	0	3	15	0	18	0	0	17	0	17	0	1	0	0	1	0	2	0	0	2	38	111
1:00 AM	0	2	7	0	9	0	0	9	0	9	0	1	0	0	1	0	2	0	1	3	22	102
1:15 AM	0	1	9	0	10	0	0	10	1	11	0	1	0	0	1	0	0	0	0	0	22	103
1:30 AM	0	1	9	1	11	0	0	12	0	12	0	0	1	0	1	0	0	0	5	5	29	97
1:45 AM	0	3	7	2	12	0	0	12	0	12	0	0	1	1	2	0	0	1	2	3	29	92
2:00 AM	0	1	2	1	4	0	0	14	1	15	0	1	0	0	1	0	0	0	3	3	23	77
2:15 AM	0	2	4	0	6	0	0	8	0	8	0	1	0	0	1	0	1	0	0	1	16	68
2:30 AM	0	1	9	3	13	0	0	7	0	7	0	1	0	0	1	0	0	2	1	3	24	66
2:45 AM	0	0	8	0	8	0	0	5	0	5	0	0	0	1	1	0	0	0	0	0	14	71
3:00 AM	0	0	7	0	7	0	0	4	0	4	0	1	1	0	2	0	0	0	1	1	14	92
3:15 AM	0	2	6	0	8	0	0	5	0	5	0	0	1	0	1	0	0	0	0	0	14	111
3:30 AM	0	0	3	4	7	0	1	14	0	15	0	1	0	0	1	0	2	1	3	6	29	149
3:45 AM	0	1	14	6	21	0	0	10	0	10	0	2	0	0	2	0	1	0	1	2	35	205
4:00 AM	0	0	15	4	19	0	1	6	1	8	0	2	0	0	2	0	1	1	2	4	33	294
4:15 AM	0	2	15	3	20	0	0	25	0	25	0	0	2	0	2	0	0	0	5	5	52	393
4:30 AM	0	0	36	7	43	0	1	27	1	29	0	3	3	1	7	0	0	2	4	6	85	533
4:45 AM	0	3	34	14	51	0	0	47	1	48	0	7	2	0	9	0	3	6	7	16	124	715
5:00 AM	0	0	46	6	52	0	1	62	0	63	0	4	3	0	7	0	0	6	4	10	132	916
5:15 AM	0	3	75	9	87	0	1	77	1	79	0	7	2	0	9	0	3	13	1	17	192	1,120
5:30 AM	0	5	106	32	143	0	2	81	1	84	0	11	6	2	19	0	2	10	9	21	267	1,425
5:45 AM	0	7	123	36	166	0	5	104	4	113	0	9	8	4	21	0	2	15	8	25	325	1,778

IRONWOOD 92 PARTNERS

SHEA BOULEVARD and 92nd STREET - THURSDAY 04/22/2021

EXISTING MIDNIGHT TO NOON 12-HOUR TURNING MOVEMENT COUNTS

BEGIN	SHEA BOULEVARD EASTBOUND					SHEA BOULEVARD WESTBOUND					92nd STREET NORTHBOUND					92nd STREET SOUTHBOUND					ALL	60 MIN.
TIME	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	TOTAL	TOTAL
6:00 AM	0	5	125	32	162	0	5	119	4	128	0	7	10	1	18	0	7	10	11	28	336	2,206
6:15 AM	0	3	186	57	246	0	10	148	8	166	0	17	10	4	31	0	7	27	20	54	497	2,802
6:30 AM	1	5	218	82	306	0	13	184	3	200	0	18	15	9	42	0	10	48	14	72	620	3,362
6:45 AM	0	7	265	92	364	0	19	241	7	267	0	19	24	5	48	0	10	42	22	74	753	3,921
7:00 AM	0	16	354	91	461	0	15	296	4	315	0	21	17	16	54	0	31	53	18	102	932	4,382
7:15 AM	0	19	341	87	447	0	23	398	12	433	0	40	26	10	76	0	26	44	31	101	1,057	4,538
7:30 AM	0	18	361	107	486	0	20	426	19	465	0	51	32	14	97	0	23	67	41	131	1,179	4,628
7:45 AM	0	17	356	136	509	0	30	398	13	441	0	61	38	14	113	0	34	81	36	151	1,214	4,642
8:00 AM	2	25	367	116	510	1	23	333	23	380	0	34	32	17	83	1	31	59	24	115	1,088	4,604
8:15 AM	2	19	340	84	445	0	26	385	16	427	0	47	37	24	108	0	43	91	33	167	1,147	4,530
8:30 AM	0	27	336	124	487	0	17	380	21	418	0	65	60	10	135	0	27	86	40	153	1,193	4,456
8:45 AM	1	31	331	115	478	0	28	349	24	401	0	95	44	21	160	0	32	68	37	137	1,176	4,309
9:00 AM	0	24	325	83	432	0	17	277	25	319	0	86	39	17	142	0	33	57	31	121	1,014	4,225
9:15 AM	1	45	310	103	459	0	22	335	24	381	0	65	31	18	114	0	25	49	45	119	1,073	4,200
9:30 AM	1	40	311	81	433	0	18	290	18	326	0	95	52	21	168	0	28	48	43	119	1,046	4,249
9:45 AM	2	34	292	73	401	0	29	367	25	421	0	73	36	26	135	0	30	61	44	135	1,092	4,344
10:00 AM	3	31	253	70	357	0	16	323	20	359	0	83	54	23	160	0	28	49	36	113	989	4,400
10:15 AM	1	34	310	66	411	0	21	381	29	431	0	94	51	21	166	0	32	45	37	114	1,122	4,543
10:30 AM	4	47	317	94	462	0	24	338	13	375	0	102	57	17	176	0	23	59	46	128	1,141	4,649
10:45 AM	2	36	312	101	451	0	21	370	26	417	0	89	51	21	161	0	38	43	38	119	1,148	4,654
11:00 AM	3	40	322	74	439	0	13	316	19	348	0	106	55	32	193	0	30	74	48	152	1,132	4,656
11:15 AM	**0**	**42**	**286**	**68**	**396**	**0**	**27**	**389**	**20**	**436**	**0**	**130**	**66**	**36**	**232**	**0**	**48**	**68**	**48**	**164**	**1,228**	**4,698**
11:30 AM	4	38	333	52	427	0	15	360	27	402	0	103	58	23	184	0	29	52	52	133	1,146	4,567
11:45 AM	1	50	318	53	422	0	13	327	21	361	0	116	65	26	207	0	49	53	58	160	1,150	4,554
AM PEAK	8	182	1,268	238	1,696	1	71	1,458	84	1,614	0	449	253	111	813	0	163	210	202	575	4,698	**4,698**
PHF		0.84	0.95	0.88	0.94		0.63	0.94	0.78	0.93		0.86	0.96	0.77	0.88		0.82	0.77	0.87	0.88	0.96	MAX


SUMMIT
IRONWOOD 92 PARTNERS
SHEA BOULEVARD and 92nd STREET - THURSDAY 04/22/2021
15-MINUTE TRAFFIC VOLUMES - 12:00 AM to 12:00 PM
15-MINUTE VOLUME (vehicles)
1,400
1,200
1,000
800
600
400
200
0
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
BEGINNING OF 15-MINUTE PERIOD
EASTBOUND
WESTBOUND
NORTHBOUND
SOUTHBOUND
ENTIRE INTERSECTION

IRONWOOD 92 PARTNERS

SHEA BOULEVARD and 92nd STREET - THURSDAY 04/22/2021

EXISTING NOON TO MIDNIGHT 12-HOUR TURNING MOVEMENT COUNTS

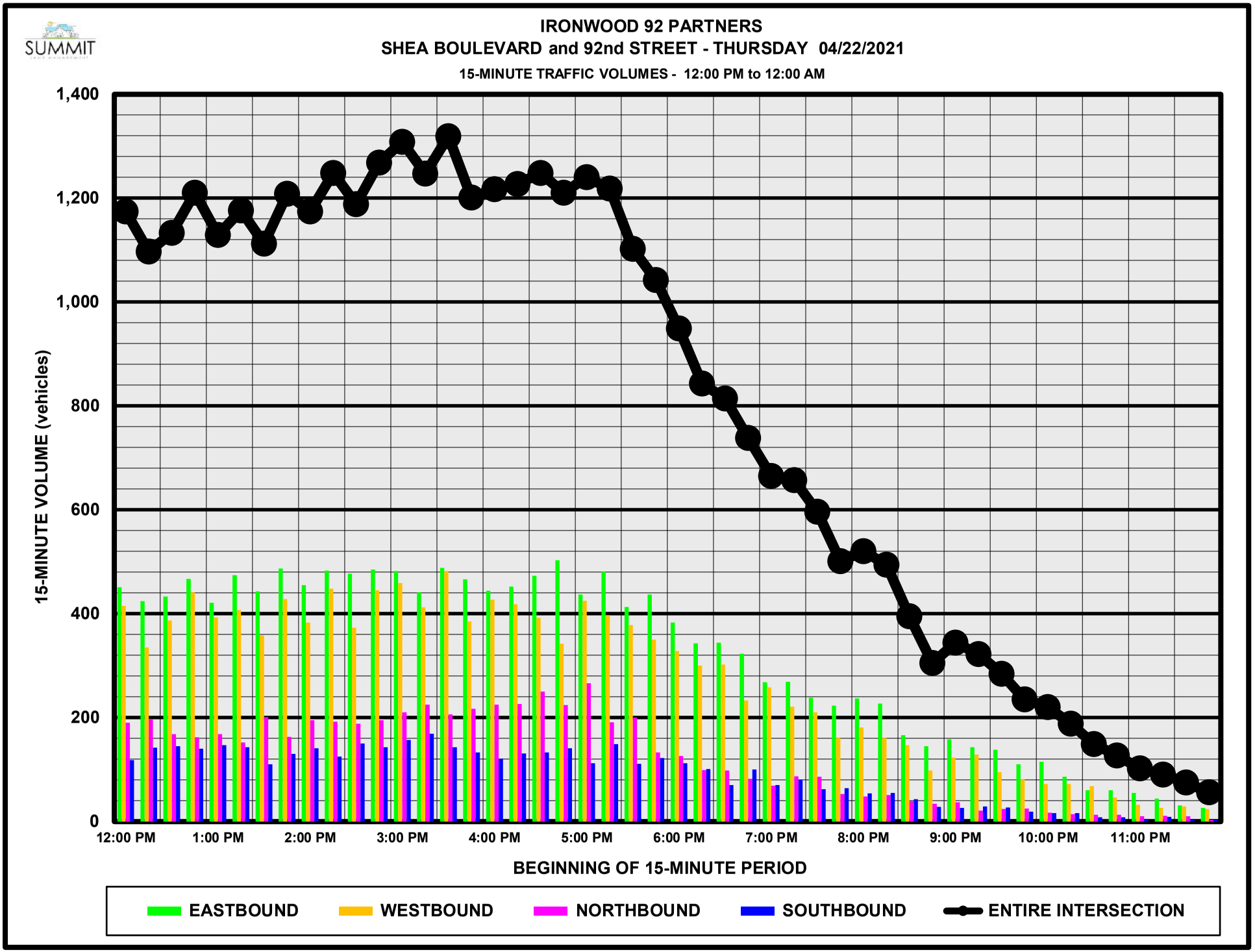
BEGIN	SHEA BOULEVARD EASTBOUND					SHEA BOULEVARD WESTBOUND					92nd STREET NORTHBOUND					92nd STREET SOUTHBOUND					ALL	60 MIN.
TIME	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	TOTAL	TOTAL
12:00 PM	3	52	331	65	451	1	16	382	16	415	0	100	64	26	190	0	37	37	44	118	1,174	4,614
12:15 PM	4	36	313	71	424	0	12	301	22	335	0	92	72	32	196	0	38	53	51	142	1,097	4,569
12:30 PM	3	49	307	74	433	0	16	354	17	387	0	98	46	24	168	0	37	57	51	145	1,133	4,648
12:45 PM	6	53	336	72	467	1	18	390	32	441	0	90	47	25	162	1	29	69	41	140	1,210	4,627
1:00 PM	2	50	289	80	421	0	28	349	16	393	0	105	45	18	168	1	51	53	42	147	1,129	4,625
1:15 PM	4	40	346	84	474	0	29	358	20	407	0	67	57	28	152	0	38	54	51	143	1,176	4,670
1:30 PM	3	46	322	72	443	0	19	314	25	358	0	102	79	20	201	0	35	43	32	110	1,112	4,742
1:45 PM	2	51	348	86	487	0	26	384	18	428	0	79	57	27	163	0	36	51	43	130	1,208	4,818
2:00 PM	2	53	325	75	455	0	8	350	25	383	0	94	72	29	195	0	35	55	51	141	1,174	4,878
2:15 PM	3	41	348	91	483	0	16	414	18	448	0	106	66	20	192	0	41	53	31	125	1,248	5,012
2:30 PM	2	52	361	62	477	0	19	333	21	373	0	84	73	31	188	0	39	63	48	150	1,188	5,011
2:45 PM	**1**	**46**	**355**	**83**	**485**	**0**	**27**	**387**	**31**	**445**	**0**	**105**	**60**	**30**	**195**	**0**	**43**	**57**	**43**	**143**	**1,268**	**5,142**
3:00 PM	0	50	368	64	482	0	12	422	25	459	0	109	68	33	210	0	41	64	52	157	1,308	5,075
3:15 PM	1	51	325	64	441	0	15	364	33	412	0	104	90	31	225	0	46	76	47	169	1,247	4,984
3:30 PM	1	46	371	70	488	0	9	443	30	482	0	98	65	43	206	0	51	48	44	143	**1,319**	4,964
3:45 PM	1	51	357	57	466	0	16	345	24	385	0	103	78	36	217	0	26	65	42	133	1,201	4,893
4:00 PM	3	57	340	44	444	0	16	382	29	427	0	127	76	22	225	0	34	48	39	121	1,217	4,902
4:15 PM	2	68	350	32	452	0	15	381	22	418	0	107	78	41	226	0	39	50	42	131	1,227	4,925
4:30 PM	2	75	358	38	473	0	13	355	24	392	0	123	96	31	250	0	50	51	32	133	1,248	4,916
4:45 PM	1	90	365	47	503	0	10	309	23	342	0	95	97	32	224	0	35	55	51	141	1,210	4,770
5:00 PM	3	53	345	36	437	0	15	387	23	425	0	147	84	35	266	0	33	43	36	112	1,240	4,602
5:15 PM	1	58	382	40	481	0	20	357	20	397	0	86	72	33	191	0	46	46	57	149	1,218	4,311
5:30 PM	0	42	335	36	413	0	12	351	15	378	0	102	59	39	200	0	30	44	37	111	1,102	3,936
5:45 PM	3	62	342	30	437	0	8	327	15	350	0	57	54	22	133	0	48	41	33	122	1,042	3,648

IRONWOOD 92 PARTNERS

SHEA BOULEVARD and 92nd STREET - THURSDAY 04/22/2021

EXISTING NOON TO MIDNIGHT 12-HOUR TURNING MOVEMENT COUNTS

BEGIN	SHEA BOULEVARD EASTBOUND					SHEA BOULEVARD WESTBOUND					92nd STREET NORTHBOUND					92nd STREET SOUTHBOUND					ALL	60 MIN.
TIME	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	TOTAL	TOTAL
6:00 PM	3	50	290	40	383	0	12	297	19	328	0	59	50	17	126	0	27	38	47	112	949	3,344
6:15 PM	2	43	257	41	343	0	13	275	12	300	0	39	42	18	99	0	26	42	33	101	843	3,060
6:30 PM	1	42	265	36	344	1	13	268	20	302	0	38	42	18	98	0	22	15	33	70	814	2,874
6:45 PM	3	45	241	34	323	0	5	215	13	233	0	28	33	21	82	0	44	26	30	100	738	2,656
7:00 PM	1	30	225	12	268	0	6	242	10	258	0	31	23	15	69	0	23	22	25	70	665	2,419
7:15 PM	2	36	218	13	269	0	3	206	12	221	0	37	33	17	87	0	32	21	27	80	657	2,274
7:30 PM	0	36	191	11	238	1	4	195	10	210	0	33	38	15	86	0	19	14	29	62	596	2,111
7:45 PM	3	39	173	8	223	0	5	141	15	161	0	24	20	9	53	0	26	21	17	64	501	1,910
8:00 PM	0	30	193	14	237	0	2	165	14	181	0	20	20	8	48	0	13	14	27	54	520	1,714
8:15 PM	1	27	193	6	227	0	3	146	12	161	0	26	19	6	51	0	24	9	22	55	494	1,538
8:30 PM	0	23	136	7	166	0	7	130	10	147	0	15	16	8	39	0	14	11	18	43	395	1,366
8:45 PM	0	17	119	9	145	0	1	94	3	98	0	7	21	6	34	0	9	10	9	28	305	1,255
9:00 PM	2	20	125	11	158	0	0	117	6	123	0	18	17	2	37	0	8	6	12	26	344	1,185
9:15 PM	1	21	117	4	143	0	3	117	9	129	0	8	10	3	21	0	8	10	11	29	322	1,061
9:30 PM	0	12	123	3	138	0	1	87	7	95	0	9	7	8	24	0	8	4	15	27	284	927
9:45 PM	0	13	91	6	110	0	2	70	9	81	0	11	12	2	25	0	8	5	6	19	235	792
10:00 PM	0	16	93	6	115	0	1	70	1	72	0	4	9	4	17	0	5	5	6	16	220	684
10:15 PM	0	9	77	0	86	0	2	67	3	72	0	6	6	2	14	0	2	2	12	16	188	566
10:30 PM	0	5	55	0	60	0	1	65	2	68	0	4	5	4	13	0	2	3	3	8	149	468
10:45 PM	0	12	43	5	60	0	1	45	0	46	0	7	3	3	13	0	6	1	1	8	127	394
11:00 PM	0	4	50	1	55	0	0	32	0	32	0	4	4	2	10	0	2	0	3	5	102	323
11:15 PM	0	5	37	2	44	0	1	25	0	26	0	8	2	1	11	0	1	4	4	9	90	
11:30 PM	0	2	27	2	31	0	1	27	1	29	0	6	1	3	10	0	4	1	0	5	75	
11:45 PM	0	3	22	1	26	0	1	23	0	24	0	2	1	0	3	0	0	1	2	3	56	MAX
PM PEAK	3	193	1,419	281	1,896	0	63	1,616	119	1,798	0	416	283	137	836	0	181	245	186	612	5,142	**5,142**
PHF		0.93	0.96	0.85	0.97		0.57	0.91	0.90	0.93		0.95	0.79	0.80	0.93		0.88	0.81	0.89	0.91	0.97	


SUMMIT
IRONWOOD 92 PARTNERS
SHEA BOULEVARD and 92nd STREET - THURSDAY 04/22/2021
15-MINUTE TRAFFIC VOLUMES - 12:00 PM to 12:00 AM
15-MINUTE VOLUME (vehicles)
1,400
1,200
1,000
800
600
400
200
0
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
BEGINNING OF 15-MINUTE PERIOD
EASTBOUND
WESTBOUND
NORTHBOUND
SOUTHBOUND
ENTIRE INTERSECTION

IRONWOOD 92 PARTNERS

NORTH LANE and 92nd STREET - THURSDAY 04/22/2021

EXISTING MIDNIGHT TO NOON 12-HOUR TURNING MOVEMENT COUNTS

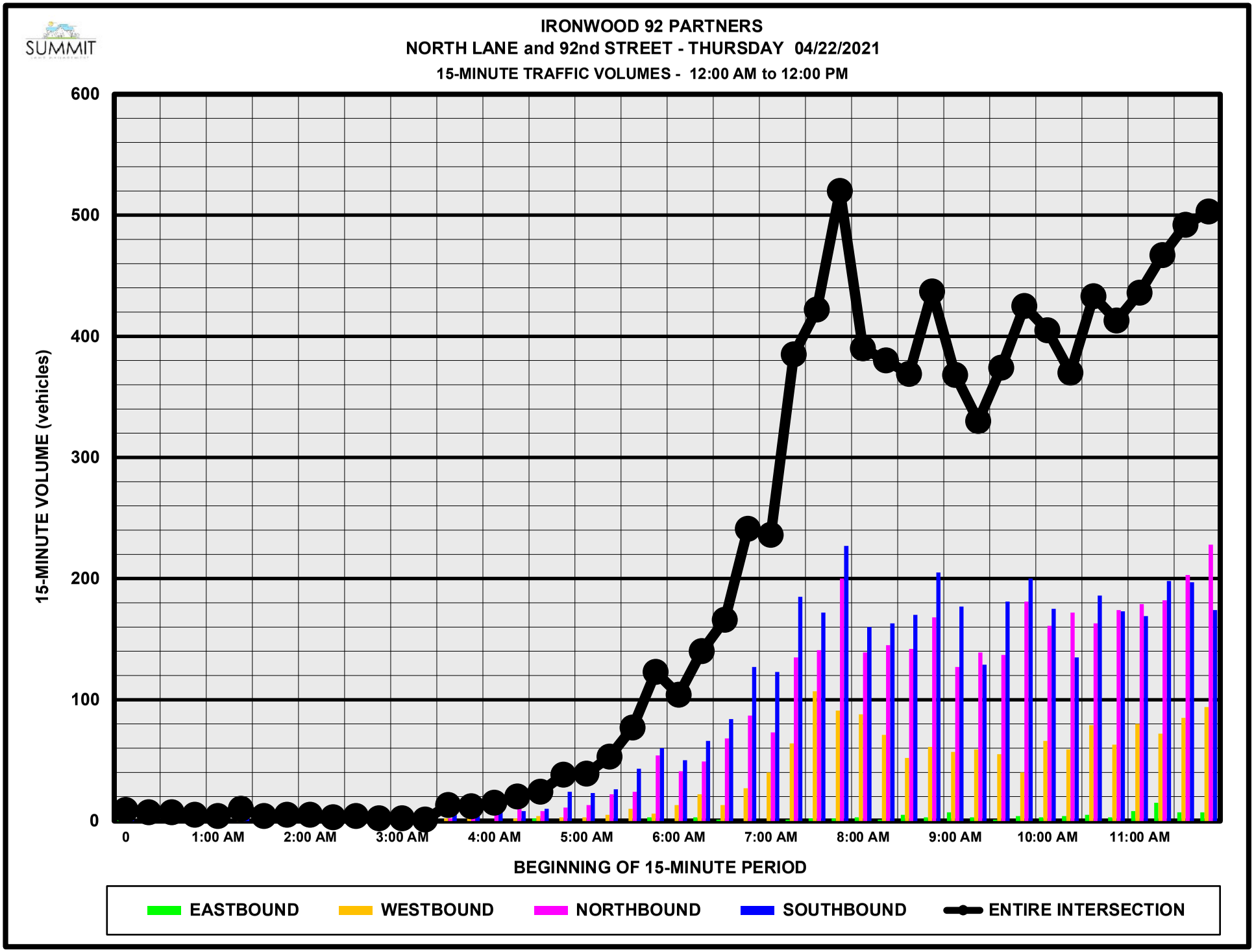
BEGIN TIME	NORTH LANE EASTBOUND					NORTH LANE WESTBOUND					92nd STREET NORTHBOUND					92nd STREET SOUTHBOUND					ALL TOTAL	60 MIN. TOTAL
	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL		
12:00 AM	0	3	0	0	3	0	1	0	0	1	0	0	2	1	3	0	0	3	0	3	10	22
12:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	2	0	2	0	0	1	1	2	5	15
12:30 AM	0	0	0	0	0	0	1	0	2	3	0	0	2	0	2	0	0	1	0	1	6	16
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	11
1:00 AM	0	0	0	0	0	0	0	0	1	1	0	0	1	0	1	0	0	1	0	1	3	14
1:15 AM	0	0	0	1	1	0	0	0	0	0	0	0	5	0	5	0	0	0	0	0	6	17
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	14
1:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	2	0	2	0	1	0	0	1	4	19
2:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	2	0	2	0	1	2	0	3	6	17
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2	3	16
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	2	1	3	6	14
2:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	12
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	1	2	0	3	5	19
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	27
3:30 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	3	0	3	4	36
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	4	4	0	8	9	46
4:00 AM	0	0	0	0	0	0	0	0	1	1	0	0	2	0	2	0	5	5	0	10	13	61
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	7	0	7	0	1	2	0	3	10	74
4:30 AM	0	0	0	0	0	0	3	0	1	4	0	1	1	2	4	0	2	4	0	6	14	104
4:45 AM	0	0	0	0	0	0	1	0	1	2	0	0	4	2	6	0	8	8	0	16	24	163
5:00 AM	0	0	0	0	0	0	1	0	6	7	0	3	2	2	7	0	2	5	5	12	26	222
5:15 AM	0	0	0	0	0	0	4	0	6	10	1	0	4	3	8	0	4	13	5	22	40	283
5:30 AM	0	1	0	0	1	0	4	1	9	14	0	0	12	2	14	0	5	32	7	44	73	371
5:45 AM	0	0	0	2	2	0	5	1	7	13	0	2	9	5	16	0	6	37	9	52	83	501

IRONWOOD 92 PARTNERS

NORTH LANE and 92nd STREET - THURSDAY 04/22/2021

EXISTING MIDNIGHT TO NOON 12-HOUR TURNING MOVEMENT COUNTS

BEGIN	NORTH LANE EASTBOUND					NORTH LANE WESTBOUND					92nd STREET NORTHBOUND					92nd STREET SOUTHBOUND					ALL	60 MIN.
TIME	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	TOTAL	TOTAL
6:00 AM	0	0	0	0	0	0	4	2	13	19	0	4	11	9	24	0	13	27	4	44	87	625
6:15 AM	0	0	0	0	0	0	2	1	14	17	1	4	15	6	26	0	21	53	11	85	128	738
6:30 AM	0	2	0	1	3	0	7	2	22	31	0	5	25	4	34	0	23	88	24	135	203	861
6:45 AM	0	0	1	1	2	0	6	1	18	25	0	4	32	4	40	0	18	106	16	140	207	989
7:00 AM	0	5	1	0	6	0	6	0	17	23	0	5	35	6	46	0	21	86	18	125	200	1,147
7:15 AM	1	2	0	1	4	0	7	1	23	31	2	4	52	13	71	0	27	94	24	145	251	1,281
7:30 AM	1	3	0	1	5	0	5	2	28	35	4	7	67	17	95	0	39	137	20	196	331	1,394
7:45 AM	0	5	1	0	6	0	2	2	28	32	3	4	69	12	88	2	34	171	32	239	365	1,416
8:00 AM	0	7	2	5	14	0	8	0	27	35	1	6	64	15	86	0	32	139	28	199	334	1,400
8:15 AM	0	3	0	2	5	0	5	1	32	38	1	1	94	13	109	0	21	180	11	212	364	1,380
8:30 AM	0	5	1	5	11	0	10	1	29	40	0	4	114	11	129	0	32	120	21	173	353	1,394
8:45 AM	0	3	1	3	7	0	8	0	29	37	0	8	91	17	116	0	30	140	19	189	349	1,369
9:00 AM	1	5	0	6	12	0	8	0	35	43	3	4	108	7	122	0	33	89	15	137	314	1,384
9:15 AM	1	7	1	7	16	0	15	0	33	48	2	7	103	15	127	0	33	126	28	187	378	1,423
9:30 AM	0	5	0	5	10	0	5	1	39	45	4	7	105	8	124	0	31	103	15	149	328	1,375
9:45 AM	2	10	0	3	15	0	10	1	26	37	2	8	130	15	155	0	29	103	25	157	364	1,394
10:00 AM	0	8	1	5	14	0	7	1	35	43	6	6	109	21	142	1	29	95	29	154	353	1,401
10:15 AM	0	5	0	7	12	0	8	0	46	54	3	0	108	17	128	0	30	88	18	136	330	1,433
10:30 AM	1	7	2	9	19	0	9	1	38	48	2	4	114	18	138	0	31	102	9	142	347	1,490
10:45 AM	0	10	1	3	14	0	8	1	43	52	4	6	110	11	131	0	31	125	18	174	371	1,525
11:00 AM	**0**	**9**	**2**	**6**	**17**	**0**	**5**	**0**	**37**	**42**	**0**	**6**	**143**	**19**	**168**	**0**	**41**	**101**	**16**	**158**	**385**	**1,547**
11:15 AM	0	7	1	6	14	0	12	0	61	73	2	3	128	19	152	1	34	100	13	148	387	1,539
11:30 AM	0	9	2	10	21	0	8	1	36	45	5	8	135	28	176	2	43	78	17	140	382	1,527
11:45 AM	1	5	1	7	14	0	9	2	46	57	2	4	150	16	172	0	40	94	16	150	393	1,515
AM PEAK	1	30	6	29	66	0	34	3	180	217	9	21	556	82	668	3	158	373	62	596	1,547	**1,547**
PHF		0.74	0.75	0.73	0.79		0.68	0.38	0.74	0.74		0.56	0.93	0.73	0.95		0.89	0.92	0.91	0.94	0.98	MAX


SUMMIT
IRONWOOD 92 PARTNERS
NORTH LANE and 92nd STREET - THURSDAY 04/22/2021
15-MINUTE TRAFFIC VOLUMES - 12:00 AM to 12:00 PM
15-MINUTE VOLUME (vehicles)
600
500
400
300
200
100
0
0
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
BEGINNING OF 15-MINUTE PERIOD
EASTBOUND
WESTBOUND
NORTHBOUND
SOUTHBOUND
ENTIRE INTERSECTION

IRONWOOD 92 PARTNERS
NORTH LANE and 92nd STREET - THURSDAY 04/22/2021
EXISTING NOON TO MIDNIGHT 12-HOUR TURNING MOVEMENT COUNTS

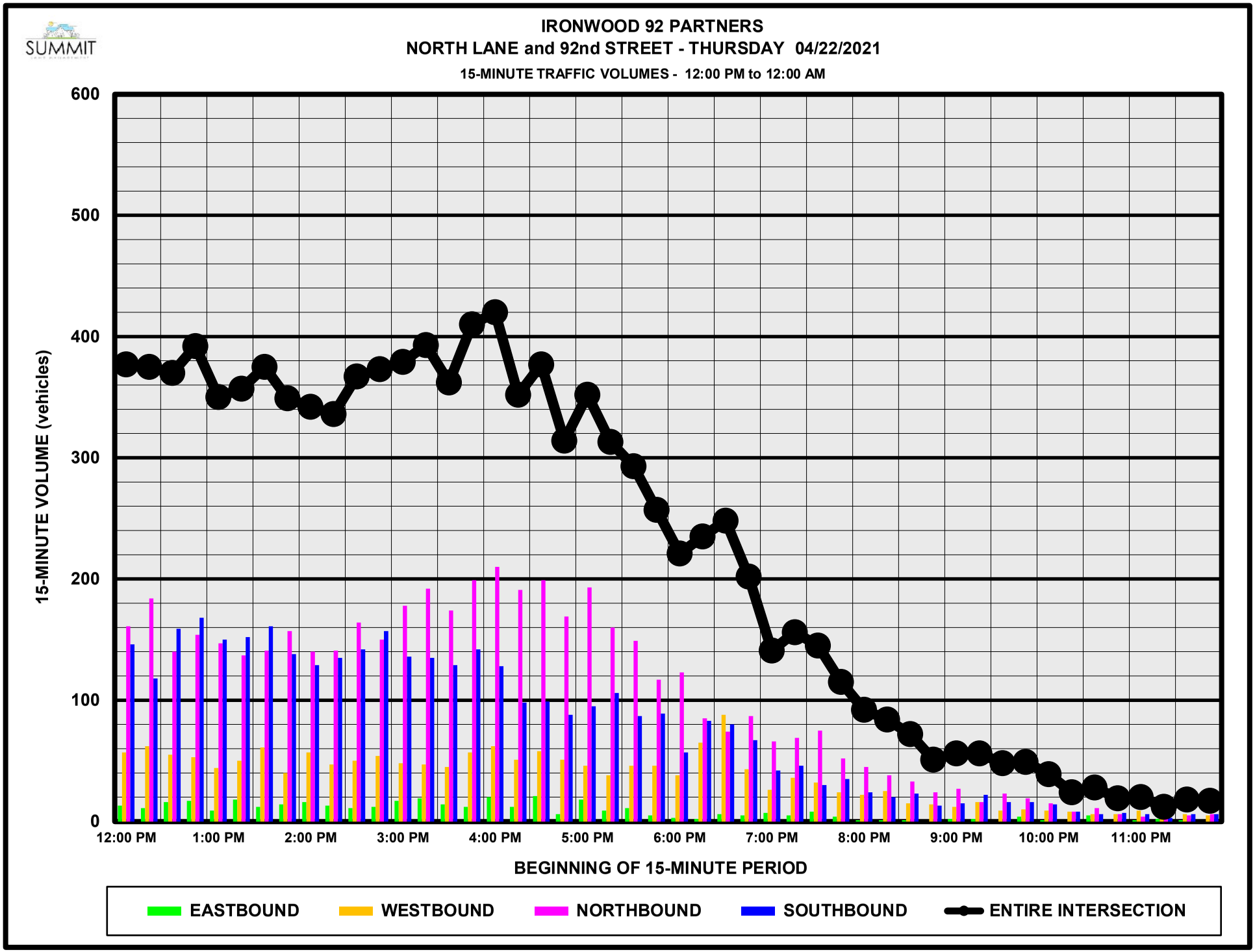
BEGIN TIME	NORTH LANE EASTBOUND					NORTH LANE WESTBOUND					92nd STREET NORTHBOUND					92nd STREET SOUTHBOUND					ALL TOTAL	60 MIN. TOTAL
	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL		
12:00 PM	0	3	1	9	13	0	11	2	44	57	3	6	128	24	161	1	45	91	9	146	377	1,514
12:15 PM	0	5	1	5	11	0	9	1	52	62	6	6	154	18	184	2	33	74	9	118	375	1,487
12:30 PM	0	4	2	10	16	0	10	0	45	55	4	10	110	16	140	0	35	111	13	159	370	1,469
12:45 PM	1	5	0	11	17	0	10	2	41	53	4	6	119	25	154	1	47	108	12	168	392	1,474
1:00 PM	0	6	0	3	9	0	4	0	40	44	6	4	122	15	147	2	41	95	12	150	350	1,431
1:15 PM	1	6	1	10	18	0	7	0	43	50	4	5	113	15	137	0	31	105	16	152	357	1,423
1:30 PM	0	4	3	5	12	0	9	1	51	61	3	5	117	16	141	1	41	108	11	161	375	1,402
1:45 PM	0	7	3	4	14	0	6	0	34	40	2	5	132	18	157	1	28	94	15	138	349	1,394
2:00 PM	1	10	0	5	16	0	11	2	44	57	3	3	119	15	140	0	27	90	12	129	342	1,418
2:15 PM	1	9	0	3	13	0	8	0	39	47	1	6	115	19	141	0	40	86	9	135	336	1,455
2:30 PM	0	7	1	3	11	0	12	0	38	50	4	4	141	15	164	0	21	108	13	142	367	1,512
2:45 PM	0	5	0	7	12	0	8	1	45	54	1	3	129	17	150	0	32	115	10	157	373	1,507
3:00 PM	0	8	0	9	17	0	8	0	40	48	4	1	155	18	178	1	27	99	9	136	379	1,544
3:15 PM	**0**	**7**	**1**	**11**	**19**	**0**	**5**	**0**	**42**	**47**	**4**	**2**	**167**	**19**	**192**	**0**	**30**	**95**	**10**	**135**	**393**	**1,585**
3:30 PM	0	6	0	8	14	0	10	0	35	45	1	2	152	19	174	1	24	101	3	129	362	1,544
3:45 PM	0	5	1	6	12	0	14	1	42	57	2	3	177	17	199	0	35	98	9	142	410	1,559
4:00 PM	0	8	1	11	20	0	8	0	54	62	0	3	186	21	210	0	32	91	5	128	**420**	1,463
4:15 PM	0	8	0	4	12	0	8	1	42	51	1	2	166	22	191	0	26	66	6	98	352	1,395
4:30 PM	0	8	0	13	21	0	8	0	50	58	1	1	185	12	199	0	30	64	5	99	377	1,356
4:45 PM	0	4	0	2	6	0	5	0	46	51	1	3	150	15	169	0	18	67	3	88	314	1,272
5:00 PM	0	8	3	7	18	0	7	2	37	46	4	2	172	15	193	0	26	67	2	95	352	1,215
5:15 PM	0	5	1	3	9	0	2	1	35	38	1	0	153	6	160	0	28	73	5	106	313	1,084
5:30 PM	0	3	0	8	11	0	9	0	37	46	2	3	133	11	149	0	36	49	2	87	293	1,006
5:45 PM	0	2	0	3	5	0	5	0	41	46	1	0	106	10	117	0	22	61	6	89	257	961

IRONWOOD 92 PARTNERS

NORTH LANE and 92nd STREET - THURSDAY 04/22/2021

EXISTING NOON TO MIDNIGHT 12-HOUR TURNING MOVEMENT COUNTS

BEGIN	NORTH LANE EASTBOUND					NORTH LANE WESTBOUND					92nd STREET NORTHBOUND					92nd STREET SOUTHBOUND					ALL	60 MIN.
TIME	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	TOTAL	TOTAL
6:00 PM	0	0	0	3	3	0	5	0	33	38	1	0	112	10	123	2	13	40	2	57	221	906
6:15 PM	0	1	0	1	2	0	3	2	28	65	1	1	88	5	85	0	29	52	2	83	235	826
6:30 PM	0	5	0	1	6	0	4	0	32	88	0	4	72	13	74	0	29	43	8	80	248	747
6:45 PM	0	3	1	1	5	0	12	0	31	43	2	3	72	10	87	0	16	45	6	67	202	644
7:00 PM	0	2	0	5	7	0	4	0	22	26	0	1	59	6	66	1	15	25	1	42	141	557
7:15 PM	0	2	1	2	5	0	2	0	34	36	0	0	61	8	69	0	16	28	2	46	156	508
7:30 PM	0	3	2	3	8	0	9	0	23	32	0	0	68	7	75	1	12	16	1	30	145	436
7:45 PM	0	3	0	1	4	0	6	0	18	24	1	0	45	6	52	1	12	22	0	35	115	363
8:00 PM	0	1	0	0	1	0	7	0	15	22	1	0	38	6	45	0	9	14	1	24	92	299
8:15 PM	0	0	1	0	1	0	4	1	20	25	0	0	35	3	38	0	6	14	0	20	84	263
8:30 PM	0	0	0	1	1	0	3	0	12	15	0	0	31	2	33	0	7	16	0	23	72	235
8:45 PM	0	0	0	0	0	0	3	1	10	14	0	0	15	9	24	0	3	9	1	13	51	211
9:00 PM	0	2	0	0	2	0	5	0	7	12	0	0	24	3	27	0	7	8	0	15	56	209
9:15 PM	0	2	0	0	2	0	4	0	12	16	0	0	14	2	16	0	6	15	1	22	56	192
9:30 PM	0	0	0	0	0	0	3	0	6	9	1	1	17	4	23	0	2	13	1	16	48	160
9:45 PM	0	3	0	1	4	0	3	0	7	10	0	0	18	1	19	0	3	12	1	16	49	140
10:00 PM	0	1	0	0	1	0	1	0	8	9	0	0	12	3	15	0	4	8	2	14	39	110
10:15 PM	0	0	0	0	0	0	1	0	7	8	0	0	7	1	8	1	1	5	1	8	24	91
10:30 PM	0	4	1	0	5	0	1	0	5	6	0	0	10	1	11	0	0	5	1	6	28	79
10:45 PM	0	0	0	0	0	0	2	0	4	6	0	0	5	1	6	0	4	3	0	7	19	69
11:00 PM	0	1	0	0	1	0	1	0	8	9	0	0	2	2	4	0	3	3	0	6	20	67
11:15 PM	0	1	0	1	2	0	1	0	2	3	0	0	3	1	4	0	0	2	1	3	12	
11:30 PM	0	1	0	0	1	0	1	0	5	6	0	0	5	0	5	0	3	2	1	6	18	
11:45 PM	0	0	0	0	0	0	0	1	4	5	0	0	5	1	6	0	2	4	0	6	17	MAX
PM PEAK	0	26	3	36	65	0	37	1	173	211	7	10	682	76	775	1	121	385	27	534	1,585	**1,585**
PHF		0.75	0.75	0.82	0.81		0.63	0.25	0.80	0.85		0.61	0.92	0.90	0.92		0.83	0.95	0.68	0.94	0.94	


SUMMIT
IRONWOOD 92 PARTNERS
NORTH LANE and 92nd STREET - THURSDAY 04/22/2021
15-MINUTE TRAFFIC VOLUMES - 12:00 PM to 12:00 AM
15-MINUTE VOLUME (vehicles)
600
500
400
300
200
100
0
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
BEGINNING OF 15-MINUTE PERIOD
EASTBOUND
WESTBOUND
NORTHBOUND
SOUTHBOUND
ENTIRE INTERSECTION

IRONWOOD 92 PARTNERS

COCHISE DRIVE and 92nd STREET - THURSDAY 04/22/2021

EXISTING MIDNIGHT TO NOON 12-HOUR TURNING MOVEMENT COUNTS

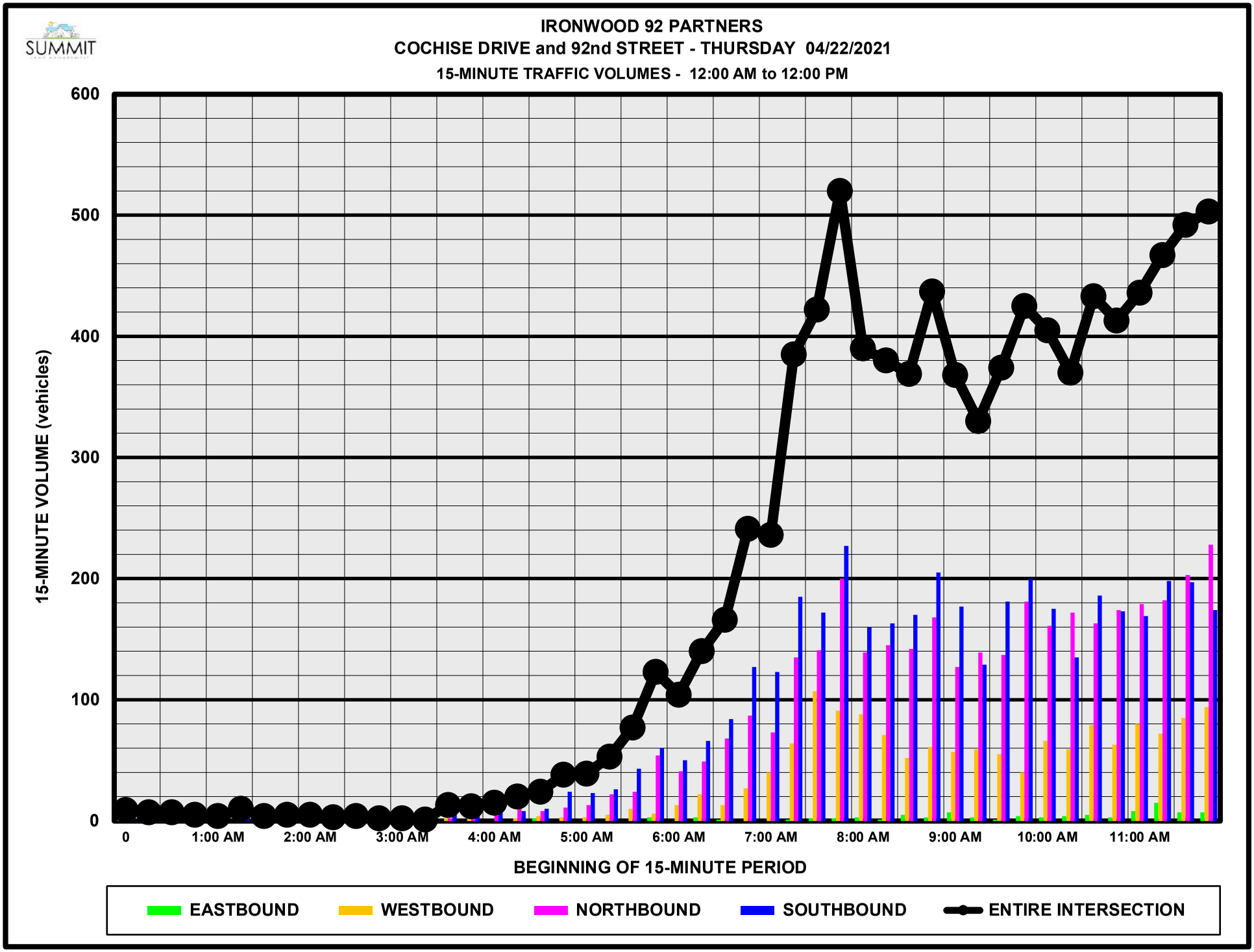
BEGIN TIME	COCHISE DRIVE EASTBOUND					COCHISE DRIVE WESTBOUND					92nd STREET CochiseBOUND					92nd STREET SOUTHBOUND					ALL TOTAL	60 MIN. TOTAL
	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL		
12:00 AM	0	0	0	0	0	0	0	0	1	1	0	0	2	0	2	0	0	3	0	3	6	13
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	1	1	0	2	4	8
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	2	10
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	9
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	11
1:15 AM	0	1	0	0	1	0	0	0	0	0	0	0	4	0	4	0	0	1	0	1	6	14
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	12
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	3	14
2:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	1	0	1	0	0	2	0	2	4	12
2:15 AM	0	1	0	0	1	0	0	0	0	0	0	0	2	0	2	0	0	1	0	1	4	12
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	1	2	3	8
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	7
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1	1	3	4	11
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2	22
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	2	4	5	35
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	3	5	6	50
4:15 AM	0	4	0	0	4	0	0	0	0	0	0	0	3	0	3	0	0	1	1	2	9	59
4:30 AM	0	0	0	0	0	0	2	1	0	3	0	0	5	0	5	0	1	5	1	7	15	81
4:45 AM	0	0	0	0	0	0	1	0	0	1	0	2	8	0	10	0	0	5	4	9	20	127
5:00 AM	0	0	0	1	1	0	0	0	0	0	0	2	7	0	9	0	0	5	0	5	15	171
5:15 AM	0	1	0	1	2	0	2	0	0	2	0	0	8	0	8	0	0	16	3	19	31	217
5:30 AM	0	2	0	0	2	0	1	0	0	1	0	5	17	2	24	1	1	26	6	34	61	278
5:45 AM	0	0	0	1	1	0	3	0	0	3	0	8	19	0	27	0	2	24	7	33	64	367

IRONWOOD 92 PARTNERS

COCHISE DRIVE and 92nd STREET - THURSDAY 04/22/2021

EXISTING MIDNIGHT TO NOON 12-HOUR TURNING MOVEMENT COUNTS

BEGIN	COCHISE DRIVE EASTBOUND					COCHISE DRIVE WESTBOUND					92nd STREET CochiseBOUND					92nd STREET SOUTHBOUND					ALL	60 MIN.
TIME	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	TOTAL	TOTAL
6:00 AM	0	1	0	0	1	0	4	3	0	7	0	4	23	0	27	0	0	20	6	26	61	473
6:15 AM	0	0	0	1	1	0	5	0	0	5	1	3	29	1	34	0	2	36	14	52	92	562
6:30 AM	0	5	1	1	7	0	5	3	0	8	0	11	35	1	47	0	0	61	27	88	150	674
6:45 AM	0	0	0	1	1	0	5	3	0	8	1	28	35	0	64	1	2	65	29	97	170	795
7:00 AM	0	3	0	3	6	0	11	0	0	11	0	10	39	1	50	1	1	54	27	83	150	927
7:15 AM	0	8	0	5	13	0	9	1	0	10	0	10	70	0	80	0	8	78	15	101	204	1,037
7:30 AM	0	8	0	10	18	0	11	1	3	15	1	11	82	2	96	0	6	113	23	142	271	1,150
7:45 AM	0	4	0	11	15	0	8	0	2	10	0	16	94	3	113	0	6	127	31	164	302	1,172
8:00 AM	0	3	0	7	10	0	9	2	1	12	1	9	81	1	92	2	4	112	28	146	260	1,180
8:15 AM	0	2	0	4	6	0	9	0	1	10	2	7	107	2	118	1	4	148	30	183	317	1,189
8:30 AM	0	5	1	6	12	0	13	0	1	14	3	7	116	4	130	2	5	113	17	137	293	1,169
8:45 AM	0	5	2	7	14	0	14	0	3	17	4	13	115	4	136	1	15	106	21	143	310	1,152
9:00 AM	0	9	0	4	13	0	14	2	7	23	3	8	107	7	125	4	5	84	15	108	269	1,164
9:15 AM	0	20	0	4	24	0	9	0	8	17	4	6	101	6	117	2	12	109	16	139	297	1,177
9:30 AM	0	12	0	5	17	0	8	2	6	16	2	13	107	1	123	3	6	85	26	120	276	1,146
9:45 AM	0	9	1	19	29	0	11	0	10	21	3	5	132	9	149	0	18	86	19	123	322	1,179
10:00 AM	0	11	0	8	19	0	10	4	7	21	4	5	121	3	133	0	5	81	23	109	282	1,175
10:15 AM	0	16	0	5	21	0	12	0	8	20	7	6	94	7	114	1	5	84	21	111	266	1,193
10:30 AM	0	12	2	16	30	0	10	2	5	17	7	12	124	6	149	0	1	96	16	113	309	1,276
10:45 AM	0	13	0	4	17	0	11	0	2	13	2	12	121	5	140	2	7	120	19	148	318	1,281
11:00 AM	0	10	0	8	18	0	9	0	5	14	3	8	147	4	162	6	6	81	13	106	300	1,306
11:15 AM	**0**	**22**	**1**	**13**	**36**	**0**	**16**	**1**	**5**	**22**	**6**	**17**	**130**	**9**	**162**	**6**	**1**	**108**	**14**	**129**	**349**	**1,346**
11:30 AM	0	15	1	13	29	0	17	1	5	23	4	8	144	2	158	7	4	83	10	104	314	1,315
11:45 AM	0	11	0	15	26	0	17	1	6	24	3	12	157	5	177	3	5	95	13	116	343	1,310
AM PEAK	0	62	2	54	118	0	65	3	19	87	18	48	584	21	671	18	18	388	46	470	1,346	**1,346**
PHF		0.69	0.50	0.90	0.82		0.93	0.75	0.79	0.91		0.70	0.93	0.58	0.95		0.58	0.90	0.82	0.91	0.96	MAX


SUMMIT
IRONWOOD 92 PARTNERS
COCHISE DRIVE and 92nd STREET - THURSDAY 04/22/2021
15-MINUTE TRAFFIC VOLUMES - 12:00 AM to 12:00 PM
15-MINUTE VOLUME (vehicles)
600
500
400
300
200
100
0
0
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
BEGINNING OF 15-MINUTE PERIOD
EASTBOUND
WESTBOUND
NORTHBOUND
SOUTHBOUND
ENTIRE INTERSECTION

IRONWOOD 92 PARTNERS

COCHISE DRIVE and 92nd STREET - THURSDAY 04/22/2021

EXISTING NOON TO MIDNIGHT 12-HOUR TURNING MOVEMENT COUNTS

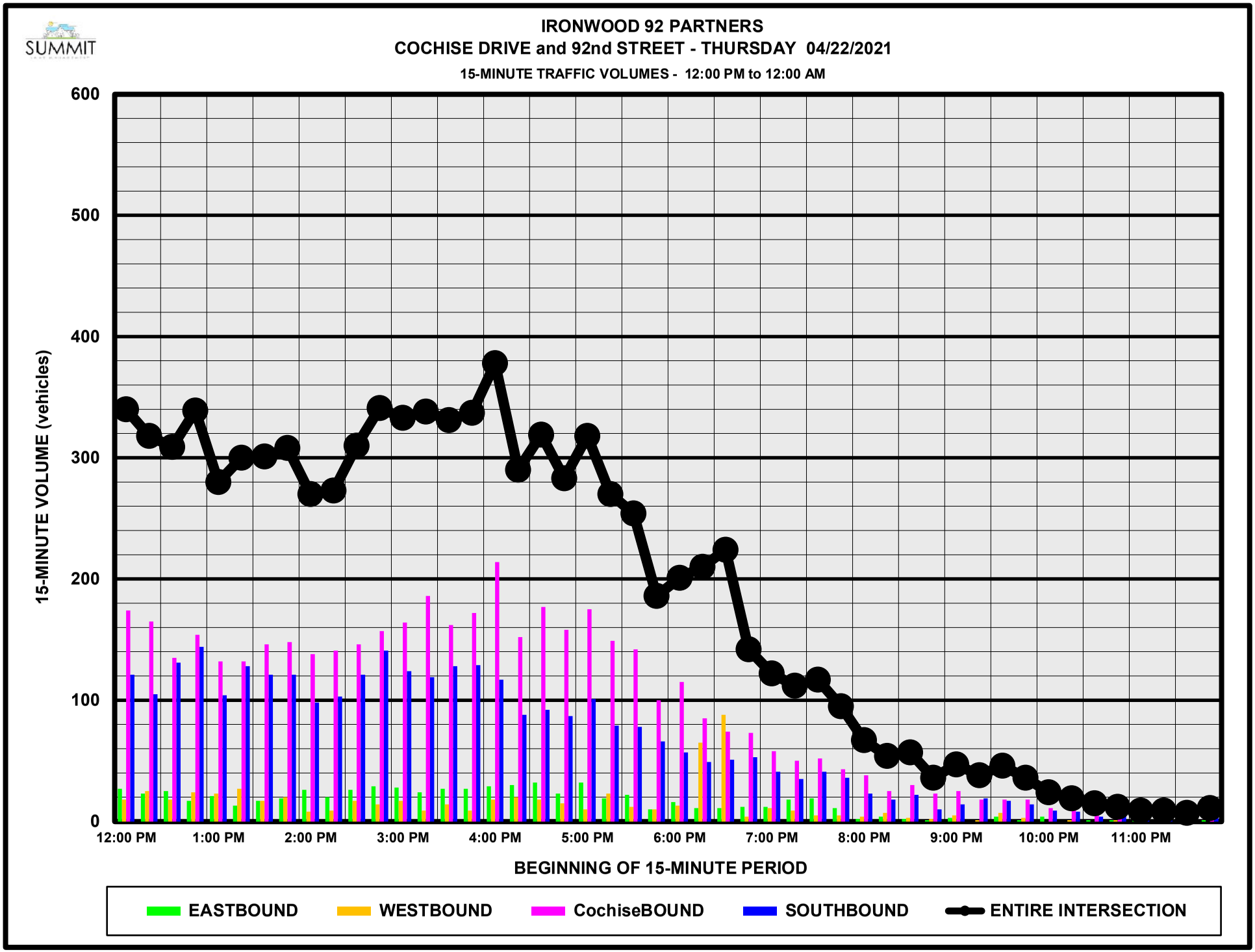
BEGIN TIME	COCHISE DRIVE EASTBOUND					COCHISE DRIVE WESTBOUND					92nd STREET NORTHBOUND					92nd STREET SOUTHBOUND					ALL TOTAL	60 MIN. TOTAL
	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL		
12:00 PM	0	14	0	13	27	0	15	0	3	18	5	11	153	5	174	2	8	102	9	121	340	1,306
12:15 PM	0	13	0	10	23	0	16	1	8	25	2	10	146	7	165	8	7	77	13	105	318	1,246
12:30 PM	0	14	0	11	25	0	12	0	6	18	3	8	122	2	135	4	6	107	14	131	309	1,228
12:45 PM	0	7	0	10	17	0	21	1	2	24	1	9	137	7	154	5	11	105	23	144	339	1,220
1:00 PM	0	10	1	10	21	0	17	0	6	23	4	8	118	2	132	5	5	76	18	104	280	1,189
1:15 PM	0	6	0	7	13	0	21	0	6	27	3	10	114	5	132	3	5	96	24	128	300	1,179
1:30 PM	0	9	0	8	17	0	13	0	4	17	3	8	128	7	146	2	7	97	15	121	301	1,152
1:45 PM	0	12	0	7	19	0	17	0	3	20	3	10	132	3	148	6	1	94	20	121	308	1,161
2:00 PM	0	19	0	7	26	0	6	0	2	8	3	6	126	3	138	3	5	77	13	98	270	1,194
2:15 PM	0	11	0	9	20	0	8	0	1	9	6	7	127	1	141	1	2	84	16	103	273	1,257
2:30 PM	0	15	0	11	26	0	14	1	2	17	2	3	140	1	146	3	4	99	15	121	310	1,322
2:45 PM	0	18	0	11	29	0	9	2	3	14	6	9	139	3	157	3	4	117	17	141	341	1,343
3:00 PM	0	18	0	10	28	0	10	1	6	17	2	6	155	1	164	6	7	98	13	124	333	1,339
3:15 PM	**0**	**12**	**1**	**11**	**24**	**0**	**8**	**0**	**1**	**9**	**5**	**7**	**171**	**3**	**186**	**5**	**6**	**99**	**9**	**119**	**338**	**1,384**
3:30 PM	0	17	0	10	27	0	8	0	6	14	3	8	149	2	162	8	6	105	9	128	331	1,336
3:45 PM	0	16	0	11	27	0	8	0	1	9	1	4	166	1	172	7	5	104	13	129	337	1,324
4:00 PM	0	12	1	16	29	0	9	2	7	18	6	7	200	1	214	6	8	96	7	117	**378**	1,270
4:15 PM	0	21	3	6	30	0	13	0	7	20	1	4	146	1	152	6	5	71	6	88	290	1,210
4:30 PM	0	23	1	8	32	0	10	2	6	18	3	3	169	2	177	4	5	82	1	92	319	1,190
4:45 PM	0	15	1	7	23	0	10	0	5	15	1	4	152	1	158	6	2	79	0	87	283	1,125
5:00 PM	0	17	1	14	32	0	9	0	1	10	3	2	168	2	175	5	3	89	4	101	318	1,028
5:15 PM	0	7	1	11	19	0	17	0	6	23	4	3	137	5	149	3	4	70	2	79	270	911
5:30 PM	0	12	0	10	22	0	5	3	4	12	3	2	134	3	142	3	1	68	6	78	254	851
5:45 PM	0	7	0	3	10	0	7	0	3	10	0	1	98	1	100	1	1	61	3	66	186	821

IRONWOOD 92 PARTNERS

COCHISE DRIVE and 92nd STREET - THURSDAY 04/22/2021

EXISTING NOON TO MIDNIGHT 12-HOUR TURNING MOVEMENT COUNTS

BEGIN	COCHISE DRIVE EASTBOUND					COCHISE DRIVE WESTBOUND					92nd STREET NORTHBOUND					92nd STREET SOUTHBOUND					ALL	60 MIN.
TIME	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	TOTAL	TOTAL
6:00 PM	0	12	0	4	16	0	11	1	1	13	1	6	105	3	115	1	1	52	3	57	201	777
6:15 PM	0	10	0	1	11	0	11	0	1	65	0	1	84	1	85	1	1	44	3	49	210	698
6:30 PM	0	6	0	5	11	0	10	2	4	88	0	6	72	1	74	3	2	33	13	51	224	600
6:45 PM	0	8	0	4	12	0	2	1	1	4	0	5	67	1	73	2	1	44	6	53	142	493
7:00 PM	0	8	0	4	12	0	8	1	2	11	0	0	58	0	58	2	0	39	0	41	122	446
7:15 PM	0	13	0	5	18	0	9	0	0	9	0	1	46	3	50	1	2	32	0	35	112	391
7:30 PM	0	13	0	6	19	0	3	1	1	5	0	0	52	0	52	4	0	37	0	41	117	333
7:45 PM	0	7	0	4	11	0	4	0	1	5	1	1	41	0	43	5	1	29	1	36	95	273
8:00 PM	0	1	0	1	2	0	1	0	3	4	0	0	38	0	38	0	0	23	0	23	67	214
8:15 PM	0	4	0	0	4	0	4	0	3	7	0	0	25	0	25	0	0	18	0	18	54	194
8:30 PM	0	2	0	0	2	0	2	0	1	3	0	0	30	0	30	0	0	21	1	22	57	178
8:45 PM	0	1	0	0	1	0	1	1	0	2	0	0	23	0	23	0	0	9	1	10	36	167
9:00 PM	0	2	0	1	3	0	3	1	1	5	0	0	25	0	25	0	0	13	1	14	47	167
9:15 PM	0	0	0	0	0	0	1	0	0	1	0	1	17	0	18	0	0	18	1	19	38	144
9:30 PM	0	3	0	1	4	0	5	0	2	7	0	0	18	0	18	0	1	15	1	17	46	125
9:45 PM	0	0	0	1	1	0	3	0	0	3	1	0	17	0	18	0	0	14	0	14	36	94
10:00 PM	0	4	0	0	4	0	0	0	0	0	0	0	11	0	11	0	0	7	2	9	24	70
10:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	10	0	10	0	0	7	1	8	19	55
10:30 PM	0	0	0	1	1	0	0	0	0	0	0	0	10	0	10	0	0	4	0	4	15	45
10:45 PM	0	1	0	0	1	0	0	1	0	1	0	0	5	0	5	0	0	5	0	5	12	37
11:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	4	0	4	0	0	4	0	4	9	36
11:15 PM	0	0	0	0	0	0	0	0	1	1	0	0	4	0	4	0	0	4	0	4	9	
11:30 PM	0	1	0	1	2	0	0	0	0	0	0	0	2	0	2	0	0	3	0	3	7	
11:45 PM	0	1	0	0	1	0	0	0	0	0	0	1	5	0	6	0	0	4	0	4	11	MAX
PM PEAK	0	57	2	48	107	0	33	2	15	50	15	26	686	7	734	26	25	404	38	493	1,384	**1,384**
PHF		0.81	0.50	0.75	0.92		0.86	0.25	0.54	0.69		0.73	0.86	0.58	0.86		0.77	0.96	0.73	0.96	0.92	


SUMMIT
IRONWOOD 92 PARTNERS
COCHISE DRIVE and 92nd STREET - THURSDAY 04/22/2021
15-MINUTE TRAFFIC VOLUMES - 12:00 PM to 12:00 AM
15-MINUTE VOLUME (vehicles)
600
500
400
300
200
100
0
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
BEGINNING OF 15-MINUTE PERIOD
EASTBOUND
WESTBOUND
CochiseBOUND
SOUTHBOUND
ENTIRE INTERSECTION

IRONWOOD 92 PARTNERS

IRONWOOD LANE and 92nd STREET - THURSDAY 04/22/2021

EXISTING MIDNIGHT TO NOON 12-HOUR TURNING MOVEMENT COUNTS

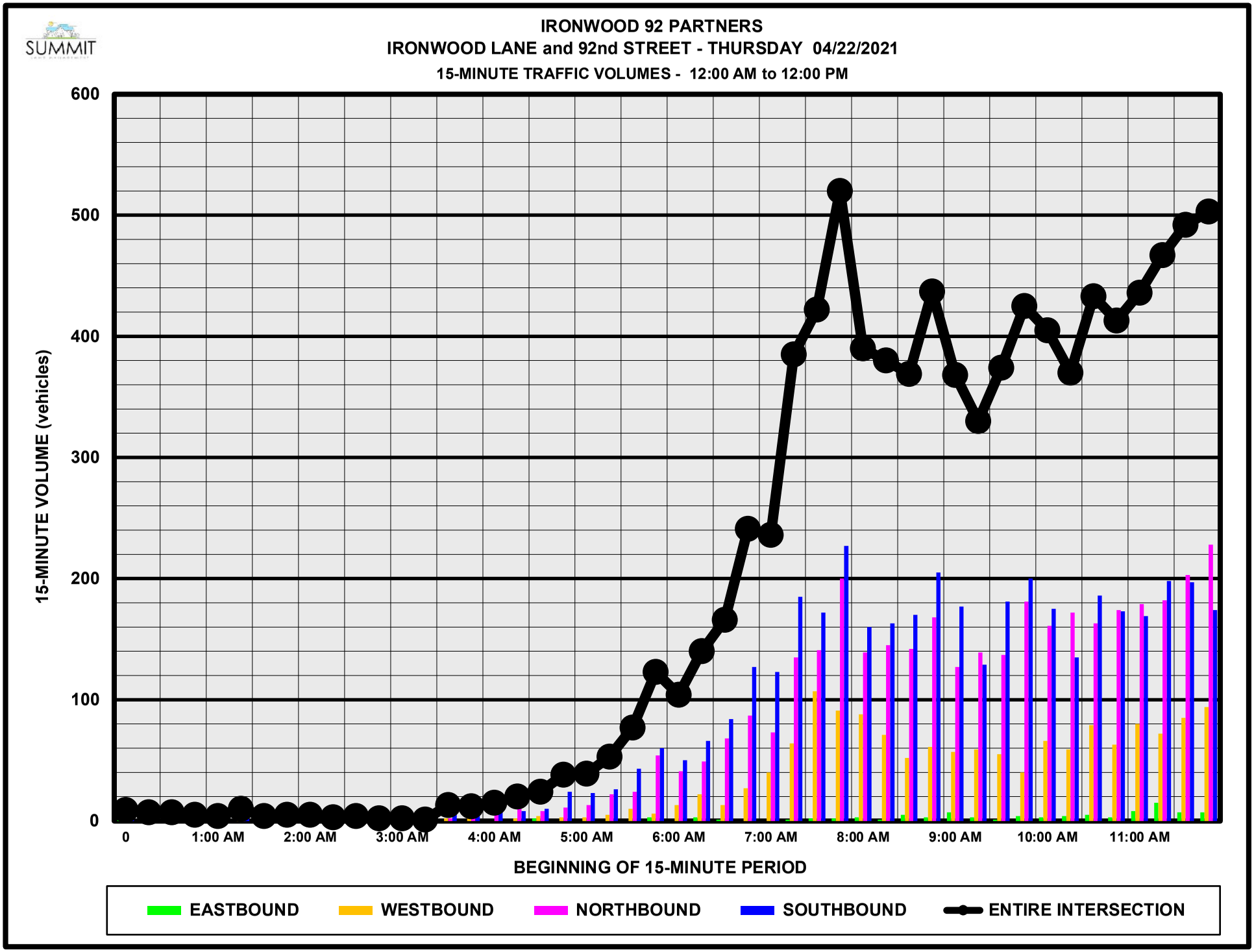
BEGIN TIME	IRONWOOD LANE EASTBOUND					IRONWOOD LANE WESTBOUND					92nd STREET IronwoodBOUND					92nd STREET SOUTHBOUND					ALL TOTAL	60 MIN. TOTAL
	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL		
12:00 AM	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	1	3	0	4	6	13
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0	0	1	0	1	4	8
12:30 AM	0	0	0	0	0	0	0	0	1	1	0	0	1	0	1	0	0	1	0	1	3	9
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	7
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	0	0	1	0	1	5	11
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	11
2:00 AM	0	0	0	1	1	0	0	0	1	1	0	0	1	0	1	0	0	2	0	2	5	11
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	0	2	3	9
2:30 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	1	2	6
2:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	1	0	0	1	3	10
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	1	2	3	14
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	1	1	2	4	23
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	0	2	3	37
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	1	1	4	50
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	0	0	6	1	7	12	70
4:45 AM	0	0	0	0	0	0	0	1	0	1	0	1	10	0	11	0	0	3	3	6	18	110
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10	0	0	5	1	6	16	151
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	9	0	9	0	0	11	4	15	24	187
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	21	1	23	0	4	17	8	29	52	241
5:45 AM	0	0	0	0	0	0	0	0	1	1	0	3	28	0	31	1	1	19	6	27	59	299

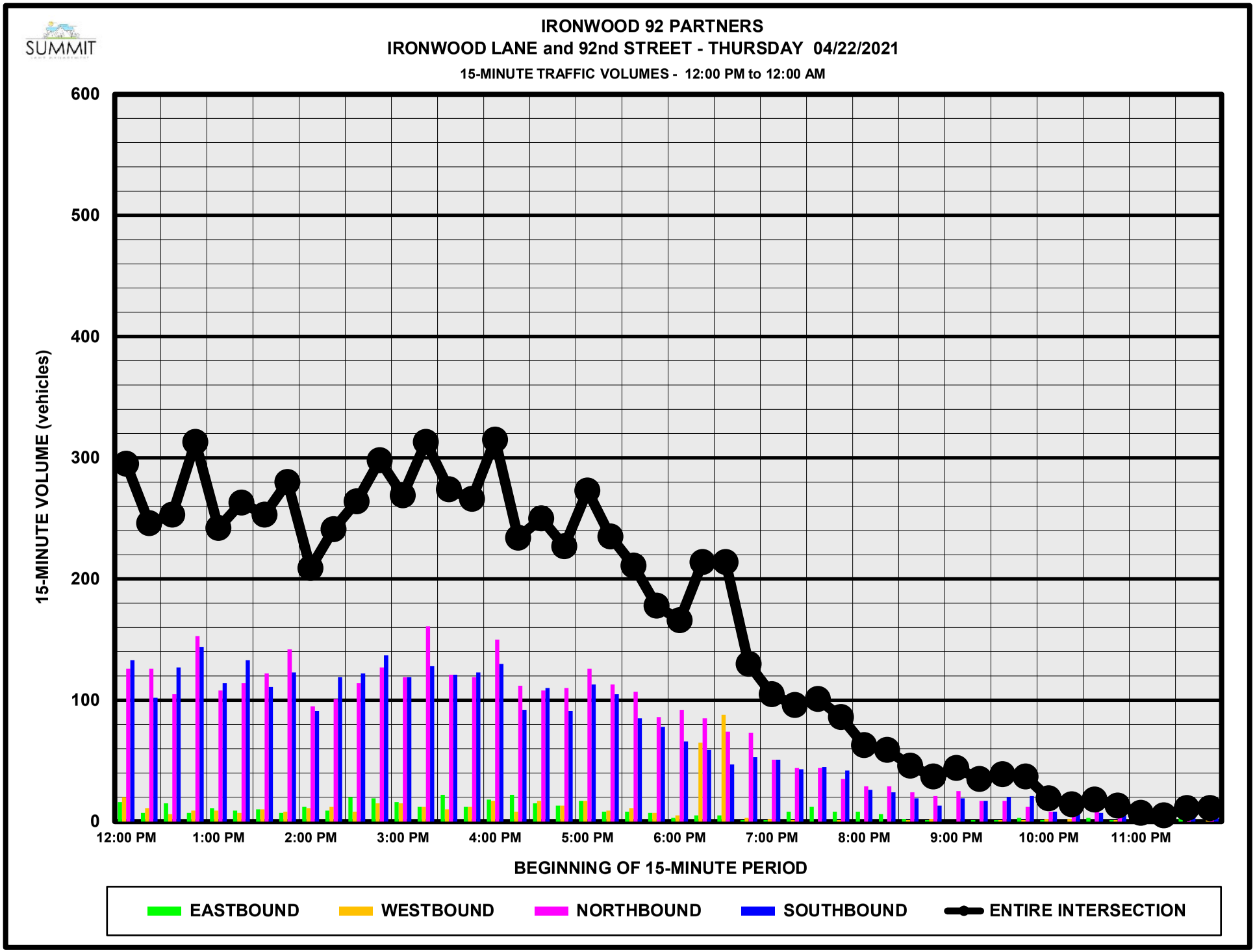
IRONWOOD 92 PARTNERS

IRONWOOD LANE and 92nd STREET - THURSDAY 04/22/2021

EXISTING MIDNIGHT TO NOON 12-HOUR TURNING MOVEMENT COUNTS

BEGIN	IRONWOOD LANE EASTBOUND					IRONWOOD LANE WESTBOUND					92nd STREET IronwoodBOUND					92nd STREET SOUTHBOUND					ALL	60 MIN.
TIME	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	TOTAL	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	2	26	1	29	0	1	17	5	23	52	388
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	4	32	2	38	0	7	25	8	40	78	466
6:30 AM	0	1	0	1	2	0	0	0	1	1	0	2	43	3	48	0	5	38	16	59	110	565
6:45 AM	0	2	0	0	2	0	0	0	0	0	0	4	64	1	69	2	8	47	20	77	148	710
7:00 AM	0	1	0	1	2	0	0	0	1	1	0	1	53	2	56	1	19	43	8	71	130	865
7:15 AM	0	2	0	2	4	0	1	0	3	4	0	2	74	6	82	4	24	51	8	87	177	969
7:30 AM	0	2	1	3	6	0	1	0	3	4	0	8	104	2	114	5	23	85	18	131	255	1,093
7:45 AM	0	5	0	5	10	0	3	0	3	6	1	13	109	9	132	8	32	94	21	155	303	1,102
8:00 AM	0	3	1	2	6	0	0	0	2	2	1	3	95	6	105	2	26	85	8	121	234	1,074
8:15 AM	0	2	1	6	9	0	2	0	8	10	0	10	108	4	122	10	35	106	9	160	301	1,082
8:30 AM	1	1	0	3	5	0	1	0	5	6	0	4	109	5	118	4	22	102	7	135	264	1,043
8:45 AM	0	8	0	4	12	0	2	0	6	8	0	3	108	9	120	7	21	95	12	135	275	1,011
9:00 AM	0	9	0	5	14	0	6	0	3	9	1	4	96	11	112	3	18	80	6	107	242	1,009
9:15 AM	0	3	0	6	9	0	4	1	2	7	0	9	100	13	122	7	16	96	5	124	262	1,008
9:30 AM	0	2	1	8	11	0	7	0	13	20	1	7	78	11	97	5	16	73	10	104	232	984
9:45 AM	0	4	1	12	17	0	5	0	7	12	0	11	113	13	137	3	24	75	5	107	273	1,011
10:00 AM	0	2	1	4	7	0	11	0	7	18	0	1	100	9	110	5	13	81	7	106	241	1,005
10:15 AM	0	6	1	7	14	0	6	0	4	10	0	4	84	10	98	7	11	90	8	116	238	1,032
10:30 AM	0	5	0	7	12	0	3	0	4	7	0	4	110	4	118	1	16	96	9	122	259	1,078
10:45 AM	0	5	1	7	13	0	3	0	5	8	0	2	99	8	109	5	20	105	7	137	267	1,080
11:00 AM	0	8	0	12	20	0	5	1	7	13	0	6	114	9	129	2	10	90	4	106	268	1,093
11:15 AM	**0**	**6**	**0**	**6**	**12**	**0**	**3**	**0**	**4**	**7**	**1**	**2**	**113**	**5**	**121**	**8**	**24**	**109**	**3**	**144**	**284**	**1,120**
11:30 AM	0	12	1	6	19	0	6	0	7	13	0	4	107	5	116	4	13	93	3	113	261	1,082
11:45 AM	0	3	1	10	14	0	5	1	9	15	1	1	114	3	119	3	11	111	7	132	280	1,074
AM PEAK	0	30	2	29	61	0	21	1	33	55	3	8	453	18	482	16	63	429	14	522	1,120	**1,120**
PHF		0.60	0.50	0.73	0.80		0.70	0.25	0.63	0.69		0.50	0.95	0.90	0.96		0.61	0.92	0.50	0.91	0.95	MAX


SUMMIT
IRONWOOD 92 PARTNERS
IRONWOOD LANE and 92nd STREET - THURSDAY 04/22/2021
15-MINUTE TRAFFIC VOLUMES - 12:00 AM to 12:00 PM
15-MINUTE VOLUME (vehicles)
600
500
400
300
200
100
0
0
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
BEGINNING OF 15-MINUTE PERIOD
EASTBOUND
WESTBOUND
NORTHBOUND
SOUTHBOUND
ENTIRE INTERSECTION


SUMMIT
IRONWOOD 92 PARTNERS
IRONWOOD LANE and 92nd STREET - THURSDAY 04/22/2021
15-MINUTE TRAFFIC VOLUMES - 12:00 PM to 12:00 AM
15-MINUTE VOLUME (vehicles)
600
500
400
300
200
100
0
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
BEGINNING OF 15-MINUTE PERIOD
EASTBOUND
WESTBOUND
NORTHBOUND
SOUTHBOUND
ENTIRE INTERSECTION

IRONWOOD 92 PARTNERS

IRONWOOD LANE and 92nd STREET - THURSDAY 04/22/2021

EXISTING NOON TO MIDNIGHT 12-HOUR TURNING MOVEMENT COUNTS

BEGIN	IRONWOOD LANE EASTBOUND					IRONWOOD LANE WESTBOUND					92nd STREET NORTHBOUND					92nd STREET SOUTHBOUND					ALL	60 MIN.
TIME	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	TOTAL	TOTAL
12:00 PM	0	9	0	7	16	0	7	0	13	20	1	1	119	5	126	1	15	116	1	133	295	1,107
12:15 PM	0	5	0	2	7	0	5	0	6	11	0	4	121	1	126	0	10	87	5	102	246	1,054
12:30 PM	0	6	0	9	15	0	4	0	2	6	0	1	101	3	105	6	15	99	7	127	253	1,071
12:45 PM	0	2	1	4	7	0	6	0	3	9	2	9	135	7	153	4	22	114	4	144	313	1,071
1:00 PM	0	5	0	6	11	0	1	0	8	9	0	4	100	4	108	6	17	85	6	114	242	1,038
1:15 PM	0	5	2	2	9	0	2	0	5	7	0	0	105	9	114	6	17	104	6	133	263	1,005
1:30 PM	0	3	0	7	10	0	4	0	6	10	1	5	106	10	122	4	16	86	5	111	253	983
1:45 PM	0	3	0	4	7	0	3	1	4	8	0	6	130	6	142	3	18	95	7	123	280	994
2:00 PM	0	8	0	4	12	0	4	1	6	11	1	3	90	1	95	2	6	81	2	91	209	1,012
2:15 PM	0	3	1	5	9	0	4	0	8	12	0	0	95	6	101	7	10	93	9	119	241	1,072
2:30 PM	0	12	0	8	20	0	3	0	5	8	0	2	108	4	114	2	19	96	5	122	264	1,144
2:45 PM	0	6	1	12	19	0	6	0	9	15	0	6	113	8	127	7	16	102	12	137	298	1,154
3:00 PM	0	6	0	10	16	0	7	0	8	15	0	2	115	2	119	1	13	100	5	119	269	1,122
3:15 PM	**0**	**3**	**0**	**9**	**12**	**0**	**3**	**0**	**9**	**12**	**0**	**3**	**154**	**4**	**161**	**5**	**17**	**105**	**1**	**128**	**313**	**1,168**
3:30 PM	0	12	0	10	22	0	5	0	5	10	0	3	115	3	121	3	17	94	7	121	274	1,089
3:45 PM	0	8	1	3	12	0	5	0	7	12	0	2	115	2	119	2	11	107	3	123	266	1,065
4:00 PM	0	5	0	13	18	0	7	0	10	17	1	1	143	5	150	5	3	118	4	130	**315**	1,026
4:15 PM	0	14	0	8	22	0	2	0	6	8	0	2	107	3	112	2	4	82	4	92	234	984
4:30 PM	0	8	0	7	15	0	7	0	10	17	1	0	106	1	108	5	4	97	4	110	250	985
4:45 PM	0	7	0	6	13	0	7	0	6	13	0	1	108	1	110	3	3	83	2	91	227	946
5:00 PM	0	9	0	8	17	0	15	0	2	17	0	1	125	0	126	1	3	105	4	113	273	897
5:15 PM	0	3	0	5	8	0	4	0	5	9	1	1	108	3	113	0	3	97	5	105	235	790
5:30 PM	0	6	0	2	8	0	5	0	6	11	1	0	105	1	107	1	1	78	5	85	211	769
5:45 PM	0	4	0	3	7	0	6	0	1	7	0	0	86	0	86	0	1	74	3	78	178	772

IRONWOOD 92 PARTNERS

IRONWOOD LANE and 92nd STREET - THURSDAY 04/22/2021

EXISTING NOON TO MIDNIGHT 12-HOUR TURNING MOVEMENT COUNTS

BEGIN	IRONWOOD LANE EASTBOUND					IRONWOOD LANE WESTBOUND					92nd STREET NORTHBOUND					92nd STREET SOUTHBOUND					ALL	60 MIN.
TIME	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	TOTAL	TOTAL
6:00 PM	0	2	0	1	3	0	3	0	2	5	0	0	92	0	92	0	2	63	1	66	166	724
6:15 PM	0	5	0	0	5	0	5	0	3	65	0	0	71	0	85	0	3	55	1	59	214	663
6:30 PM	0	2	0	3	5	0	0	0	0	88	0	1	71	0	74	0	0	45	2	47	214	545
6:45 PM	0	1	0	0	1	0	0	0	3	3	0	2	71	0	73	0	0	53	0	53	130	432
7:00 PM	0	1	0	0	1	0	0	0	2	2	0	0	51	0	51	0	0	51	0	51	105	388
7:15 PM	0	6	0	2	8	0	1	0	0	1	0	0	44	0	44	0	1	41	1	43	96	346
7:30 PM	0	9	0	3	12	0	0	0	0	0	0	0	44	0	44	0	0	45	0	45	101	309
7:45 PM	0	6	0	2	8	0	1	0	0	1	1	0	34	0	35	0	1	41	0	42	86	254
8:00 PM	0	7	0	1	8	0	0	0	0	0	0	0	29	0	29	0	1	25	0	26	63	205
8:15 PM	0	3	0	3	6	0	0	0	0	0	0	0	28	1	29	0	1	23	0	24	59	186
8:30 PM	0	0	0	2	2	0	0	0	1	1	0	0	24	0	24	0	0	19	0	19	46	162
8:45 PM	0	1	0	0	1	0	1	0	1	2	0	0	21	0	21	0	0	13	0	13	37	155
9:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	24	0	25	0	0	19	0	19	44	155
9:15 PM	0	0	0	1	1	0	0	0	0	0	0	0	17	0	17	0	0	17	0	17	35	130
9:30 PM	0	1	0	0	1	0	1	0	0	1	0	0	17	0	17	0	3	16	1	20	39	109
9:45 PM	0	3	0	0	3	0	0	0	1	1	0	0	12	0	12	0	0	21	0	21	37	88
10:00 PM	0	1	0	0	1	0	0	0	2	2	1	0	7	0	8	0	0	8	0	8	19	64
10:15 PM	0	0	0	0	0	0	1	0	1	2	0	0	6	0	6	0	1	5	0	6	14	52
10:30 PM	0	3	0	0	3	0	0	0	0	0	0	0	8	0	8	0	0	7	0	7	18	43
10:45 PM	0	0	0	1	1	0	1	0	0	1	0	0	6	0	6	0	0	5	0	5	13	36
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	4	0	4	7	34
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	3	0	3	5	
11:30 PM	0	3	0	2	5	0	0	0	0	0	0	0	1	0	1	0	2	3	0	5	11	
11:45 PM	0	0	0	0	0	0	2	0	1	3	0	0	4	0	4	0	2	2	0	4	11	MAX
PM PEAK	0	28	1	35	64	0	20	0	31	51	1	9	527	14	551	15	48	424	15	502	1,168	**1,168**
PHF		0.55	0.25	0.67	0.73		0.65	0.00	0.78	0.75		0.63	0.86	0.70	0.86		0.70	0.90	0.54	0.97	0.93	

IRONWOOD 92 PARTNERS

MOUNTAIN VIEW ROAD and 92nd STREET - THURSDAY 04/22/2021

EXISTING MIDNIGHT TO NOON 12-HOUR TURNING MOVEMENT COUNTS

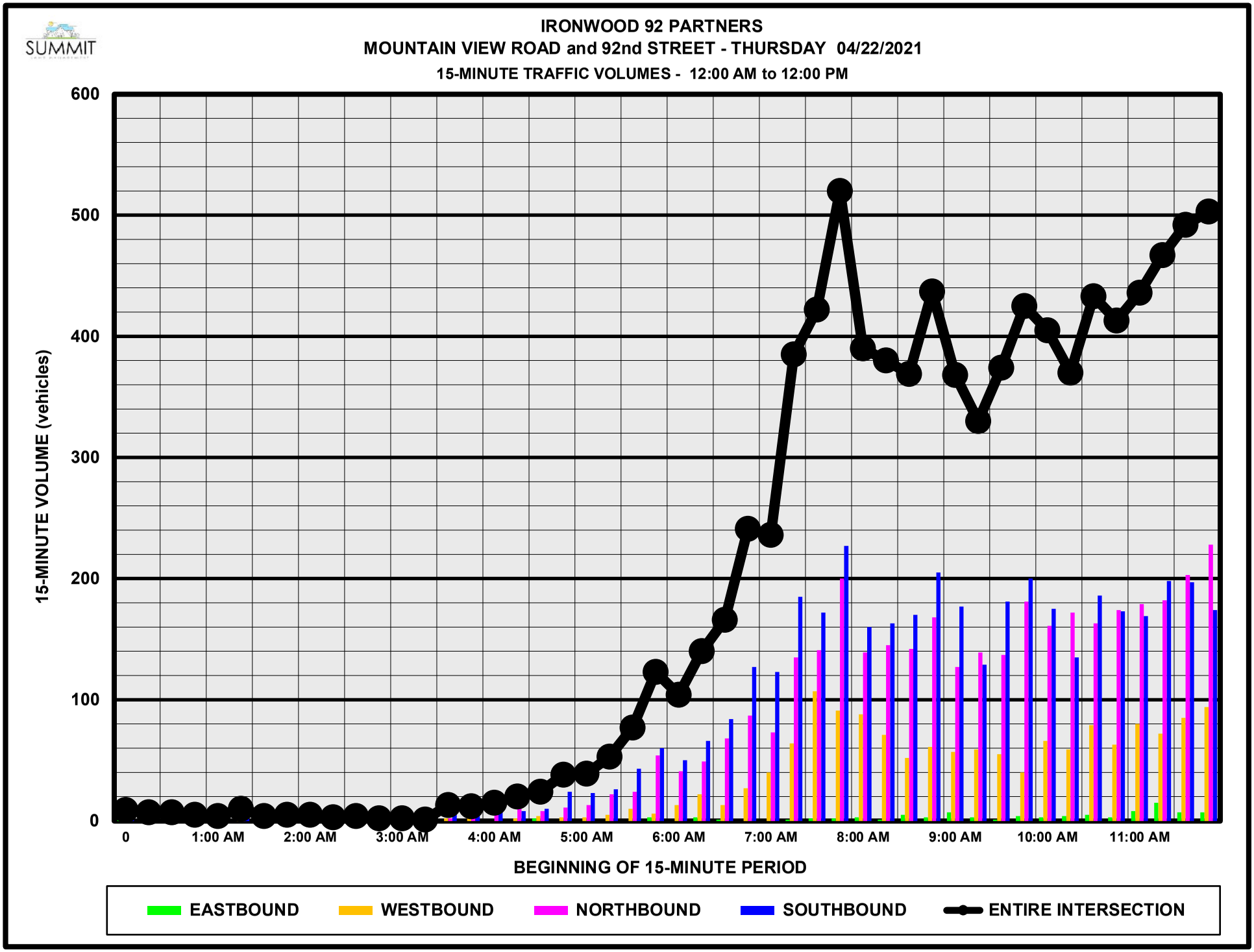
BEGIN TIME	MOUNTAIN VIEW ROAD EASTBOUND					MOUNTAIN VIEW ROAD WESTBOUND					92nd STREET MountainViewBOUND					92nd STREET SOUTHBOUND					ALL TOTAL	60 MIN. TOTAL
	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL		
12:00 AM	0	0	0	1	1	0	0	0	1	1	0	0	2	2	4	0	1	3	0	4	10	22
12:15 AM	0	0	0	0	0	0	1	0	0	1	0	1	1	2	4	0	0	1	0	1	6	16
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	2	18
12:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	2	2	0	0	0	0	0	4	16
1:00 AM	0	0	0	1	1	0	1	0	1	2	0	0	0	1	1	0	0	0	0	0	4	13
1:15 AM	0	0	0	1	1	0	0	0	3	3	0	0	1	2	3	0	0	1	0	1	8	13
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	8
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	3	0	3	4	7
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	2	6
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	5
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
3:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	3	17
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	19
3:30 AM	0	0	1	0	1	0	2	0	1	3	1	0	0	0	1	0	1	0	0	1	6	23
3:45 AM	0	0	0	0	0	0	0	0	1	1	0	2	1	2	5	0	1	0	0	1	7	29
4:00 AM	0	0	0	0	0	0	1	0	0	1	0	0	1	1	2	0	0	2	0	2	5	39
4:15 AM	0	0	0	0	0	0	0	0	1	1	0	2	2	0	4	0	0	0	0	0	5	52
4:30 AM	0	0	0	0	0	0	0	1	2	3	0	1	3	0	4	0	3	2	0	5	12	75
4:45 AM	0	0	0	0	0	0	1	0	5	6	0	1	6	1	8	0	1	2	0	3	17	115
5:00 AM	0	0	0	1	1	0	1	0	3	4	0	2	7	0	9	0	2	2	0	4	18	163
5:15 AM	0	0	0	0	0	0	1	0	4	5	0	7	3	3	13	0	5	5	0	10	28	218
5:30 AM	0	0	1	0	1	0	3	0	12	15	0	6	13	0	19	0	4	13	0	17	52	289
5:45 AM	0	0	0	0	0	0	5	1	9	15	0	11	19	2	32	0	5	12	1	18	65	371

IRONWOOD 92 PARTNERS

MOUNTAIN VIEW ROAD and 92nd STREET - THURSDAY 04/22/2021

EXISTING MIDNIGHT TO NOON 12-HOUR TURNING MOVEMENT COUNTS

BEGIN	MOUNTAIN VIEW ROAD EASTBOUND					MOUNTAIN VIEW ROAD WESTBOUND					92nd STREET MountainViewBOUND					92nd STREET SOUTHBOUND					ALL	60 MIN.
TIME	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	TOTAL	TOTAL
6:00 AM	0	0	1	2	3	0	3	1	7	11	1	11	25	5	42	0	2	15	0	17	73	480
6:15 AM	0	1	0	1	2	0	7	0	13	20	0	11	27	12	50	0	12	14	1	27	99	564
6:30 AM	0	0	1	1	2	0	10	2	15	27	0	17	35	14	66	0	15	23	1	39	134	688
6:45 AM	0	0	0	1	1	0	9	2	10	21	1	15	60	29	105	0	18	28	1	47	174	852
7:00 AM	0	0	1	3	4	0	13	1	17	31	0	9	43	25	77	0	13	30	2	45	157	1,026
7:15 AM	0	4	1	8	13	0	20	1	22	43	1	17	62	30	110	1	19	35	2	57	223	1,158
7:30 AM	0	3	1	14	18	0	24	2	32	58	0	18	80	34	132	0	26	63	1	90	298	1,274
7:45 AM	0	4	1	8	13	0	34	3	24	61	0	11	113	47	171	1	31	68	3	103	348	1,310
8:00 AM	0	2	1	6	9	0	36	2	28	66	1	9	74	40	124	0	29	60	1	90	289	1,293
8:15 AM	0	1	3	3	7	0	35	1	25	61	0	9	94	50	153	2	32	79	5	118	339	1,285
8:30 AM	0	6	1	3	10	0	47	2	37	86	1	13	77	47	138	0	23	76	1	100	334	1,275
8:45 AM	0	1	1	9	11	0	42	3	36	81	0	9	83	44	136	0	30	72	1	103	331	1,238
9:00 AM	0	0	1	3	4	0	37	2	31	70	1	5	80	32	118	1	23	65	0	89	281	1,249
9:15 AM	0	1	0	2	3	0	42	5	34	81	0	6	78	52	136	1	27	81	0	109	329	1,252
9:30 AM	0	3	2	2	7	0	44	2	35	81	2	2	66	47	117	0	25	64	3	92	297	1,217
9:45 AM	0	0	1	2	3	0	53	2	30	85	0	3	108	50	161	0	19	73	1	93	342	1,259
10:00 AM	0	2	2	2	6	0	45	3	36	84	0	0	57	39	96	4	20	74	0	98	284	1,257
10:15 AM	0	1	0	1	2	0	47	3	20	70	0	4	78	44	126	2	24	70	0	96	294	1,330
10:30 AM	0	3	3	2	8	0	53	6	37	96	0	1	71	50	122	2	33	77	1	113	339	1,397
10:45 AM	0	2	1	5	8	0	51	2	37	90	1	5	78	45	129	0	31	80	2	113	340	1,400
11:00 AM	0	2	2	3	7	0	56	2	41	99	1	3	83	52	139	1	23	87	1	112	357	1,424
11:15 AM	0	1	0	6	7	0	51	4	36	91	2	3	83	58	146	0	34	83	0	117	361	1,419
11:30 AM	0	0	0	2	2	0	54	0	41	95	3	5	75	57	140	1	32	72	0	105	342	1,423
11:45 AM	**0**	**2**	**0**	**4**	**6**	**0**	**50**	**1**	**34**	**85**	**4**	**1**	**86**	**52**	**143**	**1**	**21**	**107**	**1**	**130**	**364**	**1,453**
AM PEAK	0	3	3	18	24	0	226	7	129	362	4	12	340	243	599	1	97	367	3	468	1,453	**1,453**
PHF		0.30	0.75	0.64	0.75		0.76	0.29	0.90	0.91		0.42	0.96	0.88	0.92		0.73	0.86	0.38	0.90	0.98	MAX


SUMMIT
IRONWOOD 92 PARTNERS
MOUNTAIN VIEW ROAD and 92nd STREET - THURSDAY 04/22/2021
15-MINUTE TRAFFIC VOLUMES - 12:00 AM to 12:00 PM
15-MINUTE VOLUME (vehicles)
600
500
400
300
200
100
0
0
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
BEGINNING OF 15-MINUTE PERIOD
EASTBOUND
WESTBOUND
NORTHBOUND
SOUTHBOUND
ENTIRE INTERSECTION

IRONWOOD 92 PARTNERS

MOUNTAIN VIEW ROAD and 92nd STREET - THURSDAY 04/22/2021

EXISTING NOON TO MIDNIGHT 12-HOUR TURNING MOVEMENT COUNTS

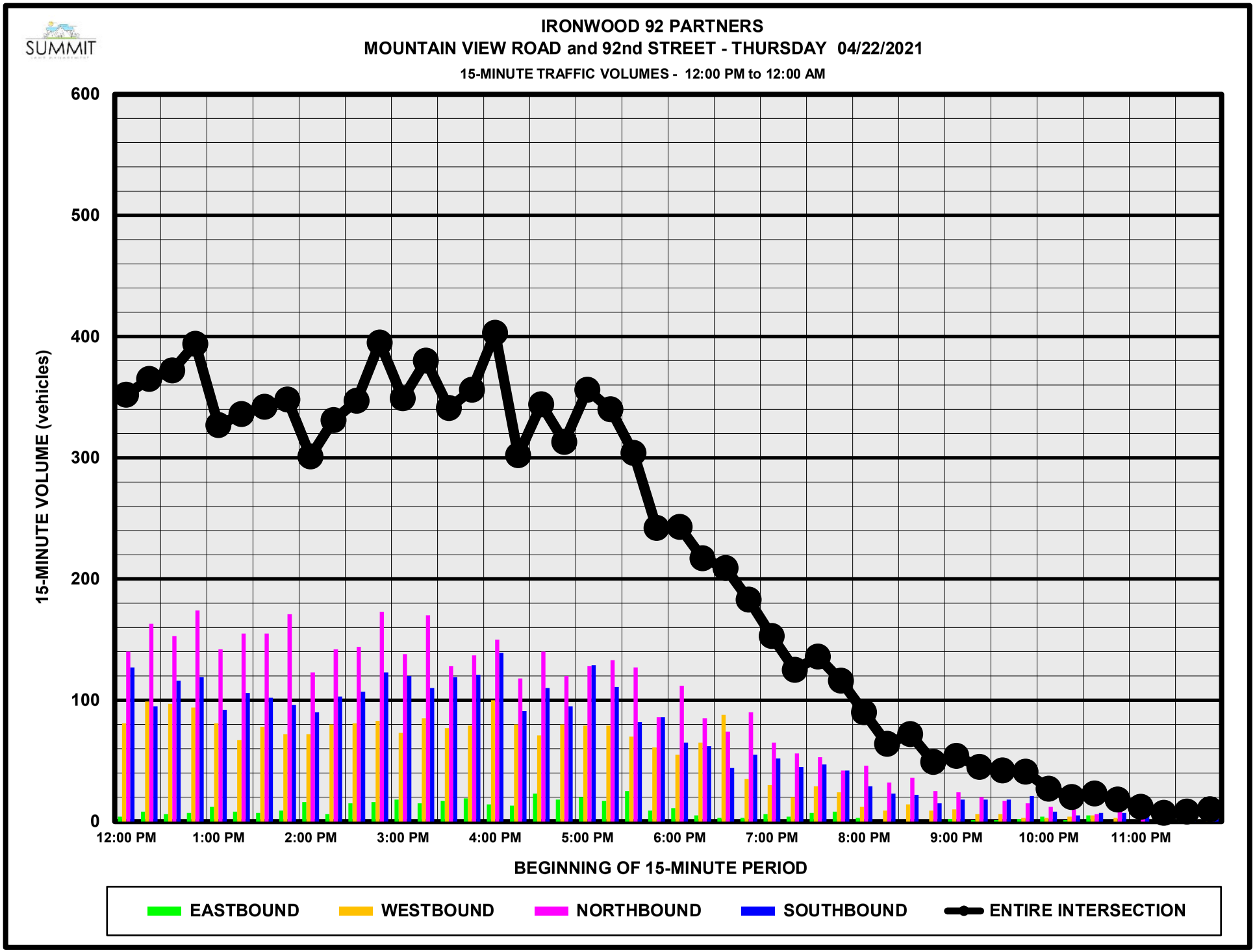
BEGIN	MOUNTAIN VIEW ROAD EASTBOUND					MOUNTAIN VIEW ROAD WESTBOUND					92nd STREET MountainViewBOUND					92nd STREET SOUTHBOUND					ALL	60 MIN.
TIME	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	TOTAL	TOTAL
12:00 PM	**0**	**0**	**1**	**3**	**4**	**0**	**45**	**0**	**36**	**81**	**0**	**1**	**83**	**56**	**140**	**0**	**32**	**95**	**0**	**127**	**352**	**1,483**
12:15 PM	0	0	1	7	8	0	57	6	36	99	0	5	89	69	163	0	19	74	2	95	365	1,458
12:30 PM	0	1	1	4	6	0	74	0	23	97	0	5	82	66	153	0	25	91	0	116	372	1,429
12:45 PM	0	4	0	3	7	0	47	5	42	94	0	4	95	75	174	1	35	81	2	119	**394**	1,399
1:00 PM	0	3	1	8	12	0	56	1	24	81	0	6	79	57	142	0	25	66	1	92	327	1,353
1:15 PM	0	2	1	5	8	0	38	3	26	67	0	3	91	61	155	0	31	75	0	106	336	1,327
1:30 PM	0	2	1	4	7	0	47	1	30	78	0	2	84	69	155	2	28	71	1	102	342	1,322
1:45 PM	0	2	1	6	9	0	37	4	31	72	0	7	104	60	171	0	34	61	1	96	348	1,327
2:00 PM	0	4	2	10	16	0	48	0	24	72	0	0	68	55	123	0	23	67	0	90	301	1,374
2:15 PM	0	0	1	5	6	0	53	1	26	80	0	8	78	56	142	2	19	81	1	103	331	1,422
2:30 PM	0	5	1	9	15	0	45	1	35	81	0	5	75	64	144	2	28	77	0	107	347	1,471
2:45 PM	0	4	2	10	16	0	48	4	31	83	0	3	93	77	173	0	20	98	5	123	395	1,465
3:00 PM	0	5	3	10	18	0	41	2	30	73	0	0	86	52	138	0	33	85	2	120	349	1,426
3:15 PM	0	6	1	8	15	0	46	1	38	85	0	3	107	60	170	0	32	76	2	110	380	1,480
3:30 PM	0	1	6	10	17	0	39	1	37	77	0	4	80	44	128	0	24	93	2	119	341	1,402
3:45 PM	0	4	2	13	19	0	44	3	32	79	0	2	78	57	137	0	31	89	1	121	356	1,405
4:00 PM	0	4	0	10	14	0	58	0	42	100	0	4	110	36	150	0	39	100	0	139	403	1,362
4:15 PM	0	2	2	9	13	0	50	3	27	80	0	2	68	48	118	1	23	66	1	91	302	1,315
4:30 PM	0	3	4	16	23	0	42	2	27	71	0	5	79	56	140	0	16	92	2	110	344	1,353
4:45 PM	0	5	1	12	18	0	46	2	32	80	0	7	76	37	120	0	21	72	2	95	313	1,313
5:00 PM	0	7	0	13	20	0	47	0	32	79	0	2	77	49	128	0	27	102	0	129	356	1,242
5:15 PM	0	3	4	10	17	0	44	1	34	79	0	4	77	52	133	0	24	86	1	111	340	1,129
5:30 PM	0	7	1	17	25	0	42	0	28	70	0	3	76	48	127	0	20	60	2	82	304	1,006
5:45 PM	0	5	1	3	9	0	40	1	20	61	0	5	51	30	86	0	24	61	1	86	242	911

IRONWOOD 92 PARTNERS

MOUNTAIN VIEW ROAD and 92nd STREET - THURSDAY 04/22/2021

EXISTING NOON TO MIDNIGHT 12-HOUR TURNING MOVEMENT COUNTS

BEGIN	MOUNTAIN VIEW ROAD EASTBOUND					MOUNTAIN VIEW ROAD WESTBOUND					92nd STREET MountainViewBOUND					92nd STREET SOUTHBOUND					ALL	60 MIN.
TIME	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	U	LEFT	THRU	RIGHT	TOTAL	TOTAL	TOTAL
6:00 PM	0	2	1	8	11	0	33	0	22	55	0	1	66	45	112	0	18	47	0	65	243	852
6:15 PM	0	0	0	5	5	0	19	1	21	65	0	1	50	37	85	0	14	46	2	62	217	762
6:30 PM	0	0	0	3	3	0	21	0	12	88	0	2	65	30	74	0	19	25	0	44	209	670
6:45 PM	0	0	0	3	3	0	17	0	18	35	0	2	45	43	90	0	10	45	0	55	183	597
7:00 PM	0	0	0	6	6	0	15	1	14	30	0	0	41	24	65	0	19	33	0	52	153	530
7:15 PM	0	0	1	3	4	0	13	0	7	20	0	0	35	21	56	0	14	31	0	45	125	467
7:30 PM	0	0	0	7	7	0	15	0	14	29	1	0	29	23	53	0	9	38	0	47	136	406
7:45 PM	0	0	1	7	8	0	15	1	8	24	0	0	27	15	42	0	9	33	0	42	116	342
8:00 PM	0	0	0	3	3	0	6	0	6	12	0	0	27	19	46	0	6	23	0	29	90	275
8:15 PM	0	0	0	0	0	0	4	0	5	9	0	0	17	15	32	0	7	16	0	23	64	239
8:30 PM	0	0	0	0	0	0	8	1	5	14	0	0	20	16	36	0	10	12	0	22	72	220
8:45 PM	0	0	0	0	0	0	3	0	6	9	0	0	16	9	25	0	5	10	0	15	49	190
9:00 PM	0	1	0	1	2	0	4	0	6	10	0	0	16	8	24	0	4	14	0	18	54	182
9:15 PM	0	0	0	1	1	0	2	0	4	6	0	0	13	7	20	0	9	8	1	18	45	155
9:30 PM	0	0	0	1	1	0	3	0	3	6	0	0	12	5	17	0	2	16	0	18	42	130
9:45 PM	0	0	0	2	2	0	1	0	2	3	0	0	9	6	15	0	10	11	0	21	41	111
10:00 PM	0	0	0	4	4	0	2	0	1	3	0	0	4	8	12	0	4	4	0	8	27	88
10:15 PM	0	0	0	1	1	0	3	0	1	4	0	0	5	5	10	0	3	2	0	5	20	73
10:30 PM	0	1	0	4	5	0	3	0	2	5	0	0	5	1	6	0	1	5	1	7	23	60
10:45 PM	0	0	0	0	0	0	1	1	1	3	0	0	4	4	8	0	0	7	0	7	18	45
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	4	3	7	0	3	2	0	5	12	37
11:15 PM	0	0	0	0	0	0	0	0	1	1	0	0	1	1	2	0	1	3	0	4	7	
11:30 PM	0	0	0	2	2	0	0	0	1	1	0	0	0	1	1	0	3	1	0	4	8	
11:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	3	2	5	0	1	3	0	4	10	MAX
PM PEAK	0	5	3	17	25	0	223	11	137	371	0	15	349	266	630	1	111	341	4	457	1,483	**1,483**
PHF		0.28	0.75	0.61	0.78		0.75	0.46	0.82	0.94		0.68	0.92	0.89	0.91		0.77	0.90	0.50	0.90	0.94	


SUMMIT
IRONWOOD 92 PARTNERS
MOUNTAIN VIEW ROAD and 92nd STREET - THURSDAY 04/22/2021
15-MINUTE TRAFFIC VOLUMES - 12:00 PM to 12:00 AM
15-MINUTE VOLUME (vehicles)
600
500
400
300
200
100
0
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
BEGINNING OF 15-MINUTE PERIOD
EASTBOUND
WESTBOUND
NORTHBOUND
SOUTHBOUND
ENTIRE INTERSECTION

SUMMIT
LAND MANAGEMENT

Appendix B

Level-of-Service without Mercado Courtyards

SUMMIT
LAND MANAGEMENT

Appendix B.1

Existing 2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	1268	238	72	1458	84	449	253	111	163	210	202
Future Volume (veh/h)	190	1268	238	72	1458	84	449	253	111	163	210	202
Initial Q (Qb), 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
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	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	226	1378	270	114	1585	108	522	275	144	199	273	232
Peak Hour Factor	0.84	0.92	0.88	0.63	0.92	0.78	0.86	0.92	0.77	0.82	0.77	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	214	2260	702	178	2207	685	303	684	305	267	648	289
Arrive On Green	0.06	0.44	0.44	0.05	0.43	0.43	0.09	0.19	0.19	0.08	0.18	0.18
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	226	1378	270	114	1585	108	522	275	144	199	273	232
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	6.0	20.0	11.1	3.1	24.8	4.0	8.5	6.6	7.8	5.5	6.6	13.6
Cycle Q Clear(g_c), s	6.0	20.0	11.1	3.1	24.8	4.0	8.5	6.6	7.8	5.5	6.6	13.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	214	2260	702	178	2207	685	303	684	305	267	648	289
V/C Ratio(X)	1.06	0.61	0.38	0.64	0.72	0.16	1.72	0.40	0.47	0.74	0.42	0.80
Avail Cap(c_a), veh/h	214	2753	854	321	2910	903	303	1000	446	303	1000	446
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	45.5	20.6	18.2	45.1	22.7	16.8	44.3	34.3	34.8	43.8	35.1	38.0
Incr Delay (d2), s/veh	77.5	0.3	0.3	3.8	0.6	0.1	339.4	0.4	1.1	8.5	0.4	5.9
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(50%),veh/ln	4.9	7.7	4.0	1.4	9.6	1.5	17.9	2.9	3.1	2.7	2.9	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	123.1	20.9	18.5	48.9	23.3	16.9	383.7	34.7	35.9	52.3	35.6	43.9
LnGrp LOS	F	C	B	D	C	B	F	C	D	D	D	D
Approach Vol, veh/h		1874			1807			941			704	
Approach Delay, s/veh		32.9			24.5			228.5			43.0	
Approach LOS		C			C			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	24.4	11.0	48.6	14.0	23.4	12.0	47.6
Change Period (Y+Rc), s	5.5	* 5.7	6.0	5.7	5.5	* 5.7	6.0	5.7
Max Green Setting (Gmax), s	8.5	* 27	9.0	52.3	8.5	* 27	6.0	55.3
Max Q Clear Time (g_c+I1), s	7.5	9.8	5.1	22.0	10.5	15.6	8.0	26.8
Green Ext Time (p_c), s	0.1	2.1	0.1	14.1	0.0	2.1	0.0	15.1

Intersection Summary	
HCM 6th Ctrl Delay	65.9
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	1419	281	63	1616	119	416	283	137	181	245	186
Future Volume (veh/h)	196	1419	281	63	1616	119	416	283	137	181	245	186
Initial Q (Qb), 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
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	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	213	1542	331	111	1776	132	452	358	171	206	302	209
Peak Hour Factor	0.92	0.92	0.85	0.57	0.91	0.90	0.92	0.79	0.80	0.88	0.81	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	284	2258	701	169	2089	648	540	758	338	272	481	215
Arrive On Green	0.08	0.44	0.44	0.05	0.41	0.41	0.16	0.21	0.21	0.08	0.14	0.14
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	213	1542	331	111	1776	132	452	358	171	206	302	209
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	6.4	25.5	15.5	3.3	33.3	5.7	13.4	9.3	10.0	6.2	8.5	13.9
Cycle Q Clear(g_c), s	6.4	25.5	15.5	3.3	33.3	5.7	13.4	9.3	10.0	6.2	8.5	13.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	284	2258	701	169	2089	648	540	758	338	272	481	215
V/C Ratio(X)	0.75	0.68	0.47	0.66	0.85	0.20	0.84	0.47	0.51	0.76	0.63	0.97
Avail Cap(c_a), veh/h	458	2530	785	229	2192	680	769	919	410	344	481	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(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	47.4	23.5	20.7	49.3	28.3	20.1	43.2	36.3	36.6	47.6	43.1	45.4
Incr Delay (d2), s/veh	4.0	0.7	0.5	4.3	3.3	0.2	5.6	0.5	1.2	7.2	2.6	53.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	10.0	5.7	1.5	13.7	2.1	6.1	4.1	4.0	2.9	3.9	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.3	24.2	21.2	53.6	31.5	20.3	48.8	36.8	37.8	54.9	45.7	99.0
LnGrp LOS	D	C	C	D	C	C	D	D	D	D	D	F
Approach Vol, veh/h		2086			2019			981			717	
Approach Delay, s/veh		26.5			32.0			42.5			63.9	
Approach LOS		C			C			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.8	28.2	11.2	52.4	22.0	20.0	14.7	48.9
Change Period (Y+Rc), s	5.5	* 5.7	6.0	5.7	5.5	* 5.7	6.0	5.7
Max Green Setting (Gmax), s	10.5	* 27	7.0	52.3	23.5	* 14	14.0	45.3
Max Q Clear Time (g_c+I1), s	8.2	12.0	5.3	27.5	15.4	15.9	8.4	35.3
Green Ext Time (p_c), s	0.2	2.6	0.0	14.6	1.1	0.0	0.3	7.9

Intersection Summary	
HCM 6th Ctrl Delay	35.7
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection												
Int Delay, s/veh	10.1											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	6	29	34	3	180	30	556	82	161	373	62
Future Vol, veh/h	31	6	29	34	3	180	30	556	82	161	373	62
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	0	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	75	73	68	38	74	56	92	73	89	92	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	8	40	50	8	243	54	604	112	181	405	68

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1181	1591	203	1337	1603	358	473	0	0	716	0	0
Stage 1	767	767	-	768	768	-	-	-	-	-	-	-
Stage 2	414	824	-	569	835	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	145	106	804	111	105	638	1085	-	-	880	-	-
Stage 1	361	410	-	360	409	-	-	-	-	-	-	-
Stage 2	586	385	-	474	381	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	67	80	804	79	79	638	1085	-	-	880	-	-
Mov Cap-2 Maneuver	67	80	-	79	79	-	-	-	-	-	-	-
Stage 1	343	326	-	342	389	-	-	-	-	-	-	-
Stage 2	338	366	-	349	303	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	67.5	33.1	0.6	2.8
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1085	-	-	67	319	79	522	880	-	-
HCM Lane V/C Ratio	0.049	-	-	0.625	0.15	0.633	0.481	0.206	-	-
HCM Control Delay (s)	8.5	-	-	123.5	18.3	108.7	18.1	10.1	-	-
HCM Lane LOS	A	-	-	F	C	F	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	2.7	0.5	2.9	2.6	0.8	-	-

Intersection	
Int Delay, s/veh	8.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	3	36	37	1	173	17	682	76	122	385	27
Future Vol, veh/h	26	3	36	37	1	173	17	682	76	122	385	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	0	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	82	63	25	80	61	92	90	83	92	68
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	4	44	59	4	216	28	741	84	147	418	40

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1141	1593	209	1344	1591	413	458	0	0	825	0	0
Stage 1	712	712	-	839	839	-	-	-	-	-	-	-
Stage 2	429	881	-	505	752	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	156	106	797	110	106	588	1099	-	-	801	-	-
Stage 1	389	434	-	326	379	-	-	-	-	-	-	-
Stage 2	574	363	-	518	416	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	80	84	797	84	84	588	1099	-	-	801	-	-
Mov Cap-2 Maneuver	80	84	-	84	84	-	-	-	-	-	-	-
Stage 1	379	354	-	318	370	-	-	-	-	-	-	-
Stage 2	350	354	-	395	339	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	41.8	37.2	0.3	2.6
HCM LOS	E	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1099	-	-	80	466	84	530	801	-	-
HCM Lane V/C Ratio	0.025	-	-	0.433	0.103	0.699	0.416	0.184	-	-
HCM Control Delay (s)	8.4	-	-	80.7	13.6	114.6	16.5	10.5	-	-
HCM Lane LOS	A	-	-	F	B	F	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.8	0.3	3.4	2	0.7	-	-

Intersection	
Int Delay, s/veh	8.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	2	54	65	3	19	66	584	21	36	388	46
Future Vol, veh/h	62	2	54	65	3	19	66	584	21	36	388	46
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	0	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	69	50	90	92	75	79	70	92	58	58	90	82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	90	4	60	71	4	24	94	635	36	62	431	56

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1063	1414	216	1183	1452	336	487	0	0	671	0	0
Stage 1	555	555	-	841	841	-	-	-	-	-	-	-
Stage 2	508	859	-	342	611	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	177	136	789	145	129	660	1072	-	-	915	-	-
Stage 1	484	511	-	326	379	-	-	-	-	-	-	-
Stage 2	516	371	-	646	482	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	147	116	789	116	110	660	1072	-	-	915	-	-
Mov Cap-2 Maneuver	147	116	-	116	110	-	-	-	-	-	-	-
Stage 1	441	476	-	297	346	-	-	-	-	-	-	-
Stage 2	448	338	-	552	449	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	41.2	58.3	1.1	1
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1072	-	-	147	579	116	385	915	-	-
HCM Lane V/C Ratio	0.088	-	-	0.611	0.111	0.609	0.073	0.068	-	-
HCM Control Delay (s)	8.7	-	-	62	12	75.5	15.1	9.2	-	-
HCM Lane LOS	A	-	-	F	B	F	C	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	3.2	0.4	3	0.2	0.2	-	-

Intersection												
Int Delay, s/veh	5.5											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	57	2	48	33	2	15	41	686	7	51	404	38
Future Vol, veh/h	57	2	48	33	2	15	41	686	7	51	404	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	0	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	50	75	86	25	54	73	86	58	77	92	73
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	70	4	64	38	8	28	56	798	12	66	439	52

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1086	1493	220	1270	1539	405	491	0	0	810	0	0
Stage 1	571	571	-	916	916	-	-	-	-	-	-	-
Stage 2	515	922	-	354	623	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	171	122	784	125	115	595	1069	-	-	812	-	-
Stage 1	473	503	-	293	349	-	-	-	-	-	-	-
Stage 2	511	347	-	636	476	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	138	106	784	101	100	595	1069	-	-	812	-	-
Mov Cap-2 Maneuver	138	106	-	101	100	-	-	-	-	-	-	-
Stage 1	448	462	-	278	331	-	-	-	-	-	-	-
Stage 2	450	329	-	532	437	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	34.2	41	0.6	1.2
HCM LOS	D	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1069	-	-	138	570	101	282	812	-	-
HCM Lane V/C Ratio	0.053	-	-	0.51	0.119	0.38	0.127	0.082	-	-
HCM Control Delay (s)	8.6	-	-	55.5	12.2	61	19.6	9.8	-	-
HCM Lane LOS	A	-	-	F	B	F	C	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	2.4	0.4	1.5	0.4	0.3	-	-

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	2	29	21	1	33	11	453	18	79	429	14
Future Vol, veh/h	30	2	29	21	1	33	11	453	18	79	429	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	0	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	60	50	73	70	25	63	50	92	90	61	92	50
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	50	4	40	30	4	52	22	492	20	130	466	28

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1018	1282	233	1041	1300	256	494	0	0	512	0	0
Stage 1	726	726	-	546	546	-	-	-	-	-	-	-
Stage 2	292	556	-	495	754	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	191	164	769	184	160	743	1066	-	-	1050	-	-
Stage 1	382	428	-	490	516	-	-	-	-	-	-	-
Stage 2	692	511	-	525	415	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	155	141	769	152	137	743	1066	-	-	1050	-	-
Mov Cap-2 Maneuver	155	141	-	152	137	-	-	-	-	-	-	-
Stage 1	374	375	-	480	505	-	-	-	-	-	-	-
Stage 2	625	500	-	432	364	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	26.4	19.8	0.3	1.8
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1066	-	-	155	546	152	566	1050	-	-
HCM Lane V/C Ratio	0.021	-	-	0.323	0.08	0.197	0.1	0.123	-	-
HCM Control Delay (s)	8.4	-	-	38.9	12.2	34.4	12.1	8.9	-	-
HCM Lane LOS	A	-	-	E	B	D	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.3	0.3	0.7	0.3	0.4	-	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	1	35	20	0	31	10	527	14	63	424	15
Future Vol, veh/h	28	1	35	20	0	31	10	527	14	63	424	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	0	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	55	25	67	65	25	78	63	86	70	70	90	54
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	4	52	31	0	40	16	613	20	90	471	28

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	990	1316	236	1073	1334	317	499	0	0	633	0	0
Stage 1	651	651	-	655	655	-	-	-	-	-	-	-
Stage 2	339	665	-	418	679	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	201	156	766	175	153	679	1061	-	-	946	-	-
Stage 1	424	463	-	421	461	-	-	-	-	-	-	-
Stage 2	649	456	-	583	449	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	173	139	766	146	136	679	1061	-	-	946	-	-
Mov Cap-2 Maneuver	173	139	-	146	136	-	-	-	-	-	-	-
Stage 1	418	419	-	415	454	-	-	-	-	-	-	-
Stage 2	602	449	-	487	406	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.5	21.7	0.2	1.4
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1061	-	-	173	580	146	679	946	-	-
HCM Lane V/C Ratio	0.015	-	-	0.294	0.097	0.211	0.059	0.095	-	-
HCM Control Delay (s)	8.4	-	-	34.3	11.9	36.1	10.6	9.2	-	-
HCM Lane LOS	A	-	-	D	B	E	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.2	0.3	0.8	0.2	0.3	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	3	18	226	7	129	16	340	243	98	367	3
Future Volume (veh/h)	3	3	18	226	7	129	16	340	243	98	367	3
Initial Q (Qb), 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
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	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	10	4	28	297	24	143	38	370	276	134	427	8
Peak Hour Factor	0.30	0.75	0.64	0.76	0.29	0.90	0.42	0.92	0.88	0.73	0.86	0.38
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	299	54	375	423	62	368	624	2215	988	534	2215	988
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.62	0.62	0.62	0.62	0.62	0.62
Sat Flow, veh/h	1218	202	1414	1377	233	1388	954	3554	1585	785	3554	1585
Grp Volume(v), veh/h	10	0	32	297	0	167	38	370	276	134	427	8
Grp Sat Flow(s),veh/h/ln	1218	0	1616	1377	0	1621	954	1777	1585	785	1777	1585
Q Serve(g_s), s	0.6	0.0	1.4	18.9	0.0	7.7	1.6	4.0	7.3	7.9	4.7	0.2
Cycle Q Clear(g_c), s	8.3	0.0	1.4	20.2	0.0	7.7	6.3	4.0	7.3	11.9	4.7	0.2
Prop In Lane	1.00		0.88	1.00		0.86	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	299	0	428	423	0	430	624	2215	988	534	2215	988
V/C Ratio(X)	0.03	0.00	0.07	0.70	0.00	0.39	0.06	0.17	0.28	0.25	0.19	0.01
Avail Cap(c_a), veh/h	679	0	933	854	0	936	624	2215	988	534	2215	988
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.9	0.0	25.2	32.8	0.0	27.5	8.7	7.2	7.9	9.7	7.4	6.5
Incr Delay (d2), s/veh	0.0	0.0	0.1	2.1	0.0	0.6	0.2	0.2	0.7	1.1	0.2	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(50%),veh/ln	0.2	0.0	0.5	6.4	0.0	3.0	0.3	1.4	2.4	1.4	1.7	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.0	0.0	25.3	34.9	0.0	28.1	8.9	7.4	8.6	10.9	7.6	6.5
LnGrp LOS	C	A	C	C	A	C	A	A	A	B	A	A
Approach Vol, veh/h		42			464			684			569	
Approach Delay, s/veh		26.6			32.5			7.9			8.3	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		62.0		29.4		62.0		29.4				
Change Period (Y+Rc), s		5.0		* 5.2		5.0		* 5.2				
Max Green Setting (Gmax), s		57.0		* 53		57.0		* 53				
Max Q Clear Time (g_c+I1), s		9.3		10.3		13.9		22.2				
Green Ext Time (p_c), s		3.8		0.2		4.4		2.0				

Intersection Summary	
HCM 6th Ctrl Delay	15.0
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	3	17	223	11	137	15	349	266	112	341	4
Future Volume (veh/h)	5	3	17	223	11	137	15	349	266	112	341	4
Initial Q (Qb), 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
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	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	4	28	297	24	167	22	379	299	145	379	8
Peak Hour Factor	0.28	0.75	0.61	0.75	0.46	0.82	0.68	0.92	0.89	0.77	0.90	0.50
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	279	54	377	425	54	377	654	2211	986	518	2211	986
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.62	0.62	0.62	0.62	0.62	0.62
Sat Flow, veh/h	1192	202	1414	1377	203	1413	997	3554	1585	762	3554	1585
Grp Volume(v), veh/h	18	0	32	297	0	191	22	379	299	145	379	8
Grp Sat Flow(s),veh/h/ln	1192	0	1616	1377	0	1616	997	1777	1585	762	1777	1585
Q Serve(g_s), s	1.2	0.0	1.4	18.9	0.0	9.0	0.9	4.1	8.0	9.1	4.1	0.2
Cycle Q Clear(g_c), s	10.2	0.0	1.4	20.2	0.0	9.0	5.0	4.1	8.0	13.2	4.1	0.2
Prop In Lane	1.00		0.88	1.00		0.87	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	279	0	431	425	0	431	654	2211	986	518	2211	986
V/C Ratio(X)	0.06	0.00	0.07	0.70	0.00	0.44	0.03	0.17	0.30	0.28	0.17	0.01
Avail Cap(c_a), veh/h	648	0	931	852	0	931	654	2211	986	518	2211	986
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.2	0.0	25.1	32.7	0.0	28.0	8.4	7.3	8.1	10.1	7.3	6.6
Incr Delay (d2), s/veh	0.1	0.0	0.1	2.1	0.0	0.7	0.1	0.2	0.8	1.3	0.2	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(50%),veh/ln	0.3	0.0	0.5	6.4	0.0	3.5	0.2	1.4	2.6	1.6	1.5	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.3	0.0	25.2	34.8	0.0	28.7	8.5	7.5	8.9	11.5	7.5	6.6
LnGrp LOS	C	A	C	C	A	C	A	A	A	B	A	A
Approach Vol, veh/h		50			488			700			532	
Approach Delay, s/veh		27.8			32.4			8.1			8.6	
Approach LOS		C			C			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		62.0		29.6		62.0		29.6				
Change Period (Y+Rc), s		5.0		* 5.2		5.0		* 5.2				
Max Green Setting (Gmax), s		57.0		* 53		57.0		* 53				
Max Q Clear Time (g_c+I1), s		10.0		12.2		15.2		22.2				
Green Ext Time (p_c), s		3.9		0.2		4.1		2.2				

Intersection Summary	
HCM 6th Ctrl Delay	15.5
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

SUMMIT
LAND MANAGEMENT

Appendix B.2

Ambient 2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	1280	240	75	1470	85	450	255	110	165	210	205
Future Volume (veh/h)	190	1280	240	75	1470	85	450	255	110	165	210	205
Initial Q (Qb), 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
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	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	207	1391	261	82	1598	92	489	277	120	179	228	223
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	216	2309	717	160	2227	691	305	681	304	248	622	277
Arrive On Green	0.06	0.45	0.45	0.05	0.44	0.44	0.09	0.19	0.19	0.07	0.17	0.17
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	207	1391	261	82	1598	92	489	277	120	179	228	223
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	5.7	19.7	10.4	2.2	24.7	3.3	8.5	6.6	6.4	4.9	5.4	13.0
Cycle Q Clear(g_c), s	5.7	19.7	10.4	2.2	24.7	3.3	8.5	6.6	6.4	4.9	5.4	13.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	216	2309	717	160	2227	691	305	681	304	248	622	277
V/C Ratio(X)	0.96	0.60	0.36	0.51	0.72	0.13	1.60	0.41	0.40	0.72	0.37	0.80
Avail Cap(c_a), veh/h	216	2777	862	323	2936	912	305	1009	450	305	1009	450
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	45.0	19.8	17.3	44.8	22.3	16.2	43.8	34.1	34.0	43.7	35.0	38.1
Incr Delay (d2), s/veh	49.8	0.3	0.3	2.5	0.6	0.1	285.3	0.4	0.8	6.3	0.4	5.4
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(50%),veh/ln	3.9	7.5	3.7	1.0	9.6	1.2	15.7	2.8	2.5	2.3	2.4	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	94.8	20.1	17.6	47.4	22.8	16.3	329.1	34.5	34.8	50.0	35.3	43.5
LnGrp LOS	F	C	B	D	C	B	F	C	C	D	D	D
Approach Vol, veh/h		1859			1772			886			630	
Approach Delay, s/veh		28.0			23.6			197.1			42.4	
Approach LOS		C			C			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	24.1	10.4	49.2	14.0	22.5	12.0	47.6
Change Period (Y+Rc), s	5.5	* 5.7	6.0	5.7	5.5	* 5.7	6.0	5.7
Max Green Setting (Gmax), s	8.5	* 27	9.0	52.3	8.5	* 27	6.0	55.3
Max Q Clear Time (g_c+I1), s	6.9	8.6	4.2	21.7	10.5	15.0	7.7	26.7
Green Ext Time (p_c), s	0.1	2.0	0.1	14.2	0.0	1.8	0.0	15.2

Intersection Summary	
HCM 6th Ctrl Delay	57.4
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	195	1430	285	65	1630	120	420	285	140	180	245	185
Future Volume (veh/h)	195	1430	285	65	1630	120	420	285	140	180	245	185
Initial Q (Qb), 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
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	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	212	1554	310	71	1772	130	457	310	152	196	266	208
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	283	2292	711	143	2085	647	545	772	344	262	481	215
Arrive On Green	0.08	0.45	0.45	0.04	0.41	0.41	0.16	0.22	0.22	0.08	0.14	0.14
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	212	1554	310	71	1772	130	457	310	152	196	266	208
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	6.3	25.5	14.2	2.1	33.2	5.6	13.6	7.9	8.8	5.9	7.4	13.8
Cycle Q Clear(g_c), s	6.3	25.5	14.2	2.1	33.2	5.6	13.6	7.9	8.8	5.9	7.4	13.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	283	2292	711	143	2085	647	545	772	344	262	481	215
V/C Ratio(X)	0.75	0.68	0.44	0.50	0.85	0.20	0.84	0.40	0.44	0.75	0.55	0.97
Avail Cap(c_a), veh/h	458	2527	785	229	2189	680	769	918	410	343	481	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(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	47.4	23.1	20.0	49.6	28.3	20.1	43.2	35.5	35.8	47.8	42.7	45.5
Incr Delay (d2), s/veh	4.0	0.7	0.4	2.6	3.3	0.2	5.8	0.3	0.9	6.3	1.4	52.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	10.0	5.2	1.0	13.7	2.1	6.2	3.5	3.5	2.8	3.4	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.4	23.7	20.4	52.2	31.6	20.3	49.0	35.8	36.7	54.2	44.1	98.1
LnGrp LOS	D	C	C	D	C	C	D	D	D	D	D	F
Approach Vol, veh/h		2076			1973			919			670	
Approach Delay, s/veh		26.1			31.6			42.5			63.8	
Approach LOS		C			C			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.5	28.7	10.4	53.1	22.2	20.0	14.6	48.8
Change Period (Y+Rc), s	5.5	* 5.7	6.0	5.7	5.5	* 5.7	6.0	5.7
Max Green Setting (Gmax), s	10.5	* 27	7.0	52.3	23.5	* 14	14.0	45.3
Max Q Clear Time (g_c+I1), s	7.9	10.8	4.1	27.5	15.6	15.8	8.3	35.2
Green Ext Time (p_c), s	0.2	2.3	0.0	14.6	1.1	0.0	0.3	7.9

Intersection Summary	
HCM 6th Ctrl Delay	35.2
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection												
Int Delay, s/veh	6.2											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	5	30	35	5	180	30	560	85	160	375	60
Future Vol, veh/h	30	5	30	35	5	180	30	560	85	160	375	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	0	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	5	33	38	5	196	33	609	92	174	408	65

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1129	1523	204	1276	1542	351	473	0	0	701	0	0
Stage 1	756	756	-	721	721	-	-	-	-	-	-	-
Stage 2	373	767	-	555	821	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	159	117	803	124	114	645	1085	-	-	892	-	-
Stage 1	366	414	-	385	430	-	-	-	-	-	-	-
Stage 2	620	410	-	484	387	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	88	91	803	94	89	645	1085	-	-	892	-	-
Mov Cap-2 Maneuver	88	91	-	94	89	-	-	-	-	-	-	-
Stage 1	355	333	-	373	417	-	-	-	-	-	-	-
Stage 2	413	398	-	368	312	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	39.9	23.5	0.4	2.7
HCM LOS	E	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1085	-	-	88	379	94	552	892	-	-
HCM Lane V/C Ratio	0.03	-	-	0.371	0.1	0.405	0.364	0.195	-	-
HCM Control Delay (s)	8.4	-	-	68.2	15.6	67.2	15.2	10	-	-
HCM Lane LOS	A	-	-	F	C	F	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.5	0.3	1.6	1.7	0.7	-	-

Intersection												
Int Delay, s/veh	5.2											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	5	35	35	0	175	15	685	75	125	390	25
Future Vol, veh/h	25	5	35	35	0	175	15	685	75	125	390	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	0	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	5	38	38	0	190	16	745	82	136	424	27

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1101	1555	212	1305	1541	414	451	0	0	827	0	0
Stage 1	696	696	-	818	818	-	-	-	-	-	-	-
Stage 2	405	859	-	487	723	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	166	112	793	118	114	587	1106	-	-	800	-	-
Stage 1	398	441	-	336	388	-	-	-	-	-	-	-
Stage 2	593	371	-	531	429	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	96	92	793	92	93	587	1106	-	-	800	-	-
Mov Cap-2 Maneuver	96	92	-	92	93	-	-	-	-	-	-	-
Stage 1	392	366	-	331	383	-	-	-	-	-	-	-
Stage 2	395	366	-	413	356	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	31	23.2	0.2	2.4
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1106	-	-	96	406	92	587	800	-	-
HCM Lane V/C Ratio	0.015	-	-	0.283	0.107	0.414	0.324	0.17	-	-
HCM Control Delay (s)	8.3	-	-	56.7	14.9	69.3	14	10.4	-	-
HCM Lane LOS	A	-	-	F	B	F	B	B	-	-
HCM 95th %tile Q(veh)	0	-	-	1.1	0.4	1.7	1.4	0.6	-	-

Intersection												
Int Delay, s/veh	5.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	60	0	55	65	5	20	65	590	20	35	390	45
Future Vol, veh/h	60	0	55	65	5	20	65	590	20	35	390	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	0	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	65	0	60	71	5	22	71	641	22	38	424	49

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	965	1305	212	1082	1343	332	473	0	0	663	0	0
Stage 1	500	500	-	794	794	-	-	-	-	-	-	-
Stage 2	465	805	-	288	549	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	209	159	793	172	151	664	1085	-	-	922	-	-
Stage 1	521	541	-	348	398	-	-	-	-	-	-	-
Stage 2	547	393	-	695	515	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	180	143	793	146	135	664	1085	-	-	922	-	-
Mov Cap-2 Maneuver	180	143	-	146	135	-	-	-	-	-	-	-
Stage 1	487	519	-	325	372	-	-	-	-	-	-	-
Stage 2	487	367	-	616	494	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.5	41	0.8	0.7
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1085	-	-	180	793	146	372	922	-	-
HCM Lane V/C Ratio	0.065	-	-	0.362	0.075	0.484	0.073	0.041	-	-
HCM Control Delay (s)	8.5	-	-	35.9	9.9	50.8	15.4	9.1	-	-
HCM Lane LOS	A	-	-	E	A	F	C	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1.5	0.2	2.3	0.2	0.1	-	-

Intersection												
Int Delay, s/veh	3.7											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	55	0	50	35	0	15	40	690	5	50	405	40
Future Vol, veh/h	55	0	50	35	0	15	40	690	5	50	405	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	0	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	60	0	54	38	0	16	43	750	5	54	440	43

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1009	1389	220	1167	1430	378	483	0	0	755	0	0
Stage 1	548	548	-	839	839	-	-	-	-	-	-	-
Stage 2	461	841	-	328	591	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	194	141	784	149	133	620	1076	-	-	851	-	-
Stage 1	488	515	-	326	379	-	-	-	-	-	-	-
Stage 2	550	379	-	659	493	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	174	127	784	128	120	620	1076	-	-	851	-	-
Mov Cap-2 Maneuver	174	127	-	128	120	-	-	-	-	-	-	-
Stage 1	468	483	-	313	364	-	-	-	-	-	-	-
Stage 2	514	364	-	574	462	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.6	34.5	0.5	1
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1076	-	-	174	784	128	620	851	-	-
HCM Lane V/C Ratio	0.04	-	-	0.344	0.069	0.297	0.026	0.064	-	-
HCM Control Delay (s)	8.5	-	-	36.1	9.9	44.6	11	9.5	-	-
HCM Lane LOS	A	-	-	E	A	E	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.4	0.2	1.2	0.1	0.2	-	-

Intersection												
Int Delay, s/veh	2.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	0	30	20	0	35	10	455	20	80	430	15
Future Vol, veh/h	30	0	30	20	0	35	10	455	20	80	430	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	0	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	0	33	22	0	38	11	495	22	87	467	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	911	1180	234	936	1185	259	483	0	0	517	0	0
Stage 1	641	641	-	528	528	-	-	-	-	-	-	-
Stage 2	270	539	-	408	657	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	229	189	768	220	188	740	1076	-	-	1045	-	-
Stage 1	430	468	-	502	526	-	-	-	-	-	-	-
Stage 2	713	520	-	591	460	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	202	172	768	196	171	740	1076	-	-	1045	-	-
Mov Cap-2 Maneuver	202	172	-	196	171	-	-	-	-	-	-	-
Stage 1	426	429	-	497	521	-	-	-	-	-	-	-
Stage 2	669	515	-	519	422	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.1	15.7	0.2	1.3
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1076	-	-	202	768	196	740	1045	-	-
HCM Lane V/C Ratio	0.01	-	-	0.161	0.042	0.111	0.051	0.083	-	-
HCM Control Delay (s)	8.4	-	-	26.2	9.9	25.6	10.1	8.8	-	-
HCM Lane LOS	A	-	-	D	A	D	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0.1	0.4	0.2	0.3	-	-

Intersection												
Int Delay, s/veh	2.3											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	0	35	20	0	30	10	530	15	65	425	15
Future Vol, veh/h	30	0	35	20	0	30	10	530	15	65	425	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	0	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	0	38	22	0	33	11	576	16	71	462	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	914	1218	231	979	1226	296	478	0	0	592	0	0
Stage 1	604	604	-	606	606	-	-	-	-	-	-	-
Stage 2	310	614	-	373	620	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	228	179	771	204	177	700	1081	-	-	980	-	-
Stage 1	452	486	-	451	485	-	-	-	-	-	-	-
Stage 2	675	481	-	620	478	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	204	165	771	182	163	700	1081	-	-	980	-	-
Mov Cap-2 Maneuver	204	165	-	182	163	-	-	-	-	-	-	-
Stage 1	447	451	-	446	480	-	-	-	-	-	-	-
Stage 2	637	476	-	547	444	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.3	17.2	0.2	1.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1081	-	-	204	771	182	700	980	-	-
HCM Lane V/C Ratio	0.01	-	-	0.16	0.049	0.119	0.047	0.072	-	-
HCM Control Delay (s)	8.4	-	-	26	9.9	27.4	10.4	9	-	-
HCM Lane LOS	A	-	-	D	A	D	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0.2	0.4	0.1	0.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	20	230	5	130	15	345	245	100	370	5
Future Volume (veh/h)	5	5	20	230	5	130	15	345	245	100	370	5
Initial Q (Qb), 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
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	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	5	22	250	5	141	16	375	266	109	402	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	270	69	304	381	12	352	680	2325	1037	566	2325	1037
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.65	0.65	0.65	0.65	0.65	0.65
Sat Flow, veh/h	1242	302	1329	1383	55	1539	978	3554	1585	788	3554	1585
Grp Volume(v), veh/h	5	0	27	250	0	146	16	375	266	109	402	5
Grp Sat Flow(s),veh/h/ln	1242	0	1631	1383	0	1593	978	1777	1585	788	1777	1585
Q Serve(g_s), s	0.3	0.0	1.1	15.1	0.0	6.8	0.6	3.6	6.1	5.4	3.8	0.1
Cycle Q Clear(g_c), s	7.1	0.0	1.1	16.2	0.0	6.8	4.4	3.6	6.1	9.0	3.8	0.1
Prop In Lane	1.00		0.81	1.00		0.97	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	270	0	373	381	0	365	680	2325	1037	566	2325	1037
V/C Ratio(X)	0.02	0.00	0.07	0.66	0.00	0.40	0.02	0.16	0.26	0.19	0.17	0.00
Avail Cap(c_a), veh/h	739	0	988	903	0	966	680	2325	1037	566	2325	1037
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.5	0.0	26.3	32.7	0.0	28.5	6.7	5.8	6.3	7.6	5.9	5.2
Incr Delay (d2), s/veh	0.0	0.0	0.1	1.9	0.0	0.7	0.1	0.1	0.6	0.8	0.2	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(50%),veh/ln	0.1	0.0	0.4	5.1	0.0	2.6	0.1	1.2	1.9	0.9	1.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.6	0.0	26.4	34.6	0.0	29.2	6.8	6.0	6.9	8.3	6.0	5.2
LnGrp LOS	C	A	C	C	A	C	A	A	A	A	A	A
Approach Vol, veh/h		32			396			657			516	
Approach Delay, s/veh		27.2			32.6			6.4			6.5	
Approach LOS		C			C			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		62.0		25.1		62.0		25.1				
Change Period (Y+Rc), s		5.0		* 5.2		5.0		* 5.2				
Max Green Setting (Gmax), s		57.0		* 53		57.0		* 53				
Max Q Clear Time (g_c+I1), s		8.1		9.1		11.0		18.2				
Green Ext Time (p_c), s		3.7		0.1		3.9		1.7				

Intersection Summary	
HCM 6th Ctrl Delay	13.3
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	15	225	10	140	15	350	270	115	345	5
Future Volume (veh/h)	5	5	15	225	10	140	15	350	270	115	345	5
Initial Q (Qb), 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
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	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	5	16	245	11	152	16	380	293	125	375	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	248	87	279	379	24	333	704	2343	1045	557	2343	1045
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.66	0.66	0.66	0.66	0.66	0.66
Sat Flow, veh/h	1223	392	1253	1391	108	1493	1003	3554	1585	765	3554	1585
Grp Volume(v), veh/h	5	0	21	245	0	163	16	380	293	125	375	5
Grp Sat Flow(s),veh/h/ln	1223	0	1645	1391	0	1602	1003	1777	1585	765	1777	1585
Q Serve(g_s), s	0.3	0.0	0.9	14.6	0.0	7.6	0.5	3.5	6.7	6.4	3.5	0.1
Cycle Q Clear(g_c), s	7.9	0.0	0.9	15.4	0.0	7.6	4.0	3.5	6.7	10.0	3.5	0.1
Prop In Lane	1.00		0.76	1.00		0.93	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	248	0	366	379	0	357	704	2343	1045	557	2343	1045
V/C Ratio(X)	0.02	0.00	0.06	0.65	0.00	0.46	0.02	0.16	0.28	0.22	0.16	0.00
Avail Cap(c_a), veh/h	722	0	1005	919	0	978	704	2343	1045	557	2343	1045
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.5	0.0	26.5	32.5	0.0	29.1	6.4	5.6	6.2	7.5	5.6	5.0
Incr Delay (d2), s/veh	0.0	0.0	0.1	1.9	0.0	0.9	0.1	0.1	0.7	0.9	0.1	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(50%),veh/ln	0.1	0.0	0.3	5.0	0.0	3.0	0.1	1.1	2.0	1.1	1.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.5	0.0	26.5	34.4	0.0	30.0	6.4	5.8	6.8	8.5	5.8	5.0
LnGrp LOS	C	A	C	C	A	C	A	A	A	A	A	A
Approach Vol, veh/h		26			408			689			505	
Approach Delay, s/veh		27.7			32.6			6.2			6.4	
Approach LOS		C			C			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		62.0		24.5		62.0		24.5				
Change Period (Y+Rc), s		5.0		* 5.2		5.0		* 5.2				
Max Green Setting (Gmax), s		57.0		* 53		57.0		* 53				
Max Q Clear Time (g_c+I1), s		8.7		9.9		12.0		17.4				
Green Ext Time (p_c), s		3.8		0.1		3.9		1.8				

Intersection Summary			
HCM 6th Ctrl Delay			13.2
HCM 6th LOS			B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

SUMMIT
LAND MANAGEMENT

Appendix C
Collision Data

92nd STREET AND SHEA BOULEVARD

DATE	TIME	MANNER	TRAVEL DIRECTIONS	VEHICLE 1 ACTION	VEHICLE 2 ACTION	INJURY SEVERITY	VIOLATION	COMMENTS
11 / 14 / 2020	10:58 PM	Angle - Not Left-turn	Eastbound & Eastbound	Straight	Straight	Unknown	Two Violations	
10 / 20 / 2020	4:44 PM	Rear-end	Westbound & Westbound	Straight	Slowing	No Injury	Speed Too Fast	
10 / 13 / 2020	1:57 PM	Rear-end	Westbound & Westbound	Straight	Stopped	Possible	Unsafe Lane Change	
09 / 17 / 2020	3:40 PM	Left-turn	Westbound & Eastbound	Turning Left	Straight	No Injury	Made Improper Turn	
07 / 28 / 2020	8:05 AM	Rear-end	Eastbound & Eastbound	Straight	Slowing	No Injury	Speed Too Fast	
06 / 25 / 2020	11:50 AM	Rear-end	Eastbound & Eastbound	Straight	Stopped	No Injury	Speed Too Fast	
06 / 14 / 2020	1:05 AM	Side-swipe Same	Eastbound & Eastbound	Turning Left	Turning Left	No Injury	Drove in Opposing Lane	
06 / 11 / 2020	9:25 PM	Angle - Not Left-turn	Westbound & Westbound	Crossing Road	Turning Left	Non-Incapacitating	Disregarded Signal	
05 / 15 / 2020	12:15 PM	Rear-end	Westbound & Westbound	Slowing	Stopped	No Injury	Speed Too Fast	
05 / 11 / 2020	11:12 AM	Angle - Not Left-turn	Westbound & Northbound	Straight	Turning Left	Possible	Two Violations	
04 / 17 / 2020	10:46 AM	Side-swipe Same	Southbound & Southbound	Changing Lane	Straight	No Injury	Unsafe Lane Change	
02 / 19 / 2020	2:34 PM	Other	Northbound & Northbound	Backing	Stopped	No Injury	Other	
02 / 13 / 2020	4:47 PM	Side-swipe Same	Northbound & Eastbound	Turning Right	Straight	No Injury	Failed to Yield	
02 / 06 / 2020	9:46 AM	Angle - Not Left-turn	Southbound & Northbound	Turning Right	Turning Left	No Injury	Made Improper Turn	
11 / 14 / 2019	5:47 PM	Rear-end	Westbound & Westbound	Straight	Stopped	No Injury	Speed Too Fast	
11 / 03 / 2019	6:20 PM	Rear-end	Westbound & Westbound	Straight	Stopped	Non-Incapacitating	Speed Too Fast	
10 / 31 / 2019	2:19 PM	Rear-end	Eastbound & Eastbound	Straight	Stopped	No Injury	Speed Too Fast	
10 / 11 / 2019	11:22 AM	Rear-end	Westbound & Westbound	Straight	Straight	No Injury	Other	
09 / 12 / 2019	8:00 AM	Rear-end	Westbound & Westbound	Straight	Slowing	No Injury	Followed Too Closely	
06 / 26 / 2019	1:36 PM	Rear-end	Westbound & Westbound	Straight	Stopped	Possible	Speed Too Fast	
06 / 21 / 2019	11:50 AM	Rear-end	Southbound & Southbound	Straight	Stopped	No Injury	Speed Too Fast	
05 / 29 / 2019	2:24 PM	Angle - Not Left-turn	Northbound & Northbound	Turning Left	Straight	No Injury	Failed to Yield	
05 / 29 / 2019	2:46 PM	Rear-end	Eastbound & Eastbound	Straight	Stopped	No Injury	Speed Too Fast	
04 / 17 / 2019	1:58 PM	Side-swipe Same	Southbound & Westbound	Turning Right	Straight	No Injury	Made Improper Turn	
04 / 10 / 2019	5:51 PM	Rear-end	Eastbound & Eastbound	Straight	Straight	No Injury	Followed Too Closely	
02 / 06 / 2019	8:18 AM	Angle - Not Left-turn	Westbound & Northbound	Straight	Straight	Non-Incapacitating	Disregarded Signal	

92nd STREET AND SHEA BOULEVARD								
DATE	TIME	MANNER	TRAVEL DIRECTIONS	VEHICLE 1 ACTION	VEHICLE 2 ACTION	INJURY SEVERITY	VIOLATION	COMMENTS
12 / 25 / 2020	12:08 PM	Rear-end	Eastbound & Eastbound	Straight	Stopped	No Injury	Followed Too Closely	
01 / 21 / 2020	6:48 PM	Side-swipe Same	Eastbound & Eastbound	Turning Right	Straight	No Injury	Made Improper Turn	
12 / 18 / 2019	2:39 PM	Side-swipe Same	Westbound & Westbound	Changing Lane	Straight	No Injury	Unsafe Lane Change	
07 / 01 / 2019	5:19 PM	Rear-end	Westbound & Westbound	Straight	Stopped	Non-Incapacitating	No Improper Action	
08 / 26 / 2020	11:11 AM	Rear-end	Westbound & Westbound	Straight	Stopped	No Injury	Other	
07 / 08 / 2020	2:45 PM	Rear-end	Westbound & Westbound	Straight	Slowing	No Injury	Followed Too Closely	
05 / 29 / 2020	12:27 PM	Rear-end	Westbound & Westbound	Slowing	Stopped	No Injury	Speed Too Fast	
12 / 21 / 2019	9:14 AM	Side-swipe Same	Southbound & Westbound	Turning Right	Straight	No Injury	Made Improper Turn	
12 / 06 / 2019	12:18 PM	Rear-end	Westbound & Westbound	Slowing	Stopped	No Injury	Speed Too Fast	
11 / 09 / 2019	6:01 PM	Rear-end	Westbound & Westbound	Straight	Straight	No Injury	Speed Too Fast	
09 / 18 / 2019	12:43 PM	Rear-end	Westbound & Westbound	Straight	Stopped	No Injury	Followed Too Closely	
09 / 17 / 2019	7:04 PM	Rear-to-Rear	Eastbound & Eastbound	Backing	Unparking	No Injury	No Improper Action	
08 / 29 / 2019	10:46 AM	Side-swipe Same	Eastbound & Eastbound	Changing Lane	Stopped	No Injury	Unsafe Lane Change	
04 / 03 / 2019	2:07 PM	Rear-end	Eastbound & Eastbound	Straight	Stopped	Possible	Other	
03 / 24 / 2019	3:58 PM	Rear-end	Eastbound & Eastbound	Straight	Straight	No Injury	Followed Too Closely	
12 / 14 / 2018	1:26 PM	Angle - Not Left-turn	Northbound & Southbound	Straight	U-turning	No Injury	Disregarded Signal	DUI
12 / 08 / 2018	12:56 PM	Left-turn	Northbound & Westbound	Turning Left	Straight	No Injury	Failed to Yield	
12 / 04 / 2018	12:00 PM	Rear-end	Westbound & Westbound	Slowing	Stopped	Possible	Speed Too Fast	MULTI VEH 3
11 / 23 / 2018	5:36 PM	Rear-end	Westbound & Westbound	Straight	Stopped	No Injury	No Improper Action	
11 / 05 / 2018	5:30 PM	Rear-end	Westbound & Westbound	Straight	Stopped	Unknown	Followed Too Closely	
10 / 31 / 2018	1:05 PM	Angle - Not Left-turn	Eastbound & Northbound	Straight	Straight	Non-Incapacitating	Failed to Yield	MULTI VEH 3
10 / 30 / 2018	7:03 PM	Rear-end	Eastbound & Eastbound	Straight	Stopped	No Injury	No Improper Action	MULTI VEH 3
09 / 11 / 2018	2:09 PM	Angle - Not Left-turn	Northbound & Southbound	Turning Left	Straight	Possible	Failed to Yield	
08 / 27 / 2018	12:25 PM	Side-swipe Same	Westbound & Westbound	Straight	Slowing	No Injury	Speed Too Fast	MULTI VEH 3
08 / 13 / 2018	12:06 PM	Rear-end	Westbound & Westbound	Straight	Slowing	Possible	Speed Too Fast	MULTI VEH 3
07 / 09 / 2018	3:26 PM	Angle - Not Left-turn	Westbound & Eastbound	Turning Left	Straight	Incapacitating	Failed to Yield	

92nd STREET AND SHEA BOULEVARD								
06 / 28 / 2018	6:15 PM	Side-swipe Same	Eastbound & Eastbound	Straight	Straight	No Injury	Unknown	
06 / 13 / 2018	1:14 PM	Rear-end	Northbound & Eastbound	U-turning	Straight	No Injury	Made Improper Turn	
05 / 21 / 2018	9:37 AM	Rear-end	Southbound & Southbound	Straight	Stopped	No Injury	No Improper Action	
05 / 10 / 2018	9:04 PM	Rear-end	Westbound & Westbound	Straight	Straight	Possible	Speed Too Fast	
03 / 09 / 2018	3:44 PM	Rear-end	Westbound & Westbound	Slowing	Stopped	No Injury	Followed Too Closely	
02 / 05 / 2018	12:18 PM	Rear-end	Eastbound & Eastbound	Straight	Stopped	No Injury	Speed Too Fast	
02 / 03 / 2018	9:39 AM	Rear-end	Southbound & Southbound	Turning Left	Other	No Injury	No Improper Action	
01 / 11 / 2018	6:39 PM	Rear-end	Westbound & Westbound	Straight	Stopped	Possible	Speed Too Fast	
12 / 28 / 2018	1:44 PM	Rear-end	Westbound & Westbound	Slowing	Stopped	No Injury	Speed Too Fast	
11 / 13 / 2018	2:44 PM	Angle - Not Left-turn	Eastbound & Eastbound	Turning Right	Straight	No Injury	Failed to Yield	
03 / 02 / 2018	1:36 PM	Rear-end	Westbound & Westbound	Straight	Stopped	No Injury	Speed Too Fast	
04 / 12 / 2018	2:27 PM	Other	Northbound & Southbound	Backing	Stopped	No Injury	Other	
04 / 02 / 2018	9:30 AM	Rear-end	Southbound & Southbound	Turning Left	Turning Left	Unknown	Speed Too Fast	HIT AND RUN
07 / 24 / 2018	4:46 PM	Other	Northbound & Northbound	Backing	Stopped	Unknown	Other	HIT AND RUN
06 / 04 / 2018	11:46 AM	Head-on	Southbound & Northbound	Stopped	Straight	No Injury	Made Improper Turn	
11 / 29 / 2018	7:30 PM	Single-Vehicle	Northbound & Westbound	Walking Against Traffic	Straight	Incapacitating	Disregarded Signal	CAR/PEDESTRIAN
10 / 26 / 2018	11:15 AM	Rear-end	Westbound & Westbound	Straight	Stopped	Possible	Other	
05 / 09 / 2018	8:20 AM	Rear-end	Eastbound & Eastbound	Straight	Stopped	No Injury	Speed Too Fast	

92nd STREET AND NORTH LANE

DATE	TIME	MANNER	TRAVEL DIRECTIONS	VEHICLE 1 ACTION	VEHICLE 2 ACTION	INJURY SEVERITY	VIOLATION	COMMENTS
02 / 24 / 2020	12:04 PM	Angle - Not Left-turn	Southbound & Southbound	Turning Right	Turning Left	No Injury	Two Violations	
02 / 07 / 2020	5:30 AM	Angle - Not Left-turn	Westbound & Southbound	Straight	Straight	Possible	Failed to Yield	
10 / 01 / 2019	2:03 PM	Left-turn	Westbound & Northbound	Turning Left	Straight	No Injury	No Improper Action	
07 / 13 / 2018	10:18 PM	Left-turn	Eastbound & Northbound	Turning Left	Straight	No Injury	Failed to Yield	
05 / 10 / 2018	3:55 PM	Left-turn	Westbound & Southbound	Turning Left	Straight	No Injury	Failed to Yield	
03 / 23 / 2018	10:41 AM	Angle - Not Left-turn	Northbound & Northbound	Turning Right	Turning Left	No Injury	Made Improper Turn	

92nd STREET AND COCHISE DRIVE

DATE	TIME	MANNER	TRAVEL DIRECTIONS	VEHICLE 1 ACTION	VEHICLE 2 ACTION	INJURY SEVERITY	VIOLATION	COMMENTS
9/14/2020	2:58 PM	Left-turn	Eastbound & Northbound	Turning Left	Straight	No Injury	Failed to Yield	
2/16/2020	2:54 PM	Rear-end	Eastbound & Eastbound	Straight	Stopped	No Injury	Speed Too Fast	
11/5/2019	11:01 AM	Side-swipe Same	Northbound & Eastbound	Turning Right	Straight	No Injury	Failed to Yield	
10/24/2019	1:38 PM	Angle - Not Left-turn	Southbound & Northbound	Turning Right	Turning Left	No Injury	Made Improper Turn	
10/3/2019	3:01 PM	Rear-end	Westbound & Westbound	Straight	Stopped	No Injury	Speed Too Fast	
1/9/2019	12:53 PM	Rear-end	Westbound & Westbound	Straight	Stopped	Non-Incapacitating	Speed Too Fast	
10/17/2018	12:53 PM	Rear-end	Westbound & Westbound	Straight	Straight	No Injury	Other	
5/9/2018	3:38 PM	Rear-end	Westbound & Westbound	Straight	Slowing	No Injury	Followed Too Closely	

92nd STREET AND IRONWOOD LANE

DATE	TIME	MANNER	TRAVEL DIRECTIONS	VEHICLE 1 ACTION	VEHICLE 2 ACTION	INJURY SEVERITY	VIOLATION	COMMENTS
01 / 27 / 2020	4:23 PM	Rear-end	Eastbound & Eastbound	Straight	Stopped	No Injury	Speed Too Fast	
04 / 18 / 2019	2:09 PM	Side-swipe Same	Eastbound & Eastbound	Turning Left	Turning Left	No Injury	Drove in Opposing Lane	
06 / 25 / 2018	2:02 PM	Rear-end	Westbound & Westbound	Slowing	Stopped	No Injury	Speed Too Fast	
01 / 08 / 2018	3:27 PM	Angle - Not Left-turn	Westbound & Westbound	Crossing Road	Turning Left	Non-Incapacitating	Disregarded Signal	

92nd STREET AND MOUNTAIN VIEW ROAD

DATE	TIME	MANNER	TRAVEL DIRECTIONS	VEHICLE 1 ACTION	VEHICLE 2 ACTION	INJURY SEVERITY	VIOLATION	COMMENTS
06 / 09 / 2018	8:18 AM	Rear-end	Southbound & Southbound	Straight	Stopped	No Injury	Speed Too Fast	
03 / 26 / 2018	2:37 PM	Angle - Not Left-turn	Northbound & Northbound	Turning Left	Straight	No Injury	Failed to Yield	
03 / 06 / 2018	12:13 PM	Rear-end	Eastbound & Eastbound	Straight	Stopped	No Injury	Speed Too Fast	

SUMMIT
LAND MANAGEMENT

Appendix D

Mercado Courtyards Trip Generation

SUMMIT
LAND MANAGEMENT

Appendix D.1

Existing Retail Portion

PROJECT		**IRONWOOD 92 MIXED USE PROJECT**					
PARCEL		**EXISTING RETAIL BUILDINGS**					
ITE LAND USE CATEGORY AND CODE		**SHOPPING CENTER - 820**					
INDEPENDENT VARIABLE		**THOUSAND SQUARE FEET**					
SIZE		**30.00**					
						ENTERING	EXITING	TOTAL
***WEEKDAY* DAILY**						50%	50%	
STUDIES and LOW, AVERAGE, AND HIGH SIZE		147	9	453	1,510			
MINIMUM RATE	LOW RATES ACCEPTABLE	7.42				112	111	223
AVERAGE RATE		37.75				567	566	1,133
MAXIMUM RATE	HIGH RATES SUSPECT	207.98				3,120	3,119	6,239
STANDARD DEVIATION		16.41						
EQUATION: LN (T) = 0.68 * LN(X) + 5.57		R^2 = 0.76				1,326	1,325	2,651
LARGEST OF AVERAGE OR EQUATION						**1,326**	**1,325**	**2,651**
AM PEAK HOUR ADJACENT STREET						62%	38%	
STUDIES and LOW, AVERAGE, AND HIGH SIZE		84	9	351	1,510			
MINIMUM RATE	LOW RATES ACCEPTABLE	0.18				3	2	5
AVERAGE RATE		0.94				17	11	28
MAXIMUM RATE	HIGH RATES SUSPECT	23.74				441	271	712
STANDARD DEVIATION		0.87						
EQUATION: T = 0.50 * (X) + 151.78		R^2 = 0.50				104	63	167
LARGEST OF AVERAGE OR EQUATION						**104**	**63**	**167**
AM PEAK HOUR GENERATOR						54%	46%	
STUDIES and LOW, AVERAGE, AND HIGH SIZE		47	8	323	1,320			
MINIMUM RATE	LOW RATES ACCEPTABLE	0.70				11	10	21
AVERAGE RATE		3.00				49	41	90
MAXIMUM RATE	HIGH RATES SUSPECT	23.74				384	328	712
STANDARD DEVIATION		1.85						
EQUATION: T = 2.76 * (X) + 77.28		R^2 = 0.71				86	74	160
LARGEST OF AVERAGE OR EQUATION						**86**	**74**	**160**
PM PEAK HOUR ADJACENT STREET						48%	52%	
STUDIES and LOW, AVERAGE, AND HIGH SIZE		261	2	327	2,200			
MINIMUM RATE	LOW RATES ACCEPTABLE	0.74				11	11	22
AVERAGE RATE		3.81				55	59	114
MAXIMUM RATE	HIGH RATES SUSPECT	18.69				269	292	561
STANDARD DEVIATION		2.04						
EQUATION: LN (T) = 0.74 * LN(X) + 2.89		R^2 = 0.82				107	116	223
LARGEST OF AVERAGE OR EQUATION						**107**	**116**	**223**
PM PEAK HOUR GENERATOR						50%	50%	
STUDIES and LOW, AVERAGE, AND HIGH SIZE		53	7	298	1,320			
MINIMUM RATE	LOW RATES ACCEPTABLE	0.78				12	11	23
AVERAGE RATE		4.21				63	63	126
MAXIMUM RATE	HIGH RATES SUSPECT	27.27				409	409	818
STANDARD DEVIATION		2.47						
EQUATION: LN (T) = 0.72 * LN(X) + 3.02		R^2 = 0.76				119	118	237
LARGEST OF AVERAGE OR EQUATION						**119**	**118**	223

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PROJECT		**IRONWOOD 92 MIXED USE PROJECT**					
PARCEL		**EXISTING RETAIL BUILDINGS**					
ITE LAND USE CATEGORY AND CODE		**SHOPPING CENTER - 820**					
INDEPENDENT VARIABLE		**THOUSAND SQUARE FEET**					
SIZE		**30.00**					
						ENTERING	EXITING	SUM
***SATURDAY* DAILY**						50%	50%	
STUDIES and LOW, AVERAGE, AND HIGH SIZE		58	47	602	1,510			
MINIMUM RATE	LOW RATES ACCEPTABLE	13.01				195	195	390
AVERAGE RATE		46.12				692	692	1,384
MAXIMUM RATE	HIGH RATES SUSPECT	167.89				2,519	2,518	5,037
STANDARD DEVIATION		17.91						
EQUATION: LN (T) = 0.62 * LN(X) + 6.24		R^2 = 0.71				2,113	2,112	4,225
LARGEST OF AVERAGE OR EQUATION						**2,113**	**2,112**	**4,225**
PEAK HOUR GENERATOR						52%	48%	
STUDIES and LOW, AVERAGE, AND HIGH SIZE		119	4	419	1,510			
MINIMUM RATE	LOW RATES ACCEPTABLE	1.42				22	21	43
AVERAGE RATE		4.50				70	65	135
MAXIMUM RATE	HIGH RATES SUSPECT	15.10				236	217	453
STANDARD DEVIATION		1.88						
EQUATION: LN (T) = 0.79 * LN(X) + 2.79		R^2 = 0.71				124	115	239
LARGEST OF AVERAGE OR EQUATION						**124**	**115**	**239**
***SUNDAY* DAILY**						50%	50%	
STUDIES and LOW, AVERAGE, AND HIGH SIZE		30	47	509	1,510			
MINIMUM RATE	LOW RATES ACCEPTABLE	4.15				63	62	125
AVERAGE RATE		21.10				317	316	633
MAXIMUM RATE	HIGH RATES SUSPECT	148.15				2,223	2,222	4,445
STANDARD DEVIATION		17.18						
EQUATION: NOT PROVIDED		NA				NA	NA	NA
LARGEST OF AVERAGE OR EQUATION						**317**	**316**	**633**
PEAK HOUR GENERATOR						49%	51%	
STUDIES and LOW, AVERAGE, AND HIGH SIZE		24	47	382	1,268			
MINIMUM RATE	LOW RATES ACCEPTABLE	0.39				6	6	12
AVERAGE RATE		2.79				41	43	84
MAXIMUM RATE	HIGH RATES SUSPECT	12.40				182	190	372
STANDARD DEVIATION		2.18						
EQUATION: NOT PROVIDED		NA				NA	NA	NA
LARGEST OF AVERAGE OR EQUATION						**41**	**43**	**84**

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Appendix D.2

Existing Medical Office Portion

PROJECT		**IRONWOOD 92 MIXED USE PROJECT**					
PARCEL		**EXISTING MEDICAL OFFICE BUILDING**					
ITE LAND USE CATEGORY AND CODE		**MEDICAL-DENTAL OFFICE BUILDING - 720**					
INDEPENDENT VARIABLE		**THOUSAND SQUARE FEET**					
SIZE		**13**					
						ENTERING	EXITING	TOTAL
***WEEKDAY* DAILY**						50%	50%	
STUDIES and LOW, AVERAGE, AND HIGH SIZE		28	2	24	111			
MINIMUM RATE	LOW RATES SUSPECT	9.14				60	59	119
AVERAGE RATE		34.80				226	226	452
MAXIMUM RATE	HIGH RATES SUSPECT	100.75				655	655	1,310
STANDARD DEVIATION		9.79						
EQUATION: T = 38.42 * (X) - 87.62		R^2 = 0.77				206	206	412
LARGEST OF AVERAGE OR EQUATION						**226**	**226**	**452**
AM PEAK HOUR ADJACENT STREET						78%	22%	
STUDIES and LOW, AVERAGE, AND HIGH SIZE		44	2	32	112			
MINIMUM RATE	LOW RATES ACCEPTABLE	0.85				9	2	11
AVERAGE RATE		2.78				28	8	36
MAXIMUM RATE	HIGH RATES SUSPECT	14.30				145	41	186
STANDARD DEVIATION		1.28						
EQUATION: LN(T) = 0.89 * LN(X) + 1.31		R^2 = 0.62				28	8	36
LARGEST OF AVERAGE OR EQUATION						**28**	**8**	**36**
AM PEAK HOUR GENERATOR						62%	38%	
STUDIES and LOW, AVERAGE, AND HIGH SIZE		36	2	27	168			
MINIMUM RATE	LOW RATES ACCEPTABLE	1.21				10	6	16
AVERAGE RATE		3.53				29	17	46
MAXIMUM RATE	HIGH RATES SUSPECT	19.28				156	95	251
STANDARD DEVIATION		1.55						
EQUATION: T = 3.43 * (X) + 2.57		R^2 = 0.90				29	18	47
LARGEST OF AVERAGE OR EQUATION						**29**	**18**	**47**
PM PEAK HOUR ADJACENT STREET						28%	72%	
STUDIES and LOW, AVERAGE, AND HIGH SIZE		65	2	28	112			
MINIMUM RATE	LOW RATES SUSPECT	0.25				1	2	3
AVERAGE RATE		3.46				13	32	45
MAXIMUM RATE	HIGH RATES SUSPECT	8.86				32	83	115
STANDARD DEVIATION		1.58						
EQUATION: T = 3.39 * (X) + 2.02		R^2 = 0.73				13	33	46
LARGEST OF AVERAGE OR EQUATION						**13**	**33**	**46**
PM PEAK HOUR GENERATOR						39%	61%	
STUDIES and LOW, AVERAGE, AND HIGH SIZE		42	2	26	168			
MINIMUM RATE	LOW RATES ACCEPTABLE	1.49				7	12	19
AVERAGE RATE		4.10				21	32	53
MAXIMUM RATE	HIGH RATES SUSPECT	15.55				79	123	202
STANDARD DEVIATION		1.44						
EQUATION: T = 4.27 * (X) - 4.63		R^2 = 0.91				20	31	51
LARGEST OF AVERAGE OR EQUATION						**21**	**32**	**53**

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PROJECT		**IRONWOOD 92 MIXED USE PROJECT**					
PARCEL		**EXISTING MEDICAL OFFICE BUILDING**					
ITE LAND USE CATEGORY AND CODE		**MEDICAL-DENTAL OFFICE BUILDING - 720**					
INDEPENDENT VARIABLE		**THOUSAND SQUARE FEET**					
SIZE		**13**					
						ENTERING	EXITING	SUM
***SATURDAY* DAILY**						50%	50%	
STUDIES and LOW, AVERAGE, AND HIGH SIZE		6	18	41	111			
MINIMUM RATE	LOW RATES ACCEPTABLE	1.10				7	7	14
AVERAGE RATE		8.57				56	55	111
MAXIMUM RATE	HIGH RATES ACCEPTABLE	21.93				143	142	285
STANDARD DEVIATION		9.07						
EQUATION: NOT PROVIDED		NA				NA	NA	NA
LARGEST OF AVERAGE OR EQUATION						**56**	**55**	**111**
PEAK HOUR GENERATOR						57%	43%	
STUDIES and LOW, AVERAGE, AND HIGH SIZE		4	18	28	43			
MINIMUM RATE	LOW RATES ACCEPTABLE	1.33				10	7	17
AVERAGE RATE		3.10				23	17	40
MAXIMUM RATE	HIGH RATES ACCEPTABLE	4.02				30	22	52
STANDARD DEVIATION		1.20						
EQUATION: T = 4.94 * (X) - 50.78		R^2 = 0.78				7	6	13
LARGEST OF AVERAGE OR EQUATION						**23**	**17**	**40**
***SUNDAY* DAILY**						50%	50%	
STUDIES and LOW, AVERAGE, AND HIGH SIZE		5	18	44	111			
MINIMUM RATE	LOW RATES ACCEPTABLE	0.39				3	2	5
AVERAGE RATE		1.42				9	9	18
MAXIMUM RATE	HIGH RATES SUSPECT	5.11				33	33	66
STANDARD DEVIATION		1.44						
EQUATION: NOT PROVIDED		NA				NA	NA	NA
LARGEST OF AVERAGE OR EQUATION						**9**	**9**	**18**
PEAK HOUR GENERATOR						52%	48%	
STUDIES and LOW, AVERAGE, AND HIGH SIZE		3	24	31	43			
MINIMUM RATE	LOW RATES ACCEPTABLE	0.12				1	1	2
AVERAGE RATE		0.32				2	2	4
MAXIMUM RATE	HIGH RATES ACCEPTABLE	0.63				4	4	8
STANDARD DEVIATION		0.23						
EQUATION: NOT PROVIDED		NA				NA	NA	NA
LARGEST OF AVERAGE OR EQUATION						**2**	**2**	**4**

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Appendix D.3

Existing Vacant Medical Office

PROJECT		**IRONWOOD 92 MIXED USE PROJECT**					
PARCEL		**EXISTING VACANT MEDICAL OFFICE BUILDING**					
ITE LAND USE CATEGORY AND CODE		**MEDICAL-DENTAL OFFICE BUILDING - 720**					
INDEPENDENT VARIABLE		**THOUSAND SQUARE FEET**					
SIZE		**58**					
						ENTERING	EXITING	TOTAL
***WEEKDAY* DAILY**						50%	50%	
STUDIES and LOW, AVERAGE, AND HIGH SIZE		28	2	24	111			
MINIMUM RATE	LOW RATES SUSPECT	9.14				265	265	530
AVERAGE RATE		34.80				1,009	1,009	2,018
MAXIMUM RATE	HIGH RATES SUSPECT	100.75				2,922	2,922	5,844
STANDARD DEVIATION		9.79						
EQUATION: T = 38.42 * (X) - 87.62		R^2 = 0.77				1,071	1,070	2,141
LARGEST OF AVERAGE OR EQUATION						**1,071**	**1,070**	**2,141**
AM PEAK HOUR ADJACENT STREET						78%	22%	
STUDIES and LOW, AVERAGE, AND HIGH SIZE		44	2	32	112			
MINIMUM RATE	LOW RATES ACCEPTABLE	0.85				38	11	49
AVERAGE RATE		2.78				126	35	161
MAXIMUM RATE	HIGH RATES SUSPECT	14.30				647	182	829
STANDARD DEVIATION		1.28						
EQUATION: LN(T) = 0.89 * LN(X) + 1.31		R^2 = 0.62				108	30	138
LARGEST OF AVERAGE OR EQUATION						**126**	**35**	**161**
AM PEAK HOUR GENERATOR						62%	38%	
STUDIES and LOW, AVERAGE, AND HIGH SIZE		36	2	27	168			
MINIMUM RATE	LOW RATES ACCEPTABLE	1.21				43	27	70
AVERAGE RATE		3.53				127	78	205
MAXIMUM RATE	HIGH RATES SUSPECT	19.28				693	425	1,118
STANDARD DEVIATION		1.55						
EQUATION: T = 3.43 * (X) + 2.57		R^2 = 0.90				125	77	202
LARGEST OF AVERAGE OR EQUATION						**127**	**78**	**205**
PM PEAK HOUR ADJACENT STREET						28%	72%	
STUDIES and LOW, AVERAGE, AND HIGH SIZE		65	2	28	112			
MINIMUM RATE	LOW RATES SUSPECT	0.25				4	11	15
AVERAGE RATE		3.46				56	145	201
MAXIMUM RATE	HIGH RATES SUSPECT	8.86				144	370	514
STANDARD DEVIATION		1.58						
EQUATION: T = 3.39 * (X) + 2.02		R^2 = 0.73				56	143	199
LARGEST OF AVERAGE OR EQUATION						**56**	**145**	**201**
PM PEAK HOUR GENERATOR						39%	61%	
STUDIES and LOW, AVERAGE, AND HIGH SIZE		42	2	26	168			
MINIMUM RATE	LOW RATES ACCEPTABLE	1.49				34	52	86
AVERAGE RATE		4.10				93	145	238
MAXIMUM RATE	HIGH RATES SUSPECT	15.55				352	550	902
STANDARD DEVIATION		1.44						
EQUATION: T = 4.27 * (X) - 4.63		R^2 = 0.91				95	148	243
LARGEST OF AVERAGE OR EQUATION						**95**	**148**	**243**

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PROJECT		**IRONWOOD 92 MIXED USE PROJECT**					
PARCEL		**EXISTING VACANT MEDICAL OFFICE BUILDING**					
ITE LAND USE CATEGORY AND CODE		**MEDICAL-DENTAL OFFICE BUILDING - 720**					
INDEPENDENT VARIABLE		**THOUSAND SQUARE FEET**					
SIZE		**58**					
						ENTERING	EXITING	SUM
***SATURDAY* DAILY**						50%	50%	
STUDIES and LOW, AVERAGE, AND HIGH SIZE		6	18	41	111			
MINIMUM RATE	LOW RATES ACCEPTABLE	1.10				32	32	64
AVERAGE RATE		8.57				249	248	497
MAXIMUM RATE	HIGH RATES ACCEPTABLE	21.93				636	636	1,272
STANDARD DEVIATION		9.07						
EQUATION: NOT PROVIDED		NA				NA	NA	NA
LARGEST OF AVERAGE OR EQUATION						**249**	**248**	**497**
PEAK HOUR GENERATOR						57%	43%	
STUDIES and LOW, AVERAGE, AND HIGH SIZE		4	18	28	43			
MINIMUM RATE	LOW RATES ACCEPTABLE	1.33				44	33	77
AVERAGE RATE		3.10				103	77	180
MAXIMUM RATE	HIGH RATES ACCEPTABLE	4.02				133	100	233
STANDARD DEVIATION		1.20						
EQUATION: T = 4.94 * (X) - 50.78		R^2 = 0.78				135	101	236
LARGEST OF AVERAGE OR EQUATION						**135**	**101**	**236**
***SUNDAY* DAILY**						50%	50%	
STUDIES and LOW, AVERAGE, AND HIGH SIZE		5	18	44	111			
MINIMUM RATE	LOW RATES ACCEPTABLE	0.39				12	11	23
AVERAGE RATE		1.42				41	41	82
MAXIMUM RATE	HIGH RATES SUSPECT	5.11				148	148	296
STANDARD DEVIATION		1.44						
EQUATION: NOT PROVIDED		NA				NA	NA	NA
LARGEST OF AVERAGE OR EQUATION						**41**	**41**	**82**
PEAK HOUR GENERATOR						52%	48%	
STUDIES and LOW, AVERAGE, AND HIGH SIZE		3	24	31	43			
MINIMUM RATE	LOW RATES ACCEPTABLE	0.12				4	3	7
AVERAGE RATE		0.32				10	9	19
MAXIMUM RATE	HIGH RATES ACCEPTABLE	0.63				19	18	37
STANDARD DEVIATION		0.23						
EQUATION: NOT PROVIDED		NA				NA	NA	NA
LARGEST OF AVERAGE OR EQUATION						**10**	**9**	**19**

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Appendix D.4

Possible Medical Office

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Appendix D.5

Proposed Multi-family Portion

PROJECT		**IRONWOOD 92 APARTMENTS**					
PARCEL		**ENTIRE**					
ITE LAND USE CATEGORY AND CODE		**MULTIFAMILY HOUSING (MID-RISE) - 221**					
INDEPENDENT VARIABLE		**DWELLING UNITS**					
SIZE		**273**					
						ENTERING	EXITING	TOTAL
***WEEKDAY* DAILY**						50%	50%	
NUMBER OF STUDIES and AVERAGE SIZE		27	21	205	494			
MINIMUM RATE	LOW RATES ACCEPTABLE	1.27				174	173	347
AVERAGE RATE		5.44				743	742	1,485
MAXIMUM RATE	HIGH RATES SUSPECT	12.50				1,707	1,706	3,413
STANDARD DEVIATION		2.03						
EQUATION: T = 5.45 * (X) - 1.75		R^2 = 0.77				743	743	1,486
LARGEST OF AVERAGE OR EQUATION						**743**	**743**	**1,486**
AM PEAK HOUR ADJACENT STREET						26%	74%	
NUMBER OF STUDIES and AVERAGE SIZE		53	26	207	703			
MINIMUM RATE	LOW RATES ACCEPTABLE	0.06				4	12	16
AVERAGE RATE		0.36				25	73	98
MAXIMUM RATE	HIGH RATES SUSPECT	1.61				114	326	440
STANDARD DEVIATION		0.19						
EQUATION: LN(T) = 0.98 * LN(X) - 0.98		R^2 = 0.67				24	68	92
LARGEST OF AVERAGE OR EQUATION						**25**	**73**	**98**
AM PEAK HOUR GENERATOR						27%	73%	
NUMBER OF STUDIES and AVERAGE SIZE		48	21	225	1,168			
MINIMUM RATE	LOW RATES ACCEPTABLE	0.06				4	12	16
AVERAGE RATE		0.32				23	64	87
MAXIMUM RATE	HIGH RATES SUSPECT	0.77				57	153	210
STANDARD DEVIATION		0.17						
EQUATION: LN(T) = 0.83 * LN(X) - 0.27		R^2 = 0.89				22	58	80
LARGEST OF AVERAGE OR EQUATION						**23**	**64**	**87**
PM PEAK HOUR ADJACENT STREET						61%	39%	
NUMBER OF STUDIES and AVERAGE SIZE		60	26	208	703			
MINIMUM RATE	LOW RATES ACCEPTABLE	0.15				25	16	41
AVERAGE RATE		0.44				73	47	120
MAXIMUM RATE	HIGH RATES SUSPECT	1.11				185	118	303
STANDARD DEVIATION		0.19						
EQUATION: LN(T) = 0.96 * LN(X) - 0.63		R^2 = 0.72				71	45	116
LARGEST OF AVERAGE OR EQUATION						**73**	**47**	**120**
PM PEAK HOUR GENERATOR						60%	40%	
NUMBER OF STUDIES and AVERAGE SIZE		47	21	211	1,168			
MINIMUM RATE	LOW RATES ACCEPTABLE	0.09				15	10	25
AVERAGE RATE		0.41				67	45	112
MAXIMUM RATE	HIGH RATES SUSPECT	1.26				206	138	344
STANDARD DEVIATION		0.22						
EQUATION: LN(T) = 0.83 * LN(X) - 0.05		R^2 = 0.66				164	110	274
LARGEST OF AVERAGE OR EQUATION						**164**	**110**	**274**

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PROJECT		**IRONWOOD 92 APARTMENTS**					
PARCEL		**ENTIRE**					
ITE LAND USE CATEGORY AND CODE		**MULTIFAMILY HOUSING (MID-RISE) - 221**					
INDEPENDENT VARIABLE		**DWELLING UNITS**					
SIZE		**273**					
					ENTERING	EXITING	SUM
***SATURDAY* DAILY**					50%	50%	
NUMBER OF STUDIES and AVERAGE SIZE		6	111	224	336		
MINIMUM RATE	LOW RATES ACCEPTABLE	4.03				550	550	1,100
AVERAGE RATE		4.91				670	670	1,340
MAXIMUM RATE	HIGH RATES SUSPECT	8.51				1,162	1,161	2,323
STANDARD DEVIATION		1.26						
EQUATION: T = 3.04 * (X) + 417.11		R^2 = 0.73				624	623	1,247
LARGEST OF AVERAGE OR EQUATION						**670**	**670**	**1,340**
PEAK HOUR GENERATOR						49%	51%	
NUMBER OF STUDIES and AVERAGE SIZE		8	111	264	462		
MINIMUM RATE	LOW RATES ACCEPTABLE	0.34				46	47	93
AVERAGE RATE		0.44				59	61	120
MAXIMUM RATE	HIGH RATES ACCEPTABLE	0.73				98	101	199
STANDARD DEVIATION		0.89						
EQUATION: T = 0.42 * (X) + 6.73		R^2 = 0.89				59	62	121
LARGEST OF AVERAGE OR EQUATION						**59**	**62**	**121**
SUNDAY DAILY						50%	50%	
NUMBER OF STUDIES and AVERAGE SIZE		6	111	224	336		
MINIMUM RATE	LOW RATES ACCEPTABLE	3.06				418	417	835
AVERAGE RATE		4.09				559	558	1,117
MAXIMUM RATE	HIGH RATES SUSPECT	8.41				1,148	1,148	2,296
STANDARD DEVIATION		1.48						
EQUATION: NOT PROVIDED		NA				NA	NA	NA
LARGEST OF AVERAGE OR EQUATION						**559**	**558**	**1,117**
PEAK HOUR GENERATOR						62%	38%	
NUMBER OF STUDIES and AVERAGE SIZE		6	111	224	336		
MINIMUM RATE	LOW RATES ACCEPTABLE	0.26				44	27	71
AVERAGE RATE		0.39				66	40	106
MAXIMUM RATE	HIGH RATES SUSPECT	1.07				181	111	292
STANDARD DEVIATION		0.23						
EQUATION: NOT PROVIDED		NA				NA	NA	NA
LARGEST OF AVERAGE OR EQUATION						**66**	**40**	**106**

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PROJECT		**IRONWOOD 92 APARTMENTS**					
PARCEL		**ENTIRE**					
ITE LAND USE CATEGORY AND CODE		**MULTIFAMILY HOUSING (MID-RISE) - 221**					
INDEPENDENT VARIABLE		**DWELLING UNITS - EXCLUDING OUTLIERS**					
SIZE		**273**					
						ENTERING	EXITING	TOTAL
***WEEKDAY* DAILY**						50%	50%	
NUMBER OF STUDIES and AVERAGE SIZE		18	21	238	494			
MINIMUM RATE	LOW RATES ACCEPTABLE	3.76				514	513	1,027
AVERAGE RATE		5.17				707	706	1,413
MAXIMUM RATE	HIGH RATES ACCEPTABLE	6.59				900	900	1,800
STANDARD DEVIATION		0.55						
LARGEST OF AVERAGE OR EQUATION						**707**	**706**	**1,413**
AM PEAK HOUR ADJACENT STREET						26%	74%	
NUMBER OF STUDIES and AVERAGE SIZE		49	26	213	703			
MINIMUM RATE	LOW RATES ACCEPTABLE	0.10				7	21	28
AVERAGE RATE		0.34				24	68	92
MAXIMUM RATE	HIGH RATES ACCEPTABLE	0.57				41	116	157
STANDARD DEVIATION		0.12						
LARGEST OF AVERAGE OR EQUATION						**24**	**68**	**92**
AM PEAK HOUR GENERATOR								
NUMBER OF STUDIES and AVERAGE SIZE								
MINIMUM RATE	LOW RATES ACCEPTABLE							
AVERAGE RATE								
MAXIMUM RATE	HIGH RATES ACCEPTABLE							
STANDARD DEVIATION								
LARGEST OF AVERAGE OR EQUATION								
PM PEAK HOUR ADJACENT STREET						61%	39%	
NUMBER OF STUDIES and AVERAGE SIZE		46	26	171	703			
MINIMUM RATE	LOW RATES ACCEPTABLE	0.15				25	16	41
AVERAGE RATE		0.45				75	48	123
MAXIMUM RATE	HIGH RATES ACCEPTABLE	0.74				124	79	203
STANDARD DEVIATION		0.18						
LARGEST OF AVERAGE OR EQUATION						**75**	**48**	**123**
PM PEAK HOUR GENERATOR								
NUMBER OF STUDIES and AVERAGE SIZE								
MINIMUM RATE	LOW RATES ACCEPTABLE							
AVERAGE RATE								
MAXIMUM RATE	HIGH RATES ACCEPTABLE							
STANDARD DEVIATION								
LARGEST OF AVERAGE OR EQUATION								

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Appendix E

Signal Warrant Analysis

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Appendix E.1

Existing Traffic Counts

TRAFFIC CONTROL SIGNAL WARRANT STUDY
LANE NUMBER, SPEED, AND VOLUME DATA

PROJECT: **IRONWOOD 92 PARTNERS**
LOCATION: **SCOTTSDALE, ARIZONA**

NORTH/SOUTH STREET: **92nd STREET**

NB LANES: **2**
SB LANES: **2**

EAST/WEST STREET: **COCHISE DRIVE**

EB LANES: **2**
WB LANES: **2**

SPEED LIMIT ON MAJOR STREET: **35**
85TH PERCENTILE SPEED ON MAJOR STREET: **UNKNOWN**

VOLUME DATA: EXISTING

DATE OF COUNT: 22 April 2021
DATE OF STUDY: 28 April 2021

SPECIAL CONDITIONS: **NONE**

	INTERSECTION APPROACH TRAFFIC VOLUMES			
TIME	**NORTHBOUND**	**SOUTHBOUND**	**EASTBOUND**	**WESTBOUND**
1:00 AM	**6**	**6**	**0**	**1**
2:00 AM	**8**	**2**	**1**	**0**
3:00 AM	**5**	**5**	**2**	**0**
4:00 AM	**2**	**9**	**0**	**0**
5:00 AM	**19**	**23**	**4**	**4**
6:00 AM	**68**	**90**	**6**	**6**
7:00 AM	**172**	**262**	**10**	**28**
8:00 AM	**338**	**486**	**52**	**46**
9:00 AM	**474**	**604**	**42**	**53**
10:00 AM	**510**	**483**	**83**	**77**
11:00 AM	**531**	**477**	**87**	**71**
12:00 PM	**655**	**452**	**109**	**83**
1:00 PM	**624**	**495**	**92**	**85**
2:00 PM	**555**	**471**	**70**	**87**
3:00 PM	**581**	**460**	**101**	**48**
4:00 PM	**683**	**495**	**106**	**49**
5:00 PM	**700**	**380**	**114**	**71**
6:00 PM	**564**	**322**	**83**	**55**
7:00 PM	**352**	**209**	**50**	**45**
8:00 PM	**202**	**152**	**60**	**30**
9:00 PM	**116**	**73**	**9**	**16**
10:00 PM	**79**	**64**	**8**	**16**
11:00 PM	**36**	**26**	**6**	**2**
12:00 AM	**16**	**15**	**4**	**1**
TOTAL	7,296	6,061	1,099	874

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TRAFFIC CONTROL SIGNAL WARRANT STUDY
CRASH EXPERIENCE AND DELAY DATA

92nd STREET and COCHISE DRIVE

CRASH EXPERIENCE DATA

HAVE LESS RESTRICTIVE MEANS BEEN ATTEMPTED?	**NO**
TOTAL NUMBER OF CRASHES IN A 12 MONTH PERIOD:	**4**
NUMBER OF POTENTIALLY PREVENTABLE CRASHES IN A 12 MONTH PERIOD:	**0**
WILL SIGNAL DISRUPT PROGRESSIVE TRAFFIC FLOW?	**POTENTIALLY**

VEHICLE DELAY DATA

TIME PERIOD	SIDE STREET AVERAGE DELAY SECONDS/VEHICLE	SIDE STREET TOTAL DELAY VEH-HOURS	SIDE STREET VOLUME	TOTAL INTERSECTION VOLUME
11:00 AM to 12:00 PM	**32.5**	**0.98**	**109**	**1,299**
7:00 PM to 8:00 PM	**34.8**	**0.58**	**60**	**444**

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IRONWOOD 92 PARTNERS
92nd STREET and COCHISE DRIVE
MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
TRAFFIC CONTROL SIGNAL WARRANT STUDY SUMMARY

LOCATION:	**SCOTTSDALE, ARIZONA**
SPECIAL CONDITIONS:	**NONE**
DATE OF COUNT:	22 April 2021
DATE OF STUDY:	28 April 2021

NORTH/SOUTH STREET:	92nd STREET	MAJOR	MULTI-LANE
EAST/WEST STREET:	COCHISE DRIVE	MINOR	MULTI-LANE

POSTED SPEED LIMIT ON MAJOR STREET:	35 mph
85th PERCENTILE SPEED ON MAJOR STREET:	Unknown

WARRANT	**EXISTING**	**REQUIRED**	**SATISFIED?**
# 1. EIGHT-HOUR VEHICULAR VOLUME			
A. MINIMUM VEHICULAR VOLUME	0	8	NO
B. INTERRUPTION OF CONTINUOUS TRAFFIC	4	8	NO
COMBINATION OF WARRANTS 1A AND 1B (80% of Values)	0	8	NO
COMBINATION OF WARRANTS 1A AND 1B (56% of Values)	-	-	Not Applicable
# 2. FOUR-HOUR VEHICULAR VOLUME	0	4	NO
# 3. PEAK HOUR			
A. PEAK HOUR DELAY - AM	1	3	NO
A. PEAK HOUR DELAY - PM	0	3	NO
B. PEAK HOUR VOLUME	0	1	NO
# 7. CRASH EXPERIENCE			
WITH WARRANT # 1A (Traffic Volumes at 80% of Original Values)	0	8	NO
WITH WARRANT # 1B (Traffic Volumes at 80% of Original Values)	0	8	NO
WITH WARRANT # 1A (Traffic Volumes at 56% of Original Values)	-	-	Not Applicable
WITH WARRANT # 1B (Traffic Volumes at 56% of Original Values)	-	-	Not Applicable
TOTAL NUMBER OF CRASHES	4	-	-
NUMBER OF POTENTIALLY PREVENTABLE CRASHES	0	5	NO
HAVE LESS RESTRICTIVE MEANS BEEN ATTEMPTED?	NO	-	NO
# 7. ENTIRE WARRANT	-	-	NO

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

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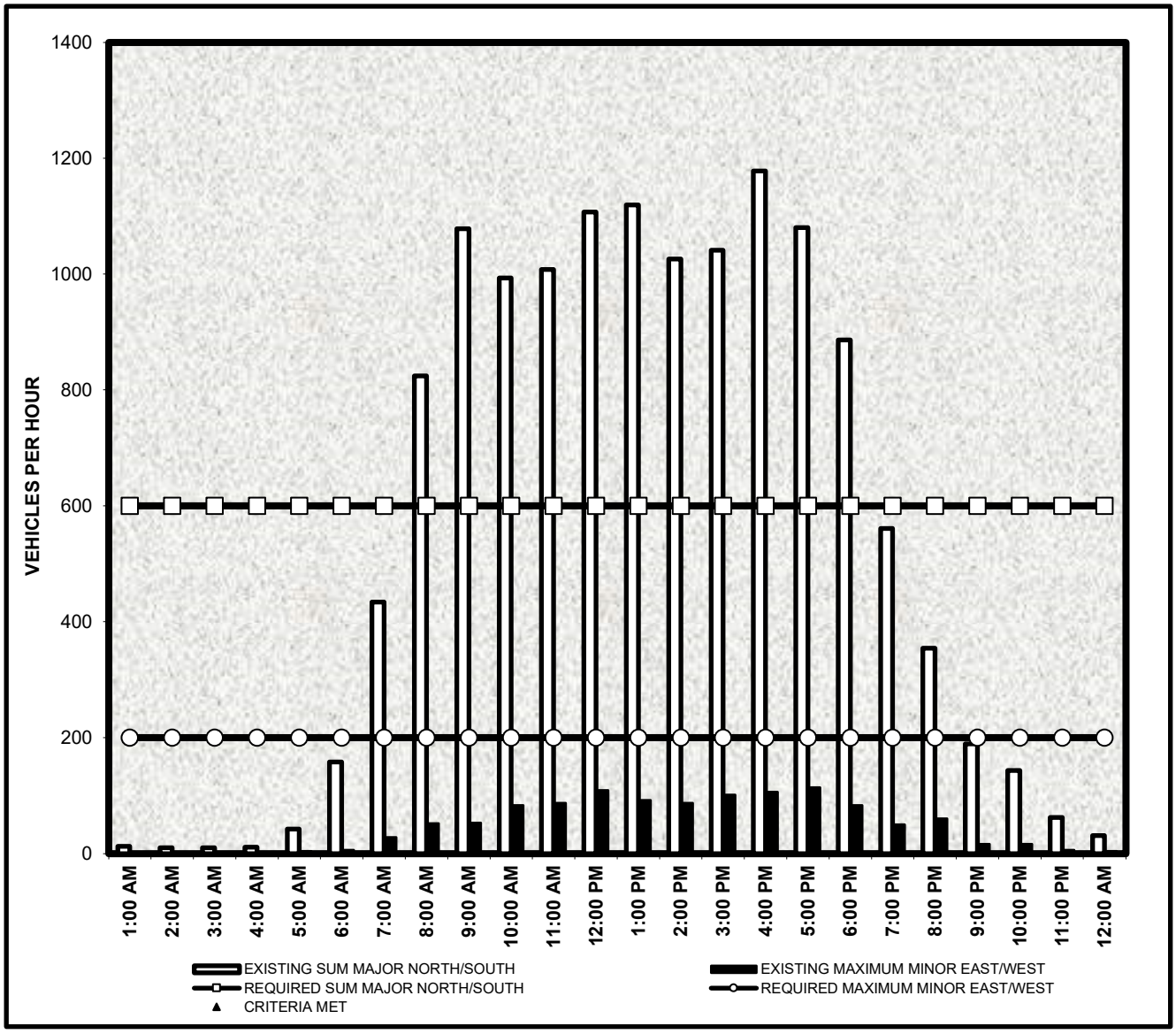
IRONWOOD 92 PARTNERS
92nd STREET and COCHISE DRIVE
M. U. T. C. D. WARRANT # 1A
Minimum Vehicular Volume

REQUIRED HOURLY VOLUMES FOR 8 HOURS ON NORTH/SOUTH STREET	600
REQUIRED HOURLY VOLUMES FOR 8 HOURS ON EAST/WEST STREET	200

NUMBER OF HOURS SATISFIED:	***0***
NUMBER OF HOURS SATISFIED BY LESS THAN 10%:	***0***
NUMBER OF HOURS WITHIN 10% OF BEING SATISFIED:	***0***

WARRANT CRITERIA:	**NOT SATISFIED**



The Minimum Vehicular Volume, Condition A, is intended for application where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal. The warrant is satisfied when, for each of any eight hours of an average day, the traffic volumes provided in the MUTCD exist on the major street and on the higher-volume minor-street approach to the intersection, and the signal installation will not seriously disrupt progressive traffic flow.

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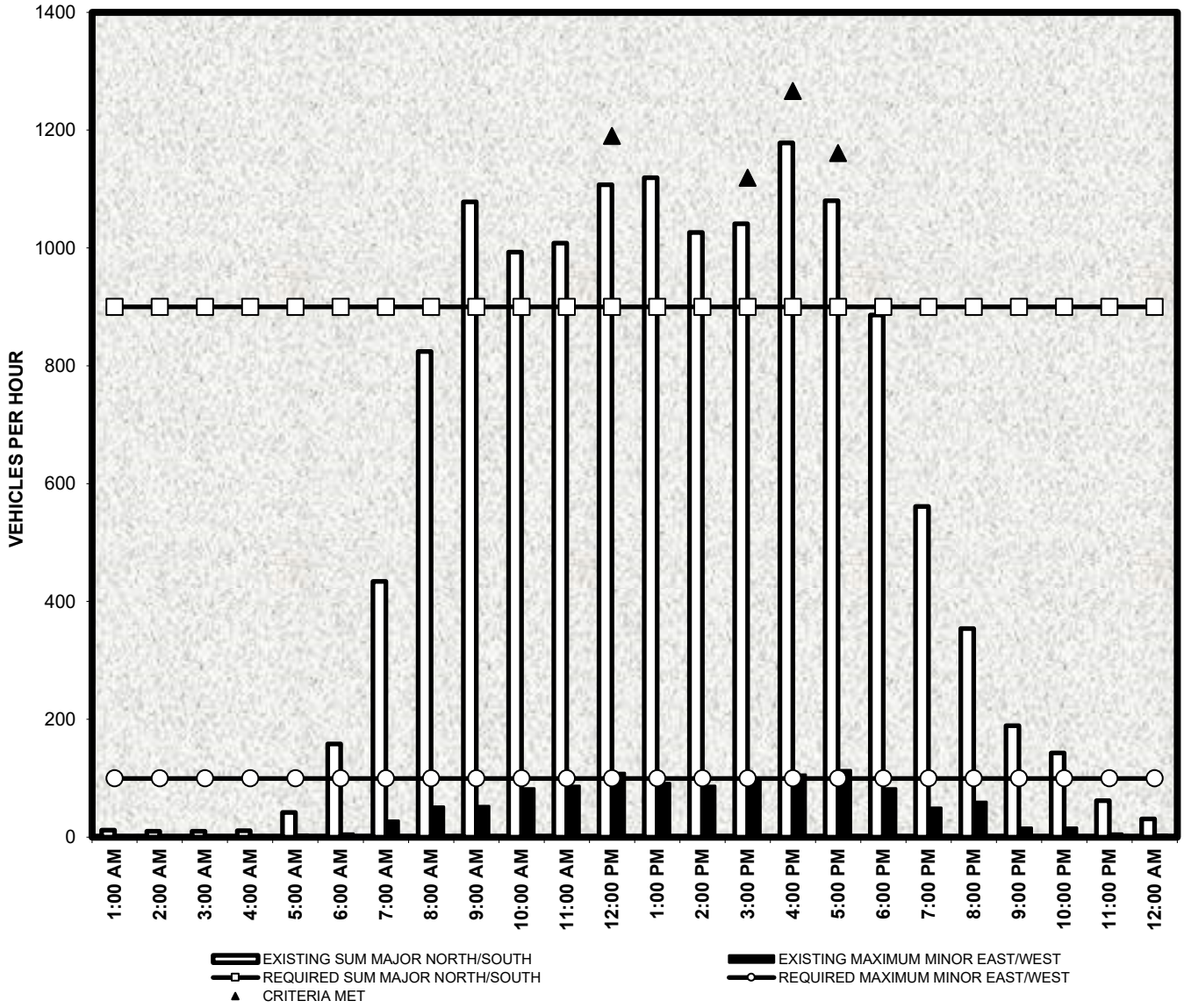
IRONWOOD 92 PARTNERS
92nd STREET and COCHISE DRIVE
M. U. T. C. D. WARRANT # 1B
Interruption of Continuous Traffic

REQUIRED HOURLY VOLUMES FOR 8 HOURS ON NORTH/SOUTH STREET	900
REQUIRED HOURLY VOLUMES FOR 8 HOURS ON EAST/WEST STREET	100

NUMBER OF HOURS SATISFIED:	***4***
NUMBER OF HOURS SATISFIED BY LESS THAN 10%:	***3***
NUMBER OF HOURS WITHIN 10% OF BEING SATISFIED:	***1***

WARRANT CRITERIA:	**NOT SATISFIED**



The Interruption of Continuous Traffic, Condition B, is intended for application where the traffic volume on a major street is so heavy that traffic on a minor intersecting street suffers excessive delay or conflict in entering or crossing the major street. The warrant is satisfied when, for each of any eight hours of an average day, the traffic volumes provided in the MUTCD exist on the major street and on the higher-volume minor-street approach to the intersection, and the signal installation will not seriously disrupt progressive traffic flow.

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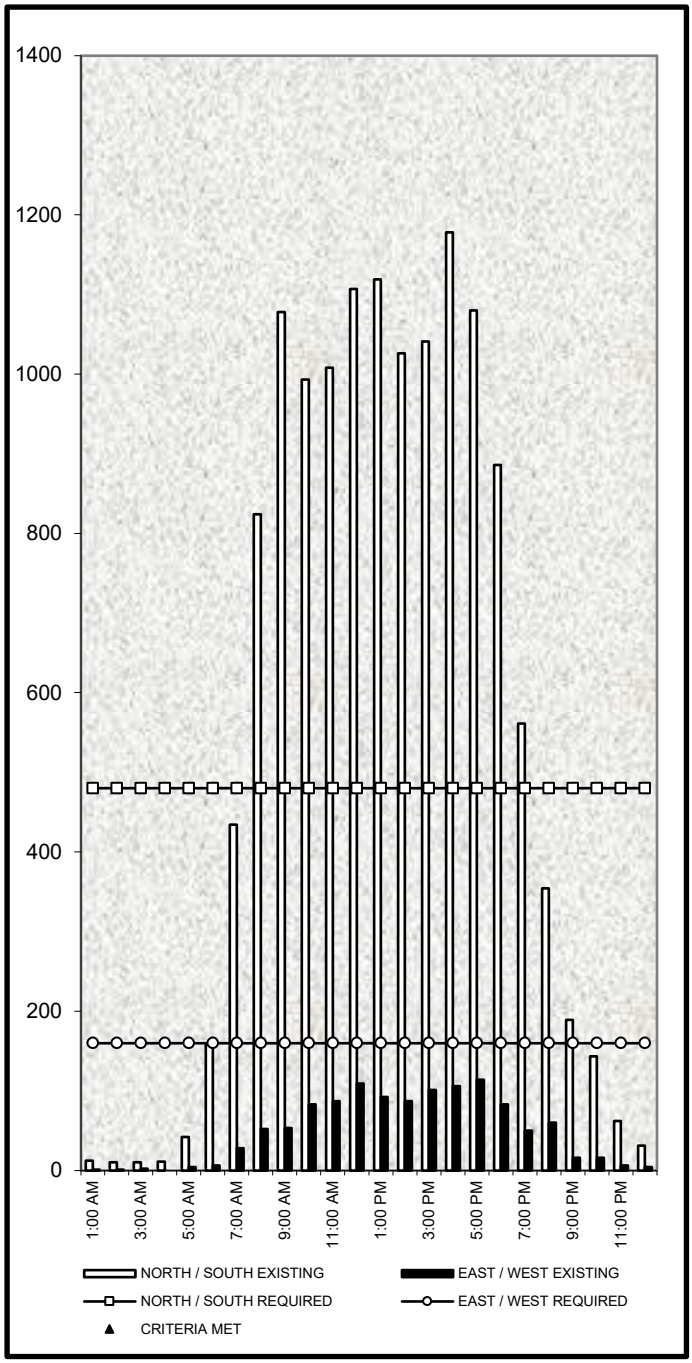
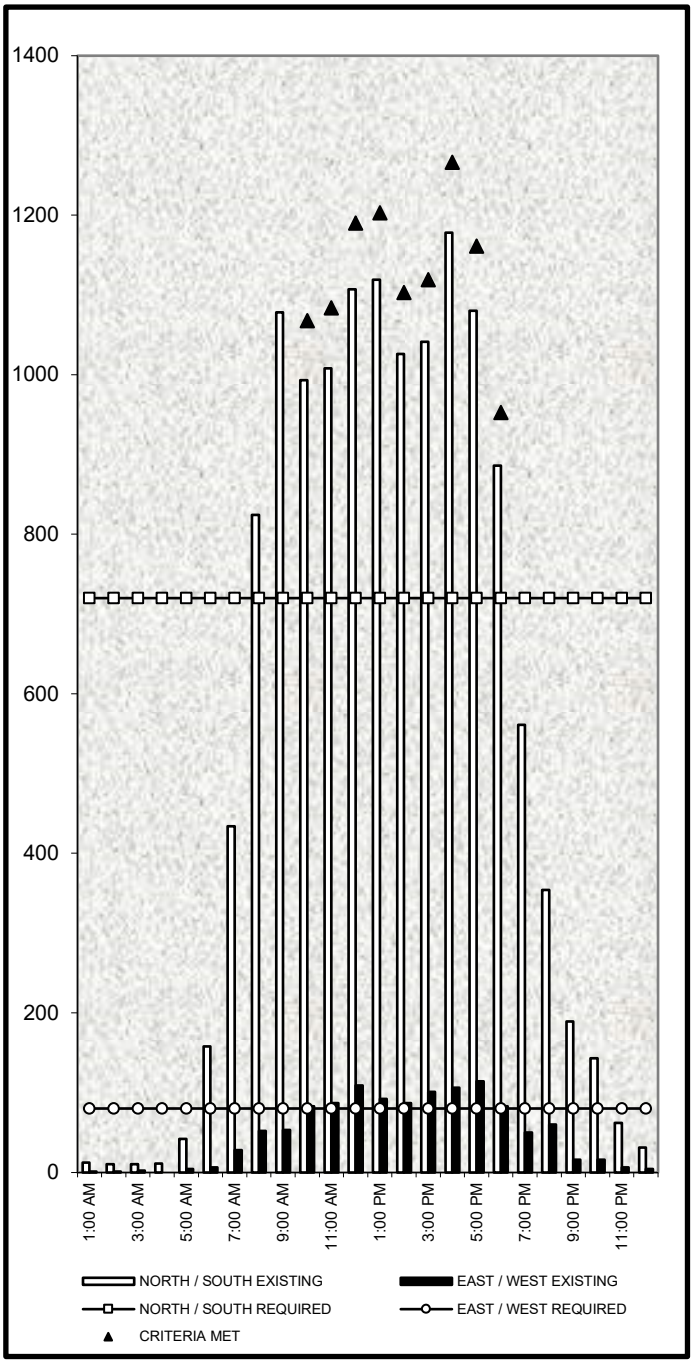
IRONWOOD 92 PARTNERS
92nd STREET and COCHISE DRIVE
M. U. T. C. D. WARRANT # 1
Combination of Conditions A and B at 80% of Original Values

REQUIRED HOURLY VOLUMES FOR 8 HOURS ON NORTH / SOUTH STREET	480	720
REQUIRED HOURLY VOLUMES FOR 8 HOURS ON EAST / WEST STREET	160	80

NUMBER OF HOURS SATISFIED:	***0***	***9***

WARRANT CRITERIA:	**NOT SATISFIED**





The major-street and minor-street volumes shall be for the same 8 hours for each condition; however, the 8 hours satisfied on A shall not be required to be the same 8 hours satisfied in Condition B. The combination of Conditions A and B should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

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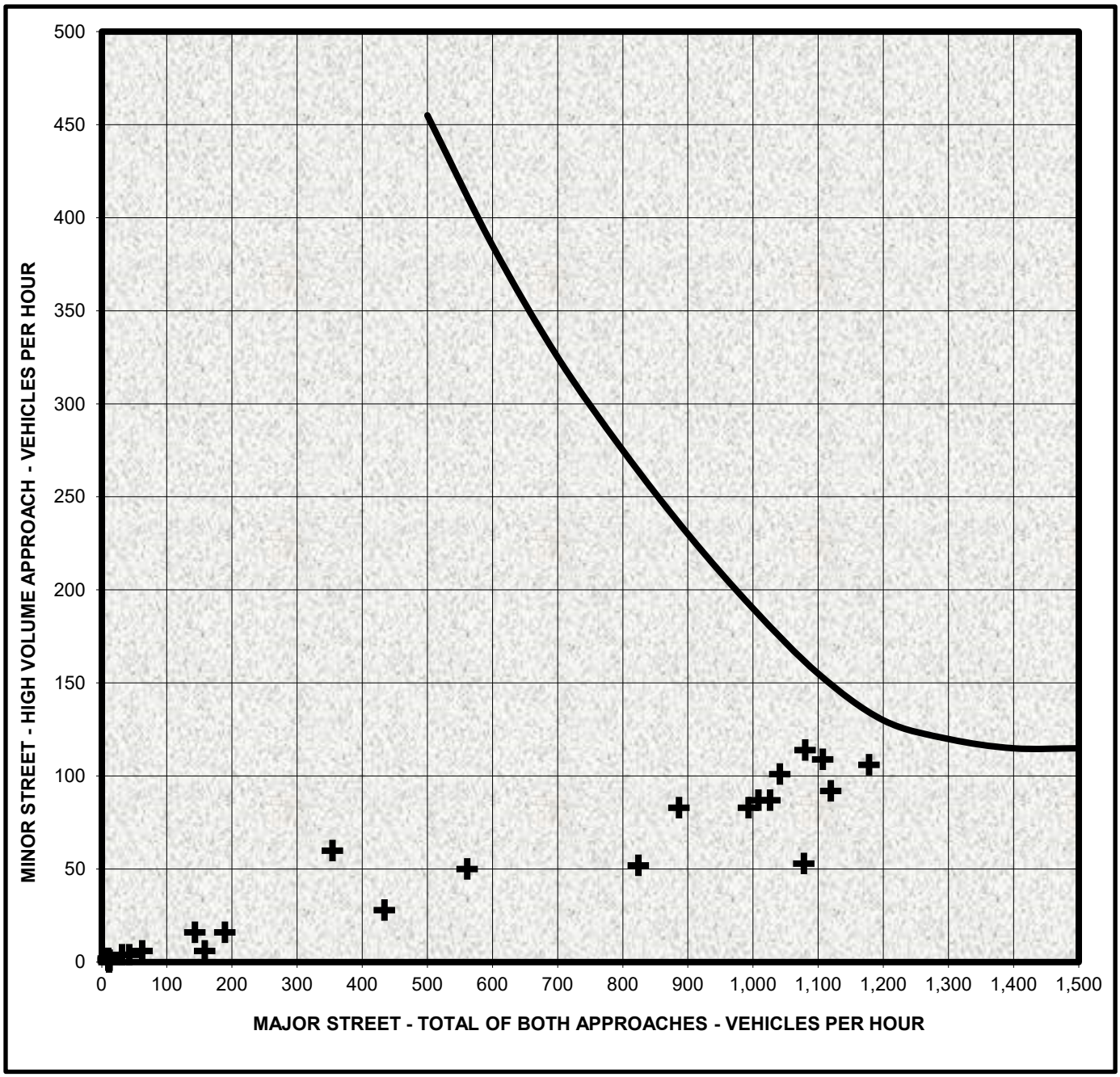
IRONWOOD 92 PARTNERS
92nd STREET and COCHISE DRIVE
M. U. T. C. D. WARRANT # 2
Four-Hour Vehicular Volume

NUMBER OF HOURS SATISFIED:	***0***
NUMBER OF HOURS SATISFIED BY LESS THAN 10%:	***0***
NUMBER OF HOURS WITHIN 10% OF BEING SATISFIED:	***0***

WARRANT CRITERIA:	**NOT SATISFIED**



The Four Hour Vehicular Volume signal warrant conditions are intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal. The need for a traffic control signal shall be considered if an engineering study finds that for each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher volume minor-street approach (one direction only) all fall above the applicable curve provided in the MUTCD for the existing combination of approach lanes.

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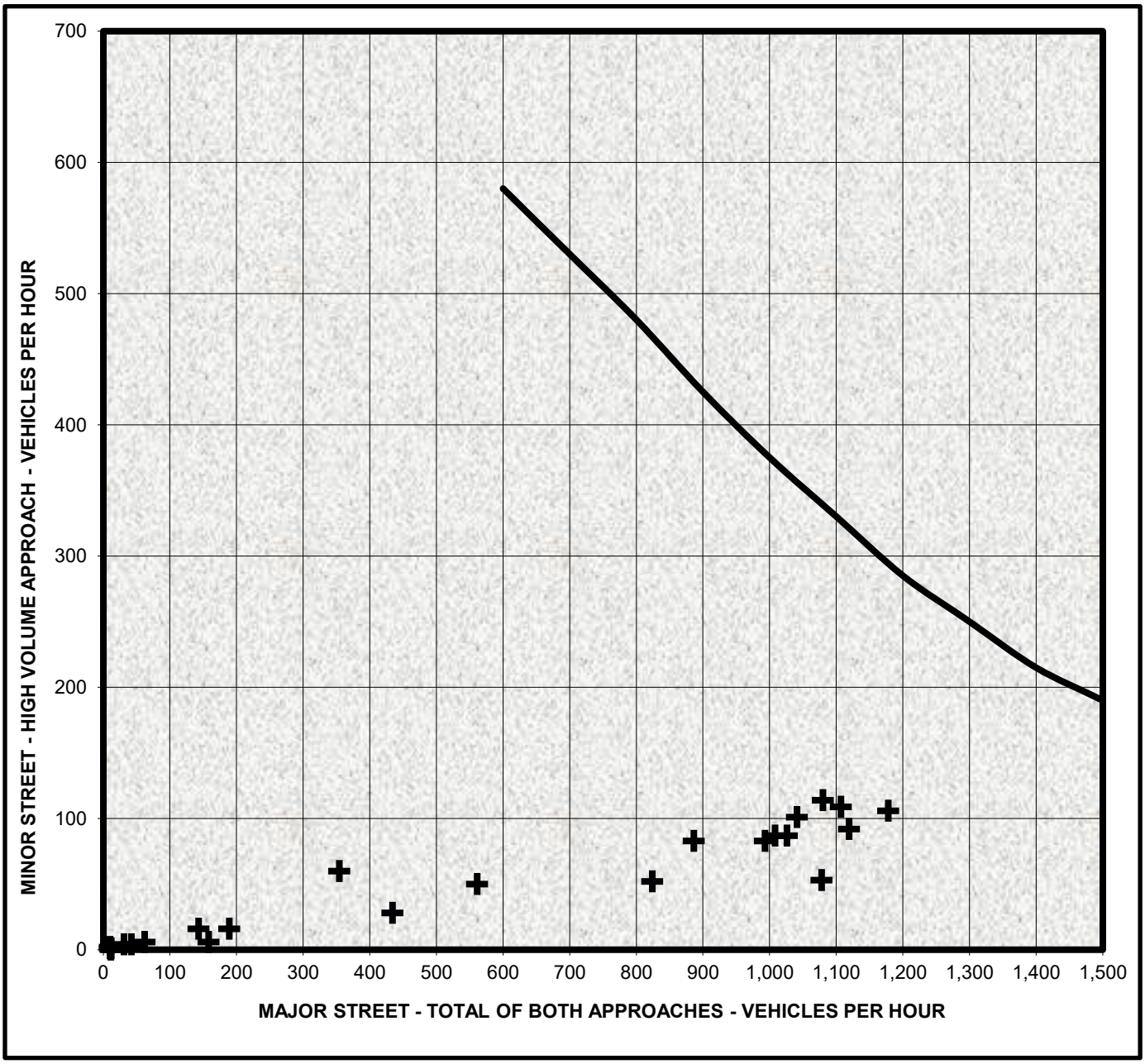
IRONWOOD 92 PARTNERS
92nd STREET and COCHISE DRIVE
M. U. T. C. D. WARRANT # 3
One-Hour Vehicular Volume

NUMBER OF HOURS SATISFIED:	***0***
NUMBER OF HOURS SATISFIED BY LESS THAN 10%:	***0***
NUMBER OF HOURS WITHIN 10% OF BEING SATISFIED:	***0***

WARRANT CRITERIA:	**NOT SATISFIED**



The Four Hour Vehicular Volume signal warrant conditions are intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal. The need for a traffic control signal shall be considered if an engineering study finds that for each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher volume minor-street approach (one direction only) all fall above the applicable curve provided in the MUTCD for the existing combination of approach lanes.

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Appendix E.2

Ambient 2024

TRAFFIC CONTROL SIGNAL WARRANT STUDY
LANE NUMBER, SPEED, AND VOLUME DATA

PROJECT: **IRONWOOD 92 PARTNERS**
LOCATION: **SCOTTSDALE, ARIZONA**

NORTH/SOUTH STREET: **92nd STREET**

NB LANES: **2**
SB LANES: **2**

EAST/WEST STREET: **COCHISE DRIVE**

EB LANES: **2**
WB LANES: **2**

SPEED LIMIT ON MAJOR STREET: **35**
85TH PERCENTILE SPEED ON MAJOR STREET: **UNKNOWN**

VOLUME DATA: EXISTING

DATE OF COUNT: 22 April 2021
DATE OF STUDY: 26 May 2021

SPECIAL CONDITIONS: **NONE**

	INTERSECTION APPROACH TRAFFIC VOLUMES			
TIME	**NORTHBOUND**	**SOUTHBOUND**	**EASTBOUND**	**WESTBOUND**
1:00 AM	**6**	**6**	**0**	**1**
2:00 AM	**8**	**2**	**1**	**0**
3:00 AM	**5**	**5**	**2**	**0**
4:00 AM	**2**	**9**	**0**	**0**
5:00 AM	**19**	**23**	**4**	**4**
6:00 AM	**69**	**91**	**6**	**6**
7:00 AM	**173**	**263**	**10**	**28**
8:00 AM	**342**	**490**	**52**	**47**
9:00 AM	**480**	**609**	**42**	**54**
10:00 AM	**518**	**490**	**83**	**78**
11:00 AM	**540**	**481**	**87**	**72**
12:00 PM	**664**	**455**	**110**	**84**
1:00 PM	**633**	**501**	**93**	**86**
2:00 PM	**563**	**474**	**70**	**88**
3:00 PM	**587**	**463**	**102**	**49**
4:00 PM	**690**	**500**	**107**	**50**
5:00 PM	**707**	**384**	**115**	**72**
6:00 PM	**571**	**324**	**83**	**56**
7:00 PM	**350**	**210**	**50**	**46**
8:00 PM	**205**	**153**	**60**	**30**
9:00 PM	**117**	**73**	**9**	**16**
10:00 PM	**80**	**64**	**8**	**16**
11:00 PM	**36**	**26**	**6**	**2**
12:00 AM	**16**	**15**	**4**	**1**
TOTAL	7,381	6,111	1,104	886

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TRAFFIC CONTROL SIGNAL WARRANT STUDY
CRASH EXPERIENCE AND DELAY DATA

92nd STREET and COCHISE DRIVE

CRASH EXPERIENCE DATA

HAVE LESS RESTRICTIVE MEANS BEEN ATTEMPTED?	**NO**
TOTAL NUMBER OF CRASHES IN A 12 MONTH PERIOD:	**4**
NUMBER OF POTENTIALLY PREVENTABLE CRASHES IN A 12 MONTH PERIOD:	**0**
WILL SIGNAL DISRUPT PROGRESSIVE TRAFFIC FLOW?	**POTENTIALLY**

VEHICLE DELAY DATA

TIME PERIOD	SIDE STREET AVERAGE DELAY SECONDS/VEHICLE	SIDE STREET TOTAL DELAY VEH-HOURS	SIDE STREET VOLUME	TOTAL INTERSECTION VOLUME
11:00 AM to 12:00 PM	**32.5**	**0.99**	**110**	**1,313**
7:00 PM to 8:00 PM	**34.8**	**0.58**	**60**	**448**

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IRONWOOD 92 PARTNERS
92nd STREET and COCHISE DRIVE
MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
TRAFFIC CONTROL SIGNAL WARRANT STUDY SUMMARY

LOCATION:	**SCOTTSDALE, ARIZONA**
SPECIAL CONDITIONS:	**NONE**
DATE OF COUNT:	22 April 2021
DATE OF STUDY:	26 May 2021

NORTH/SOUTH STREET:	92nd STREET	MAJOR	MULTI-LANE
EAST/WEST STREET:	COCHISE DRIVE	MINOR	MULTI-LANE

POSTED SPEED LIMIT ON MAJOR STREET:	35 mph
85th PERCENTILE SPEED ON MAJOR STREET:	Unknown

WARRANT	**EXISTING**	**REQUIRED**	**SATISFIED?**
# 1. EIGHT-HOUR VEHICULAR VOLUME			
A. MINIMUM VEHICULAR VOLUME	0	8	NO
B. INTERRUPTION OF CONTINUOUS TRAFFIC	4	8	NO
COMBINATION OF WARRANTS 1A AND 1B (80% of Values)	0	8	NO
COMBINATION OF WARRANTS 1A AND 1B (56% of Values)	-	-	Not Applicable
# 2. FOUR-HOUR VEHICULAR VOLUME	0	4	NO
# 3. PEAK HOUR			
A. PEAK HOUR DELAY - AM	1	3	NO
A. PEAK HOUR DELAY - PM	0	3	NO
B. PEAK HOUR VOLUME	0	1	NO
# 7. CRASH EXPERIENCE			
WITH WARRANT # 1A (Traffic Volumes at 80% of Original Values)	0	8	NO
WITH WARRANT # 1B (Traffic Volumes at 80% of Original Values)	0	8	NO
WITH WARRANT # 1A (Traffic Volumes at 56% of Original Values)	-	-	Not Applicable
WITH WARRANT # 1B (Traffic Volumes at 56% of Original Values)	-	-	Not Applicable
TOTAL NUMBER OF CRASHES	4	-	-
NUMBER OF POTENTIALLY PREVENTABLE CRASHES	0	5	NO
HAVE LESS RESTRICTIVE MEANS BEEN ATTEMPTED?	NO	-	NO
# 7. ENTIRE WARRANT	-	-	NO

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

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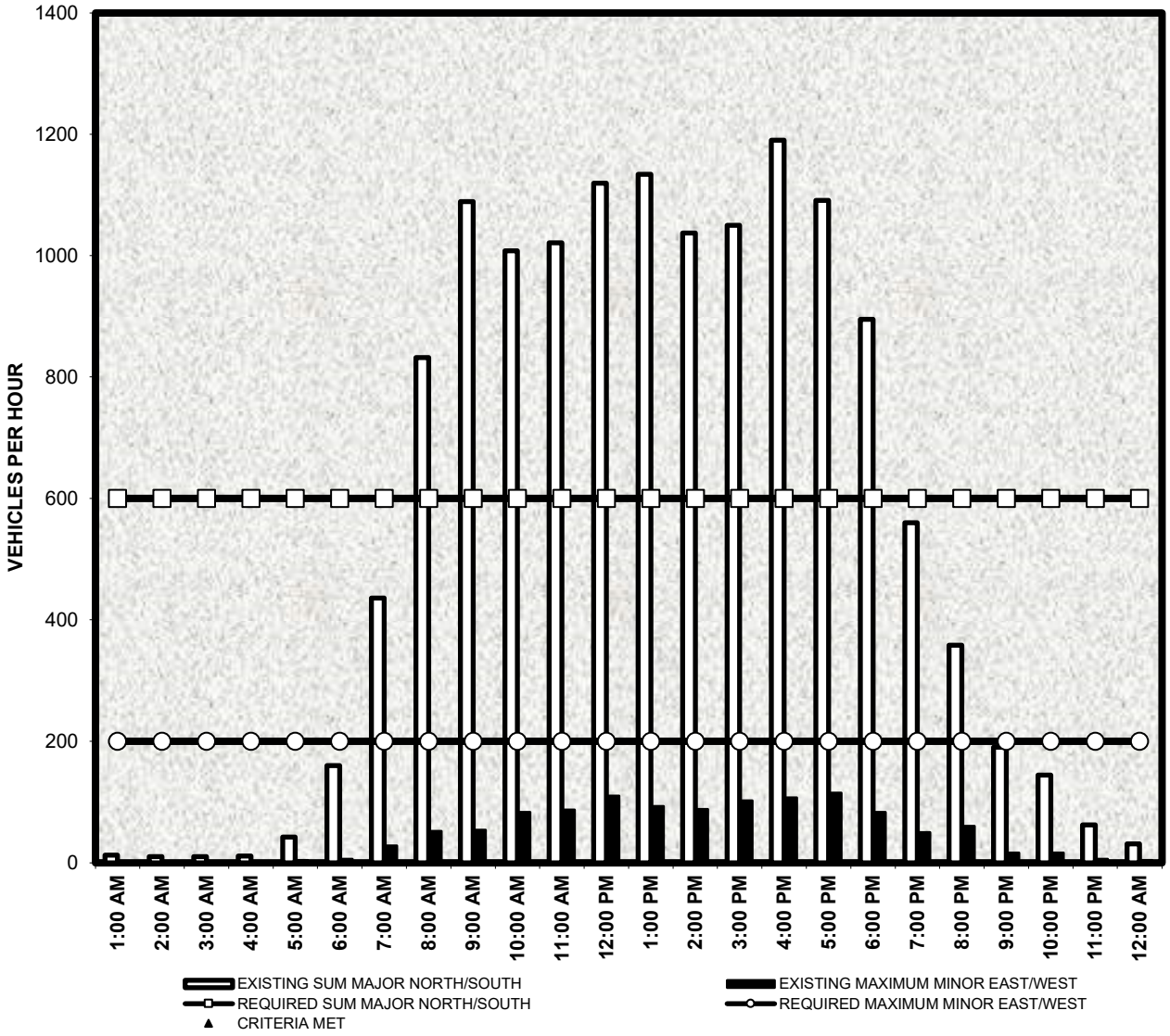
IRONWOOD 92 PARTNERS
92nd STREET and COCHISE DRIVE
M. U. T. C. D. WARRANT # 1A
Minimum Vehicular Volume

REQUIRED HOURLY VOLUMES FOR 8 HOURS ON NORTH/SOUTH STREET	600
REQUIRED HOURLY VOLUMES FOR 8 HOURS ON EAST/WEST STREET	200

NUMBER OF HOURS SATISFIED:	***0***
NUMBER OF HOURS SATISFIED BY LESS THAN 10%:	***0***
NUMBER OF HOURS WITHIN 10% OF BEING SATISFIED:	***0***

WARRANT CRITERIA:	**NOT SATISFIED**



The Minimum Vehicular Volume, Condition A, is intended for application where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal. The warrant is satisfied when, for each of any eight hours of an average day, the traffic volumes provided in the MUTCD exist on the major street and on the higher-volume minor-street approach to the intersection, and the signal installation will not seriously disrupt progressive traffic flow.

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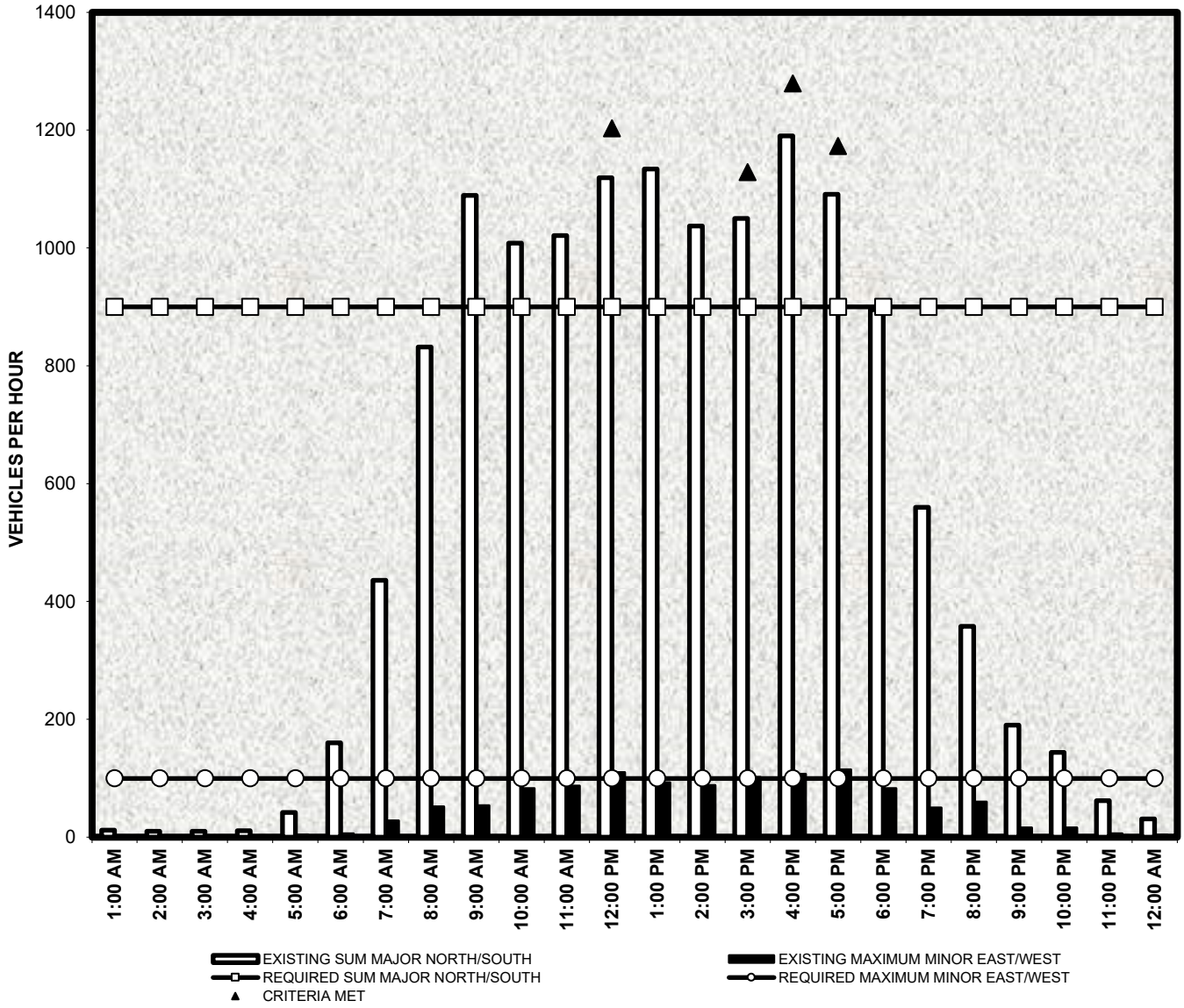
IRONWOOD 92 PARTNERS
92nd STREET and COCHISE DRIVE
M. U. T. C. D. WARRANT # 1B
Interruption of Continuous Traffic

REQUIRED HOURLY VOLUMES FOR 8 HOURS ON NORTH/SOUTH STREET	900
REQUIRED HOURLY VOLUMES FOR 8 HOURS ON EAST/WEST STREET	100

NUMBER OF HOURS SATISFIED:	***4***
NUMBER OF HOURS SATISFIED BY LESS THAN 10%:	***3***
NUMBER OF HOURS WITHIN 10% OF BEING SATISFIED:	***1***

WARRANT CRITERIA:	**NOT SATISFIED**



The Interruption of Continuous Traffic, Condition B, is intended for application where the traffic volume on a major street is so heavy that traffic on a minor intersecting street suffers excessive delay or conflict in entering or crossing the major street. The warrant is satisfied when, for each of any eight hours of an average day, the traffic volumes provided in the MUTCD exist on the major street and on the higher-volume minor-street approach to the intersection, and the signal installation will not seriously disrupt progressive traffic flow.

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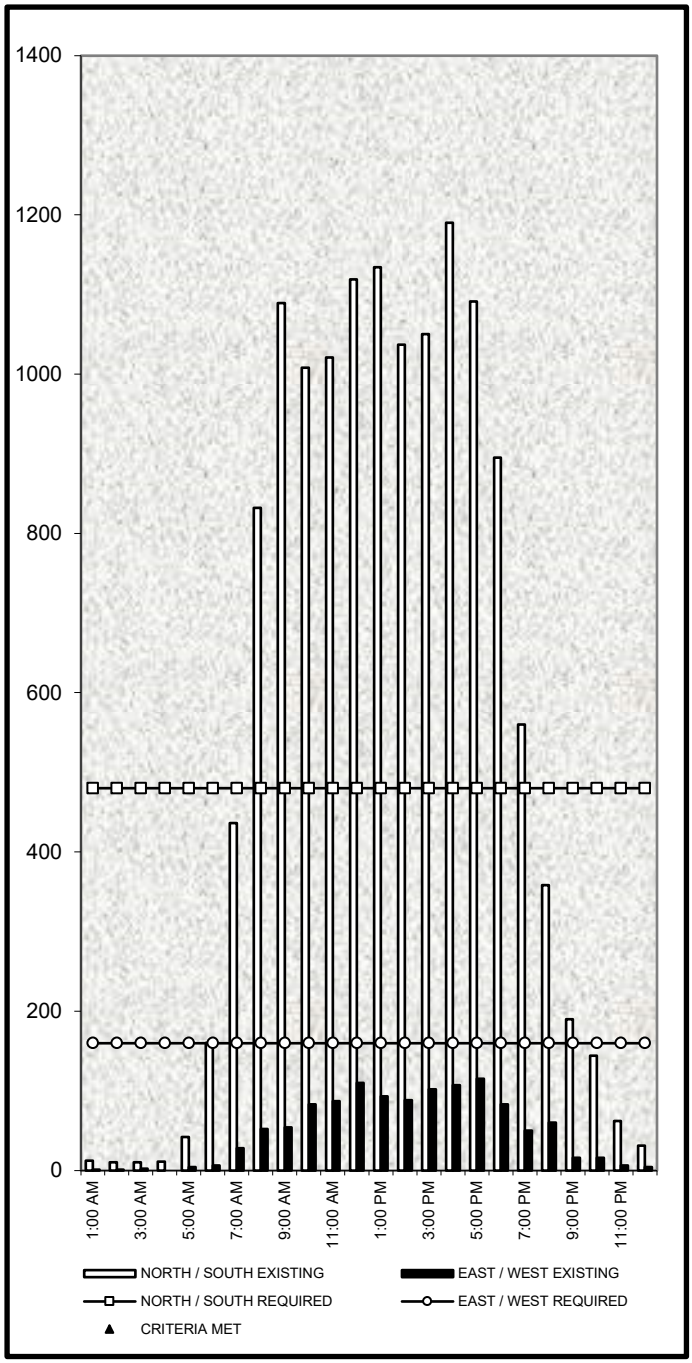
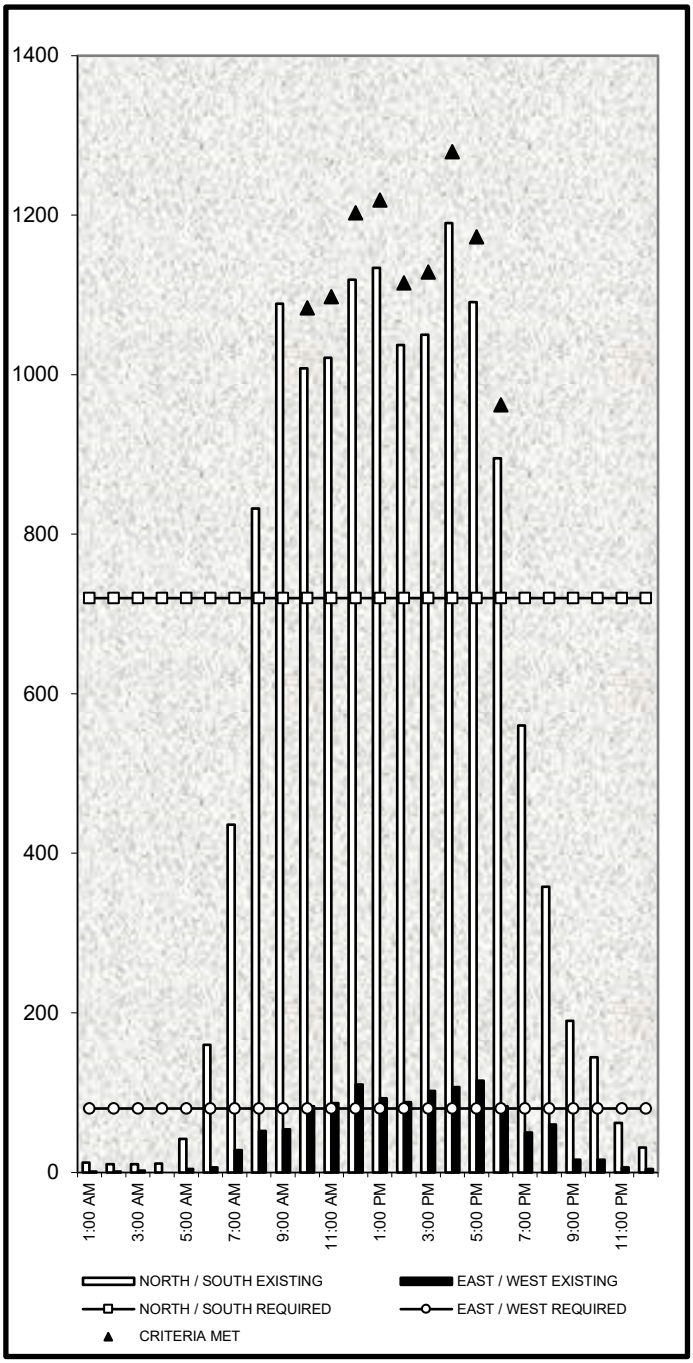
IRONWOOD 92 PARTNERS
92nd STREET and COCHISE DRIVE
M. U. T. C. D. WARRANT # 1
Combination of Conditions A and B at 80% of Original Values

REQUIRED HOURLY VOLUMES FOR 8 HOURS ON NORTH / SOUTH STREET	480	720
REQUIRED HOURLY VOLUMES FOR 8 HOURS ON EAST / WEST STREET	160	80

NUMBER OF HOURS SATISFIED:	***0***	***9***

WARRANT CRITERIA:	**NOT SATISFIED**





The major-street and minor-street volumes shall be for the same 8 hours for each condition; however, the 8 hours satisfied on A shall not be required to be the same 8 hours satisfied in Condition B. The combination of Conditions A and B should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

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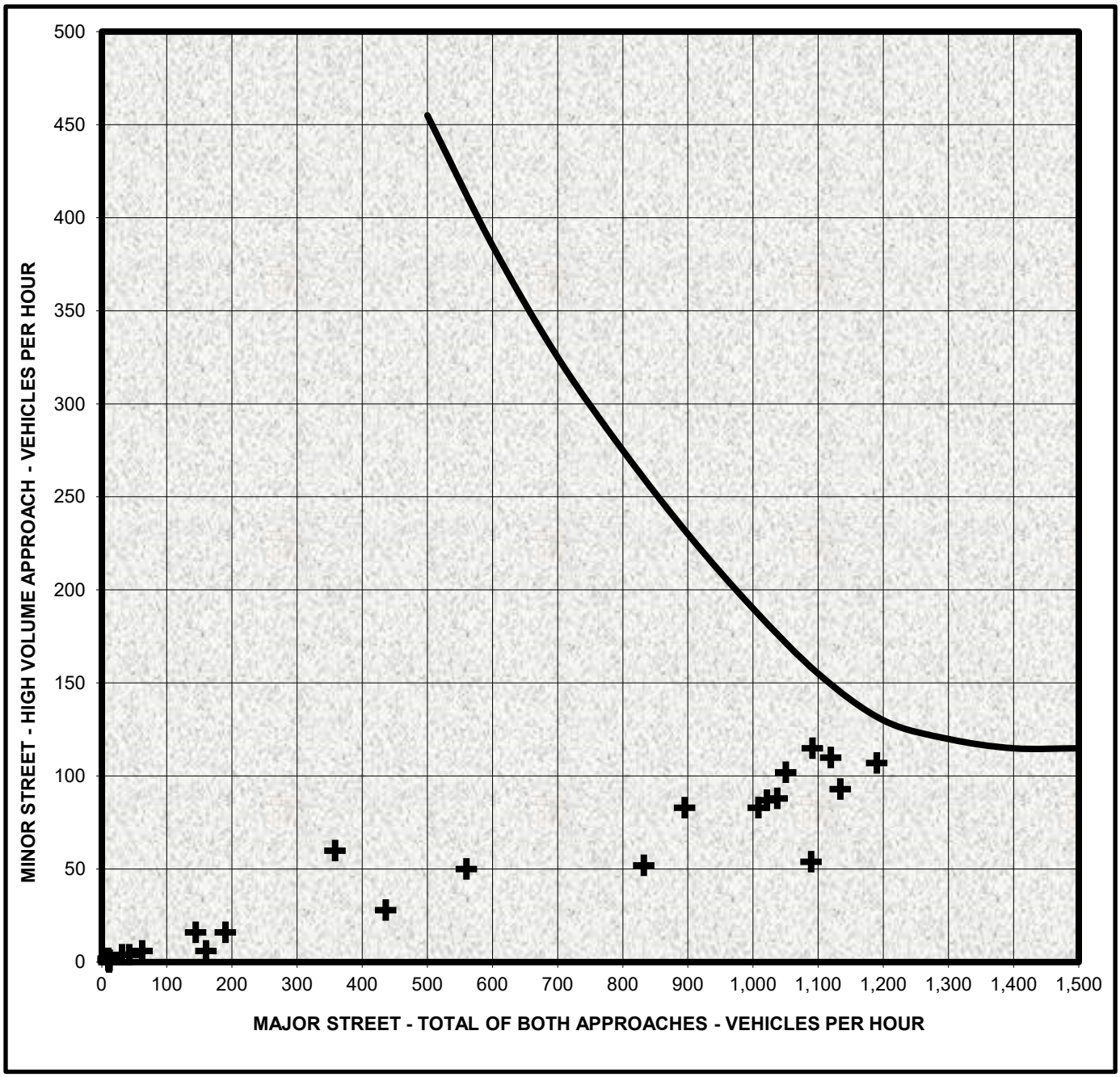
IRONWOOD 92 PARTNERS
92nd STREET and COCHISE DRIVE
M. U. T. C. D. WARRANT # 2
Four-Hour Vehicular Volume

NUMBER OF HOURS SATISFIED:	***0***
NUMBER OF HOURS SATISFIED BY LESS THAN 10%:	***0***
NUMBER OF HOURS WITHIN 10% OF BEING SATISFIED:	***0***

WARRANT CRITERIA:	**NOT SATISFIED**



The Four Hour Vehicular Volume signal warrant conditions are intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal. The need for a traffic control signal shall be considered if an engineering study finds that for each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher volume minor-street approach (one direction only) all fall above the applicable curve provided in the MUTCD for the existing combination of approach lanes.

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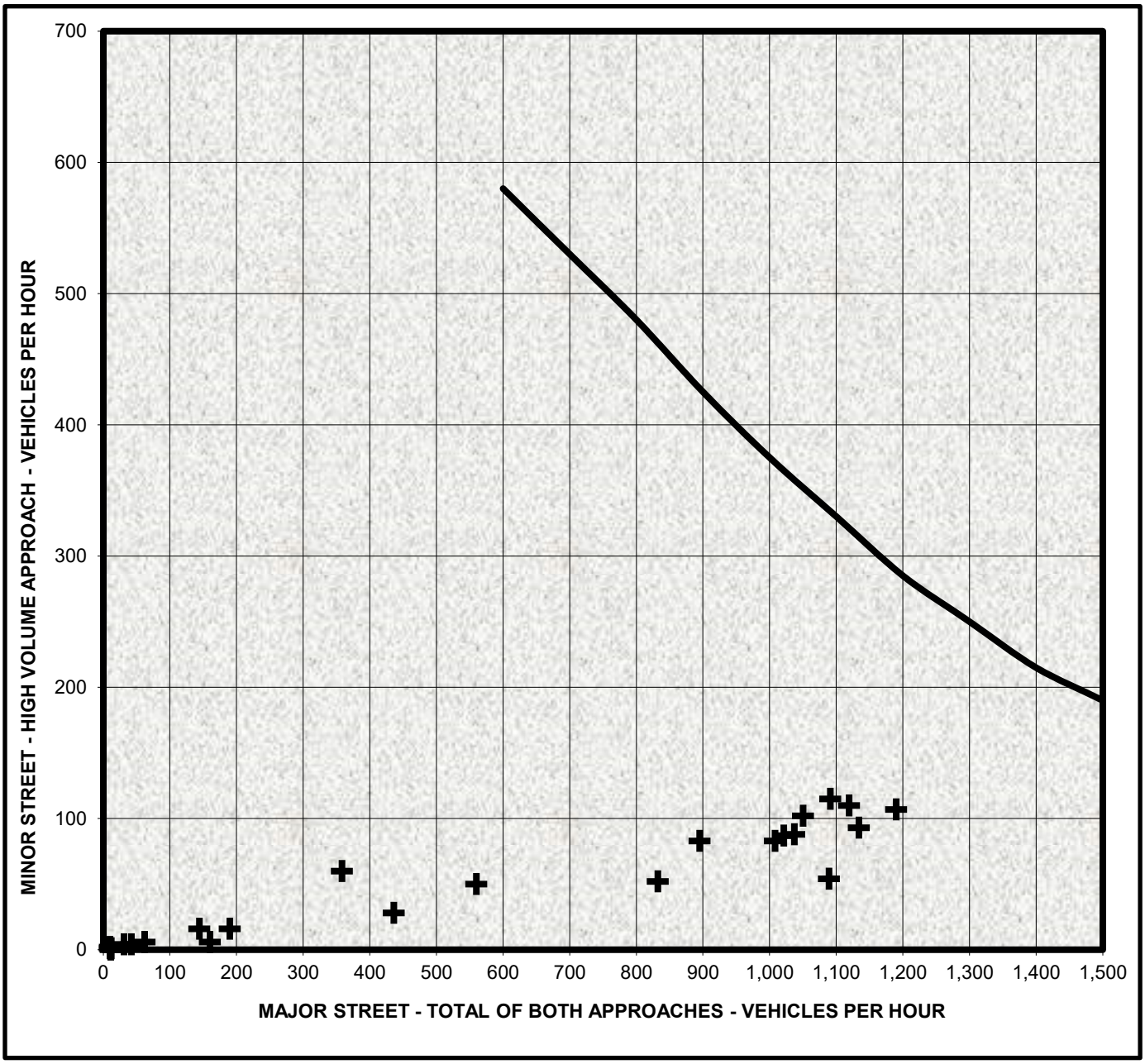
IRONWOOD 92 PARTNERS
92nd STREET and COCHISE DRIVE
M. U. T. C. D. WARRANT # 3
One-Hour Vehicular Volume

NUMBER OF HOURS SATISFIED:	***0***
NUMBER OF HOURS SATISFIED BY LESS THAN 10%:	***0***
NUMBER OF HOURS WITHIN 10% OF BEING SATISFIED:	***0***

WARRANT CRITERIA:	**NOT SATISFIED**



The Four Hour Vehicular Volume signal warrant conditions are intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal. The need for a traffic control signal shall be considered if an engineering study finds that for each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher volume minor-street approach (one direction only) all fall above the applicable curve provided in the MUTCD for the existing combination of approach lanes.

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Appendix E.3

2024 with Mercado Courtyards Apartments – 1-lane Minor

IRONWOOD 92 PARTNERS
92nd STREET and COCHISE DRIVE
MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
TRAFFIC CONTROL SIGNAL WARRANT STUDY SUMMARY

LOCATION:	**SCOTTSDALE, ARIZONA**
SPECIAL CONDITIONS:	**NONE**
DATE OF COUNT:	22 April 2021
DATE OF STUDY:	26 May 2021

NORTH/SOUTH STREET:	92nd STREET	MAJOR	MULTI-LANE
EAST/WEST STREET:	COCHISE DRIVE	MINOR	MULTI-LANE

POSTED SPEED LIMIT ON MAJOR STREET:	35 mph
85th PERCENTILE SPEED ON MAJOR STREET:	Unknown

WARRANT	**EXISTING**	**REQUIRED**	**SATISFIED?**
# 1. EIGHT-HOUR VEHICULAR VOLUME			
A. MINIMUM VEHICULAR VOLUME	0	8	NO
B. INTERRUPTION OF CONTINUOUS TRAFFIC	8	8	YES
COMBINATION OF WARRANTS 1A AND 1B (80% of Values)	0	8	NO
COMBINATION OF WARRANTS 1A AND 1B (56% of Values)	-	-	Not Applicable
# 2. FOUR-HOUR VEHICULAR VOLUME	1	4	NO
# 3. PEAK HOUR			
A. PEAK HOUR DELAY - AM	1	3	NO
A. PEAK HOUR DELAY - PM	0	3	NO
B. PEAK HOUR VOLUME	0	1	NO
# 7. CRASH EXPERIENCE			
WITH WARRANT # 1A (Traffic Volumes at 80% of Original Values)	0	8	NO
WITH WARRANT # 1B (Traffic Volumes at 80% of Original Values)	0	8	NO
WITH WARRANT # 1A (Traffic Volumes at 56% of Original Values)	-	-	Not Applicable
WITH WARRANT # 1B (Traffic Volumes at 56% of Original Values)	-	-	Not Applicable
TOTAL NUMBER OF CRASHES	4	-	-
NUMBER OF POTENTIALLY PREVENTABLE CRASHES	0	5	NO
HAVE LESS RESTRICTIVE MEANS BEEN ATTEMPTED?	NO	-	NO
# 7. ENTIRE WARRANT	-	-	NO

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

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SUMMIT
LAND MANAGEMENT

TRAFFIC CONTROL SIGNAL WARRANT STUDY
LANE NUMBER, SPEED, AND VOLUME DATA

PROJECT: **IRONWOOD 92 PARTNERS**
LOCATION: **SCOTTSDALE, ARIZONA**

NORTH/SOUTH STREET: **92nd STREET**

NB LANES: **2**
SB LANES: **2**

EAST/WEST STREET: **COCHISE DRIVE**

EB LANES: **2**
WB LANES: **2**

SPEED LIMIT ON MAJOR STREET: **35**
85TH PERCENTILE SPEED ON MAJOR STREET: **UNKNOWN**

VOLUME DATA: EXISTING

DATE OF COUNT: 22 April 2021
DATE OF STUDY: 26 May 2021

SPECIAL CONDITIONS: **NONE**

	INTERSECTION APPROACH TRAFFIC VOLUMES			
TIME	**NORTHBOUND**	**SOUTHBOUND**	**EASTBOUND**	**WESTBOUND**
1:00 AM	**6**	**7**	**0**	**1**
2:00 AM	**8**	**2**	**1**	**0**
3:00 AM	**5**	**5**	**2**	**0**
4:00 AM	**2**	**9**	**0**	**0**
5:00 AM	**22**	**28**	**4**	**32**
6:00 AM	**74**	**98**	**6**	**48**
7:00 AM	**186**	**279**	**10**	**84**
8:00 AM	**358**	**522**	**52**	**116**
9:00 AM	**499**	**645**	**42**	**111**
10:00 AM	**564**	**557**	**83**	**116**
11:00 AM	**583**	**528**	**87**	**95**
12:00 PM	**710**	**504**	**110**	**122**
1:00 PM	**677**	**560**	**93**	**124**
2:00 PM	**604**	**521**	**70**	**120**
3:00 PM	**620**	**508**	**102**	**75**
4:00 PM	**725**	**555**	**107**	**83**
5:00 PM	**744**	**440**	**115**	**112**
6:00 PM	**609**	**367**	**83**	**99**
7:00 PM	**371**	**233**	**50**	**86**
8:00 PM	**218**	**167**	**60**	**58**
9:00 PM	**124**	**81**	**9**	**37**
10:00 PM	**83**	**69**	**8**	**30**
11:00 PM	**36**	**26**	**6**	**2**
12:00 AM	**16**	**15**	**4**	**1**
TOTAL	7,844	6,726	1,104	1,552

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TRAFFIC CONTROL SIGNAL WARRANT STUDY
CRASH EXPERIENCE AND DELAY DATA

92nd STREET and COCHISE DRIVE

CRASH EXPERIENCE DATA

HAVE LESS RESTRICTIVE MEANS BEEN ATTEMPTED?	**NO**
TOTAL NUMBER OF CRASHES IN A 12 MONTH PERIOD:	**4**
NUMBER OF POTENTIALLY PREVENTABLE CRASHES IN A 12 MONTH PERIOD:	**0**
WILL SIGNAL DISRUPT PROGRESSIVE TRAFFIC FLOW?	**POTENTIALLY**

VEHICLE DELAY DATA

TIME PERIOD	SIDE STREET AVERAGE DELAY SECONDS/VEHICLE	SIDE STREET TOTAL DELAY VEH-HOURS	SIDE STREET VOLUME	TOTAL INTERSECTION VOLUME
9:00 AM to 10:00 AM	**32.5**	**1.05**	**116**	**1,320**
7:00 PM to 8:00 PM	**34.8**	**0.58**	**60**	**503**

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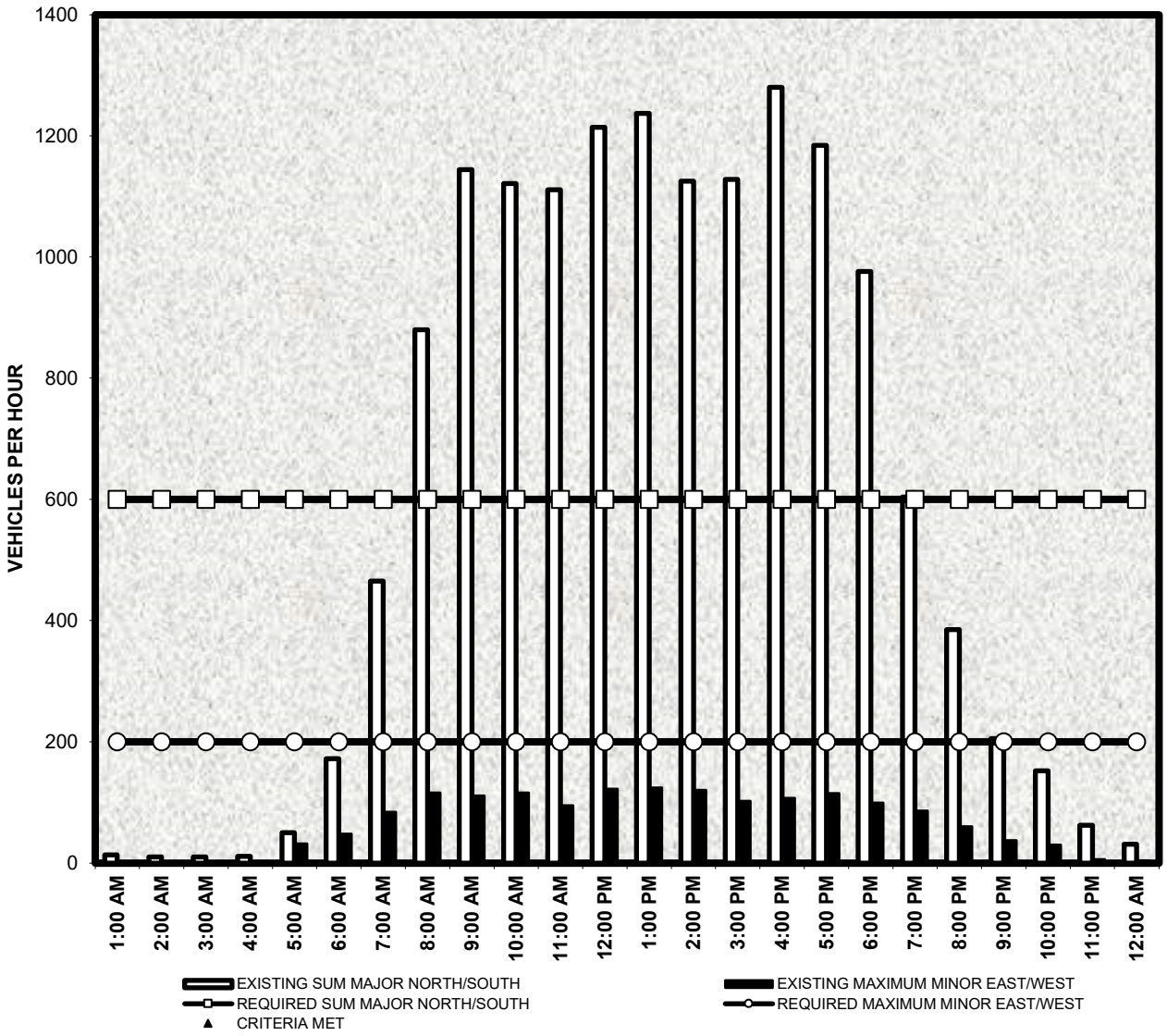
IRONWOOD 92 PARTNERS
92nd STREET and COCHISE DRIVE
M. U. T. C. D. WARRANT # 1A
Minimum Vehicular Volume

REQUIRED HOURLY VOLUMES FOR 8 HOURS ON NORTH/SOUTH STREET	600
REQUIRED HOURLY VOLUMES FOR 8 HOURS ON EAST/WEST STREET	200

NUMBER OF HOURS SATISFIED:	***0***
NUMBER OF HOURS SATISFIED BY LESS THAN 10%:	***0***
NUMBER OF HOURS WITHIN 10% OF BEING SATISFIED:	***0***

WARRANT CRITERIA:	**NOT SATISFIED**



The Minimum Vehicular Volume, Condition A, is intended for application where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal. The warrant is satisfied when, for each of any eight hours of an average day, the traffic volumes provided in the MUTCD exist on the major street and on the higher-volume minor-street approach to the intersection, and the signal installation will not seriously disrupt progressive traffic flow.

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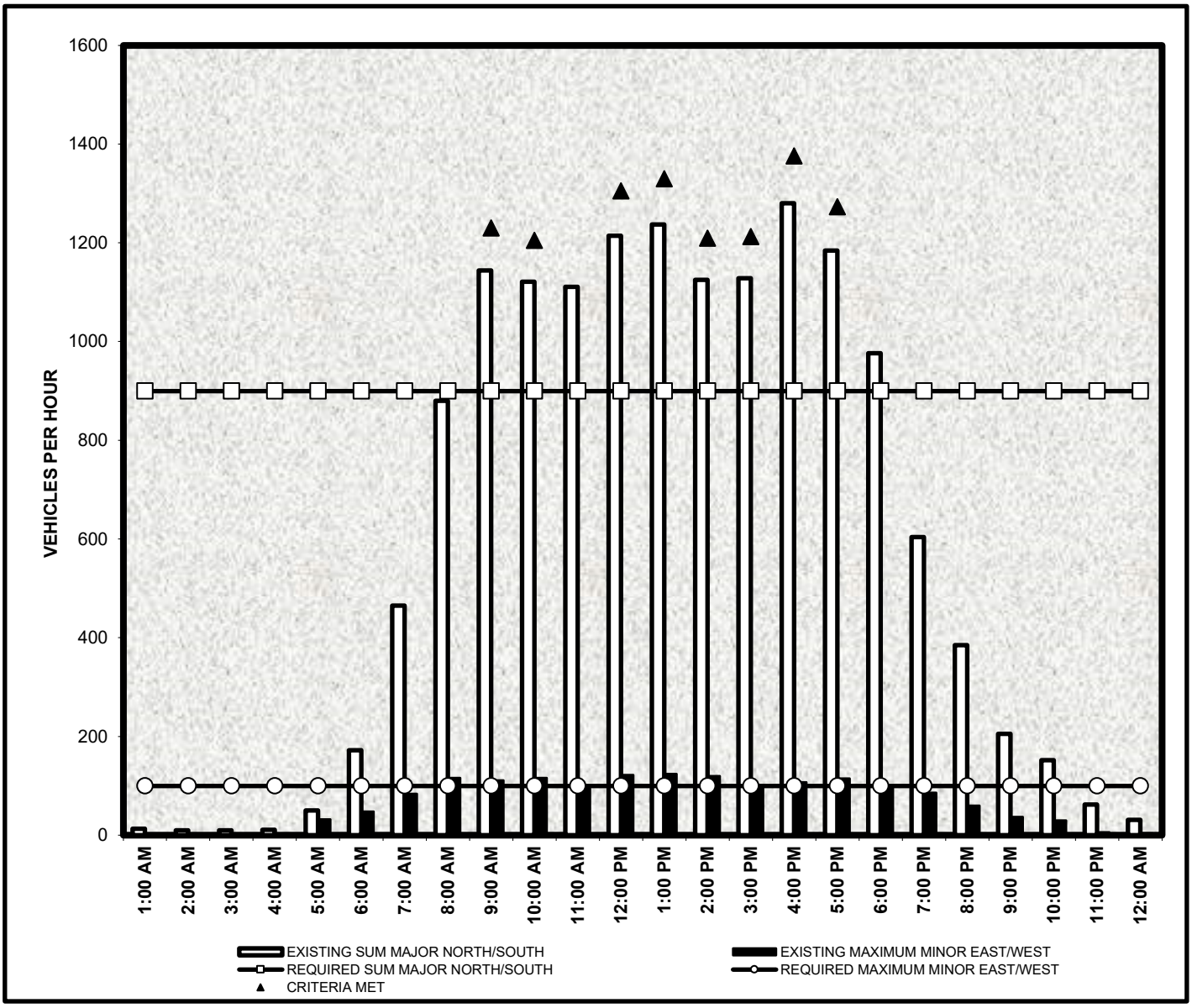
SUMMIT

IRONWOOD 92 PARTNERS
92nd STREET and COCHISE DRIVE
M. U. T. C. D. WARRANT # 1B
Interruption of Continuous Traffic

REQUIRED HOURLY VOLUMES FOR 8 HOURS ON NORTH/SOUTH STREET	900
REQUIRED HOURLY VOLUMES FOR 8 HOURS ON EAST/WEST STREET	100

NUMBER OF HOURS SATISFIED:	***8***
NUMBER OF HOURS SATISFIED BY LESS THAN 10%:	***2***
NUMBER OF HOURS WITHIN 10% OF BEING SATISFIED:	***3***

WARRANT CRITERIA:	**SATISFIED**



The Interruption of Continuous Traffic, Condition B, is intended for application where the traffic volume on a major street is so heavy that traffic on a minor intersecting street suffers excessive delay or conflict in entering or crossing the major street. The warrant is satisfied when, for each of any eight hours of an average day, the traffic volumes provided in the MUTCD exist on the major street and on the higher-volume minor-street approach to the intersection, and the signal installation will not seriously disrupt progressive traffic flow.

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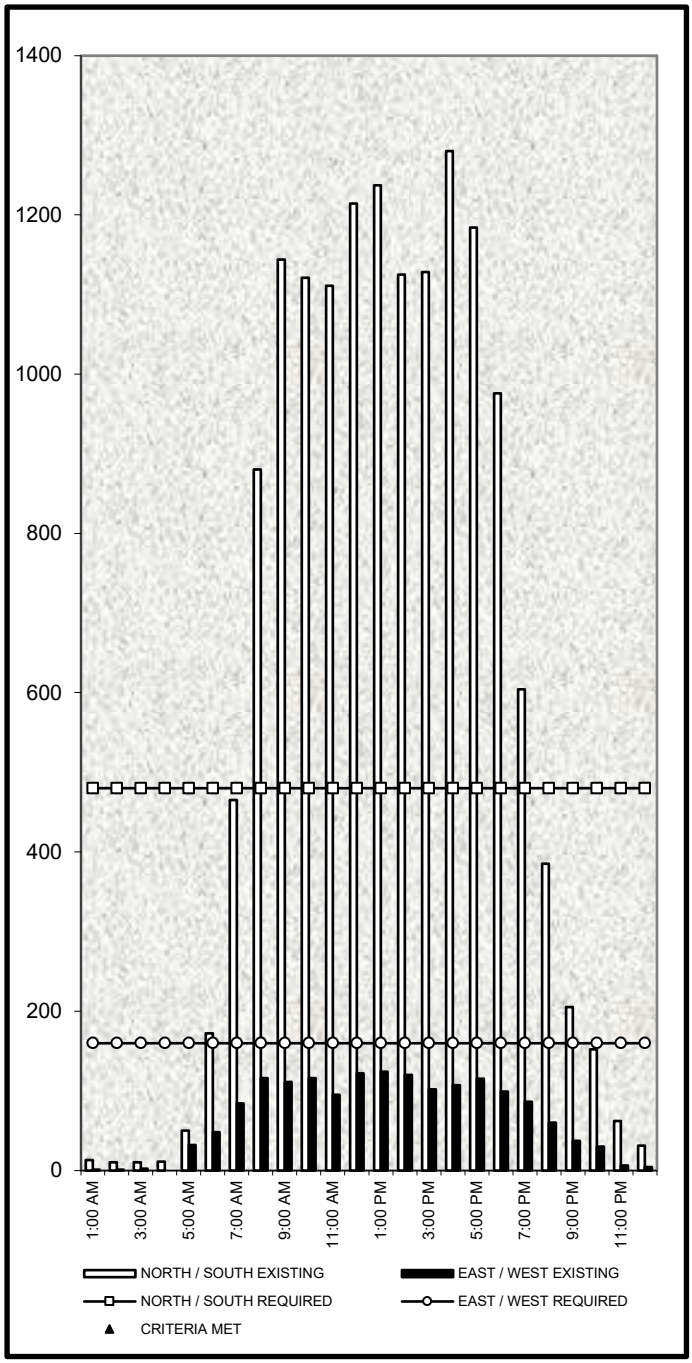
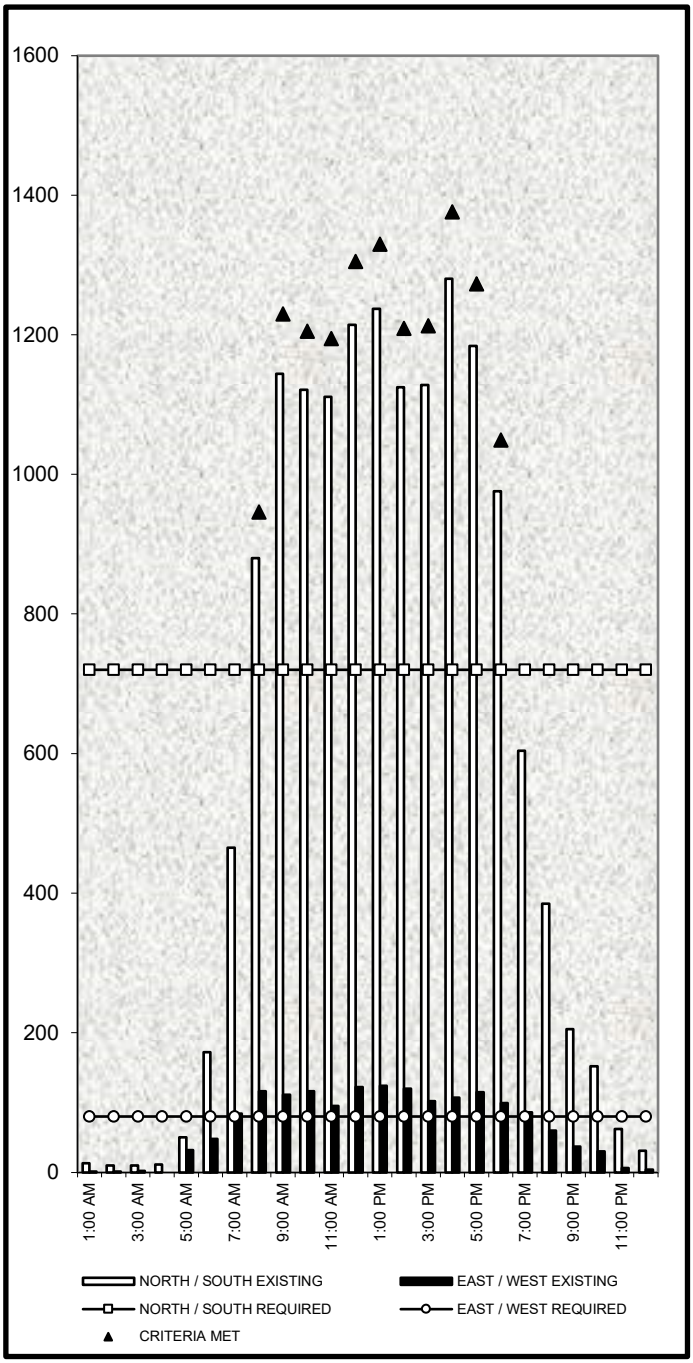
IRONWOOD 92 PARTNERS
92nd STREET and COCHISE DRIVE
M. U. T. C. D. WARRANT # 1
Combination of Conditions A and B at 80% of Original Values

REQUIRED HOURLY VOLUMES FOR 8 HOURS ON NORTH / SOUTH STREET	480	720
REQUIRED HOURLY VOLUMES FOR 8 HOURS ON EAST / WEST STREET	160	80

NUMBER OF HOURS SATISFIED:	***0***	***11***

WARRANT CRITERIA:	**NOT SATISFIED**





The major-street and minor-street volumes shall be for the same 8 hours for each condition; however, the 8 hours satisfied on A shall not be required to be the same 8 hours satisfied in Condition B. The combination of Conditions A and B should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

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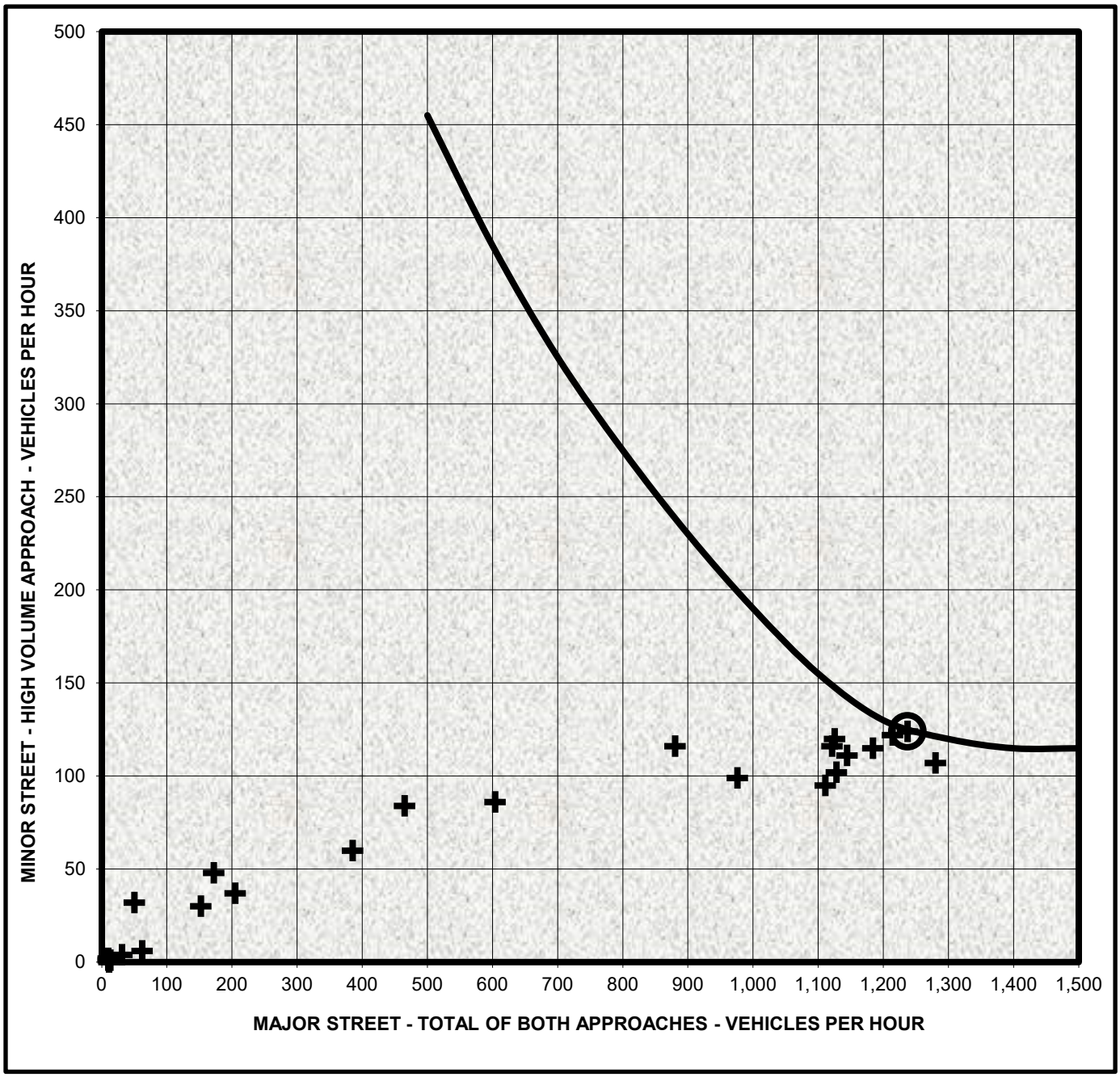
IRONWOOD 92 PARTNERS
92nd STREET and COCHISE DRIVE
M. U. T. C. D. WARRANT # 2
Four-Hour Vehicular Volume

NUMBER OF HOURS SATISFIED:	***1***
NUMBER OF HOURS SATISFIED BY LESS THAN 10%:	***1***
NUMBER OF HOURS WITHIN 10% OF BEING SATISFIED:	***1***

WARRANT CRITERIA:	**NOT SATISFIED**



The Four Hour Vehicular Volume signal warrant conditions are intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal. The need for a traffic control signal shall be considered if an engineering study finds that for each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher volume minor-street approach (one direction only) all fall above the applicable curve provided in the MUTCD for the existing combination of approach lanes.

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IRONWOOD 92 PARTNERS
92nd STREET and COCHISE DRIVE
M. U. T. C. D. WARRANT # 3
Peak Hour, Category A (Delay)

REQUIRED SIDE STREET VEHICLE-HOURS DELAY:	5.00
REQUIRED SIDE STREET HOURLY VOLUME:	150
REQUIRED TOTAL INTERSECTION HOURLY VOLUME:	800

TIME PERIOD: 9:00 AM to 10:00 AM	MEASURED	SATISFIED?
SIDE STREET VEHICLE-HOURS DELAY:	1.05	NO
SIDE STREET HOURLY VOLUME:	116	NO
TOTAL INTERSECTION HOURLY VOLUME:	1320	YES
ALL CRITERIA		**NO**

TIME PERIOD: 7:00 PM to 8:00 PM	MEASURED	SATISFIED?
SIDE STREET VEHICLE-HOURS DELAY:	0.58	NO
SIDE STREET HOURLY VOLUME:	60	NO
TOTAL INTERSECTION HOURLY VOLUME:	503	NO
ALL CRITERIA		**NO**

The Peak Hour signal warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor-street suffers undue delay when entering or crossing the major street.

This signal warrant shall be applied only in unusual cases. Such cases include, but are not limited to, office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time.

The need for a traffic control signal shall be considered if an engineering study finds that all three of the following conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day:

1. The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and

2. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes, and

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.

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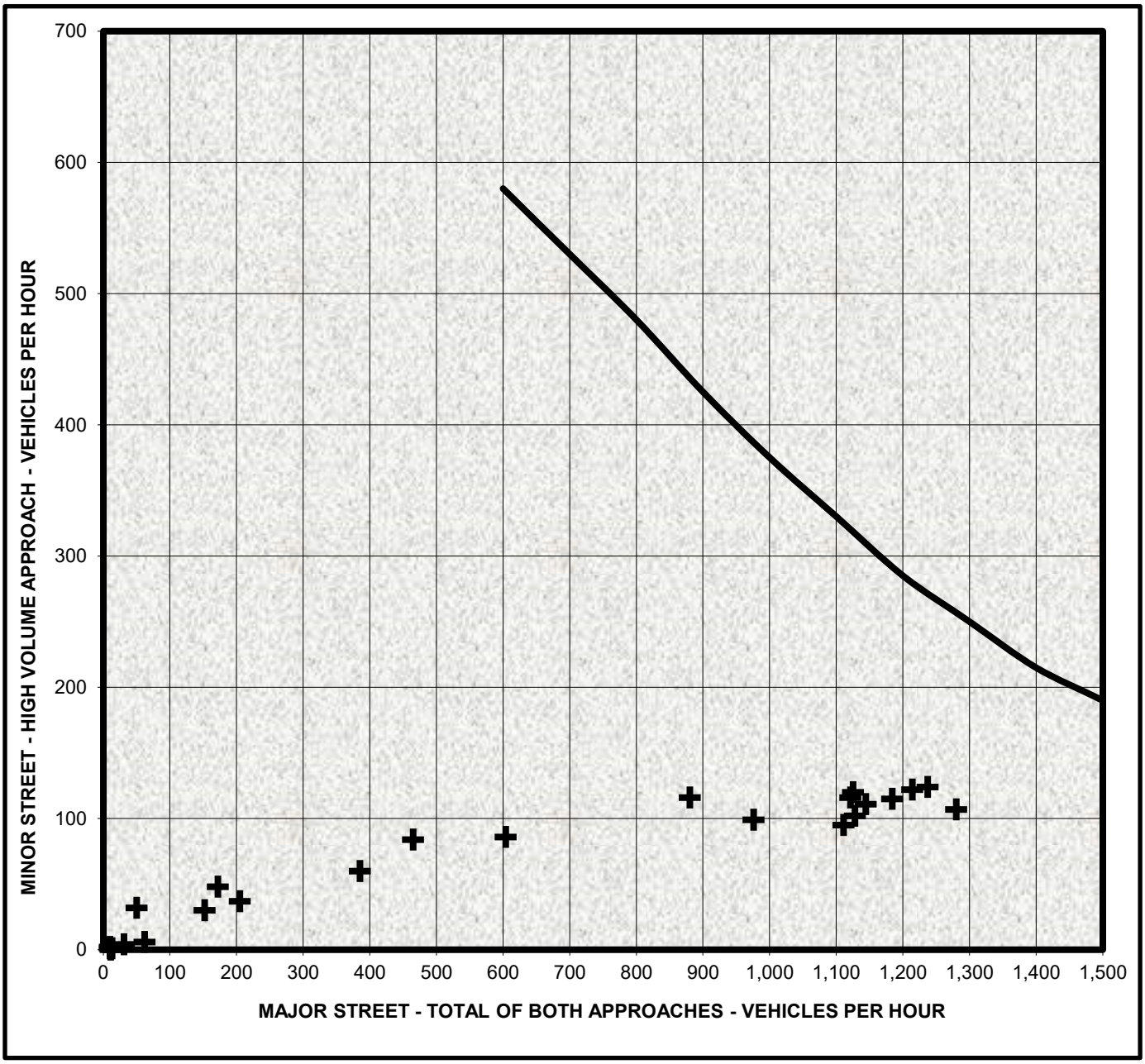
IRONWOOD 92 PARTNERS
92nd STREET and COCHISE DRIVE
M. U. T. C. D. WARRANT # 3
One-Hour Vehicular Volume

NUMBER OF HOURS SATISFIED:	***0***
NUMBER OF HOURS SATISFIED BY LESS THAN 10%:	***0***
NUMBER OF HOURS WITHIN 10% OF BEING SATISFIED:	***0***

WARRANT CRITERIA:	**NOT SATISFIED**



The Four Hour Vehicular Volume signal warrant conditions are intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal. The need for a traffic control signal shall be considered if an engineering study finds that for each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher volume minor-street approach (one direction only) all fall above the applicable curve provided in the MUTCD for the existing combination of approach lanes.

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Appendix E.4

2024 with Mercado Courtyards Apartments – 2-lane Minor

IRONWOOD 92 PARTNERS
92nd STREET and COCHISE DRIVE
MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
TRAFFIC CONTROL SIGNAL WARRANT STUDY SUMMARY

LOCATION:	**SCOTTSDALE, ARIZONA**
SPECIAL CONDITIONS:	**NONE**
DATE OF COUNT:	22 April 2021
DATE OF STUDY:	26 May 2021

NORTH/SOUTH STREET:	92nd STREET	MAJOR	MULTI-LANE
EAST/WEST STREET:	COCHISE DRIVE	MINOR	SINGLE LANE

POSTED SPEED LIMIT ON MAJOR STREET:	35 mph
85th PERCENTILE SPEED ON MAJOR STREET:	Unknown

WARRANT	**EXISTING**	**REQUIRED**	**SATISFIED?**
# 1. EIGHT-HOUR VEHICULAR VOLUME			
A. MINIMUM VEHICULAR VOLUME	0	8	NO
B. INTERRUPTION OF CONTINUOUS TRAFFIC	10	8	YES
COMBINATION OF WARRANTS 1A AND 1B (80% of Values)	3	8	NO
COMBINATION OF WARRANTS 1A AND 1B (56% of Values)	-	-	Not Applicable
# 2. FOUR-HOUR VEHICULAR VOLUME	7	4	YES
# 3. PEAK HOUR			
A. PEAK HOUR DELAY - AM	2	3	NO
A. PEAK HOUR DELAY - PM	0	3	NO
B. PEAK HOUR VOLUME	0	1	NO
# 7. CRASH EXPERIENCE			
WITH WARRANT # 1A (Traffic Volumes at 80% of Original Values)	0	8	NO
WITH WARRANT # 1B (Traffic Volumes at 80% of Original Values)	0	8	NO
WITH WARRANT # 1A (Traffic Volumes at 56% of Original Values)	-	-	Not Applicable
WITH WARRANT # 1B (Traffic Volumes at 56% of Original Values)	-	-	Not Applicable
TOTAL NUMBER OF CRASHES	4	-	-
NUMBER OF POTENTIALLY PREVENTABLE CRASHES	0	5	NO
HAVE LESS RESTRICTIVE MEANS BEEN ATTEMPTED?	NO	-	NO
# 7. ENTIRE WARRANT	-	-	NO

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Checked by: PEB 4/13/2022

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TRAFFIC CONTROL SIGNAL WARRANT STUDY
LANE NUMBER, SPEED, AND VOLUME DATA

PROJECT: **IRONWOOD 92 PARTNERS**
LOCATION: **SCOTTSDALE, ARIZONA**

NORTH/SOUTH STREET: **92nd STREET**

NB LANES: **2**
SB LANES: **2**

EAST/WEST STREET: **COCHISE DRIVE**

EB LANES: **1**
WB LANES: **1**

SPEED LIMIT ON MAJOR STREET: **35**
85TH PERCENTILE SPEED ON MAJOR STREET: **UNKNOWN**

VOLUME DATA: EXISTING

DATE OF COUNT: 22 April 2021
DATE OF STUDY: 26 May 2021

SPECIAL CONDITIONS: **NONE**

	INTERSECTION APPROACH TRAFFIC VOLUMES			
TIME	**NORTHBOUND**	**SOUTHBOUND**	**EASTBOUND**	**WESTBOUND**
1:00 AM	**6**	**7**	**0**	**1**
2:00 AM	**8**	**2**	**1**	**0**
3:00 AM	**5**	**5**	**2**	**0**
4:00 AM	**2**	**9**	**0**	**0**
5:00 AM	**22**	**28**	**4**	**32**
6:00 AM	**74**	**98**	**6**	**48**
7:00 AM	**186**	**279**	**10**	**84**
8:00 AM	**358**	**522**	**52**	**116**
9:00 AM	**499**	**645**	**42**	**111**
10:00 AM	**564**	**557**	**83**	**116**
11:00 AM	**583**	**528**	**87**	**95**
12:00 PM	**710**	**504**	**110**	**122**
1:00 PM	**677**	**560**	**93**	**124**
2:00 PM	**604**	**521**	**70**	**120**
3:00 PM	**620**	**508**	**102**	**75**
4:00 PM	**725**	**555**	**107**	**83**
5:00 PM	**744**	**440**	**115**	**112**
6:00 PM	**609**	**367**	**83**	**99**
7:00 PM	**371**	**233**	**50**	**86**
8:00 PM	**218**	**167**	**60**	**58**
9:00 PM	**124**	**81**	**9**	**37**
10:00 PM	**83**	**69**	**8**	**30**
11:00 PM	**36**	**26**	**6**	**2**
12:00 AM	**16**	**15**	**4**	**1**
TOTAL	7,844	6,726	1,104	1,552

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TRAFFIC CONTROL SIGNAL WARRANT STUDY
CRASH EXPERIENCE AND DELAY DATA

92nd STREET and COCHISE DRIVE

CRASH EXPERIENCE DATA

HAVE LESS RESTRICTIVE MEANS BEEN ATTEMPTED?	**NO**
TOTAL NUMBER OF CRASHES IN A 12 MONTH PERIOD:	**4**
NUMBER OF POTENTIALLY PREVENTABLE CRASHES IN A 12 MONTH PERIOD:	**0**
WILL SIGNAL DISRUPT PROGRESSIVE TRAFFIC FLOW?	**POTENTIALLY**

VEHICLE DELAY DATA

TIME PERIOD	SIDE STREET AVERAGE DELAY SECONDS/VEHICLE	SIDE STREET TOTAL DELAY VEH-HOURS	SIDE STREET VOLUME	TOTAL INTERSECTION VOLUME
9:00 AM to 10:00 AM	**32.5**	**1.05**	**116**	**1,320**
7:00 PM to 8:00 PM	**34.8**	**0.58**	**60**	**503**

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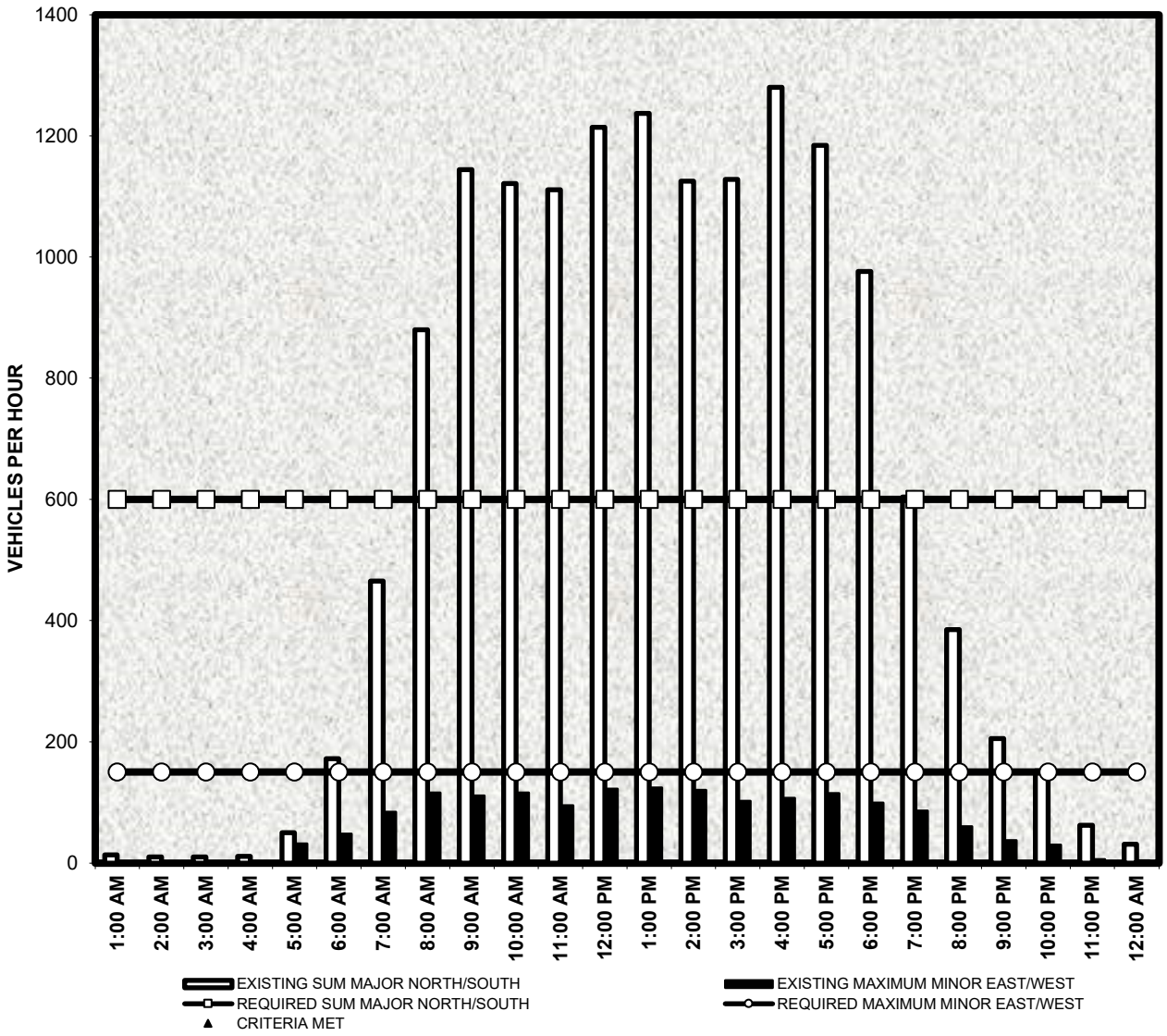
LAND MANAGEMENT

IRONWOOD 92 PARTNERS
92nd STREET and COCHISE DRIVE
M. U. T. C. D. WARRANT # 1A
Minimum Vehicular Volume

REQUIRED HOURLY VOLUMES FOR 8 HOURS ON NORTH/SOUTH STREET	600
REQUIRED HOURLY VOLUMES FOR 8 HOURS ON EAST/WEST STREET	150

NUMBER OF HOURS SATISFIED:	***0***
NUMBER OF HOURS SATISFIED BY LESS THAN 10%:	***0***
NUMBER OF HOURS WITHIN 10% OF BEING SATISFIED:	***0***

WARRANT CRITERIA:	**NOT SATISFIED**



The Minimum Vehicular Volume, Condition A, is intended for application where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal. The warrant is satisfied when, for each of any eight hours of an average day, the traffic volumes provided in the MUTCD exist on the major street and on the higher-volume minor-street approach to the intersection, and the signal installation will not seriously disrupt progressive traffic flow.

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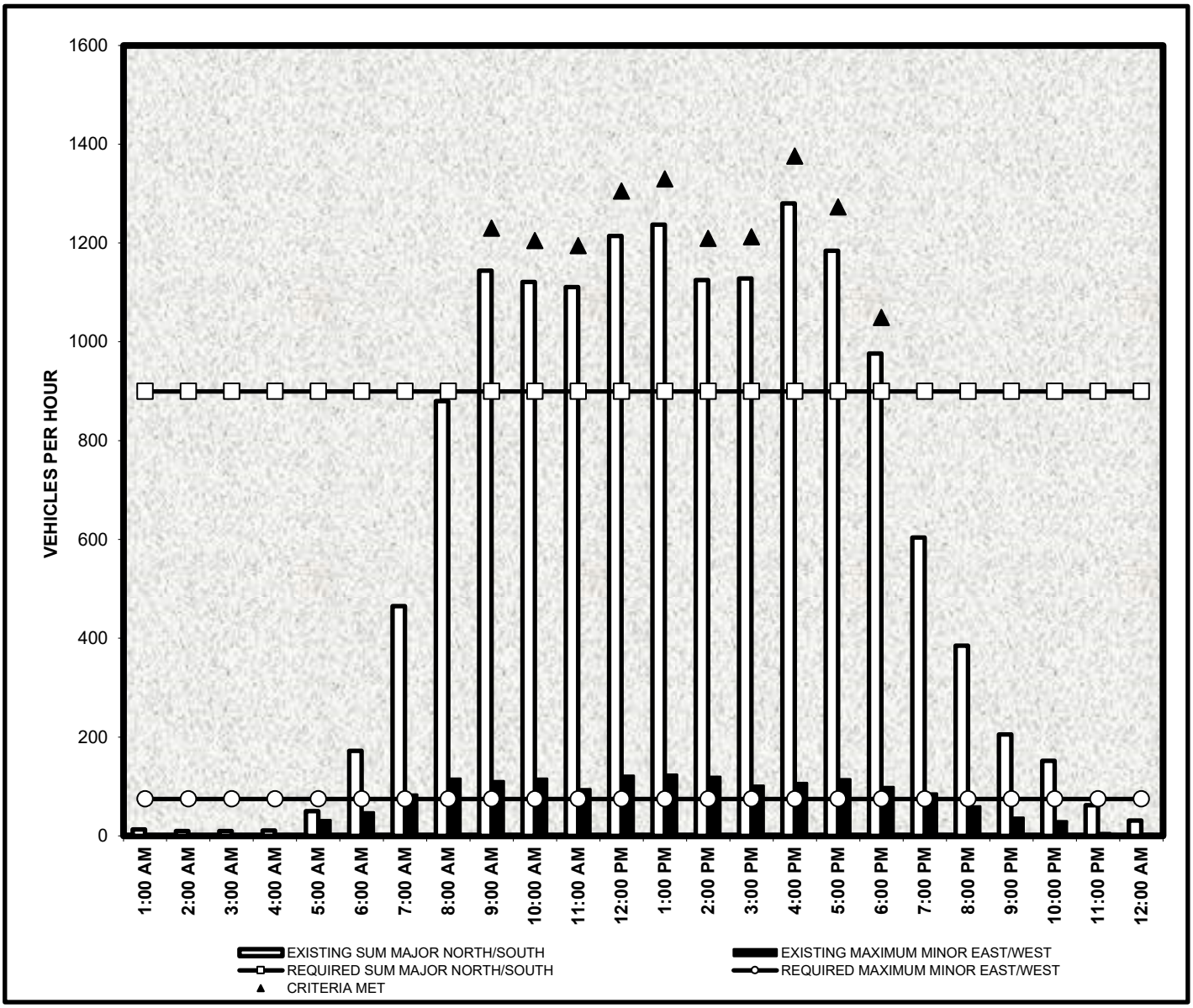
SUMMIT

IRONWOOD 92 PARTNERS
92nd STREET and COCHISE DRIVE
M. U. T. C. D. WARRANT # 1B
Interruption of Continuous Traffic

REQUIRED HOURLY VOLUMES FOR 8 HOURS ON NORTH/SOUTH STREET	900
REQUIRED HOURLY VOLUMES FOR 8 HOURS ON EAST/WEST STREET	75

NUMBER OF HOURS SATISFIED:	***10***
NUMBER OF HOURS SATISFIED BY LESS THAN 10%:	***1***
NUMBER OF HOURS WITHIN 10% OF BEING SATISFIED:	***1***

WARRANT CRITERIA:	**SATISFIED**



The Interruption of Continuous Traffic, Condition B, is intended for application where the traffic volume on a major street is so heavy that traffic on a minor intersecting street suffers excessive delay or conflict in entering or crossing the major street. The warrant is satisfied when, for each of any eight hours of an average day, the traffic volumes provided in the MUTCD exist on the major street and on the higher-volume minor-street approach to the intersection, and the signal installation will not seriously disrupt progressive traffic flow.

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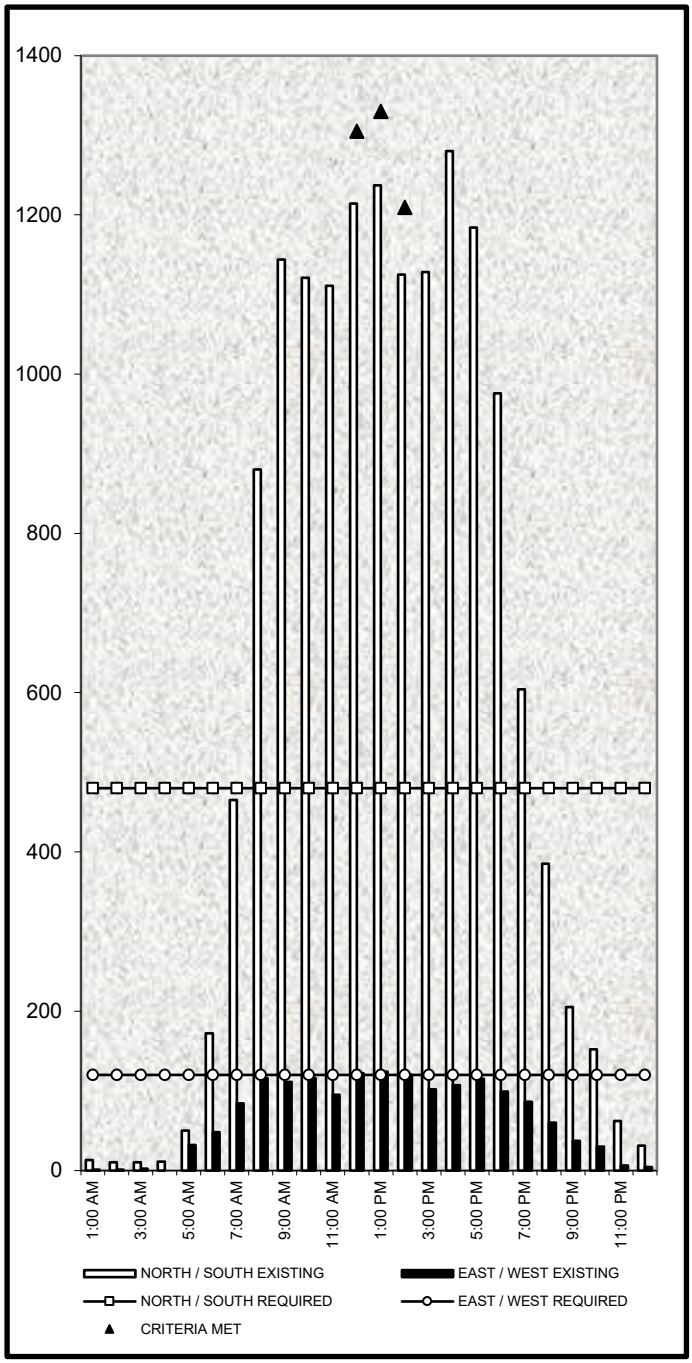
LAND MANAGEMENT

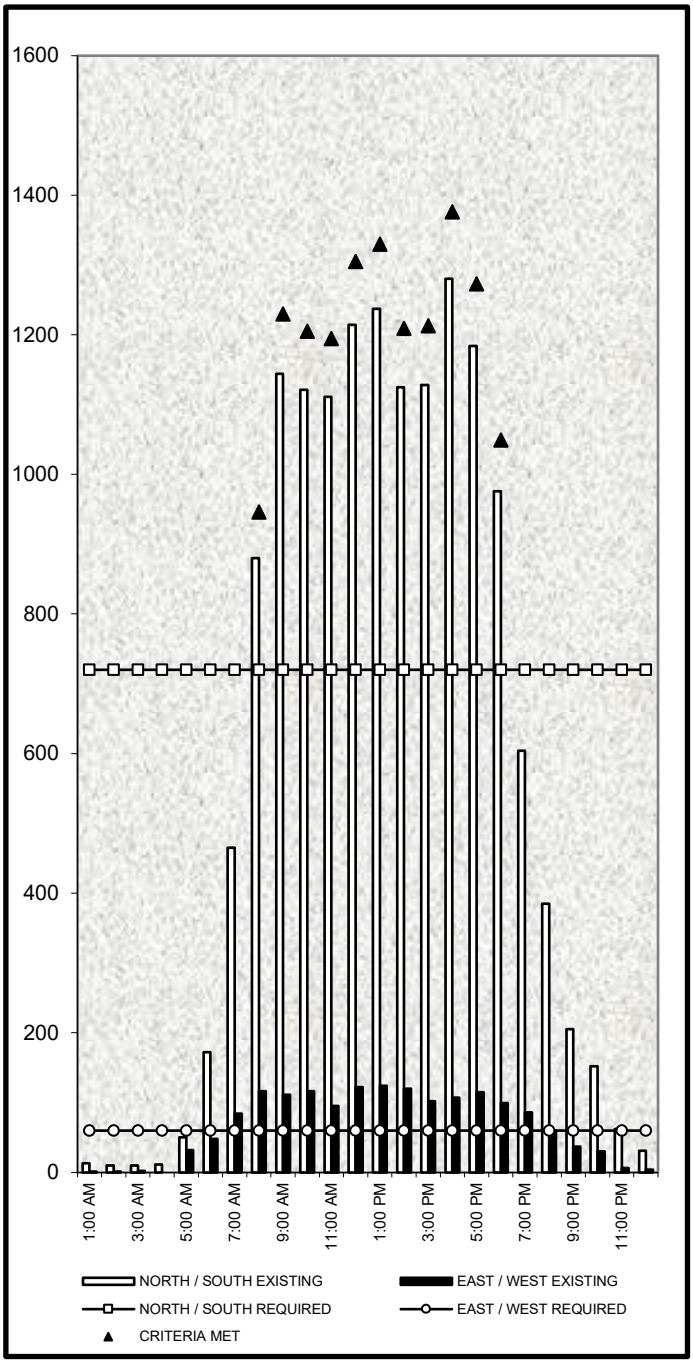
IRONWOOD 92 PARTNERS
92nd STREET and COCHISE DRIVE
M. U. T. C. D. WARRANT # 1
Combination of Conditions A and B at 80% of Original Values

REQUIRED HOURLY VOLUMES FOR 8 HOURS ON NORTH / SOUTH STREET	480	720
REQUIRED HOURLY VOLUMES FOR 8 HOURS ON EAST / WEST STREET	120	60

NUMBER OF HOURS SATISFIED:	***3***	***11***

WARRANT CRITERIA:	**NOT SATISFIED**





The major-street and minor-street volumes shall be for the same 8 hours for each condition; however, the 8 hours satisfied on A shall not be required to be the same 8 hours satisfied in Condition B. The combination of Conditions A and B should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

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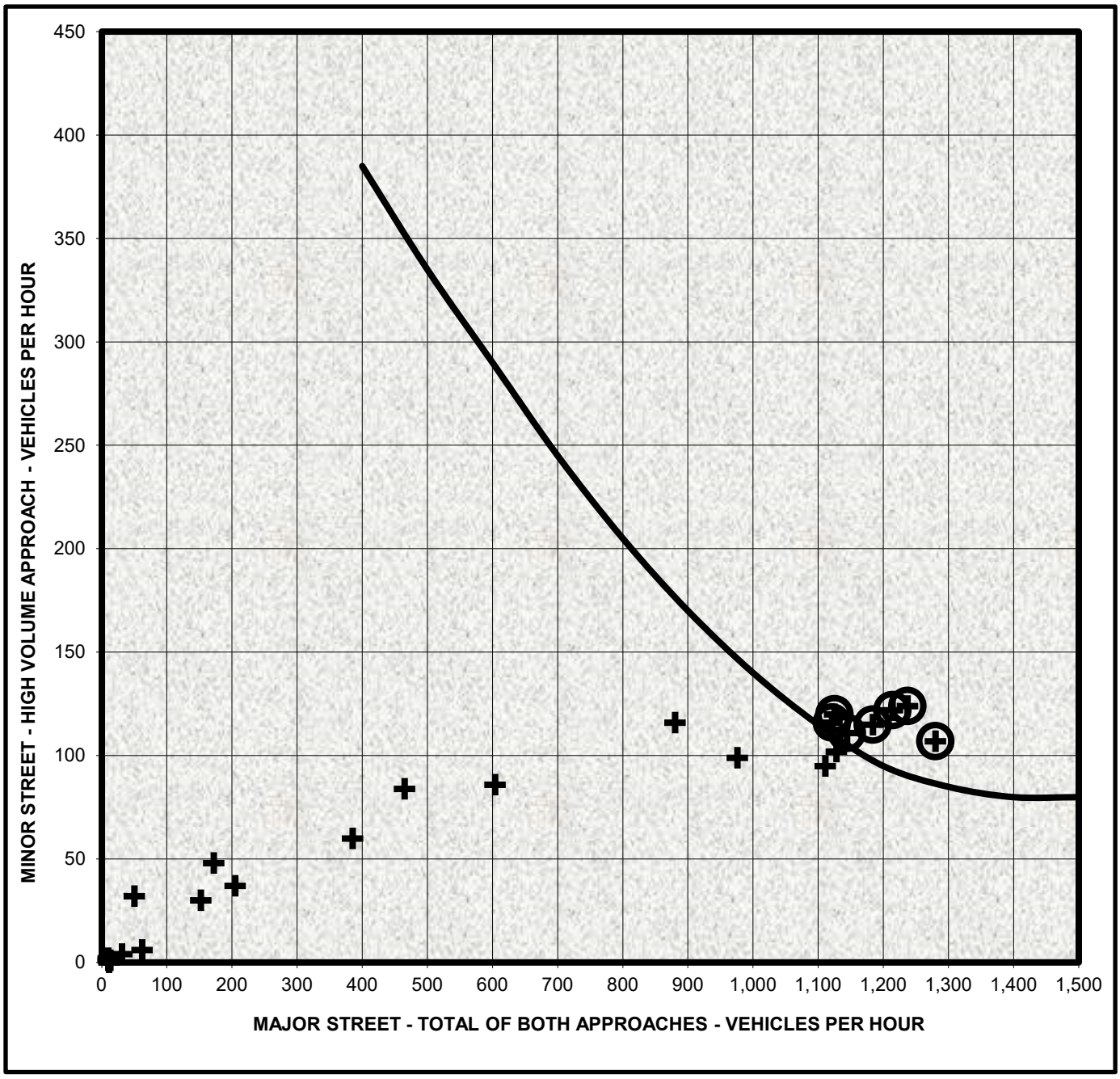
SUMMIT

IRONWOOD 92 PARTNERS
92nd STREET and COCHISE DRIVE
M. U. T. C. D. WARRANT # 2
Four-Hour Vehicular Volume

NUMBER OF HOURS SATISFIED:	***7***
NUMBER OF HOURS SATISFIED BY LESS THAN 10%:	***3***
NUMBER OF HOURS WITHIN 10% OF BEING SATISFIED:	***1***

WARRANT CRITERIA:	**SATISFIED**



The Four Hour Vehicular Volume signal warrant conditions are intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal. The need for a traffic control signal shall be considered if an engineering study finds that for each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher volume minor-street approach (one direction only) all fall above the applicable curve provided in the MUTCD for the existing combination of approach lanes.

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IRONWOOD 92 PARTNERS
92nd STREET and COCHISE DRIVE
M. U. T. C. D. WARRANT # 3
Peak Hour, Category A (Delay)

REQUIRED SIDE STREET VEHICLE-HOURS DELAY:	4.00
REQUIRED SIDE STREET HOURLY VOLUME:	100
REQUIRED TOTAL INTERSECTION HOURLY VOLUME:	800

TIME PERIOD: 9:00 AM to 10:00 AM	MEASURED	SATISFIED?
SIDE STREET VEHICLE-HOURS DELAY:	1.05	NO
SIDE STREET HOURLY VOLUME:	116	YES
TOTAL INTERSECTION HOURLY VOLUME:	1320	YES
ALL CRITERIA		**NO**

TIME PERIOD: 7:00 PM to 8:00 PM	MEASURED	SATISFIED?
SIDE STREET VEHICLE-HOURS DELAY:	0.58	NO
SIDE STREET HOURLY VOLUME:	60	NO
TOTAL INTERSECTION HOURLY VOLUME:	503	NO
ALL CRITERIA		**NO**

The Peak Hour signal warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor-street suffers undue delay when entering or crossing the major street.

This signal warrant shall be applied only in unusual cases. Such cases include, but are not limited to, office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time.

The need for a traffic control signal shall be considered if an engineering study finds that all three of the following conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day:

1. The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and

2. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes, and

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.

Checked by: PEB 4/13/2022

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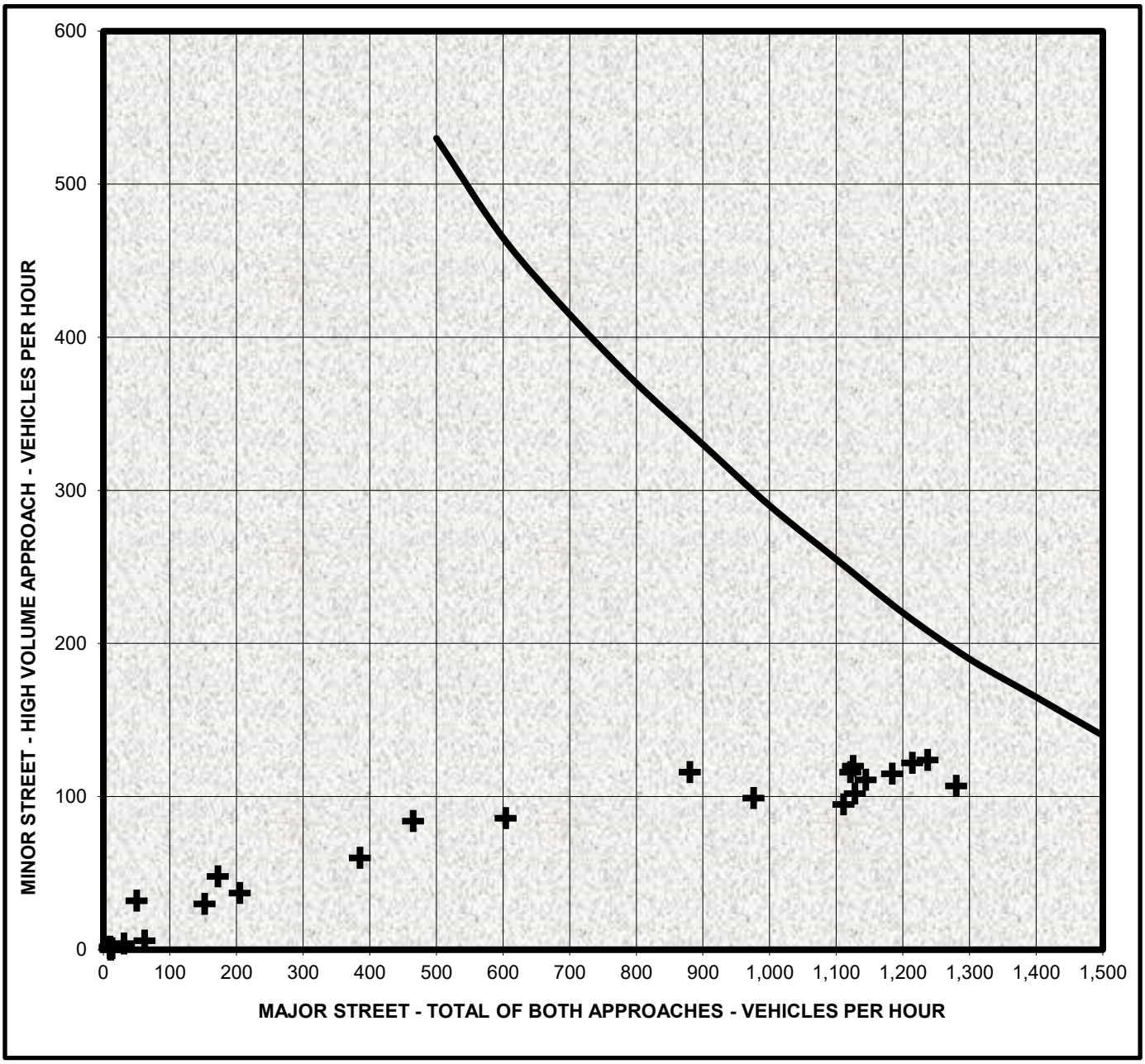
IRONWOOD 92 PARTNERS
92nd STREET and COCHISE DRIVE
M. U. T. C. D. WARRANT # 3
One-Hour Vehicular Volume

NUMBER OF HOURS SATISFIED:	***0***
NUMBER OF HOURS SATISFIED BY LESS THAN 10%:	***0***
NUMBER OF HOURS WITHIN 10% OF BEING SATISFIED:	***0***

WARRANT CRITERIA:	**NOT SATISFIED**



The Four Hour Vehicular Volume signal warrant conditions are intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal. The need for a traffic control signal shall be considered if an engineering study finds that for each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher volume minor-street approach (one direction only) all fall above the applicable curve provided in the MUTCD for the existing combination of approach lanes.

Checked by: PEB 4/13/2022

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Appendix F

Level-of-Service with Mercado Courtyards

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Appendix F.1

Existing Traffic Control

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	1280	239	74	1470	85	469	266	115	165	208	205
Future Volume (veh/h)	190	1280	239	74	1470	85	469	266	115	165	208	205
Initial Q (Qb), 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
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	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	207	1391	260	80	1598	92	510	289	125	179	226	223
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	216	2311	717	158	2227	691	306	680	304	248	622	277
Arrive On Green	0.06	0.45	0.45	0.05	0.44	0.44	0.09	0.19	0.19	0.07	0.17	0.17
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	207	1391	260	80	1598	92	510	289	125	179	226	223
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	5.7	19.7	10.3	2.2	24.7	3.3	8.5	6.9	6.7	4.9	5.4	13.0
Cycle Q Clear(g_c), s	5.7	19.7	10.3	2.2	24.7	3.3	8.5	6.9	6.7	4.9	5.4	13.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	216	2311	717	158	2227	691	306	680	304	248	622	277
V/C Ratio(X)	0.96	0.60	0.36	0.50	0.72	0.13	1.67	0.42	0.41	0.72	0.36	0.80
Avail Cap(c_a), veh/h	216	2778	862	323	2937	912	306	1009	450	306	1009	450
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	45.0	19.8	17.2	44.8	22.2	16.2	43.8	34.2	34.1	43.7	34.9	38.1
Incr Delay (d2), s/veh	49.8	0.3	0.3	2.5	0.6	0.1	315.2	0.4	0.9	6.3	0.4	5.4
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(50%),veh/ln	3.9	7.5	3.7	1.0	9.6	1.2	17.0	3.0	2.6	2.3	2.4	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	94.7	20.1	17.5	47.3	22.8	16.3	359.1	34.6	35.0	49.9	35.3	43.5
LnGrp LOS	F	C	B	D	C	B	F	C	D	D	D	D
Approach Vol, veh/h		1858			1770			924			628	
Approach Delay, s/veh		28.0			23.6			213.7			42.4	
Approach LOS		C			C			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	24.1	10.4	49.2	14.0	22.5	12.0	47.6
Change Period (Y+Rc), s	5.5	* 5.7	6.0	5.7	5.5	* 5.7	6.0	5.7
Max Green Setting (Gmax), s	8.5	* 27	9.0	52.3	8.5	* 27	6.0	55.3
Max Q Clear Time (g_c+I1), s	6.9	8.9	4.2	21.7	10.5	15.0	7.7	26.7
Green Ext Time (p_c), s	0.1	2.1	0.1	14.2	0.0	1.8	0.0	15.2

Intersection Summary	
HCM 6th Ctrl Delay	61.4
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	195	1430	296	67	1630	120	433	295	144	180	264	185
Future Volume (veh/h)	195	1430	296	67	1630	120	433	295	144	180	264	185
Initial Q (Qb), 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
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	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	212	1554	322	73	1772	130	471	321	157	196	287	201
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	282	2282	708	144	2077	645	558	783	349	261	478	213
Arrive On Green	0.08	0.45	0.45	0.04	0.41	0.41	0.16	0.22	0.22	0.08	0.13	0.13
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	212	1554	322	73	1772	130	471	321	157	196	287	201
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	6.4	25.7	15.0	2.2	33.5	5.6	14.1	8.2	9.1	5.9	8.1	13.4
Cycle Q Clear(g_c), s	6.4	25.7	15.0	2.2	33.5	5.6	14.1	8.2	9.1	5.9	8.1	13.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	282	2282	708	144	2077	645	558	783	349	261	478	213
V/C Ratio(X)	0.75	0.68	0.45	0.51	0.85	0.20	0.84	0.41	0.45	0.75	0.60	0.94
Avail Cap(c_a), veh/h	455	2512	780	228	2176	676	764	913	407	341	478	213
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	47.7	23.4	20.4	49.9	28.6	20.4	43.3	35.5	35.9	48.1	43.3	45.6
Incr Delay (d2), s/veh	4.0	0.7	0.5	2.8	3.4	0.2	6.4	0.3	0.9	6.5	2.1	45.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	10.1	5.5	1.0	13.9	2.1	6.5	3.6	3.6	2.8	3.7	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.7	24.0	20.9	52.6	32.0	20.5	49.7	35.9	36.8	54.6	45.4	91.2
LnGrp LOS	D	C	C	D	C	C	D	D	D	D	D	F
Approach Vol, veh/h		2088			1975			949			684	
Approach Delay, s/veh		26.4			32.0			42.9			61.5	
Approach LOS		C			C			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.5	29.1	10.4	53.2	22.7	20.0	14.7	48.9
Change Period (Y+Rc), s	5.5	* 5.7	6.0	5.7	5.5	* 5.7	6.0	5.7
Max Green Setting (Gmax), s	10.5	* 27	7.0	52.3	23.5	* 14	14.0	45.3
Max Q Clear Time (g_c+I1), s	7.9	11.1	4.2	27.7	16.1	15.4	8.4	35.5
Green Ext Time (p_c), s	0.2	2.3	0.0	14.6	1.1	0.0	0.3	7.7

Intersection Summary	
HCM 6th Ctrl Delay	35.3
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	5	30	35	5	180	30	595	85	160	371	60
Future Vol, veh/h	30	5	30	35	5	180	30	595	85	160	371	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	0	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	5	33	38	5	196	33	647	92	174	403	65

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1143	1556	202	1311	1575	370	468	0	0	739	0	0
Stage 1	751	751	-	759	759	-	-	-	-	-	-	-
Stage 2	392	805	-	552	816	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	155	112	805	116	109	627	1090	-	-	863	-	-
Stage 1	369	416	-	365	413	-	-	-	-	-	-	-
Stage 2	604	393	-	486	389	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	84	87	805	88	84	627	1090	-	-	863	-	-
Mov Cap-2 Maneuver	84	87	-	88	84	-	-	-	-	-	-	-
Stage 1	358	332	-	354	401	-	-	-	-	-	-	-
Stage 2	397	381	-	366	310	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	42.2	25.1	0.4	2.8
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1090	-	-	84	369	88	534	863	-	-
HCM Lane V/C Ratio	0.03	-	-	0.388	0.103	0.432	0.377	0.202	-	-
HCM Control Delay (s)	8.4	-	-	72.8	15.9	74	15.8	10.2	-	-
HCM Lane LOS	A	-	-	F	C	F	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.5	0.3	1.8	1.7	0.8	-	-

Intersection												
Int Delay, s/veh	5.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	5	35	35	0	175	15	712	75	125	422	25
Future Vol, veh/h	25	5	35	35	0	175	15	712	75	125	422	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	0	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	5	38	38	0	190	16	774	82	136	459	27

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1150	1619	230	1351	1605	428	486	0	0	856	0	0
Stage 1	731	731	-	847	847	-	-	-	-	-	-	-
Stage 2	419	888	-	504	758	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	153	102	772	109	104	575	1073	-	-	780	-	-
Stage 1	379	425	-	323	376	-	-	-	-	-	-	-
Stage 2	582	360	-	518	413	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	88	83	772	84	85	575	1073	-	-	780	-	-
Mov Cap-2 Maneuver	88	83	-	84	85	-	-	-	-	-	-	-
Stage 1	373	351	-	318	370	-	-	-	-	-	-	-
Stage 2	384	355	-	400	341	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	34	25.1	0.2	2.3
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1073	-	-	88	379	84	575	780	-	-
HCM Lane V/C Ratio	0.015	-	-	0.309	0.115	0.453	0.331	0.174	-	-
HCM Control Delay (s)	8.4	-	-	63.2	15.7	79.3	14.3	10.6	-	-
HCM Lane LOS	A	-	-	F	C	F	B	B	-	-
HCM 95th %tile Q(veh)	0	-	-	1.2	0.4	1.9	1.4	0.6	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	0	55	96	5	62	65	590	20	31	390	45
Future Volume (veh/h)	60	0	55	96	5	62	65	590	20	31	390	45
Initial Q (Qb), 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
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	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	0	60	104	5	67	71	641	22	34	424	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	492	0	297	502	21	280	635	1584	707	543	1584	707
Arrive On Green	0.19	0.00	0.19	0.19	0.19	0.19	0.45	0.45	0.45	0.45	0.45	0.45
Sat Flow, veh/h	1328	0	1585	1343	111	1491	921	3554	1585	772	3554	1585
Grp Volume(v), veh/h	65	0	60	104	0	72	71	641	22	34	424	49
Grp Sat Flow(s),veh/h/ln	1328	0	1585	1343	0	1602	921	1777	1585	772	1777	1585
Q Serve(g_s), s	1.1	0.0	0.8	1.7	0.0	0.9	1.3	3.0	0.2	0.8	1.8	0.4
Cycle Q Clear(g_c), s	2.0	0.0	0.8	2.5	0.0	0.9	3.1	3.0	0.2	3.8	1.8	0.4
Prop In Lane	1.00		1.00	1.00		0.93	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	492	0	297	502	0	300	635	1584	707	543	1584	707
V/C Ratio(X)	0.13	0.00	0.20	0.21	0.00	0.24	0.11	0.40	0.03	0.06	0.27	0.07
Avail Cap(c_a), veh/h	2434	0	2616	2466	0	2644	2869	10209	4553	2418	10209	4553
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.3	0.0	8.4	9.5	0.0	8.5	5.3	4.6	3.8	5.9	4.3	3.9
Incr Delay (d2), s/veh	0.1	0.0	0.3	0.2	0.0	0.4	0.1	0.2	0.0	0.0	0.1	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(50%),veh/ln	0.2	0.0	0.2	0.4	0.0	0.2	0.1	0.4	0.0	0.1	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.5	0.0	8.8	9.7	0.0	8.9	5.3	4.8	3.8	5.9	4.4	3.9
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		125			176			734			507	
Approach Delay, s/veh		9.1			9.4			4.8			4.4	
Approach LOS		A			A			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.4		9.1		15.4		9.1				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		70.5		40.5		70.5		40.5				
Max Q Clear Time (g_c+I1), s		5.1		4.0		5.8		4.5				
Green Ext Time (p_c), s		5.8		0.6		3.5		0.8				

Intersection Summary	
HCM 6th Ctrl Delay	5.5
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	0	50	24	0	42	40	690	36	82	405	40
Future Volume (veh/h)	55	0	50	24	0	42	40	690	36	82	405	40
Initial Q (Qb), 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
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	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	60	0	54	26	0	46	43	750	39	89	440	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	452	0	230	445	0	230	674	1751	781	535	1751	781
Arrive On Green	0.15	0.00	0.15	0.15	0.00	0.15	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	1360	0	1585	1350	0	1585	912	3554	1585	687	3554	1585
Grp Volume(v), veh/h	60	0	54	26	0	46	43	750	39	89	440	43
Grp Sat Flow(s),veh/h/ln	1360	0	1585	1350	0	1585	912	1777	1585	687	1777	1585
Q Serve(g_s), s	1.0	0.0	0.7	0.4	0.0	0.6	0.7	3.4	0.3	2.4	1.8	0.4
Cycle Q Clear(g_c), s	1.6	0.0	0.7	1.2	0.0	0.6	2.5	3.4	0.3	5.8	1.8	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	452	0	230	445	0	230	674	1751	781	535	1751	781
V/C Ratio(X)	0.13	0.00	0.23	0.06	0.00	0.20	0.06	0.43	0.05	0.17	0.25	0.06
Avail Cap(c_a), veh/h	2031	0	2071	2013	0	2071	3103	11215	5002	2363	11215	5002
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.1	0.0	9.4	9.9	0.0	9.4	4.4	4.1	3.3	5.9	3.7	3.3
Incr Delay (d2), s/veh	0.1	0.0	0.5	0.1	0.0	0.4	0.0	0.2	0.0	0.1	0.1	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(50%),veh/ln	0.2	0.0	0.2	0.1	0.0	0.2	0.1	0.3	0.0	0.2	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.2	0.0	9.9	10.0	0.0	9.8	4.4	4.2	3.3	6.1	3.7	3.3
LnGrp LOS	B	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		114			72			832			572	
Approach Delay, s/veh		10.1			9.8			4.2			4.1	
Approach LOS		B			A			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		16.8		8.1		16.8		8.1				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		78.5		32.5		78.5		32.5				
Max Q Clear Time (g_c+I1), s		5.4		3.6		7.8		3.2				
Green Ext Time (p_c), s		6.9		0.5		4.2		0.3				

Intersection Summary	
HCM 6th Ctrl Delay	4.8
HCM 6th LOS	A

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	0	30	20	0	35	10	455	20	80	455	15
Future Vol, veh/h	30	0	30	20	0	35	10	455	20	80	455	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	0	-	0	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	0	33	22	0	38	11	495	22	87	495	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	939	1208	248	939	1202	248	511	0	0	517	0	0
Stage 1	669	669	-	517	517	-	-	-	-	-	-	-
Stage 2	270	539	-	422	685	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	219	182	752	219	183	752	1050	-	-	1045	-	-
Stage 1	413	454	-	509	532	-	-	-	-	-	-	-
Stage 2	713	520	-	580	447	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	193	165	752	195	166	752	1050	-	-	1045	-	-
Mov Cap-2 Maneuver	193	165	-	195	166	-	-	-	-	-	-	-
Stage 1	409	416	-	504	527	-	-	-	-	-	-	-
Stage 2	670	515	-	509	410	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.7	15.7	0.2	1.3
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1050	-	-	193	752	195	752	1045	-	-
HCM Lane V/C Ratio	0.01	-	-	0.169	0.043	0.111	0.051	0.083	-	-
HCM Control Delay (s)	8.5	-	-	27.4	10	25.8	10	8.8	-	-
HCM Lane LOS	A	-	-	D	B	D	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0.1	0.4	0.2	0.3	-	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	0	35	20	0	30	10	561	15	65	414	15
Future Vol, veh/h	30	0	35	20	0	30	10	561	15	65	414	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	0	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	0	38	22	0	33	11	610	16	71	450	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	919	1240	225	1007	1248	313	466	0	0	626	0	0
Stage 1	592	592	-	640	640	-	-	-	-	-	-	-
Stage 2	327	648	-	367	608	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	226	174	778	195	172	683	1092	-	-	952	-	-
Stage 1	460	492	-	430	468	-	-	-	-	-	-	-
Stage 2	660	464	-	625	484	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	201	159	778	174	158	683	1092	-	-	952	-	-
Mov Cap-2 Maneuver	201	159	-	174	158	-	-	-	-	-	-	-
Stage 1	455	455	-	426	463	-	-	-	-	-	-	-
Stage 2	622	459	-	550	448	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.5	17.7	0.1	1.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1092	-	-	201	778	174	683	952	-	-
HCM Lane V/C Ratio	0.01	-	-	0.162	0.049	0.125	0.048	0.074	-	-
HCM Control Delay (s)	8.3	-	-	26.3	9.9	28.6	10.5	9.1	-	-
HCM Lane LOS	A	-	-	D	A	D	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0.2	0.4	0.1	0.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	20	230	5	130	15	345	245	105	389	6
Future Volume (veh/h)	5	5	20	230	5	130	15	345	245	105	389	6
Initial Q (Qb), 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
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	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	5	22	250	5	141	16	375	266	114	423	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	280	70	308	391	13	356	658	2283	1018	562	2283	1018
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.64	0.64	0.64	0.64	0.64	0.64
Sat Flow, veh/h	1242	302	1329	1383	55	1539	958	3554	1585	788	3554	1585
Grp Volume(v), veh/h	5	0	27	250	0	146	16	375	266	114	423	7
Grp Sat Flow(s),veh/h/ln	1242	0	1631	1383	0	1593	958	1777	1585	788	1777	1585
Q Serve(g_s), s	0.3	0.0	1.0	14.0	0.0	6.3	0.6	3.4	5.8	5.5	3.9	0.1
Cycle Q Clear(g_c), s	6.6	0.0	1.0	15.0	0.0	6.3	4.5	3.4	5.8	8.9	3.9	0.1
Prop In Lane	1.00		0.81	1.00		0.97	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	280	0	378	391	0	369	658	2283	1018	562	2283	1018
V/C Ratio(X)	0.02	0.00	0.07	0.64	0.00	0.40	0.02	0.16	0.26	0.20	0.19	0.01
Avail Cap(c_a), veh/h	880	0	1165	1059	0	1138	658	2283	1018	562	2283	1018
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.1	0.0	24.3	30.2	0.0	26.3	6.8	5.8	6.2	7.6	5.9	5.2
Incr Delay (d2), s/veh	0.0	0.0	0.1	1.7	0.0	0.7	0.1	0.2	0.6	0.8	0.2	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(50%),veh/ln	0.1	0.0	0.4	4.7	0.0	2.4	0.1	1.1	1.8	0.9	1.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.1	0.0	24.4	31.9	0.0	27.0	6.8	5.9	6.8	8.4	6.1	5.2
LnGrp LOS	C	A	C	C	A	C	A	A	A	A	A	A
Approach Vol, veh/h		32			396			657			544	
Approach Delay, s/veh		25.1			30.1			6.3			6.5	
Approach LOS		C			C			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		57.0		23.9		57.0		23.9				
Change Period (Y+Rc), s		5.0		* 5.2		5.0		* 5.2				
Max Green Setting (Gmax), s		52.0		* 58		52.0		* 58				
Max Q Clear Time (g_c+I1), s		7.8		8.6		10.9		17.0				
Green Ext Time (p_c), s		3.7		0.1		4.1		1.7				

Intersection Summary												
HCM 6th Ctrl Delay			12.5									
HCM 6th LOS			B									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	15	225	10	149	15	372	270	113	336	5
Future Volume (veh/h)	5	5	15	225	10	149	15	372	270	113	336	5
Initial Q (Qb), 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
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	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	5	16	245	11	162	16	404	293	123	365	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	248	88	283	388	23	338	705	2308	1029	540	2308	1029
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.65	0.65	0.65	0.65	0.65	0.65
Sat Flow, veh/h	1212	392	1253	1391	102	1499	1012	3554	1585	748	3554	1585
Grp Volume(v), veh/h	5	0	21	245	0	173	16	404	293	123	365	5
Grp Sat Flow(s),veh/h/ln	1212	0	1645	1391	0	1601	1012	1777	1585	748	1777	1585
Q Serve(g_s), s	0.3	0.0	0.8	13.7	0.0	7.7	0.5	3.7	6.5	6.4	3.3	0.1
Cycle Q Clear(g_c), s	8.0	0.0	0.8	14.5	0.0	7.7	3.8	3.7	6.5	10.0	3.3	0.1
Prop In Lane	1.00		0.76	1.00		0.94	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	248	0	371	388	0	361	705	2308	1029	540	2308	1029
V/C Ratio(X)	0.02	0.00	0.06	0.63	0.00	0.48	0.02	0.18	0.28	0.23	0.16	0.00
Avail Cap(c_a), veh/h	818	0	1145	1042	0	1114	705	2308	1029	540	2308	1029
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.9	0.0	24.8	30.5	0.0	27.4	6.3	5.7	6.2	7.6	5.6	5.0
Incr Delay (d2), s/veh	0.0	0.0	0.1	1.7	0.0	1.0	0.1	0.2	0.7	1.0	0.1	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(50%),veh/ln	0.1	0.0	0.3	4.6	0.0	2.9	0.1	1.2	1.9	1.0	1.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.9	0.0	24.8	32.2	0.0	28.4	6.4	5.8	6.9	8.6	5.7	5.0
LnGrp LOS	C	A	C	C	A	C	A	A	A	A	A	A
Approach Vol, veh/h		26			418			713			493	
Approach Delay, s/veh		26.0			30.6			6.3			6.5	
Approach LOS		C			C			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		58.0		23.6		58.0		23.6				
Change Period (Y+Rc), s		5.0		* 5.2		5.0		* 5.2				
Max Green Setting (Gmax), s		53.0		* 57		53.0		* 57				
Max Q Clear Time (g_c+I1), s		8.5		10.0		12.0		16.5				
Green Ext Time (p_c), s		4.0		0.1		3.8		1.9				

Intersection Summary	
HCM 6th Ctrl Delay	12.8
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

SUMMIT
LAND MANAGEMENT

Appendix F.2

92nd / Cochise with Existing Stop Signs and with Signal

Intersection	
Int Delay, s/veh	7.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	60	0	55	96	5	62	65	590	20	31	390	45
Future Vol, veh/h	60	0	55	96	5	62	65	590	20	31	390	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	0	-	0	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	65	0	60	104	5	67	71	641	22	34	424	49

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	957	1297	212	1063	1324	321	473	0	0	663	0	0
Stage 1	492	492	-	783	783	-	-	-	-	-	-	-
Stage 2	465	805	-	280	541	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	212	161	793	177	155	675	1085	-	-	922	-	-
Stage 1	527	546	-	353	403	-	-	-	-	-	-	-
Stage 2	547	393	-	703	519	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	171	145	793	151	140	675	1085	-	-	922	-	-
Mov Cap-2 Maneuver	171	145	-	151	140	-	-	-	-	-	-	-
Stage 1	493	526	-	330	377	-	-	-	-	-	-	-
Stage 2	454	367	-	626	500	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.8	46.6	0.8	0.6
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1085	-	-	171	793	151	525	922	-	-
HCM Lane V/C Ratio	0.065	-	-	0.381	0.075	0.691	0.139	0.037	-	-
HCM Control Delay (s)	8.5	-	-	38.5	9.9	70	13	9.1	-	-
HCM Lane LOS	A	-	-	E	A	F	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1.6	0.2	4	0.5	0.1	-	-

Intersection												
Int Delay, s/veh	4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	55	0	50	24	0	42	40	690	36	82	405	40
Future Vol, veh/h	55	0	50	24	0	42	40	690	36	82	405	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	0	-	0	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	60	0	54	26	0	46	43	750	39	89	440	43

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1079	1493	220	1234	1497	375	483	0	0	789	0	0
Stage 1	618	618	-	836	836	-	-	-	-	-	-	-
Stage 2	461	875	-	398	661	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	173	122	784	133	121	623	1076	-	-	827	-	-
Stage 1	443	479	-	328	381	-	-	-	-	-	-	-
Stage 2	550	365	-	599	458	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	143	104	784	110	104	623	1076	-	-	827	-	-
Mov Cap-2 Maneuver	143	104	-	110	104	-	-	-	-	-	-	-
Stage 1	425	427	-	315	366	-	-	-	-	-	-	-
Stage 2	489	350	-	497	409	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	29.4	24.4	0.4	1.5
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1076	-	-	143	784	110	623	827	-	-
HCM Lane V/C Ratio	0.04	-	-	0.418	0.069	0.237	0.073	0.108	-	-
HCM Control Delay (s)	8.5	-	-	47.2	9.9	47.6	11.2	9.9	-	-
HCM Lane LOS	A	-	-	E	A	E	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.8	0.2	0.9	0.2	0.4	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	0	55	96	5	62	65	590	20	31	390	45
Future Volume (veh/h)	60	0	55	96	5	62	65	590	20	31	390	45
Initial Q (Qb), 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
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	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	0	60	104	5	67	71	641	22	34	424	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	492	0	297	502	21	280	635	1584	707	543	1584	707
Arrive On Green	0.19	0.00	0.19	0.19	0.19	0.19	0.45	0.45	0.45	0.45	0.45	0.45
Sat Flow, veh/h	1328	0	1585	1343	111	1491	921	3554	1585	772	3554	1585
Grp Volume(v), veh/h	65	0	60	104	0	72	71	641	22	34	424	49
Grp Sat Flow(s),veh/h/ln	1328	0	1585	1343	0	1602	921	1777	1585	772	1777	1585
Q Serve(g_s), s	1.1	0.0	0.8	1.7	0.0	0.9	1.3	3.0	0.2	0.8	1.8	0.4
Cycle Q Clear(g_c), s	2.0	0.0	0.8	2.5	0.0	0.9	3.1	3.0	0.2	3.8	1.8	0.4
Prop In Lane	1.00		1.00	1.00		0.93	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	492	0	297	502	0	300	635	1584	707	543	1584	707
V/C Ratio(X)	0.13	0.00	0.20	0.21	0.00	0.24	0.11	0.40	0.03	0.06	0.27	0.07
Avail Cap(c_a), veh/h	2434	0	2616	2466	0	2644	2869	10209	4553	2418	10209	4553
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.3	0.0	8.4	9.5	0.0	8.5	5.3	4.6	3.8	5.9	4.3	3.9
Incr Delay (d2), s/veh	0.1	0.0	0.3	0.2	0.0	0.4	0.1	0.2	0.0	0.0	0.1	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(50%),veh/ln	0.2	0.0	0.2	0.4	0.0	0.2	0.1	0.4	0.0	0.1	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.5	0.0	8.8	9.7	0.0	8.9	5.3	4.8	3.8	5.9	4.4	3.9
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		125			176			734			507	
Approach Delay, s/veh		9.1			9.4			4.8			4.4	
Approach LOS		A			A			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.4		9.1		15.4		9.1				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		70.5		40.5		70.5		40.5				
Max Q Clear Time (g_c+I1), s		5.1		4.0		5.8		4.5				
Green Ext Time (p_c), s		5.8		0.6		3.5		0.8				

Intersection Summary	
HCM 6th Ctrl Delay	5.5
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	0	50	26	0	49	40	690	42	90	405	40
Future Volume (veh/h)	55	0	50	26	0	49	40	690	42	90	405	40
Initial Q (Qb), 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
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	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	60	0	54	28	0	53	43	750	46	98	440	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	446	0	234	445	0	234	672	1758	784	531	1758	784
Arrive On Green	0.15	0.00	0.15	0.15	0.00	0.15	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	1351	0	1585	1350	0	1585	912	3554	1585	682	3554	1585
Grp Volume(v), veh/h	60	0	54	28	0	53	43	750	46	98	440	43
Grp Sat Flow(s),veh/h/ln	1351	0	1585	1350	0	1585	912	1777	1585	682	1777	1585
Q Serve(g_s), s	1.0	0.0	0.8	0.5	0.0	0.7	0.7	3.4	0.4	2.7	1.8	0.4
Cycle Q Clear(g_c), s	1.8	0.0	0.8	1.2	0.0	0.7	2.5	3.4	0.4	6.1	1.8	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	446	0	234	445	0	234	672	1758	784	531	1758	784
V/C Ratio(X)	0.13	0.00	0.23	0.06	0.00	0.23	0.06	0.43	0.06	0.18	0.25	0.05
Avail Cap(c_a), veh/h	1990	0	2046	1988	0	2046	3065	11078	4941	2320	11078	4941
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.2	0.0	9.5	10.0	0.0	9.5	4.4	4.1	3.3	6.0	3.7	3.3
Incr Delay (d2), s/veh	0.1	0.0	0.5	0.1	0.0	0.5	0.0	0.2	0.0	0.2	0.1	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(50%),veh/ln	0.2	0.0	0.2	0.1	0.0	0.2	0.1	0.4	0.0	0.2	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.4	0.0	10.0	10.1	0.0	9.9	4.4	4.2	3.3	6.2	3.7	3.3
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		114			81			839			581	
Approach Delay, s/veh		10.2			10.0			4.2			4.1	
Approach LOS		B			A			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		17.0		8.2		17.0		8.2				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		78.5		32.5		78.5		32.5				
Max Q Clear Time (g_c+I1), s		5.4		3.8		8.1		3.2				
Green Ext Time (p_c), s		6.9		0.5		4.4		0.3				

Intersection Summary	
HCM 6th Ctrl Delay	4.9
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	0	55	96	5	62	65	590	20	31	390	45
Future Volume (veh/h)	60	0	55	96	5	62	65	590	20	31	390	45
Initial Q (Qb), 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
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	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	0	60	104	5	67	71	641	22	34	424	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	501	0	293	511	21	275	634	1537	686	544	1537	686
Arrive On Green	0.18	0.00	0.18	0.18	0.18	0.18	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	1328	0	1585	1343	111	1491	921	3554	1585	772	3554	1585
Grp Volume(v), veh/h	65	0	60	104	0	72	71	641	22	34	424	49
Grp Sat Flow(s),veh/h/ln	1328	0	1585	1343	0	1602	921	1777	1585	772	1777	1585
Q Serve(g_s), s	1.0	0.0	0.8	1.7	0.0	0.9	1.3	2.9	0.2	0.7	1.8	0.4
Cycle Q Clear(g_c), s	1.9	0.0	0.8	2.4	0.0	0.9	3.1	2.9	0.2	3.7	1.8	0.4
Prop In Lane	1.00		1.00	1.00		0.93	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	501	0	293	511	0	296	634	1537	686	544	1537	686
V/C Ratio(X)	0.13	0.00	0.21	0.20	0.00	0.24	0.11	0.42	0.03	0.06	0.28	0.07
Avail Cap(c_a), veh/h	1527	0	1517	1548	0	1533	1352	4308	1922	1146	4308	1922
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.0	0.0	8.1	9.2	0.0	8.2	5.3	4.6	3.8	5.9	4.3	3.9
Incr Delay (d2), s/veh	0.1	0.0	0.3	0.2	0.0	0.4	0.1	0.2	0.0	0.0	0.1	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(50%),veh/ln	0.2	0.0	0.2	0.3	0.0	0.2	0.1	0.4	0.0	0.1	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.1	0.0	8.5	9.3	0.0	8.6	5.4	4.8	3.9	5.9	4.4	3.9
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		125			176			734			507	
Approach Delay, s/veh		8.8			9.0			4.8			4.5	
Approach LOS		A			A			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		14.7		8.8		14.7		8.8				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		28.5		22.5		28.5		22.5				
Max Q Clear Time (g_c+I1), s		5.1		3.9		5.7		4.4				
Green Ext Time (p_c), s		5.1		0.4		3.1		0.6				

Intersection Summary			
HCM 6th Ctrl Delay			5.5
HCM 6th LOS			A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	0	50	24	0	42	40	690	36	82	405	40
Future Volume (veh/h)	55	0	50	24	0	42	40	690	36	82	405	40
Initial Q (Qb), 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
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	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	60	0	54	26	0	46	43	750	39	89	440	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	466	0	234	459	0	234	668	1698	757	532	1698	757
Arrive On Green	0.15	0.00	0.15	0.15	0.00	0.15	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	1360	0	1585	1350	0	1585	912	3554	1585	687	3554	1585
Grp Volume(v), veh/h	60	0	54	26	0	46	43	750	39	89	440	43
Grp Sat Flow(s),veh/h/ln	1360	0	1585	1350	0	1585	912	1777	1585	687	1777	1585
Q Serve(g_s), s	1.0	0.0	0.7	0.4	0.0	0.6	0.7	3.4	0.3	2.4	1.8	0.4
Cycle Q Clear(g_c), s	1.6	0.0	0.7	1.1	0.0	0.6	2.5	3.4	0.3	5.7	1.8	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	466	0	234	459	0	234	668	1698	757	532	1698	757
V/C Ratio(X)	0.13	0.00	0.23	0.06	0.00	0.20	0.06	0.44	0.05	0.17	0.26	0.06
Avail Cap(c_a), veh/h	1424	0	1352	1410	0	1352	1390	4508	2011	1075	4508	2011
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.7	0.0	9.0	9.5	0.0	9.0	4.5	4.2	3.4	6.1	3.7	3.4
Incr Delay (d2), s/veh	0.1	0.0	0.5	0.1	0.0	0.4	0.0	0.2	0.0	0.1	0.1	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(50%),veh/ln	0.2	0.0	0.2	0.1	0.0	0.2	0.1	0.3	0.0	0.2	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.8	0.0	9.5	9.6	0.0	9.4	4.5	4.3	3.4	6.2	3.8	3.4
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		114			72			832			572	
Approach Delay, s/veh		9.7			9.5			4.3			4.2	
Approach LOS		A			A			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		16.0		8.1		16.0		8.1				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		30.5		20.5		30.5		20.5				
Max Q Clear Time (g_c+I1), s		5.4		3.6		7.7		3.1				
Green Ext Time (p_c), s		6.1		0.4		3.8		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	4.9
HCM 6th LOS	A

SUMMIT
LAND MANAGEMENT

Appendix F.3

Possible 92nd / Shea Signal Timing Improvements

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	1280	239	74	1470	85	469	266	115	165	208	205
Future Volume (veh/h)	190	1280	239	74	1470	85	469	266	115	165	208	205
Initial Q (Qb), 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
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	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	207	1391	260	80	1598	92	510	289	125	179	226	223
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	271	2060	640	150	1882	584	592	926	413	247	572	379
Arrive On Green	0.08	0.40	0.40	0.04	0.37	0.37	0.17	0.26	0.26	0.07	0.16	0.16
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	207	1391	260	80	1598	92	510	289	125	179	226	223
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	6.1	23.1	12.1	2.3	29.8	4.0	14.9	6.8	6.6	5.3	5.9	12.9
Cycle Q Clear(g_c), s	6.1	23.1	12.1	2.3	29.8	4.0	14.9	6.8	6.6	5.3	5.9	12.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	271	2060	640	150	1882	584	592	926	413	247	572	379
V/C Ratio(X)	0.76	0.68	0.41	0.53	0.85	0.16	0.86	0.31	0.30	0.72	0.40	0.59
Avail Cap(c_a), veh/h	300	2133	662	200	1986	616	717	1252	558	377	902	527
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	46.8	25.3	22.1	48.5	30.1	21.9	41.8	30.8	30.8	47.1	39.0	34.9
Incr Delay (d2), s/veh	10.1	0.8	0.4	2.9	3.6	0.1	9.1	0.2	0.4	4.0	0.4	1.5
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(50%),veh/ln	3.0	9.3	4.5	1.1	12.5	1.5	7.0	2.9	2.5	2.4	2.6	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.9	26.2	22.5	51.5	33.6	22.1	50.8	31.0	31.2	51.1	39.4	36.4
LnGrp LOS	E	C	C	D	C	C	D	C	C	D	D	D
Approach Vol, veh/h		1858			1770			924			628	
Approach Delay, s/veh		29.1			33.8			42.0			41.7	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.9	32.7	10.5	47.5	23.2	22.4	14.1	43.9
Change Period (Y+Rc), s	5.5	* 5.7	6.0	5.7	5.5	* 5.7	6.0	5.7
Max Green Setting (Gmax), s	11.3	* 37	6.0	43.3	21.5	* 26	9.0	40.3
Max Q Clear Time (g_c+I1), s	7.3	8.8	4.3	25.1	16.9	14.9	8.1	31.8
Green Ext Time (p_c), s	0.2	2.4	0.0	10.6	0.9	1.8	0.1	6.4

Intersection Summary	
HCM 6th Ctrl Delay	34.5
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	195	1430	296	67	1630	120	433	295	144	180	264	185
Future Volume (veh/h)	195	1430	296	67	1630	120	433	295	144	180	264	185
Initial Q (Qb), 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
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	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	212	1554	322	73	1772	130	471	321	157	196	287	201
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	283	2285	709	144	2080	646	558	779	348	262	474	341
Arrive On Green	0.08	0.45	0.45	0.04	0.41	0.41	0.16	0.22	0.22	0.08	0.13	0.13
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	212	1554	322	73	1772	130	471	321	157	196	287	201
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	6.4	25.6	14.9	2.2	33.4	5.6	14.0	8.2	9.1	5.9	8.1	12.1
Cycle Q Clear(g_c), s	6.4	25.6	14.9	2.2	33.4	5.6	14.0	8.2	9.1	5.9	8.1	12.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	283	2285	709	144	2080	646	558	779	348	262	474	341
V/C Ratio(X)	0.75	0.68	0.45	0.51	0.85	0.20	0.84	0.41	0.45	0.75	0.61	0.59
Avail Cap(c_a), veh/h	456	2518	782	228	2181	677	766	915	408	342	479	343
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	47.6	23.3	20.3	49.8	28.5	20.3	43.2	35.5	35.9	48.0	43.3	37.4
Incr Delay (d2), s/veh	4.0	0.7	0.5	2.7	3.3	0.2	6.3	0.3	0.9	6.4	2.1	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	10.1	5.5	1.0	13.8	2.1	6.4	3.6	3.6	2.8	3.7	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.6	23.9	20.8	52.5	31.9	20.4	49.5	35.9	36.8	54.5	45.5	40.0
LnGrp LOS	D	C	C	D	C	C	D	D	D	D	D	D
Approach Vol, veh/h		2088			1975			949			684	
Approach Delay, s/veh		26.3			31.9			42.8			46.4	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.5	29.0	10.4	53.2	22.6	19.9	14.7	48.9
Change Period (Y+Rc), s	5.5	* 5.7	6.0	5.7	5.5	* 5.7	6.0	5.7
Max Green Setting (Gmax), s	10.5	* 27	7.0	52.3	23.5	* 14	14.0	45.3
Max Q Clear Time (g_c+I1), s	7.9	11.1	4.2	27.6	16.0	14.1	8.4	35.4
Green Ext Time (p_c), s	0.2	2.3	0.0	14.6	1.1	0.1	0.3	7.8

Intersection Summary	
HCM 6th Ctrl Delay	33.4
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	1280	239	74	1470	85	469	266	115	165	208	205
Future Volume (veh/h)	190	1280	239	74	1470	85	469	266	115	165	208	205
Initial Q (Qb), 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
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	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	207	1391	260	80	1598	92	510	289	125	179	226	223
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	230	1807	561	166	1712	531	576	958	427	255	628	280
Arrive On Green	0.07	0.35	0.35	0.05	0.34	0.34	0.17	0.27	0.27	0.07	0.18	0.18
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	207	1391	260	80	1598	92	510	289	125	179	226	223
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	5.3	21.8	11.4	2.0	27.2	3.7	13.0	5.8	5.6	4.6	5.0	12.1
Cycle Q Clear(g_c), s	5.3	21.8	11.4	2.0	27.2	3.7	13.0	5.8	5.6	4.6	5.0	12.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	230	1807	561	166	1712	531	576	958	427	255	628	280
V/C Ratio(X)	0.90	0.77	0.46	0.48	0.93	0.17	0.88	0.30	0.29	0.70	0.36	0.80
Avail Cap(c_a), veh/h	230	1807	561	192	1720	534	580	1221	544	380	1015	453
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	41.7	25.8	22.5	41.7	28.9	21.1	36.6	26.1	26.0	40.7	32.6	35.5
Incr Delay (d2), s/veh	33.5	2.1	0.6	2.2	9.9	0.2	15.1	0.2	0.4	3.5	0.3	5.1
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(50%),veh/ln	3.3	8.8	4.2	0.9	12.2	1.4	6.6	2.4	2.1	2.1	2.2	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.1	27.9	23.1	43.9	38.8	21.3	51.7	26.3	26.4	44.2	32.9	40.6
LnGrp LOS	E	C	C	D	D	C	D	C	C	D	C	D
Approach Vol, veh/h		1858			1770			924			628	
Approach Delay, s/veh		32.5			38.1			40.3			38.9	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.1	30.0	10.3	37.5	20.5	21.6	12.0	35.9
Change Period (Y+Rc), s	5.5	* 5.7	6.0	5.7	5.5	* 5.7	6.0	5.7
Max Green Setting (Gmax), s	9.9	* 31	5.0	31.3	15.1	* 26	6.0	30.3
Max Q Clear Time (g_c+I1), s	6.6	7.8	4.0	23.8	15.0	14.1	7.3	29.2
Green Ext Time (p_c), s	0.2	2.3	0.0	5.5	0.0	1.8	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	36.6
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	195	1430	296	67	1630	120	433	295	144	180	264	185
Future Volume (veh/h)	195	1430	296	67	1630	120	433	295	144	180	264	185
Initial Q (Qb), 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
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	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	212	1554	322	73	1772	130	471	321	157	196	287	201
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	231	1942	603	161	1839	571	520	847	378	274	593	265
Arrive On Green	0.07	0.38	0.38	0.05	0.36	0.36	0.15	0.24	0.24	0.08	0.17	0.17
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	212	1554	322	73	1772	130	471	321	157	196	287	201
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	5.5	24.3	14.2	1.8	30.5	5.1	12.0	6.8	7.5	5.0	6.6	10.8
Cycle Q Clear(g_c), s	5.5	24.3	14.2	1.8	30.5	5.1	12.0	6.8	7.5	5.0	6.6	10.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	231	1942	603	161	1839	571	520	847	378	274	593	265
V/C Ratio(X)	0.92	0.80	0.53	0.45	0.96	0.23	0.91	0.38	0.42	0.72	0.48	0.76
Avail Cap(c_a), veh/h	231	1942	603	193	1839	571	520	1126	502	401	1003	447
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	41.6	24.7	21.6	41.6	28.1	20.0	37.5	28.6	28.9	40.3	33.8	35.6
Incr Delay (d2), s/veh	37.4	2.5	0.9	2.0	13.4	0.2	19.4	0.3	0.7	3.5	0.6	4.5
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(50%),veh/ln	3.5	9.8	5.2	0.8	14.1	1.9	6.4	2.9	2.9	2.2	2.9	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.9	27.2	22.5	43.6	41.5	20.2	56.8	28.9	29.6	43.8	34.5	40.1
LnGrp LOS	E	C	C	D	D	C	E	C	C	D	C	D
Approach Vol, veh/h		2088			1975			949			684	
Approach Delay, s/veh		31.7			40.2			42.9			38.8	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	27.1	10.2	39.8	19.0	20.7	12.0	38.0
Change Period (Y+Rc), s	5.5	* 5.7	6.0	5.7	5.5	* 5.7	6.0	5.7
Max Green Setting (Gmax), s	10.4	* 28	5.0	33.3	13.5	* 25	6.0	32.3
Max Q Clear Time (g_c+I1), s	7.0	9.5	3.8	26.3	14.0	12.8	7.5	32.5
Green Ext Time (p_c), s	0.2	2.5	0.0	5.6	0.0	2.1	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	37.4
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	1280	239	74	1470	85	469	266	115	165	208	205
Future Volume (veh/h)	190	1280	239	74	1470	85	469	266	115	165	208	205
Initial Q (Qb), 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
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	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	207	1391	260	80	1598	92	510	289	125	179	226	223
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	233	1827	567	168	1729	537	579	930	415	256	598	374
Arrive On Green	0.07	0.36	0.36	0.05	0.34	0.34	0.17	0.26	0.26	0.07	0.17	0.17
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	207	1391	260	80	1598	92	510	289	125	179	226	223
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	5.3	21.4	11.2	2.0	26.8	3.6	12.8	5.8	5.6	4.5	5.0	11.1
Cycle Q Clear(g_c), s	5.3	21.4	11.2	2.0	26.8	3.6	12.8	5.8	5.6	4.5	5.0	11.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	233	1827	567	168	1729	537	579	930	415	256	598	374
V/C Ratio(X)	0.89	0.76	0.46	0.48	0.92	0.17	0.88	0.31	0.30	0.70	0.38	0.60
Avail Cap(c_a), veh/h	233	1827	567	195	1742	541	588	1236	551	385	1028	566
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	41.1	25.2	21.9	41.2	28.3	20.6	36.1	26.3	26.3	40.1	32.8	30.2
Incr Delay (d2), s/veh	30.9	1.9	0.6	2.1	8.8	0.1	14.4	0.2	0.4	3.4	0.4	1.5
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(50%),veh/ln	3.2	8.6	4.1	0.9	11.8	1.3	6.4	2.4	2.1	2.0	2.2	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.9	27.1	22.5	43.3	37.0	20.8	50.5	26.5	26.7	43.6	33.2	31.7
LnGrp LOS	E	C	C	D	D	C	D	C	C	D	C	C
Approach Vol, veh/h		1858			1770			924			628	
Approach Delay, s/veh		31.5			36.5			39.8			35.6	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.1	28.9	10.3	37.5	20.4	20.7	12.0	35.8
Change Period (Y+Rc), s	5.5	* 5.7	6.0	5.7	5.5	* 5.7	6.0	5.7
Max Green Setting (Gmax), s	9.9	* 31	5.0	31.3	15.1	* 26	6.0	30.3
Max Q Clear Time (g_c+I1), s	6.5	7.8	4.0	23.4	14.8	13.1	7.3	28.8
Green Ext Time (p_c), s	0.2	2.3	0.0	5.7	0.1	1.8	0.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	35.2
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	195	1430	296	67	1630	120	433	295	144	180	264	185
Future Volume (veh/h)	195	1430	296	67	1630	120	433	295	144	180	264	185
Initial Q (Qb), 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
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	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	212	1554	322	73	1772	130	471	321	157	196	287	201
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	233	1960	608	162	1855	576	525	824	368	275	567	360
Arrive On Green	0.07	0.38	0.38	0.05	0.36	0.36	0.15	0.23	0.23	0.08	0.16	0.16
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	212	1554	322	73	1772	130	471	321	157	196	287	201
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	5.4	23.9	14.0	1.8	30.1	5.1	11.9	6.8	7.5	4.9	6.6	10.0
Cycle Q Clear(g_c), s	5.4	23.9	14.0	1.8	30.1	5.1	11.9	6.8	7.5	4.9	6.6	10.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	233	1960	608	162	1855	576	525	824	368	275	567	360
V/C Ratio(X)	0.91	0.79	0.53	0.45	0.96	0.23	0.90	0.39	0.43	0.71	0.51	0.56
Avail Cap(c_a), veh/h	233	1960	608	194	1856	576	525	1136	507	405	1012	558
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	41.1	24.2	21.2	41.2	27.6	19.6	37.0	28.8	29.1	39.9	34.1	30.4
Incr Delay (d2), s/veh	35.3	2.3	0.9	1.9	12.0	0.2	18.0	0.3	0.8	3.4	0.7	1.4
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(50%),veh/ln	3.4	9.6	5.1	0.8	13.7	1.8	6.2	2.9	2.9	2.2	2.9	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.4	26.6	22.0	43.2	39.6	19.8	55.0	29.1	29.9	43.3	34.8	31.8
LnGrp LOS	E	C	C	D	D	B	E	C	C	D	C	C
Approach Vol, veh/h		2088			1975			949			684	
Approach Delay, s/veh		30.9			38.4			42.1			36.4	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	26.3	10.2	39.8	19.0	19.9	12.0	38.0
Change Period (Y+Rc), s	5.5	* 5.7	6.0	5.7	5.5	* 5.7	6.0	5.7
Max Green Setting (Gmax), s	10.4	* 28	5.0	33.3	13.5	* 25	6.0	32.3
Max Q Clear Time (g_c+I1), s	6.9	9.5	3.8	25.9	13.9	12.0	7.4	32.1
Green Ext Time (p_c), s	0.2	2.5	0.0	5.8	0.0	2.2	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	36.0
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.