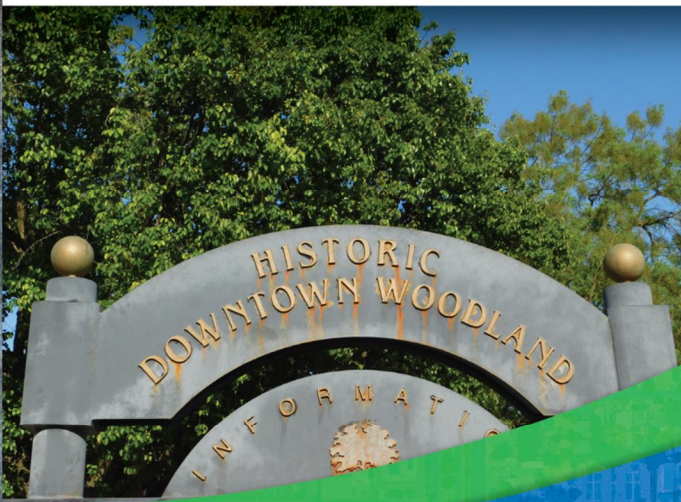




Woodland Transit Center Relocation

Traffic and Safety
Analysis Memorandum

August 2024



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Overview

Yolo County Transit District (YoloTD) is seeking to relocate the Woodland Transit Center, currently located in the County Fair Mall parking lot in southern Woodland, to a more central and convenient location in downtown Woodland. An overview of Downtown Woodland, its transportation network, and the proposed transit center are shown in Figure 1.

This memorandum builds on work previously completed as part of the Woodland Transit Center Relocation Study (Study), including the Transit Facility Needs (July 2023) and Alternatives Analysis (November 2023) memoranda. The work to date for the Study resulted in a preliminary preferred alternative for a relocated, on-street transit center in Downtown Woodland, along Court Street between 1st Street and 3rd Street. Figure 3 illustrates the preliminary design for the preferred alternative.

This memorandum summarizes the analysis of the transportation conditions within Downtown Woodland where the new transit center will be located. This includes a safety analysis, traffic analysis, and circulation improvements. The area reviewed for this analysis (Study Area) includes the Downtown portion of Woodland between 3rd Street and College Street, with a specific focus on the intersections most strongly associated with bus diversion as a result of the re-located Woodland Transit Center. The intersections within the Study Area are listed below and shown in Figure 1:

- Main Street and 3rd Street
- Main Street and College Street
- Court Street and College Street
- Court Street and 2nd Street
- Court Street and 3rd Street

A summary of the safety analysis, traffic analysis, and circulation improvements is provided below and discussed further in the subsequent sections.

Safety Analysis: Review of collision history within the Study Area for the most recent five years

- There were no visible, severe, or fatal collisions in the past 5 years within the Study Area.
- Potential improvements may be considered to mitigate existing traffic safety concerns at certain areas with common collision patterns.
- The re-location of the transit center is not anticipated to have any adverse effects to safety conditions in Downtown Woodland.

Circulation Improvements: Roadway improvements required to address any safety and/or turning challenges:

- Minor roadway striping modifications and parking relocations are required at Main Street and 3rd Street to accommodate bus turns. An additional very minor striping modification is required at Court Street and West Street (outside of the analysis study area) to accommodate bus turns.

Traffic Analysis: Summarizes an operational analysis for the intersections in the Study Area

- Modifications to lane geometry and addition of bus traffic does not have an adverse effect on the performance of the intersections in the Study Area.

Figure 1: Downtown Woodland – Transportation Overview

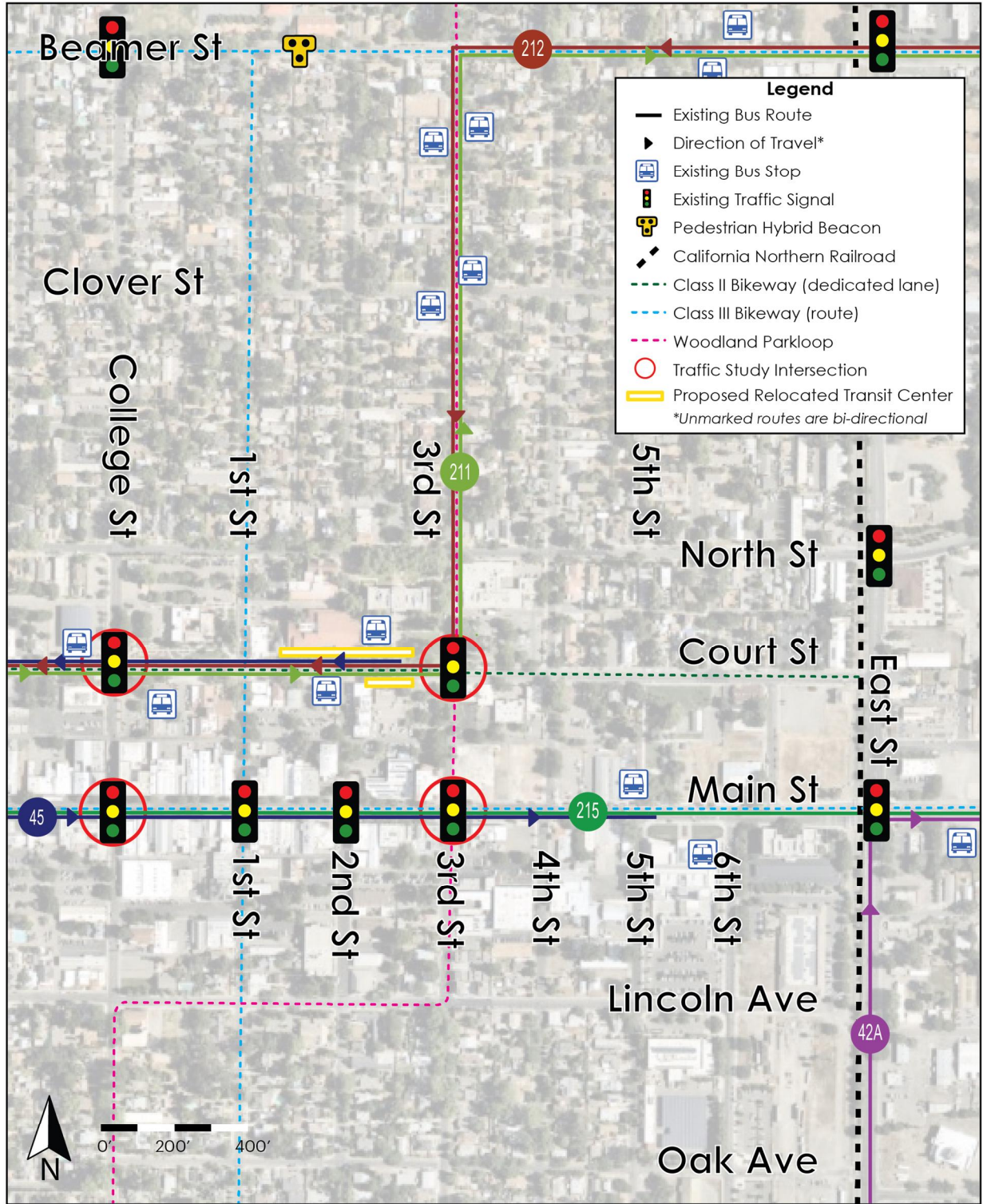
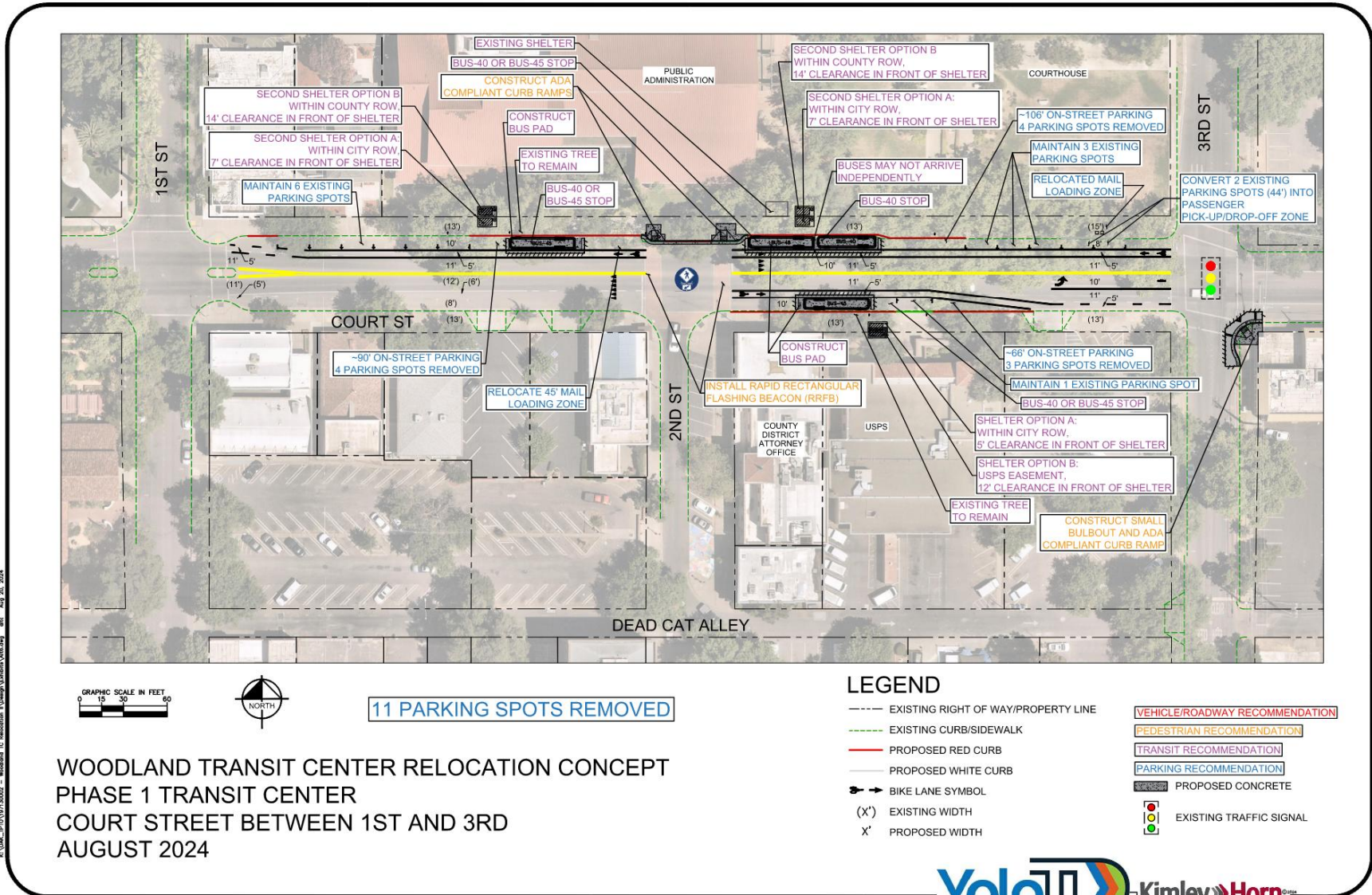


Figure 2: Preferred Transit Center Alternative



Safety Analysis

Collision data recorded within the Study Area between January 1st, 2019 and December 31st, 2023 was collected from the Transportation Injury Mapping System, which uses data from the Statewide Integrated Traffic Records System (SWITRS). Injuries suffered by involved parties are classified into one of five categories (from most to least severe): fatal injury, severe injury, other visible injury, complaints of pain, and property damage only.

Table 1 shows the number of collisions, by injury severity, which occurred within the Study Area. There was a total of 21 collisions recorded within the Study Area between 2019 and 2023. Of these, more than 85% of collisions resulted in property damage only. The other three collisions resulted in complaints of pain for one or both parties involved. There were no visible, severe, or fatal injuries resulting from any of the collisions during the time period.

Table 1: Collision Severity Summary

Collision Severity	Occurrences
Property Damage Only	18
Complaint of Pain	3
Other Visible Injury	0
Severe Injury	0
Fatal Injury	0
TOTAL	21

Table 2 provides a summary of the parties involved with each collision observed during the 5-year time period. Of the 21 collisions observed in the Study Area, 16 involved only vehicles, three involved a pedestrian, and two involved a cyclist.

Table 2: Parties Involved Summary

Involved With	Occurrences
Automobile Only	16
Pedestrian	3
Bicyclist	2
TOTAL	21

Figure 3 shows the severity, location, and parties involved in the 21 collisions recorded within the Study Area. Collisions were observed near each of the intersections in the Study Area, with the highest concentration of collisions occurring at or around the intersection of Main Street and 3rd Street. Collisions along Court Street were less frequent than along Main Street, and only one collision was observed to have occurred on one of the north-south streets.

At the intersection of Main Street and 3rd Street, the most common collision factors attributed to these collisions were traffic signal and sign violations, which were attributed to three collisions. Of the nine collisions observed at or near this intersection, six were classified as broadside collisions. One of the collisions involved

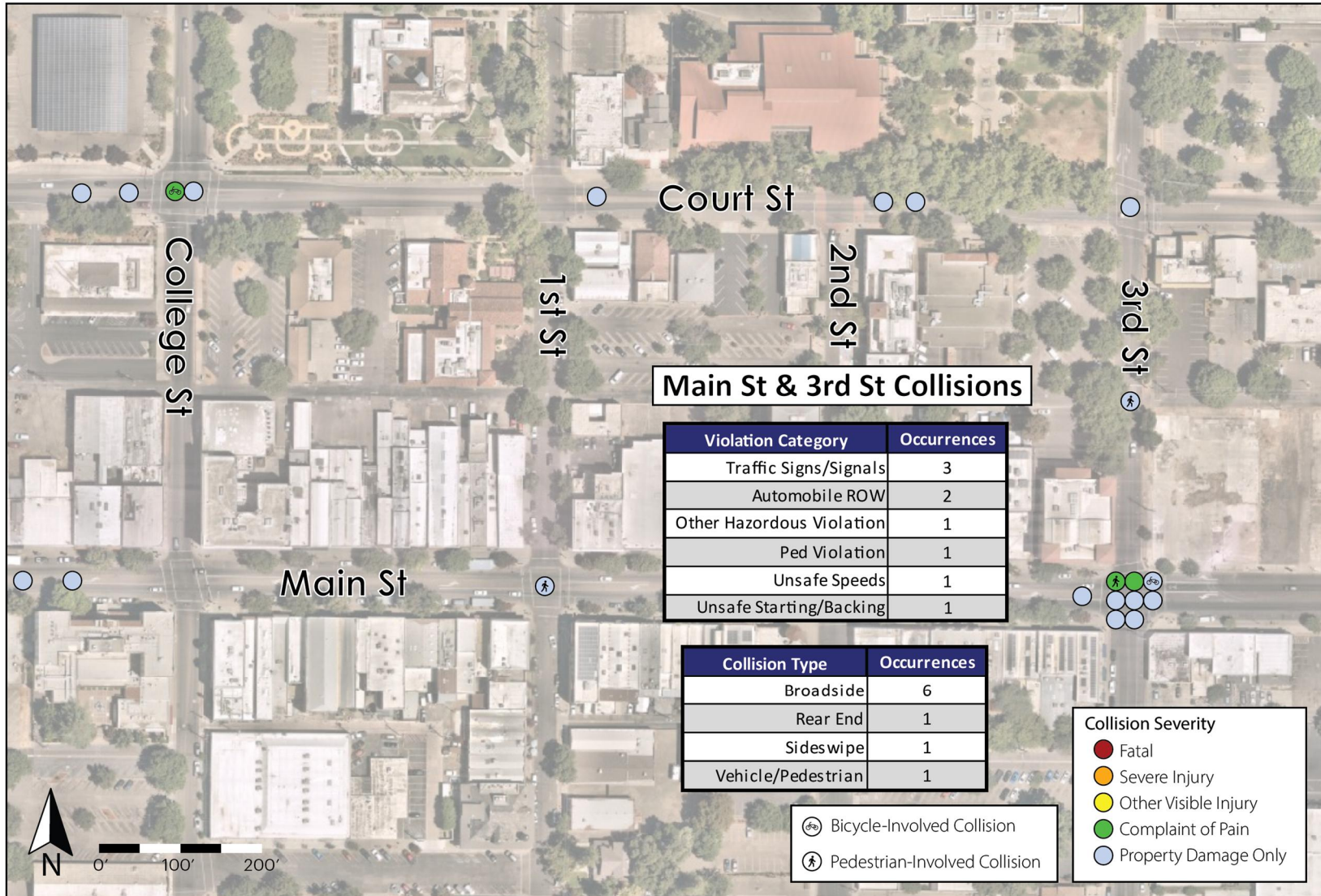
a pedestrian and was attributed to a pedestrian violation, and another one involved a bicycle and was attributed to an automobile right-of-way violation.

Notably, based on a review of the party information for the collisions observed at Main Street and 3rd Street, the majority of the incidents occur when southbound or northbound vehicles proceed through the intersection on a red light, ultimately colliding with an eastbound or westbound through vehicle. Several strategies can be considered to improve operational safety given the proposed routing:

- Consider increasing southbound yellow or all-red time
- Consider warning signage for vehicles at intersection approaches, particularly the eastbound and southbound approaches given the tight building setback at the northwest corner
- Consider concave mirrors on the intersection approaches to improve sight distance
- Consider striping high visibility crosswalks at pedestrian crossings

While these strategies could be considered and implemented to mitigate the existing collision pattern at the intersection of Main Street and 3rd Street, it should be noted that the proposed volume additions given the new bus routing are minor, with only a small percentage increase of the approach volumes for any leg within the Study Area. Review of the safety data did not reveal any significantly dangerous collision patterns, and the re-location of the transit center is not anticipated to have any adverse effects to safety conditions in Downtown Woodland.

Figure 3: Study Area Collision Summary



Circulation Improvements

Given the proposed re-routing associated with the relocation of the Woodland Transit Center, this analysis reviewed the existing geometry and configuration of the adjacent transportation infrastructure to evaluate its ability to accommodate new bus trips. Each of Woodland’s six bus routes will now be routed to the new transit center on Court Street, meaning several routes will be traveling along segments and making new turns at intersections that previously accommodated less bus traffic. Overall proposed routing for the system is shown in Figure 4, while Figure 5 depicts the bus routing proposed for Downtown Woodland.

Existing City of Woodland bus schedules were reviewed to project the approximate level of peak hour bus traffic during the peak hour periods of traffic analysis. During the AM (7:45-8:45 AM) and PM (4:15-5:15 PM) peak hours, the trip breakdown by route is shown in Table 3. Further discussion of the volumes and peak hour determinations is provided in the following section.

Table 3: Peak Hour Bus Trips

Route	AM Peak	PM Peak
42A	2	2
42B	2	2
45	0	0
211	1	1
212	1	1
215 EB	2	0
215 WB	1	1
Total	9	7

Local routes 211 and 212 are currently routed through Court Street at the location of the new transit center; however, the volumes were added for this analysis to ensure a more conservative capacity result. Bus volumes are shown in Figure 6.

Figure 4: Proposed Bus Routing

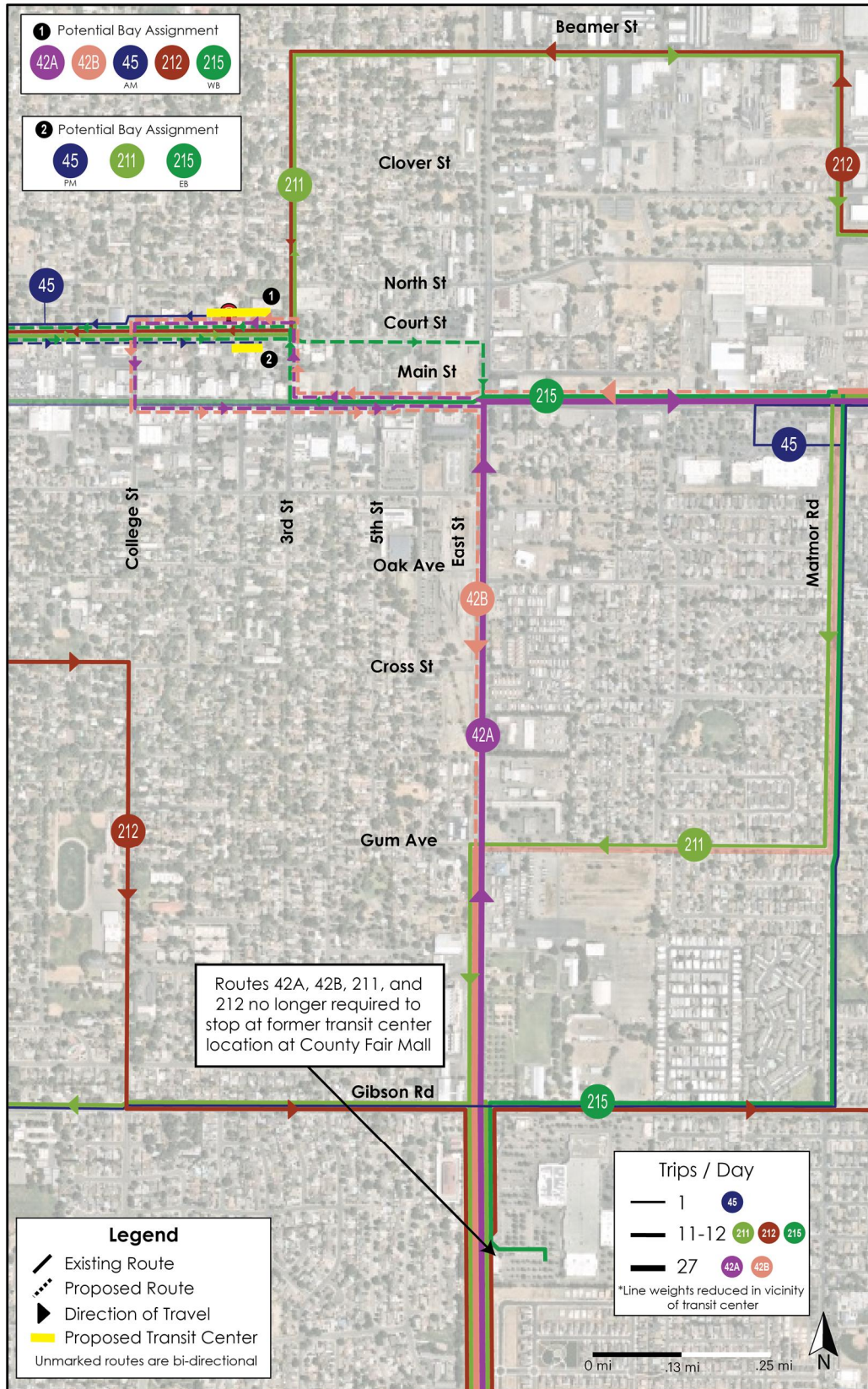


Figure 5: Proposed Bus Routing – Downtown Woodland

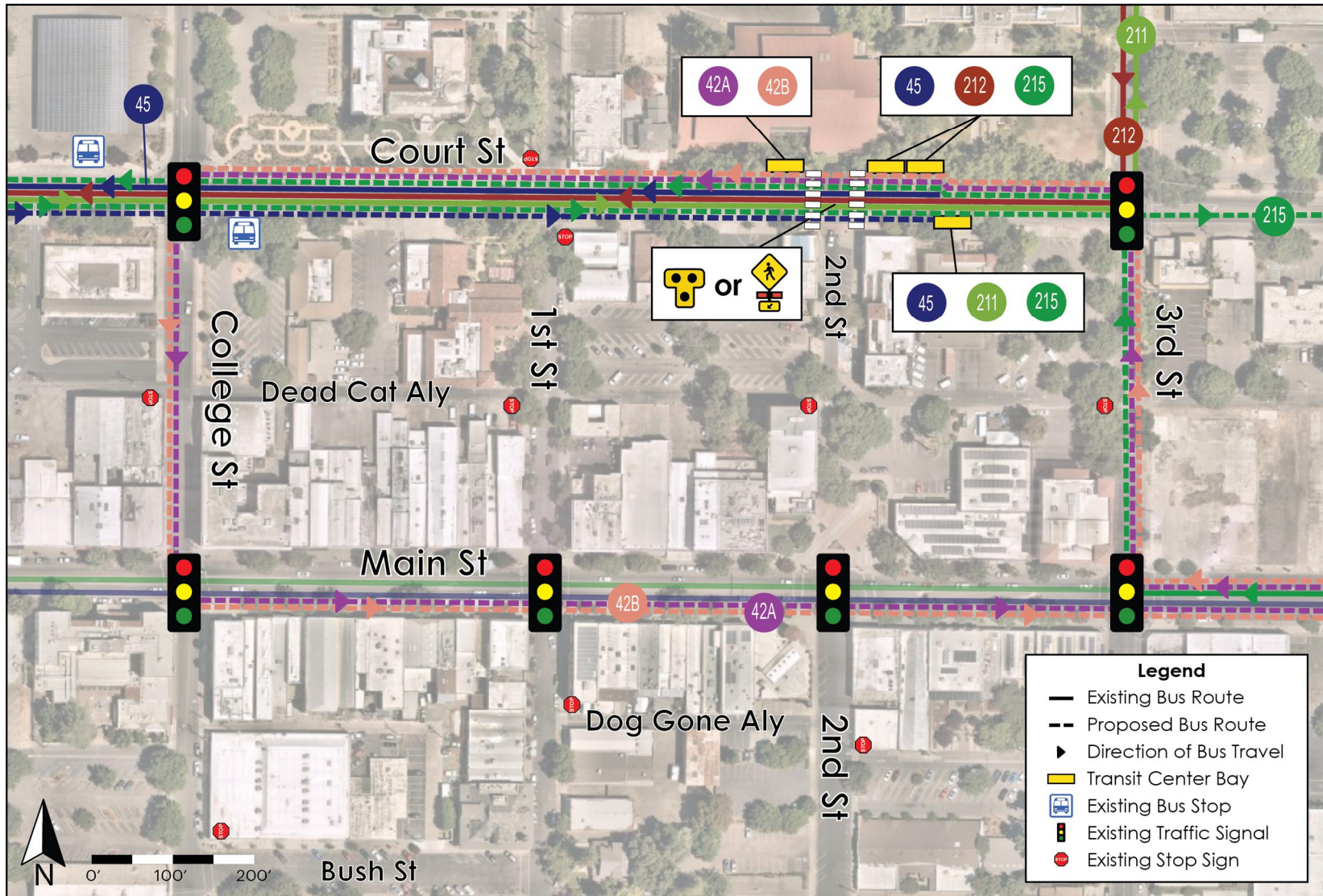
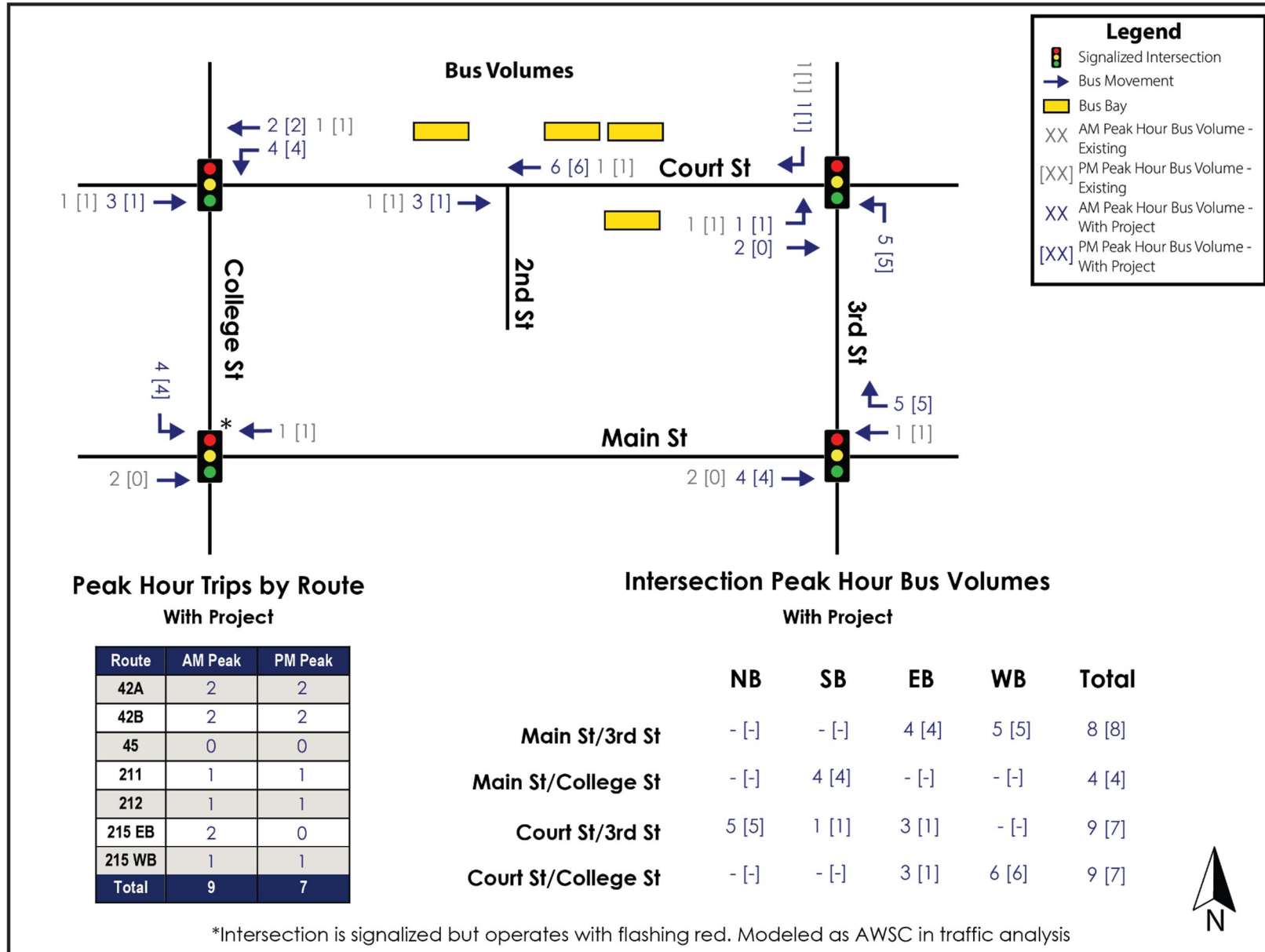


Figure 6: Bus Volumes - Proposed Transit Center Relocation



Turn Analysis

Given the modifications to bus routes to travel through the Study Area, a turning template analysis was completed for several relevant movements. Figures created for this analysis are provided as Attachment A: Turning Template Analysis. Overall, the analysis found that most of the new turn movements would be accommodated by the existing geometry. Some minor modifications are required as detailed below:

- Main Street and 3rd Street
 - Remove low-volume westbound right-turn lane
 - Remove four parallel parking spaces on the northern leg of 3rd Street (two on each side). Provide up to four new parking spaces on the northern side of the westbound approach of Main Street
 - Stripe painted median on the northern leg of 3rd Street
- Court Street and West Street (intersection not included in Study Area but will accommodate new bus turns with the SBL)
 - Move stop bar for WBL back 4' from crosswalk

Traffic Analysis

Methodology

Synchro 12 analysis software was used to analyze the intersections in the Study Area:

- Main Street and 3rd Street (signal)
- Main Street and College Street (signal – red flashing (AWSC))
- Court Street and College Street (signal)
- Court Street and 2nd Street (uncontrolled)
- Court Street and 3rd Street (signal)

This analysis used standard measures of effectiveness to evaluate the existing and proposed network, including level of service (LOS) and queueing. The LOS of an intersection is a quantitative measure used to describe operational conditions. LOS ranges from A (best), which represents minimal delay, to F (worst), which represents heavy delay and an intersection that is operating at or near its functional capacity. The LOS standards used for this evaluation are based on the Transportation and Circulation Element of the City of Woodland General Plan Update (2017), which establish the minimum acceptable level of service for intersections in Woodland is LOS D (Policy 3.A.1). Levels of service for this study were determined using methods defined in the Highway Capacity Manual 6th Edition (HCM) and the Synchro 12 analysis software.

The HCM includes procedures for analyzing side-street stop-controlled (SSSC), all-way stop-controlled (AWSC), and signalized intersections. The intersection of Court Street and 2nd Street operates as an uncontrolled intersection with 2nd Street as an ingress-only approach; this intersection was therefore not analyzed. While there are four signalized intersections in the Study Area, the intersection of Main Street and College Street currently operates with flashing red phases, according to the City of Woodland. This intersection is therefore analyzed as an all-way stop-controlled intersection. Signalized LOS thresholds and analysis are used for the remaining signalized intersections of Main Street/3rd Street, Court Street/3rd Street, and Court Street/College Street. LOS in this analysis is defined as a function of average control delay for the intersection. Table 4 relates the operational characteristics associated with each LOS category for signalized and unsignalized intersections.

Table 4: Intersection Level of Service Definitions

LOS	Description	Signalized (seconds)	Unsignalized (seconds)
A	Free flow with no delays. Users are virtually unaffected by others in the traffic stream.	delay ≤ 10.0	delay ≤ 10.0
B	Stable traffic. Traffic flows smoothly with few delays.	10.0 < delay ≤ 20.0	10.0 < delay ≤ 15.0
C	Stable flow but the operation of individual users becomes affected by other vehicles. Modest delays.	20.0 < delay ≤ 35.0	15.0 < delay ≤ 25.0
D	Approaching unstable flow. Operation of individual users becomes significantly affected by other vehicles. Delays may be more than one cycle during peak hours.	35.0 < delay ≤ 55.0	25.0 < delay ≤ 35.0
E	Unstable flow with operating conditions at or near the capacity level. Long delays and vehicle queuing.	55.0 < delay ≤ 80.0	35.0 < delay ≤ 50.0
F	Forced or breakdown flow that causes reduced capacity. Stop and go traffic conditions. Excessively long delays and vehicle queuing.	delay > 80	delay > 50

Scenarios

The purpose of this traffic analysis is to evaluate the existing operations of the Study Area intersections without and with the new transit center, including lane reductions at certain approaches and the addition of bus volumes. This analysis considers two analysis scenarios:

- Existing No-Build (2024)
- Build (2024)

Lane configurations for both scenarios are shown in Figure 7 and Figure 8. The proposed adjustments to the lane configurations result from the safety and turning analysis discussed previously.

Figure 7: Existing Lane Configuration

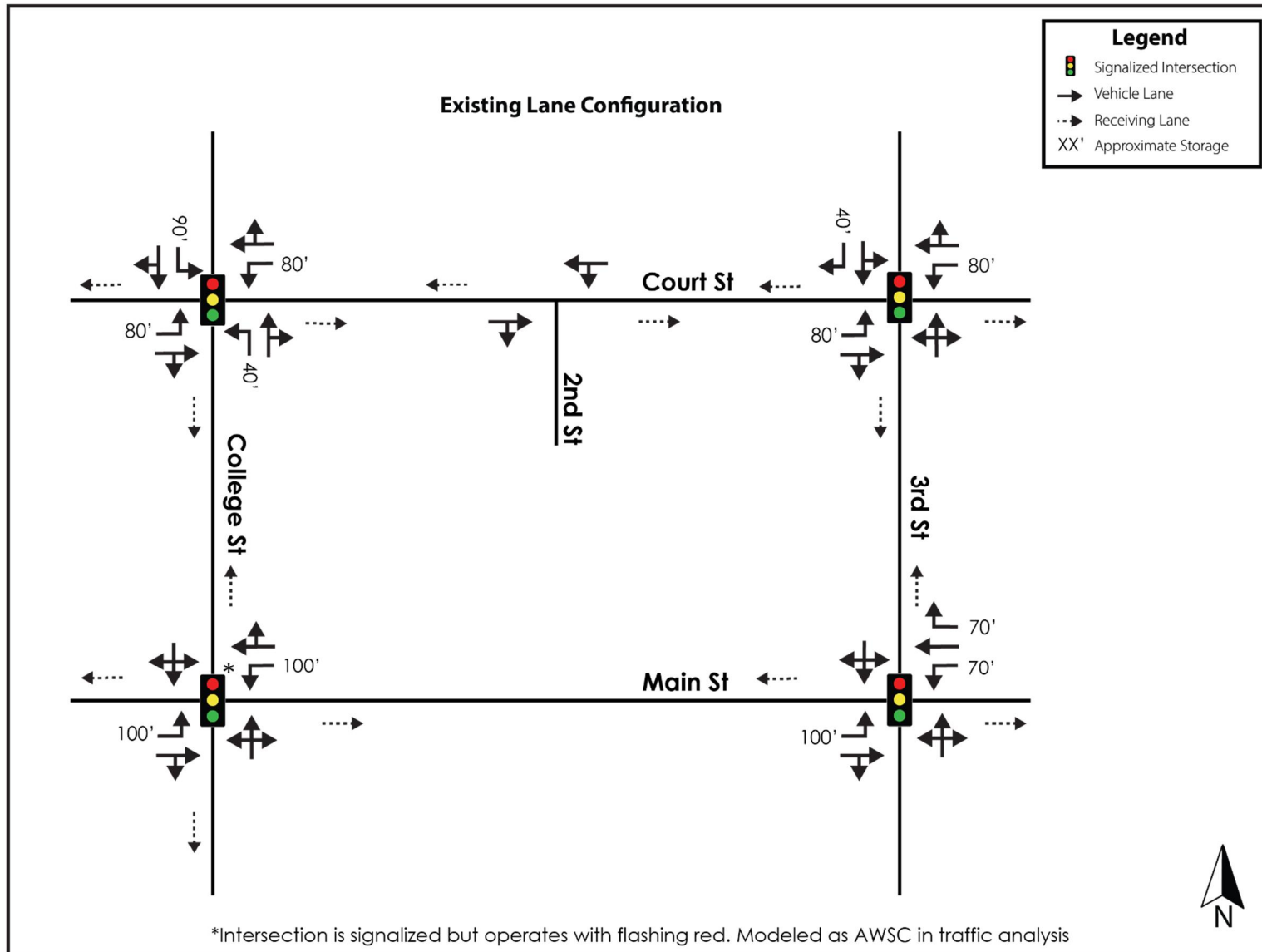
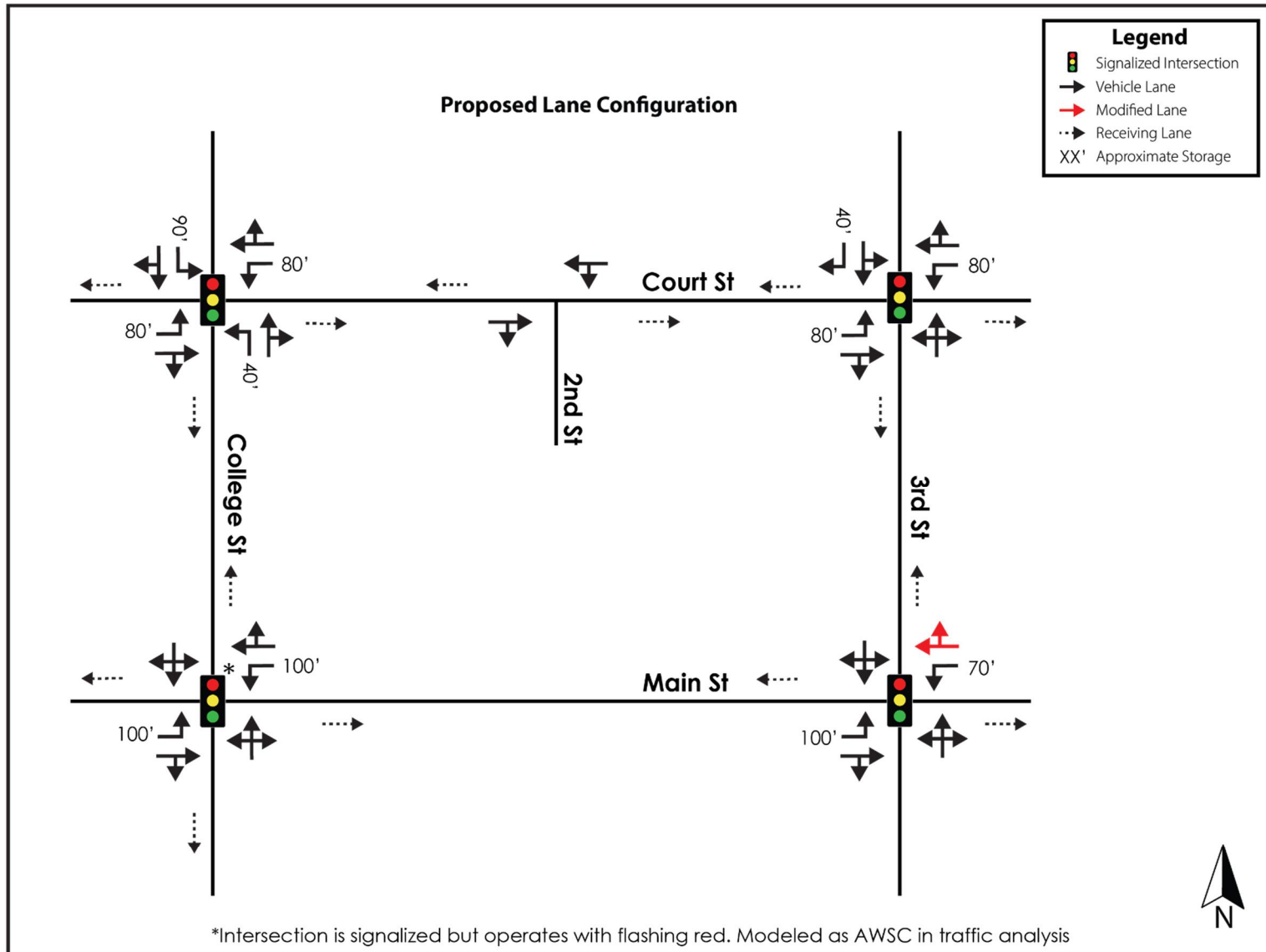


Figure 8: Proposed Lane Configuration



Existing No-Build Scenario

VOLUME DATA

Traffic counts for the analysis were collected for the AM (7-9 AM) peak period and the PM (4-6 PM) peak period on May 5th, 2024. Turning movement counts, which included vehicle, pedestrian, and bicycle counts, were collected for each of the following intersections:

- Main Street and 3rd Street
- Main Street and College Street
- Court Street and College Street
- Court Street and 2nd Street
- Court Street and 3rd Street

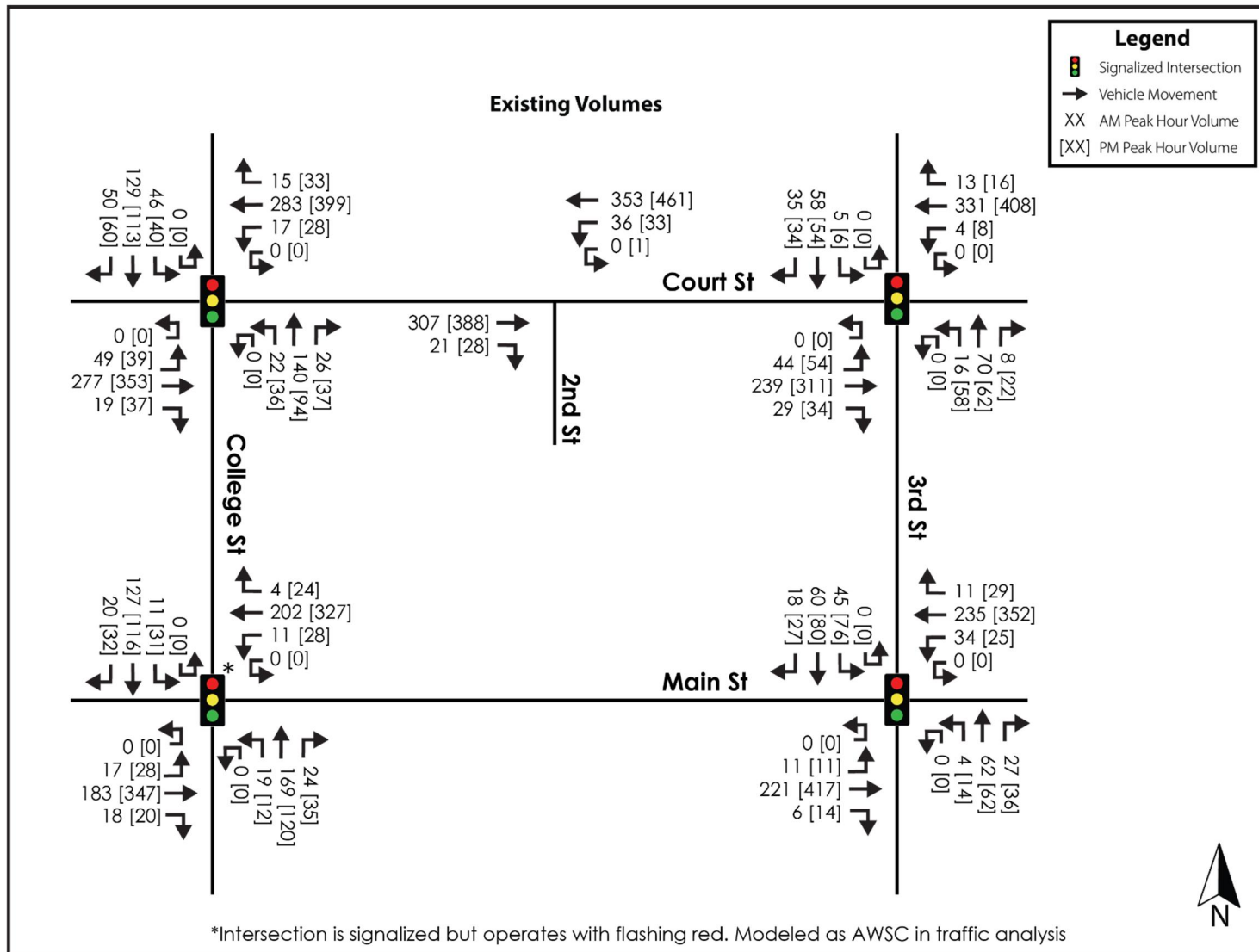
Upon reviewing the volume data, the AM peak hour was determined to be 7:45-8:45 AM, while the PM peak hour occurs between 4:15-5:15 PM. Peak hours were determined based on the hour with the highest volume levels across the five intersections. Volume balancing was not performed between intersections given the presence of driveways and other outlets present. Given that both scenarios evaluate conditions based on the existing volumes, no growth factor or other volume adjustments were performed. Peak hour factors were calculated by approach.

Volumes for the study area intersections are shown in Figure 9. Raw data sheets for the turning movement counts can be viewed in Attachment B: Turning Movement Counts.

SIGNAL TIMING

Timing data for the signalized intersections within the Study Area were provided by the City of Woodland (City). As previously noted, based on communication with the City, the intersection of Main Street and College Street has been operating under a flashing red configuration since the COVID-19 pandemic, meaning it operates as a four-way stop. The other intersections were programmed based on the timing sheets and coordination plans provided by the City. Timings and splits for each signal phase were not adjusted or optimized between the no-build and build scenarios.

Figure 9: Existing Volumes



Build Scenario

VOLUME DATA

Under Build conditions, volumes are adjusted slightly to account for the newly diverted bus trips that will occur, and heavy vehicle percentages at these movements are calculated and modeled based on the addition of bus movements.

The team reviewed current routes, proposed changes given the new transit center, and schedules for each of the lines to gain a better understanding of the impacts of the new bus demand on the surrounding transportation network. New proposed routes were coordinated through several discussions with YoloTD and the City of Woodland.

SIGNAL TIMING

As previously noted, timing data for the signalized intersections within the Study Area were provided by the City of Woodland. Timings and splits for each signal phase were not adjusted or optimized between the no-build and build scenarios.

LEFT-TURN PHASING

Two left-turn movements that would be utilized by the proposed bus routing currently operate with permissive left-turn phasing. Specifically, buses would utilize permissive left-turn phases for the northbound left movement at the intersection of 3rd Street/Court Street and the westbound left movement at the intersection at College Street/Court Street. Both industry guidance on left-turn phasing and operational findings support that permissive phasing is appropriate with the additional bus activity.

The California MUTCD provides guidance for left-turn phasing in Section 4D.19.4, which states¹, “since separate signal phases for protected left turns will reduce the green time available for other phases, alternate means of handling left turn conflicts should be considered first”. Section 4D.19.4 provides some guidance for when permissive left-turn phasing should be considered for conversion to protected phasing:

- Collisions - Five or more left turn collisions for a particular left turn movement during a recent 12-month period – not met within study area
- Delay - Left-turn delay of one or more vehicles, which were waiting at the beginning of the green interval and are still remaining in the left turn lane after at least 80% of the total number of cycles for one hour – not met within study area
- Volume - At new intersections where only estimated volumes are available, the following criteria may be used. For pre-timed signal or a background-cycle-controlled actuated signal, a left turn volume of more than two vehicles per approach per cycle for a peak hour; or for a traffic-actuated signal, 50 or more left turning vehicles per hour in one direction with the product of the turning and conflicting through traffic during the peak hour of 100,000 or more – not met within study area as the only location with 50 left-turns in an hour would have a product of turning and conflict through volumes far below the threshold.
- Miscellaneous. Other factors that might be considered include but are not limited to: impaired sight distance due to horizontal or vertical curvature, or where there are a large percentage of buses and trucks – not met within study area, as additional bus volumes with the Project are minimal and would not represent a large percentage of overall traffic.

¹ California Manual on Uniform Traffic Control Devices, 2014 Edition (Revision 8)

Additionally, several studies suggest the general volume threshold for considering a form of protected phasing for left-turn movements is 2 vehicles per signal cycle (Bonneson and Fontaine (2001) Guidelines for Selection of Left Turn Phasing Mode and Qi, Yu and Yu (2010) Guidelines for Selection of Left Turn Phasing Mode). With more than 60 actuated cycles per hour at each intersection, both intersections have fewer than one vehicle per signal cycle. Therefore, neither permissive left-turn movement within the Study Area meets this threshold.

As a second reference document, the National Cooperative Highway Research Program's (NCHRP) Left Turn Treatments at Intersections (Pline 1996) includes the following detailed guidelines for selection of protected-only phasing:

- Use protected-only phasing when any two of the following conditions are met:
 - Peak 15-minute flow rate for the left-turning traffic is greater than 320 vph – not met within study area
 - Peak 15-minute flow rate for the opposing traffic is greater than 1100 vph – not met within study area
 - Opposing traffic speed limit is greater than or equal to 45 mph – not met within study area
 - Two or more left-turn lanes – not met within study area
- Use protected-only phasing when any one of the following conditions is met:
 - Where four or more lanes must be crossed by the left-turn movement – not met within study area
 - Three opposing traffic lanes and the opposing speed is 45 mph or greater – not met within study area
 - Left-turn volume exceeds 320 vph and the percent of heavy vehicles exceeds 2.5 – not met within study area
 - Opposing volume exceeds 1,100 vph and the percent of heavy left-turn vehicles in the left-turn traffic exceeds 2.5 – not met within study area
 - Seven or more left-turn related accidents within 3 years for protected/permissive option – not met within study area
 - More than 260 left-turn related conflicts per million vehicles squared for protected/permissive option – not met within study area
 - The average stopped delay to left-turning traffic is acceptable for protected-only phasing and it is the engineering judgment that more left-turn accidents would occur under the protected/permissive option – not met within study area

While the above criteria are not specific to bus operations, anecdotally, there are countless examples throughout the region and Northern California of buses operating through permissive left-turn movements; one such example is Sacramento Regional Transit (SacRT) Route 11 turning from Riverside Boulevard to Broadway in Sacramento. Based on the available guidance, modification of the permissive left-turn signal operation at 3rd & Court and College & Court is not recommended to accommodate the proposed bus operations.

Traffic Analysis Results

Table 5 displays results from the analysis of the existing traffic network, while Table 6 displays the results from the Build analysis, which includes modifications to some lane configurations and additional bus volumes. Results presented from the analysis include average delay and 95th percentile queue by intersection movement. Storage lengths for turn-lane pockets are shown to compare anticipated queue lengths to the existing capacity of the turn lane. Changes in delay and 95th percentile queue are shown in Table 6 under categories labeled with "Δ" to show the difference between existing and build conditions. Capacity reports for the analysis can be found in Attachment C: Synchro Capacity Reports.

Table 5: Existing No-Build Level of Service and Delay (s)

Int. #	Int. Name	Movement	Storage	Existing			
				Weekday AM Peak Hour		Weekday PM Peak Hour	
				LOS (Delay (s))	95th Q	LOS (Delay (s))	95th Q
1	Main Street & 3rd Street	NBL	-	C (25.2)	71'	C (25.6)	85'
		NBT	-	C (25.2)	71'	C (25.6)	85'
		NBR	-	C (25.2)	71'	C (25.6)	85'
		SBL	-	D (36.6)	102'	E (58.9)	158'
		SBT	-	D (36.6)	102'	E (58.9)	158'
		SBR	-	D (36.6)	102'	E (58.9)	158'
		EBL	100'	A (7.8)	11'	A (8.6)	11'
		EBT	-	A (8.0)	112'	B (10.9)	226'
		EBR	-	A (8.0)	112'	B (10.9)	226'
		WBL	70	A (7.7)	24'	A (8.8)	20'
		WBT	-	A (8.0)	116'	B (10.1)	180'
		WBR	70'	A (8.0)	0'	A (1.3)	7'
	Overall	-		B (14.8)		C (20.3)	
2	Main Street & College Street	NBL	-	C (15.2)	78'	B (13.8)	38'
		NBT	-	C (15.2)	78'	B (13.8)	38'
		NBR	-	C (15.2)	78'	B (13.8)	38'
		SBL	-	B (12.3)	38'	C (15.6)	58'
		SBT	-	B (12.3)	38'	C (15.6)	58'
		SBR	-	B (12.3)	38'	C (15.6)	58'
		EBL	100'	B (10.1)	3'	B (10.5)	5'
		EBT	-	B (13.8)	50'	C (24.1)	138'
		EBR	-	B (13.8)	50'	C (24.1)	138'
		WBL	100'	A (10.0)	3'	B (10.5)	5'
		WBT	-	B (13.7)	48'	C (23.6)	135'
		WBR	-	B (13.7)	48'	C (23.6)	135'
	Overall	-		B (13.8)		C (20.1)	
3	Court Street & College Street	NBL	40'	A (8.0)	12'	A (8.3)	20'
		NBT	-	A (9.8)	55'	A (7.9)	47'
		NBR	-	A (9.8)	55'	A (7.9)	47'
		SBL	90'	A (8.4)	23'	A (8.3)	21'
		SBT	-	A (8.3)	63'	A (8.0)	59'
		SBR	-	A (8.3)	63'	A (8.0)	59'
		EBL	80'	A (8.2)	24'	A (7.3)	21'
		EBT	-	B (10.7)	105'	A (8.7)	143'
		EBR	-	B (10.7)	105'	A (8.7)	143'
		WBL	80'	A (7.3)	11'	A (7.1)	16'
		WBT	-	B (10.3)	108'	A (9.2)	163'
		WBR	-	B (10.3)	108'	A (9.2)	163'
	Overall			A (9.8)		A (8.6)	
4	Court Street & 3rd Street	NBL	-	B (11.9)	48'	B (18.5)	92'
		NBT	-	B (11.9)	48'	B (18.5)	92'
		NBR	-	B (11.9)	48'	B (18.5)	92'
		SBL	-	B (11.3)	36'	B (16.2)	46'
		SBT	-	B (11.3)	36'	B (16.2)	46'
		SBR	40'	A (5.4)	15'	A (2.9)	10'
		EBL	80'	B (16.5)	37'	B (19.6)	49'
		EBT	-	A (7.5)	109'	A (6.8)	139'
		EBR	-	A (7.5)	109'	A (6.8)	139'
		WBL	80'	B (18.2)	8'	C (23.1)	15'
		WBT	-	B (10.5)	150'	B (12.6)	212'
		WBR	-	B (10.5)	150'	B (12.6)	212'
	Overall			A (9.9)		B (12.0)	

Table 6: Build Level of Service, Delay (s) and Change (Δ)

Int. #	Int. Name	Movement	Storage	Build							
				Weekday AM Peak Hour				Weekday PM Peak Hour			
				LOS (Delay (s))	Delay Δ	95th Q	Q Δ (ft)	LOS (Delay (s))	Delay Δ	95th Q	Q Δ (ft)
1	Main Street & 3rd Street	NBL	-	C (25.2)	0	71'	0	C (25.1)	-0.5	84'	-1
		NBT	-	C (25.2)	0	71'	0	C (25.1)	-0.5	84'	-1
		NBR	-	C (25.2)	0	71'	0	C (25.1)	-0.5	84'	-1
		SBL	-	D (36.6)	0	102'	0	E (56.7)	-2.2	156'	-2
		SBT	-	D (36.6)	0	102'	0	E (56.7)	-2.2	156'	-2
		SBR	-	D (36.6)	0	102'	0	E (56.7)	-2.2	156'	-2
		EBL	100'	A (7.8)	0	11'	0	A (8.7)	0.1	11'	0
		EBT	-	A (8.1)	0.1	114'	2	B (11.2)	0.3	232'	6
		EBR	-	A (8.1)	0.1	114'	2	B (11.2)	0.3	232'	6
		WBL	70	A (7.7)	0	24'	0	A (8.9)	0.1	20'	0
		WBT	-	A (8.1)	0.1	124'	8	B (10.6)	0.5	201'	21
		WBR	-	A (8.1)	0.1	124'	124	B (10.6)	9.3	201'	194
Overall	-	B (14.8)				C (20.2)					
2	Main Street & College Street	NBL	-	C (15.8)	0.6	83'	5	B (14.0)	0.2	38'	0
		NBT	-	C (15.8)	0.6	83'	5	B (14.0)	0.2	38'	0
		NBR	-	C (15.8)	0.6	83'	5	B (14.0)	0.2	38'	0
		SBL	-	B (13.7)	1.4	45'	7	C (16.6)	1	65'	7
		SBT	-	B (13.7)	1.4	45'	7	C (16.6)	1	65'	7
		SBR	-	B (13.7)	1.4	45'	7	C (16.6)	1	65'	7
		EBL	100	B (10.2)	0.1	3'	0	B (10.6)	0.1	5'	0
		EBT	-	B (14.1)	0.3	53'	3	C (24.9)	0.8	168'	30
		EBR	-	B (14.1)	0.3	53'	3	C (24.9)	0.8	168'	30
		WBL	100'	B (10.2)	0.2	3'	0	B (10.6)	0.1	5'	0
		WBT	-	B (14.0)	0.3	50'	2	C (24.3)	0.7	165'	30
		WBR	-	B (14.0)	0.3	50'	2	C (24.3)	0.7	165'	30
Overall	-	B (14.4)				C (20.8)					
3	Court Street & College Street	NBL	40'	A (8.0)	0	12'	0	A (8.3)	0	20'	0
		NBT	-	A (9.9)	0.1	55'	0	A (7.9)	0	47'	0
		NBR	-	A (9.9)	0.1	55'	0	A (7.9)	0	47'	0
		SBL	90'	A (8.4)	0	23'	0	A (8.3)	0	21'	0
		SBT	-	A (8.4)	0.1	63'	0	A (8.0)	0	59'	0
		SBR	-	A (8.4)	0.1	63'	0	A (8.0)	0	59'	0
		EBL	80'	A (8.2)	0	24'	0	A (7.3)	0	21'	0
		EBT	-	A (10.9)	0.2	107'	2	A (8.7)	0	143'	0
		EBR	-	A (10.9)	0.2	107'	2	A (8.7)	0	143'	0
		WBL	80'	A (7.7)	0.4	14'	3	A (7.3)	0.2	18'	2
		WBT	-	A (10.4)	0.1	110'	2	A (9.2)	0	164'	1
		WBR	-	A (10.4)	0.1	110'	2	A (9.2)	0	164'	1
Overall	-	A (9.9)				A (8.6)					
4	Court Street & 3rd Street	NBL	-	B (12.6)	0.7	51'	3	B (19.3)	0.8	98'	6
		NBT	-	B (12.6)	0.7	51'	3	B (19.3)	0.8	98'	6
		NBR	-	B (12.6)	0.7	51'	3	B (19.3)	0.8	98'	6
		SBL	-	B (11.6)	0.3	37'	1	B (16.5)	0.3	47'	1
		SBT	-	B (11.6)	0.3	37'	1	B (16.5)	0.3	47'	1
		SBR	40'	A (5.6)	0.2	16'	1	A (3.1)	0.2	11'	1
		EBL	80'	B (16.9)	0.4	38'	1	C (20.0)	0.4	50'	1
		EBT	-	A (7.4)	-0.1	110'	1	A (6.8)	0	138'	-1
		EBR	-	A (7.4)	-0.1	110'	1	A (6.8)	0	138'	-1
		WBL	80'	B (18.7)	0.5	8'	0	C (23.8)	0.7	16'	1
		WBT	-	A (10.5)	0	156'	6	B (12.7)	0.1	213'	1
		WBR	-	A (10.5)	0	156'	6	B (12.7)	0.1	213'	1
Overall	-	B (10.1)				B (12.1)					

EXISTING NO-BUILD RESULTS

As shown in Table 5, the analysis results for the Existing scenario show that the intersections generally operate with low levels of delay and queues that can be accommodated by existing turn-lane storage. Delays for most of the intersection approaches are less than 20 seconds resulting in LOS A or LOS B. The intersections along Main Street tend to experience more delay and longer queues than the intersections along Court Street; however, capacity is not exceeded at any approach and delay levels still tend to be relatively low.

The largest delays are projected at the intersection of Main Street and 3rd Street. This intersection notably features a leading pedestrian interval (LPI) that provides a head start to pedestrians upon push-button actuation. The intersection is still anticipated to operate at acceptable levels. The southbound approach is projected to operate with around 35 seconds of delay in the AM peak hour and around a minute of delay in the PM peak hour. Aside from the southbound approach of 3rd Street at Main Street, all of the other approaches at intersections within the Study Area are anticipated to operate with less than 30 seconds of delay during either peak hour scenario.

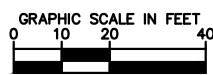
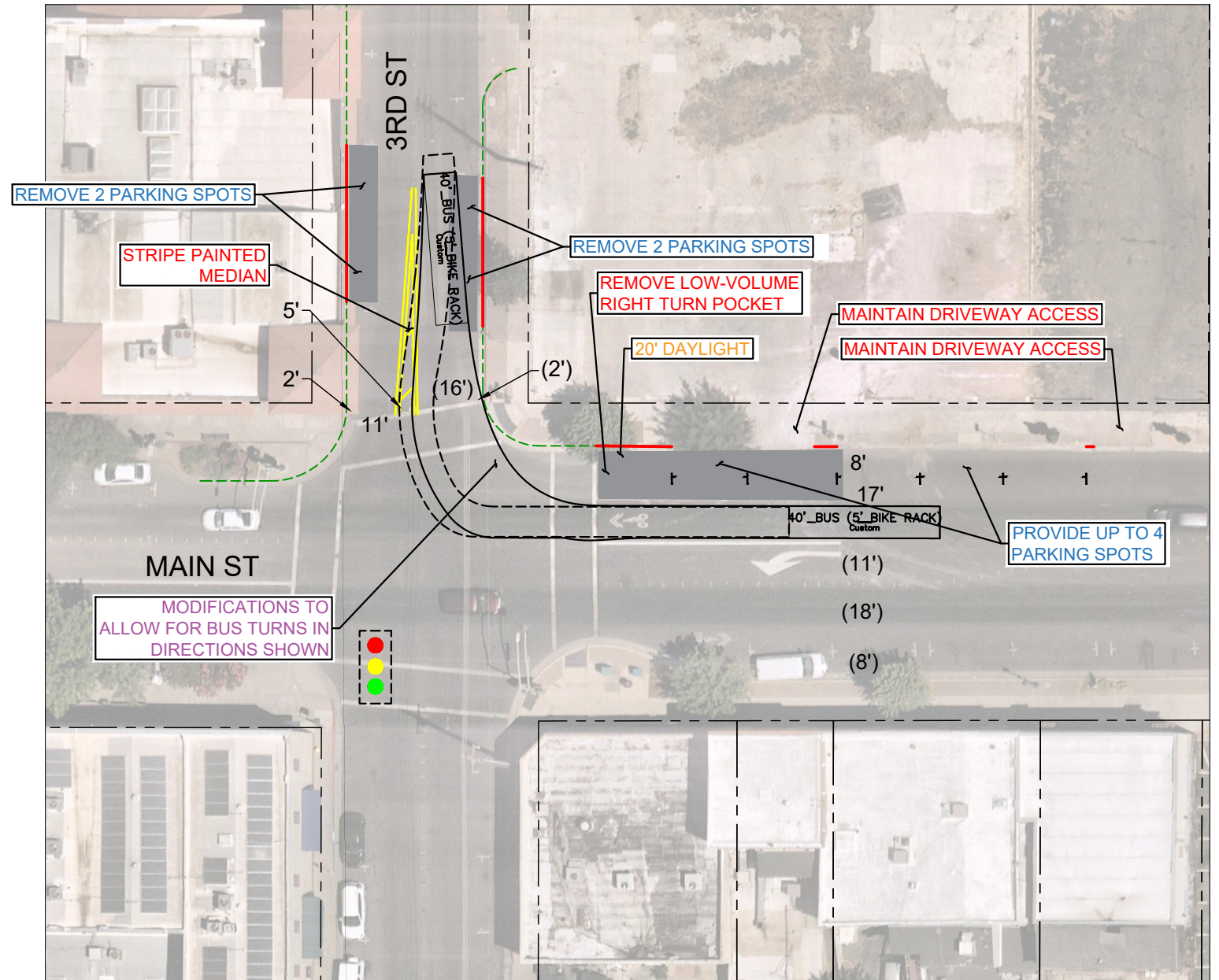
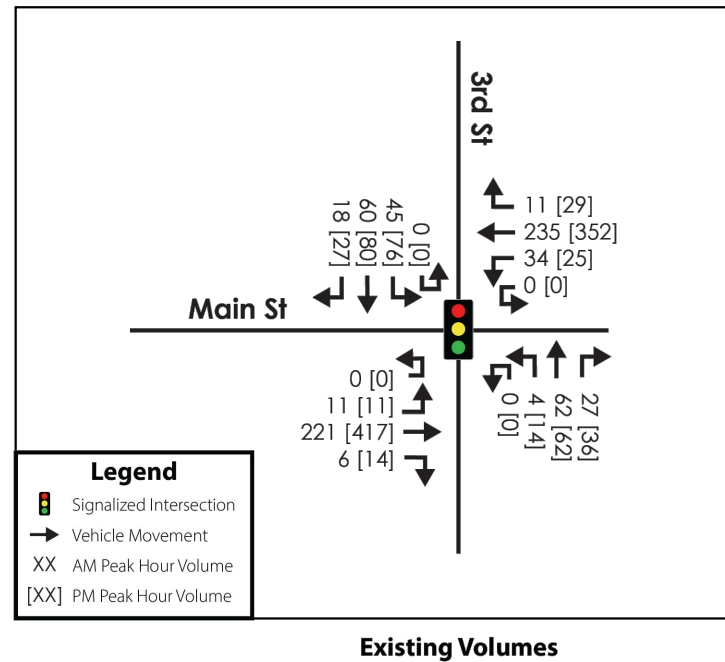
BUILD RESULTS

As shown in Table 6, the analysis results for the Build scenario show that, with the changes to lane configurations and addition of bus volumes, the intersections are expected to continue to operate at acceptable levels with delay changes of less than one second and queue length changes of one vehicle or less. Delays for most of the intersection approaches are anticipated to remain at generally low levels, with level of service generally unchanged. Similar to the Existing conditions, the intersections along Main Street tend to experience more delay and longer queues than the intersections along Court Street, but none of the intersections are projected to experience significant adverse impacts as a result of the implementation of the new transit center.

The largest anticipated increase in delay is projected at the westbound approach of Main Street and 3rd Street with the elimination of the westbound right-turn lane under the Build configuration. However, even with this increased delay, the intersection is anticipated to operate at acceptable levels per City of Woodland General Plan policies with the implementation of the new transit center.

ATTACHMENT A: TURNING TEMPLATE ANALYSIS

K:\OAK_TF\197130002 - Woodland TC Relocation \Design\Exhibits\Circulation1.dwg Location 1 Jun 12, 2024

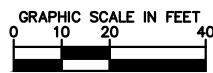
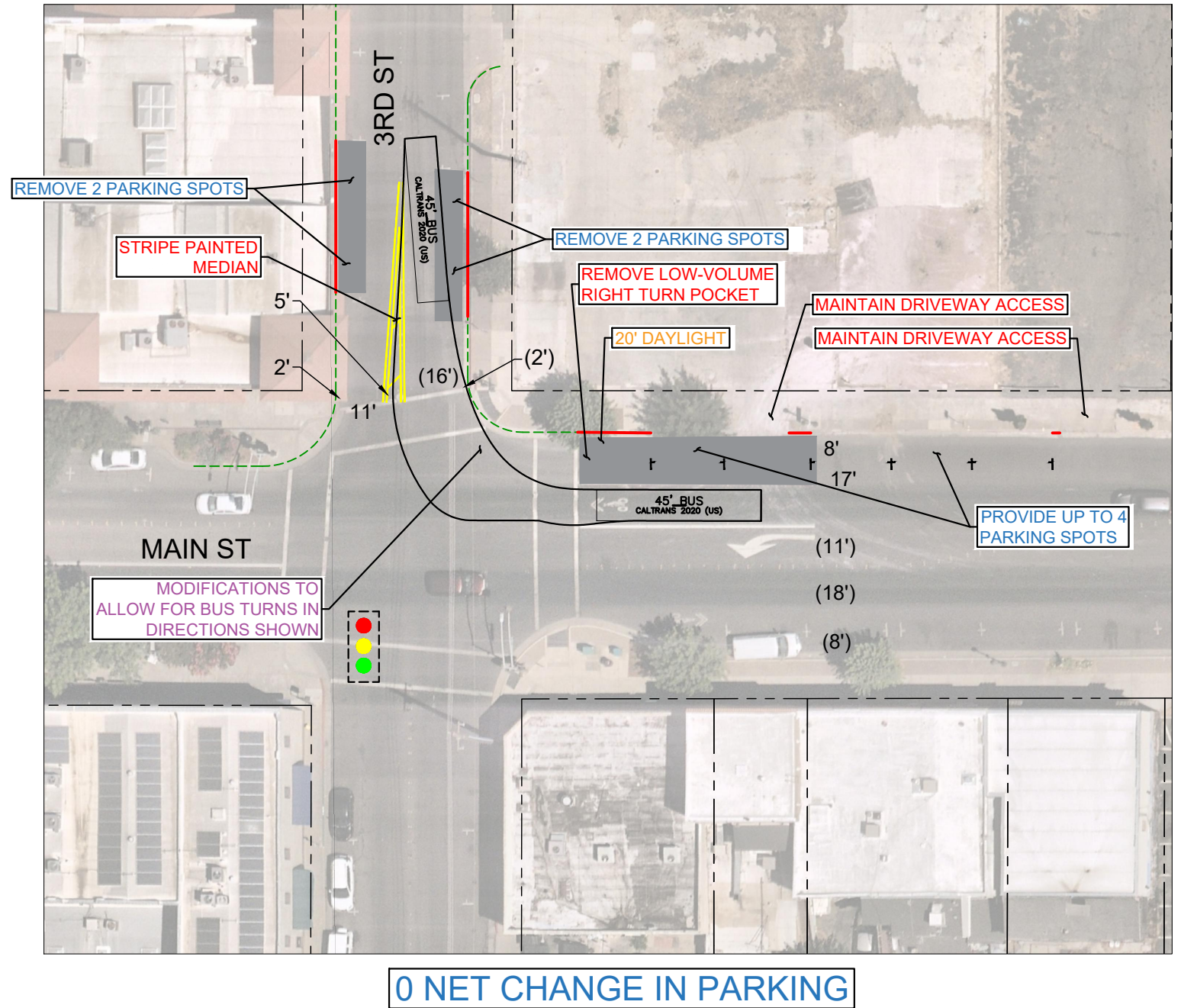
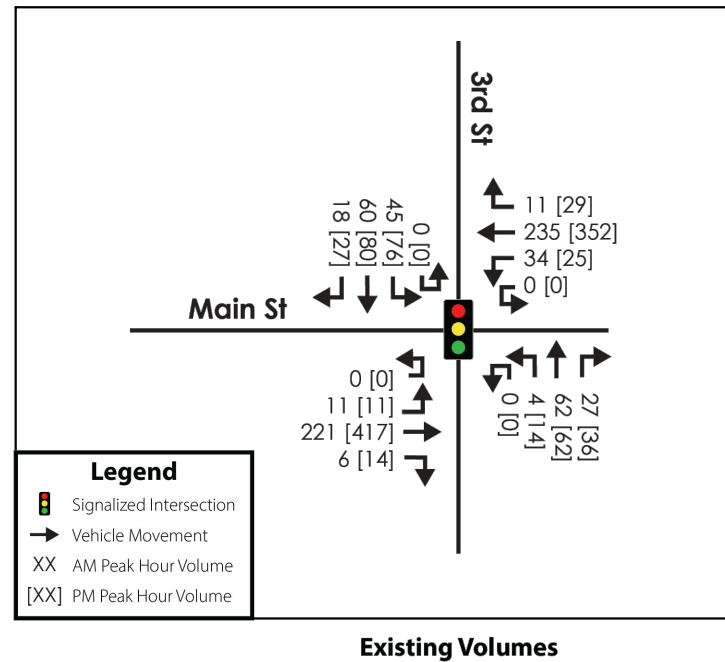


WOODLAND TRANSIT CENTER RELOCATION CONCEPT BUS TURN MODIFICATIONS 3RD ST AND MAIN ST JUNE 2024

LEGEND

- EXISTING RIGHT OF WAY/PROPERTY LINE
- EXISTING CURB/SIDEWALK
- PROPOSED CURB/SIDEWALK
- PROPOSED RED CURB
- PROPOSED WHITE CURB
- BIKE LANE SYMBOL
- (X') EXISTING WIDTH
- X' PROPOSED WIDTH
- VEHICLE/ROADWAY RECOMMENDATION
- PEDESTRIAN RECOMMENDATION
- BICYCLE RECOMMENDATION
- TRANSIT RECOMMENDATION
- PARKING ANALYSIS
- PROPOSED CONCRETE
- EXISTING TRAFFIC SIGNAL

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WOODLAND TRANSIT CENTER RELOCATION CONCEPT

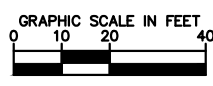
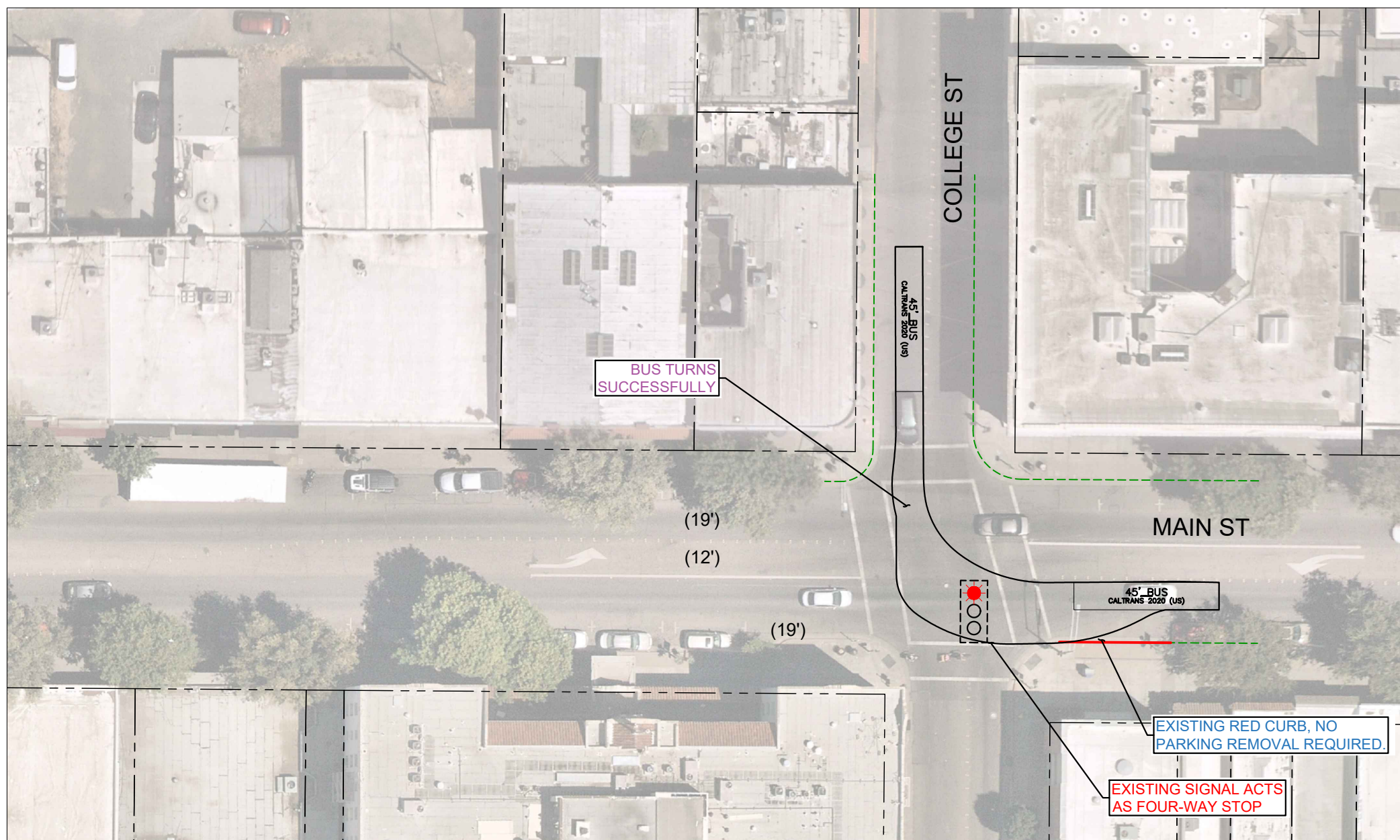
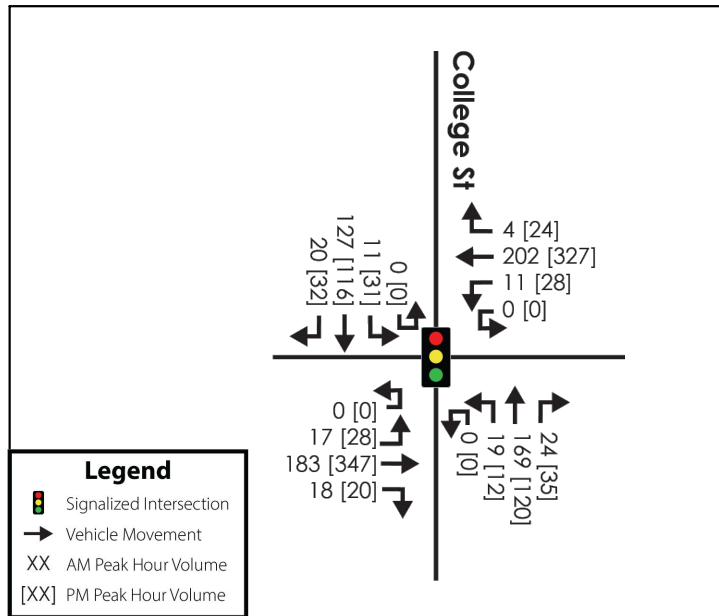
BUS TURN MODIFICATIONS

3RD ST AND MAIN ST - BUS 45

JUNE 2024

LEGEND

- EXISTING RIGHT OF WAY/PROPERTY LINE
- EXISTING CURB/SIDEWALK
- PROPOSED CURB/SIDEWALK
- PROPOSED RED CURB
- PROPOSED WHITE CURB
- BIKE LANE SYMBOL
- (X') EXISTING WIDTH
- X' PROPOSED WIDTH
- VEHICLE/ROADWAY RECOMMENDATION
- PEDESTRIAN RECOMMENDATION
- BICYCLE RECOMMENDATION
- TRANSIT RECOMMENDATION
- PARKING ANALYSIS
- PROPOSED CONCRETE
- EXISTING TRAFFIC SIGNAL

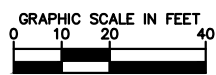
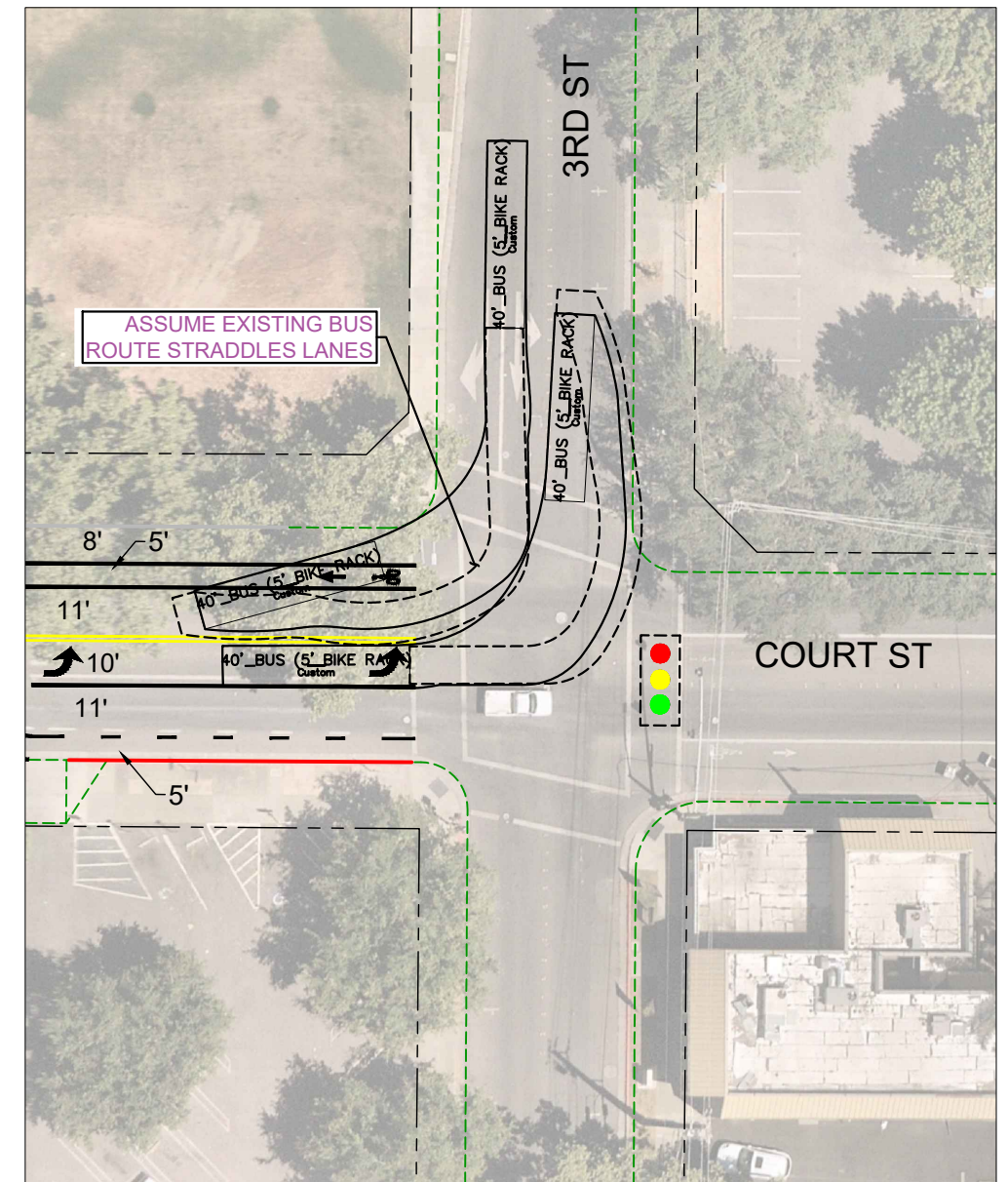
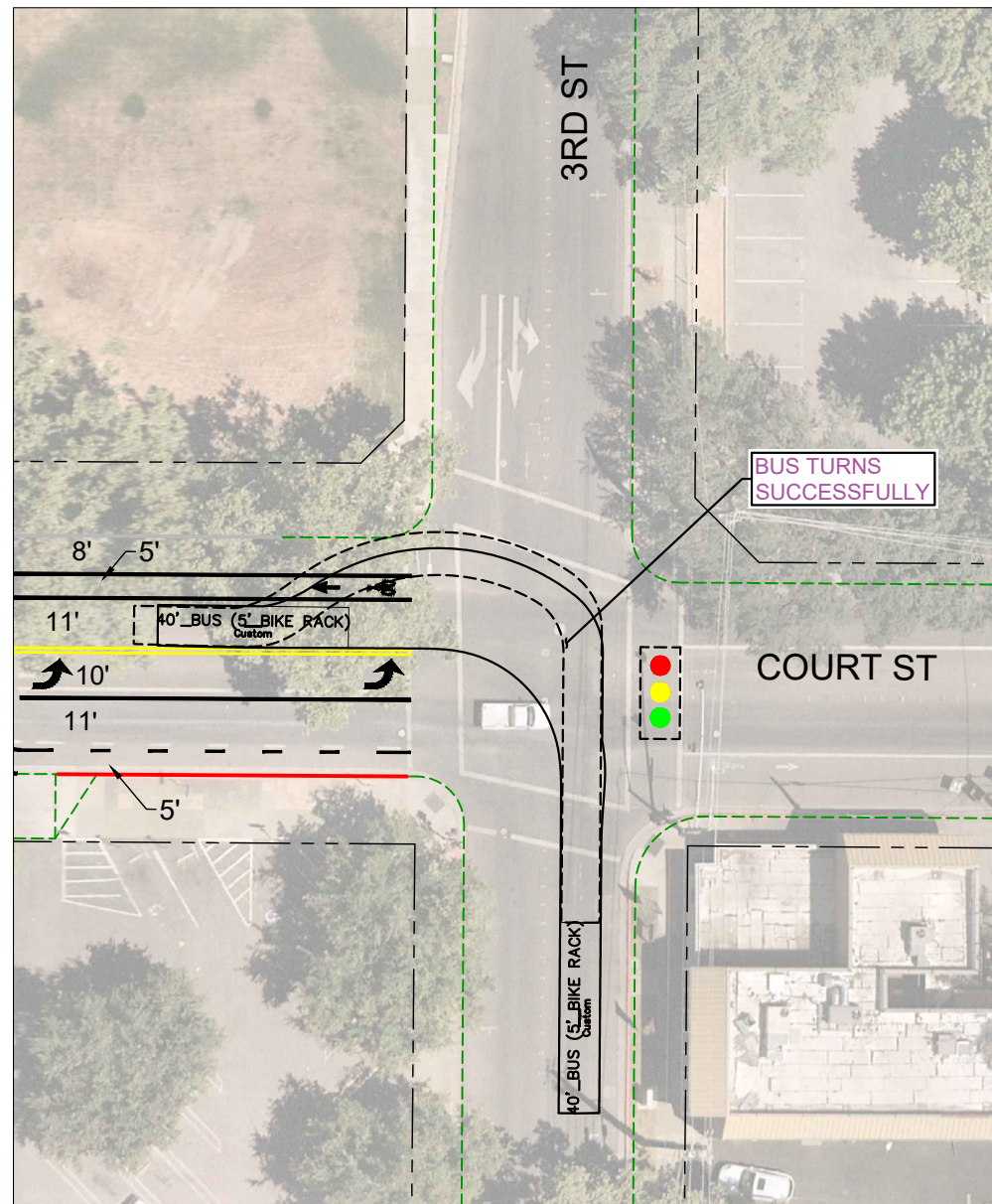
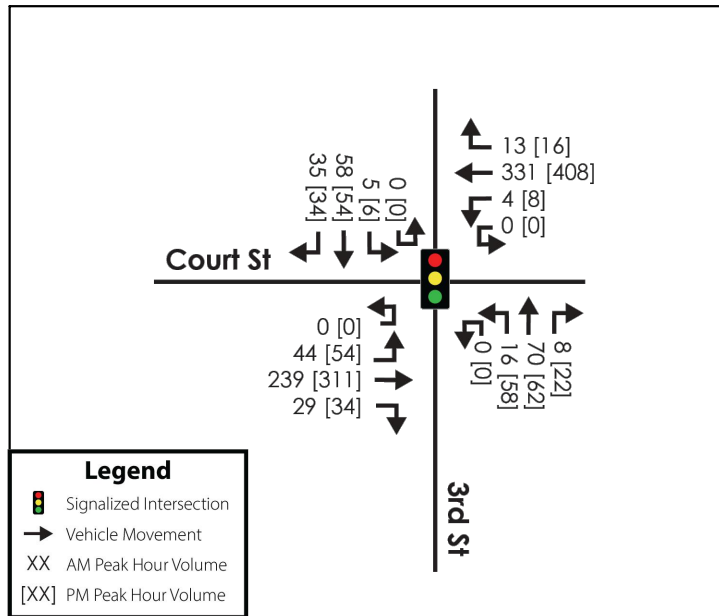


**WOODLAND TRANSIT CENTER RELOCATION CONCEPT
BUS TURN MODIFICATIONS
COLLEGE ST AND MAIN ST - BUS 45
JUNE 2024**

LEGEND

- EXISTING RIGHT OF WAY/PROPERTY LINE
- EXISTING CURB/SIDEWALK
- PROPOSED CURB/SIDEWALK
- PROPOSED RED CURB
- PROPOSED WHITE CURB
- BIKE LANE SYMBOL
- (X') EXISTING WIDTH
- X' PROPOSED WIDTH
- VEHICLE/ROADWAY RECOMMENDATION
- PEDESTRIAN RECOMMENDATION
- BICYCLE RECOMMENDATION
- TRANSIT RECOMMENDATION
- PARKING ANALYSIS
- PROPOSED CONCRETE
- EXISTING TRAFFIC SIGNAL

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WOODLAND TRANSIT CENTER RELOCATION CONCEPT

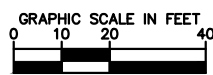
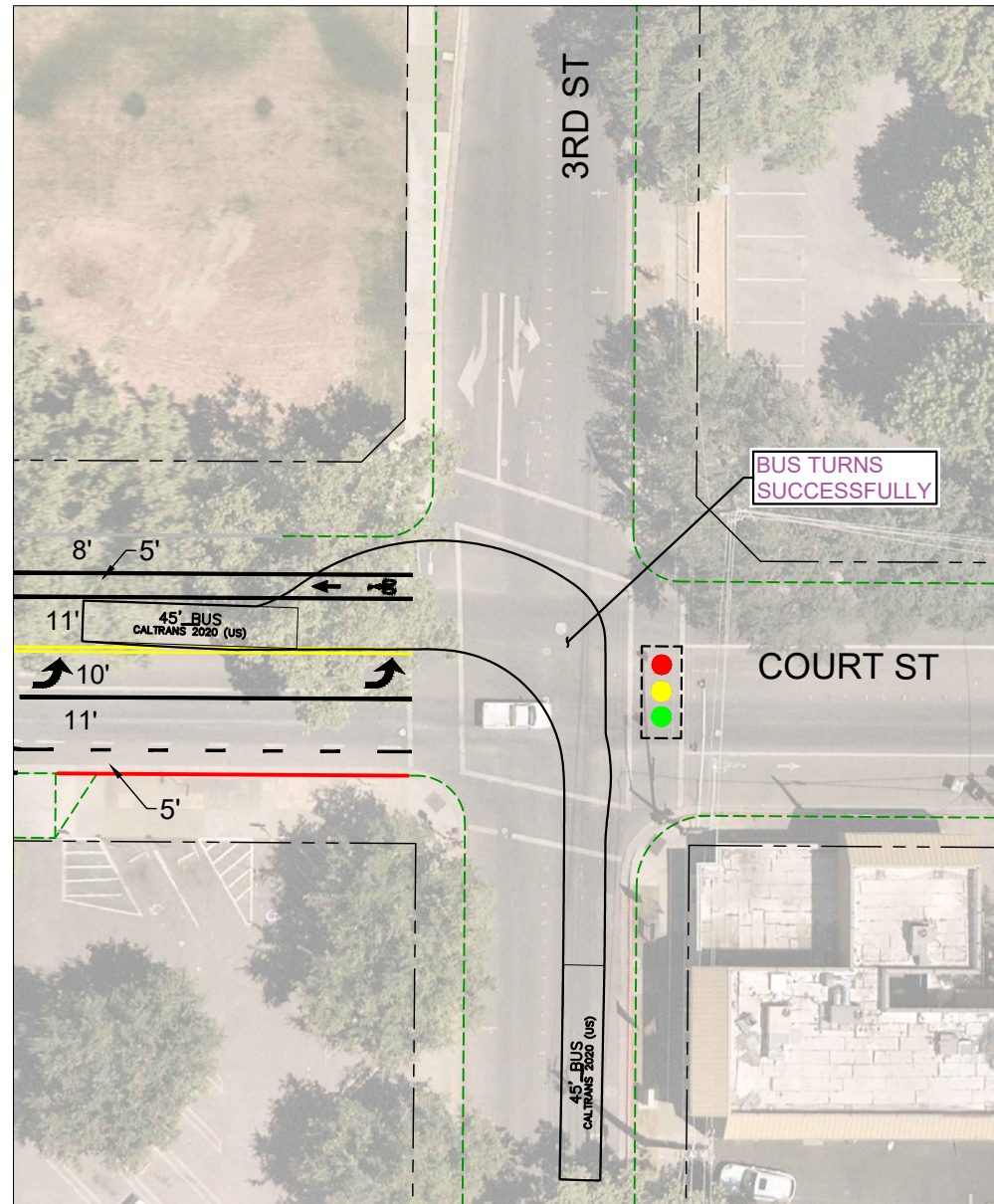
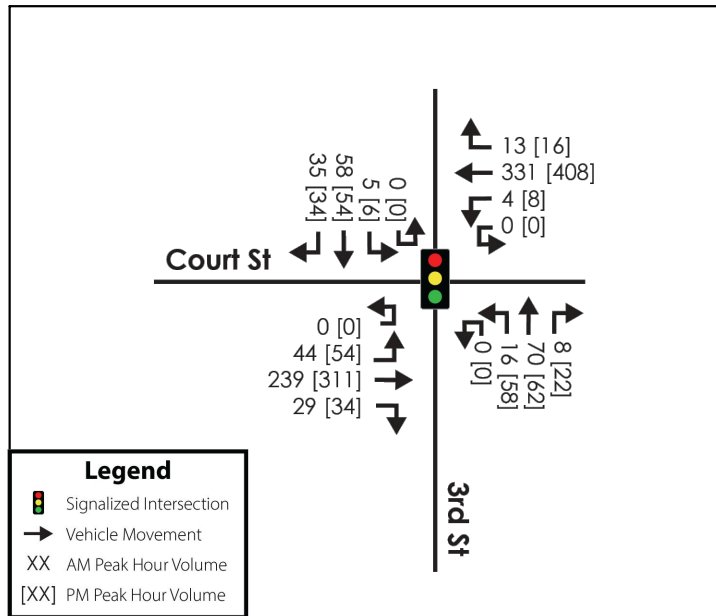
BUS TURN MODIFICATIONS

3RD ST AND COURT ST

JUNE 2024

LEGEND

- EXISTING RIGHT OF WAY/PROPERTY LINE
- EXISTING CURB/SIDEWALK
- PROPOSED CURB/SIDEWALK
- PROPOSED RED CURB
- PROPOSED WHITE CURB
- BIKE LANE SYMBOL
- (X') EXISTING WIDTH
- X' PROPOSED WIDTH
- VEHICLE/ROADWAY RECOMMENDATION
- PEDESTRIAN RECOMMENDATION
- BICYCLE RECOMMENDATION
- TRANSIT RECOMMENDATION
- PARKING ANALYSIS
- PROPOSED CONCRETE
- EXISTING TRAFFIC SIGNAL



WOODLAND TRANSIT CENTER RELOCATION CONCEPT

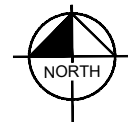
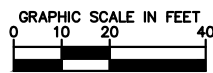
BUS TURN MODIFICATIONS

3RD ST AND COURT ST - BUS 45

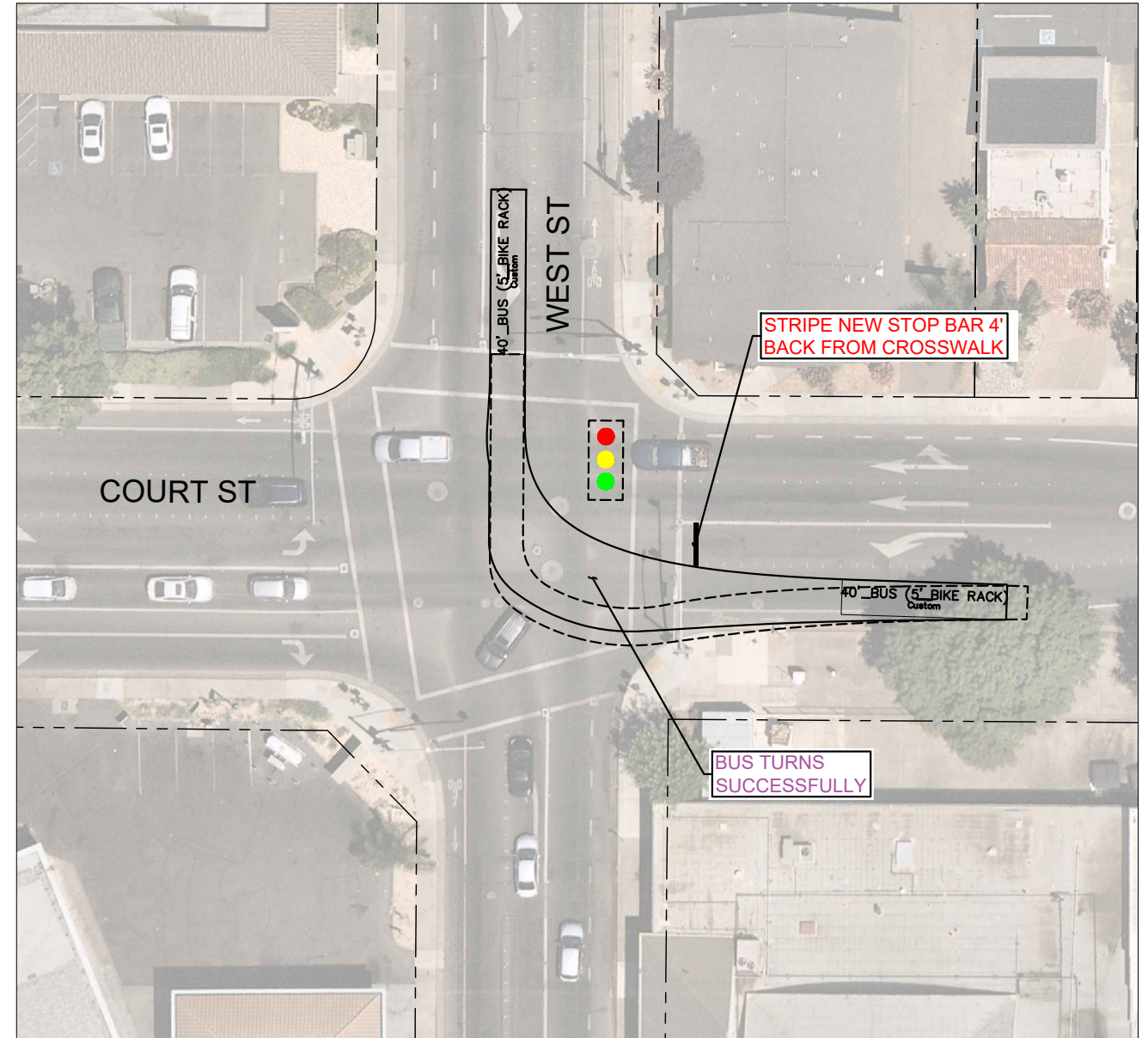
JUNE 2024

LEGEND

- EXISTING RIGHT OF WAY/PROPERTY LINE
- EXISTING CURB/SIDEWALK
- PROPOSED CURB/SIDEWALK
- PROPOSED RED CURB
- PROPOSED WHITE CURB
- BIKE LANE SYMBOL
- (X') EXISTING WIDTH
- X' PROPOSED WIDTH
- VEHICLE/ROADWAY RECOMMENDATION
- PEDESTRIAN RECOMMENDATION
- BICYCLE RECOMMENDATION
- TRANSIT RECOMMENDATION
- PARKING ANALYSIS
- PROPOSED CONCRETE
- EXISTING TRAFFIC SIGNAL

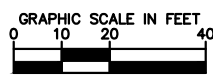


WOODLAND TRANSIT CENTER RELOCATION CONCEPT BUS TURN MODIFICATIONS WEST ST AND COURT ST JUNE 2024

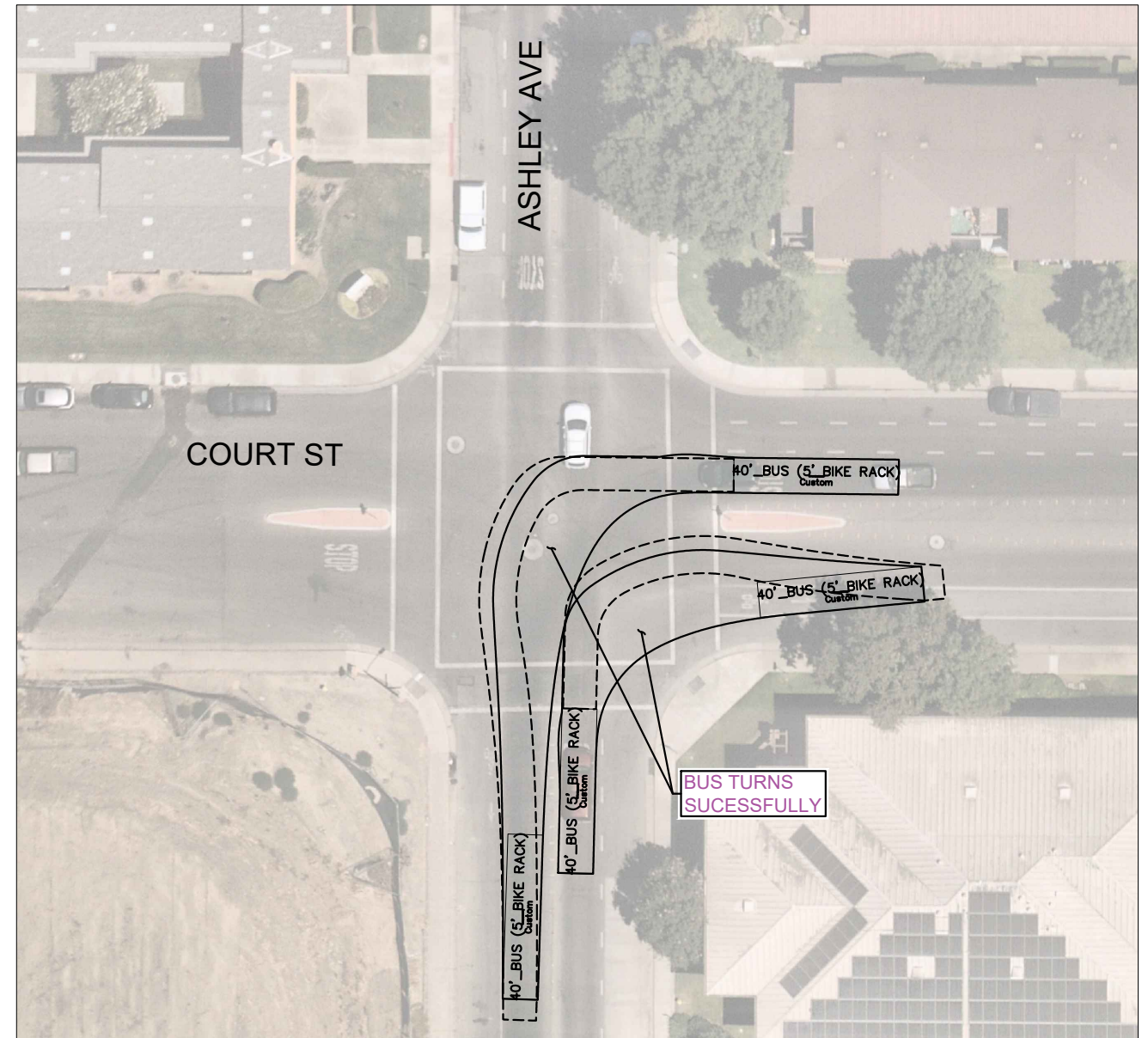


LEGEND

- EXISTING RIGHT OF WAY/PROPERTY LINE
- EXISTING CURB/SIDEWALK
- PROPOSED CURB/SIDEWALK
- PROPOSED RED CURB
- PROPOSED WHITE CURB
- BIKE LANE SYMBOL
- (X') EXISTING WIDTH
- X' PROPOSED WIDTH
- VEHICLE/ROADWAY RECOMMENDATION
- PEDESTRIAN RECOMMENDATION
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- TRANSIT RECOMMENDATION
- PARKING ANALYSIS
- PROPOSED CONCRETE
- EXISTING TRAFFIC SIGNAL



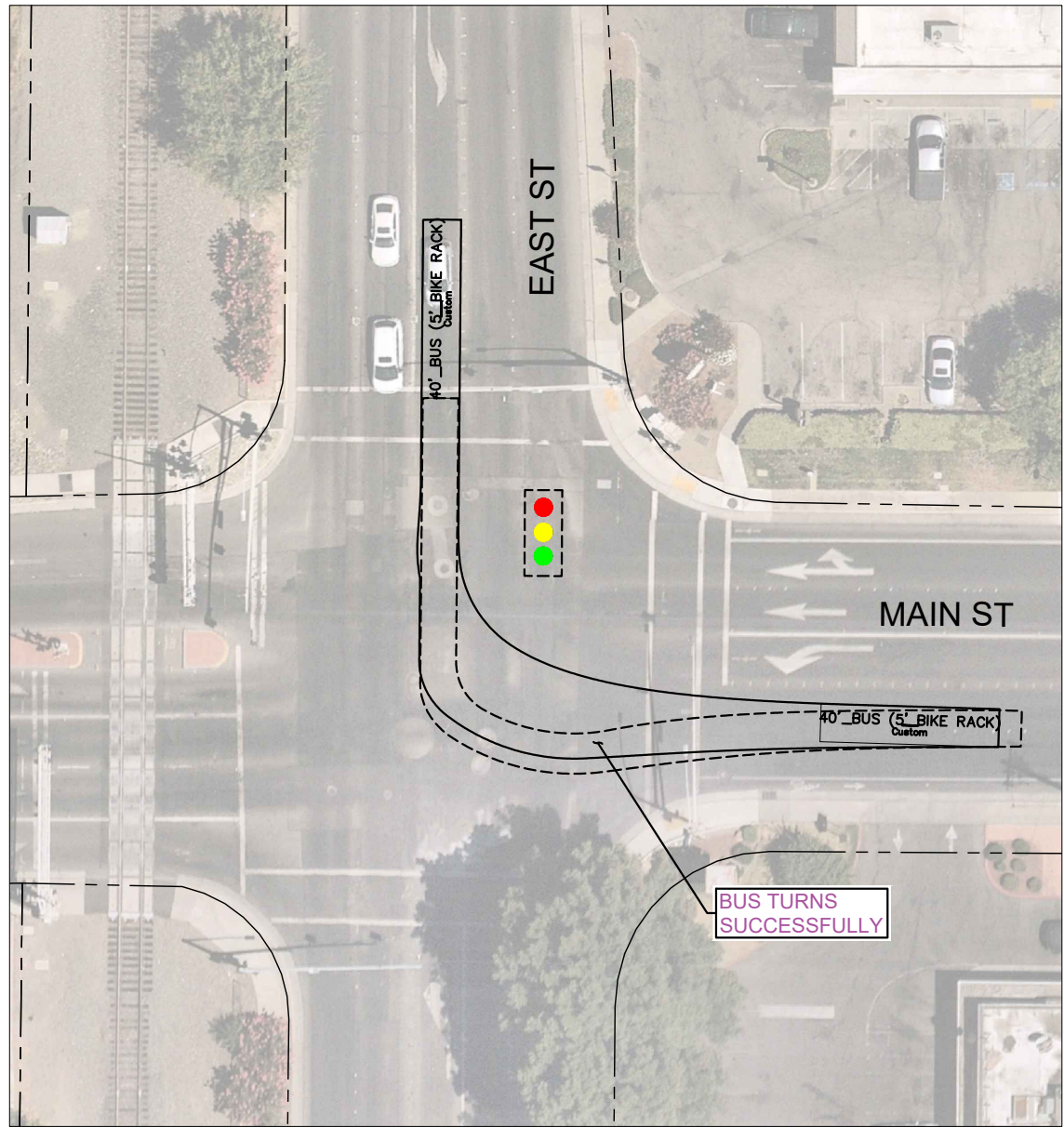
WOODLAND TRANSIT CENTER RELOCATION CONCEPT BUS TURN MODIFICATIONS ASHLEY AVE AND COURT ST JUNE 2024



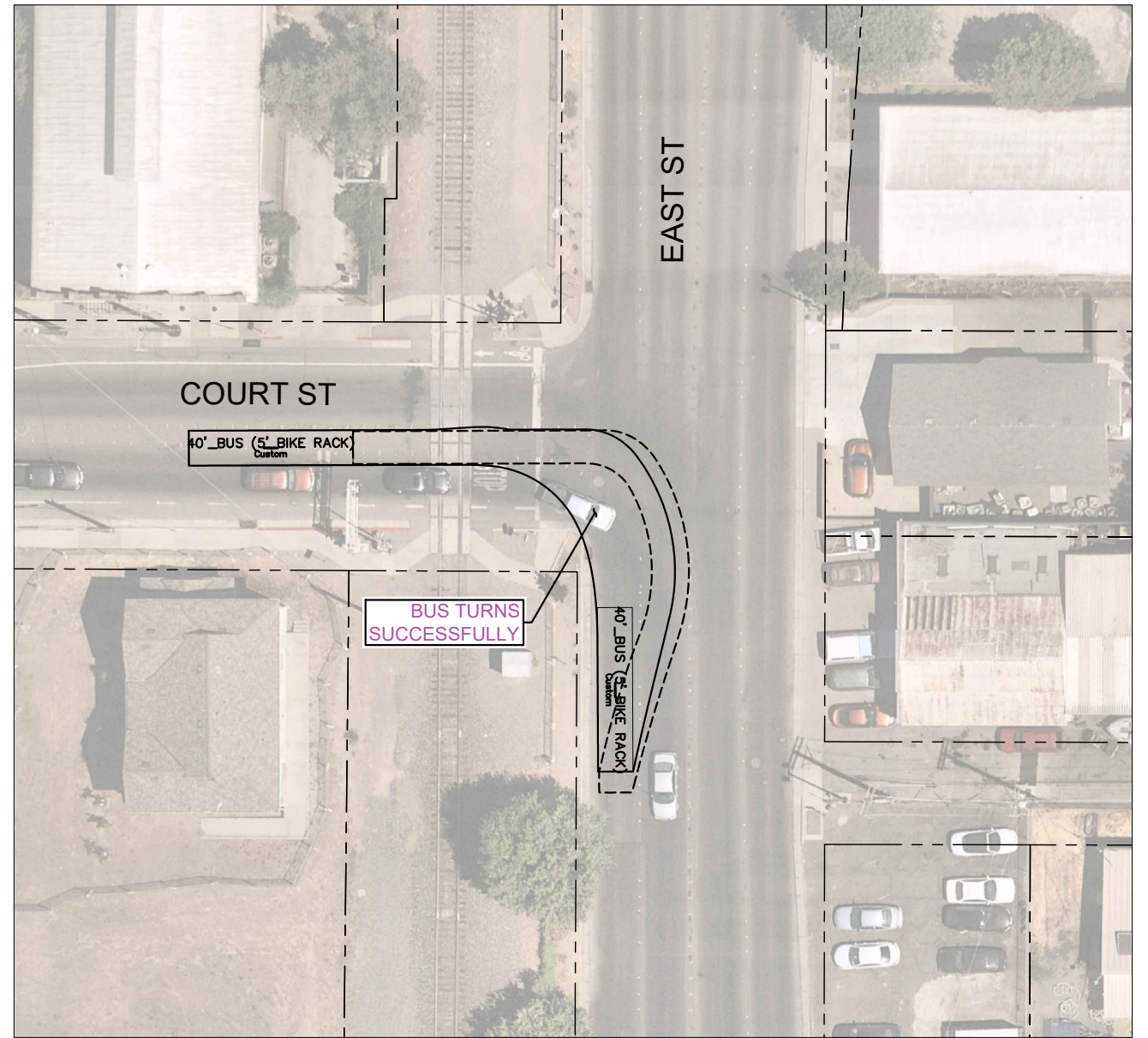
LEGEND

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- EXISTING CURB/SIDEWALK
- PROPOSED CURB/SIDEWALK
- PROPOSED RED CURB
- PROPOSED WHITE CURB
- BIKE LANE SYMBOL
- EXISTING WIDTH
- PROPOSED WIDTH
- VEHICLE/ROADWAY RECOMMENDATION
- PEDESTRIAN RECOMMENDATION
- BICYCLE RECOMMENDATION
- TRANSIT RECOMMENDATION
- PARKING ANALYSIS
- PROPOSED CONCRETE
- EXISTING TRAFFIC SIGNAL

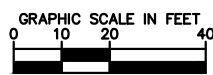
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EAST ST AND MAIN ST



EAST ST AND COURT ST



WOODLAND TRANSIT CENTER RELOCATION CONCEPT BUS TURN MODIFICATIONS EAST ST JUNE 2024

LEGEND

- EXISTING RIGHT OF WAY/PROPERTY LINE
- EXISTING CURB/SIDEWALK
- PROPOSED CURB/SIDEWALK
- PROPOSED RED CURB
- PROPOSED WHITE CURB
- BIKE LANE SYMBOL
- EXISTING WIDTH
- PROPOSED WIDTH
- VEHICLE/ROADWAY RECOMMENDATION
- PEDESTRIAN RECOMMENDATION
- BICYCLE RECOMMENDATION
- TRANSIT RECOMMENDATION
- PARKING ANALYSIS
- PROPOSED CONCRETE
- EXISTING TRAFFIC SIGNAL

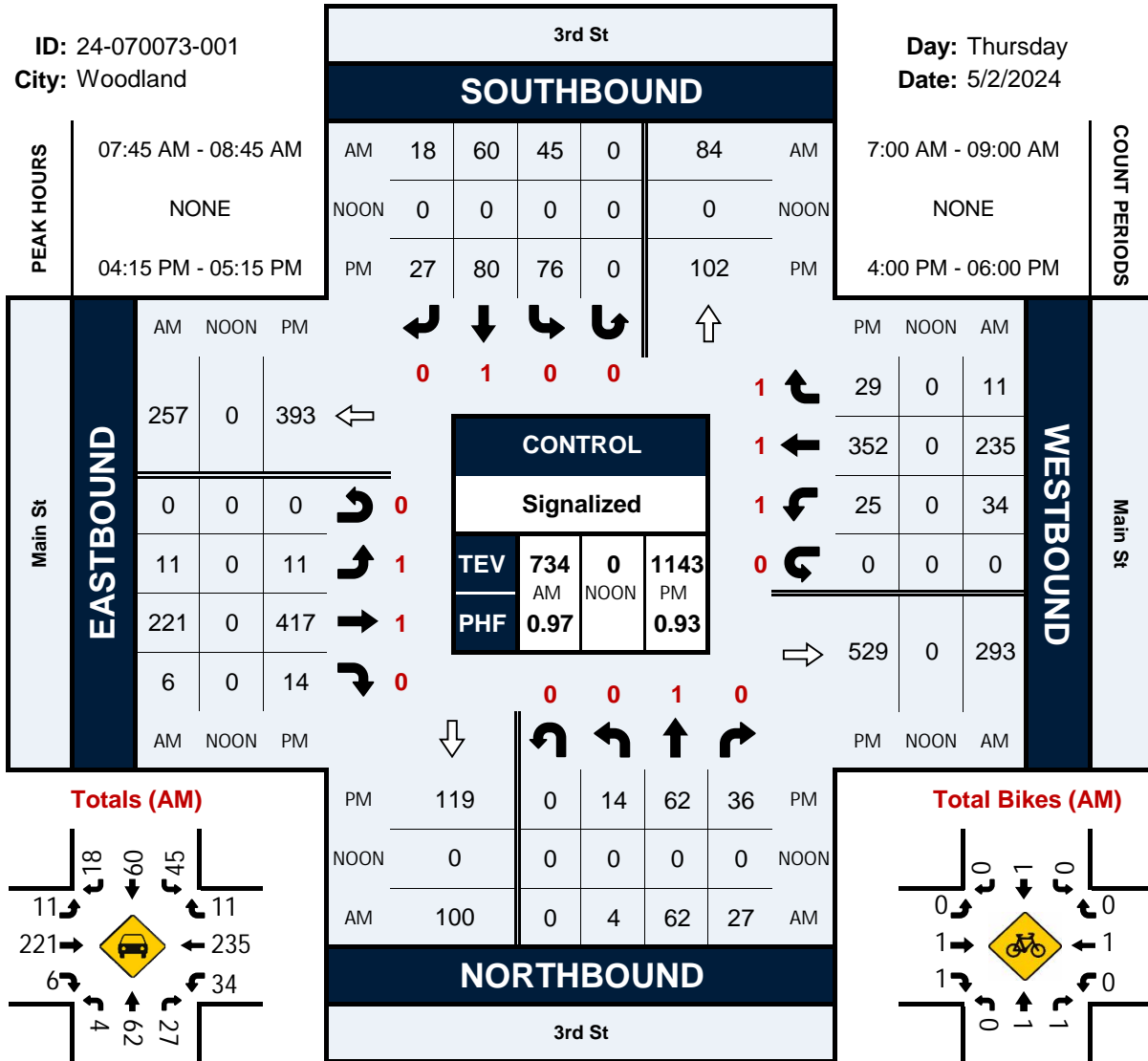
ATTACHMENT B: TURNING MOVEMENT COUNTS

3rd St & Main St

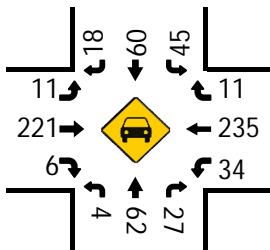
Peak Hour Turning Movement Count

ID: 24-070073-001
City: Woodland

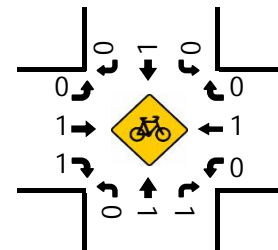
Day: Thursday
Date: 5/2/2024



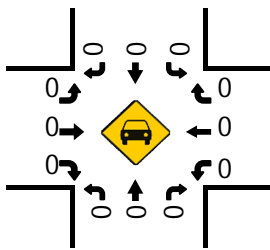
Totals (AM)



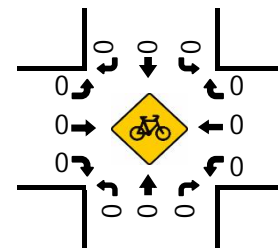
Total Bikes (AM)



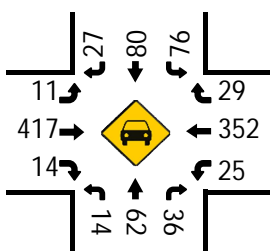
Totals (NOON)



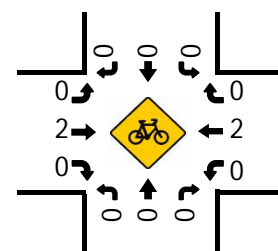
Total Bikes (NOON)



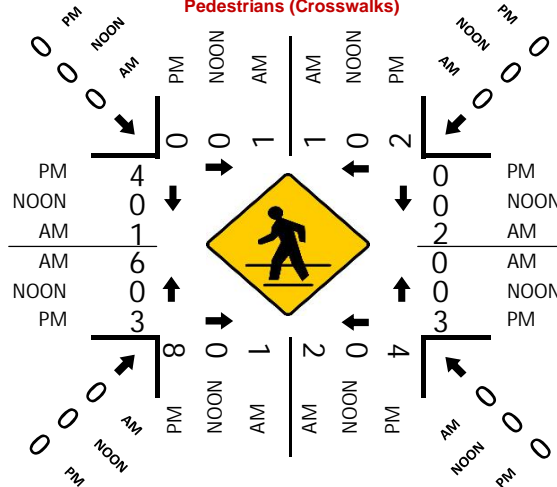
Totals (PM)



Total Bikes (PM)



Pedestrians (Crosswalks)

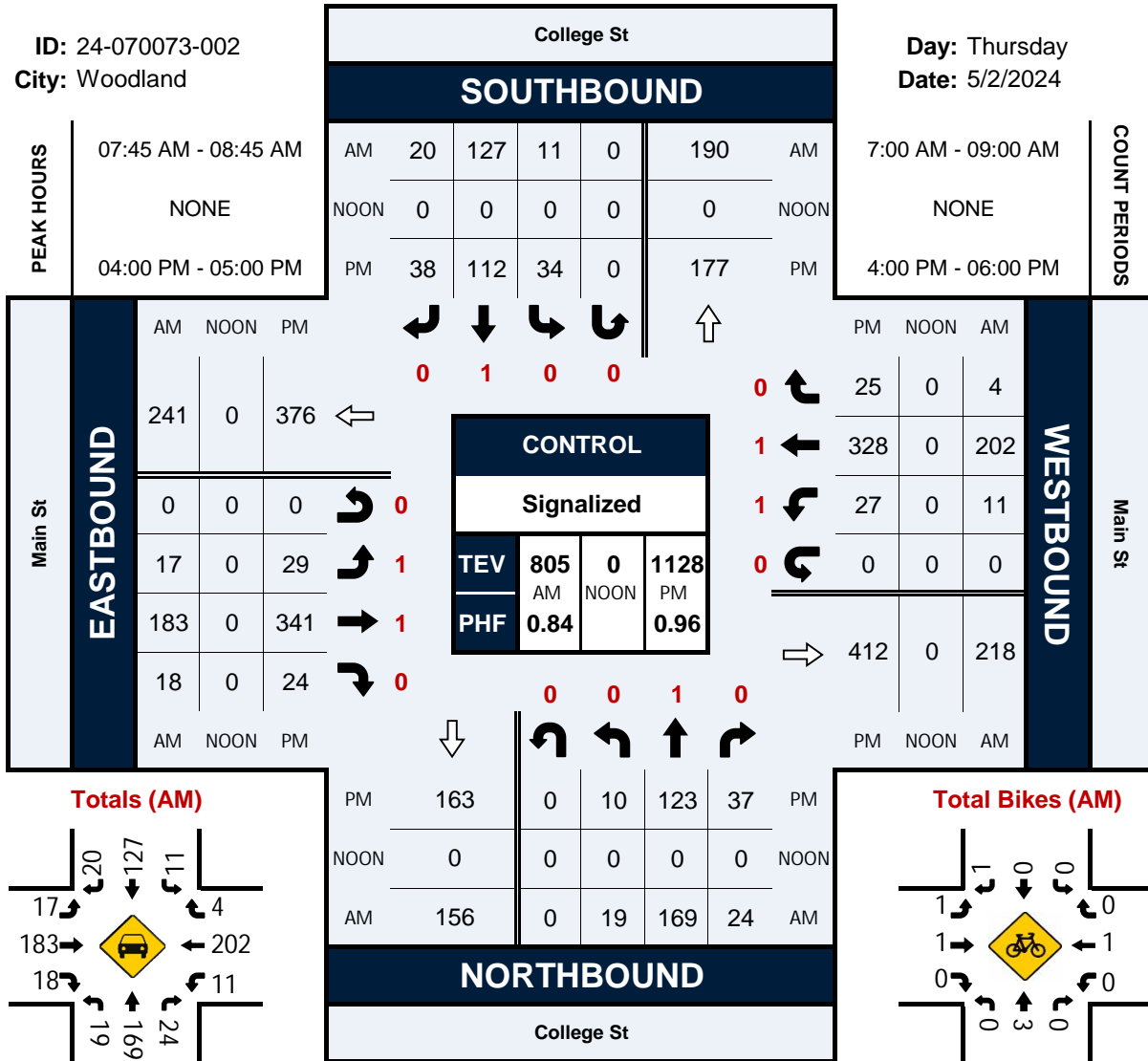


College St & Main St

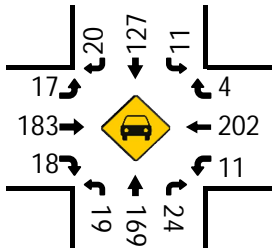
Peak Hour Turning Movement Count

ID: 24-070073-002
City: Woodland

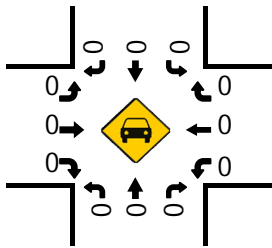
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Date: 5/2/2024



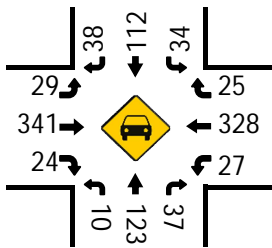
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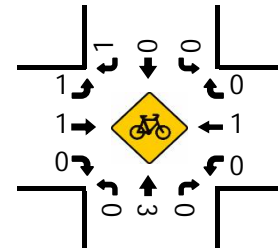
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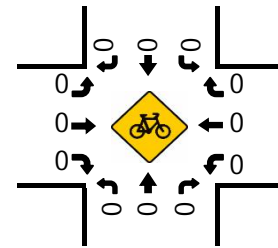
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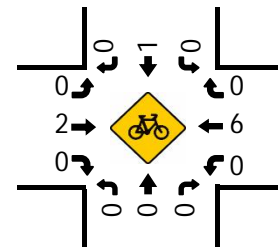
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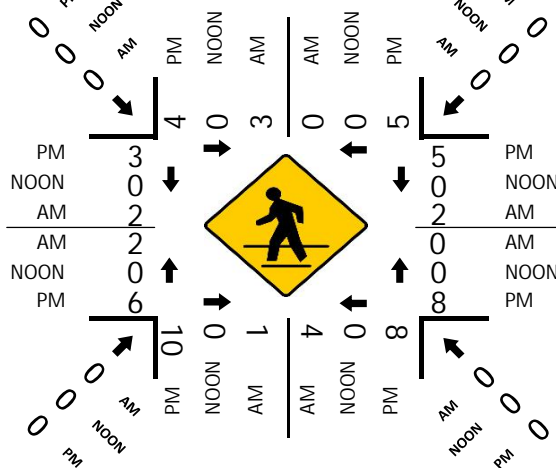
Total Bikes (NOON)



Total Bikes (PM)



Pedestrians (Crosswalks)

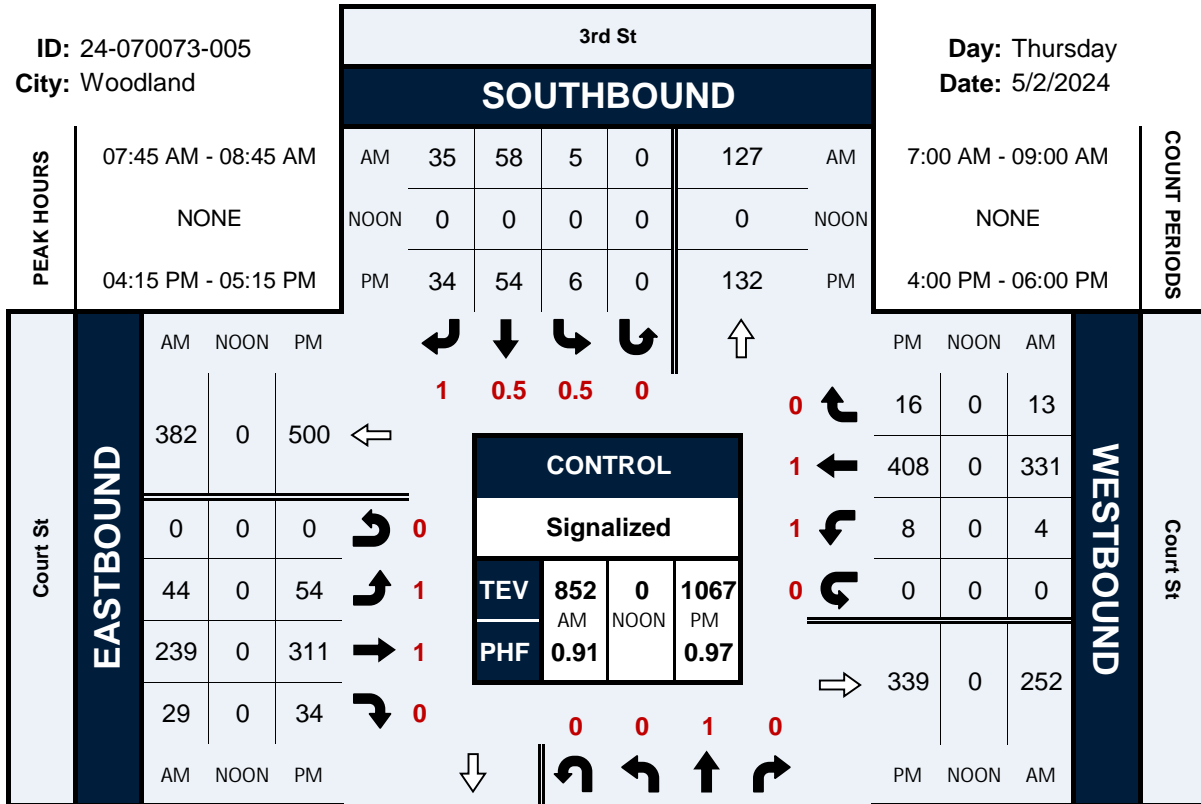


3rd St & Court St

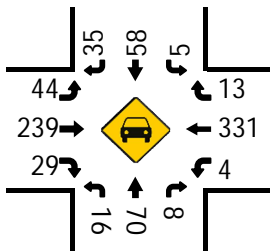
Peak Hour Turning Movement Count

ID: 24-070073-005
City: Woodland

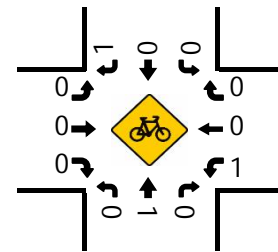
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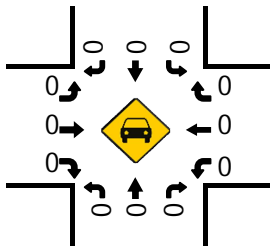
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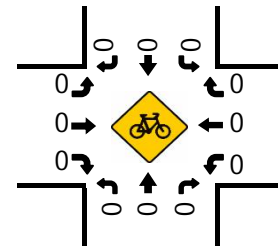
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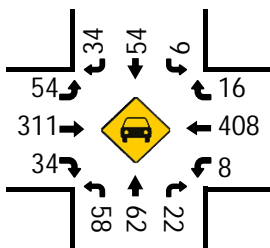
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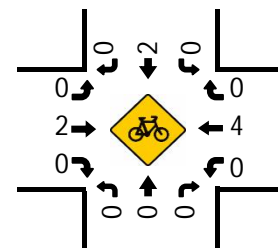
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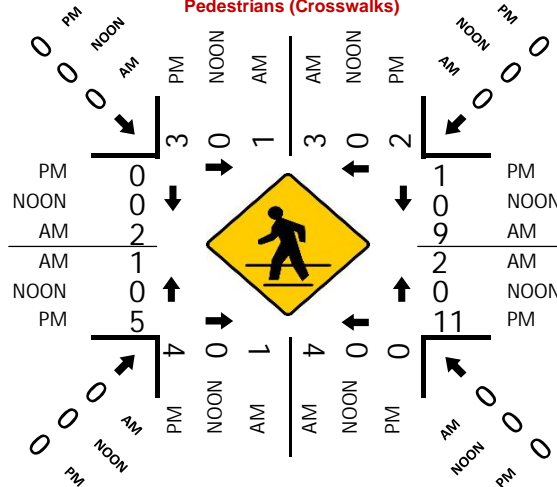
Totals (PM)



Total Bikes (PM)























Pedestrians (Crosswalks)



ATTACHMENT C: SYNCHRO CAPACITY REPORTS

Lanes, Volumes, Timings
1: 3rd Street & Main Street

2024 Existing AM
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	221	6	34	235	11	4	62	27	45	60	18
Future Volume (vph)	11	221	6	34	235	11	4	62	27	45	60	18
Satd. Flow (prot)	1805	1892	0	1805	1900	1615	0	1822	0	0	1830	0
Flt Permitted	0.583			0.578				0.985			0.772	
Satd. Flow (perm)	1108	1892	0	1098	1900	1615	0	1799	0	0	1439	0
Satd. Flow (RTOR)		2				55		23			10	
Peak Hour Factor	0.86	0.86	0.86	0.91	0.91	0.91	0.86	0.86	0.86	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	13	257	7	37	258	12	5	72	31	48	65	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	264	0	37	258	12	0	108	0	0	132	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8				4
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	8.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	21.7	21.7		19.7	19.7	19.7	26.7	26.7		21.7	21.7	
Total Split (s)	48.4	48.4		48.4	48.4	48.4	34.0	34.0		34.0	34.0	
Total Split (%)	52.4%	52.4%		52.4%	52.4%	52.4%	36.8%	36.8%		36.8%	36.8%	
Maximum Green (s)	44.7	44.7		44.7	44.7	44.7	30.3	30.3		30.3	30.3	
Yellow Time (s)	3.2	3.2		3.2	3.2	3.2	3.2	3.2		3.2	3.2	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)	3.7	3.7		3.7	3.7	3.7		3.7			3.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Recall Mode	Max	Max		Max	Max	Max	None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		9.0	9.0	9.0	16.0	16.0		11.0	11.0	
Pedestrian Calls (#/hr)	3	3		2	2	2	2	2		7	7	
Act Effct Green (s)	44.9	44.9		44.9	44.9	44.9		11.3			11.3	
Actuated g/C Ratio	0.61	0.61		0.61	0.61	0.61		0.15			0.15	
v/c Ratio	0.01	0.22		0.05	0.22	0.01		0.36			0.57	
Control Delay (s/veh)	7.8	8.0		7.7	8.0	0.0		25.2			36.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Delay (s/veh)	7.8	8.0		7.7	8.0	0.0		25.2			36.5	
LOS	A	A		A	A	A		C			D	
Approach Delay (s/veh)		8.1			7.7			25.2			36.6	
Approach LOS		A			A			C			D	
Queue Length 50th (ft)	2	43		5	42	0		35			52	
Queue Length 95th (ft)	11	112		24	116	0		71			102	
Internal Link Dist (ft)		1094			489			483			395	
Turn Bay Length (ft)	100			75		75						
Base Capacity (vph)	675	1154		669	1158	1005		756			600	
Starvation Cap Reductn	0	0		0	0	0		0			0	
Spillback Cap Reductn	0	0		0	0	0		0			0	

Lanes, Volumes, Timings
 1: 3rd Street & Main Street

2024 Existing AM
 AM Peak Hour

Lane Group	Ø9	Ø10	Ø11	Ø12
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Satd. Flow (RTOR)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	9	10	11	12
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	5%	5%	5%	5%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	0.2	0.2	0.2	0.2
Recall Mode	Max	Max	Max	Max
Walk Time (s)				
Flash Dont Walk (s)				
Pedestrian Calls (#/hr)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
LOS				
Approach Delay (s/veh)				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				

Lanes, Volumes, Timings
1: 3rd Street & Main Street

2024 Existing AM
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0		0	0	0		0			0	
Reduced v/c Ratio	0.02	0.23		0.06	0.22	0.01		0.14			0.22	

Intersection Summary

Cycle Length: 92.4	
Actuated Cycle Length: 73.7	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.58	
Intersection Signal Delay (s/veh): 14.8	Intersection LOS: B
Intersection Capacity Utilization 42.4%	ICU Level of Service A
Analysis Period (min) 15	




















Splits and Phases: 1: 3rd Street & Main Street

 Ø9 Ø2 5 s 48.4 s	 Ø11 Ø4 5 s 34 s
 Ø10 Ø6 5 s 48.4 s	 Ø12 Ø8 5 s 34 s

Lane Group	Ø9	Ø10	Ø11	Ø12
Storage Cap Reductn				
Reduced v/c Ratio				
Intersection Summary				

Lanes, Volumes, Timings
2: College Street & Main Street

2024 Existing AM
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	183	18	11	202	4	19	169	24	11	127	20
Future Volume (vph)	17	183	18	11	202	4	19	169	24	11	127	20
Satd. Flow (prot)	1805	1875	0	1805	1894	0	0	1864	0	0	1862	0
Flt Permitted	0.950			0.950				0.996			0.997	
Satd. Flow (perm)	1805	1875	0	1805	1894	0	0	1864	0	0	1862	0
Peak Hour Factor	0.88	0.88	0.88	0.94	0.94	0.94	0.64	0.64	0.64	0.77	0.77	0.77
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	19	208	20	12	215	4	30	264	38	14	165	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	19	228	0	12	219	0	0	332	0	0	205	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 36.7%						ICU Level of Service A						
Analysis Period (min) 15												

Intersection	
Intersection Delay, s/veh	13.8
Intersection LOS	B






















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↷			↷	
Traffic Vol, veh/h	17	183	18	11	202	4	19	169	24	11	127	20
Future Vol, veh/h	17	183	18	11	202	4	19	169	24	11	127	20
Peak Hour Factor	0.88	0.88	0.88	0.94	0.94	0.94	0.64	0.64	0.64	0.77	0.77	0.77
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	19	208	20	12	215	4	30	264	38	14	165	26
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay, s/veh	13.5	13.5	15.2	12.3
HCM LOS	B	B	C	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	9%	100%	0%	100%	0%	7%
Vol Thru, %	80%	0%	91%	0%	98%	80%
Vol Right, %	11%	0%	9%	0%	2%	13%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	212	17	201	11	206	158
LT Vol	19	17	0	11	0	11
Through Vol	169	0	183	0	202	127
RT Vol	24	0	18	0	4	20
Lane Flow Rate	331	19	228	12	219	205
Geometry Grp	2	5	5	5	5	2
Degree of Util (X)	0.528	0.038	0.415	0.023	0.403	0.346
Departure Headway (Hd)	5.855	7.122	6.546	7.15	6.625	6.073
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	619	505	553	503	546	593
Service Time	3.855	4.829	4.253	4.857	4.332	4.097
HCM Lane V/C Ratio	0.535	0.038	0.412	0.024	0.401	0.346
HCM Control Delay, s/veh	15.2	10.1	13.8	10	13.7	12.3
HCM Lane LOS	C	B	B	A	B	B
HCM 95th-tile Q	3.1	0.1	2	0.1	1.9	1.5

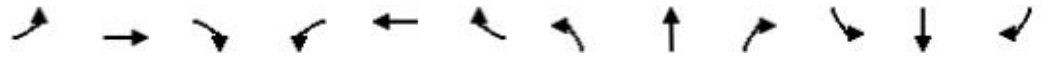
Lanes, Volumes, Timings
3: College Street & Court Street

2024 Existing AM
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	277	19	17	283	15	22	140	26	46	129	50
Future Volume (vph)	49	277	19	17	283	15	22	140	26	46	129	50
Satd. Flow (prot)	1805	1883	0	1805	1885	0	1805	1856	0	1805	1820	0
Flt Permitted	0.529			0.504			0.630			0.597		
Satd. Flow (perm)	1005	1883	0	958	1885	0	1197	1856	0	1134	1820	0
Satd. Flow (RTOR)		5			4			10			22	
Peak Hour Factor	0.78	0.78	0.78	0.83	0.83	0.83	0.63	0.63	0.63	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	63	355	24	20	341	18	35	222	41	52	147	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	379	0	20	359	0	35	263	0	52	204	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	7.0		7.0	7.0		8.0	8.0	
Minimum Split (s)	22.1	22.1		24.1	24.1		23.7	23.7		22.7	22.7	
Total Split (s)	60.8	60.8		60.8	60.8		47.0	47.0		47.0	47.0	
Total Split (%)	56.4%	56.4%		56.4%	56.4%		43.6%	43.6%		43.6%	43.6%	
Maximum Green (s)	56.7	56.7		56.7	56.7		43.3	43.3		43.3	43.3	
Yellow Time (s)	3.6	3.6		3.6	3.6		3.2	3.2		3.2	3.2	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.1	4.1		4.1	4.1		3.7	3.7		3.7	3.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		13.0	13.0		13.0	13.0		12.0	12.0	
Pedestrian Calls (#/hr)	4	4		4	4		3	3		8	8	
Act Effct Green (s)	11.2	11.2		11.2	11.2		10.1	10.1		10.4	10.4	
Actuated g/C Ratio	0.38	0.38		0.38	0.38		0.34	0.34		0.35	0.35	
v/c Ratio	0.16	0.53		0.05	0.50		0.08	0.41		0.13	0.31	
Control Delay (s/veh)	8.2	10.7		7.3	10.3		8.0	9.8		8.4	8.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	8.2	10.7		7.3	10.3		8.0	9.8		8.4	8.3	
LOS	A	B		A	B		A	A		A	A	
Approach Delay (s/veh)		10.4			10.2			9.6			8.4	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	5	32		1	30		3	23		4	16	
Queue Length 95th (ft)	24	105		11	108		12	55		23	63	
Internal Link Dist (ft)		368			718			396			205	
Turn Bay Length (ft)	80			80			50			90		
Base Capacity (vph)	1005	1883		958	1885		1174	1821		1113	1786	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	

Lanes, Volumes, Timings
 3: College Street & Court Street

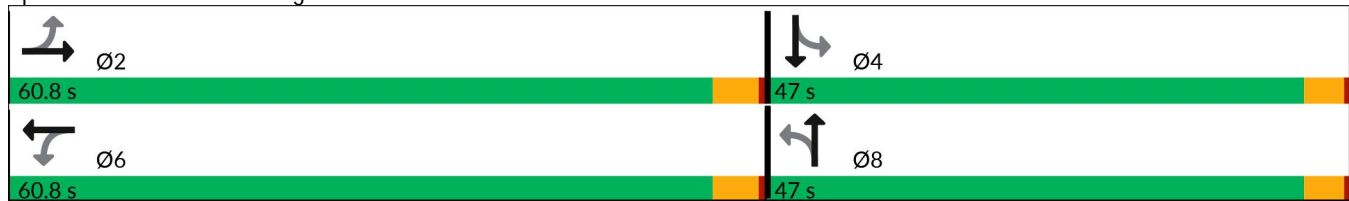
2024 Existing AM
 AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.06	0.20		0.02	0.19		0.03	0.14		0.05	0.11	




















Intersection Summary	
Cycle Length:	107.8
Actuated Cycle Length:	29.7
Natural Cycle:	50
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.53
Intersection Signal Delay (s/veh):	9.8
Intersection LOS:	A
Intersection Capacity Utilization	51.6%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 3: College Street & Court Street



Lanes, Volumes, Timings
5: 3rd Street & Court Street

2024 Existing AM
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	239	29	4	320	13	16	70	8	5	58	35
Future Volume (vph)	44	239	29	4	320	13	16	70	8	5	58	35
Satd. Flow (prot)	1805	1870	0	1805	1889	0	0	1860	0	0	1892	1615
Flt Permitted	0.950			0.950				0.936			0.969	
Satd. Flow (perm)	1805	1870	0	1805	1889	0	0	1757	0	0	1841	1615
Satd. Flow (RTOR)		8			3			4				40
Peak Hour Factor	0.91	0.91	0.91	0.93	0.93	0.93	0.81	0.81	0.81	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	48	263	32	4	344	14	20	86	10	6	66	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	295	0	4	358	0	0	116	0	0	72	40
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		4
Detector Phase	5	2		1	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	3.0	7.0		3.0	7.0		3.0	3.0		7.0	7.0	7.0
Minimum Split (s)	9.5	19.1		6.0	19.1		19.7	19.7		19.7	19.7	19.7
Total Split (s)	19.0	62.8		19.0	62.8		33.0	33.0		33.0	33.0	33.0
Total Split (%)	16.6%	54.7%		16.6%	54.7%		28.7%	28.7%		28.7%	28.7%	28.7%
Maximum Green (s)	16.0	58.7		16.0	58.7		29.3	29.3		29.3	29.3	29.3
Yellow Time (s)	3.0	3.6		3.0	3.6		3.2	3.2		3.2	3.2	3.2
All-Red Time (s)	0.0	0.5		0.0	0.5		0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	3.0	4.1		3.0	4.1			3.7			3.7	3.7
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	1.0	1.2		1.0	1.2		1.2	1.2		1.2	1.2	1.2
Recall Mode	None	None		None	None		None	None		None	None	None
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)		8.0			8.0		9.0	9.0		9.0	9.0	9.0
Pedestrian Calls (#/hr)		5			4		11	11		3	3	3
Act Effct Green (s)	5.5	16.1		4.6	14.4			8.6			10.1	10.1
Actuated g/C Ratio	0.19	0.55		0.16	0.49			0.29			0.35	0.35
v/c Ratio	0.14	0.28		0.01	0.38			0.22			0.11	0.06
Control Delay (s/veh)	16.5	7.5		18.2	10.5			11.8			11.3	5.4
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay (s/veh)	16.5	7.5		18.2	10.5			11.8			11.3	5.4
LOS	B	A		B	B			B			B	A
Approach Delay (s/veh)		8.8			10.6			11.9			9.2	
Approach LOS		A			B			B			A	
Queue Length 50th (ft)	5	21		1	27			10			6	0
Queue Length 95th (ft)	37	109		8	150			48			36	15
Internal Link Dist (ft)		304			385			395			180	
Turn Bay Length (ft)	80			80								40
Base Capacity (vph)	1112	1870		1112	1889			1546			1619	1425
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0

Lanes, Volumes, Timings
5: 3rd Street & Court Street

2024 Existing AM
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.04	0.16		0.00	0.19			0.08			0.04	0.03

Intersection Summary





















Cycle Length: 114.8	
Actuated Cycle Length: 29.2	
Natural Cycle: 50	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.38	
Intersection Signal Delay (s/veh): 9.9	Intersection LOS: A
Intersection Capacity Utilization 42.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: 3rd Street & Court Street

Ø1 19 s	Ø2 62.8 s	Ø4 33 s
Ø5 19 s	Ø6 62.8 s	Ø8 33 s

Lanes, Volumes, Timings
1: 3rd Street & Main Street

2024 Existing PM
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	417	14	25	352	29	14	62	36	76	80	27
Future Volume (vph)	11	417	14	25	352	29	14	62	36	76	80	27
Satd. Flow (prot)	1805	1890	0	1805	1900	1615	0	1807	0	0	1825	0
Flt Permitted	0.473			0.412				0.951			0.738	
Satd. Flow (perm)	899	1890	0	783	1900	1615	0	1729	0	0	1374	0
Satd. Flow (RTOR)		3				55		27			10	
Peak Hour Factor	0.91	0.91	0.91	0.90	0.90	0.90	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	12	458	15	28	391	32	17	76	44	93	98	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	473	0	28	391	32	0	137	0	0	224	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8				4
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	8.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	21.7	21.7		19.7	19.7	19.7	26.7	26.7		21.7	21.7	
Total Split (s)	50.4	50.4		50.4	50.4	50.4	32.0	32.0		32.0	32.0	
Total Split (%)	54.5%	54.5%		54.5%	54.5%	54.5%	34.6%	34.6%		34.6%	34.6%	
Maximum Green (s)	46.7	46.7		46.7	46.7	46.7	28.3	28.3		28.3	28.3	
Yellow Time (s)	3.2	3.2		3.2	3.2	3.2	3.2	3.2		3.2	3.2	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)	3.7	3.7		3.7	3.7	3.7		3.7			3.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Recall Mode	Max	Max		Max	Max	Max	None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		9.0	9.0	9.0	16.0	16.0		11.0	11.0	
Pedestrian Calls (#/hr)	12	12		2	2	2	3	3		7	7	
Act Effct Green (s)	46.9	46.9		46.9	46.9	46.9		14.5			14.5	
Actuated g/C Ratio	0.59	0.59		0.59	0.59	0.59		0.18			0.18	
v/c Ratio	0.02	0.42		0.06	0.34	0.03		0.40			0.86	
Control Delay (s/veh)	8.6	10.9		8.8	10.1	1.3		25.5			58.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Delay (s/veh)	8.6	10.9		8.8	10.1	1.3		25.5			58.9	
LOS	A	B		A	B	A		C			E	
Approach Delay (s/veh)		10.9			9.5			25.6			58.9	
Approach LOS		B			A			C			E	
Queue Length 50th (ft)	2	111		5	88	0		47			103	
Queue Length 95th (ft)	11	226		20	180	7		85			158	
Internal Link Dist (ft)		1094			489			483			395	
Turn Bay Length (ft)	100			75		75						
Base Capacity (vph)	534	1125		465	1129	982		640			501	
Starvation Cap Reductn	0	0		0	0	0		0			0	
Spillback Cap Reductn	0	0		0	0	0		0			0	

Lanes, Volumes, Timings
 1: 3rd Street & Main Street

2024 Existing PM
 PM Peak Hour

Lane Group	Ø9	Ø10	Ø11	Ø12
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Satd. Flow (RTOR)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	9	10	11	12
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	5%	5%	5%	5%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	0.2	0.2	0.2	0.2
Recall Mode	Max	Max	Max	Max
Walk Time (s)				
Flash Dont Walk (s)				
Pedestrian Calls (#/hr)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
LOS				
Approach Delay (s/veh)				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				

Lanes, Volumes, Timings
1: 3rd Street & Main Street

2024 Existing PM
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0		0	0	0		0			0	
Reduced v/c Ratio	0.02	0.42		0.06	0.35	0.03		0.21			0.45	

Intersection Summary

Cycle Length: 92.4	
Actuated Cycle Length: 78.9	
Natural Cycle: 60	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay (s/veh): 20.3	Intersection LOS: C
Intersection Capacity Utilization 46.2%	ICU Level of Service A
Analysis Period (min) 15	




















Splits and Phases: 1: 3rd Street & Main Street

 Ø9 Ø2 5 s 50.4 s	 Ø11 Ø4 5 s 32 s
 Ø10 Ø6 5 s 50.4 s	 Ø12 Ø8 5 s 32 s

Lane Group	Ø9	Ø10	Ø11	Ø12
Storage Cap Reductn				
Reduced v/c Ratio				
Intersection Summary				

Lanes, Volumes, Timings
2: College Street & Main Street

2024 Existing PM
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	347	20	28	327	24	12	120	35	31	116	32
Future Volume (vph)	28	347	20	28	327	24	12	120	35	31	116	32
Satd. Flow (prot)	1805	1885	0	1805	1881	0	0	1839	0	0	1838	0
Flt Permitted	0.950			0.950				0.996			0.991	
Satd. Flow (perm)	1805	1885	0	1805	1881	0	0	1839	0	0	1838	0
Peak Hour Factor	0.97	0.97	0.97	0.94	0.94	0.94	0.95	0.95	0.95	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	29	358	21	30	348	26	13	126	37	41	155	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	379	0	30	374	0	0	176	0	0	239	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Control Type: Unsignalized	
Intersection Capacity Utilization 47.6%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Intersection Delay, s/veh	20.1
Intersection LOS	C





















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↷			↷	
Traffic Vol, veh/h	28	347	20	28	327	24	12	120	35	31	116	32
Future Vol, veh/h	28	347	20	28	327	24	12	120	35	31	116	32
Peak Hour Factor	0.97	0.97	0.97	0.94	0.94	0.94	0.95	0.95	0.95	0.75	0.75	0.75
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	29	358	21	30	348	26	13	126	37	41	155	43
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay, s/veh	23.1	22.6	13.8	15.6
HCM LOS	C	C	B	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	7%	100%	0%	100%	0%	17%
Vol Thru, %	72%	0%	95%	0%	93%	65%
Vol Right, %	21%	0%	5%	0%	7%	18%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	167	28	367	28	351	179
LT Vol	12	28	0	28	0	31
Through Vol	120	0	347	0	327	116
RT Vol	35	0	20	0	24	32
Lane Flow Rate	176	29	378	30	373	239
Geometry Grp	2	5	5	5	5	2
Degree of Util (X)	0.344	0.058	0.706	0.06	0.697	0.455
Departure Headway (Hd)	7.043	7.271	6.72	7.279	6.718	6.868
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	508	491	537	491	538	523
Service Time	5.122	5.036	4.484	5.045	4.483	4.941
HCM Lane V/C Ratio	0.346	0.059	0.704	0.061	0.693	0.457
HCM Control Delay, s/veh	13.8	10.5	24.1	10.5	23.6	15.6
HCM Lane LOS	B	B	C	B	C	C
HCM 95th-tile Q	1.5	0.2	5.6	0.2	5.4	2.3

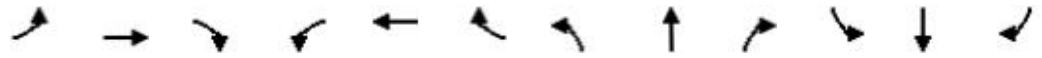
Lanes, Volumes, Timings
3: College Street & Court Street

2024 Existing PM
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	353	37	28	399	33	36	94	37	40	113	60
Future Volume (vph)	39	353	37	28	399	33	36	94	37	40	113	60
Satd. Flow (prot)	1805	1873	0	1805	1879	0	1805	1818	0	1805	1801	0
Flt Permitted	0.455			0.501			0.639			0.665		
Satd. Flow (perm)	864	1873	0	952	1879	0	1214	1818	0	1264	1801	0
Satd. Flow (RTOR)		9			7			19			26	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.91	0.91	0.91	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	41	376	39	30	424	35	40	103	41	43	123	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	415	0	30	459	0	40	144	0	43	188	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	7.0		7.0	7.0		8.0	8.0	
Minimum Split (s)	22.1	22.1		24.1	24.1		23.7	23.7		22.7	22.7	
Total Split (s)	70.8	70.8		70.8	70.8		37.0	37.0		37.0	37.0	
Total Split (%)	65.7%	65.7%		65.7%	65.7%		34.3%	34.3%		34.3%	34.3%	
Maximum Green (s)	66.7	66.7		66.7	66.7		33.3	33.3		33.3	33.3	
Yellow Time (s)	3.6	3.6		3.6	3.6		3.2	3.2		3.2	3.2	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.1	4.1		4.1	4.1		3.7	3.7		3.7	3.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		13.0	13.0		13.0	13.0		12.0	12.0	
Pedestrian Calls (#/hr)	4	4		4	4		3	3		8	8	
Act Effct Green (s)	14.4	14.4		14.4	14.4		10.6	10.6		11.1	11.1	
Actuated g/C Ratio	0.52	0.52		0.52	0.52		0.38	0.38		0.40	0.40	
v/c Ratio	0.09	0.42		0.06	0.46		0.08	0.20		0.08	0.25	
Control Delay (s/veh)	7.3	8.7		7.1	9.2		8.3	7.9		8.3	8.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	7.3	8.7		7.1	9.2		8.3	7.9		8.3	8.0	
LOS	A	A		A	A		A	A		A	A	
Approach Delay (s/veh)		8.6			9.1			8.0			8.1	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	3	35		2	41		4	11		4	15	
Queue Length 95th (ft)	21	143		16	163		20	47		21	59	
Internal Link Dist (ft)		368			718			396			205	
Turn Bay Length (ft)	80			80			50			90		
Base Capacity (vph)	864	1873		952	1879		1140	1709		1187	1693	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	

Lanes, Volumes, Timings
 3: College Street & Court Street

2024 Existing PM
 PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.05	0.22		0.03	0.24		0.04	0.08		0.04	0.11	

Intersection Summary




















Cycle Length: 107.8	
Actuated Cycle Length: 27.7	
Natural Cycle: 50	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.47	
Intersection Signal Delay (s/veh): 8.6	Intersection LOS: A
Intersection Capacity Utilization 57.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: College Street & Court Street



Lanes, Volumes, Timings
5: 3rd Street & Court Street

2024 Existing PM
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	311	34	8	408	16	58	62	22	6	54	34
Future Volume (vph)	54	311	34	8	408	16	58	62	22	6	54	34
Satd. Flow (prot)	1805	1872	0	1805	1889	0	0	1823	0	0	1890	1615
Flt Permitted	0.950			0.950				0.835			0.965	
Satd. Flow (perm)	1805	1872	0	1805	1889	0	0	1553	0	0	1834	1615
Satd. Flow (RTOR)		9			3			8				67
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	59	338	37	9	443	17	67	71	25	7	62	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	59	375	0	9	460	0	0	163	0	0	69	39
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		4
Detector Phase	5	2		1	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	3.0	7.0		3.0	7.0		3.0	3.0		7.0	7.0	7.0
Minimum Split (s)	6.0	19.1		6.0	19.1		19.7	19.7		19.7	19.7	19.7
Total Split (s)	16.0	72.8		8.0	64.8		34.0	34.0		34.0	34.0	34.0
Total Split (%)	13.9%	63.4%		7.0%	56.4%		29.6%	29.6%		29.6%	29.6%	29.6%
Maximum Green (s)	13.0	68.7		5.0	60.7		30.3	30.3		30.3	30.3	30.3
Yellow Time (s)	3.0	3.6		3.0	3.6		3.2	3.2		3.2	3.2	3.2
All-Red Time (s)	0.0	0.5		0.0	0.5		0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	3.0	4.1		3.0	4.1			3.7			3.7	3.7
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	1.2		3.0	1.2		1.2	1.2		1.2	1.2	1.2
Recall Mode	None	None		None	None		None	None		None	None	None
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)		8.0			8.0		9.0	9.0		9.0	9.0	9.0
Pedestrian Calls (#/hr)		5			4		11	11		3	3	3
Act Effct Green (s)	9.3	23.9		7.1	19.7			10.3			11.9	11.9
Actuated g/C Ratio	0.25	0.63		0.19	0.52			0.27			0.31	0.31
v/c Ratio	0.13	0.31		0.02	0.46			0.37			0.11	0.07
Control Delay (s/veh)	19.6	6.8		23.1	12.6			18.4			16.2	2.9
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay (s/veh)	19.6	6.8		23.1	12.6			18.4			16.2	2.9
LOS	B	A		C	B			B			B	A
Approach Delay (s/veh)		8.6			12.9			18.5			11.4	
Approach LOS		A			B			B			B	
Queue Length 50th (ft)	12	32		2	85			32			13	0
Queue Length 95th (ft)	49	139		15	212			92			46	10
Internal Link Dist (ft)		304			385			395			180	
Turn Bay Length (ft)	80			80								40
Base Capacity (vph)	823	1872		340	1880			1199			1414	1260
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0

Lanes, Volumes, Timings
5: 3rd Street & Court Street

2024 Existing PM
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.07	0.20		0.03	0.24			0.14			0.05	0.03

Intersection Summary

Cycle Length: 114.8	
Actuated Cycle Length: 37.8	
Natural Cycle: 55	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.47	
Intersection Signal Delay (s/veh): 12.0	Intersection LOS: B
Intersection Capacity Utilization 50.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: 3rd Street & Court Street



Lanes, Volumes, Timings
1: 3rd Street & Main Street

2024 Build AM
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	225	6	34	235	16	4	62	27	45	60	18
Future Volume (vph)	11	225	6	34	235	16	4	62	27	45	60	18
Satd. Flow (prot)	1805	1856	0	1805	1844	0	0	1822	0	0	1830	0
Flt Permitted	0.568			0.574				0.985			0.772	
Satd. Flow (perm)	1079	1856	0	1091	1844	0	0	1799	0	0	1439	0
Satd. Flow (RTOR)		2			5			23			10	
Peak Hour Factor	0.86	0.86	0.86	0.91	0.91	0.91	0.86	0.86	0.86	0.93	0.93	0.93
Heavy Vehicles (%)	0%	2%	0%	0%	0%	31%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	13	262	7	37	258	18	5	72	31	48	65	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	269	0	37	276	0	0	108	0	0	132	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8				4
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	21.7	21.7		19.7	19.7		26.7	26.7		21.7	21.7	
Total Split (s)	48.4	48.4		48.4	48.4		34.0	34.0		34.0	34.0	
Total Split (%)	52.4%	52.4%		52.4%	52.4%		36.8%	36.8%		36.8%	36.8%	
Maximum Green (s)	44.7	44.7		44.7	44.7		30.3	30.3		30.3	30.3	
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	3.2		3.2	3.2	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	3.7	3.7		3.7	3.7			3.7			3.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		9.0	9.0		16.0	16.0		11.0	11.0	
Pedestrian Calls (#/hr)	3	3		2	2		2	2		7	7	
Act Effct Green (s)	44.9	44.9		44.9	44.9			11.3			11.3	
Actuated g/C Ratio	0.61	0.61		0.61	0.61			0.15			0.15	
v/c Ratio	0.01	0.23		0.05	0.24			0.36			0.57	
Control Delay (s/veh)	7.8	8.1		7.7	8.1			25.2			36.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay (s/veh)	7.8	8.1		7.7	8.1			25.2			36.5	
LOS	A	A		A	A			C			D	
Approach Delay (s/veh)		8.1			8.1			25.2			36.6	
Approach LOS		A			A			C			D	
Queue Length 50th (ft)	2	44		5	45			35			52	
Queue Length 95th (ft)	11	114		24	124			71			102	
Internal Link Dist (ft)		1094			489			483			395	
Turn Bay Length (ft)	100			75								
Base Capacity (vph)	657	1132		664	1125			756			600	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	

Lanes, Volumes, Timings
 1: 3rd Street & Main Street

2024 Build AM
 AM Peak Hour

Lane Group	Ø9	Ø10	Ø11	Ø12
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Satd. Flow (RTOR)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	9	10	11	12
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	5%	5%	5%	5%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	0.2	0.2	0.2	0.2
Recall Mode	Max	Max	Max	Max
Walk Time (s)				
Flash Dont Walk (s)				
Pedestrian Calls (#/hr)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
LOS				
Approach Delay (s/veh)				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				

Lanes, Volumes, Timings
1: 3rd Street & Main Street

2024 Build AM
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.02	0.24		0.06	0.25			0.14			0.22	

Intersection Summary

Cycle Length: 92.4	
Actuated Cycle Length: 73.7	
Natural Cycle: 60	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.58	
Intersection Signal Delay (s/veh): 14.8	Intersection LOS: B
Intersection Capacity Utilization 43.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: 3rd Street & Main Street

 Ø9 Ø2 5 s 48.4 s	 Ø1 Ø4 5 s 34 s
 Ø10 Ø6 5 s 48.4 s	 Ø12 Ø8 5 s 34 s

Lane Group	Ø9	Ø10	Ø11	Ø12
Storage Cap Reductn				
Reduced v/c Ratio				
Intersection Summary				

Intersection	
Intersection Delay, s/veh	14.4
Intersection LOS	B

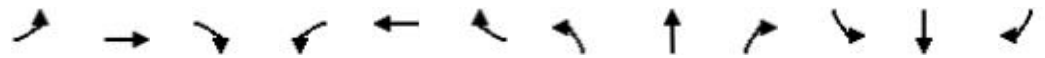
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↷			↷	
Traffic Vol, veh/h	17	183	18	11	202	4	19	169	24	15	127	20
Future Vol, veh/h	17	183	18	11	202	4	19	169	24	15	127	20
Peak Hour Factor	0.88	0.88	0.88	0.94	0.94	0.94	0.64	0.64	0.64	0.77	0.77	0.77
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	27	0	0
Mvmt Flow	19	208	20	12	215	4	30	264	38	19	165	26
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay, s/veh	13.8	13.8	15.8	13.7
HCM LOS	B	B	C	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	9%	100%	0%	100%	0%	9%
Vol Thru, %	80%	0%	91%	0%	98%	78%
Vol Right, %	11%	0%	9%	0%	2%	12%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	212	17	201	11	206	162
LT Vol	19	17	0	11	0	15
Through Vol	169	0	183	0	202	127
RT Vol	24	0	18	0	4	20
Lane Flow Rate	331	19	228	12	219	210
Geometry Grp	2	5	5	5	5	2
Degree of Util (X)	0.543	0.039	0.421	0.024	0.409	0.384
Departure Headway (Hd)	5.905	7.216	6.64	7.232	6.718	6.576
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	613	497	544	495	537	547
Service Time	3.933	4.943	4.367	4.972	4.446	4.62
HCM Lane V/C Ratio	0.54	0.038	0.419	0.024	0.408	0.384
HCM Control Delay, s/veh	15.8	10.2	14.1	10.2	14	13.7
HCM Lane LOS	C	B	B	B	B	B
HCM 95th-tile Q	3.3	0.1	2.1	0.1	2	1.8

Lanes, Volumes, Timings
3: College Street & Court Street

2024 Build AM
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	280	19	21	285	15	22	140	26	46	129	50
Future Volume (vph)	49	280	19	21	285	15	22	140	26	46	129	50
Satd. Flow (prot)	1805	1865	0	1517	1869	0	1805	1856	0	1805	1820	0
Flt Permitted	0.527			0.500			0.630			0.597		
Satd. Flow (perm)	1001	1865	0	798	1869	0	1197	1856	0	1134	1820	0
Satd. Flow (RTOR)		5			4			10			22	
Peak Hour Factor	0.78	0.78	0.78	0.83	0.83	0.83	0.63	0.63	0.63	0.88	0.88	0.88
Heavy Vehicles (%)	0%	1%	0%	19%	1%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	63	359	24	25	343	18	35	222	41	52	147	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	383	0	25	361	0	35	263	0	52	204	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	7.0		7.0	7.0		8.0	8.0	
Minimum Split (s)	22.1	22.1		24.1	24.1		23.7	23.7		22.7	22.7	
Total Split (s)	60.8	60.8		60.8	60.8		47.0	47.0		47.0	47.0	
Total Split (%)	56.4%	56.4%		56.4%	56.4%		43.6%	43.6%		43.6%	43.6%	
Maximum Green (s)	56.7	56.7		56.7	56.7		43.3	43.3		43.3	43.3	
Yellow Time (s)	3.6	3.6		3.6	3.6		3.2	3.2		3.2	3.2	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.1	4.1		4.1	4.1		3.7	3.7		3.7	3.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		13.0	13.0		13.0	13.0		12.0	12.0	
Pedestrian Calls (#/hr)	4	4		4	4		3	3		8	8	
Act Effct Green (s)	11.3	11.3		11.3	11.3		10.1	10.1		10.4	10.4	
Actuated g/C Ratio	0.38	0.38		0.38	0.38		0.34	0.34		0.35	0.35	
v/c Ratio	0.16	0.54		0.08	0.50		0.08	0.41		0.13	0.31	
Control Delay (s/veh)	8.2	10.9		7.7	10.4		8.0	9.9		8.4	8.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	8.2	10.9		7.7	10.4		8.0	9.9		8.4	8.4	
LOS	A	B		A	B		A	A		A	A	
Approach Delay (s/veh)		10.6			10.3			9.7			8.4	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	5	32		2	30		3	24		4	16	
Queue Length 95th (ft)	24	107		14	110		12	55		23	63	
Internal Link Dist (ft)		368			718			396			205	
Turn Bay Length (ft)	80			80			50			90		
Base Capacity (vph)	1001	1865		798	1869		1174	1821		1113	1786	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	

Lanes, Volumes, Timings
 3: College Street & Court Street

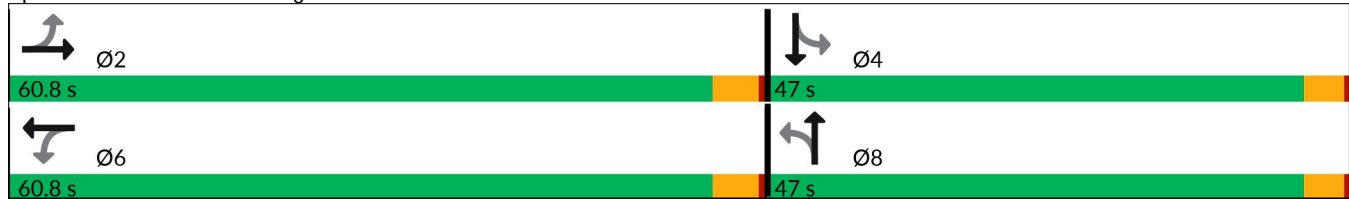
2024 Build AM
 AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.06	0.21		0.03	0.19		0.03	0.14		0.05	0.11	

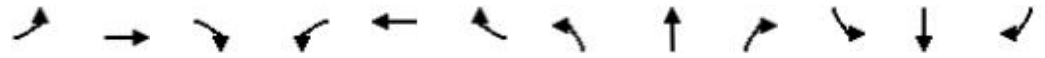
Intersection Summary	
Cycle Length:	107.8
Actuated Cycle Length:	29.8
Natural Cycle:	50
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.54
Intersection Signal Delay (s/veh):	9.9
Intersection LOS:	A
Intersection Capacity Utilization	51.7%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 3: College Street & Court Street



Lanes, Volumes, Timings
5: 3rd Street & Court Street

2024 Build AM
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	241	29	4	331	13	21	70	8	5	58	36
Future Volume (vph)	45	241	29	4	331	13	21	70	8	5	58	36
Satd. Flow (prot)	1770	1853	0	1805	1889	0	0	1768	0	0	1892	1568
Flt Permitted	0.950			0.950				0.919			0.969	
Satd. Flow (perm)	1770	1853	0	1805	1889	0	0	1643	0	0	1841	1568
Satd. Flow (RTOR)		8			3			4				41
Peak Hour Factor	0.91	0.91	0.91	0.93	0.93	0.93	0.81	0.81	0.81	0.88	0.88	0.88
Heavy Vehicles (%)	2%	1%	0%	0%	0%	0%	24%	0%	0%	0%	0%	3%
Adj. Flow (vph)	49	265	32	4	356	14	26	86	10	6	66	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	297	0	4	370	0	0	122	0	0	72	41
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8				4
Permitted Phases							8			4		4
Detector Phase	5	2		1	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	3.0	7.0		3.0	7.0		3.0	3.0		7.0	7.0	7.0
Minimum Split (s)	9.5	19.1		6.0	19.1		19.7	19.7		19.7	19.7	19.7
Total Split (s)	19.0	62.8		19.0	62.8		33.0	33.0		33.0	33.0	33.0
Total Split (%)	16.6%	54.7%		16.6%	54.7%		28.7%	28.7%		28.7%	28.7%	28.7%
Maximum Green (s)	16.0	58.7		16.0	58.7		29.3	29.3		29.3	29.3	29.3
Yellow Time (s)	3.0	3.6		3.0	3.6		3.2	3.2		3.2	3.2	3.2
All-Red Time (s)	0.0	0.5		0.0	0.5		0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	3.0	4.1		3.0	4.1			3.7			3.7	3.7
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	1.0	1.2		1.0	1.2		1.2	1.2		1.2	1.2	1.2
Recall Mode	None	None		None	None		None	None		None	None	None
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)		8.0			8.0		9.0	9.0		9.0	9.0	9.0
Pedestrian Calls (#/hr)		5			4		11	11		3	3	3
Act Effct Green (s)	5.6	16.6		4.6	14.9			8.7			10.2	10.2
Actuated g/C Ratio	0.19	0.56		0.15	0.50			0.29			0.34	0.34
v/c Ratio	0.14	0.28		0.01	0.39			0.25			0.11	0.07
Control Delay (s/veh)	16.9	7.4		18.7	10.5			12.5			11.6	5.6
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay (s/veh)	16.9	7.4		18.7	10.5			12.5			11.6	5.6
LOS	B	A		B	B			B			B	A
Approach Delay (s/veh)		8.8			10.7			12.6			9.5	
Approach LOS		A			B			B			A	
Queue Length 50th (ft)	5	21		1	28			11			7	0
Queue Length 95th (ft)	38	110		8	156			51			37	16
Internal Link Dist (ft)		304			385			395			180	
Turn Bay Length (ft)	80			80								40
Base Capacity (vph)	1076	1853		1097	1889			1433			1605	1372
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0

Lanes, Volumes, Timings
5: 3rd Street & Court Street

2024 Build AM
AM Peak Hour

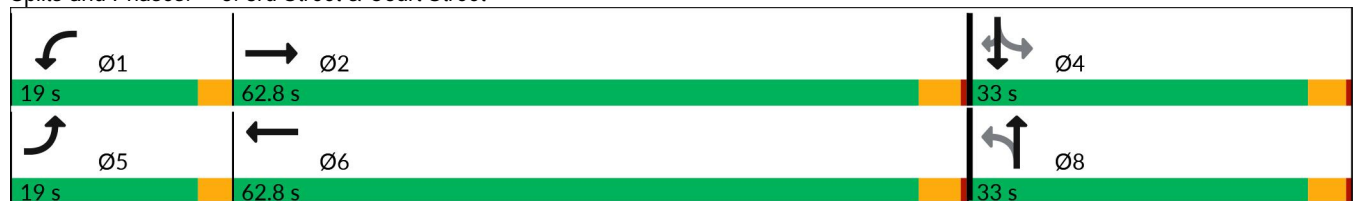


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.05	0.16		0.00	0.20			0.09			0.04	0.03

Intersection Summary

Cycle Length: 114.8	
Actuated Cycle Length: 29.8	
Natural Cycle: 50	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.39	
Intersection Signal Delay (s/veh): 10.1	Intersection LOS: B
Intersection Capacity Utilization 43.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: 3rd Street & Court Street



Lanes, Volumes, Timings
1: 3rd Street & Main Street

2024 Build PM
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	421	14	25	352	34	14	62	36	76	80	27
Future Volume (vph)	11	421	14	25	352	34	14	62	36	76	80	27
Satd. Flow (prot)	1805	1872	0	1805	1851	0	0	1807	0	0	1825	0
Flt Permitted	0.443			0.407				0.951			0.743	
Satd. Flow (perm)	842	1872	0	773	1851	0	0	1729	0	0	1383	0
Satd. Flow (RTOR)		2			7			27			10	
Peak Hour Factor	0.91	0.91	0.91	0.90	0.90	0.90	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	0%	1%	0%	0%	0%	15%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	12	463	15	28	391	38	17	76	44	93	98	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	478	0	28	429	0	0	137	0	0	224	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	21.7	21.7		19.7	19.7		26.7	26.7		21.7	21.7	
Total Split (s)	49.4	49.4		49.4	49.4		33.0	33.0		33.0	33.0	
Total Split (%)	53.5%	53.5%		53.5%	53.5%		35.7%	35.7%		35.7%	35.7%	
Maximum Green (s)	45.7	45.7		45.7	45.7		29.3	29.3		29.3	29.3	
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	3.2		3.2	3.2	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	3.7	3.7		3.7	3.7			3.7			3.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		9.0	9.0		16.0	16.0		11.0	11.0	
Pedestrian Calls (#/hr)	12	12		2	2		3	3		7	7	
Act Effct Green (s)	45.9	45.9		45.9	45.9			14.4			14.4	
Actuated g/C Ratio	0.59	0.59		0.59	0.59			0.19			0.19	
v/c Ratio	0.02	0.43		0.06	0.39			0.40			0.85	
Control Delay (s/veh)	8.7	11.2		8.9	10.6			25.1			56.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay (s/veh)	8.7	11.2		8.9	10.6			25.1			56.7	
LOS	A	B		A	B			C			E	
Approach Delay (s/veh)		11.2			10.5			25.1			56.7	
Approach LOS		B			B			C			E	
Queue Length 50th (ft)	2	113		5	97			47			101	
Queue Length 95th (ft)	11	232		20	201			84			156	
Internal Link Dist (ft)		1094			489			483			395	
Turn Bay Length (ft)	100			75								
Base Capacity (vph)	497	1105		456	1095			671			529	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	

Lane Group	Ø9	Ø10	Ø11	Ø12
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Satd. Flow (RTOR)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	9	10	11	12
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	3.0	3.0	3.0	3.0
Minimum Split (s)	5.0	5.0	5.0	5.0
Total Split (s)	5.0	5.0	5.0	5.0
Total Split (%)	5%	5%	5%	5%
Maximum Green (s)	3.0	3.0	3.0	3.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	0.2	0.2	0.2	0.2
Recall Mode	Max	Max	Max	Max
Walk Time (s)				
Flash Dont Walk (s)				
Pedestrian Calls (#/hr)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
LOS				
Approach Delay (s/veh)				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				

Lanes, Volumes, Timings
1: 3rd Street & Main Street

2024 Build PM
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.02	0.43		0.06	0.39			0.20			0.42	

Intersection Summary

Cycle Length: 92.4	
Actuated Cycle Length: 77.7	
Natural Cycle: 60	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay (s/veh): 20.2	Intersection LOS: C
Intersection Capacity Utilization 46.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: 3rd Street & Main Street

 Ø9 Ø2 5 s 49.4 s	 Ø11 Ø4 5 s 33 s
 Ø10 Ø6 5 s 49.4 s	 Ø12 Ø8 5 s 33 s

Lane Group	Ø9	Ø10	Ø11	Ø12
Storage Cap Reductn				
Reduced v/c Ratio				
Intersection Summary				

Intersection	
Intersection Delay, s/veh	20.8
Intersection LOS	C





















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↷			↷	
Traffic Vol, veh/h	28	347	20	28	327	24	12	120	35	35	116	32
Future Vol, veh/h	28	347	20	28	327	24	12	120	35	35	116	32
Peak Hour Factor	0.97	0.97	0.97	0.94	0.94	0.94	0.95	0.95	0.95	0.75	0.75	0.75
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	11	0	0
Mvmt Flow	29	358	21	30	348	26	13	126	37	47	155	43
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay, s/veh	23.9	23.3	14	16.6
HCM LOS	C	C	B	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	7%	100%	0%	100%	0%	19%
Vol Thru, %	72%	0%	95%	0%	93%	63%
Vol Right, %	21%	0%	5%	0%	7%	17%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	167	28	367	28	351	183
LT Vol	12	28	0	28	0	35
Through Vol	120	0	347	0	327	116
RT Vol	35	0	20	0	24	32
Lane Flow Rate	176	29	378	30	373	244
Geometry Grp	2	5	5	5	5	2
Degree of Util (X)	0.348	0.059	0.714	0.061	0.705	0.481
Departure Headway (Hd)	7.117	7.345	6.793	7.355	6.793	7.098
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	503	486	530	485	530	505
Service Time	5.205	5.115	4.563	5.124	4.562	5.177
HCM Lane V/C Ratio	0.35	0.06	0.713	0.062	0.704	0.483
HCM Control Delay, s/veh	14	10.6	24.9	10.6	24.3	16.6
HCM Lane LOS	B	B	C	B	C	C
HCM 95th-tile Q	1.5	0.2	5.7	0.2	5.6	2.6

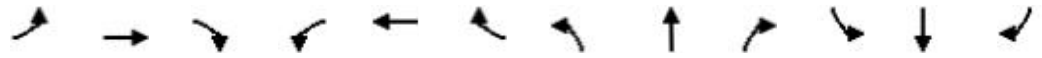
Lanes, Volumes, Timings
3: College Street & Court Street

2024 Build PM
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	354	37	32	401	33	36	94	37	40	113	60
Future Volume (vph)	39	354	37	32	401	33	36	94	37	40	113	60
Satd. Flow (prot)	1805	1873	0	1597	1879	0	1805	1818	0	1805	1801	0
Flt Permitted	0.452			0.499			0.639			0.665		
Satd. Flow (perm)	859	1873	0	839	1879	0	1214	1818	0	1264	1801	0
Satd. Flow (RTOR)		9			7			19			26	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.91	0.91	0.91	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	13%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	41	377	39	34	427	35	40	103	41	43	123	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	416	0	34	462	0	40	144	0	43	188	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	7.0		7.0	7.0		8.0	8.0	
Minimum Split (s)	22.1	22.1		24.1	24.1		23.7	23.7		22.7	22.7	
Total Split (s)	70.8	70.8		70.8	70.8		37.0	37.0		37.0	37.0	
Total Split (%)	65.7%	65.7%		65.7%	65.7%		34.3%	34.3%		34.3%	34.3%	
Maximum Green (s)	66.7	66.7		66.7	66.7		33.3	33.3		33.3	33.3	
Yellow Time (s)	3.6	3.6		3.6	3.6		3.2	3.2		3.2	3.2	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.1	4.1		4.1	4.1		3.7	3.7		3.7	3.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		13.0	13.0		13.0	13.0		12.0	12.0	
Pedestrian Calls (#/hr)	12	12		9	9		14	14		8	8	
Act Effct Green (s)	14.5	14.5		14.5	14.5		10.6	10.6		11.1	11.1	
Actuated g/C Ratio	0.52	0.52		0.52	0.52		0.38	0.38		0.40	0.40	
v/c Ratio	0.09	0.42		0.07	0.46		0.08	0.20		0.08	0.25	
Control Delay (s/veh)	7.3	8.7		7.3	9.2		8.3	7.9		8.3	8.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	7.3	8.7		7.3	9.2		8.3	7.9		8.3	8.0	
LOS	A	A		A	A		A	A		A	A	
Approach Delay (s/veh)		8.6			9.1			8.0			8.1	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	3	35		2	41		4	11		4	15	
Queue Length 95th (ft)	21	143		18	164		20	47		21	59	
Internal Link Dist (ft)		368			718			396			205	
Turn Bay Length (ft)	80			80			50			90		
Base Capacity (vph)	859	1873		839	1879		1140	1709		1187	1693	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	

Lanes, Volumes, Timings
3: College Street & Court Street

2024 Build PM
 PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.05	0.22		0.04	0.25		0.04	0.08		0.04	0.11	

Intersection Summary

Cycle Length: 107.8	
Actuated Cycle Length: 27.8	
Natural Cycle: 50	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.47	
Intersection Signal Delay (s/veh): 8.6	Intersection LOS: A
Intersection Capacity Utilization 57.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: College Street & Court Street



Lanes, Volumes, Timings
5: 3rd Street & Court Street

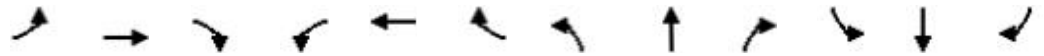
2024 Build PM
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	311	34	9	408	16	63	62	22	6	54	35
Future Volume (vph)	55	311	34	9	408	16	63	62	22	6	54	35
Satd. Flow (prot)	1770	1872	0	1597	1889	0	0	1762	0	0	1890	1568
Flt Permitted	0.950			0.950				0.829			0.966	
Satd. Flow (perm)	1770	1872	0	1597	1889	0	0	1492	0	0	1835	1568
Satd. Flow (RTOR)		9			3			7				67
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	2%	0%	0%	13%	0%	0%	8%	0%	0%	0%	0%	3%
Adj. Flow (vph)	60	338	37	10	443	17	72	71	25	7	62	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	375	0	10	460	0	0	168	0	0	69	40
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8				4
Permitted Phases							8			4		4
Detector Phase	5	2		1	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	3.0	7.0		3.0	7.0		3.0	3.0		7.0	7.0	7.0
Minimum Split (s)	6.0	19.1		6.0	19.1		19.7	19.7		19.7	19.7	19.7
Total Split (s)	16.0	72.8		8.0	64.8		34.0	34.0		34.0	34.0	34.0
Total Split (%)	13.9%	63.4%		7.0%	56.4%		29.6%	29.6%		29.6%	29.6%	29.6%
Maximum Green (s)	13.0	68.7		5.0	60.7		30.3	30.3		30.3	30.3	30.3
Yellow Time (s)	3.0	3.6		3.0	3.6		3.2	3.2		3.2	3.2	3.2
All-Red Time (s)	0.0	0.5		0.0	0.5		0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	3.0	4.1		3.0	4.1			3.7			3.7	3.7
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	1.2		3.0	1.2		1.2	1.2		1.2	1.2	1.2
Recall Mode	None	None		None	None		None	None		None	None	None
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)		8.0			8.0		9.0	9.0		9.0	9.0	9.0
Pedestrian Calls (#/hr)		4			5		5	5		12	12	12
Act Effct Green (s)	9.4	24.4		7.2	20.2			10.6			12.1	12.1
Actuated g/C Ratio	0.24	0.63		0.19	0.52			0.28			0.31	0.31
v/c Ratio	0.13	0.31		0.03	0.46			0.40			0.11	0.07
Control Delay (s/veh)	20.0	6.8		23.8	12.7			19.3			16.5	3.1
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay (s/veh)	20.0	6.8		23.8	12.7			19.3			16.5	3.1
LOS	C	A		C	B			B			B	A
Approach Delay (s/veh)		8.7			13.0			19.3			11.6	
Approach LOS		A			B			B			B	
Queue Length 50th (ft)	13	34		2	88			34			14	0
Queue Length 95th (ft)	50	138		16	213			98			47	11
Internal Link Dist (ft)		304			385			395			180	
Turn Bay Length (ft)	80			80								40
Base Capacity (vph)	799	1872		297	1875			1140			1400	1212
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0

Lanes, Volumes, Timings
5: 3rd Street & Court Street

2024 Build PM
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.08	0.20		0.03	0.25			0.15			0.05	0.03

Intersection Summary

Cycle Length: 114.8	
Actuated Cycle Length: 38.5	
Natural Cycle: 55	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.46	
Intersection Signal Delay (s/veh): 12.2	Intersection LOS: B
Intersection Capacity Utilization 50.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: 3rd Street & Court Street

