

Belmont II Development

Traffic Impact Study

Prepared for: Preferred Living
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I. Purpose of Report & Study Objectives

The purpose of this traffic analysis and report is to document the potential traffic impacts of a proposed multifamily development located in Columbus, Ohio. This traffic impact study (TIS) is required by the City of Columbus as part of the development approval process.

II. Proposed Development

A. Off-Site Developments

The study area includes the proposed site access points to Trabue Road as well as the Trabue Road intersections with N. Hague Avenue/Mapleway Drive, McKinley Avenue, and Dublin Road/Marblevista Boulevard. The surrounding area is largely developed and consists of single-family homes, multifamily developments, some retail, and industrial developments. The proposed Belmont II site is currently developed as four single-family homes.

B. On-Site Development

Location

The proposed Belmont II site is located on the south side of Trabue Road, just west of McKinley Avenue. **Figure 1** shows the location of the proposed site in central Ohio and **Figure 2** shows the study area.

Figure 1 – Location in Central Ohio

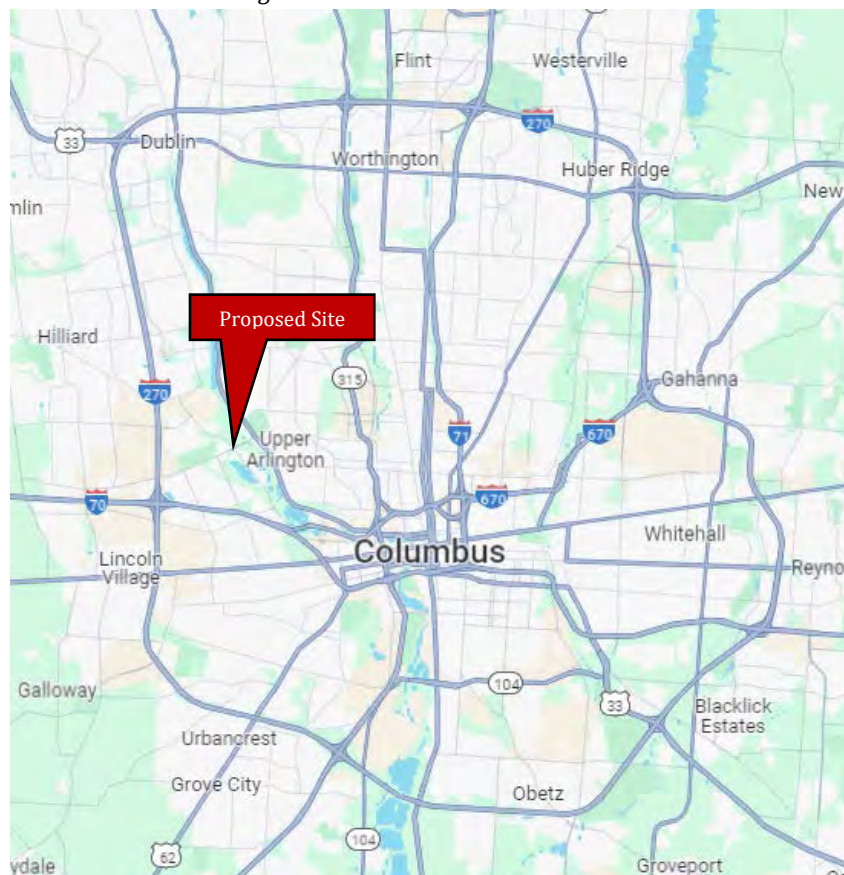
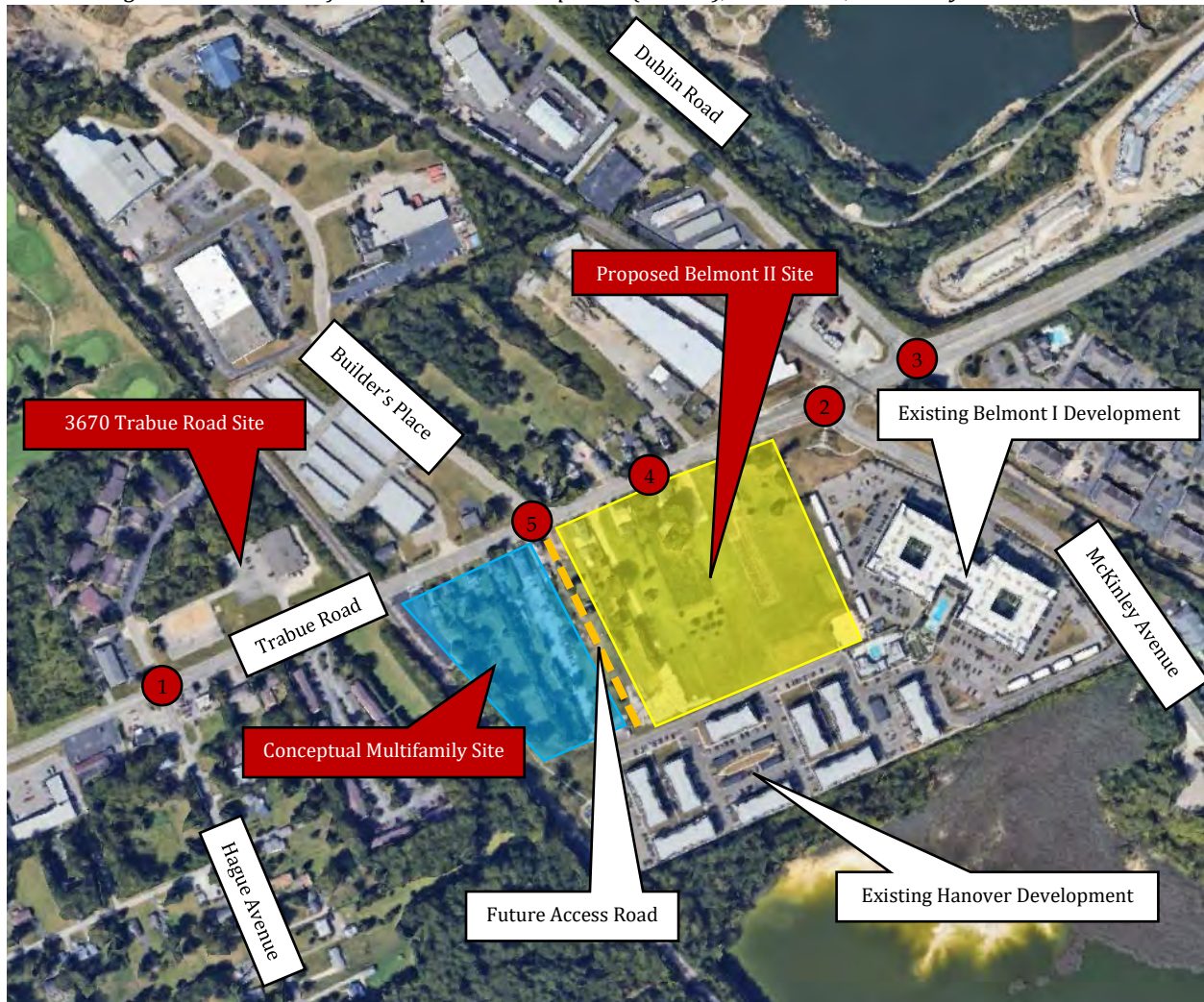


Figure 2 – Location of the Proposed Development (Yellow), Site Drives, and Study Intersections



Land Use & Intensity

The Belmont II site is proposed to develop as 300 multifamily units. For the TIS, the initial development is proposed to have a single, full access point to Trabue Road. Additionally, a new access road will be constructed along the western edge of the proposed site. This will serve as an emergency only access in the Opening Year, and a full access in the Horizon Year with cross access provided to the existing Hanover and Belmont I developments and a conceptual multifamily development west of the proposed site (shown in **Figure 2**). Once this conceptual multifamily development west of the proposed site is constructed, the existing full access point is proposed to be converted to a right-in, right-out (RIRO) access point. The conceptual multifamily development, located west of the future access road (shown in **Figure 2**), is included in the analysis, per the request of the City of Columbus. The site plan for the Belmont II development is provided in **Appendix A**.

III. Area Conditions

A. Area of Influence

The study intersections for the proposed development are listed below. Numbers correspond to **Figure 2**.

1. Trabue Road & N. Hague Avenue/Mapleway Drive
2. Trabue Road & McKinley Avenue
3. Trabue Road & Dublin Road/Marblevista Drive
4. Trabue Road & Site Access 1 (full access in Opening Year, RIRO in Horizon Year)
5. Trabue Road & Builders Place/Site Access 2 (emergency access in Opening Year, full access in Horizon Year)

Trabue Road has a four-lane typical section and posted speed limit of 35 MPH along the site frontage.

Franklin County is currently evaluating alternative options for the intersection of Trabue Road & N. Hague Avenue/Mapleway Drive. FCEO provided preliminary concept plans for a signalized option and a roundabout option, both of which can be seen in **Appendix A**. For the purposes of this study, it was assumed that the signalized alternative would be in place in all scenarios.

B. Jurisdictions

The proposed site and all study intersections are located within the City of Columbus jurisdiction, with the exception of the N. Hague Avenue/Mapleway Drive intersection, which is under Franklin County's jurisdiction.

C. Traffic Volumes & Conditions

Traffic volume data for this study were provided by the City of Columbus from the Renner-Trabue McKinley Corridor (RTMC) Study. The RTMC Study provides intersection traffic volume data for several intersections in the study area and also the wider surrounding area. The RTMC data used in this study has been rounded and smoothed for the 2022 volumes and grown and smoothed for the 2045 data as part of the RTMC study. These traffic volumes are presumed to include traffic from several on-going developments in various stages of development including traffic from the area of this subject development. Therefore, trips to and from this development were subtracted and added to the through volumes from the RTMC study at the study intersections for this project. However, the RTMC data does not include volume data for the Trabue Road & Builders Place intersection.

Turning movement count data for the Trabue Road & Builders Place intersection was collected by Carpenter Marty Transportation (CM) on June 15th, 2021. Growth rates at all the RTMC study intersections were obtained from the RTMC Study. Growth rates at the Builders Place intersection were extrapolated from adjacent intersections.

All count data and growth rate data can be found in **Appendix B**.

IV. Projected Traffic

A. Background Traffic

For analysis, the Opening Year of the development is 2025 and the Design, or Horizon Year, is 2045. The previously described growth rates were applied to the count data to produce Background volumes for the Opening and Horizon Years. The volumes at the Trabue Road & Builders Place intersection were rounded and smoothed to match the RTMC volumes at adjacent intersections to produce No Build volumes for the Opening and Horizon Years.

B. Trip Generation

Trips for the proposed development site were generated using the Institute of Transportation Engineers (ITE) methodologies and the Trip Generation Manual, 11th Edition. Land Use Code (LUC) 220 – *Multifamily Housing (Low-Rise) - Not Close to Rail Transit* was used to generate trips for the proposed development.

Table 1 summarizes the trip generation for the proposed development site, conceptual multifamily development west of the proposed site, as well as weekday trips for the Belmont I, Hanover, and 3670 Trabue Road sites. Trip generation outputs from ITE can be found in **Appendix C**.

Table 1 – Trip Generation Summary

Site	Land Use	Size	AM Peak		PM Peak		Weekday	
			Entry	Exit	Entry	Exit	Entry	Exit
Belmont I	220–Multifamily Housing (Low-Rise) – Not Close to Rail Transit	266 Units	---	---	---	---	890	890
Hanover	220–Multifamily Housing (Low-Rise) – Not Close to Rail Transit	215 Units	---	---	---	---	727	727
3670 Trabue Road	220–Multifamily Housing (Low-Rise) – Not Close to Rail Transit	205 Units	---	---	---	---	695	695
Belmont II	220–Multifamily Housing (Low-Rise) – Not Close to Rail Transit	300 Units	28	88	94	55	999	999
West Multifamily	220–Multifamily Housing (Low-Rise) – Not Close to Rail Transit	156 Units	17	54	55	32	538	538

Trips for the proposed development were distributed to/from the proposed site access points based on count data, knowledge of the surrounding area, and engineering judgment. Proposed development site traffic was added to the No Build traffic to produce Build traffic for the Opening and Horizon Years. For the Horizon Year scenarios, some existing Belmont I and Hanover development traffic is expected to reroute to the new connection to Trabue Road. This rerouting is further described within the volume calculations in **Appendix D**.

An additional volume set was developed for a potential scenario where westbound left turns at the Trabue Road & McKinley Avenue intersection would be restricted. For this volume set, it was assumed that the westbound left volume at Trabue Road & McKinley Avenue would utilize the Trabue Road & Builders Place/Site Access 2 intersection to U-Turn.

Lastly, per comments from the Franklin County Engineer’s Office, background traffic for a proposed multifamily development located at 3670 Trabue Road were added to the study network per its corresponding traffic access study. The full volume calculations can be found in **Appendix D**.

V. Traffic Analysis

A. Turn Lane Warrant & Length Analysis

A turn lane warrant analysis was conducted at both site access points using standard ODOT turn lane warrant graphs. If a turn lane was warranted in any particular scenario, the length was calculated using methodologies in the ODOT Location and Design (L&D) Manual and it was represented as such in the capacity analysis unless otherwise noted.

B. Signal Warrant Analysis

PC-Warrants 2 was used to perform signal warrant analysis at the Trabue Road & Builders Place/Site Access 2. Analysis was performed for the Opening Year and Horizon Year Build scenarios, with and without rerouted westbound left turn volumes from Trabue Road & McKinley Avenue. Additional analysis was performed assuming a road diet along Trabue Road is in place. Right turn reductions were applied.

C. Capacity Analysis

Highway Capacity Manual (HCM) module of Synchro 11 was used to analyze capacity at all study intersections.

A minimum Level-of-Service (LOS) of D for the overall intersection, approaches, and LOS E for individual movements during peak traffic hours was considered acceptable at each intersection. If unacceptable LOS/delay occurred in any scenario, mitigation was attempted to bring LOS/delay back to acceptable levels.

D. Queuing Analysis

The SimTraffic module of Synchro 11 was used to analyze queue lengths at all study intersections. Note that queuing analysis was only performed for scenarios showing a road diet along Trabue Road.

E. Sight Distance Analysis

Sight distance analysis was performed at both proposed site access points following City of Columbus Sight Distance Policy.

VI. Results

A. Turn Lane Warrant & Length Analysis

The results of the turn lane warrant and length analysis are summarized in **Table 2**. The full turn lane warrant analysis can be found in **Appendix E**.

Table 2 – Turn Lane Warrant and Length Summary

Intersection	Turn Lane	No Build	Opening Year Build	Horizon Year Build	Opening Year Build - With Improvements	Horizon Year Build - With Improvements
Trabue Road & Site Access 1	WB Left	---	Warranted – 150'	---	Warranted - 150'	---
	EB Right	---	Not Warranted		---	---
Trabue Road & Builders Place/ Site Access 2	EB Left	Warranted – 100'				
	EB Right	---	---	Not Warranted	---	---
	WB Left	---	---	Warranted – 150'	---	Warranted – 150' 300' (with Rerouted Westbound Lefts)
	WB Right	Not Warranted			---	---

B. Signal Warrant Analysis

The results of the signal warrant analysis are summarized in **Table 3**, below. The full signal warrant analysis can be seen in **Appendix F**. Per correspondence with the City of Columbus, at least one of Warrant #1 analyses, Condition A or B, or Warrant #2 must be satisfied in order to establish a traffic signal in conjunction with a proposed development. Digital copies of the PC Warrants analysis files are provided with this TIS submittal.

Table 3 – Signal Warrant Analysis Summary

Intersection	Scenario	Warrant 1	Warrant 2
Trabue Road & Builders Place /Site Access 2	Opening Year Road Diet	Not Met	Not Met
	Horizon Year With Rerouted Westbound Lefts	Not Met	Not Met
	Horizon Year Without Rerouted Westbound Lefts	Not Met	Not Met
	Horizon Year With Rerouted Westbound Lefts and Road Diet	Not Met	Not Met
	Horizon Year Without Rerouted Westbound Lefts and Road Diet	Not Met	Not Met

C. Capacity Analysis

Results of the baseline capacity analysis for all study intersections in No Build and Build scenarios can be seen in **Table 4**. Baseline analysis assumed that both site access points remained unsignalized and did not include any warranted turn lanes.

Red text identifies LOS/delay for an approach or overall intersection that exceeds acceptable criteria. The full capacity analysis can be found in **Appendix G**.

Table 4 – Baseline Capacity Analysis Summary (LOS/delay)

Intersection	Approach/ Movement	Opening Year (2025)				Horizon Year (2045)				Horizon Year with Rerouted Lefts (2045)	
		AM No Build	AM Build	PM No Build	PM Build	AM No Build	AM Build	PM No Build	PM Build	AM Build	PM Build
Trabue Road & N. Hague Avenue/ Mapleway Drive	EB	A/8.5	A/8.5	A/8.2	A/8.1	A/9.4	A/9.5	A/9.2	A/9.0	A/9.5	A/9.0
	WB	A/1.6	A/1.6	A/1.5	B/10.9	A/5.2	A/1.8	A/1.7	B/11.8	A/1.8	B/11.8
	NB	C/33.1	C/33.1	C/28.4	C/28.6	C/32.7	C/32.6	C/28.1	C/28.3	C/32.6	C/28.3
	SB	C/37.3	C/37.3	C/29.5	C/29.5	D/36.7	D/36.8	C/29.6	C/29.4	D/36.8	C/29.4
	Total	B/14.5	B/14.5	A/9.1	B/13.5	B/15.0	B/13.9	A/8.9	B/13.8	B/13.9	B/13.8
Trabue Road & Site Access 1	WB Left		A/9.1		A/9.0						
	NB		B/14.7		C/17.2		B/11.5		B/10.8	B/12.8	B/11.8
Trabue Road & Builders Place/ Site Access 2	EB Left	A/8.5	A/8.5	A/9.7	A/9.8	A/8.8	A/8.6	B/10.8	B/10.1	A/8.6	B/10.1
	WB Left						A/9.4		A/9.5	D/25.2	C/18.6
	NB						E/42.0		F/68.6	F/618.2	F/523.9
	SB	C/15.6	C/15.6	C/23.3	C/24.8	C/19.1	C/24.8	E/39.6	F/122.7	F/151.4	F/847.9
Trabue Road & McKinley Avenue	EB	C/20.2	C/20.6	B/16.5	C/26.4	C/24.2	C/24.7	C/20.3	C/27.7	C/31.8	C/28.4
	WB	B/13.9	B/13.9	A/9.4	A/9.4	C/21.6	C/21.4	B/15.2	B/14.8	B/15.3	C/21.2
	NB	A/6.8	A/6.8	B/11.5	B/11.5	A/9.4	A/8.5	B/14.3	B/13.9	A/8.7	B/13.9
	Total	B/15.6	B/15.7	B/12.1	B/15.2	C/20.5	C/20.7	B/16.5	B/18.5	C/22.7	C/22.2
Trabue Road & Dublin Road/ Marblevista Boulevard	EB	B/10.3	B/10.2	B/14.9	B/13.5	B/15.8	B/15.8	C/23.8	C/23.2	B/18.1	C/24.4
	WB	B/14.8	B/14.8	B/13.2	B/13.2	B/15.6	B/15.6	B/18.1	B/18.0	B/15.6	B/18.1
	NB	B/14.4	B/14.4	B/13.2	B/13.2	B/14.4	B/14.4	B/13.2	B/13.2	B/14.4	B/13.2
	SB	C/33.3	C/33.3	C/25.9	C/25.9	D/41.7	D/41.7	D/36.0	D/36.5	D/41.7	D/36.5
	Total	B/19.6	B/19.6	B/16.0	B/15.6	C/25.4	C/25.3	C/23.1	C/23.0	C/26.1	C/23.4

As seen in **Table 4**, the northbound and southbound approaches at the Trabue Road & Builders Place/Site Access 2 intersection show unacceptable delay levels in the Horizon Year. In the Horizon Year AM Build scenario, the northbound approach had a volume to capacity (v/c) ratio of 0.596 and the southbound approach had a v/c ratio of 0.193. In the Horizon Year PM Build scenario, the northbound and southbound approaches had a v/c ratio of 0.625 and 0.836, respectively. While the delays are high for vehicles turning from side streets, these ratios show that the intersection is still operating under capacity.

However, in the Horizon Year AM Build with Rerouted Lefts scenario, the northbound and southbound approaches had v/c ratios of 2.042 and 0.713. In the Horizon Year PM Build with Rerouted Lefts scenario, the northbound and southbound approaches had v/c ratios of 1.708 and 2.35. This shows that with the addition of the rerouted westbound lefts, the intersection becomes overcapacity.

In order to mitigate the delay levels at the Trabue Road & Builders Place/Site Access 2 intersection, a potential option for a road diet along Trabue Road was analyzed. The limits of a road diet along Trabue Road are expected to be between Hague Avenue and McKinley Avenue, where the existing four-lane typical section would be revised to a three-lane typical section with one through lane in each direction and a two-way left turn lane.

Results of the improved capacity analysis for both study intersections in No Build and Build scenarios can be seen in **Table 5**. Improved analysis assumes that a road diet is in place along Trabue Road between N. Hague Avenue and McKinley Avenue in all analysis scenarios, and that signal timings at the signalized intersections are optimized.

Table 5 – Improved Capacity Analysis Summary (LOS/delay)

Intersection	Approach/ Movement	Opening Year (2025)				Horizon Year (2045)				Horizon Year with Rerouted Lefts (2045)	
		AM No Build	AM Build	PM No Build	PM Build	AM No Build	AM Build	PM No Build	PM Build	AM Build	PM Build
Trabue Road & N. Hague Avenue/ Mapleway Drive	EB	A/8.5	A/8.5	A/8.2	A/8.1	A/9.4	A/9.4	A/9.2	A/9.0	A/9.4	A/9.4
	WB	A/1.6	A/4.7	A/1.5	A/4.3	A/5.2	A/5.2	A/1.7	A/4.6	A/5.2	A/5.2
	NB	C/33.1	C/33.1	C/28.4	C/28.5	C/32.7	C/32.7	C/28.1	C/28.2	C/32.7	C/32.7
	SB	C/37.3	C/37.3	C/29.5	C/29.5	D/36.7	D/36.8	C/29.6	C/29.4	D/36.8	D/36.8
	Total	B/14.5	B/15.4	A/9.1	B/10.4	B/15.0	B/15.0	A/8.9	B/10.2	B/15.0	B/15.0
Trabue Road & Site Access 1 <i>Road Diet</i>	WB Left		A/9.1		A/9.0						
	NB		C/19.0		C/23.8		C/15.6		B/13.6	C/20.0	C/20.0
Trabue Road & Builders Place/ Site Access 2 <i>Road Diet</i>	EB Left	A/8.5	A/8.5	A/9.8	A/9.9	A/8.8	A/8.6	B/10.8	A/10.1	A/8.6	B/10.1
	WB Left						A/9.5		A/9.5	B/11.3*	B/11.2*
	NB						F/77.1		F/217.8	F/498.8	F/1039.7
	SB	C/15.4	C/19.4	C/24.6	D/34.4	C/18.7	E/43.8	E/39.3	F/237.7	F/195.9	F/1039.5
Trabue Road & McKinley Avenue	EB	C/20.2	C/20.5	B/16.5	C/26.4	C/24.2	C/24.7	C/20.3	C/26.9	C/28.5	C/28.5
	WB	B/13.9	B/13.9	A/9.4	A/9.4	C/21.6	C/21.4	B/15.2	B/14.8	B/15.3	B/15.3
	NB	A/6.8	A/6.8	B/11.5	B/11.5	A/9.4	A/8.5	B/14.3	B/13.9	A/8.7	A/8.7
	Total	B/15.6	B/15.7	B/12.1	B/15.2	C/20.5	C/20.7	B/16.5	B/18.3	C/21.0	C/21.0
Trabue Road & Dublin Road/ Marblevista Boulevard	EB	B/10.3	C/10.2	B/14.9	B/13.5	B/15.9	B/15.8	C/23.8	C/22.9	B/17.8	B/17.8
	WB	B/14.8	B/14.8	B/13.2	B/13.2	B/15.6	B/15.6	B/18.1	B/18.0	B/15.6	B/15.6
	NB	B/14.4	B/14.4	B/13.2	B/13.2	B/14.4	B/14.4	B/13.2	B/13.2	B/14.4	B/14.4
	SB	C/33.3	C/33.3	C/25.9	C/25.9	D/41.7	D/41.7	D/36.0	D/36.5	D/41.7	D/41.7
	Total	B/19.6	B/19.6	B/16.0	B/15.6	C/25.4	C/25.3	C/23.1	C/22.9	C/26.0	C/26.0

*Due to software restrictions, the westbound U-turn volume had to be coded as left turn volume. Actual delay levels for the westbound U-turn movement are expected to be worse than what is shown in Table 5.

As seen in **Table 5**, the implementation of a road diet does not resolve the capacity issues at the Trabue Road & Builders Place/Site Access 2 intersection. However, since signal warrants were not met at this intersection, and the installation of a roundabout is not desirable by the City of Columbus or developer, these delays were considered acceptable.

D. Queuing Analysis

Results of the queuing analysis for all study intersections in Build scenarios can be seen in **Table 6**. The queuing analysis assumes that a road diet is in place along Trabue Road between N. Hague Avenue and McKinley Avenue. The full queuing analysis can be found in **Appendix H**.

Table 6 – Improved Queuing Analysis Summary (Average/95th Percentile)

Intersection	Movement	Available Storage Length	Opening Year (2025)		Horizon Year (2045)		Horizon Year with Rerouted Lefts (2045)	
			AM Build	PM Build	AM Build	PM Build	AM Build	PM Build
Trabue Road & N. Hague Avenue/ Mapleway Drive	EBL	125'	9'/34'	15'/42'	12'/53'	24'/75'	10'/37'	17'/53'
	EBT	2635'	69'/147'	75'/142'	94'/182'	115'/198'	95'/191'	101'/186'
	EBT/T	265'	25'/75'	37'/90'	43'/125'	67'/155'	47'/127'	58'/136'
	WBL	275'	31'/64'	49'/87'	39'/80'	71'/122'	43'/82'	64'/108'
	WBT	1070'	7'/26'	21'/54'	13'/41'	47'/99'	9'/29'	23'/57'
	WBT/R	~535'	7'/32'	28'/69'	15'/52'	62'/116'	10'/34'	31'/71'
	NBL/T	470'	88'/152'	81'/127'	87'/152'	74'/138'	77'/134'	57'/108'
	NBR	275'	45'/72'	34'/59'	60'/122'	36'/76'	52'/98'	36'/73'
Trabue Road & Site Access 1 Road Diet	SBL/T/R	135'	52'/97'	38'/82'	56'/111'	39'/79'	53'/94'	41'/76'
	WBL	150'	10'/36'	21'/51'				
	NBL/R	N/A	39'/76'	31'/60'				
Trabue Road & Builders Place/ Site Access 2 Road Diet	NBR	N/A			24'/50'	15'/41'	26'/54'	14'/40'
	EBL	100'	13'/45'	6'/25'	9'/29'	4'/16'	11'/35'	5'/19'
	WBL	200'			11'/31'	26'/56'	64'/115'	72'/142'
	NBL/T/R	N/A			59'/111'	95'/230'	169'/333'	168'/337'
	SBL/T/R	575'			31'/69'	59'/134'	40'/99'	124'/270'
Trabue Road & McKinley Avenue	SBL/R	575'	20'/52'	28'/58'				
	EBT	~500'	138'/237'	105'/165'	176'/275'	124'/191'	132'/224'	113'/192'
	EBT/R	~320'	138'/232'	98'/158'	167'/257'	122'/187'	155'/255'	139'/226'
	WBL	115'	74'/132'	66'/130'	118'/197'	158'/225'		
	WBT	115'	72'/139'	87'/158'	126'/208'	180'/227'	88'/152'	121'/191'
	WBT	115'	74'/143'	103'/174'	134'/224'	191'/234'	110'/169'	145'/209'
	NBL	335'	28'/73'	77'/137'	23'/58'	115'/247'	23'/65'	81'/144'
	NBR	480'	38'/75'	45'/83'	54'/106'	116'/402'	56'/101'	70'/150'
Trabue Road & Dublin Road/ Marblevista Boulevard	NBR	335'	10'/33'	15'/40'	17'/52'	57'/224'	19'/57'	31'/109'
	EBL	120'	67'/128'	102'/162'	89'/151'	134'/188'	73'/133'	123'/181'
	EBT	180'	52'/114'	53'/134'	76'/159'	112'/237'	61'/135'	95'/218'
	EBT/T	180'	30'/84'	27'/93'	55'/130'	61'/145'	39'/100'	50'/129'
	WBL	290'	5'/21'	17'/43'	4'/20'	109'/346'	5'/19'	19'/39'
	WBT	1175'	53'/100'	93'/173'	80'/161'	601'/1646'	66'/123'	119'/198'
	WBT	1175'	43'/93'	88'/167'	71'/163'	649'/1786'	62'/126'	124'/231'
	WBR	525'	10'/36'	87'/182'	18'/52'	274'/608'	17'/51'	150'/290'
	NBL	90'	5'/20'	4'/17'	7'/28'	4'/18'	7'/25'	6'/24'
	NBT	195'	44'/46'	6'/22'	7'/30'	8'/29'	10'/39'	7'/24'
	NBR	40'	29'/67'	20'/47'	30'/63'	21'/48'	25'/58'	18'/43'
	SBL	250'	141'/258'	65'/171'	217'/335'	101'/211'	225'/322'	143'/245'
	SBL/T	2125'	193'/278'	127'/193'	354'/641'	363'/780'	293'/471'	192'/265'
	SBR	550'	43'/89'	56'/122'	165'/483'	314'/637'	66'/207'	70'/143'

As seen in **Table 6**, unacceptable queue lengths are expected at the Trabue Road intersections with McKinley Avenue and Dublin Road/Marblevista Boulevard. However, no queue lengths are expected to block the proposed site access points, nor are any queue lengths expected to reach the taper points where the three-lane section widens out to the four-lane section, and vice versa.

Based on the queuing results, it appears the cause for such long queues on the westbound approach of the Trabue Road & Dublin Road/Marblevista Boulevard intersection is the weaving that occurs between the McKinley Avenue and Dublin Road/Marblevista intersections, exacerbated by westbound left turning vehicles attempting to turn onto McKinley Avenue. This is especially evident when comparing the Build results to the Build with Rerouted Left results, which show significantly reduced queuing at the Dublin Road/Marblevista Boulevard intersection, due to the restriction of the westbound left movement at McKinley Avenue.

It should be noted that the implementation of a road diet west of McKinley Avenue is not expected to adversely affect westbound queues at the Dublin Road/Marblevista Boulevard intersection that are not already present with the westbound left turn movement from Trabue Road to McKinley Avenue.

E. Sight Distance Analysis

The results of the sight distance analysis show that there are no obstructions within the sight lines of vehicles exiting the proposed site access points. Sight distance exhibits can be found in **Appendix I**.

VII. Recommendations and Conclusions

Based on the analysis herein, the improvements recommended for each study intersection can be seen in **Table 7**. Note, Build improvements are the responsibility of the developer and No Build improvements are the responsibility of the City. Additionally, Horizon Year improvements noted in **Table 7** assume Opening Year improvements have been implemented. Additional discussions and correspondence with the City of Columbus will be required to determine how improvements for this development will complement the improvements for the overall study area and corridor. Exhibits of the recommended road diet and turn lane improvements can be found in **Appendix J**. The exhibits show the road diet concept with the Trabue Road & Hague Avenue intersection in its existing condition and proposed condition (signalized intersection improvements). Additionally, the Synchro files utilized for the capacity and queuing analysis are provided with the report submittal to assist with review of the proposed road diet.

The road diet concept is recommended to be implemented with the proposed development as described in **Table 7**. This will provide dedicated eastbound and westbound left turn lane space for the Trabue Road & Builders Place intersection and future Site Access 2. It is recommended that Site Access 1 be constructed as a full access and with the proposed development and become restricted to RIRO movements after the conceptual multifamily development to the west is constructed. At that time, Site Access 2 would become a full

movement access shared between the Belmont II development and conceptual multifamily development. As a reminder, Site Access 2 is proposed to constructed with the Belmont II development as an emergency only access. The road diet will also provide a westbound left turn lane for Site Access 1 in the Opening Year condition. Signalization of the Trabue Road & Builders Place/Site Access 2 intersection should be reevaluated in the future as the area continues to develop and/or if the westbound left turn restriction at Trabue Road & McKinley Avenue intersection is implemented. The signal warrant analysis in this TIS shows a warrant is not met in any analysis scenario.

The Federal Highway Administration (FHWA) has identified road diets as a proven safety countermeasure and promotes them as a safety-focused design alternative to traditional four-lane, undivided roadways. The road diet concept enables reclaimed space within the right-of-way to be utilized for multimodal accommodations like sidewalks, shared-use paths, bike lanes, and landscaping.

Table 7 – Recommended Improvements Summary

Intersection	Opening Year		Horizon Year	
	No Build	Build	No Build	Build
Trabue Road & Site Access 1	None	150' WB Left Turn Lane with Road Diet	None	Transition to a RIRO access point
Trabue Road & Builders Place/ Site Access 2	100' EB Left Turn Lane	Road Diet	Improvements associated with U-Turn option for restricted westbound left turns at Trabue Road & McKinley Avenue (if implemented)	150' WB Left Turn Lane

Per the approved MOU, and request of the City of Columbus, site traffic percentages for intersections surrounding the proposed development were calculated. Site traffic was determined for the proposed Belmont II development and the existing Belmont I and Hanover developments. The requested intersections and site traffic percentages are listed below. The calculations for the site traffic percentages can be found in the volume calculations in **Appendix D**. Additional coordination with the Franklin County Engineer's Office will be needed to translate the site traffic percentage for the intersection of N. Hague Avenue & Trabue Road into a contribution commitment for applications Z23-012 and CV23-019. The site traffic percentages for the intersection of Trabue Road & Mckinley Avenue/Dublin Road and Mickinley Avenue & W. 5th Avenue will need to be translated into contribution commitments for applications Z23-012 and CV23-019. Note, comments from the Franklin County Engineer's Office resulted in additional background traffic through the study network. Thus, the below percentages have been updated to reflect this change.

Trabue Road & N. Hague Avenue/Mapleway Drive

Belmont II – 2.1%

Belmont I & Hanover – 3.3%

Trabue Road & Builders Place/Site Access 2

Belmont II – 6.4%

Belmont I & Hanover – 3.7%

Trabue Road & McKinley Avenue

Belmont II – 5.0%

Belmont I & Hanover – 8.9%

Trabue Road & Dublin Road/Marblevista Boulevard

Belmont II – 2.3%

Belmont I & Hanover – 4.0%

McKinley Avenue & W. 5th Avenue

Belmont II – 2.4%

Belmont I & Hanover – 7.0%

VIII. Appendices

Appendix A – Site Plan

Appendix B – Count Data and Growth Rate Data

Appendix C – Trip Generation

Appendix D – Volume Calculations

Appendix E – Turn Lane Warrant and Length Analysis

Appendix F – Signal Warrant Analysis

Appendix G – Capacity Analysis

Appendix H – Queuing Analysis

Appendix I – Sight Distance Analysis

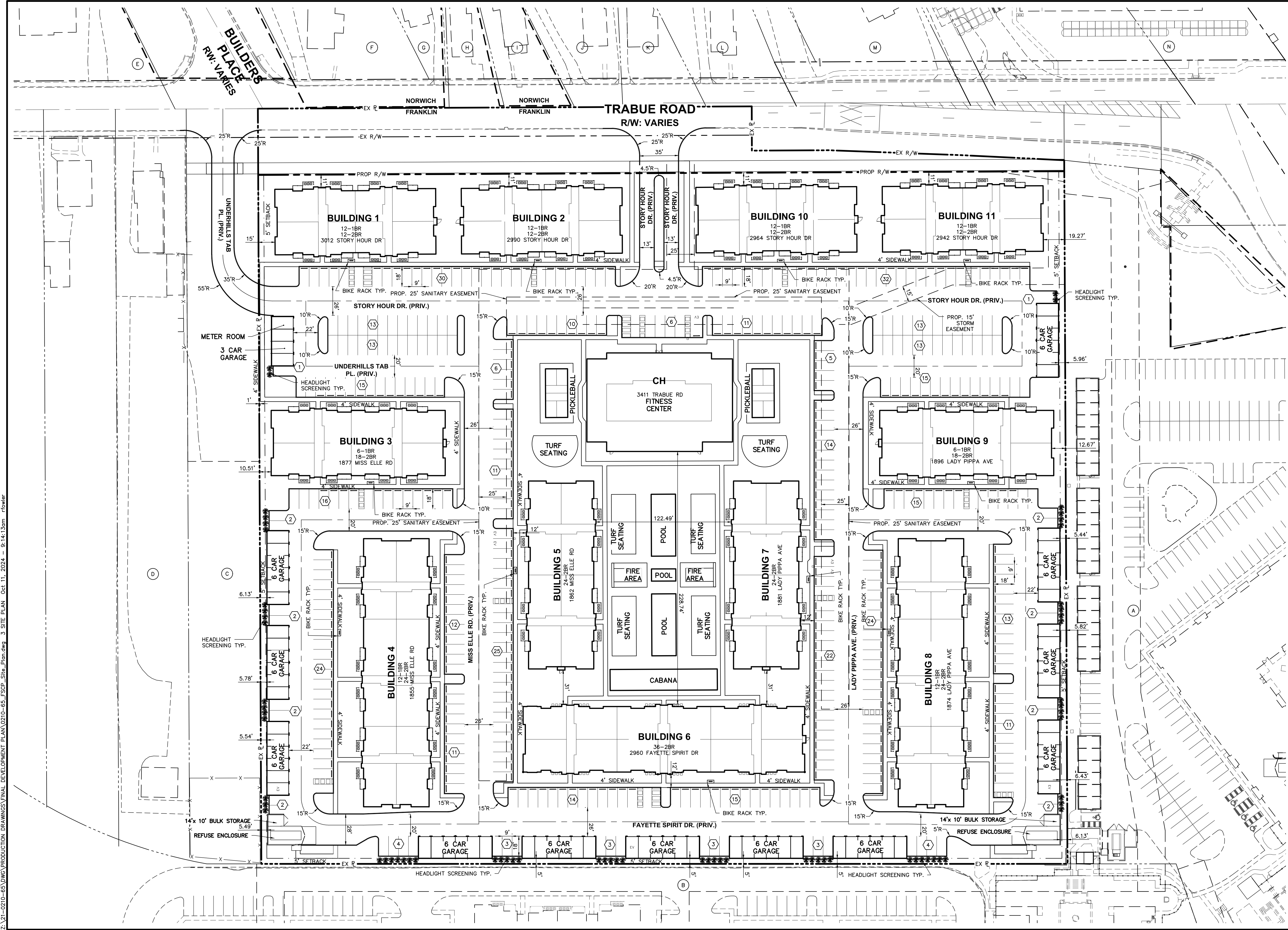
Appendix J – Improvements Exhibits

Appendix A

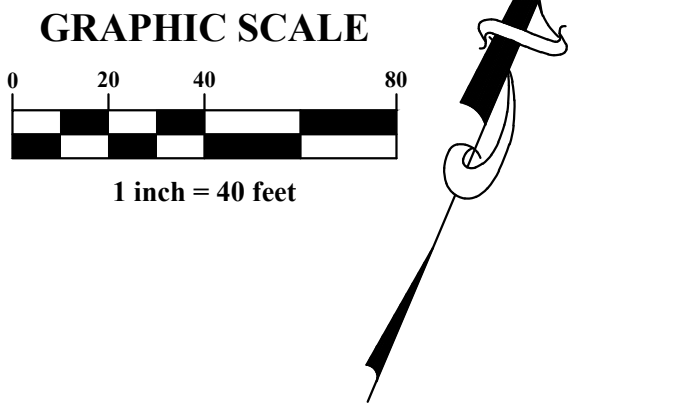
Site Plan



Z:\21-0210-65 DWG\PRODUCTION DRAWINGS\FINAL DEVELOPMENT PLAN\0210-65_FSP_Site_Plan.dwg 3 SITE PLAN Oct 11, 2024 -- 9:14:13am rflowler



- LEGEND**
- PARKING SPACE SHADE TREES (SEE DETAIL SHEET 3)
 - HEADLIGHT SCREENING (SEE DETAIL SHEET 3)
 - PROPOSED PARKING COUNT



- A** BELMONT HOUSE LLC
3255 MCKINLEY AV
PID: 010-298035
8.89 AC.
- B** HANOVER ACQUISITION LLC
3251-3255 MCKINLEY AV
PID: 010-261453
10.21 AC.
- C** MJK VENTURES TRABUE LLC
3451 TRABUE RD
PID: 146-298090
1 AC.
- D** DALLAS J. ANGELO
3459 TRABUE RD
PID: 146-298091
1 AC.
- E** TRABUE RD A&N REAL ESTATE INVESTMENTS LLC
3466 TRABUE RD
PID: 200-001835
0.73 AC.
- F** VOHNOUT VINCENT
34448 TRABUE RD
PID: 200-001142
1.93 AC.
- G** DISANTO A. DANIEL
3438 TRABUE RD
PID: 200-001148
0.98 AC.
- H** POMANTE PROPERTIES LLC
3432 TRABUE RD
PID: 203-287913
0.52 AC.
- I** 3430 TRRD LLC
3430 TRABUE RD
PID: 200-001169
0.49 AC.
- J** POMANTE PROPERTIES LLC
3418 TRABUE RD
PID: 203-287897
1.35 AC.
- K** QUINT RJR HUGO
3412 TRABUE RD
PID: 203-287904
0.58 AC.
- L** POMANTE L. ROBERT
3404 TRABUE RD
PID: 203-287899
1.87 AC.
- M** POMANTE PROPERTIES LLC
3392 TRABUE RD
PID: 203-287900
2.252 AC.
- N** CARDINAL SELF STORAGE TRABUE LLC
3370 TRABUE RD
PID: 203-287901
3.54 AC.

CITY OF COLUMBUS, OHIO
FINAL SITE COMPLIANCE PLAN
FOR
TRABUE & MCKINLEY
SITE PLAN

PLAN PREPARED BY:

ADVANCED
CIVIL DESIGN
ENGINEERS SURVEYORS

781 Science Boulevard, Suite 100
Gahanna, Ohio 43230
ph 614.428.7750
fax 614.428.7755

SCALE: 1" = 40'
DATE: 10/11/2024

SHEET 3 / 5

TRABUE ROAD & HAGUE AVENUE
INTERSECTION STUDY

ALTERNATIVE 2 - SIGNALIZED INTERSECTION

N

01/09/2023

BURGESS & NIPLER

Engineers ■ Architects ■ Planners

FRANKLIN COUNTY

ENGINEER

0

50

100

200

LEGEND:

CORPORATION
LINE:

EXISTING
RIGHT OF WAY:

CONCRETE:
(SIDEWALK)

GRASS:
(GRADING)

ASPHALT:
(PAVEMENT,
SHARED USE PATH)

RAYMOND MEMORIAL
GOLF COURSE

MAPLEWAY DR

PROPOSED MULTI-
FAMILY BUILDING

CLUB/FITNESS
CENTER &
LOBBY

PROPOSED MULTI-
FAMILY BUILDING AND
PARKING GARAGE

TRABUE RD

HAGUE AVE

TRABUE ROAD & HAGUE AVENUE
INTERSECTION STUDY

ALTERNATIVE 3 - ROUNDABOUT

N

01/09/2023

BURGESS & NIPLE

Engineers ■ Architects ■ Planners

FRANKLIN COUNTY

ENGINEER

0

50

100

200

Design Parameters	Mapleway Dr	N Hague Ave	Trabue Rd	Trabue Rd
	North Leg	South Leg	East Leg	West Leg
Inscribed Circle Diameter, FT	160.0			
Entry Width, FT	14.5	28.1	30.2	29.9
Entry Angle PHI φ, DEG	21.4°	22.7°	22.8°	16.0°
Exit Width, FT	14.1	14.8	28.3	29.7
Circulatory Roadway Width Upstream of Entry, FT	11.0	22.0	22.0	22.0
Fastest Path Speed	Southbound	Northbound	Westbound	Eastbound
R1, Radius/Speed, FT/MPH	170/25	378/34	200/27	263/30
R2, Radius/Speed, FT/MPH	65/16	103/19	150/22	108/19
R3, Radius/Speed, FT/MPH	216/27	215/27	509/32	382/33
Minimum Sight Parameters	North Leg	South Leg	East Leg	West Leg
Approach Design Speed, MPH	45	45	40	45

LEGEND:

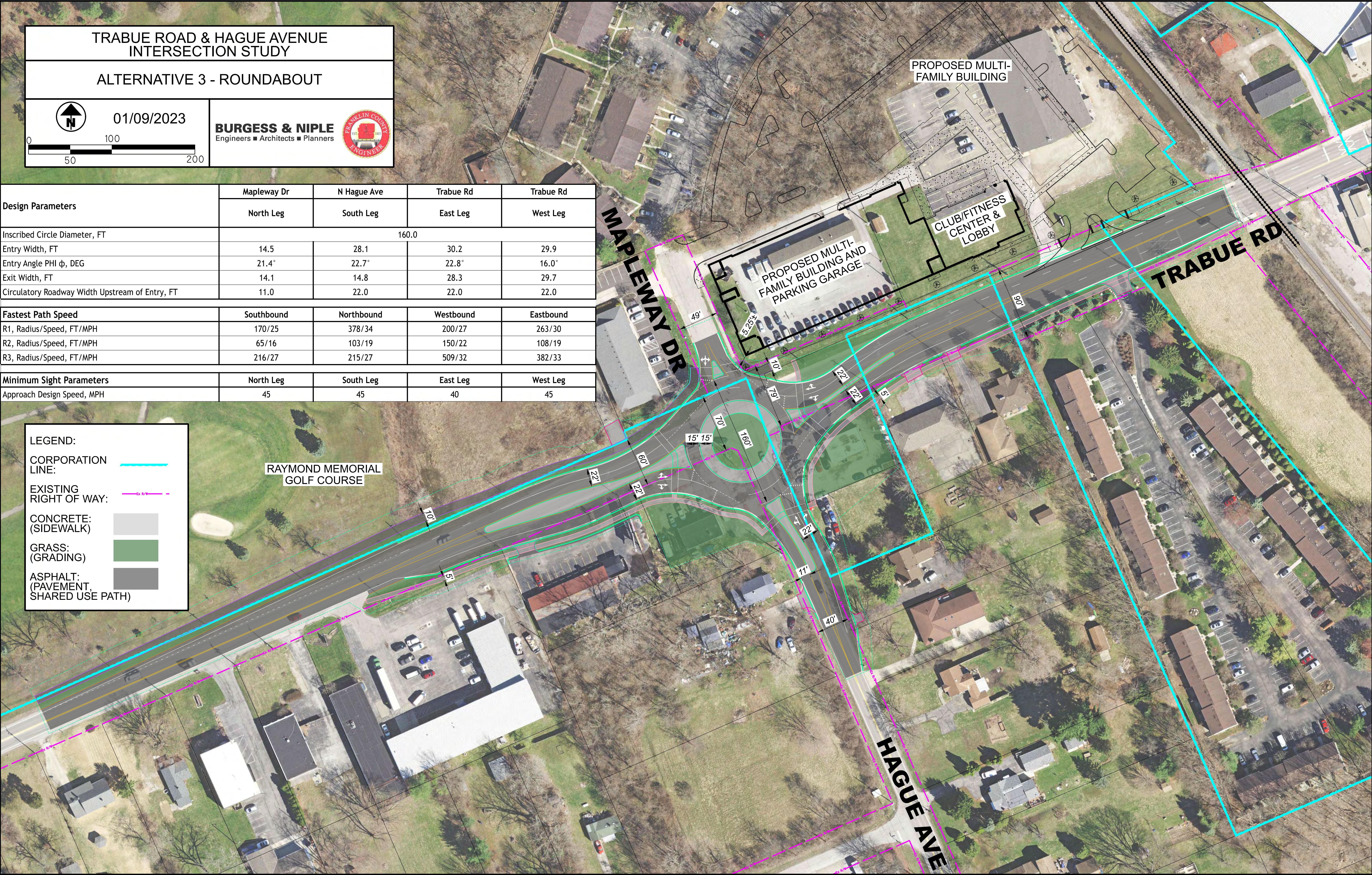
CORPORATION LINE:

EXISTING RIGHT OF WAY:

CONCRETE:
(SIDEWALK)

GRASS:
(GRADING)

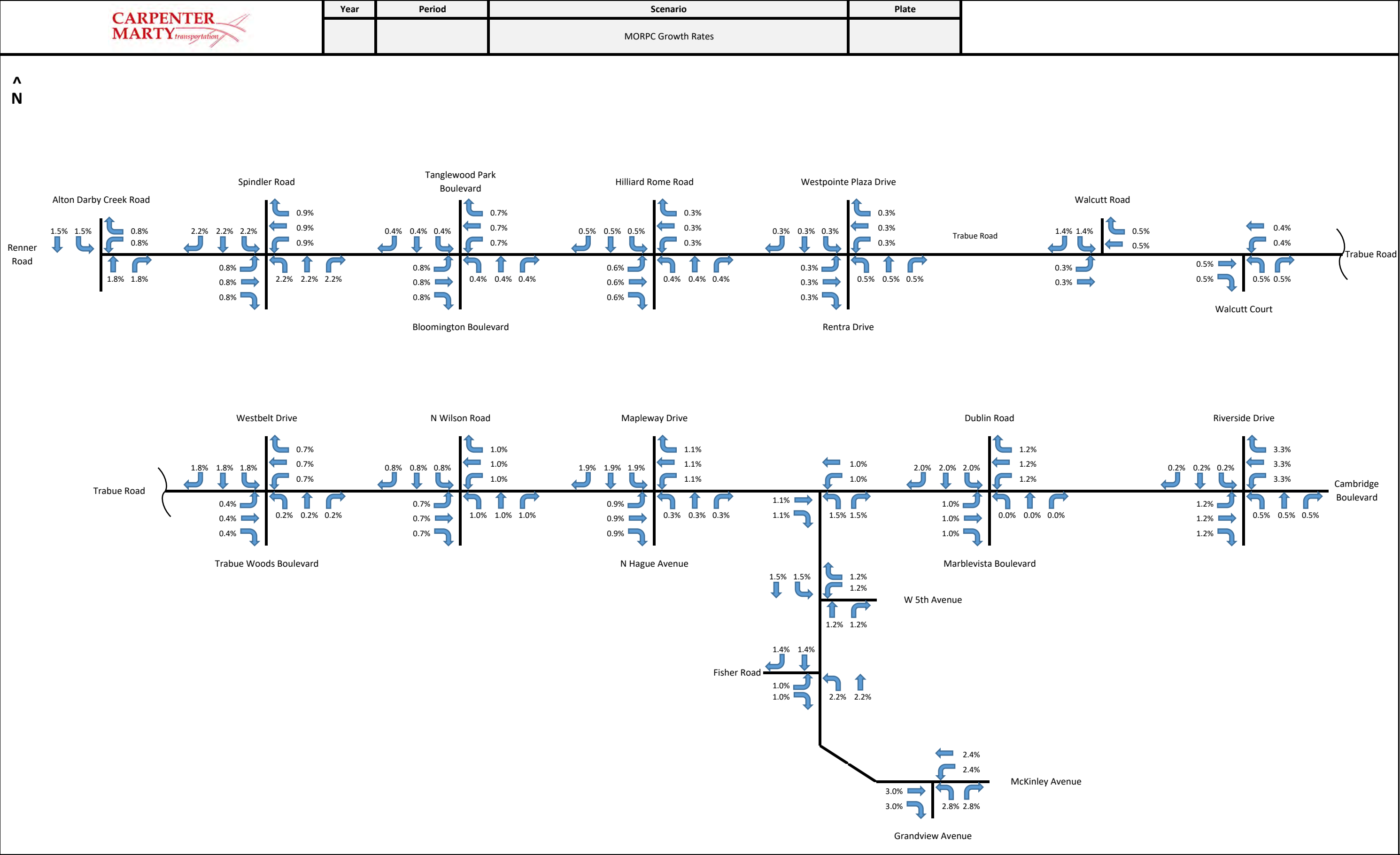
ASPHALT:
(PAVEMENT,
SHARED USE PATH)



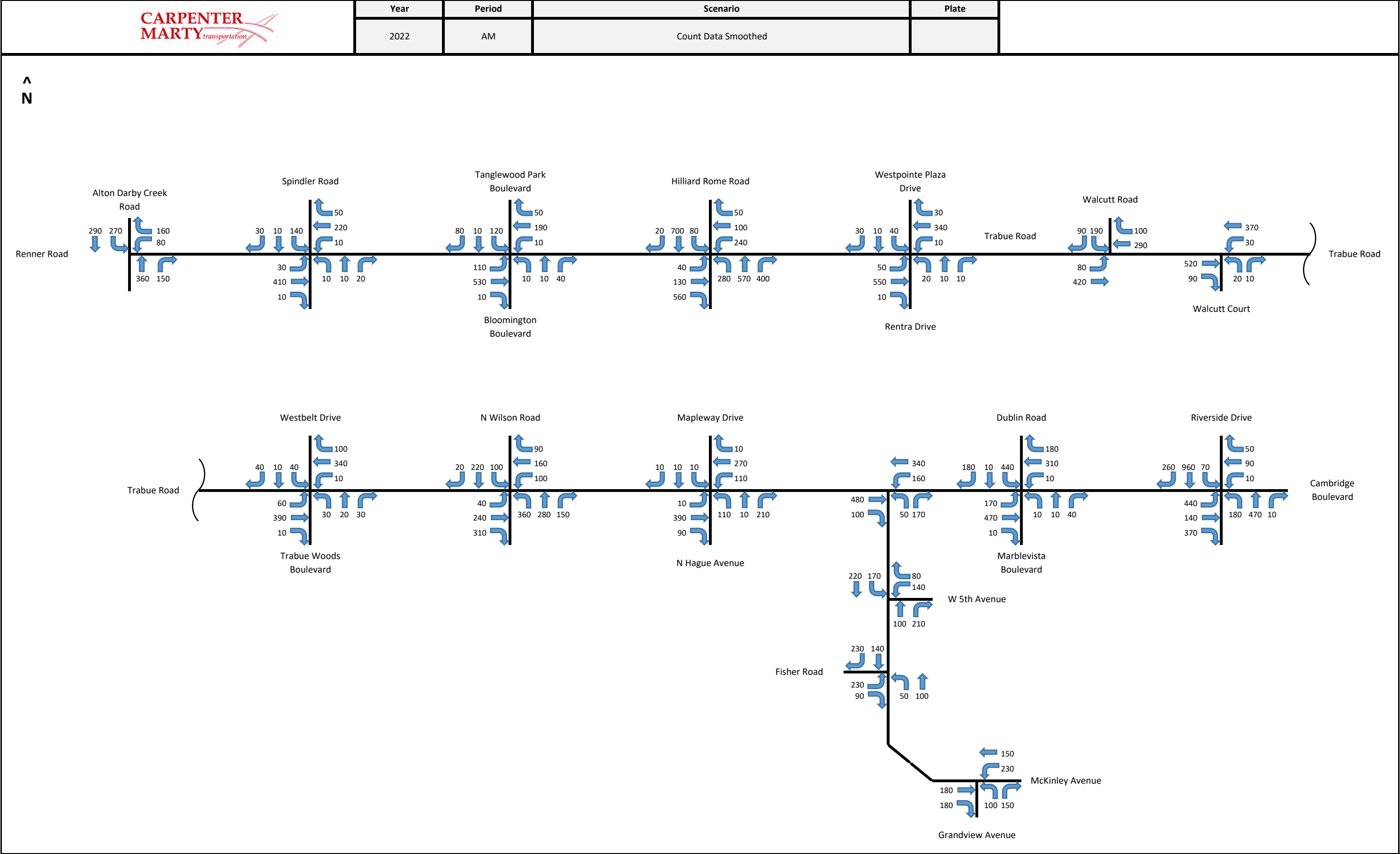
Appendix B

Count Data and Growth Rate Data

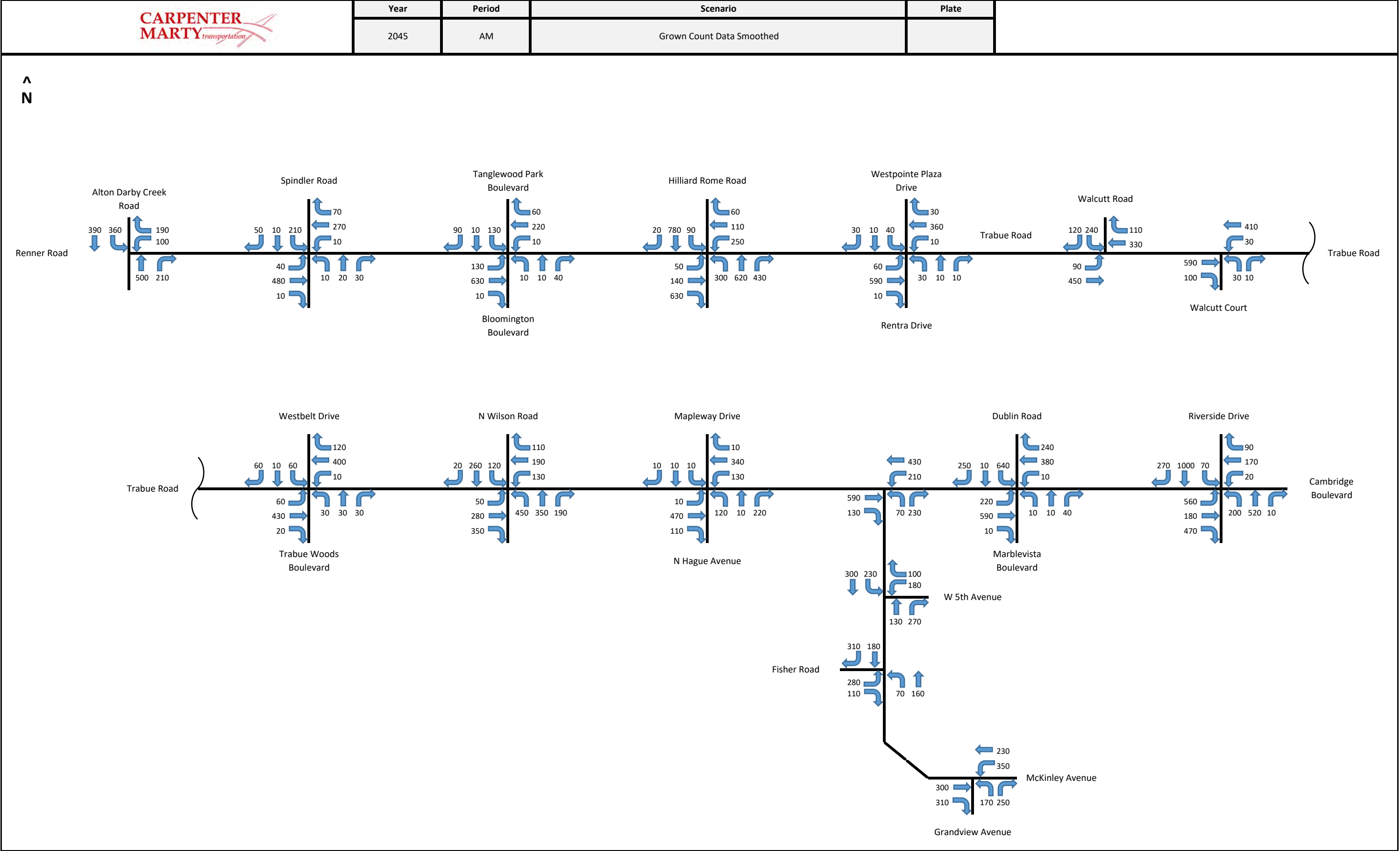
Renner/Trabue/McKinley Corridor Study
Traffic Volume Calculations



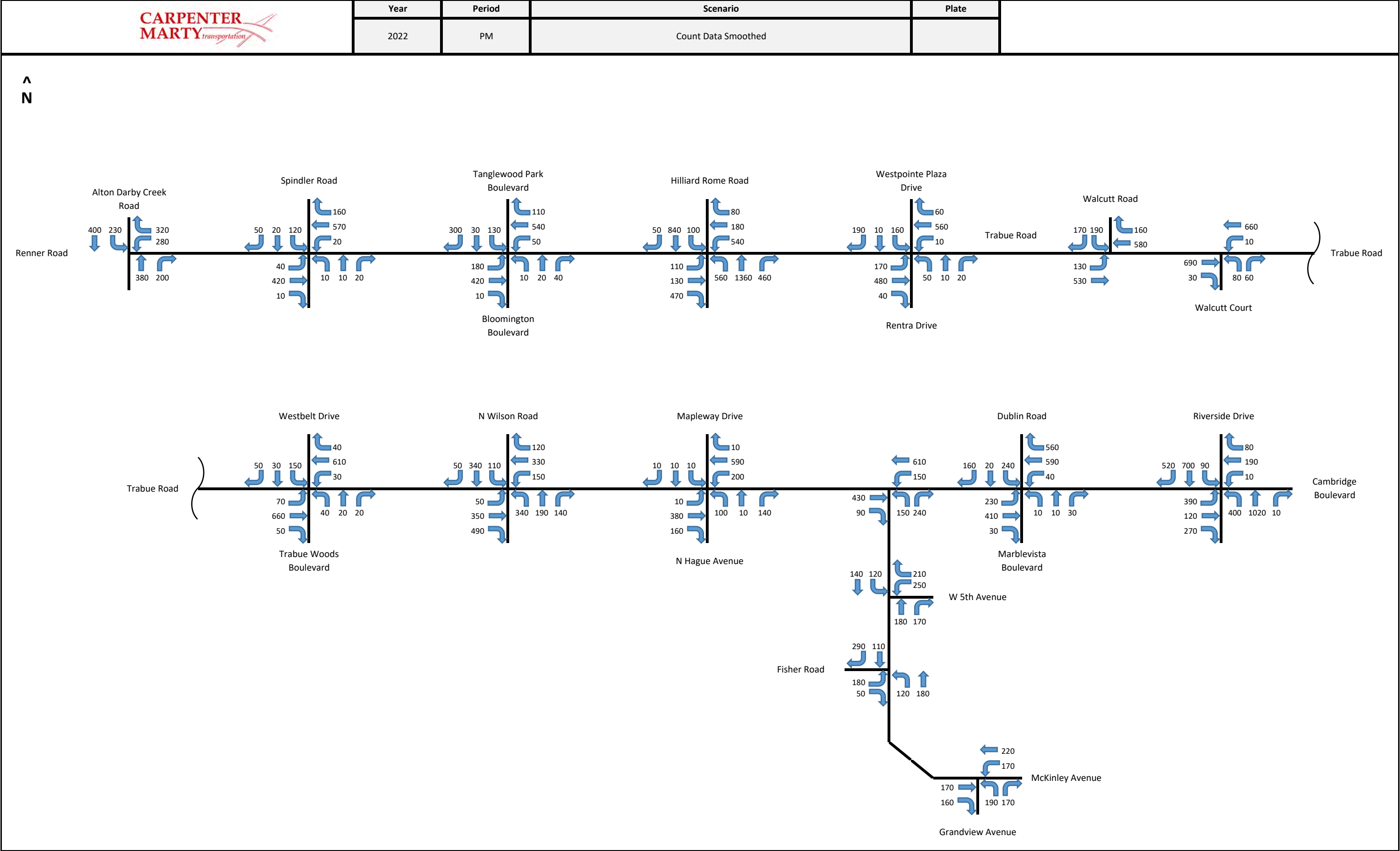
Renner/Trabue/McKinley Corridor Study
Traffic Volume Calculations



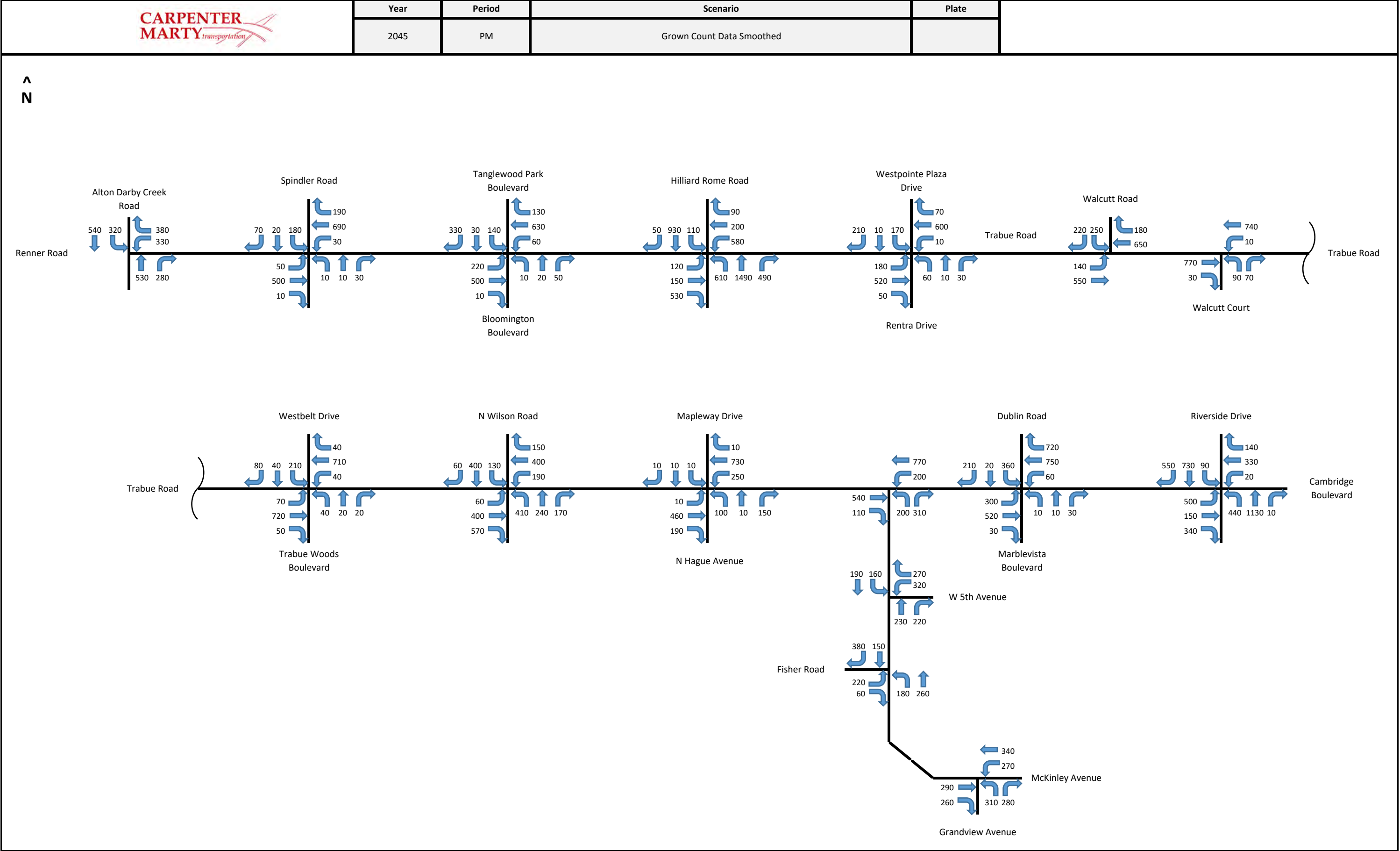
Renner/Trabue/McKinley Corridor Study
Traffic Volume Calculations



Renner/Trabue/McKinley Corridor Study
Traffic Volume Calculations



Renner/Trabue/McKinley Corridor Study
Traffic Volume Calculations



Dublin Road & Trabue Road - TMC

Tue Apr 5, 2022

Full Length (7 AM-11 AM, 2 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 945910, Location: 39.995163, -83.084968

Provided by: Carpenter Marty (CM)

Transportation Inc.

6612 Singletree Drive,

Columbus, OH, 43229, US

Leg Direction	Trabue Road Eastbound						Trabue Road Westbound						Marblevista Blvd Northbound						Dublin Road Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2022-04-05 7:00AM	38	90	0	0	128	0	0	62	38	0	100	0	0	4	6	0	10	0	67	0	33	0	100	0	338
7:15AM	39	100	2	0	141	0	0	54	37	0	91	0	1	5	11	0	17	0	80	1	35	0	116	0	365
7:30AM	40	133	0	0	173	0	2	71	39	0	112	0	2	2	11	0	15	0	124	1	32	0	157	0	457
7:45AM	57	137	0	0	194	0	3	87	53	0	143	0	4	5	14	0	23	0	121	1	49	0	171	0	531
Hourly Total	174	460	2	0	636	0	5	274	167	0	446	0	7	16	42	0	65	0	392	3	149	0	544	0	1691
8:00AM	40	100	1	0	141	0	3	72	46	0	121	0	5	4	4	0	13	0	91	1	54	0	146	0	421
8:15AM	35	103	2	0	140	0	1	76	46	0	123	0	1	0	11	0	12	0	101	0	49	0	150	0	425
8:30AM	30	77	1	0	108	0	0	58	48	0	106	0	1	0	8	0	9	0	84	0	35	0	119	0	342
8:45AM	37	126	2	0	165	0	3	55	54	0	112	0	1	2	13	0	16	0	89	0	34	0	123	0	416
Hourly Total	142	406	6	0	554	0	7	261	194	0	462	0	8	6	36	0	50	0	365	1	172	0	538	0	1604
9:00AM	28	91	2	0	121	0	7	64	39	0	110	0	0	2	6	0	8	0	74	2	29	0	105	0	344
9:15AM	23	94	6	0	123	0	2	65	40	0	107	0	2	2	10	0	14	0	68	0	20	0	88	0	332
9:30AM	21	101	0	0	122	0	0	58	33	0	91	0	0	1	5	0	6	0	74	1	31	0	106	0	325
9:45AM	20	96	0	0	116	0	4	59	29	0	92	0	2	2	8	0	12	0	52	1	32	0	85	0	305
Hourly Total	92	382	8	0	482	0	13	246	141	0	400	0	4	7	29	0	40	0	268	4	112	0	384	0	1306
10:00AM	36	66	0	0	102	0	4	52	34	0	90	0	3	1	3	0	7	0	51	0	25	0	76	0	275
10:15AM	25	69	1	0	95	0	1	52	28	0	81	0	0	2	10	0	12	0	48	1	26	0	75	0	263
10:30AM	29	71	1	0	101	0	0	66	38	0	104	0	1	2	2	0	5	0	49	3	27	0	79	0	289
10:45AM	32	71	1	0	104	0	3	66	32	0	101	0	4	1	4	0	9	0	40	3	13	0	56	0	270
Hourly Total	122	277	3	0	402	0	8	236	132	0	376	0	8	6	19	0	33	0	188	7	91	0	286	0	1097
2:00PM	31	81	3	0	115	0	3	88	55	0	146	0	3	2	2	0	7	0	59	0	29	0	88	0	356
2:15PM	52	93	5	0	150	0	10	109	61	0	180	0	2	0	6	0	8	0	53	3	37	0	93	0	431
2:30PM	35	79	3	0	117	0	5	115	64	0	184	0	2	2	5	0	9	0	45	1	33	0	79	0	389
2:45PM	33	89	4	0	126	0	8	103	72	0	183	0	2	1	7	0	10	0	48	1	38	0	87	0	406
Hourly Total	151	342	15	0	508	0	26	415	252	0	693	0	9	5	20	0	34	0	205	5	137	0	347	0	1582
3:00PM	36	81	3	0	120	0	12	118	66	0	196	0	3	1	6	0	10	0	41	3	46	0	90	0	416
3:15PM	34	82	2	0	118	0	7	98	73	0	178	0	1	2	7	0	10	0	58	0	36	0	94	0	400
3:30PM	40	95	2	0	137	0	10	127	116	0	253	0	5	1	4	0	10	0	56	2	40	0	98	0	498
3:45PM	52	110	2	0	164	0	4	120	119	0	243	0	4	2	5	0	11	0	65	3	50	0	118	0	536
Hourly Total	162	368	9	0	539	0	33	463	374	0	870	0	13	6	22	0	41	0	220	8	172	0	400	0	1850
4:00PM	45	105	6	0	156	0	7	141	110	0	258	0	1	0	12	0	13	0	69	0	46	0	115	0	542
4:15PM	60	89	1	0	150	0	8	132	146	1	287	0	1	1	0	0	2	0	71	1	40	0	112	0	551
4:30PM	44	101	5	0	150	0	8	163	150	0	321	0	4	1	8	0	13	0	46	3	39	0	88	0	572
4:45PM	66	97	6	0	169	0	12	162	137	0	311	0	3	2	4	0	9	0	64	2	35	0	101	0	590
Hourly Total	215	392	18	0	625	0	35	598	543	1	1177	0	9	4	24	0	37	0	250	6	160	0	416	0	2255
5:00PM	64	102	7	0	173	0	5	118	141	0	264	0	2	4	7	0	13	0	69	3	42	0	114	0	564
5:15PM	60	107	7	0	174	0	18	157	132	0	307	0	0	5	11	0	16	0	65	7	43	0	115	0	612
5:30PM	56	106	8	0	170	0	15	155	158	0	328	0	1	3	6	0	10	0	57	1	42	0	100	0	608
5:45PM	30	91	7	0	128	0	13	161	111	0	285	0	2	1	10	0	13	0	56	5	40	0	101	0	527
Hourly Total	210	406	29	0	645	0	51	591	542	0	1184	0	5	13	34	0	52	0	247	16	167	0	430	0	2311
Total	1268	3033	90	0	4391	0	178	3084	2345	1	5608	0	63	63	226	0	352	0	2135	50	1160	0	3345	0	13696
% Approach	28.9%	69.1%	2.0%	0%	-	-	3.2%	55.0%	41.8%	0%	-	-	17.9%	17.9%	64.2%	0%	-	-	63.8%	1.5%	34.7%	0%	-	-	-
% Total	9.3%	22.1%	0.7%	0%	32.1%	-	1.3%	22.5%	17.1%	0%	40.9%	-	0.5%	0.5%	1.7%	0%	2.6%	-	15.6%	0.4%	8.5%	0%	24.4%	-	-
Lights	1159	2937	88	0	4184	-	177	2993	2237	1	5408	-	61	63	225	0	349	-	2022	49	1031	0	3102	-	13043
% Lights	91.4%	96.8%	97.8%	0%	95.3%	-	99.4%	97.0%	95.4%	100%	96.4%	-	96.8%	100%	99.6%	0%	99.1%	-	94.7%	98.0%	88.9%	0%	92.7%	-	95.2%
Articulated Trucks	10	6	0	0	16	-	0	11	4	0	15	-	0	0	0	0	0	-	10	0	13	0	23	-	54
% Articulated Trucks	0.8%	0.2%	0%	0%	0.4%	-	0%	0.4%	0.2%	0%	0.3%	-	0%	0%	0%	0%	0%	-	0.5%	0%	1.1%	0%	0.7%	-	0.4%
Buses and Single-Unit Trucks	98	90	2	0	190	-	1	79	103	0	183	-	2	0	1	0	3	-	103	1	116	0	220	-	596
% Buses and Single-Unit Trucks	7.7%	3.0%	2.2%	0%	4.3%	-	0.6%	2.6%	4.4%	0%	3.3%	-	3.2%	0%	0.4%	0%	0.9%	-	4.8%	2.0%	10.0%	0%	6.6%	-	4.4%
Bicycles on Road	1	0	0	0	1	-	0	1	1	0	2	-	0	0	0	0	0	-	0	0	0	0	0	-	3
% Bicycles on Road	0.1%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Dublin Road & Trabue Road - TMC

Tue Apr 5, 2022

Full Length (7 AM-11 AM, 2 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 945910, Location: 39.995163, -83.084968

Provided by: Carpenter Marty (CM)

Transportation Inc.

6612 Singletree Drive,
Columbus, OH, 43229, US

[N] Dublin Road

Total: 7021

In: 3345

Out: 3676

1160

50

2135

[W] Trabue Road

Total: 8698

Out: 4307

In: 4391

1268

3033

90

2345

3084

178

In: 5608

Out: 5395

Total: 11003

[E] Trabue Road

Out: 318

In: 352

Total: 670

[S] Marblevista Blvd

63

63

226

Dublin Road & Trabue Road - TMC

Tue Apr 5, 2022

AM Peak (7:30 AM - 8:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 945910, Location: 39.995163, -83.084968

Provided by: Carpenter Marty (CM)

Transportation Inc.

6612 Singletree Drive,

Columbus, OH, 43229, US

Leg Direction	Trabue Road Eastbound						Trabue Road Westbound						Marblevista Blvd Northbound						Dublin Road Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2022-04-05 7:30AM	40	133	0	0	173	0	2	71	39	0	112	0	2	2	11	0	15	0	124	1	32	0	157	0	457
7:45AM	57	137	0	0	194	0	3	87	53	0	143	0	4	5	14	0	23	0	121	1	49	0	171	0	531
8:00AM	40	100	1	0	141	0	3	72	46	0	121	0	5	4	4	0	13	0	91	1	54	0	146	0	421
8:15AM	35	103	2	0	140	0	1	76	46	0	123	0	1	0	11	0	12	0	101	0	49	0	150	0	425
Total	172	473	3	0	648	0	9	306	184	0	499	0	12	11	40	0	63	0	437	3	184	0	624	0	1834
% Approach	26.5%	73.0%	0.5%	0%	-	-	1.8%	61.3%	36.9%	0%	-	-	19.0%	17.5%	63.5%	0%	-	-	70.0%	0.5%	29.5%	0%	-	-	-
% Total	9.4%	25.8%	0.2%	0%	35.3%	-	0.5%	16.7%	10.0%	0%	27.2%	-	0.7%	0.6%	2.2%	0%	3.4%	-	23.8%	0.2%	10.0%	0%	34.0%	-	-
PHF	0.754	0.863	0.375	-	0.835	-	0.750	0.879	0.868	-	0.872	-	0.600	0.550	0.714	-	0.685	-	0.881	0.750	0.852	-	0.912	-	0.863
Lights	150	446	3	0	599	-	9	300	164	0	473	-	12	11	40	0	63	-	413	2	153	0	568	-	1703
% Lights	87.2%	94.3%	100%	0%	92.4%	-	100%	98.0%	89.1%	0%	94.8%	-	100%	100%	100%	0%	100%	-	94.5%	66.7%	83.2%	0%	91.0%	-	92.9%
Articulated Trucks	2	3	0	0	5	-	0	0	0	0	0	-	0	0	0	0	0	-	1	0	2	0	3	-	8
% Articulated Trucks	1.2%	0.6%	0%	0%	0.8%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.2%	0%	1.1%	0%	0.5%	-	0.4%
Buses and Single-Unit Trucks	20	24	0	0	44	-	0	6	20	0	26	-	0	0	0	0	0	-	23	1	29	0	53	-	123
% Buses and Single-Unit Trucks	11.6%	5.1%	0%	0%	6.8%	-	0%	2.0%	10.9%	0%	5.2%	-	0%	0%	0%	0%	0%	-	5.3%	33.3%	15.8%	0%	8.5%	-	6.7%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Dublin Road & Trabue Road - TMC

Tue Apr 5, 2022

AM Peak (7:30 AM - 8:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 945910, Location: 39.995163, -83.084968

Provided by: Carpenter Marty (CM)

Transportation Inc.

6612 Singletree Drive,

Columbus, OH, 43229, US

[N] Dublin Road

Total: 991

In: 624

Out: 367

184

3

437

[W] Trabue Road

Total: 1150

In: 648

Out: 502

172

473

3

184

In: 499

Total: 1449

[E] Trabue Road

Out: 950

Out: 15

In: 63

Total: 78

[S] Marblevista Blvd

12

11

40

Dublin Road & Trabue Road - TMC

Tue Apr 5, 2022

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 945910, Location: 39.995163, -83.084968

Provided by: Carpenter Marty (CM)

Transportation Inc.

6612 Singletree Drive,

Columbus, OH, 43229, US

Leg Direction	Trabue Road Eastbound						Trabue Road Westbound						Marblevista Blvd Northbound						Dublin Road Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2022-04-05 4:45PM	66	97	6	0	169	0	12	162	137	0	311	0	3	2	4	0	9	0	64	2	35	0	101	0	590
5:00PM	64	102	7	0	173	0	5	118	141	0	264	0	2	4	7	0	13	0	69	3	42	0	114	0	564
5:15PM	60	107	7	0	174	0	18	157	132	0	307	0	0	5	11	0	16	0	65	7	43	0	115	0	612
5:30PM	56	106	8	0	170	0	15	155	158	0	328	0	1	3	6	0	10	0	57	1	42	0	100	0	608
Total	246	412	28	0	686	0	50	592	568	0	1210	0	6	14	28	0	48	0	255	13	162	0	430	0	2374
% Approach	35.9%	60.1%	4.1%	0%	-	-	4.1%	48.9%	46.9%	0%	-	-	12.5%	29.2%	58.3%	0%	-	-	59.3%	3.0%	37.7%	0%	-	-	-
% Total	10.4%	17.4%	1.2%	0%	28.9%	-	2.1%	24.9%	23.9%	0%	51.0%	-	0.3%	0.6%	1.2%	0%	2.0%	-	10.7%	0.5%	6.8%	0%	18.1%	-	-
PHF	0.928	0.963	0.875	-	0.990	-	0.694	0.914	0.897	-	0.921	-	0.500	0.700	0.636	-	0.750	-	0.924	0.464	0.942	-	0.935	-	0.972
Lights	244	410	28	0	682	-	50	579	565	0	1194	-	6	14	28	0	48	-	253	13	161	0	427	-	2351
% Lights	99.2%	99.5%	100%	0%	99.4%	-	100%	97.8%	99.5%	0%	98.7%	-	100%	100%	100%	0%	100%	-	99.2%	100%	99.4%	0%	99.3%	-	99.0%
Articulated Trucks	0	0	0	0	0	-	0	2	0	0	2	-	0	0	0	0	0	-	0	0	0	0	0	-	2
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0.3%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.1%
Buses and Single-Unit Trucks	1	2	0	0	3	-	0	11	2	0	13	-	0	0	0	0	0	-	2	0	1	0	3	-	19
% Buses and Single-Unit Trucks	0.4%	0.5%	0%	0%	0.4%	-	0%	1.9%	0.4%	0%	1.1%	-	0%	0%	0%	0%	0%	-	0.8%	0%	0.6%	0%	0.7%	-	0.8%
Bicycles on Road	1	0	0	0	1	-	0	0	1	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	2
% Bicycles on Road	0.4%	0%	0%	0%	0.1%	-	0%	0%	0.2%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.1%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Dublin Road & Trabue Road - TMC

Tue Apr 5, 2022

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 945910, Location: 39.995163, -83.084968

Provided by: Carpenter Marty (CM)

Transportation Inc.

6612 Singletree Drive,

Columbus, OH, 43229, US

[N] Dublin Road

Total: 1258

In: 430 Out: 828

162
13
255

[W] Trabue Road

Total: 1446
In: 686 Out: 760

246
412
28

568

Out: 695 In: 1210
Total: 1905

[E] Trabue Road

Out: 91 In: 48
Total: 139

[S] Marblevista Blvd

6
14
28

Hague Avenue/Mapleway Drive & Trabue Road - TMC

Tue Apr 5, 2022

Full Length (7 AM-11 AM, 2 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 938071, Location: 39.992561, -83.092829

Provided by: Carpenter Marty (CM)

Transportation Inc.

6612 Singletree Drive,

Columbus, OH, 43229, US

Leg Direction	Trabue Road Eastbound						Trabue Road Westbound						Hague Avenue Northbound						Mapleway Drive Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2022-04-05 7:00AM	0	86	17	0	103	0	23	41	0	0	64	0	22	0	43	0	65	0	0	0	0	0	0	0	232
7:15AM	1	87	41	0	129	0	26	53	2	0	81	0	29	0	46	0	75	0	0	0	1	0	1	0	286
7:30AM	0	113	41	0	154	0	31	63	0	0	94	0	43	0	46	0	89	0	0	2	0	0	2	0	339
7:45AM	1	97	22	0	120	0	24	94	1	0	119	0	40	0	72	0	112	0	2	0	2	0	4	0	355
Hourly Total	2	383	121	0	506	0	104	251	3	0	358	0	134	0	207	0	341	0	2	2	3	0	7	0	1212
8:00AM	2	93	13	0	108	0	28	61	0	0	89	0	15	0	47	0	62	0	0	0	0	0	0	0	259
8:15AM	0	90	15	0	105	0	22	54	0	0	76	0	13	0	42	0	55	0	0	0	0	0	0	0	236
8:30AM	2	99	21	0	122	0	25	49	0	0	74	0	18	0	27	0	45	0	2	0	1	0	3	0	244
8:45AM	1	90	22	0	113	1	29	65	1	0	95	0	23	2	39	0	64	0	1	0	2	0	3	1	275
Hourly Total	5	372	71	0	448	1	104	229	1	0	334	0	69	2	155	0	226	0	3	0	3	0	6	1	1014
9:00AM	0	71	12	0	83	0	14	57	1	0	72	0	7	0	40	0	47	0	0	1	3	0	4	0	206
9:15AM	3	69	19	0	91	0	23	65	0	0	88	0	17	0	28	0	45	0	0	0	0	0	0	0	224
9:30AM	1	74	17	0	92	0	29	52	2	0	83	0	25	2	33	0	60	0	2	2	3	0	7	0	242
9:45AM	3	84	15	0	102	0	18	53	0	0	71	0	16	0	26	0	42	0	0	1	0	0	1	0	216
Hourly Total	7	298	63	0	368	0	84	227	3	0	314	0	65	2	127	0	194	0	2	4	6	0	12	0	888
10:00AM	1	55	16	0	72	0	18	53	1	0	72	0	11	1	35	0	47	0	2	0	3	0	5	0	196
10:15AM	0	58	27	0	85	0	17	51	3	0	71	0	16	0	23	0	39	0	0	0	1	0	1	0	196
10:30AM	1	55	10	0	66	0	21	59	0	0	80	0	12	0	23	0	35	0	1	0	0	0	1	0	182
10:45AM	1	60	18	0	79	0	18	69	1	0	88	0	19	0	32	0	51	0	0	2	1	0	3	1	221
Hourly Total	3	228	71	0	302	0	74	232	5	0	311	0	58	1	113	0	172	0	3	2	5	0	10	1	795
2:00PM	2	76	22	0	100	0	31	87	2	0	120	0	11	0	18	0	29	0	3	0	2	0	5	0	254
2:15PM	0	84	19	0	103	0	33	92	0	0	125	0	22	1	30	0	53	1	0	2	0	0	2	0	283
2:30PM	3	62	29	0	94	0	46	96	3	0	145	0	21	1	29	0	51	1	0	1	2	0	3	0	293
2:45PM	2	75	34	0	111	1	43	87	0	0	130	0	20	0	39	0	59	0	0	0	2	0	2	1	302
Hourly Total	7	297	104	0	408	1	153	362	5	0	520	0	74	2	116	0	192	2	3	3	6	0	12	1	1132
3:00PM	0	64	27	0	91	0	40	95	1	0	136	0	38	2	37	0	77	0	1	1	0	0	2	0	306
3:15PM	0	74	23	0	97	0	33	92	2	0	127	0	46	2	44	0	92	0	2	1	4	0	7	0	323
3:30PM	1	91	38	0	130	0	47	110	1	0	158	0	25	1	31	0	57	0	0	2	1	0	3	0	348
3:45PM	1	81	30	0	112	0	45	124	2	0	171	0	34	0	54	0	88	0	1	1	0	0	2	0	373
Hourly Total	2	310	118	0	430	0	165	421	6	0	592	0	143	5	166	0	314	0	4	5	5	0	14	0	1350
4:00PM	1	83	19	0	103	0	47	137	3	0	187	0	29	0	37	0	66	0	0	3	2	0	5	0	361
4:15PM	0	71	43	0	114	0	59	118	4	0	181	0	27	0	41	0	68	0	1	1	1	0	3	0	366
4:30PM	0	86	51	0	137	0	49	152	1	0	202	0	20	0	26	0	46	0	2	4	0	0	6	0	391
4:45PM	4	102	32	0	138	0	52	160	0	0	212	0	33	0	36	0	69	0	1	1	3	0	5	0	424
Hourly Total	5	342	145	0	492	0	207	567	8	0	782	0	109	0	140	0	249	0	4	9	6	0	19	0	1542
5:00PM	4	98	36	0	138	0	35	131	1	0	167	0	30	1	46	0	77	0	1	2	1	0	4	0	386
5:15PM	0	96	36	0	132	0	61	142	3	0	206	0	12	2	34	0	48	0	2	2	1	0	5	0	391
5:30PM	0	103	30	0	133	0	53	133	1	0	187	0	25	1	34	1	61	0	3	1	3	0	7	0	388
5:45PM	1	81	27	0	109	0	42	143	3	0	188	0	10	1	18	0	29	0	1	2	4	0	7	0	333
Hourly Total	5	378	129	0	512	0	191	549	8	0	748	0	77	5	132	1	215	0	7	7	9	0	23	0	1498
Total	36	2608	822	0	3466	2	1082	2838	39	0	3959	0	729	17	1156	1	1903	2	28	32	43	0	103	3	9431
% Approach	1.0%	75.2%	23.7%	0%	-	-	27.3%	71.7%	1.0%	0%	-	-	38.3%	0.9%	60.7%	0.1%	-	-	27.2%	31.1%	41.7%	0%	-	-	-
% Total	0.4%	27.7%	8.7%	0%	36.8%	-	11.5%	30.1%	0.4%	0%	42.0%	-	7.7%	0.2%	12.3%	0%	20.2%	-	0.3%	0.3%	0.5%	0%	1.1%	-	-
Lights	35	2493	786	0	3314	-	1050	2711	39	0	3800	-	702	17	1115	1	1835	-	28	32	43	0	103	-	9052
% Lights	97.2%	95.6%	95.6%	0%	95.6%	-	97.0%	95.5%	100%	0%	96.0%	-	96.3%	100%	96.5%	100%	96.4%	-	100%	100%	100%	0%	100%	-	96.0%
Articulated Trucks	0	8	5	0	13	-	3	13	0	0	16	-	2	0	3	0	5	-	0	0	0	0	0	-	34
% Articulated Trucks	0%	0.3%	0.6%	0%	0.4%	-	0.3%	0.5%	0%	0%	0.4%	-	0.3%	0%	0.3%	0%	0.3%	-	0%	0%	0%	0%	0%	-	0.4%
Buses and Single-Unit Trucks	1	107	31	0	139	-	29	113	0	0	142	-	25	0	38	0	63	-	0	0	0	0	0	-	344
% Buses and Single-Unit Trucks	2.8%	4.1%	3.8%	0%	4.0%	-	2.7%	4.0%	0%	0%	3.6%	-	3.4%	0%	3.3%	0%	3.3%	-	0%	0%	0%	0%	0%	-	3.6%
Bicycles on Road	0	0	0	0	0	-	0	1	0	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	1
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	3	-
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	100%
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	-	0%

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Hague Avenue/Mapleway Drive & Trabue Road - TMC

Tue Apr 5, 2022

Full Length (7 AM-11 AM, 2 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 938071, Location: 39.992561, -83.092829

Provided by: Carpenter Marty (CM)

Transportation Inc.

6612 Singletree Drive,
Columbus, OH, 43229, US

[N] Mapleway Drive

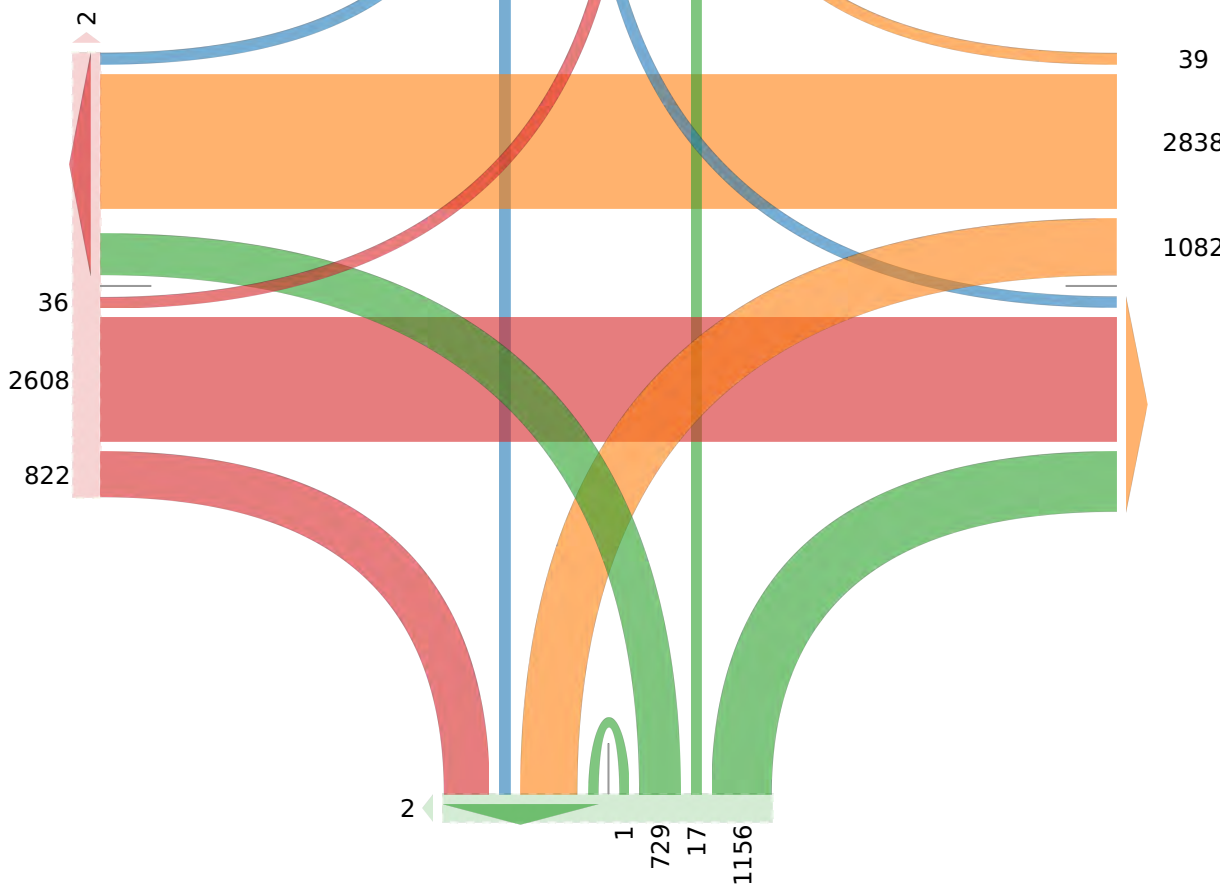
Total: 195

In: 103 Out: 92

43 32 28 3

[W] Trabue Road

Total: 7076
In: 3466 Out: 3610



Out: 1937 In: 1903

Total: 3840

[S] Hague Avenue

Hague Avenue/Mapleway Drive & Trabue Road - TMC

Tue Apr 5, 2022

AM Peak (7:15 AM - 8:15 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 938071, Location: 39.992561, -83.092829

Provided by: Carpenter Marty (CM)

Transportation Inc.

6612 Singletree Drive,
Columbus, OH, 43229, US

Leg Direction	Trabue Road Eastbound						Trabue Road Westbound						Hague Avenue Northbound						Mapleway Drive Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2022-04-05 7:15AM	1	87	41	0	129	0	26	53	2	0	81	0	29	0	46	0	75	0	0	0	1	0	1	0	286
7:30AM	0	113	41	0	154	0	31	63	0	0	94	0	43	0	46	0	89	0	0	2	0	0	2	0	339
7:45AM	1	97	22	0	120	0	24	94	1	0	119	0	40	0	72	0	112	0	2	0	2	0	4	0	355
8:00AM	2	93	13	0	108	0	28	61	0	0	89	0	15	0	47	0	62	0	0	0	0	0	0	0	259
Total	4	390	117	0	511	0	109	271	3	0	383	0	127	0	211	0	338	0	2	2	3	0	7	0	1239
% Approach	0.8%	76.3%	22.9%	0%	-	-	28.5%	70.8%	0.8%	0%	-	-	37.6%	0%	62.4%	0%	-	-	28.6%	28.6%	42.9%	0%	-	-	-
% Total	0.3%	31.5%	9.4%	0%	41.2%	-	8.8%	21.9%	0.2%	0%	30.9%	-	10.3%	0%	17.0%	0%	27.3%	-	0.2%	0.2%	0.2%	0%	0.6%	-	-
PHF	0.500	0.863	0.713	-	0.830	-	0.879	0.721	0.375	-	0.805	-	0.738	-	0.733	-	0.754	-	0.250	0.250	0.375	-	0.438	-	0.873
Lights	4	368	113	0	485	-	107	260	3	0	370	-	124	0	201	0	325	-	2	2	3	0	7	-	1187
% Lights	100%	94.4%	96.6%	0%	94.9%	-	98.2%	95.9%	100%	0%	96.6%	-	97.6%	0%	95.3%	0%	96.2%	-	100%	100%	100%	0%	100%	-	95.8%
Articulated Trucks	0	3	0	0	3	-	0	0	0	0	0	-	0	0	1	0	1	-	0	0	0	0	0	-	4
% Articulated Trucks	0%	0.8%	0%	0%	0.6%	-	0%	0%	0%	0%	0%	-	0%	0%	0.5%	0%	0.3%	-	0%	0%	0%	0%	0%	-	0.3%
Buses and Single-Unit Trucks	0	19	4	0	23	-	2	11	0	0	13	-	3	0	9	0	12	-	0	0	0	0	0	-	48
% Buses and Single-Unit Trucks	0%	4.9%	3.4%	0%	4.5%	-	1.8%	4.1%	0%	0%	3.4%	-	2.4%	0%	4.3%	0%	3.6%	-	0%	0%	0%	0%	0%	-	3.9%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Hague Avenue/Mapleway Drive & Trabue Road - TMC

Tue Apr 5, 2022

AM Peak (7:15 AM - 8:15 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 938071, Location: 39.992561, -83.092829

Provided by: Carpenter Marty (CM)

Transportation Inc.

6612 Singletree Drive,
Columbus, OH, 43229, US

[N] Mapleway Drive

Total: 14

In: 7 Out: 7

32 2

[W] Trabue Road

Total: 912

In: 511

Out: 401

4
390
117

3
271
109

Out: 603

In: 383

Total: 986

[E] Trabue Road

Out: 228 In: 338

Total: 566

[S] Hague Avenue

Hague Avenue/Mapleway Drive & Trabue Road - TMC

Tue Apr 5, 2022

PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 938071, Location: 39.992561, -83.092829

Provided by: Carpenter Marty (CM)

Transportation Inc.

6612 Singletree Drive,
Columbus, OH, 43229, US

Leg Direction	Trabue Road Eastbound						Trabue Road Westbound						Hague Avenue Northbound						Mapleway Drive Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2022-04-05 4:30PM	0	86	51	0	137	0	49	152	1	0	202	0	20	0	26	0	46	0	2	4	0	0	6	0	391
4:45PM	4	102	32	0	138	0	52	160	0	0	212	0	33	0	36	0	69	0	1	1	3	0	5	0	424
5:00PM	4	98	36	0	138	0	35	131	1	0	167	0	30	1	46	0	77	0	1	2	1	0	4	0	386
5:15PM	0	96	36	0	132	0	61	142	3	0	206	0	12	2	34	0	48	0	2	2	1	0	5	0	391
Total	8	382	155	0	545	0	197	585	5	0	787	0	95	3	142	0	240	0	6	9	5	0	20	0	1592
% Approach	1.5%	70.1%	28.4%	0%	-	-	25.0%	74.3%	0.6%	0%	-	-	39.6%	1.3%	59.2%	0%	-	-	30.0%	45.0%	25.0%	0%	-	-	-
% Total	0.5%	24.0%	9.7%	0%	34.2%	-	12.4%	36.7%	0.3%	0%	49.4%	-	6.0%	0.2%	8.9%	0%	15.1%	-	0.4%	0.6%	0.3%	0%	1.3%	-	-
PHF	0.500	0.936	0.760	-	0.987	-	0.807	0.914	0.417	-	0.928	-	0.720	0.375	0.772	-	0.779	-	0.750	0.563	0.417	-	0.833	-	0.939
Lights	8	378	152	0	538	-	194	569	5	0	768	-	93	3	142	0	238	-	6	9	5	0	20	-	1564
% Lights	100%	99.0%	98.1%	0%	98.7%	-	98.5%	97.3%	100%	0%	97.6%	-	97.9%	100%	100%	0%	99.2%	-	100%	100%	100%	0%	100%	-	98.2%
Articulated Trucks	0	0	0	0	0	-	0	2	0	0	2	-	0	0	0	0	0	-	0	0	0	0	0	-	2
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0.3%	0%	0%	0.3%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.1%
Buses and Single-Unit Trucks	0	4	3	0	7	-	3	14	0	0	17	-	2	0	0	0	2	-	0	0	0	0	0	-	26
% Buses and Single-Unit Trucks	0%	1.0%	1.9%	0%	1.3%	-	1.5%	2.4%	0%	0%	2.2%	-	2.1%	0%	0%	0%	0.8%	-	0%	0%	0%	0%	0%	-	1.6%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Hague Avenue/Mapleway Drive & Trabue Road - TMC

Tue Apr 5, 2022

PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 938071, Location: 39.992561, -83.092829

Provided by: Carpenter Marty (CM)

Transportation Inc.

6612 Singletree Drive,
Columbus, OH, 43229, US

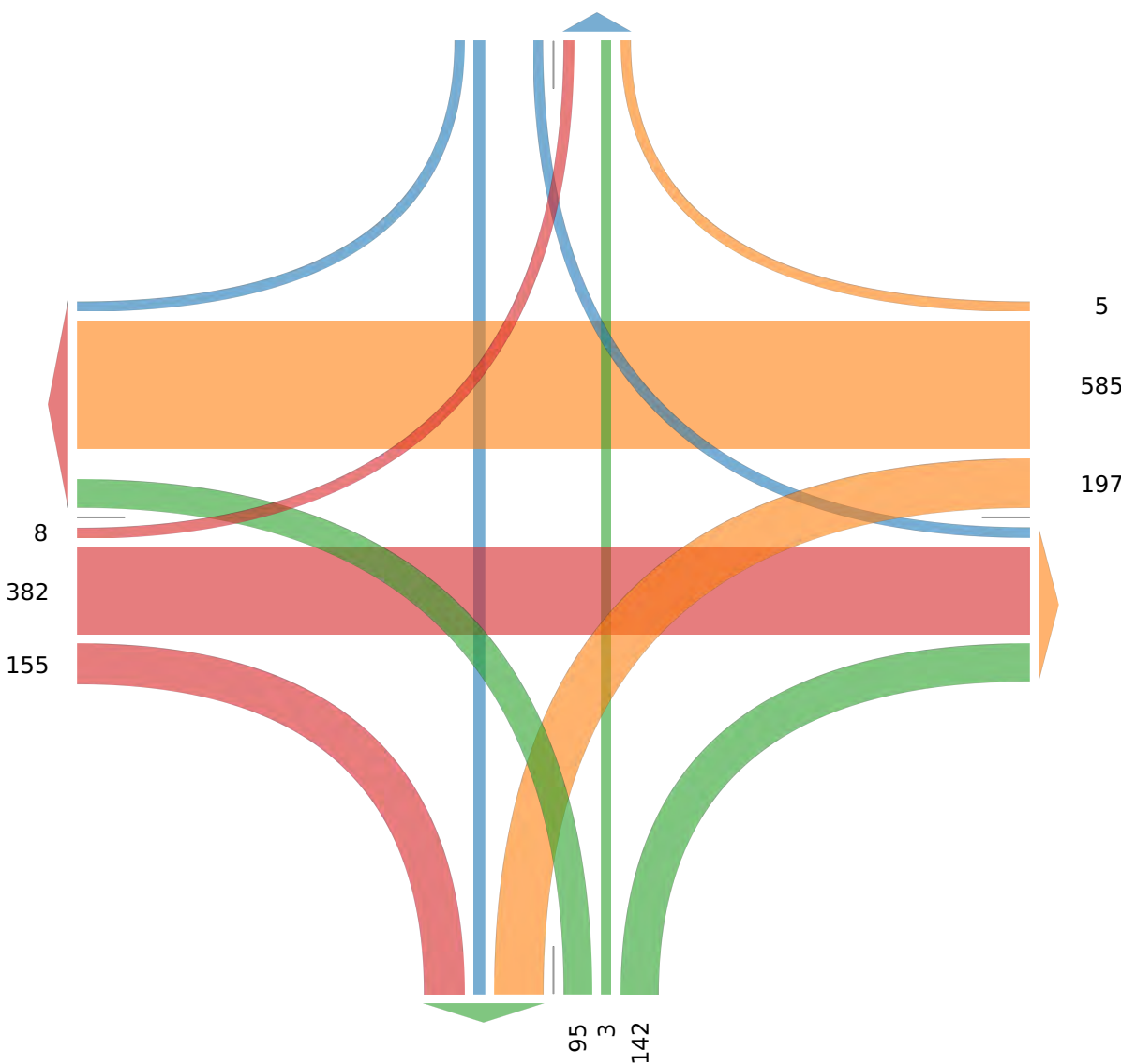
[N] Mapleway Drive

Total: 36

In: 20 Out: 16

5 9 6

[W] Trabue Road
Total: 1230
In: 545 Out: 685



McKinley Avenue & Trabue Road - TMC

Tue Apr 5, 2022

Full Length (7 AM-11 AM, 2 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 946058, Location: 39.994819, -83.085899

Provided by: Carpenter Marty (CM)

Transportation Inc.

6612 Singletree Drive,

Columbus, OH, 43229, US

Leg Direction	Trabue Road Eastbound					Trabue Road Westbound					McKinley Avenue Northbound					
Time	T	R	U	App	Ped*	L	T	U	App	Ped*	L	R	U	App	Ped*	Int
2022-04-05 7:00AM	92	15	0	107	0	31	62	0	93	0	6	29	0	35	1	235
7:15AM	105	18	0	123	0	28	60	0	88	0	14	31	0	45	0	256
7:30AM	134	17	0	151	0	27	75	0	102	0	12	35	0	47	0	300
7:45AM	134	35	0	169	0	38	99	0	137	0	19	60	0	79	0	385
Hourly Total	465	85	0	550	0	124	296	0	420	0	51	155	0	206	1	1176
8:00AM	107	30	0	137	0	50	86	0	136	0	8	41	0	49	0	322
8:15AM	104	19	0	123	0	49	79	0	128	0	11	37	0	48	0	299
8:30AM	73	20	0	93	0	25	70	0	95	0	22	39	0	61	0	249
8:45AM	116	22	0	138	0	27	60	0	87	0	11	33	0	44	0	269
Hourly Total	400	91	0	491	0	151	295	0	446	0	52	150	0	202	0	1139
9:00AM	97	20	0	117	0	38	63	0	101	0	10	30	0	40	0	258
9:15AM	89	13	0	102	0	22	68	0	90	0	17	35	0	52	0	244
9:30AM	96	13	0	109	0	24	64	0	88	0	19	29	0	48	0	245
9:45AM	81	18	0	99	0	31	59	0	90	0	7	30	0	37	0	226
Hourly Total	363	64	0	427	0	115	254	0	369	0	53	124	0	177	0	973
10:00AM	79	11	0	90	0	15	52	0	67	0	6	27	0	33	0	190
10:15AM	71	12	0	83	0	19	56	0	75	0	12	25	0	37	0	195
10:30AM	65	10	0	75	0	22	66	0	88	0	18	33	0	51	0	214
10:45AM	75	21	0	96	0	13	76	0	89	0	11	29	0	40	0	225
Hourly Total	290	54	0	344	0	69	250	0	319	0	47	114	0	161	0	824
2:00PM	83	18	0	101	0	31	87	0	118	0	24	35	0	59	0	278
2:15PM	103	22	0	125	0	41	116	0	157	0	20	42	0	62	0	344
2:30PM	82	21	0	103	0	27	115	0	142	0	20	30	0	50	0	295
2:45PM	92	14	0	106	0	25	121	0	146	0	16	38	0	54	0	306
Hourly Total	360	75	0	435	0	124	439	0	563	0	80	145	0	225	0	1223
3:00PM	94	20	0	114	0	42	115	0	157	0	17	27	0	44	0	315
3:15PM	93	18	0	111	0	30	116	0	146	0	16	26	0	42	0	299
3:30PM	97	21	0	118	0	32	133	0	165	0	21	35	0	56	0	339
3:45PM	114	17	0	131	1	32	146	0	178	0	25	48	0	73	0	382
Hourly Total	398	76	0	474	1	136	510	0	646	0	79	136	0	215	0	1335
4:00PM	104	22	0	126	0	40	138	0	178	0	38	54	0	92	0	396
4:15PM	91	20	0	111	0	35	150	0	185	0	23	52	0	75	0	371
4:30PM	92	14	0	106	0	30	170	0	200	0	30	60	0	90	0	396
4:45PM	115	28	0	143	0	42	164	0	206	0	44	52	0	96	0	445
Hourly Total	402	84	0	486	0	147	622	0	769	0	135	218	0	353	0	1608
5:00PM	116	20	0	136	0	38	122	0	160	0	39	56	0	95	0	391
5:15PM	115	24	0	139	0	39	154	0	193	0	35	70	0	105	0	437
5:30PM	101	26	0	127	0	41	164	0	205	0	29	64	0	93	0	425
5:45PM	86	18	0	104	0	52	163	0	215	0	21	42	0	63	0	382
Hourly Total	418	88	0	506	0	170	603	0	773	0	124	232	0	356	0	1635
Total	3096	617	0	3713	1	1036	3269	0	4305	0	621	1274	0	1895	1	9913
% Approach	83.4%	16.6%	0%	-	-	24.1%	75.9%	0%	-	-	32.8%	67.2%	0%	-	-	-
% Total	31.2%	6.2%	0%	37.5%	-	10.5%	33.0%	0%	43.4%	-	6.3%	12.9%	0%	19.1%	-	-
Lights	2983	577	0	3560	-	935	3153	0	4088	-	579	1183	0	1762	-	9410
% Lights	96.4%	93.5%	0%	95.9%	-	90.3%	96.5%	0%	95.0%	-	93.2%	92.9%	0%	93.0%	-	94.9%
Articulated Trucks	6	6	0	12	-	9	13	0	22	-	4	9	0	13	-	47
% Articulated Trucks	0.2%	1.0%	0%	0.3%	-	0.9%	0.4%	0%	0.5%	-	0.6%	0.7%	0%	0.7%	-	0.5%
Buses and Single-Unit Trucks	107	34	0	141	-	92	101	0	193	-	38	82	0	120	-	454
% Buses and Single-Unit Trucks	3.5%	5.5%	0%	3.8%	-	8.9%	3.1%	0%	4.5%	-	6.1%	6.4%	0%	6.3%	-	4.6%
Bicycles on Road	0	0	0	0	-	0	2	0	2	-	0	0	0	0	-	2
% Bicycles on Road	0%	0%	0%	0%	-	0%	0.1%	0%	0%	-	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-
% Pedestrians	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	100%	-

Leg Direction	Trabue Road Eastbound					Trabue Road Westbound					McKinley Avenue Northbound					
Time	T	R	U	App	Ped*	L	T	U	App	Ped*	L	R	U	App	Ped*	Int
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

McKinley Avenue & Trabue Road - TMC

Tue Apr 5, 2022

Full Length (7 AM-11 AM, 2 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

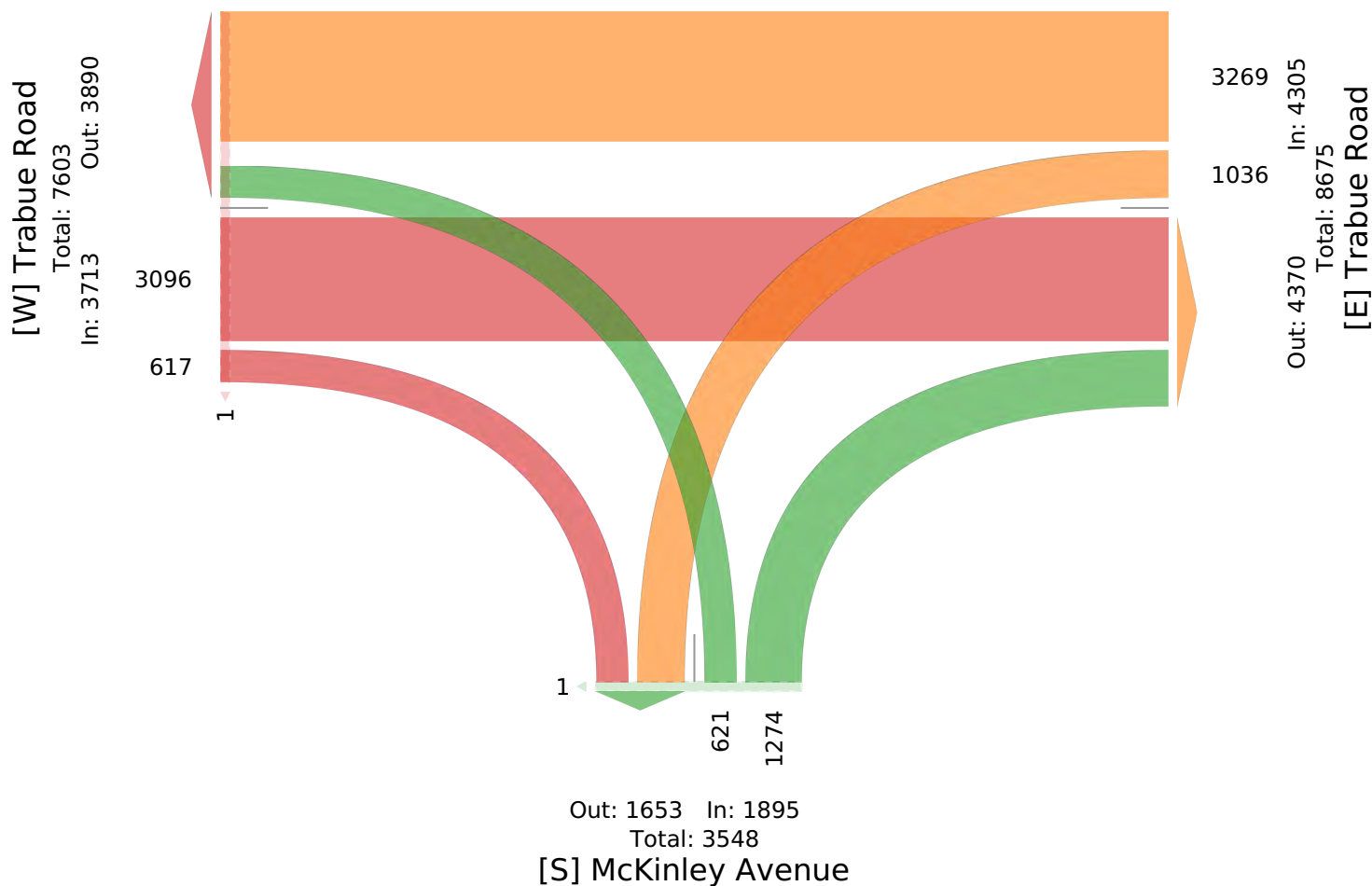
All Movements

ID: 946058, Location: 39.994819, -83.085899

Provided by: Carpenter Marty (CM)

Transportation Inc.

6612 Singletree Drive,
Columbus, OH, 43229, US



McKinley Avenue & Trabue Road - TMC

Tue Apr 5, 2022

AM Peak (7:30 AM - 8:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 946058, Location: 39.994819, -83.085899

Provided by: Carpenter Marty (CM)

Transportation Inc.

6612 Singletree Drive,

Columbus, OH, 43229, US

Leg Direction	Trabue Road Eastbound					Trabue Road Westbound					McKinley Avenue Northbound					
Time	T	R	U	App	Ped*	L	T	U	App	Ped*	L	R	U	App	Ped*	Int
2022-04-05 7:30AM	134	17	0	151	0	27	75	0	102	0	12	35	0	47	0	300
7:45AM	134	35	0	169	0	38	99	0	137	0	19	60	0	79	0	385
8:00AM	107	30	0	137	0	50	86	0	136	0	8	41	0	49	0	322
8:15AM	104	19	0	123	0	49	79	0	128	0	11	37	0	48	0	299
Total	479	101	0	580	0	164	339	0	503	0	50	173	0	223	0	1306
% Approach	82.6%	17.4%	0%	-	-	32.6%	67.4%	0%	-	-	22.4%	77.6%	0%	-	-	-
% Total	36.7%	7.7%	0%	44.4%	-	12.6%	26.0%	0%	38.5%	-	3.8%	13.2%	0%	17.1%	-	-
PHF	0.894	0.721	-	0.858	-	0.820	0.856	-	0.918	-	0.658	0.721	-	0.706	-	0.848
Lights	449	93	0	542	-	139	326	0	465	-	45	155	0	200	-	1207
% Lights	93.7%	92.1%	0%	93.4%	-	84.8%	96.2%	0%	92.4%	-	90.0%	89.6%	0%	89.7%	-	92.4%
Articulated Trucks	2	2	0	4	-	2	0	0	2	-	0	1	0	1	-	7
% Articulated Trucks	0.4%	2.0%	0%	0.7%	-	1.2%	0%	0%	0.4%	-	0%	0.6%	0%	0.4%	-	0.5%
Buses and Single-Unit Trucks	28	6	0	34	-	23	13	0	36	-	5	17	0	22	-	92
% Buses and Single-Unit Trucks	5.8%	5.9%	0%	5.9%	-	14.0%	3.8%	0%	7.2%	-	10.0%	9.8%	0%	9.9%	-	7.0%
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

McKinley Avenue & Trabue Road - TMC

Tue Apr 5, 2022

AM Peak (7:30 AM - 8:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

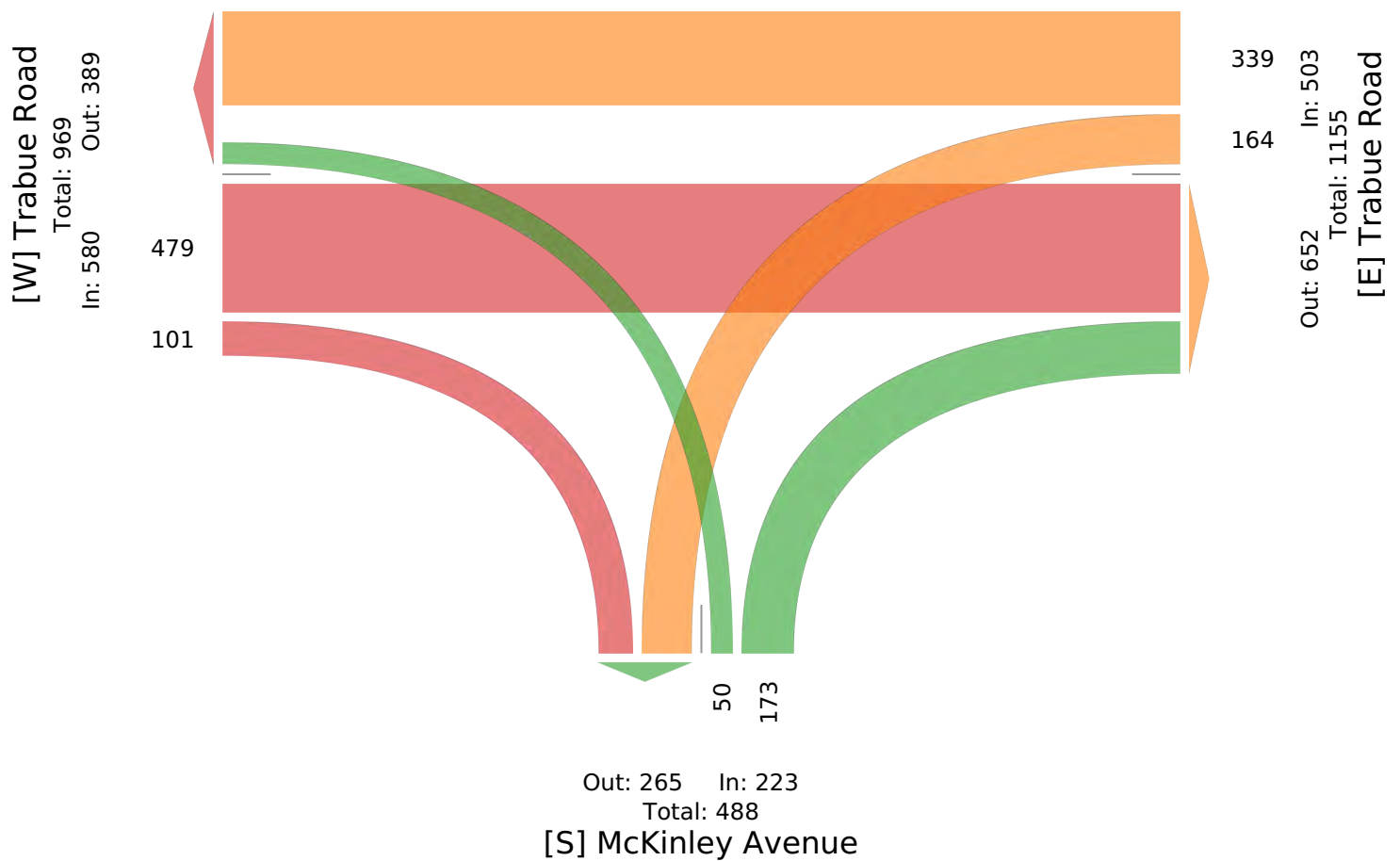
All Movements

ID: 946058, Location: 39.994819, -83.085899

Provided by: Carpenter Marty (CM)

Transportation Inc.

6612 Singletree Drive,
Columbus, OH, 43229, US



McKinley Avenue & Trabue Road - TMC

Tue Apr 5, 2022

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 946058, Location: 39.994819, -83.085899

Provided by: Carpenter Marty (CM)

Transportation Inc.

6612 Singletree Drive,

Columbus, OH, 43229, US

Leg Direction	Trabue Road Eastbound					Trabue Road Westbound					McKinley Avenue Northbound					
Time	T	R	U	App	Ped*	L	T	U	App	Ped*	L	R	U	App	Ped*	Int
2022-04-05 4:45PM	115	28	0	143	0	42	164	0	206	0	44	52	0	96	0	445
5:00PM	116	20	0	136	0	38	122	0	160	0	39	56	0	95	0	391
5:15PM	115	24	0	139	0	39	154	0	193	0	35	70	0	105	0	437
5:30PM	101	26	0	127	0	41	164	0	205	0	29	64	0	93	0	425
Total	447	98	0	545	0	160	604	0	764	0	147	242	0	389	0	1698
% Approach	82.0%	18.0%	0%	-	-	20.9%	79.1%	0%	-	-	37.8%	62.2%	0%	-	-	-
% Total	26.3%	5.8%	0%	32.1%	-	9.4%	35.6%	0%	45.0%	-	8.7%	14.3%	0%	22.9%	-	-
PHF	0.963	0.875	-	0.953	-	0.952	0.921	-	0.927	-	0.835	0.864	-	0.926	-	0.954
Lights	445	95	0	540	-	159	590	0	749	-	143	240	0	383	-	1672
% Lights	99.6%	96.9%	0%	99.1%	-	99.4%	97.7%	0%	98.0%	-	97.3%	99.2%	0%	98.5%	-	98.5%
Articulated Trucks	0	0	0	0	-	0	2	0	2	-	0	1	0	1	-	3
% Articulated Trucks	0%	0%	0%	0%	-	0%	0.3%	0%	0.3%	-	0%	0.4%	0%	0.3%	-	0.2%
Buses and Single-Unit Trucks	2	3	0	5	-	1	12	0	13	-	4	1	0	5	-	23
% Buses and Single-Unit Trucks	0.4%	3.1%	0%	0.9%	-	0.6%	2.0%	0%	1.7%	-	2.7%	0.4%	0%	1.3%	-	1.4%
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

McKinley Avenue & Trabue Road - TMC

Tue Apr 5, 2022

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

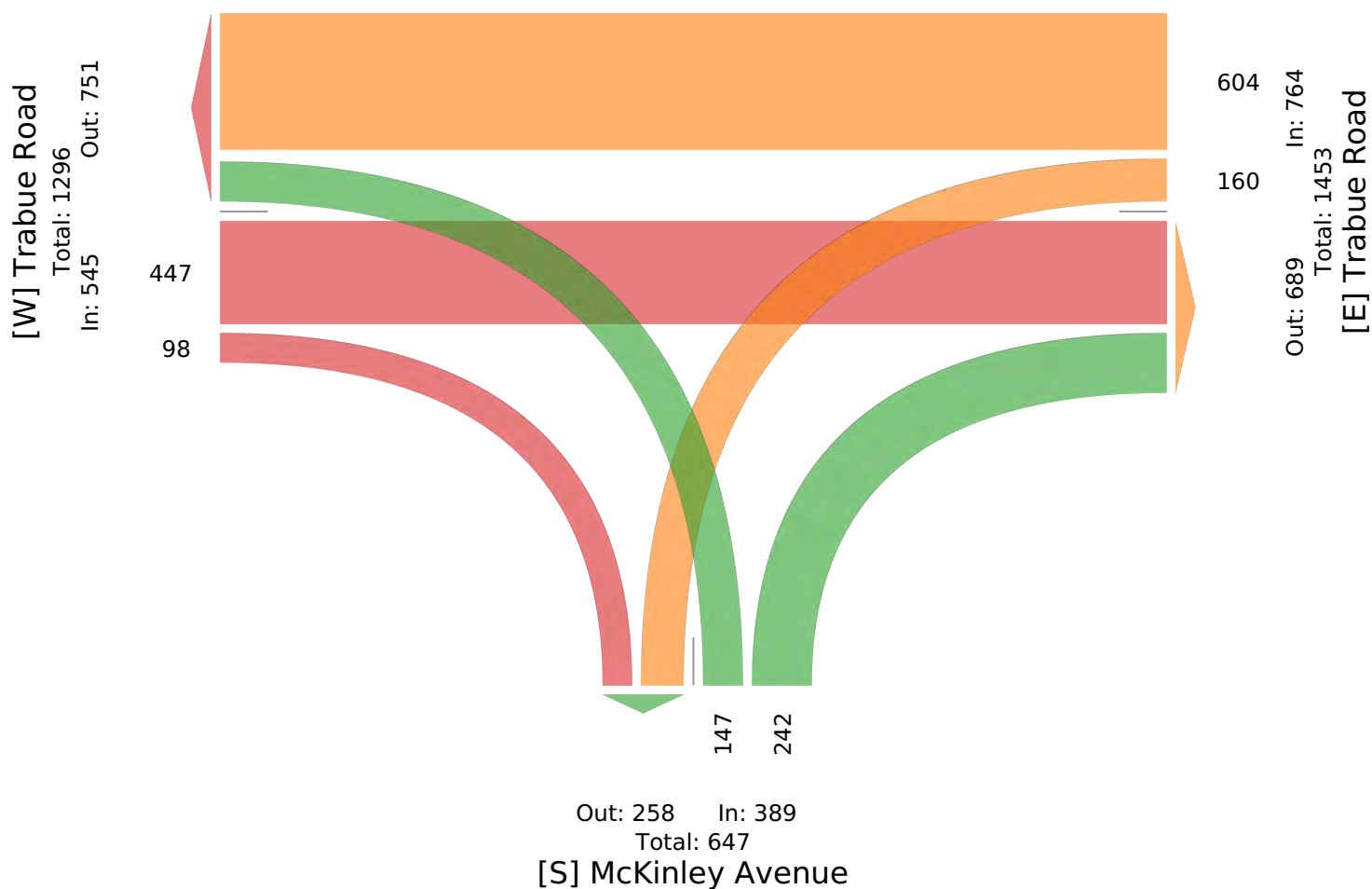
All Movements

ID: 946058, Location: 39.994819, -83.085899

Provided by: Carpenter Marty (CM)

Transportation Inc.

6612 Singletree Drive,
Columbus, OH, 43229, US



W. 5th Ave & McKinley Ave - TMC

Tue Apr 12, 2022

Full Length (7 AM-11 AM, 2 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 946054, Location: 39.98486, -83.074961

Provided by: Carpenter Marty (CM)

Transportation Inc.

6612 Singletree Drive,

Columbus, OH, 43229, US

Leg Direction	W. 5th Avenue Westbound					McKinley Avenue Northbound					McKinley Avenue Southbound					
Time	L	R	U	App	Ped*	T	R	U	App	Ped*	L	T	U	App	Ped*	Int
2022-04-12 7:00AM	27	6	0	33	0	26	43	0	69	0	23	50	0	73	0	175
7:15AM	29	13	1	43	0	19	60	0	79	0	31	41	0	72	0	194
7:30AM	32	15	0	47	0	28	53	0	81	0	37	61	0	98	0	226
7:45AM	35	19	0	54	0	27	63	0	90	0	59	50	0	109	0	253
Hourly Total	123	53	1	177	0	100	219	0	319	0	150	202	0	352	0	848
8:00AM	43	20	0	63	0	17	47	0	64	0	39	63	0	102	0	229
8:15AM	32	27	0	59	0	32	47	0	79	0	39	48	0	87	0	225
8:30AM	23	20	0	43	0	20	35	0	55	0	29	38	0	67	0	165
8:45AM	32	13	0	45	0	18	59	0	77	0	22	36	0	58	0	180
Hourly Total	130	80	0	210	0	87	188	0	275	0	129	185	0	314	0	799
9:00AM	23	14	0	37	0	29	36	0	65	0	26	32	0	58	0	160
9:15AM	14	18	0	32	0	32	38	0	70	0	21	26	0	47	0	149
9:30AM	17	20	0	37	1	21	37	0	58	0	21	27	0	48	0	143
9:45AM	27	16	0	43	0	25	34	0	59	0	19	18	0	37	0	139
Hourly Total	81	68	0	149	1	107	145	0	252	0	87	103	0	190	0	591
10:00AM	36	12	0	48	0	19	31	0	50	0	12	18	0	30	0	128
10:15AM	27	17	0	44	0	10	16	0	26	0	24	28	0	52	0	122
10:30AM	25	16	0	41	0	26	38	0	64	0	17	29	0	46	0	151
10:45AM	25	20	0	45	0	16	39	0	55	0	15	24	0	39	0	139
Hourly Total	113	65	0	178	0	71	124	0	195	0	68	99	0	167	0	540
2:00PM	38	18	0	56	1	25	38	0	63	0	22	34	0	56	0	175
2:15PM	31	25	0	56	0	25	33	0	58	0	16	34	0	50	0	164
2:30PM	50	32	0	82	1	31	26	0	57	0	21	48	0	69	0	208
2:45PM	39	29	0	68	1	37	41	0	78	0	23	40	0	63	0	209
Hourly Total	158	104	0	262	3	118	138	0	256	0	82	156	0	238	0	756
3:00PM	55	29	0	84	0	32	34	0	66	0	19	35	0	54	0	204
3:15PM	39	29	0	68	0	31	42	0	73	0	18	38	0	56	0	197
3:30PM	40	26	0	66	1	49	42	0	91	0	29	39	0	68	0	225
3:45PM	58	29	0	87	0	36	37	0	73	0	25	41	0	66	0	226
Hourly Total	192	113	0	305	1	148	155	0	303	0	91	153	0	244	0	852
4:00PM	54	33	0	87	0	34	33	0	67	0	24	33	0	57	0	211
4:15PM	46	42	0	88	1	49	34	0	83	0	25	38	0	63	0	234
4:30PM	65	37	0	102	1	47	31	0	78	0	25	38	0	63	0	243
4:45PM	57	50	0	107	0	44	40	0	84	0	32	32	0	64	0	255
Hourly Total	222	162	0	384	2	174	138	0	312	0	106	141	0	247	0	943
5:00PM	73	63	0	136	0	47	51	0	98	0	31	39	0	70	0	304
5:15PM	54	59	0	113	0	41	47	0	88	0	34	35	0	69	0	270
5:30PM	58	39	0	97	0	31	32	0	63	0	20	30	0	50	0	210
5:45PM	52	62	0	114	0	23	25	0	48	0	32	36	0	68	0	230
Hourly Total	237	223	0	460	0	142	155	0	297	0	117	140	0	257	0	1014
Total	1256	868	1	2125	7	947	1262	0	2209	0	830	1179	0	2009	0	6343
% Approach	59.1%	40.8%	0%	-	-	42.9%	57.1%	0%	-	-	41.3%	58.7%	0%	-	-	-
% Total	19.8%	13.7%	0%	33.5%	-	14.9%	19.9%	0%	34.8%	-	13.1%	18.6%	0%	31.7%	-	-
Lights	1204	810	1	2015	-	832	1215	0	2047	-	779	1041	0	1820	-	5882
% Lights	95.9%	93.3%	100%	94.8%	-	87.9%	96.3%	0%	92.7%	-	93.9%	88.3%	0%	90.6%	-	92.7%
Articulated Trucks	5	3	0	8	-	34	2	0	36	-	1	36	0	37	-	81
% Articulated Trucks	0.4%	0.3%	0%	0.4%	-	3.6%	0.2%	0%	1.6%	-	0.1%	3.1%	0%	1.8%	-	1.3%
Buses and Single-Unit Trucks	46	52	0	98	-	81	45	0	126	-	49	100	0	149	-	373
% Buses and Single-Unit Trucks	3.7%	6.0%	0%	4.6%	-	8.6%	3.6%	0%	5.7%	-	5.9%	8.5%	0%	7.4%	-	5.9%
Bicycles on Road	1	3	0	4	-	0	0	0	0	-	1	2	0	3	-	7
% Bicycles on Road	0.1%	0.3%	0%	0.2%	-	0%	0%	0%	0%	-	0.1%	0.2%	0%	0.1%	-	0.1%
Pedestrians	-	-	-	-	5	-	-	-	-	0	-	-	-	-	0	-
% Pedestrians	-	-	-	-	71.4%	-	-	-	-	-	-	-	-	-	-	-

Leg Direction	W. 5th Avenue Westbound					McKinley Avenue Northbound					McKinley Avenue Southbound					
Time	L	R	U	App	Ped*	T	R	U	App	Ped*	L	T	U	App	Ped*	Int
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	28.6%	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

W. 5th Ave & McKinley Ave - TMC

Tue Apr 12, 2022

Full Length (7 AM-11 AM, 2 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

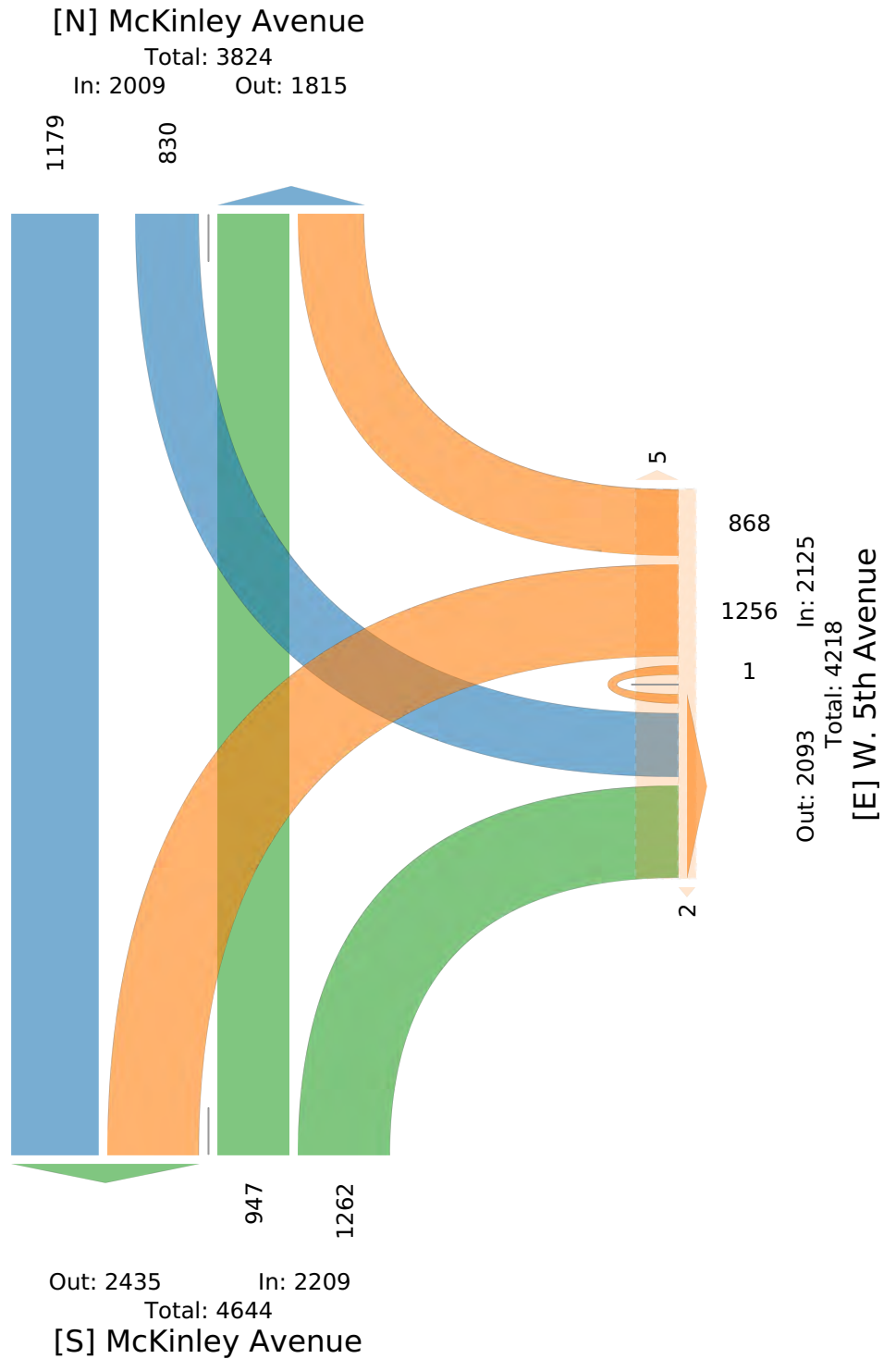
All Movements

ID: 946054, Location: 39.98486, -83.074961

Provided by: Carpenter Marty (CM)

Transportation Inc.

6612 Singletree Drive,
Columbus, OH, 43229, US



W. 5th Ave & McKinley Ave - TMC

Tue Apr 12, 2022

AM Peak (7:30 AM - 8:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 946054, Location: 39.98486, -83.074961

Provided by: Carpenter Marty (CM)

Transportation Inc.

6612 Singletree Drive,

Columbus, OH, 43229, US

Leg Direction	W. 5th Avenue Westbound					McKinley Avenue Northbound					McKinley Avenue Southbound					
Time	L	R	U	App	Ped*	T	R	U	App	Ped*	L	T	U	App	Ped*	Int
2022-04-12 7:30AM	32	15	0	47	0	28	53	0	81	0	37	61	0	98	0	226
7:45AM	35	19	0	54	0	27	63	0	90	0	59	50	0	109	0	253
8:00AM	43	20	0	63	0	17	47	0	64	0	39	63	0	102	0	229
8:15AM	32	27	0	59	0	32	47	0	79	0	39	48	0	87	0	225
Total	142	81	0	223	0	104	210	0	314	0	174	222	0	396	0	933
% Approach	63.7%	36.3%	0%	-	-	33.1%	66.9%	0%	-	-	43.9%	56.1%	0%	-	-	-
% Total	15.2%	8.7%	0%	23.9%	-	11.1%	22.5%	0%	33.7%	-	18.6%	23.8%	0%	42.4%	-	-
PHF	0.826	0.750	-	0.885	-	0.813	0.833	-	0.872	-	0.737	0.881	-	0.908	-	0.922
Lights	131	70	0	201	-	84	202	0	286	-	162	191	0	353	-	840
% Lights	92.3%	86.4%	0%	90.1%	-	80.8%	96.2%	0%	91.1%	-	93.1%	86.0%	0%	89.1%	-	90.0%
Articulated Trucks	2	0	0	2	-	7	0	0	7	-	0	6	0	6	-	15
% Articulated Trucks	1.4%	0%	0%	0.9%	-	6.7%	0%	0%	2.2%	-	0%	2.7%	0%	1.5%	-	1.6%
Buses and Single-Unit Trucks	9	11	0	20	-	13	8	0	21	-	12	25	0	37	-	78
% Buses and Single-Unit Trucks	6.3%	13.6%	0%	9.0%	-	12.5%	3.8%	0%	6.7%	-	6.9%	11.3%	0%	9.3%	-	8.4%
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

W. 5th Ave & McKinley Ave - TMC

Tue Apr 12, 2022

AM Peak (7:30 AM - 8:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

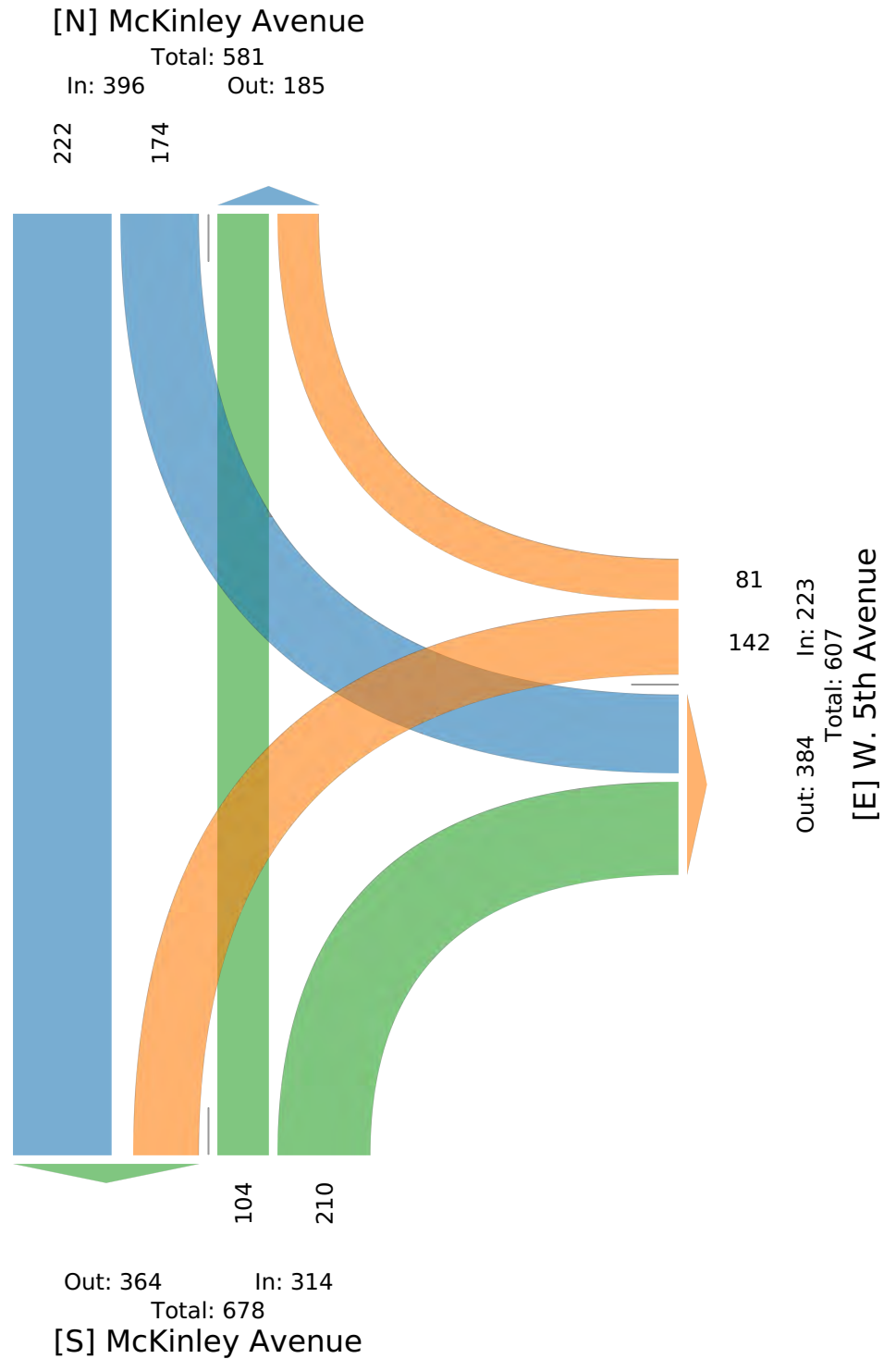
ID: 946054, Location: 39.98486, -83.074961

Provided by: Carpenter Marty (CM)

Transportation Inc.

6612 Singletree Drive,

Columbus, OH, 43229, US



W. 5th Ave & McKinley Ave - TMC

Tue Apr 12, 2022

PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 946054, Location: 39.98486, -83.074961

Provided by: Carpenter Marty (CM)

Transportation Inc.

6612 Singletree Drive,

Columbus, OH, 43229, US

Leg Direction	W. 5th Avenue Westbound					McKinley Avenue Northbound					McKinley Avenue Southbound					
Time	L	R	U	App	Ped*	T	R	U	App	Ped*	L	T	U	App	Ped*	Int
2022-04-12 4:30PM	65	37	0	102	1	47	31	0	78	0	25	38	0	63	0	243
4:45PM	57	50	0	107	0	44	40	0	84	0	32	32	0	64	0	255
5:00PM	73	63	0	136	0	47	51	0	98	0	31	39	0	70	0	304
5:15PM	54	59	0	113	0	41	47	0	88	0	34	35	0	69	0	270
Total	249	209	0	458	1	179	169	0	348	0	122	144	0	266	0	1072
% Approach	54.4%	45.6%	0%	-	-	51.4%	48.6%	0%	-	-	45.9%	54.1%	0%	-	-	-
% Total	23.2%	19.5%	0%	42.7%	-	16.7%	15.8%	0%	32.5%	-	11.4%	13.4%	0%	24.8%	-	-
PHF	0.853	0.817	-	0.836	-	0.952	0.828	-	0.888	-	0.897	0.941	-	0.960	-	0.881
Lights	239	202	0	441	-	176	166	0	342	-	120	136	0	256	-	1039
% Lights	96.0%	96.7%	0%	96.3%	-	98.3%	98.2%	0%	98.3%	-	98.4%	94.4%	0%	96.2%	-	96.9%
Articulated Trucks	2	0	0	2	-	0	1	0	1	-	0	2	0	2	-	5
% Articulated Trucks	0.8%	0%	0%	0.4%	-	0%	0.6%	0%	0.3%	-	0%	1.4%	0%	0.8%	-	0.5%
Buses and Single-Unit Trucks	8	4	0	12	-	3	2	0	5	-	2	5	0	7	-	24
% Buses and Single-Unit Trucks	3.2%	1.9%	0%	2.6%	-	1.7%	1.2%	0%	1.4%	-	1.6%	3.5%	0%	2.6%	-	2.2%
Bicycles on Road	0	3	0	3	-	0	0	0	0	-	0	1	0	1	-	4
% Bicycles on Road	0%	1.4%	0%	0.7%	-	0%	0%	0%	0%	-	0%	0.7%	0%	0.4%	-	0.4%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
% Pedestrians	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

W. 5th Ave & McKinley Ave - TMC

Tue Apr 12, 2022

PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

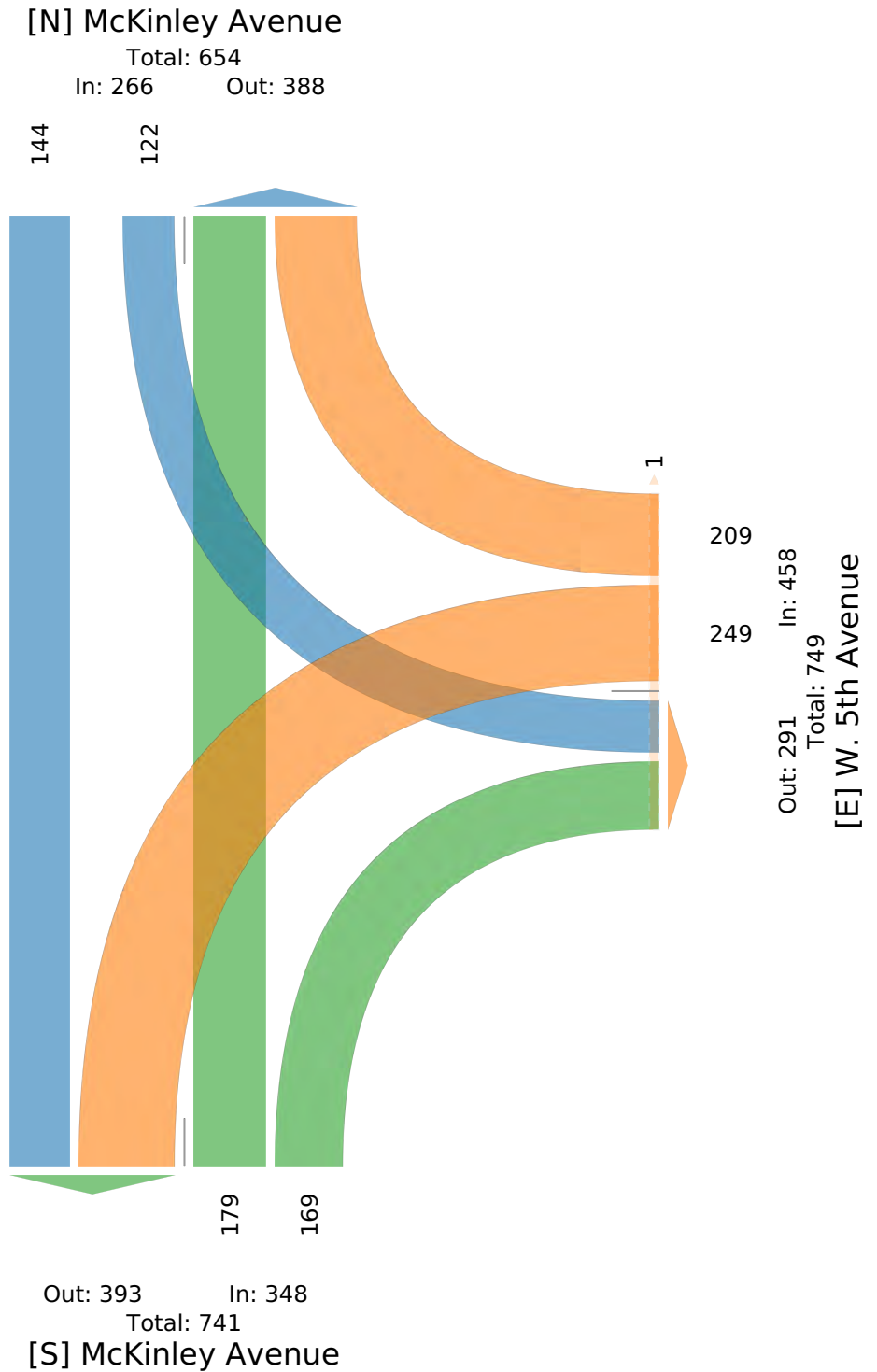
All Movements

ID: 946054, Location: 39.98486, -83.074961

Provided by: Carpenter Marty (CM)

Transportation Inc.

6612 Singletree Drive,
Columbus, OH, 43229, US

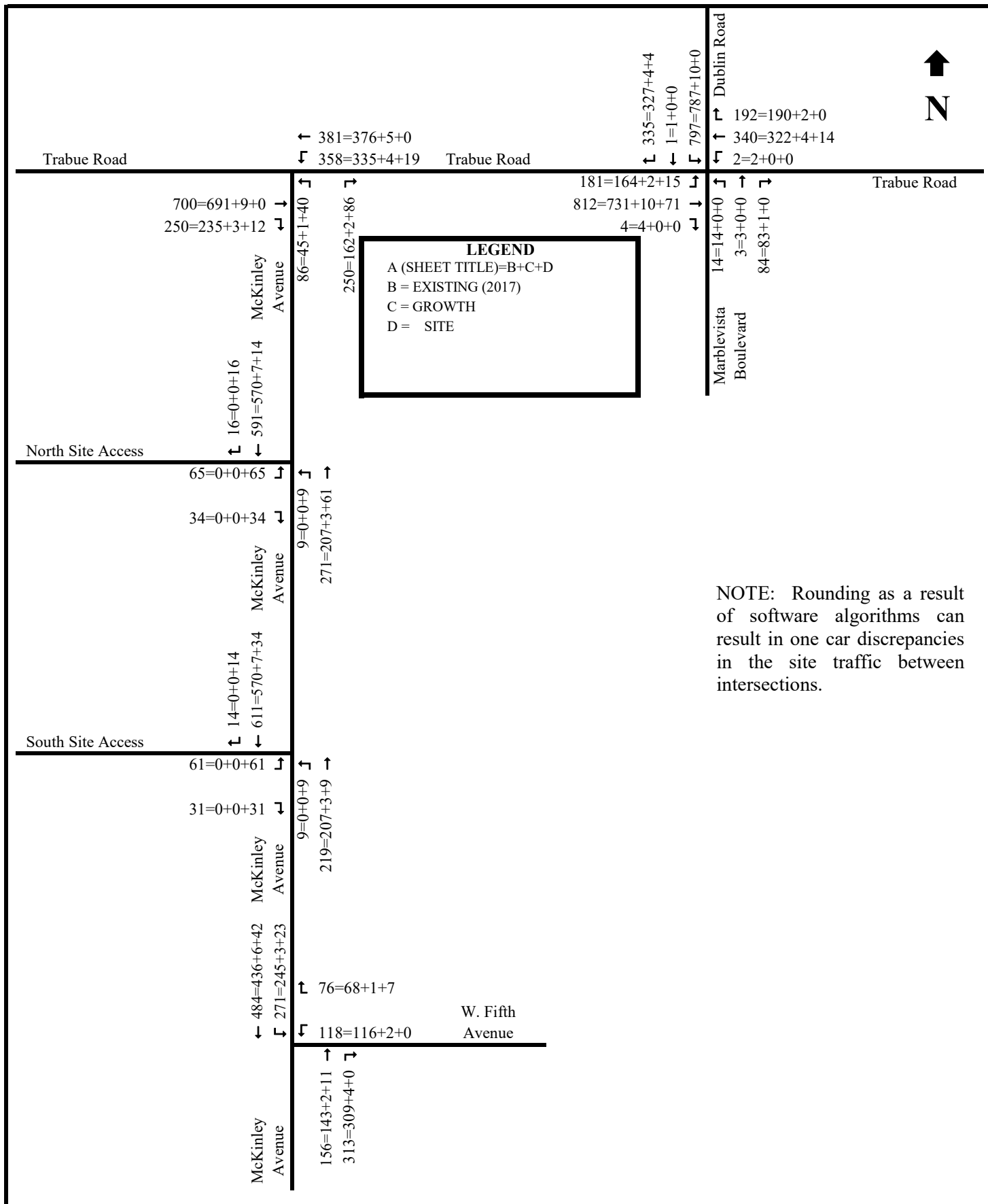


Leg	Builders Place				Trabue Road				Trabue Road					
Direction	Southbound				Westbound				Eastbound					
Start Time	Right	Left	U-Turn	App Total	Right	Thru	U-Turn	App Total	Thru	Left	U-Turn	App Total	Int Total	
2021-06-15 06:00:00	1	0	0	1	4	24	0	28	33	2	0	35	64	
2021-06-15 06:15:00	0	9	0	9	2	34	0	36	61	6	0	67	112	
2021-06-15 06:30:00	0	2	0	2	2	48	0	50	63	6	0	69	121	
2021-06-15 06:45:00	2	2	0	4	3	62	0	65	76	7	0	83	152	
2021-06-15 07:00:00	1	2	0	3	4	52	0	56	83	10	0	93	152	
2021-06-15 07:15:00	1	2	0	3	4	57	0	61	102	4	0	106	170	
2021-06-15 07:30:00	3	1	0	4	9	74	0	83	93	8	0	101	188	
2021-06-15 07:45:00	6	2	0	8	8	105	0	113	130	11	0	141	262	
2021-06-15 08:00:00	2	3	0	5	11	84	0	95	94	11	0	105	205	
2021-06-15 08:15:00	1	2	0	3	4	81	0	85	99	4	0	103	191	
2021-06-15 08:30:00	1	3	0	4	9	92	0	101	94	7	0	101	206	
2021-06-15 08:45:00	1	3	0	4	3	64	0	67	88	6	0	94	165	
2021-06-15 09:00:00	1	3	0	4	9	86	0	95	71	6	0	77	176	
2021-06-15 09:15:00	2	1	0	3	6	66	0	72	77	3	0	80	155	
2021-06-15 09:30:00	2	8	0	10	1	73	0	74	82	5	0	87	171	
2021-06-15 09:45:00	5	2	0	7	4	93	0	97	81	13	0	94	198	
2021-06-15 10:00:00	2	6	0	8	2	67	0	69	74	3	0	77	154	
2021-06-15 10:15:00	2	1	0	3	2	74	0	76	93	3	0	96	175	
2021-06-15 10:30:00	0	0	0	0	2	93	0	95	76	2	0	78	173	
2021-06-15 10:45:00	3	3	0	6	7	75	0	82	53	3	0	56	144	
2021-06-15 11:00:00	3	0	0	3	3	88	0	91	62	2	0	64	158	
2021-06-15 11:15:00	5	5	0	10	1	96	0	97	72	7	0	79	186	
2021-06-15 11:30:00	7	8	0	15	5	99	0	104	89	7	0	96	215	
2021-06-15 11:45:00	12	11	0	23	2	128	0	130	86	8	0	94	247	
2021-06-15 12:00:00	6	9	0	15	4	132	0	136	91	4	0	95	246	
2021-06-15 12:15:00	7	3	0	10	5	107	0	112	106	7	0	113	235	
2021-06-15 12:30:00	2	4	0	6	6	105	0	111	87	4	0	91	208	
2021-06-15 12:45:00	1	7	0	8	8	111	0	119	88	8	0	96	223	
2021-06-15 13:00:00	6	7	0	13	4	120	0	124	70	6	0	76	213	
2021-06-15 13:15:00	3	4	0	7	5	91	0	96	83	9	0	92	195	
2021-06-15 13:30:00	2	5	0	7	4	97	0	101	82	0	0	82	190	
2021-06-15 13:45:00	2	2	0	4	5	113	0	118	64	1	0	65	187	
2021-06-15 14:00:00	16	4	0	20	3	120	0	123	77	1	0	78	221	
2021-06-15 14:15:00	3	9	0	12	5	116	0	121	70	2	0	72	205	
2021-06-15 14:30:00	6	3	0	9	3	122	0	125	65	0	0	65	199	
2021-06-15 14:45:00	4	6	0	10	4	122	0	126	93	3	0	96	232	
2021-06-15 15:00:00	10	3	0	13	1	130	0	131	79	4	0	83	227	
2021-06-15 15:15:00	8	1	0	9	5	143	0	148	88	4	0	92	249	
2021-06-15 15:30:00	7	5	0	12	3	122	0	125	105	2	0	107	244	
2021-06-15 15:45:00	11	3	0	14	2	117	0	119	73	5	0	78	211	
2021-06-15 16:00:00	15	6	0	21	3	136	0	139	90	3	1	94	254	
2021-06-15 16:15:00	5	7	0	12	8	174	0	182	95	2	0	97	291	
2021-06-15 16:30:00	5	9	0	14	0	157	0	157	101	2	0	103	274	
2021-06-15 16:45:00	7	6	0	13	0	159	0	159	111	0	0	111	283	
2021-06-15 17:00:00	7	4	0	11	0	161	0	161	112	1	0	113	285	
2021-06-15 17:15:00	7	3	0	10	2	182	0	184	91	1	0	92	286	
2021-06-15 17:30:00	6	3	0	9	0	164	0	164	98	0	0	98	271	
2021-06-15 17:45:00	1	7	0	8	2	169	0	171	75	2	0	77	256	
2021-06-15 18:00:00	4	4	0	8	0	171	0	171	73	1	0	74	253	
2021-06-15 18:15:00	6	3	0	9	0	172	0	172	87	1	0	88	269	
2021-06-15 18:30:00	3	0	0	3	1	185	0	186	87	1	0	88	277	
2021-06-15 18:45:00	3	1	0	4	0	145	0	145	59	0	0	59	208	
Grand Total	226	207	0	433	190	5658	0	5848	4332	218	1	4551	10832	
% Approach	52.2%	47.8%	0.0%		3.2%	96.8%	0.0%		95.2%	4.8%	0.0%			
% Total	2.1%	1.9%	0.0%	4.0%	1.8%	52.2%	0.0%	54.0%	40.0%	2.0%	0.0%	42.0%		
Lights	202	191	0	393	175	5464	0	5639	4147	199	1	4347	10379	
% Lights	89.4%	92.3%	0.0%	90.8%	92.1%	96.6%	0.0%	96.4%	95.7%	91.3%	100.0%	95.5%	95.8%	
Articulated Trucks	4	2	0	6	1	21	0	22	14	4	0	18	46	
% Articulated Trucks	1.8%	1.0%	0.0%	1.4%	0.5%	0.4%	0.0%	0.4%	0.3%	1.8%	0.0%	0.4%	0.4%	
Buses and Single-Unit Trucks	20	14	0	34	14	173	0	187	171	15	0	186	407	
% Buses and Single-Unit Trucks	8.8%	6.8%	0.0%	7.9%	7.4%	3.1%	0.0%	3.2%	3.9%	6.9%	0.0%	4.1%	3.8%	

	South			East			West				Total	Total
	McKinley Avenue (Northbound)			Trabue Road (E) (Westbound)			Trabue Road (W) (Eastbound)					
	Left	Right	Total	Left	Thru	Total	Thru	Right	Total			
12:00am		0	3	3	1	4	5	10	1	11	19	
12:15am		0	2	2	2	3	5	6	1	7	14	
12:30am		0	1	1	2	2	4	4	1	5	10	
12:45am		0	0	0	2	1	3	3	0	3	6	
Hourly Tota		0	6	6	7	10	17	23	3	26	49	
1:00am		0	0	0	0	2	2	2	0	2	4	
1:15am		0	0	0	0	2	2	2	0	2	4	
1:30am		0	1	1	0	1	1	2	0	2	4	
1:45am		0	1	1	0	1	1	2	0	2	4	
Hourly Tota		0	2	2	0	6	6	8	0	8	16	
2:00am		0	1	1	0	1	1	2	0	2	4	
2:15am		0	1	1	0	1	1	2	0	2	4	
2:30am		0	1	1	0	1	1	3	0	3	5	
2:45am		0	0	0	0	1	1	4	1	5	6	
Hourly Tota		0	3	3	0	4	4	11	1	12	19	
3:00am		0	0	0	0	1	1	4	1	5	6	
3:15am		0	0	0	0	1	1	3	0	3	4	
3:30am		0	2	2	0	1	1	4	0	4	7	
3:45am		0	2	2	0	0	0	9	0	9	11	
Hourly Tota		0	4	4	0	3	3	20	1	21	28	
4:00am		0	1	1	0	1	1	10	0	10	12	
4:15am		0	0	0	0	2	2	3	0	3	5	
4:30am		0	0	0	6	2	8	4	0	4	12	
4:45am		1	0	1	18	3	21	11	1	12	34	
Hourly Tota		1	1	2	24	8	32	28	1	29	63	
5:00am		0	1	1	4	4	8	18	1	19	28	
5:15am		2	1	3	1	8	9	10	1	11	23	
5:30am		9	1	10	2	11	13	37	1	38	61	
5:45am		8	3	11	5	12	17	36	2	38	66	
Hourly Tota		19	6	25	12	35	47	101	5	106	178	
6:00am		4	7	11	13	22	35	21	3	24	70	
6:15am		4	19	23	24	54	78	22	7	29	130	
6:30am		5	28	33	19	52	71	36	17	53	157	
6:45am		7	8	15	21	75	96	71	13	84	195	
Hourly Tota		20	62	82	77	203	280	150	40	190	552	
7:00am		11	19	30	43	68	111	67	10	77	218	
7:15am		9	23	32	30	53	83	118	19	137	252	
7:30am		16	39	55	26	54	80	97	26	123	258	
7:45am		18	21	39	32	77	109	114	17	131	279	
Hourly Tota		54	102	156	131	252	383	396	72	468	1007	
8:00am		10	18	28	26	70	96	127	17	144	268	
8:15am		8	20	28	33	94	127	143	25	168	323	
8:30am		13	22	35	40	68	108	109	24	133	276	
8:45am		11	13	24	22	67	89	116	32	148	261	
Hourly Tota		42	73	115	121	299	420	495	98	593	1128	
9:00am		13	18	31	17	60	77	74	17	91	199	
9:15am		12	16	28	20	63	83	64	15	79	190	

9:30am	14	23	37	24	61	85	63	12	75	197
9:45am	18	19	37	30	66	96	78	12	90	223
Hourly Tota	57	76	133	91	250	341	279	56	335	809
10:00am	21	24	45	17	66	83	67	11	78	206
10:15am	12	27	39	19	76	95	67	15	82	216
10:30am	12	30	42	17	77	94	68	11	79	215
10:45am	16	27	43	14	69	83	74	15	89	215
Hourly Tota	61	108	169	67	288	355	276	52	328	852
11:00am	15	22	37	18	69	87	82	11	93	217
11:15am	16	28	44	24	82	106	79	13	92	242
11:30am	16	41	57	22	77	99	85	14	99	255
11:45am	18	32	50	26	80	106	87	16	103	259
Hourly Tota	65	123	188	90	308	398	333	54	387	973
12:00pm	17	32	49	21	78	99	93	16	109	257
12:15pm	17	30	47	35	96	131	89	19	108	286
12:30pm	15	23	38	26	89	115	97	16	113	266
12:45pm	15	25	40	23	105	128	75	17	92	260
Hourly Tota	64	110	174	105	368	473	354	68	422	1069
1:00pm	17	27	44	21	95	116	81	15	96	256
1:15pm	17	19	36	20	88	108	78	10	88	232
1:30pm	13	25	38	22	93	115	64	12	76	229
1:45pm	14	25	39	23	84	107	72	14	86	232
Hourly Tota	61	96	157	86	360	446	295	51	346	949
2:00pm	15	23	38	28	106	134	70	17	87	259
2:15pm	12	23	35	30	105	135	79	11	90	260
2:30pm	13	24	37	19	88	107	88	20	108	252
2:45pm	23	32	55	21	85	106	79	16	95	256
Hourly Tota	63	102	165	98	384	482	316	64	380	1027
3:00pm	14	27	41	22	91	113	77	20	97	251
3:15pm	17	30	47	24	76	100	83	20	103	250
3:30pm	15	26	41	21	94	115	72	22	94	250
3:45pm	18	37	55	23	116	139	86	17	103	297
Hourly Tota	64	120	184	90	377	467	318	79	397	1048
4:00pm	25	34	59	27	102	129	99	15	114	302
4:15pm	22	34	56	33	114	147	111	15	126	329
4:30pm	20	55	75	34	114	148	96	18	114	337
4:45pm	20	50	70	44	119	163	103	20	123	356
Hourly Tota	87	173	260	138	449	587	409	68	477	1324
5:00pm	22	73	95	29	136	165	112	22	134	394
5:15pm	42	57	99	30	140	170	114	44	158	427
5:30pm	29	33	62	29	152	181	89	24	113	356
5:45pm	25	37	62	26	140	166	96	21	117	345
Hourly Tota	118	200	318	114	568	682	411	111	522	1522
6:00pm	14	26	40	23	105	128	78	16	94	262
6:15pm	13	31	44	30	82	112	71	16	87	243
6:30pm	14	25	39	21	76	97	59	14	73	209
6:45pm	11	20	31	20	70	90	52	12	64	185
Hourly Tota	52	102	154	94	333	427	260	58	318	899
7:00pm	10	17	27	16	67	83	66	12	78	188
7:15pm	12	17	29	28	58	86	48	11	59	174

7:30pm	7	15	22	19	55	74	51	9	60	156
7:45pm	7	13	20	16	50	66	48	9	57	143
Hourly Tota	36	62	98	79	230	309	213	41	254	661
8:00pm	8	9	17	17	52	69	39	10	49	135
8:15pm	6	10	16	13	47	60	34	10	44	120
8:30pm	4	7	11	14	38	52	30	8	38	101
8:45pm	5	9	14	11	36	47	25	7	32	93
Hourly Tota	23	35	58	55	173	228	128	35	163	449
9:00pm	4	6	10	13	35	48	30	7	37	95
9:15pm	3	8	11	9	28	37	26	6	32	80
9:30pm	4	7	11	11	22	33	19	7	26	70
9:45pm	3	7	10	11	15	26	15	5	20	56
Hourly Tota	14	28	42	44	100	144	90	25	115	301
10:00pm	3	9	12	9	18	27	14	4	18	57
10:15pm	3	5	8	7	15	22	11	3	14	44
10:30pm	3	4	7	6	16	22	11	4	15	44
10:45pm	2	3	5	4	11	15	19	8	27	47
Hourly Tota	11	21	32	26	60	86	55	19	74	192
11:00pm	2	3	5	4	14	18	8	4	12	35
11:15pm	1	2	3	4	18	22	7	2	9	34
11:30pm	1	2	3	3	9	12	6	1	7	22
11:45pm	1	3	4	2	6	8	8	1	9	21
Hourly Tota	5	10	15	13	47	60	29	8	37	112
Grand Total	917	1625	2542	1562	5115	6677	4998	1010	6008	15227

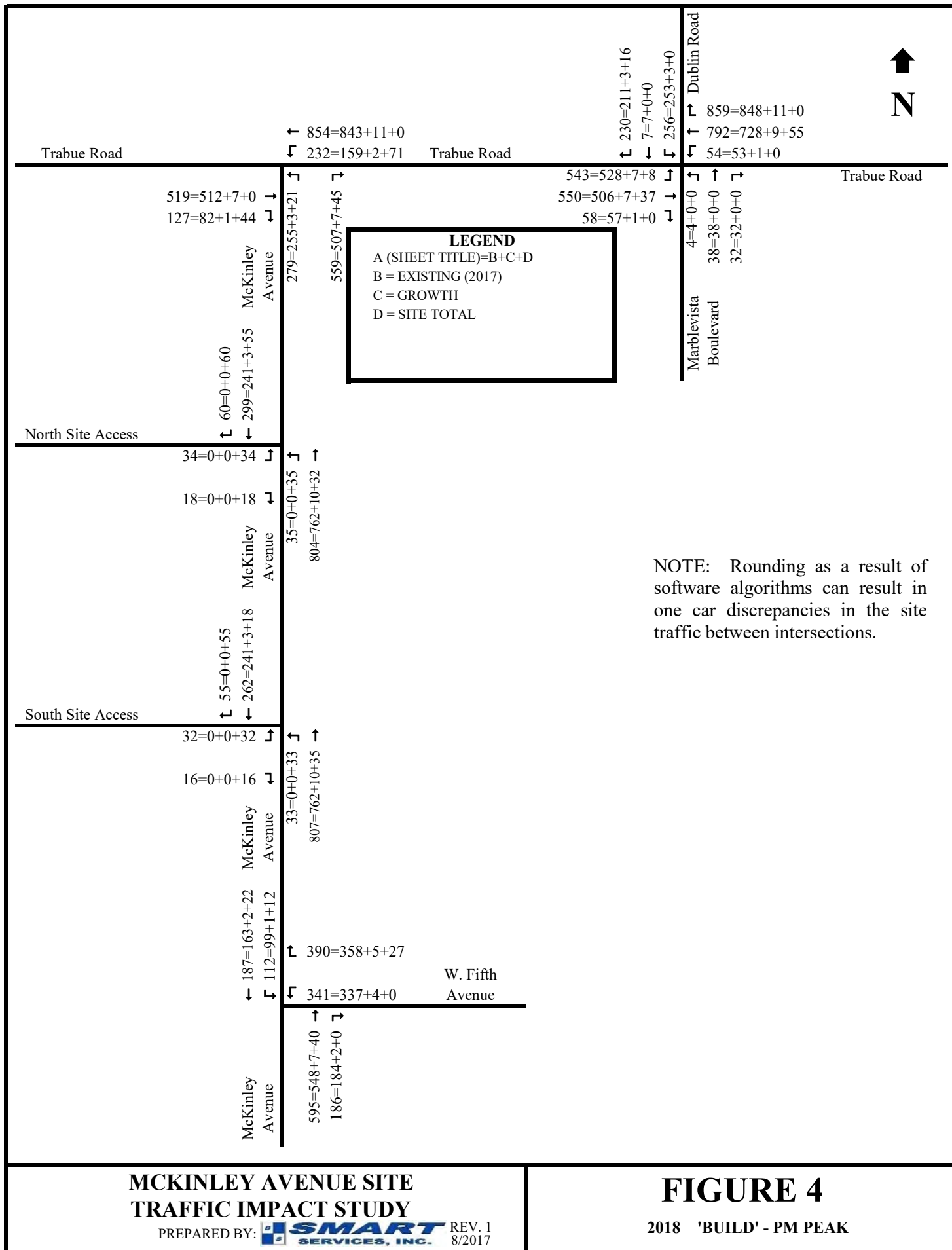


MCKINLEY AVENUE SITE TRAFFIC IMPACT STUDY

PREPARED BY: **SMART SERVICES, INC.** REV. 1 8/2017

FIGURE 3

2018 'BUILD' - AM PEAK



Appendix C

Trip Generation

Scenario - 1

Scenario Name: AM Peak - West Multifamily

User Group:

Dev. phase: 1

No. of Years to Project 0

Analyst Note:

Traffic :

Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
					Rate/Equation	Split%	Split%	
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	General Urban/Suburban	Dwelling Units	156	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LIN)	17	54	71
Data Source: Trip Generation Manual, 11th Ed					T = 0.31(X) + 22.85	24%	76%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	100	100	1	1	24	76

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	17	54	0	0	17	54
	71		0		71	

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	17	54	71

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	17	54	71
External Vehicle Trips	17	54	71
New Vehicle Trips	17	54	71

Scenario - 2

Scenario Name: PM Peak - West Multifamily

User Group:

Dev. phase: 1

No. of Years to Project 0

Analyst Note:

Traffic :

Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
					Rate/Equation	Split%	Split%	
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	General Urban/Suburban	Dwelling Units	156	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LIN)	55	32	87
Data Source: Trip Generation Manual, 11th Ed					T = 0.43(X) + 20.55	63%	37%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	100	100	1	1	63	37

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	55	32	0	0	55	32
	87		0		87	

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	55	32	87

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	55	32	87
External Vehicle Trips	55	32	87
New Vehicle Trips	55	32	87

Scenario - 3

Scenario Name: Weekday - West Multifamily

User Group:

Dev. phase: 1

No. of Years to Project 0

Analyst Note:

Traffic :

Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
					Rate/Equation	Split%	Split%	
					Best Fit (LIN)	538	538	
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	General Urban/Suburban	Dwelling Units	156	Weekday	T = 6.41(X) + 75.31	50%	50%	1076
Data Source: Trip Generation Manual, 11th Ed								

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:						
Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	100	100	1	1	50	50
ESTIMATED BASELINE SITE PERSON TRIPS:						
Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	538	538	0	0	538	538
	1076		0		1076	

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	538	538	1076

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	538	538	1076
External Vehicle Trips	538	538	1076
New Vehicle Trips	538	538	1076

Scenario - 4

Scenario Name: AM Peak - Belmont II

User Group:

Dev. phase: 1

No. of Years to Project 0

Analyst Note:

Traffic :

Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
					Rate/Equation	Split%	Split%	
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	General Urban/Suburban	Dwelling Units	300	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LIN)	28	88	116
Data Source: Trip Generation Manual, 11th Ed					T = 0.31(X) + 22.85	24%	76%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	100	100	1	1	24	76

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	28	88	0	0	28	88
	116		0		116	

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	28	88	116

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	28	88	116
External Vehicle Trips	28	88	116
New Vehicle Trips	28	88	116

Scenario - 5

Scenario Name: PM Peak - Belmont II

User Group:

Dev. phase: 1

No. of Years to Project 0

Analyst Note:

Traffic :

Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
					Rate/Equation	Split%	Split%	
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	General Urban/Suburban	Dwelling Units	300	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LIN)	94	55	149
Data Source: Trip Generation Manual, 11th Ed					T = 0.43(X) + 20.55	63%	37%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:						
Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	100	100	1	1	63	37
ESTIMATED BASELINE SITE PERSON TRIPS:						
Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	94	55	0	0	94	55
	149		0		149	

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	94	55	149

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	94	55	149
External Vehicle Trips	94	55	149
New Vehide Trips	94	55	149

Scenario - 6

Scenario Name: Weekday - Belmont II

Dev. phase: 1

Analyst Note:

User Group:

No. of Years to Project 0

Traffic :

Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
					Rate/Equation	Split%	Split%	
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	General Urban/Suburban	Dwelling Units	300	Weekday	Best Fit (LIN)	999	999	1998
Data Source: Trip Generation Manual, 11th Ed					$T = 6.41(X) + 75.31$	50%	50%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	100	100	1	1	50	50

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	999	999	0	0	999	999
	1998		0		1998	

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	999	999	1998

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	999	999	1998
External Vehicle Trips	999	999	1998
New Vehicle Trips	999	999	1998

Scenario - 7

Scenario Name: Weekday - Belmont I

Dev. phase: 1

Analyst Note:

User Group:

No. of Years to Project 0

Traffic :

Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
					Rate/Equation	Split%	Split%	
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	General Urban/Suburban	Dwelling Units	266	Weekday	Best Fit (LIN)	890	890	1780
Data Source: Trip Generation Manual, 11th Ed					T = 6.41(X) + 75.31	50%	50%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:						
Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	100	100	1	1	50	50
ESTIMATED BASELINE SITE PERSON TRIPS:						
Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	890	890	0	0	890	890
	1780		0		1780	

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	890	890	1780

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	890	890	1780
External Vehicle Trips	890	890	1780
New Vehicle Trips	890	890	1780

Scenario - 8

Scenario Name: Weekday - Hanover

Dev. phase: 1

Analyst Note:

User Group:

No. of Years to Project 0

Traffic :

Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
					Rate/Equation	Split%	Split%	
					Best Fit (LIN)	727	727	
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	General Urban/Suburban	Dwelling Units	215	Weekday	T = 6.41(X) + 75.31	50%	50%	1454
Data Source: Trip Generation Manual, 11th Ed								

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:						
Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	100	100	1	1	50	50
ESTIMATED BASELINE SITE PERSON TRIPS:						
Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	727	727	0	0	727	727
	1454		0		1454	

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	727	727	1454

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	727	727	1454
External Vehicle Trips	727	727	1454
New Vehicle Trips	727	727	1454

Scenario - 9

Scenario Name: Weekday - 3670 Trabue Road Development

User Group:

Dev. phase: 1

No. of Years to Project 0

Analyst Note:

Traffic :

Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
					Rate/Equation	Split%	Split%	
					Best Fit (LIN)	695	695	
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	General Urban/Suburban	Dwelling Units	205	Weekday	T = 6.41(X) + 75.31	50%	50%	1390
Data Source: Trip Generation Manual, 11th Ed								

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	100	100	1	1	50	50

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	695	695	0	0	695	695
	1390		0		1390	

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	695	695	1390

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	695	695	1390
External Vehicle Trips	695	695	1390
New Vehicle Trips	695	695	1390

Appendix D

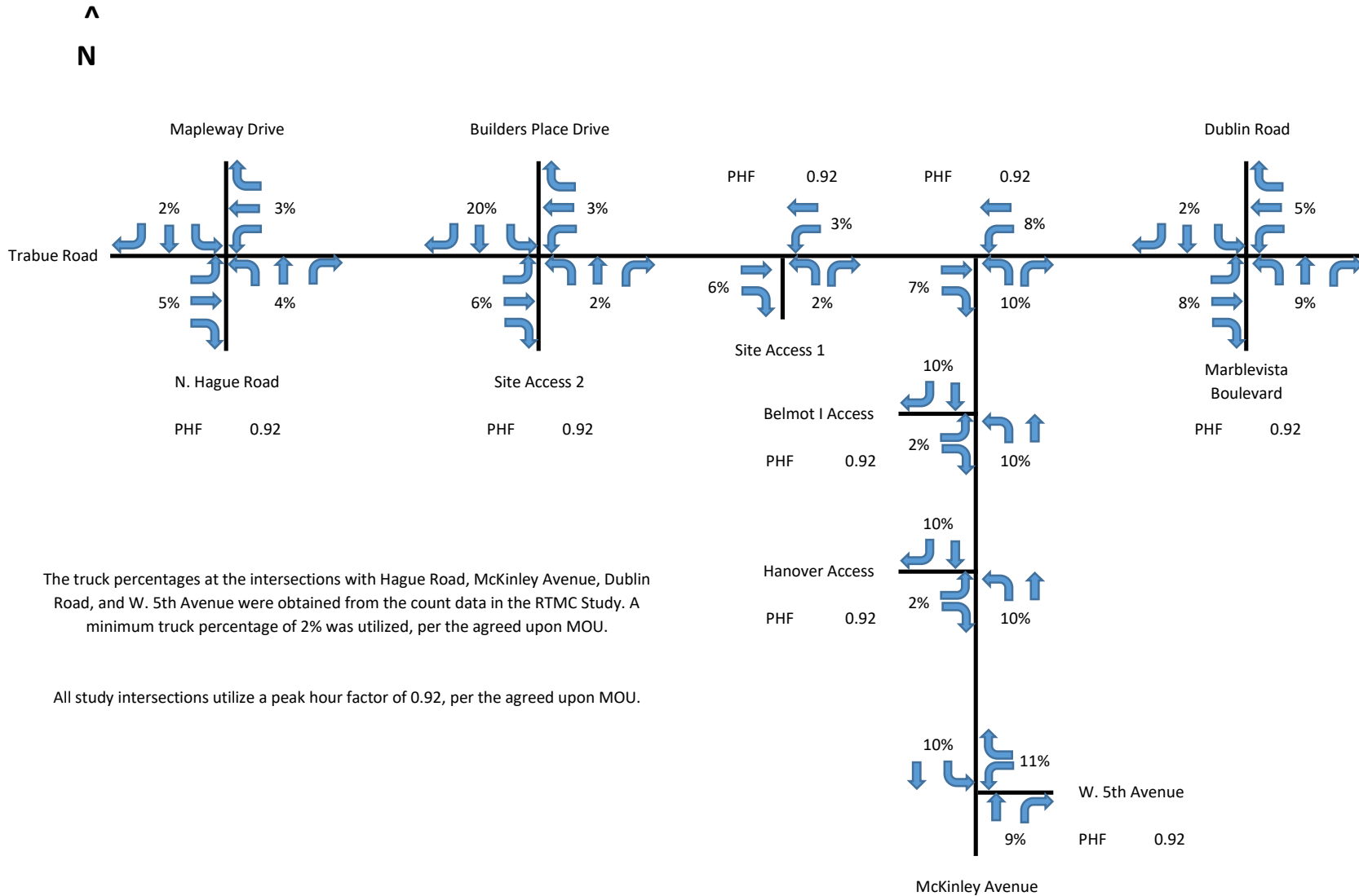
Volume Calculations

Belmont II TIS

Traffic Volume Calculations



Year	Period	Scenario	Plate
	AM	Peak Hour Factors and Truck Percentages	

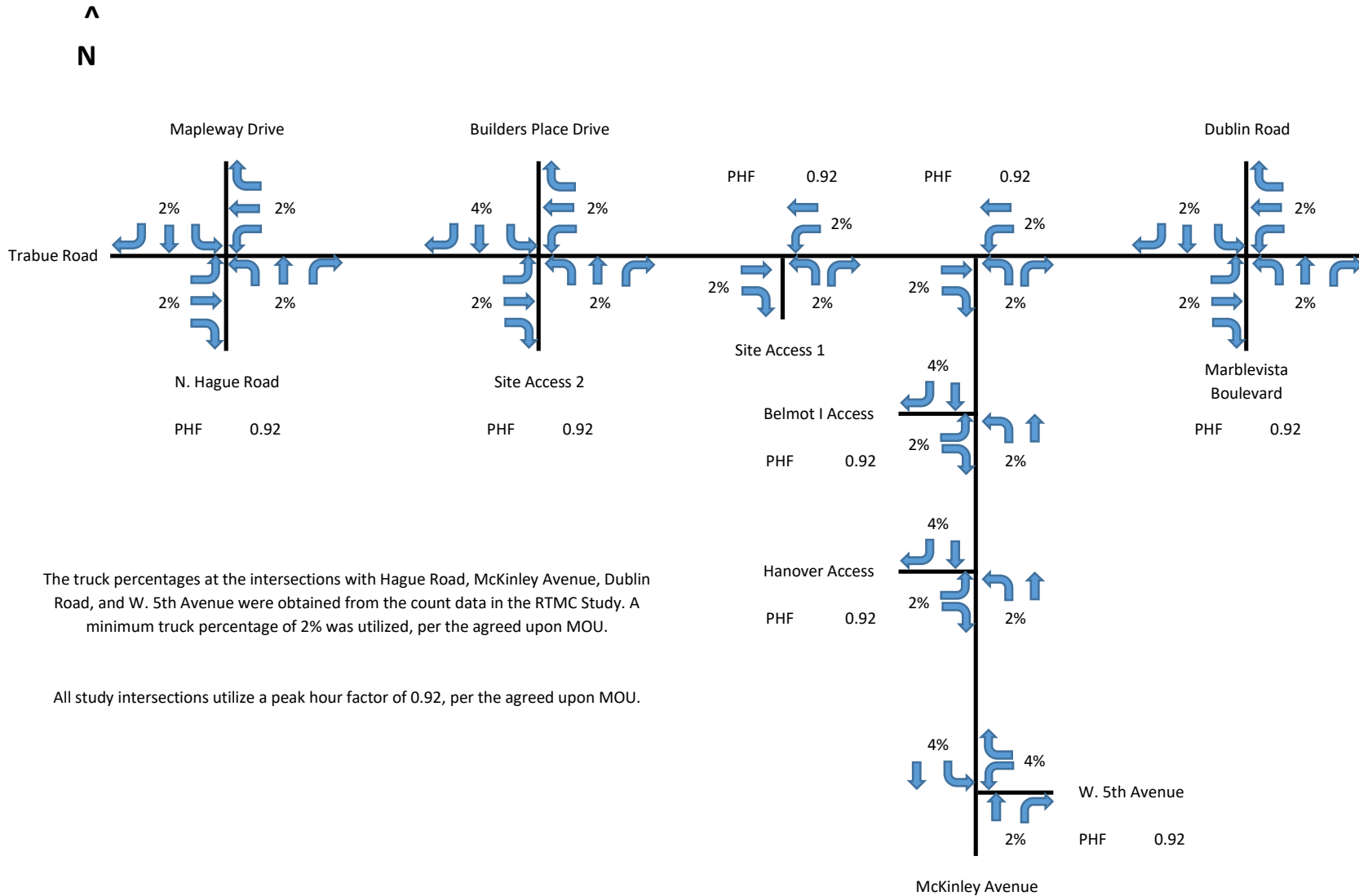


Belmont II TIS

Traffic Volume Calculations

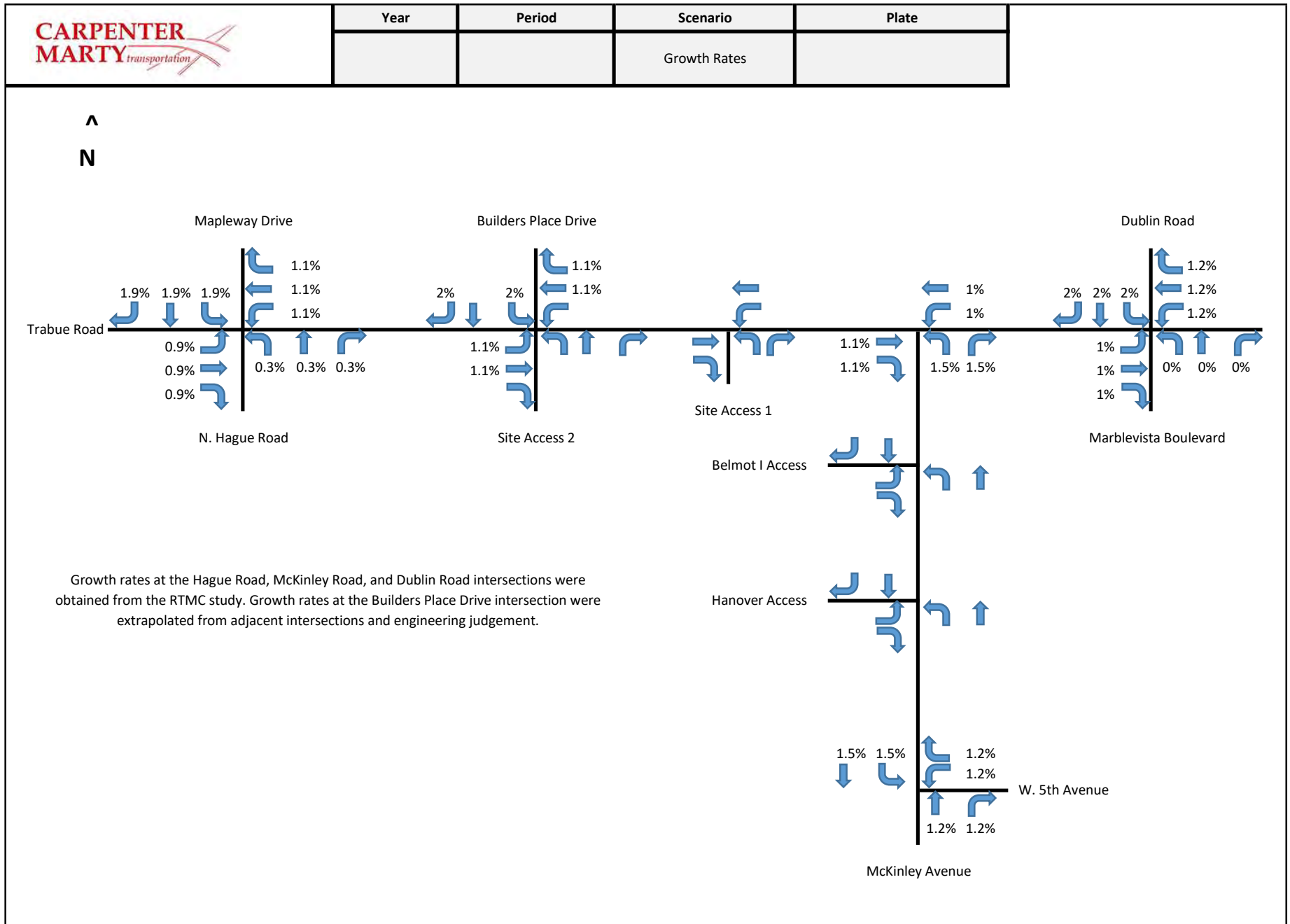


Year	Period	Scenario	Plate
	PM	Peak Hour Factors and Truck Percentages	



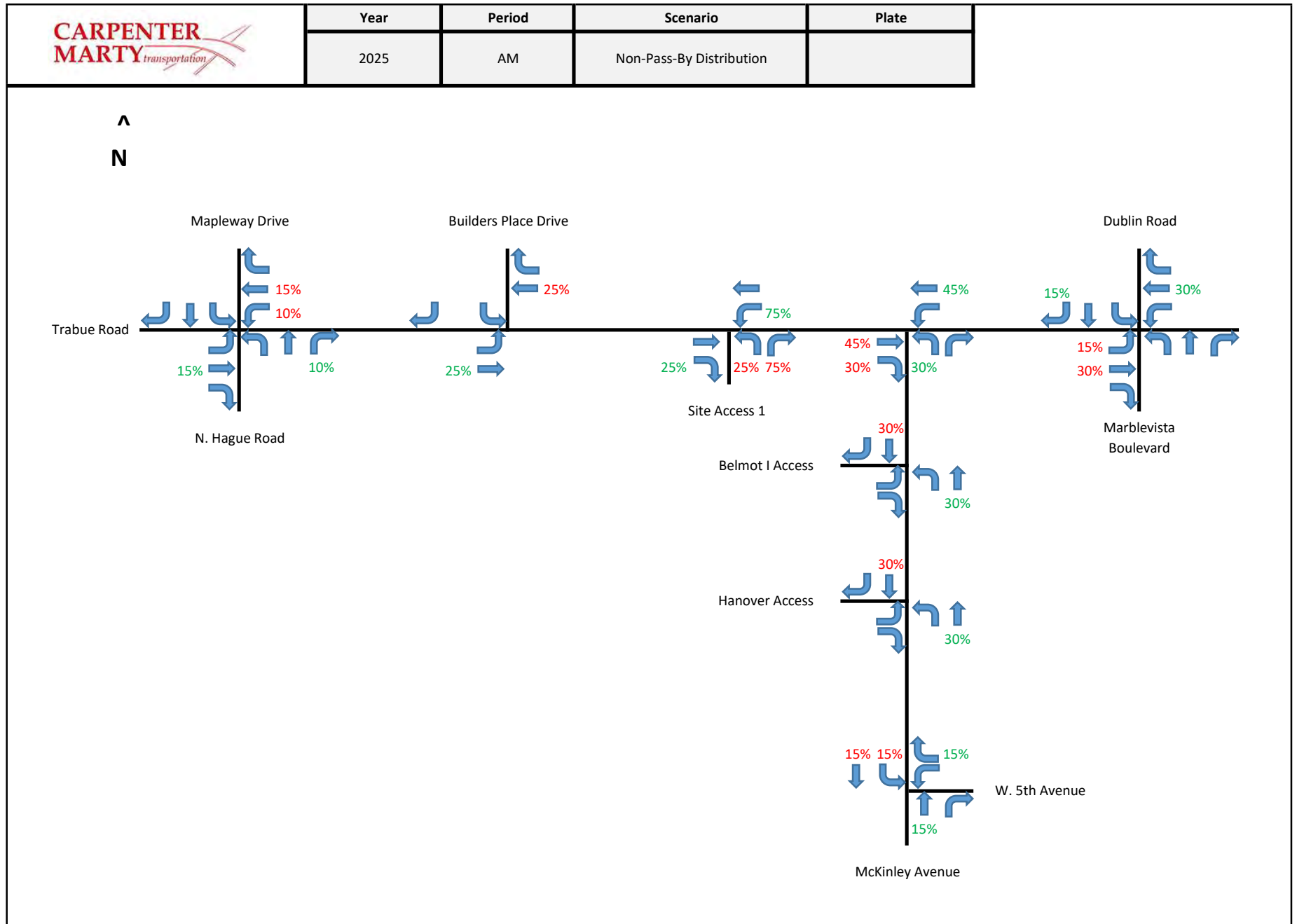
Belmont II TIS

Traffic Volume Calculations



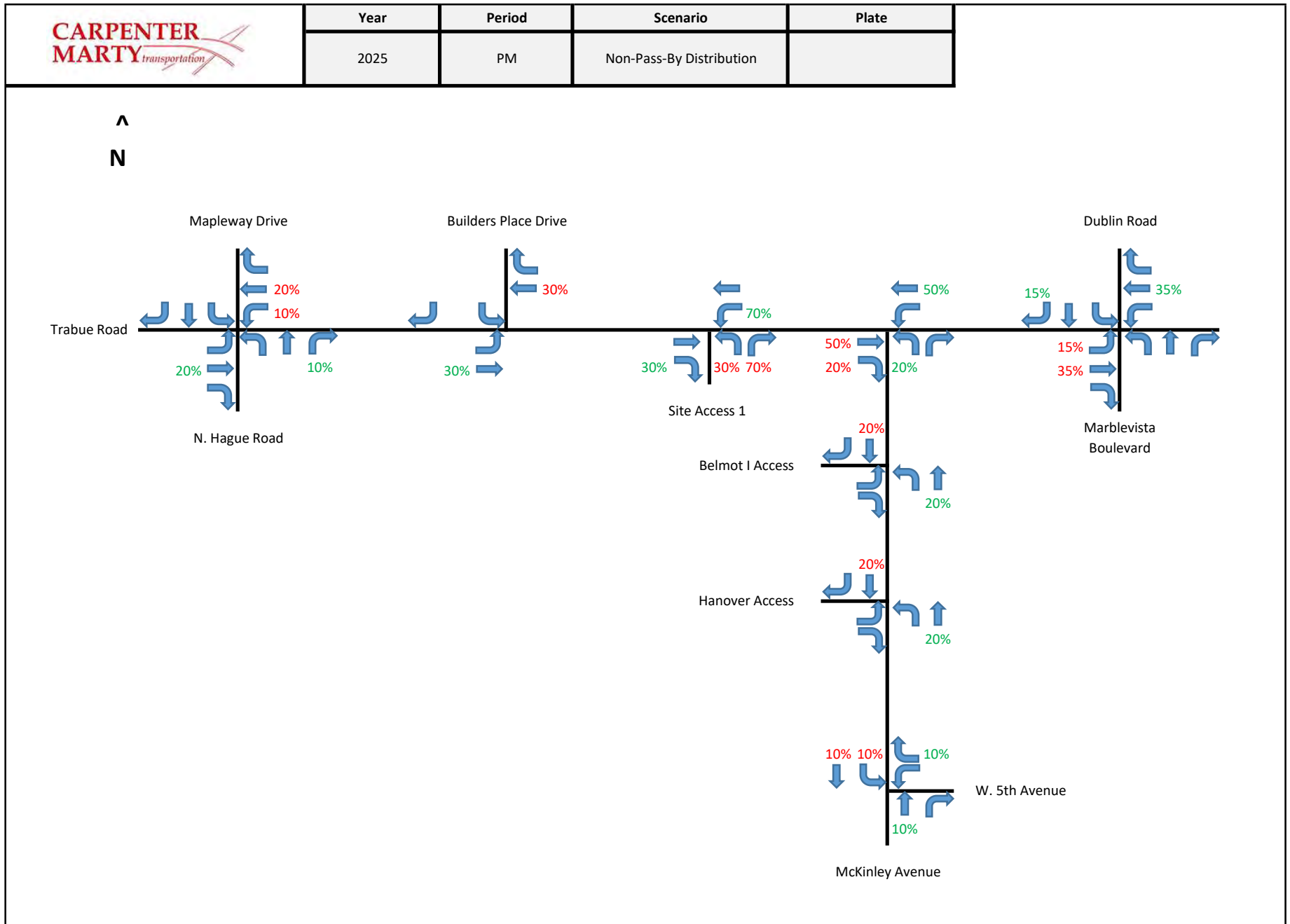
Belmont II TIS

Traffic Volume Calculations



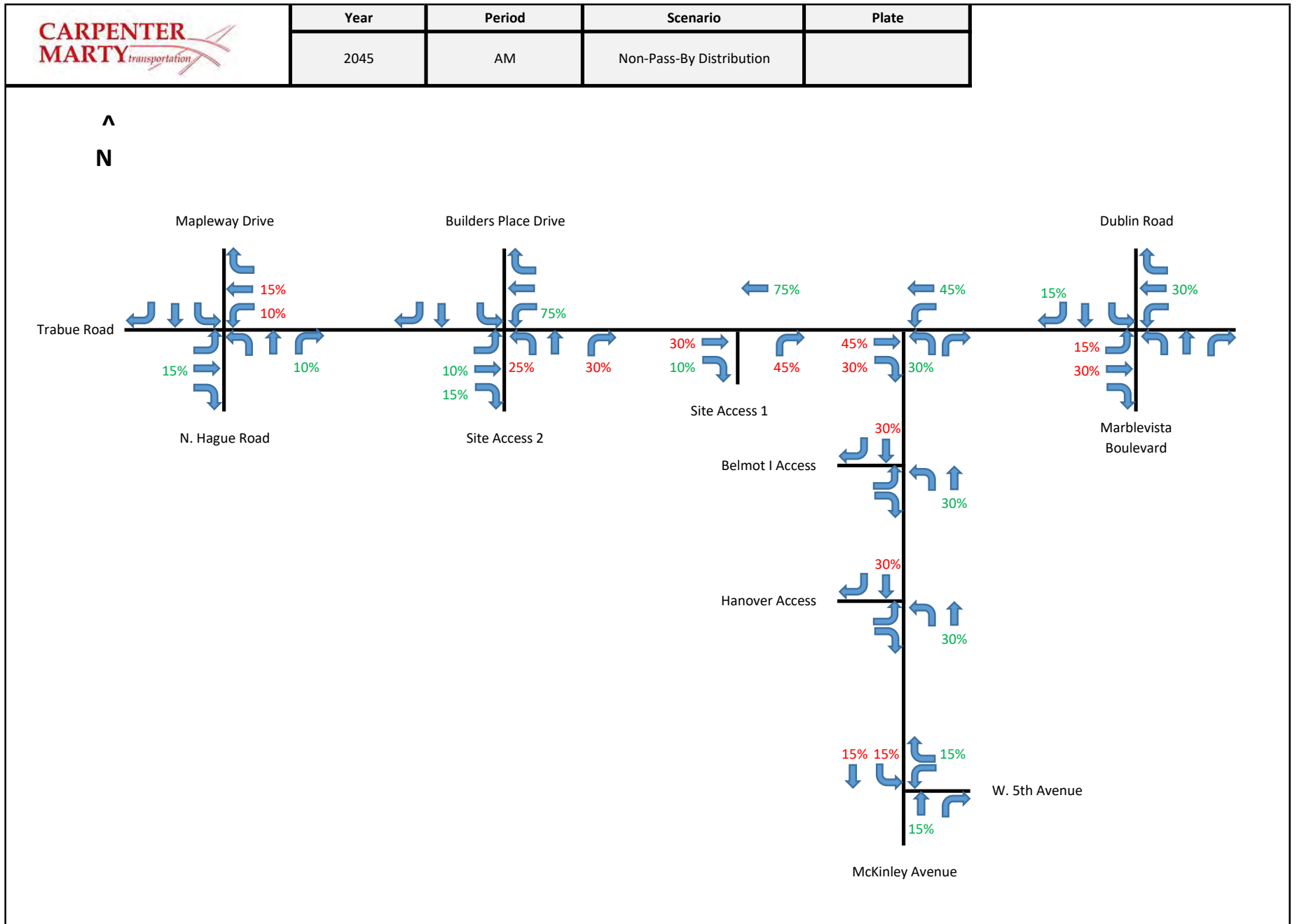
Belmont II TIS

Traffic Volume Calculations



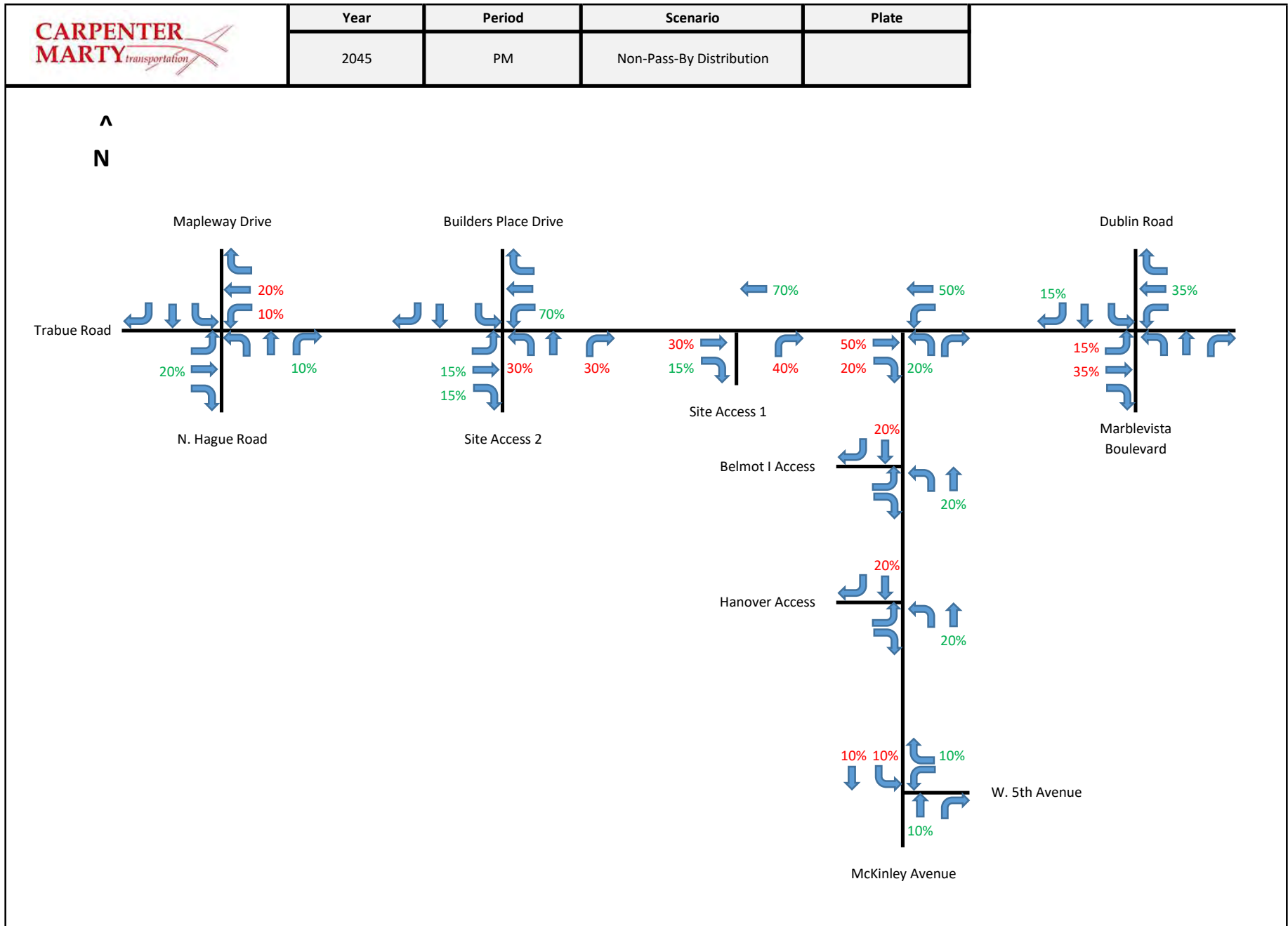
Belmont II TIS

Traffic Volume Calculations



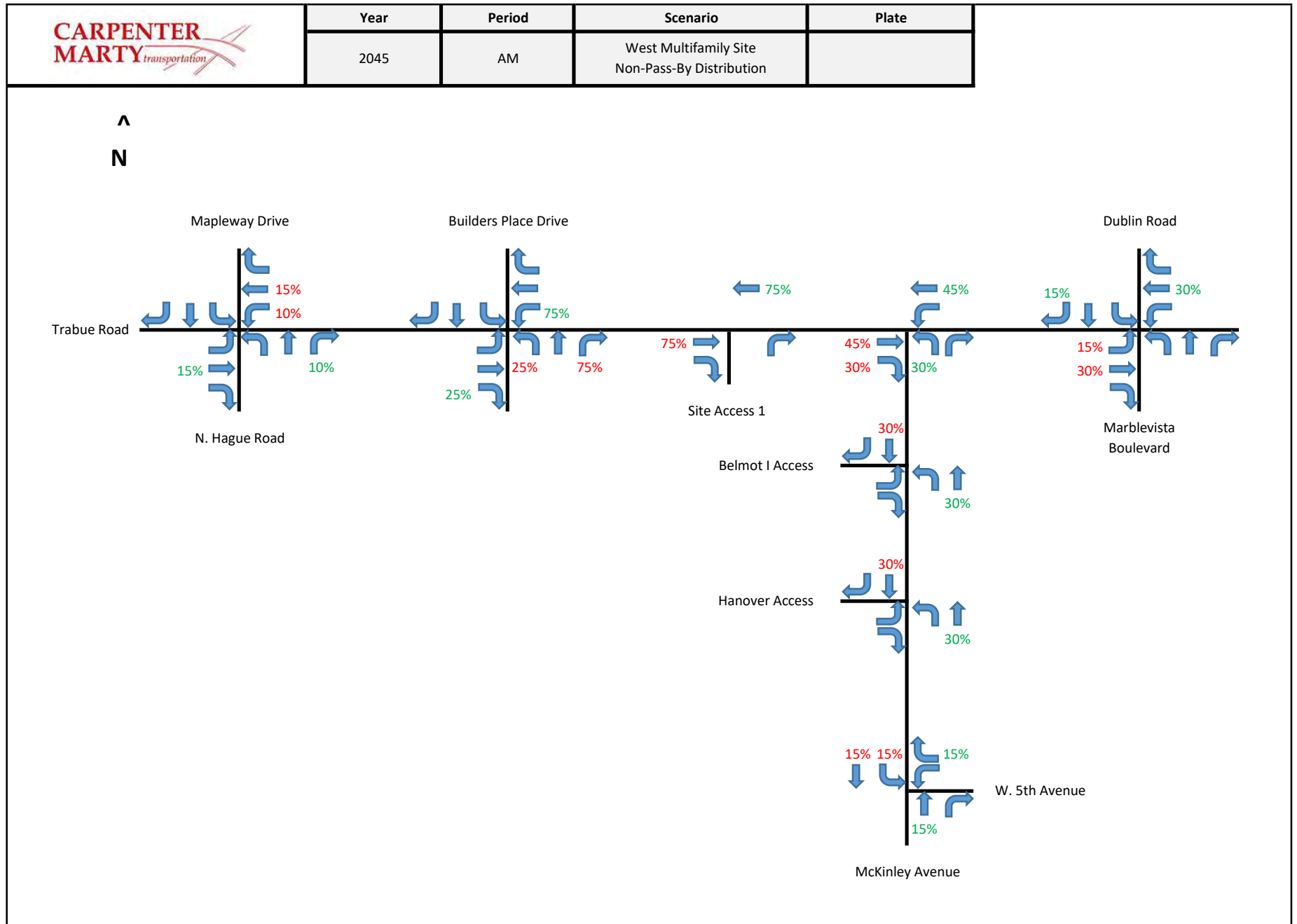
Belmont II TIS

Traffic Volume Calculations



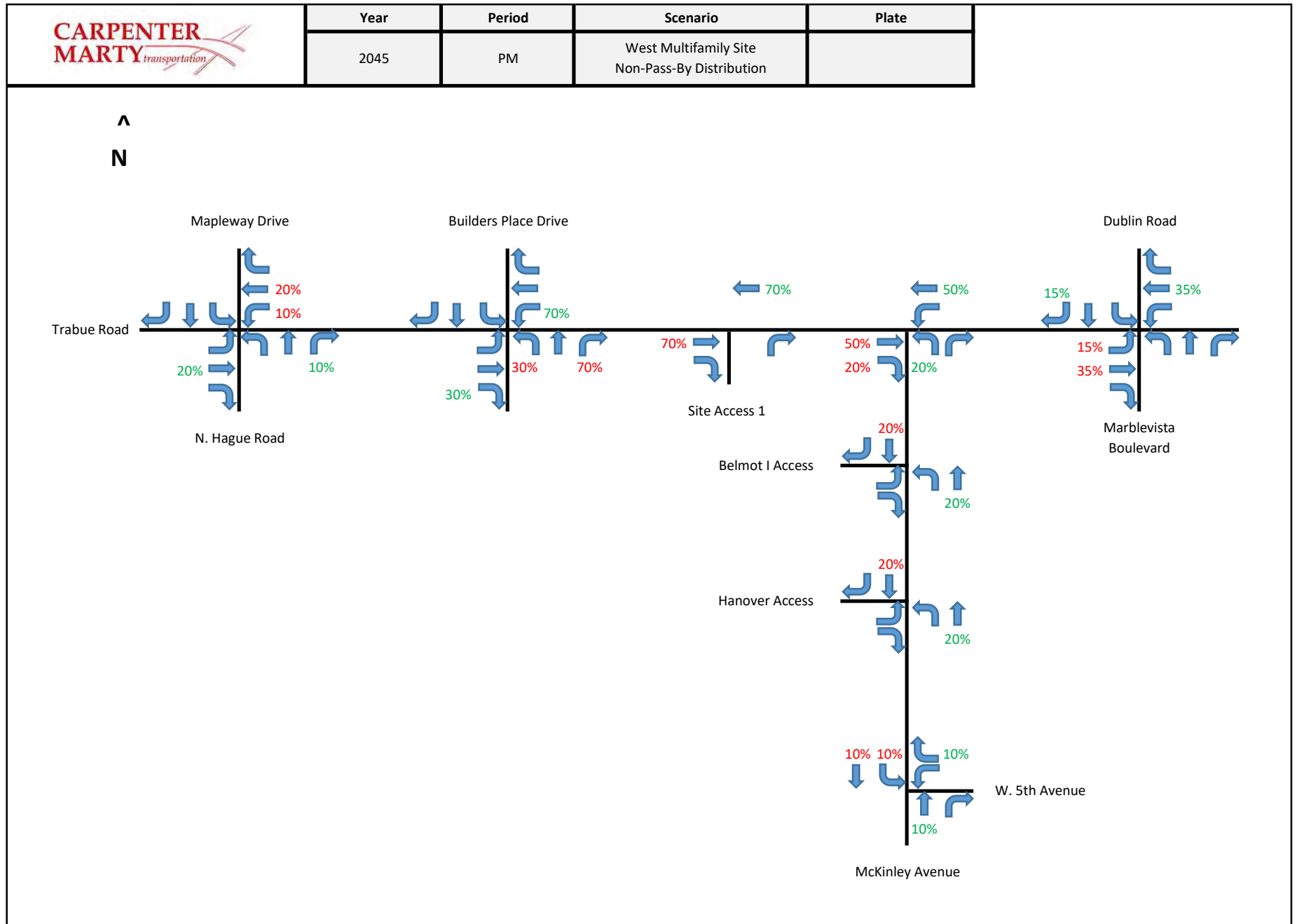
Belmont II TIS

Traffic Volume Calculations



Belmont II TIS

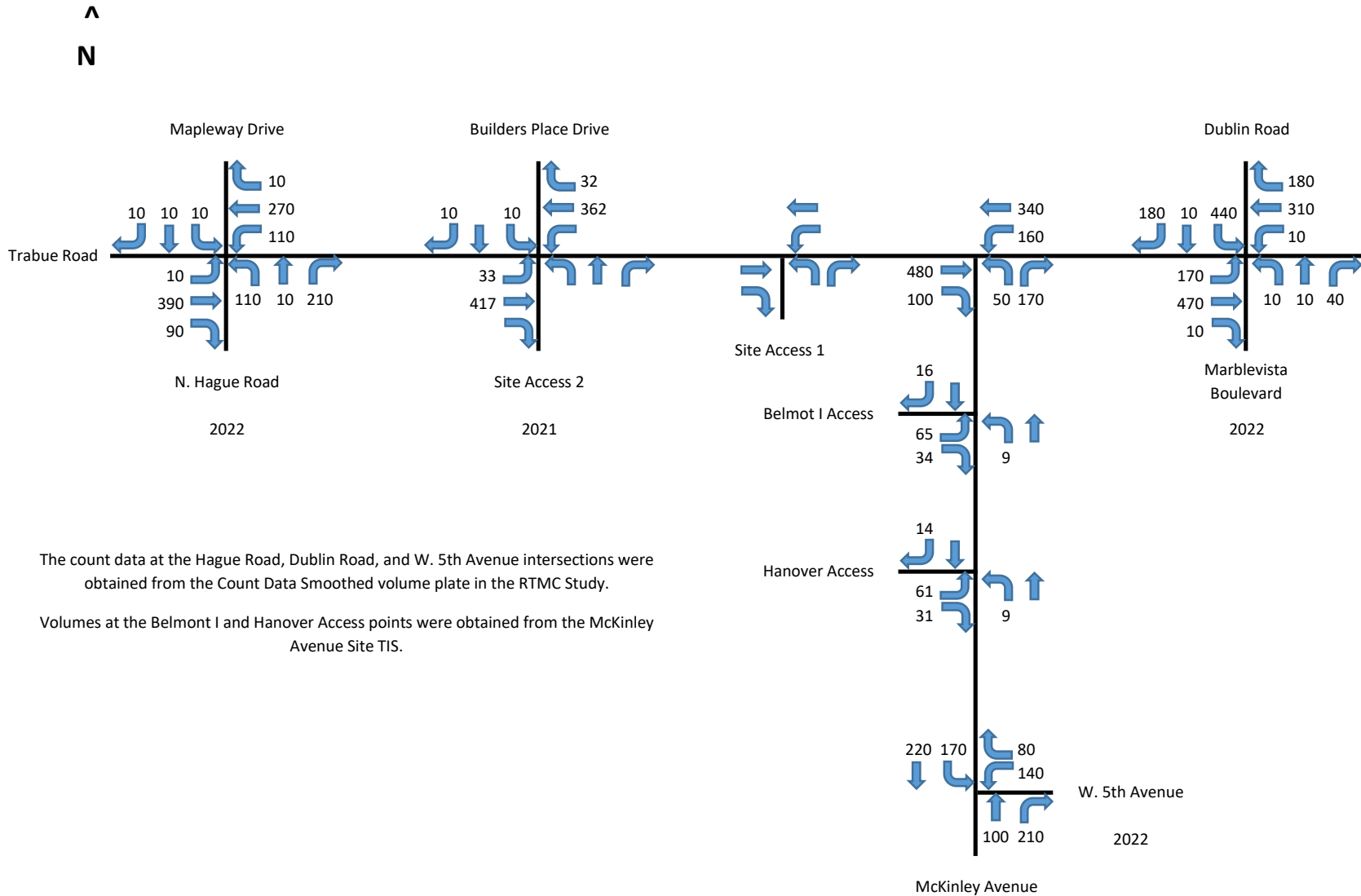
Traffic Volume Calculations



Belmont II TIS Traffic Volume Calculations



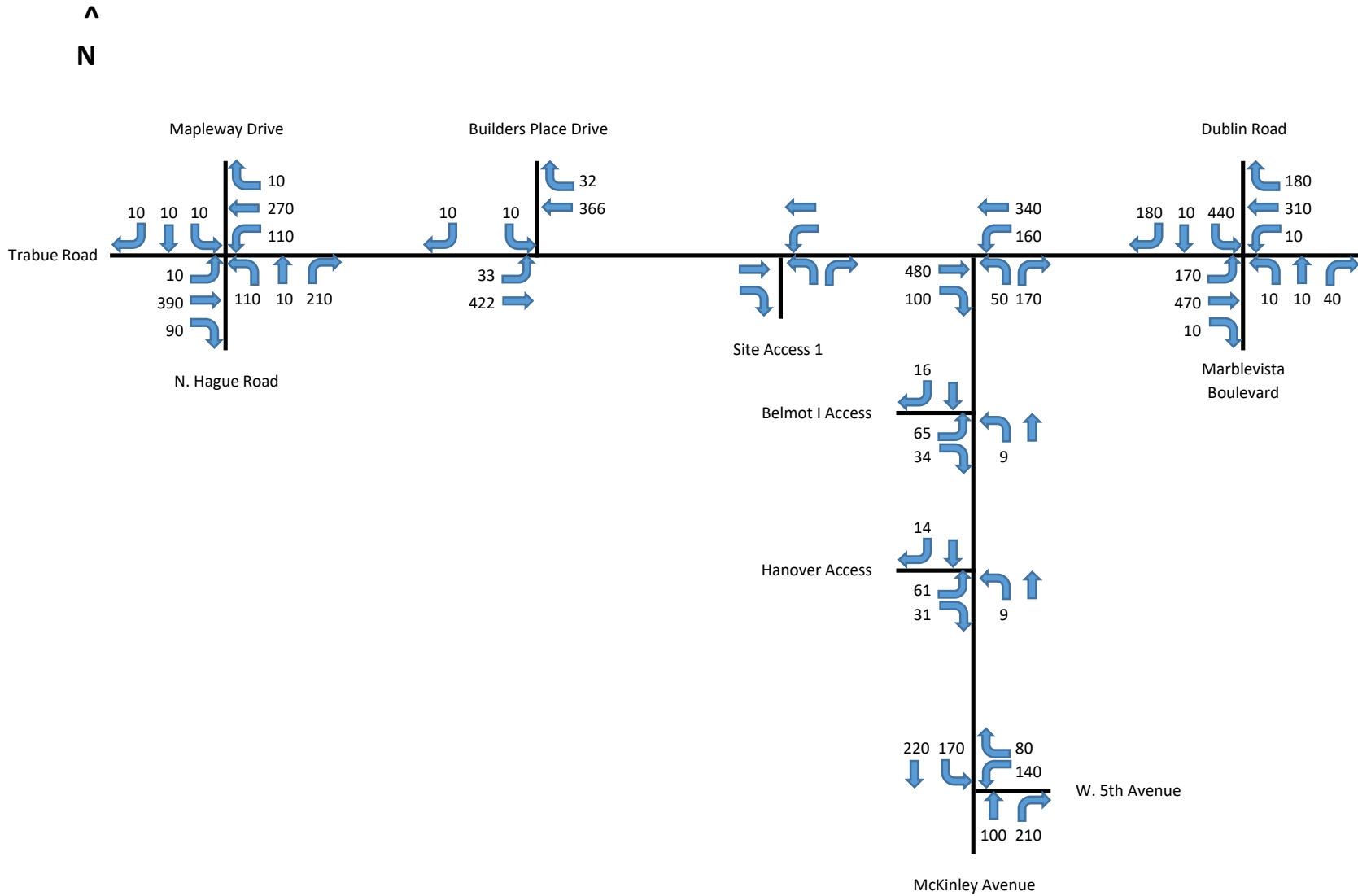
Year	Period	Scenario	Plate
Varies	AM	Count	A1



Belmont II TIS
Traffic Volume Calculations



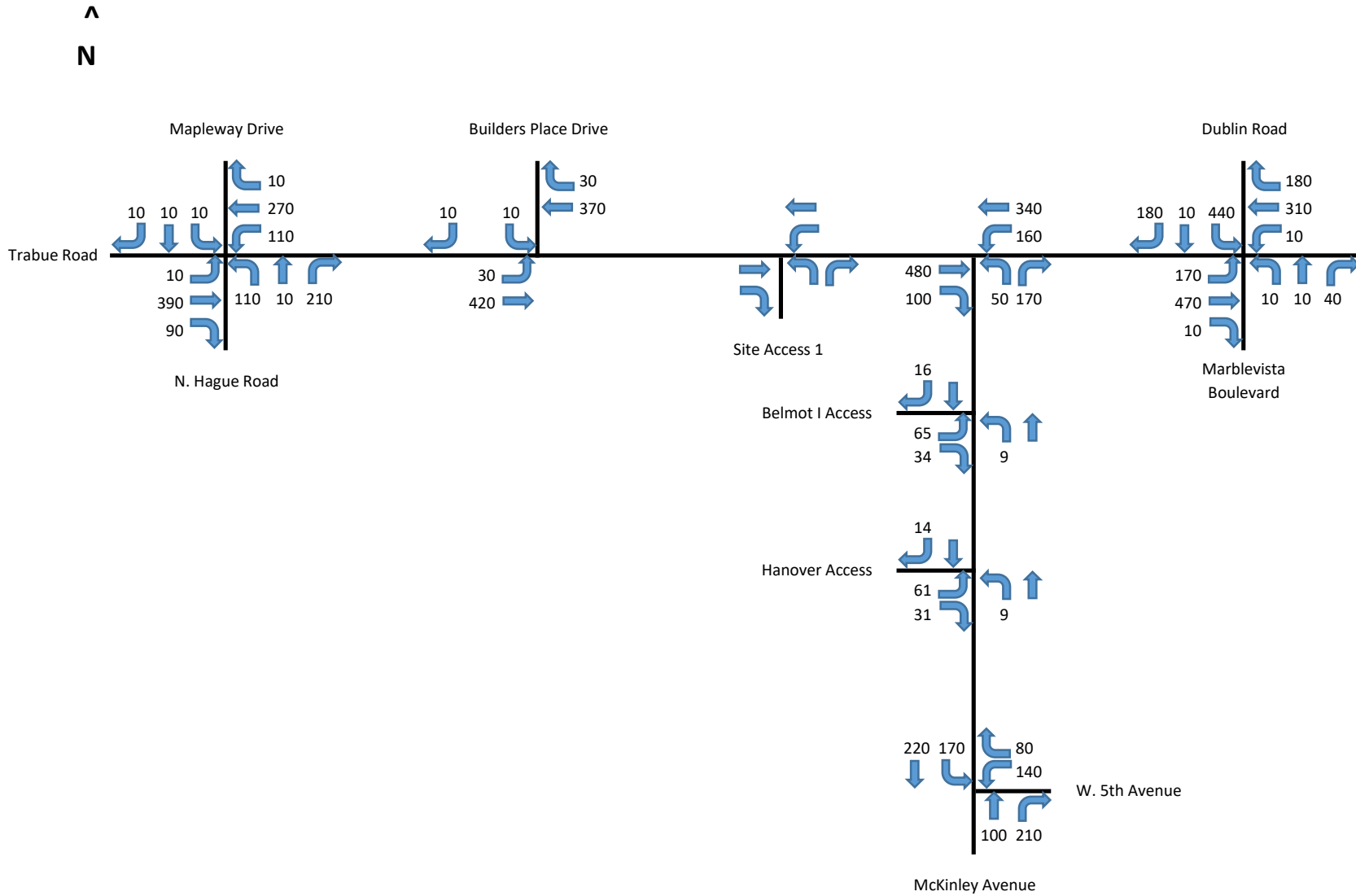
Year	Period	Scenario	Plate
2022	AM	Builders Place Grown	B1 = A1 Grown



Belmont II TIS
Traffic Volume Calculations



Year	Period	Scenario	Plate
2022	AM	Builders Place Rounded	C1 = B1 Rounded

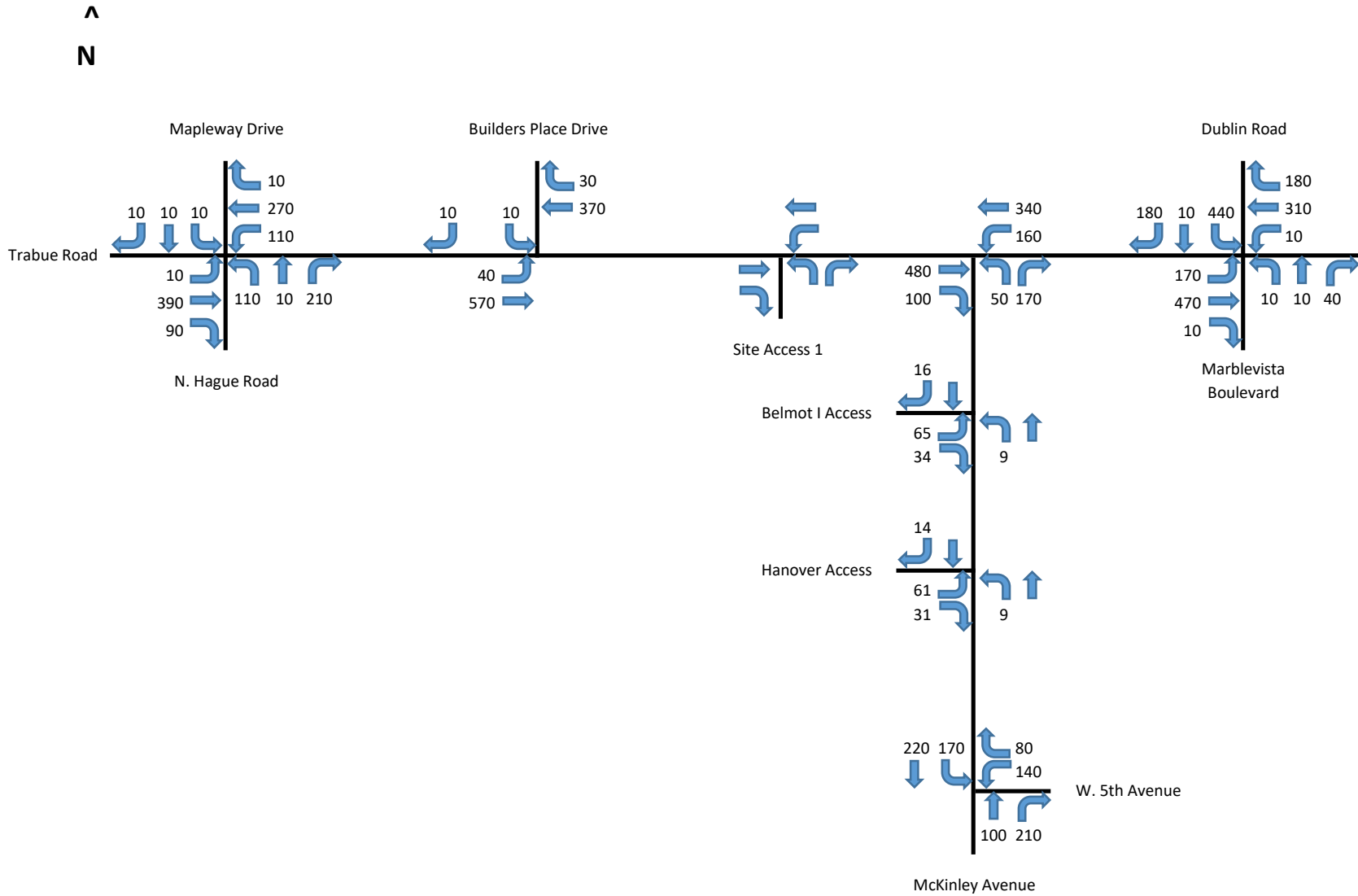


Belmont II TIS

Traffic Volume Calculations



Year	Period	Scenario	Plate
2022	AM	Smoothed	D1 = C1 Smoothed

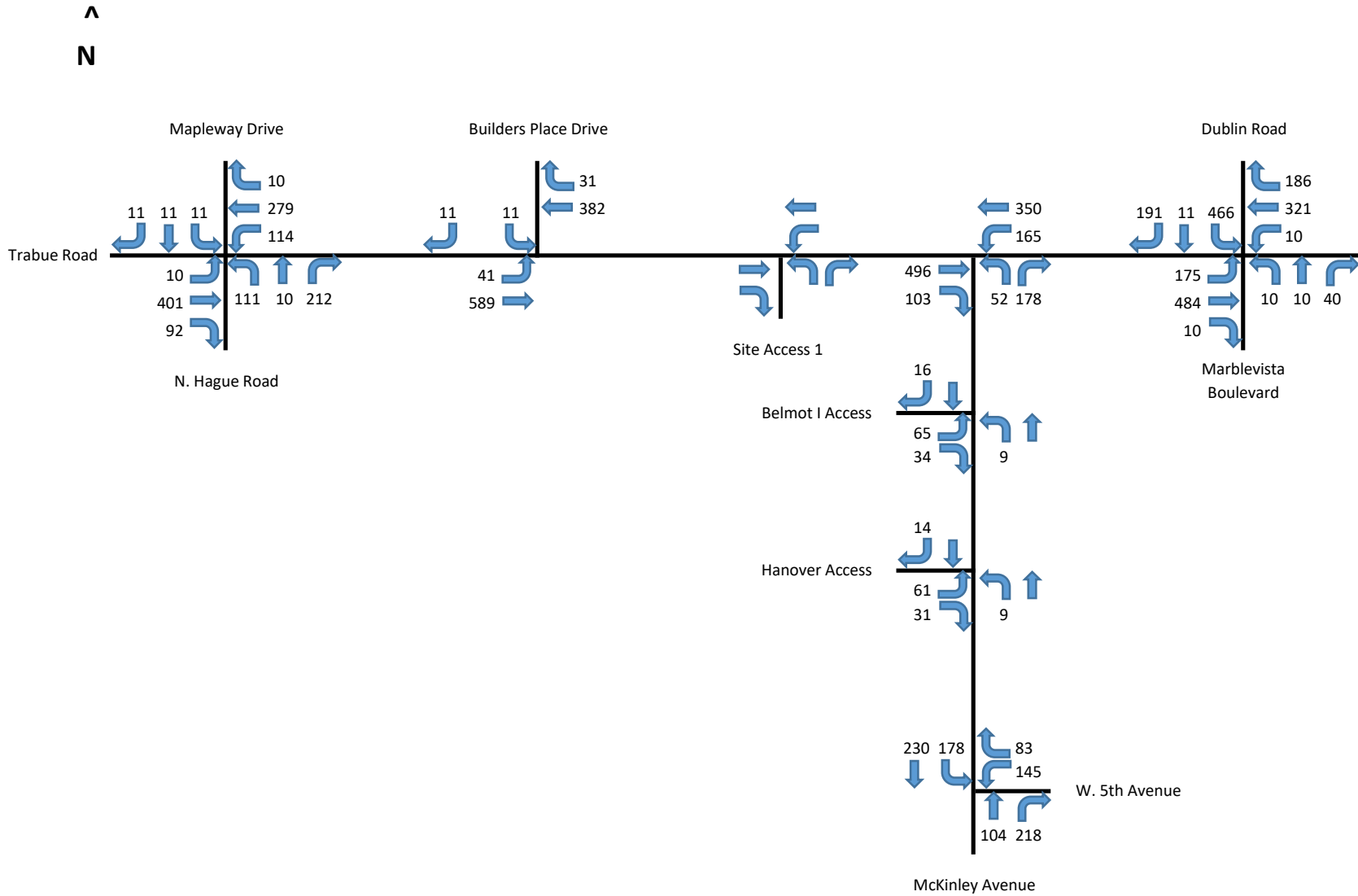


Belmont II TIS

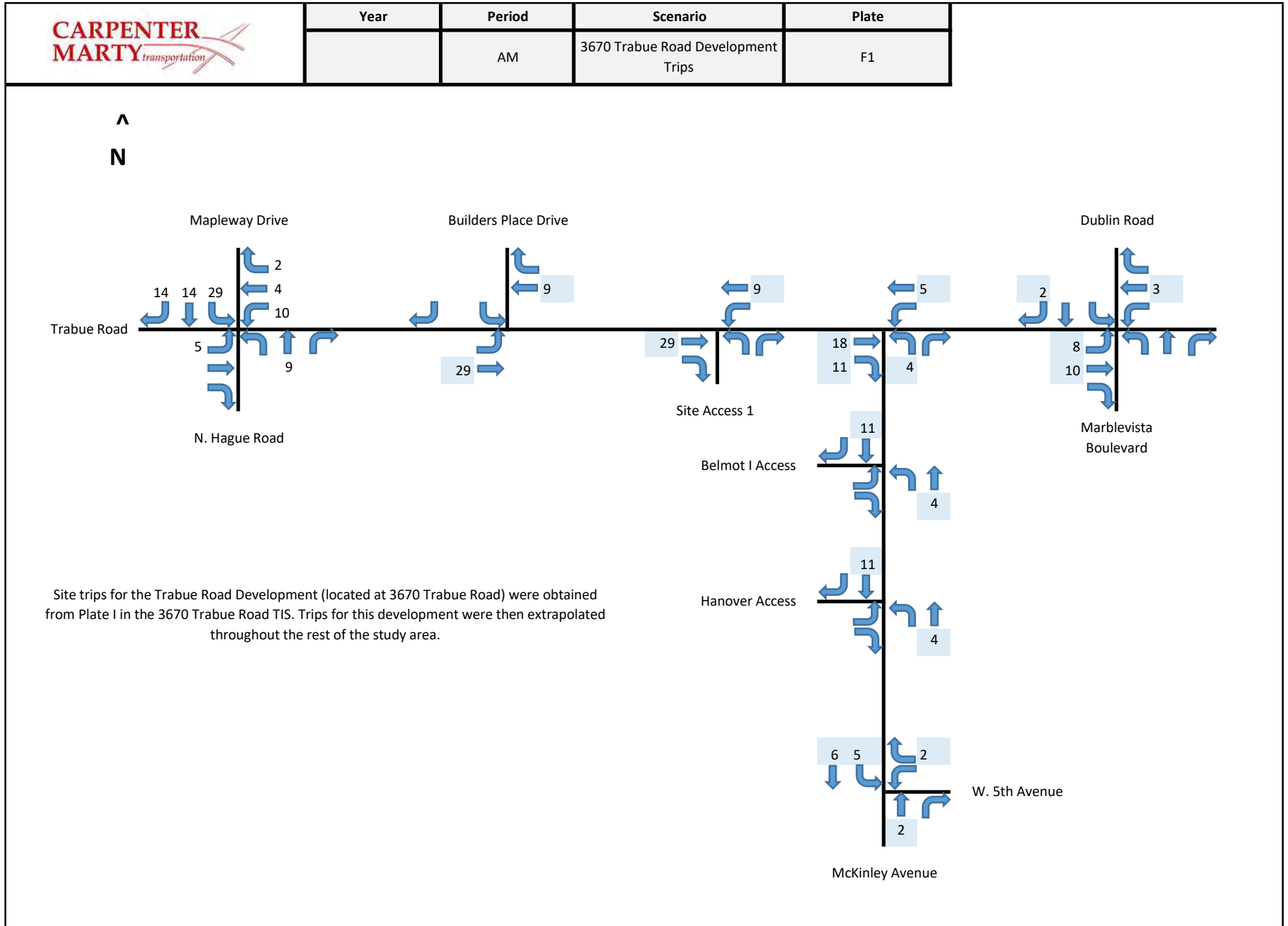
Traffic Volume Calculations



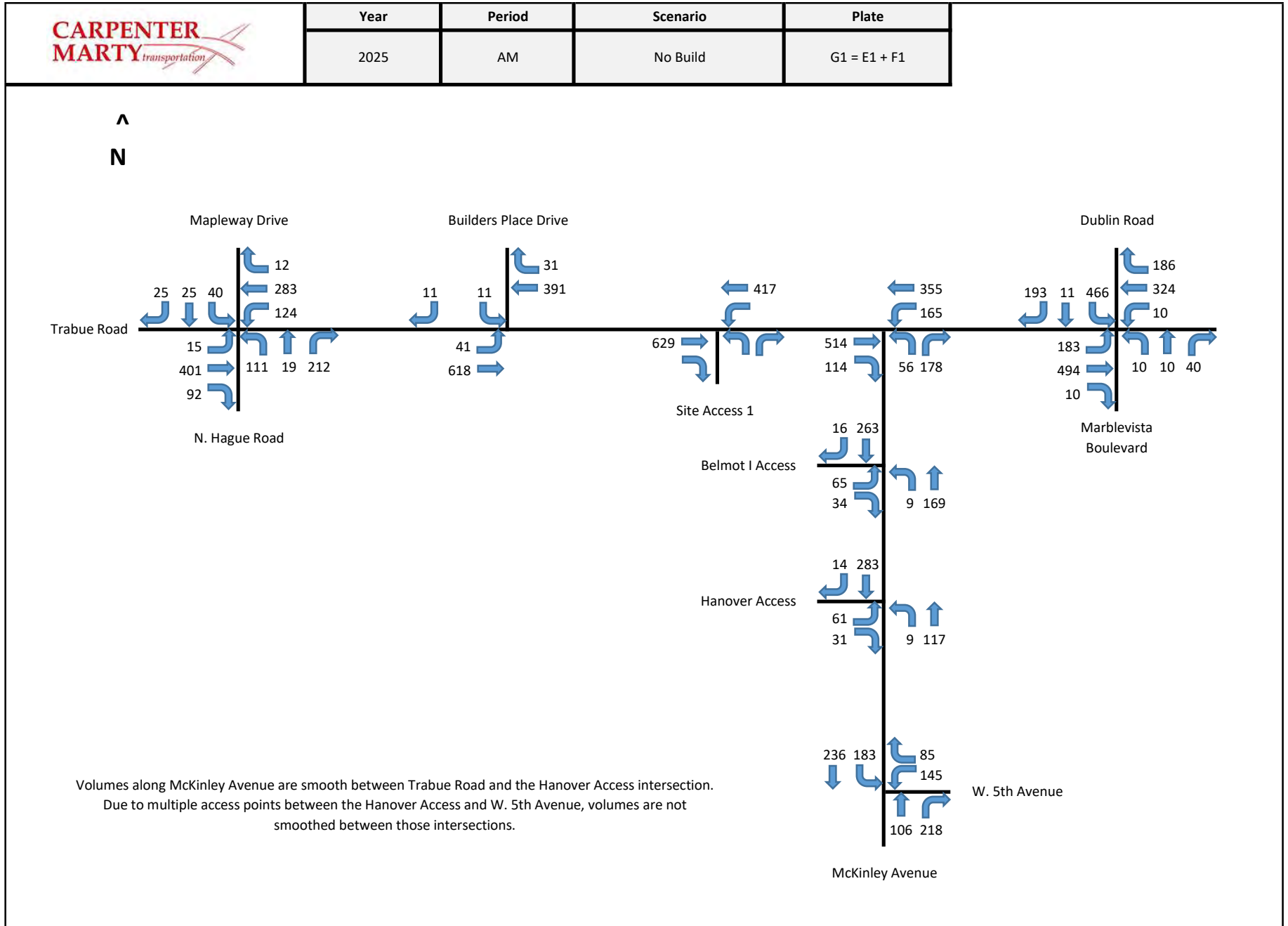
Year	Period	Scenario	Plate
2025	AM	Background Traffic	E1 = D1 Grown



Belmont II TIS
Traffic Volume Calculations



Belmont II TIS
Traffic Volume Calculations



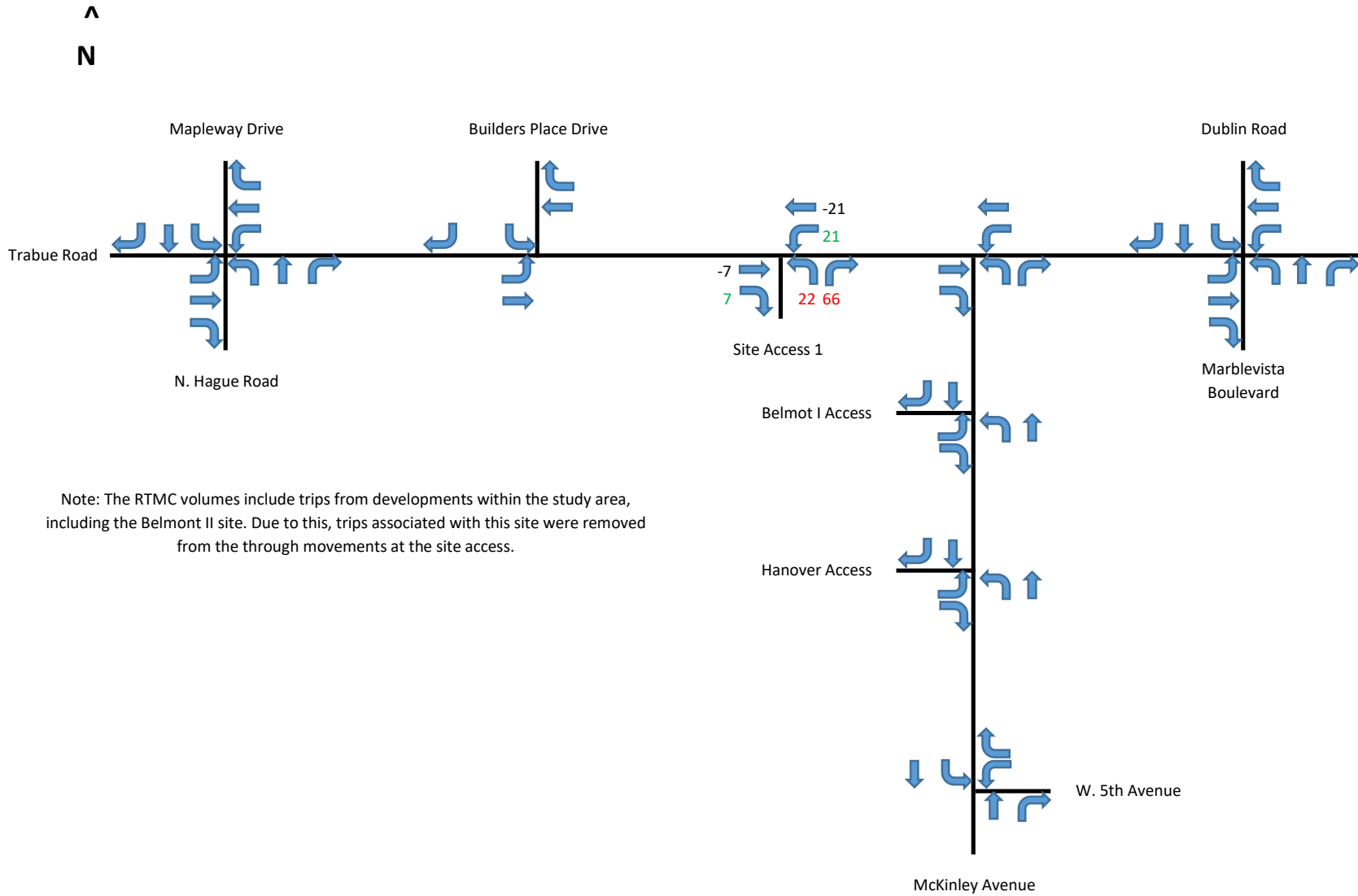
Belmont II TIS

Traffic Volume Calculations



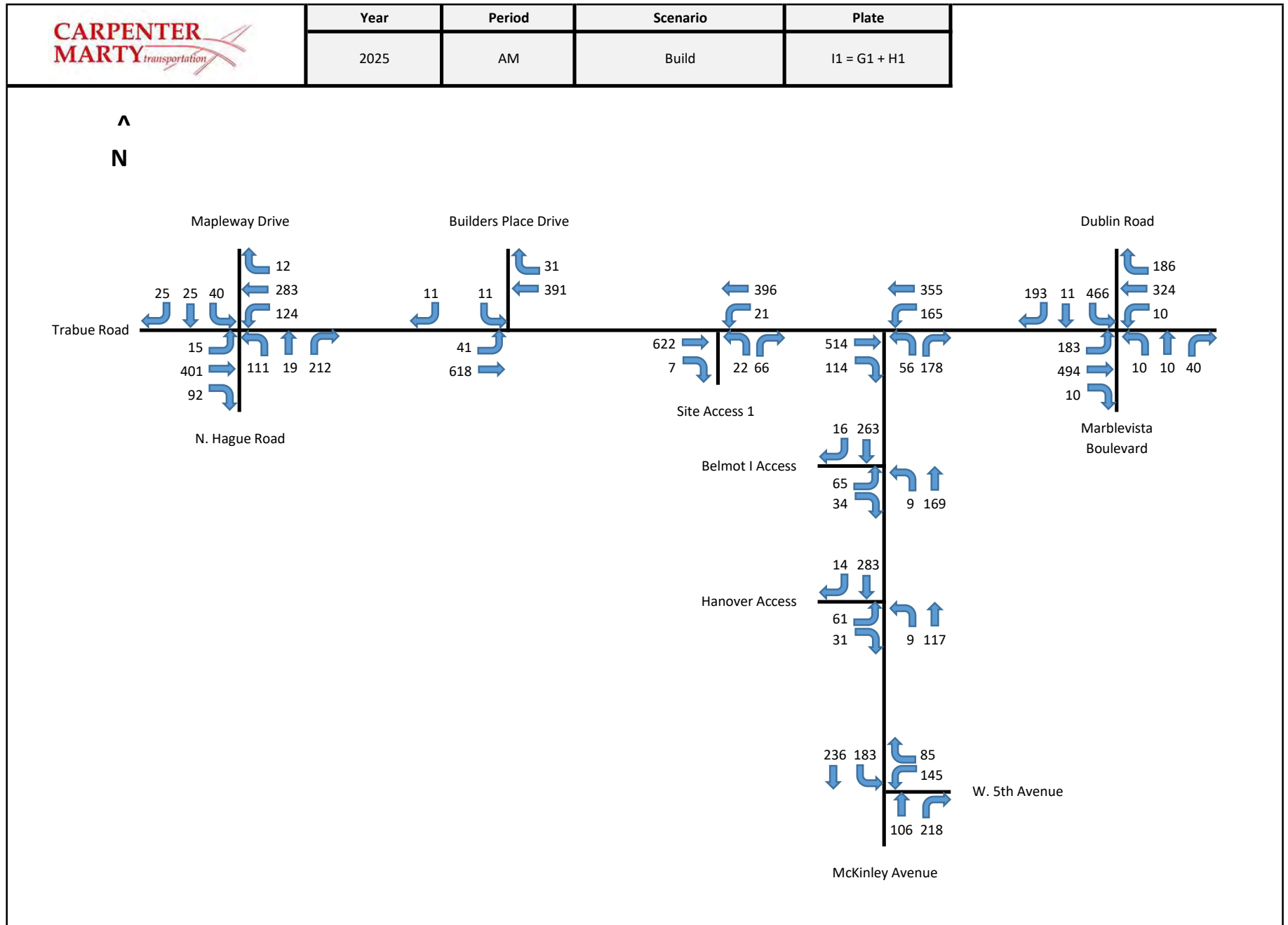
Year	Period	Scenario	Plate
2025	AM	Non-Pass-By Trips	H1

Enter 28
Exit 88



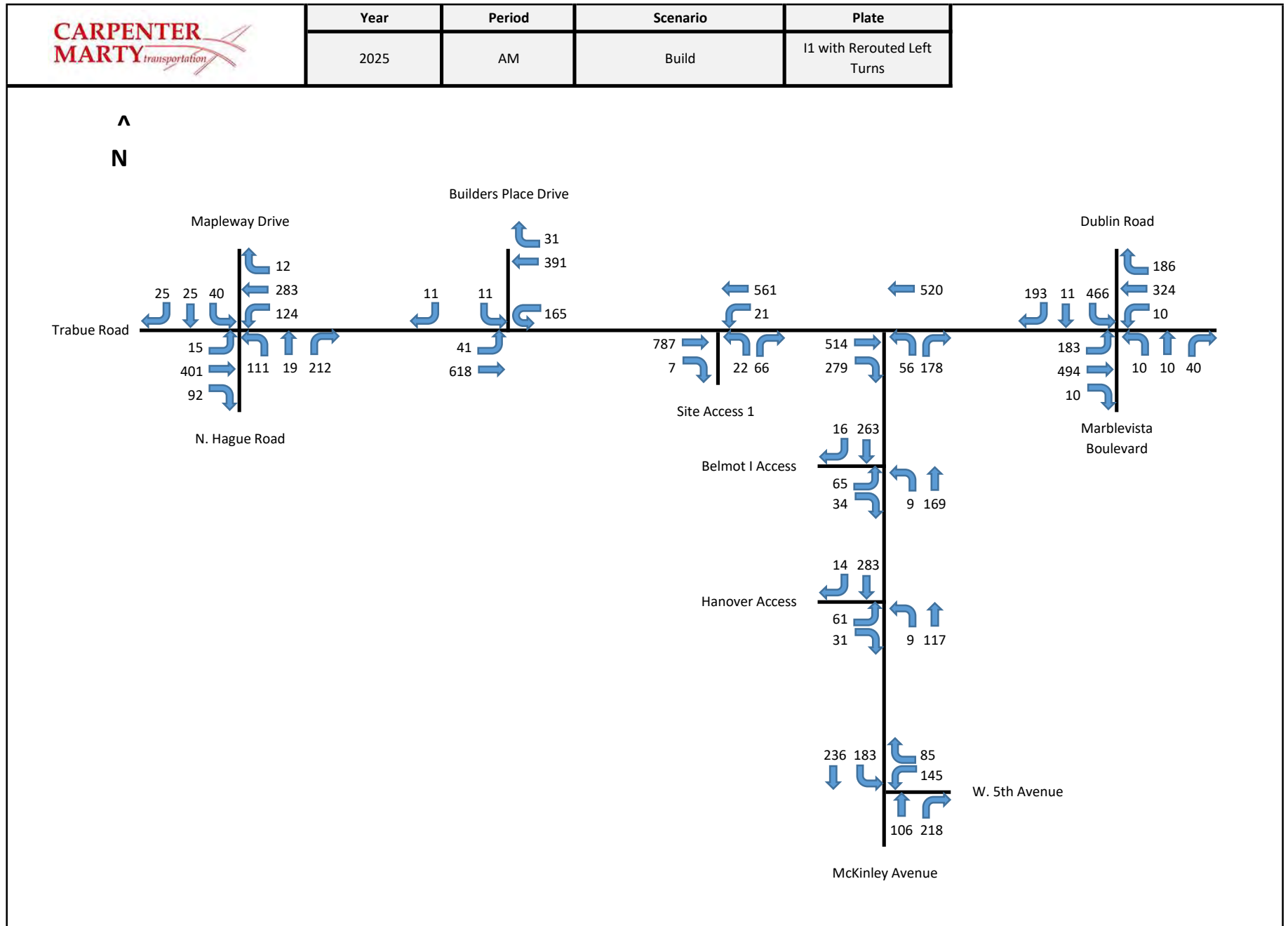
Note: The RTMC volumes include trips from developments within the study area, including the Belmont II site. Due to this, trips associated with this site were removed from the through movements at the site access.

Belmont II TIS
Traffic Volume Calculations



Belmont II TIS

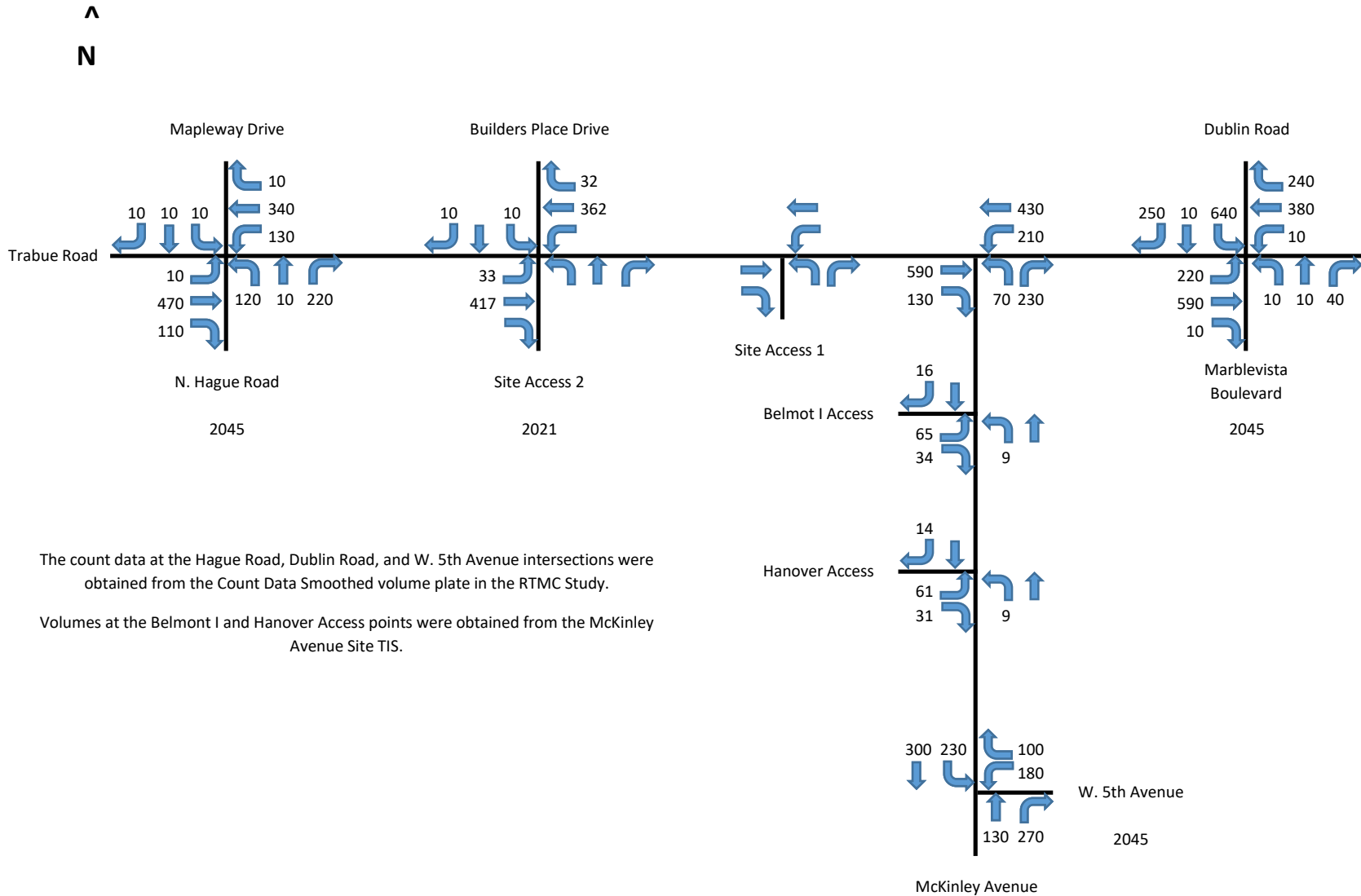
Traffic Volume Calculations



Belmont II TIS Traffic Volume Calculations



Year	Period	Scenario	Plate
Varies	AM	Count	J1



The count data at the Hague Road, Dublin Road, and W. 5th Avenue intersections were obtained from the Count Data Smoothed volume plate in the RTMC Study.

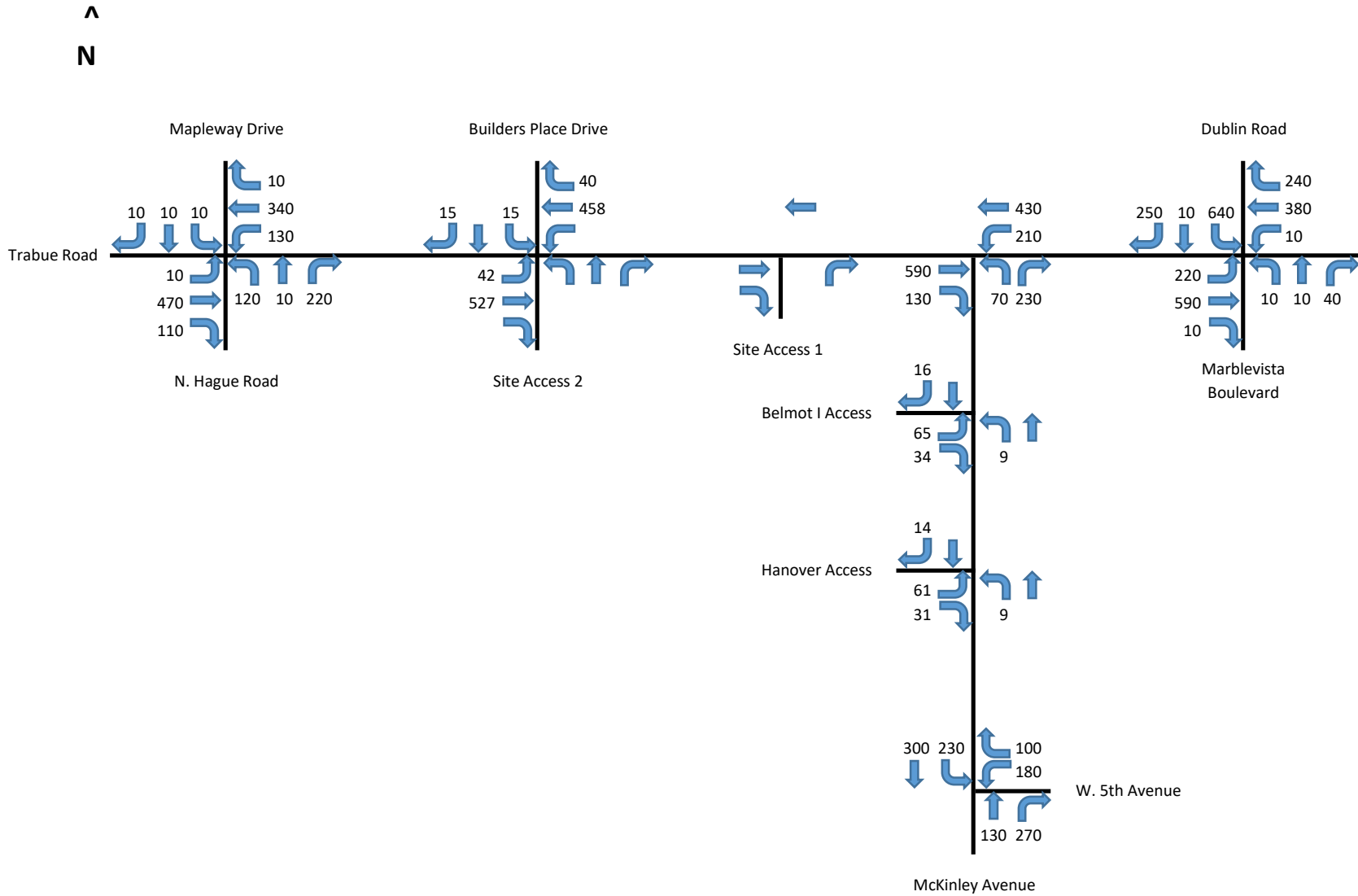
Volumes at the Belmont I and Hanover Access points were obtained from the McKinley Avenue Site TIS.

Belmont II TIS

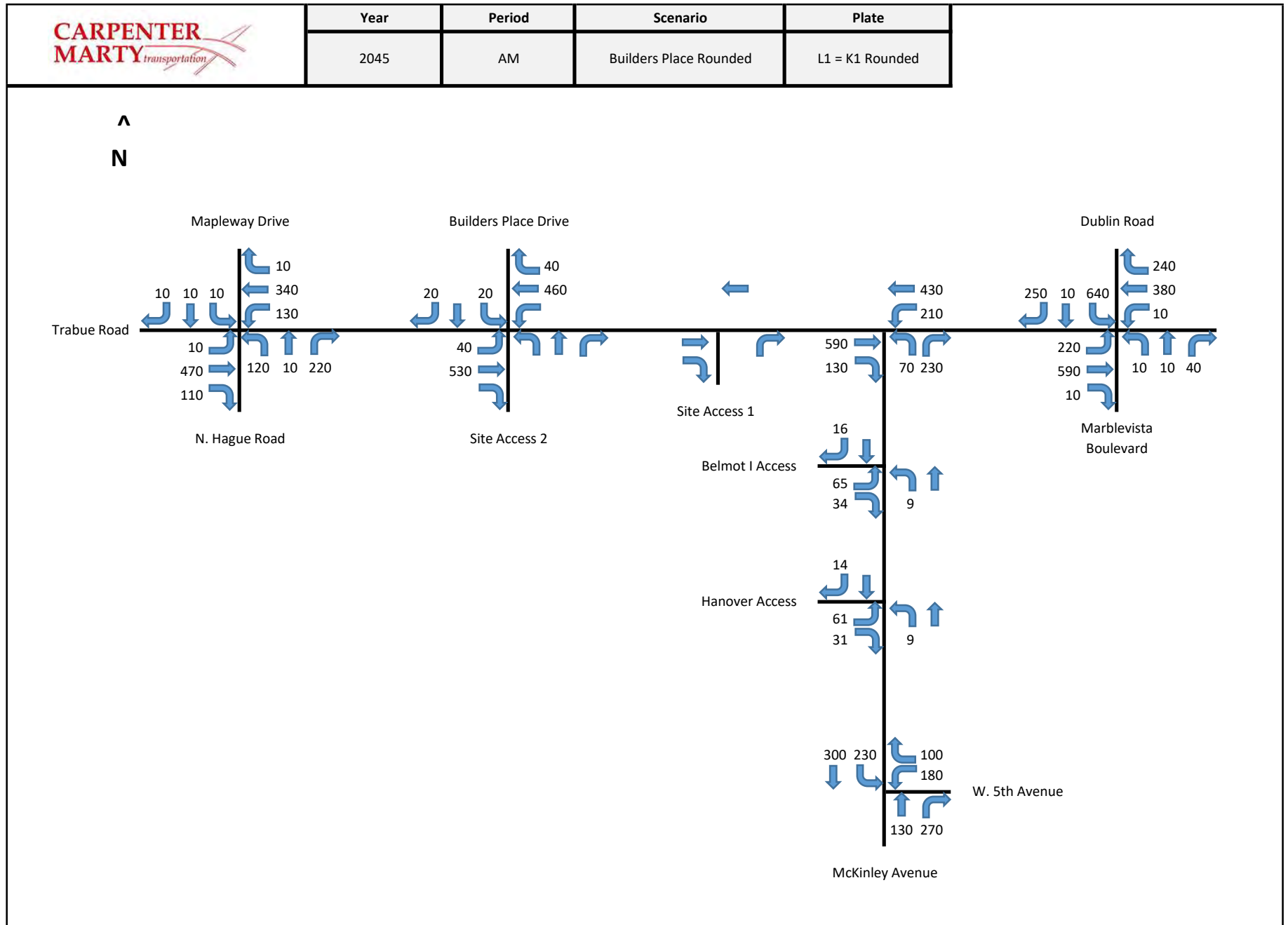
Traffic Volume Calculations



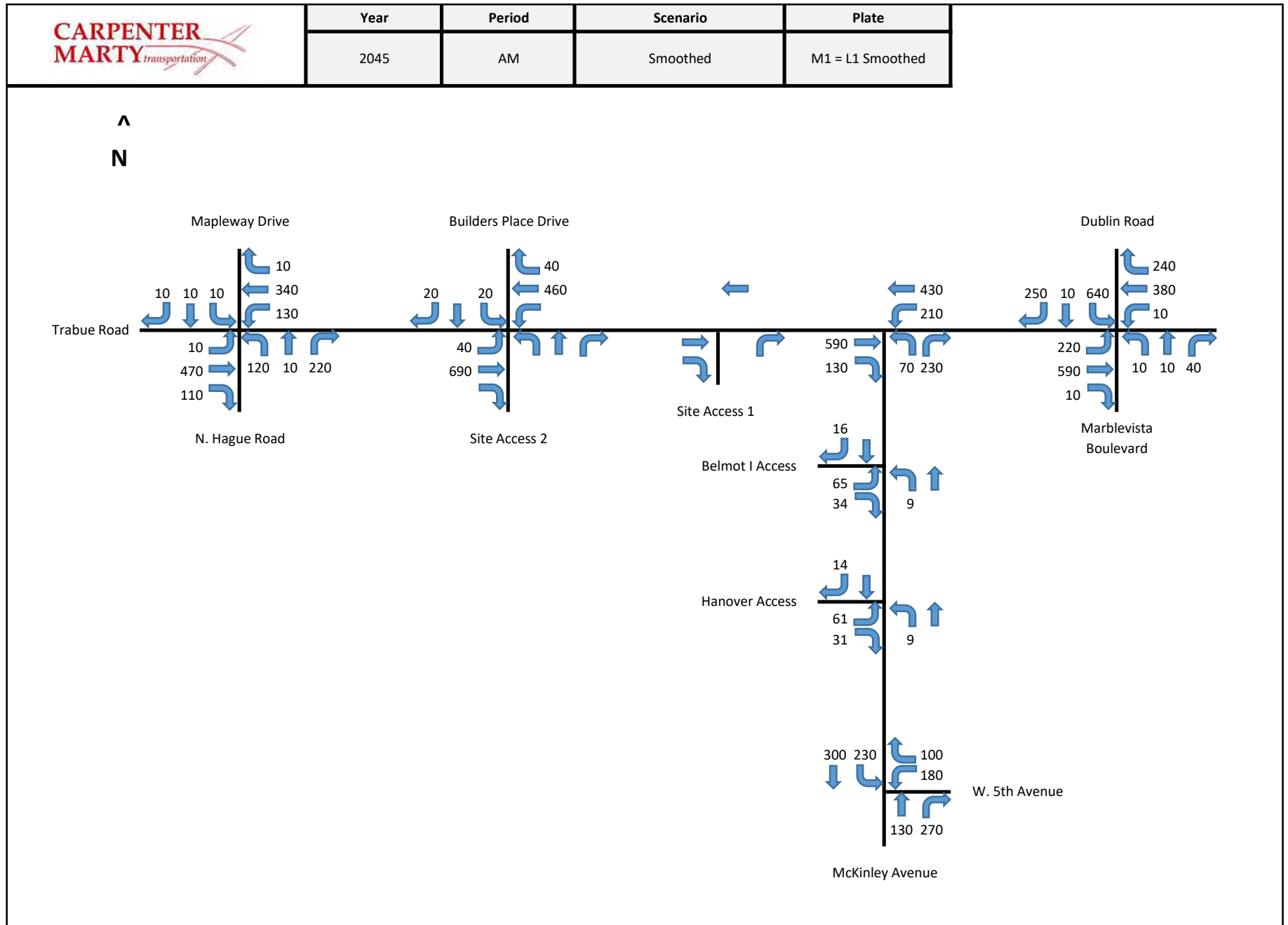
Year	Period	Scenario	Plate
2045	AM	Grown Count Data	K1 = J1 Grown



Belmont II TIS
Traffic Volume Calculations



Belmont II TIS
Traffic Volume Calculations

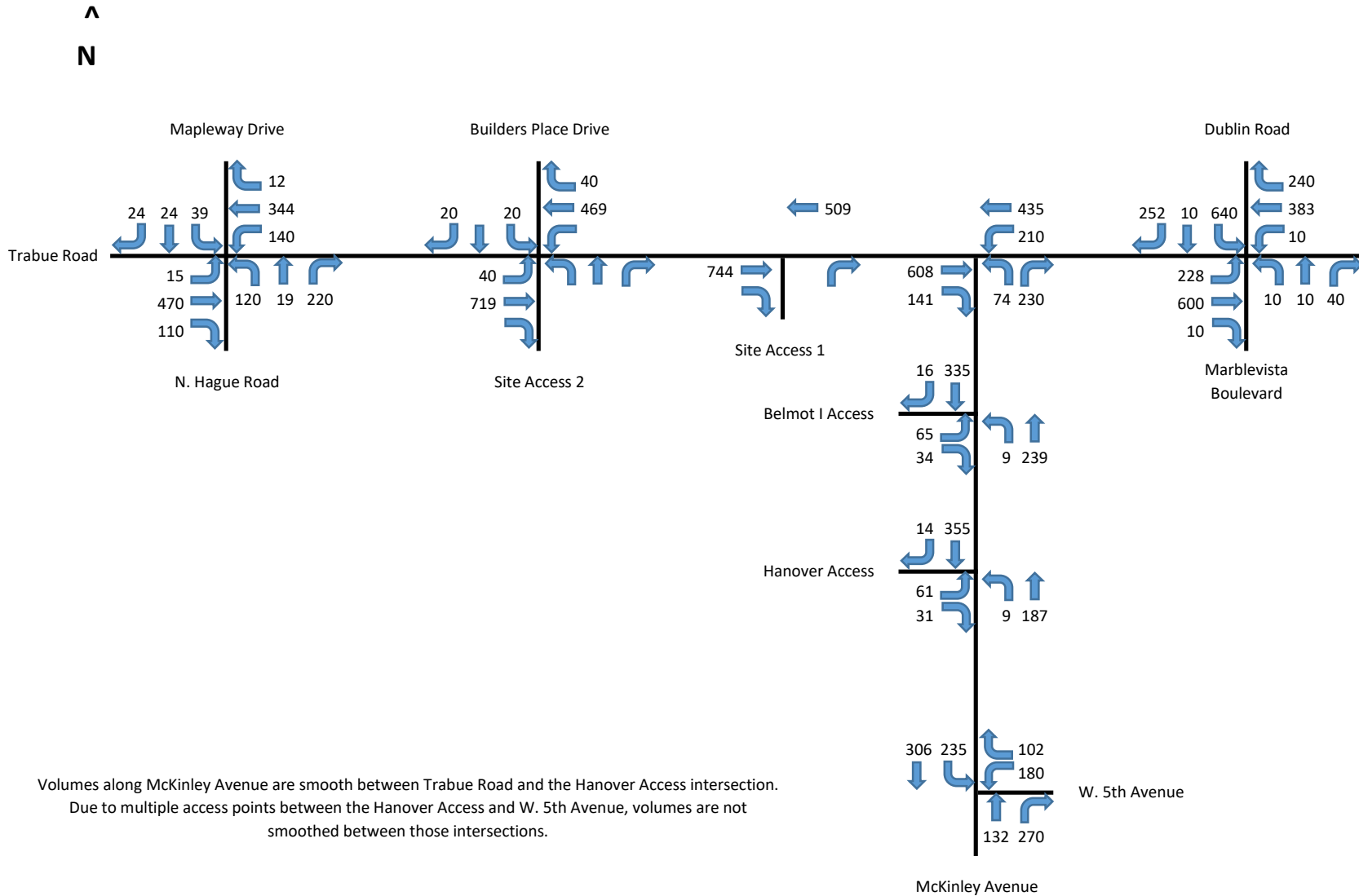


Belmont II TIS

Traffic Volume Calculations



Year	Period	Scenario	Plate
2045	AM	No Build	N1 = F1 + M1

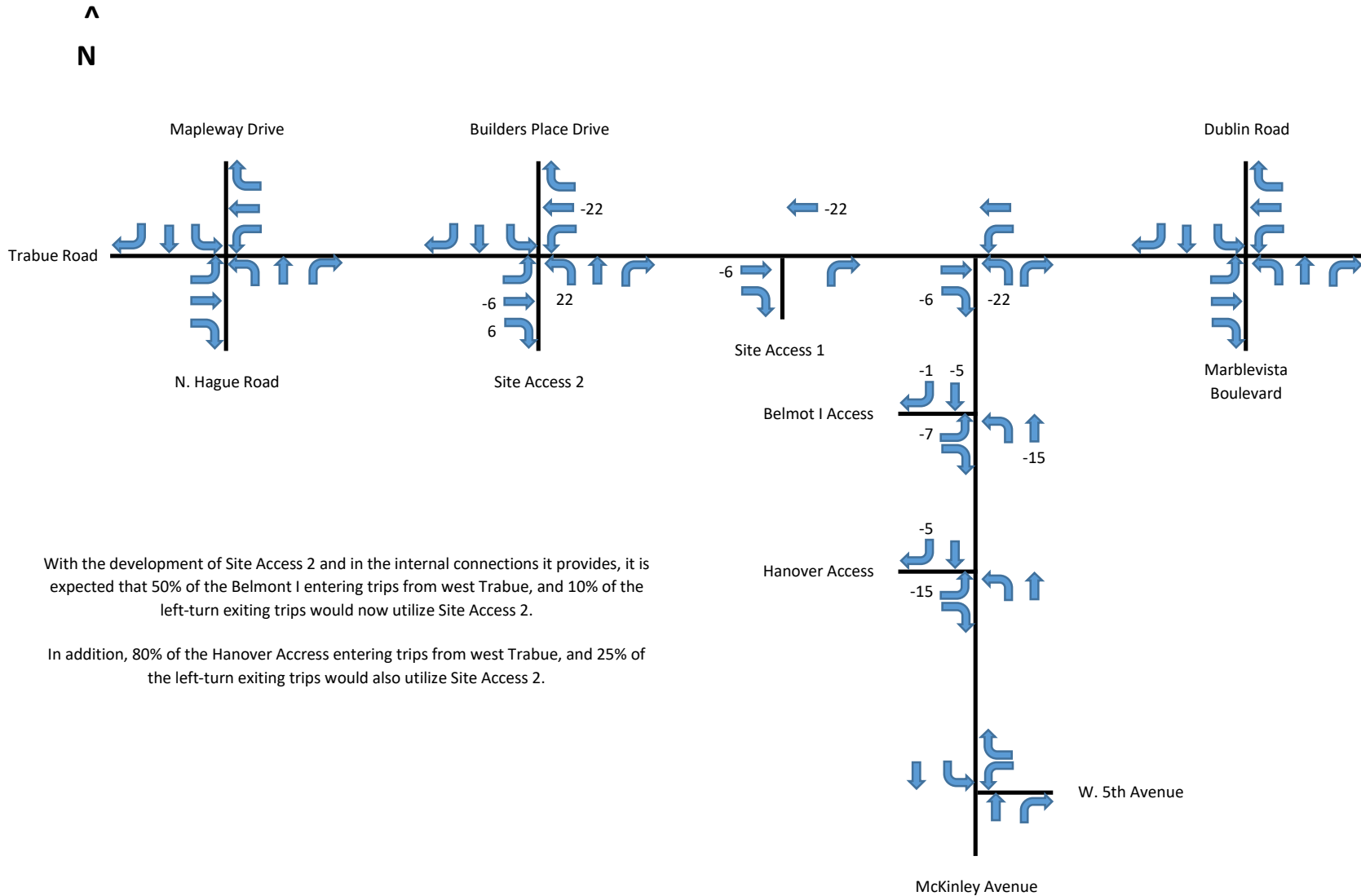


Belmont II TIS

Traffic Volume Calculations



Year	Period	Scenario	Plate
2045	AM	Rerouted Belmont I and Hanover Traffic	O1

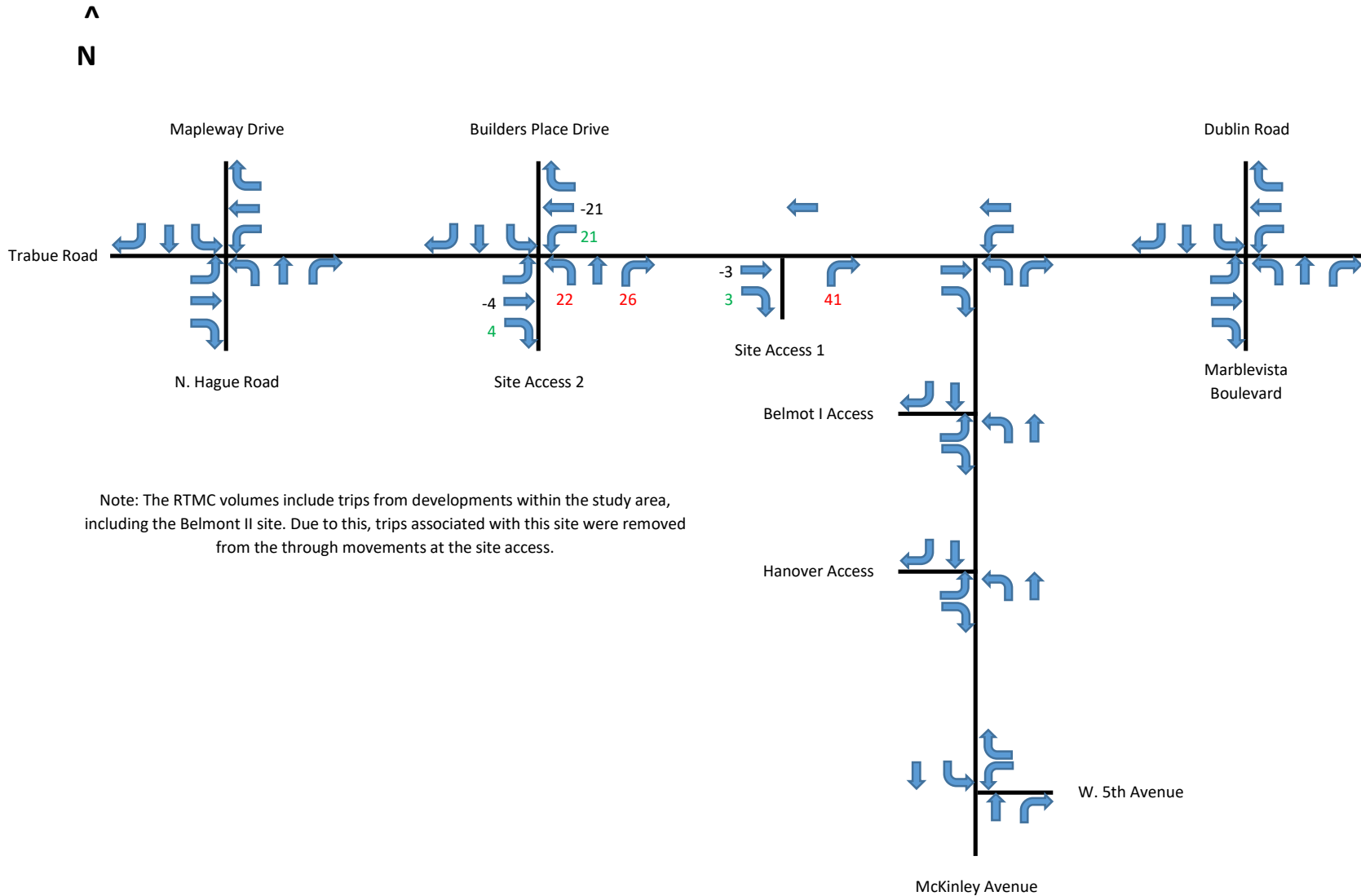


Belmont II TIS Traffic Volume Calculations



Year	Period	Scenario	Plate
2045	AM	Non-Pass-By Trips	P1

Enter 28
Exit 88



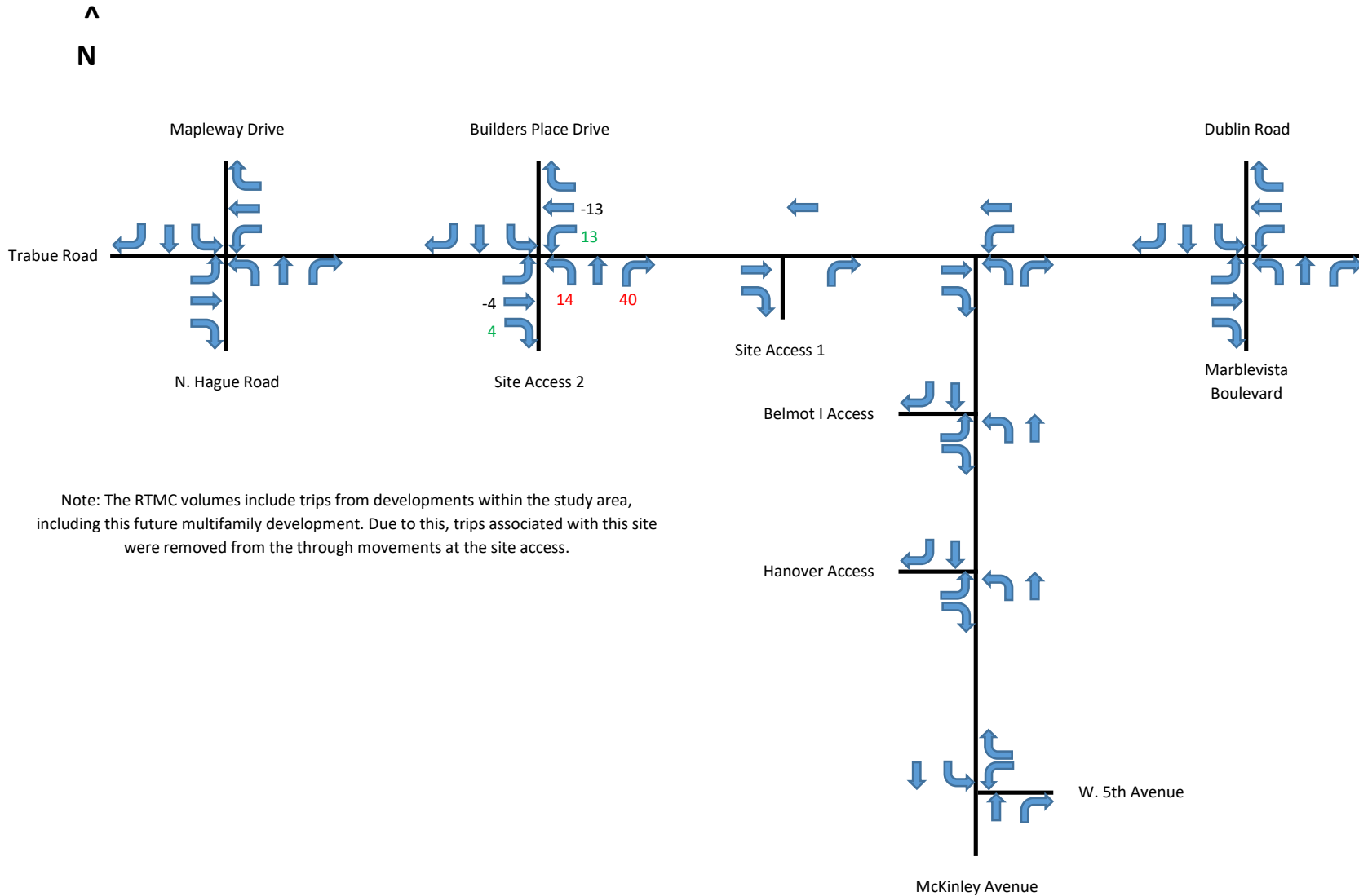
Belmont II TIS

Traffic Volume Calculations

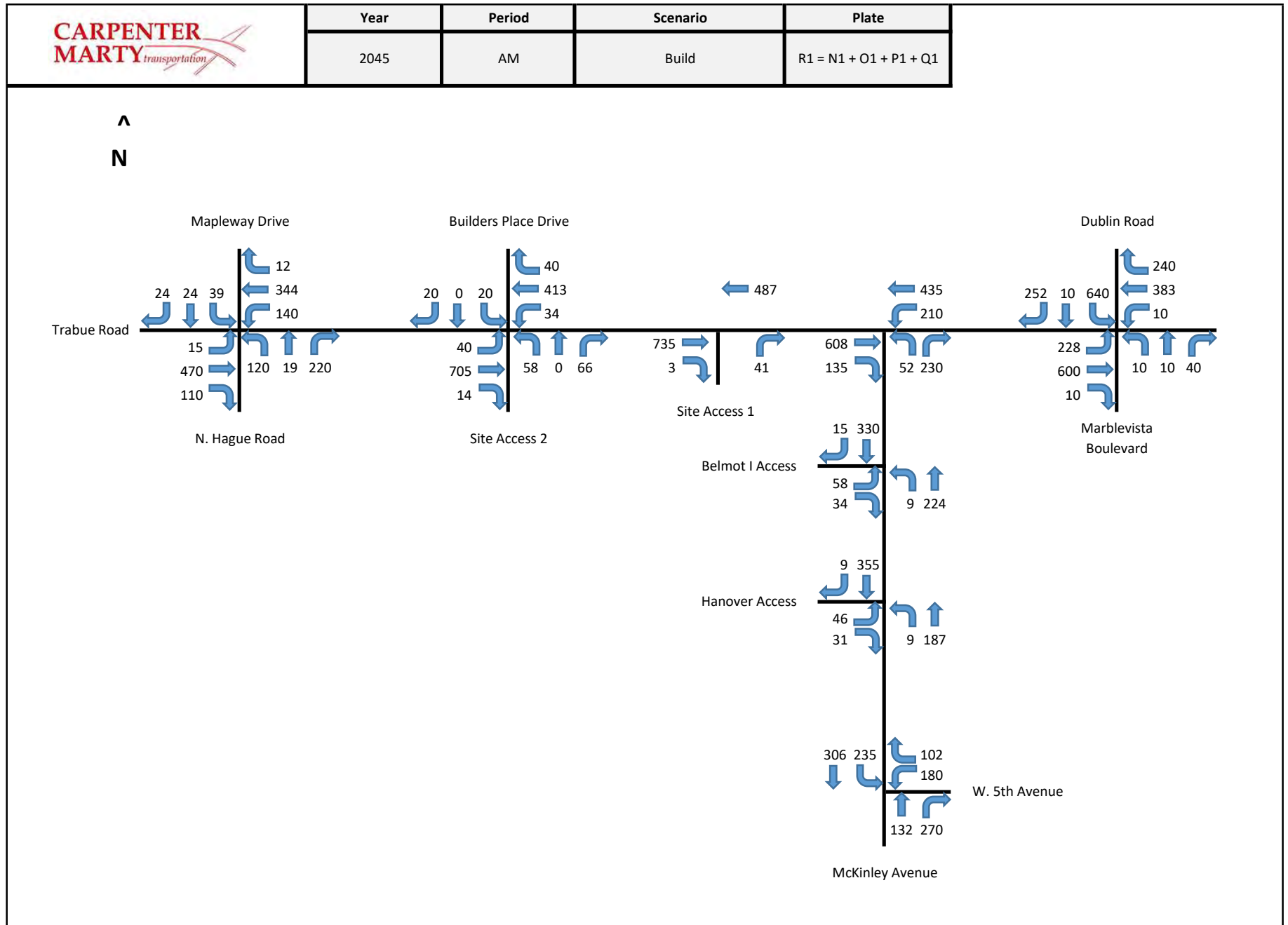


Year	Period	Scenario	Plate
2045	AM	West Multifamily Site Non-Pass-By Trips	Q1

Enter 17
Exit 54

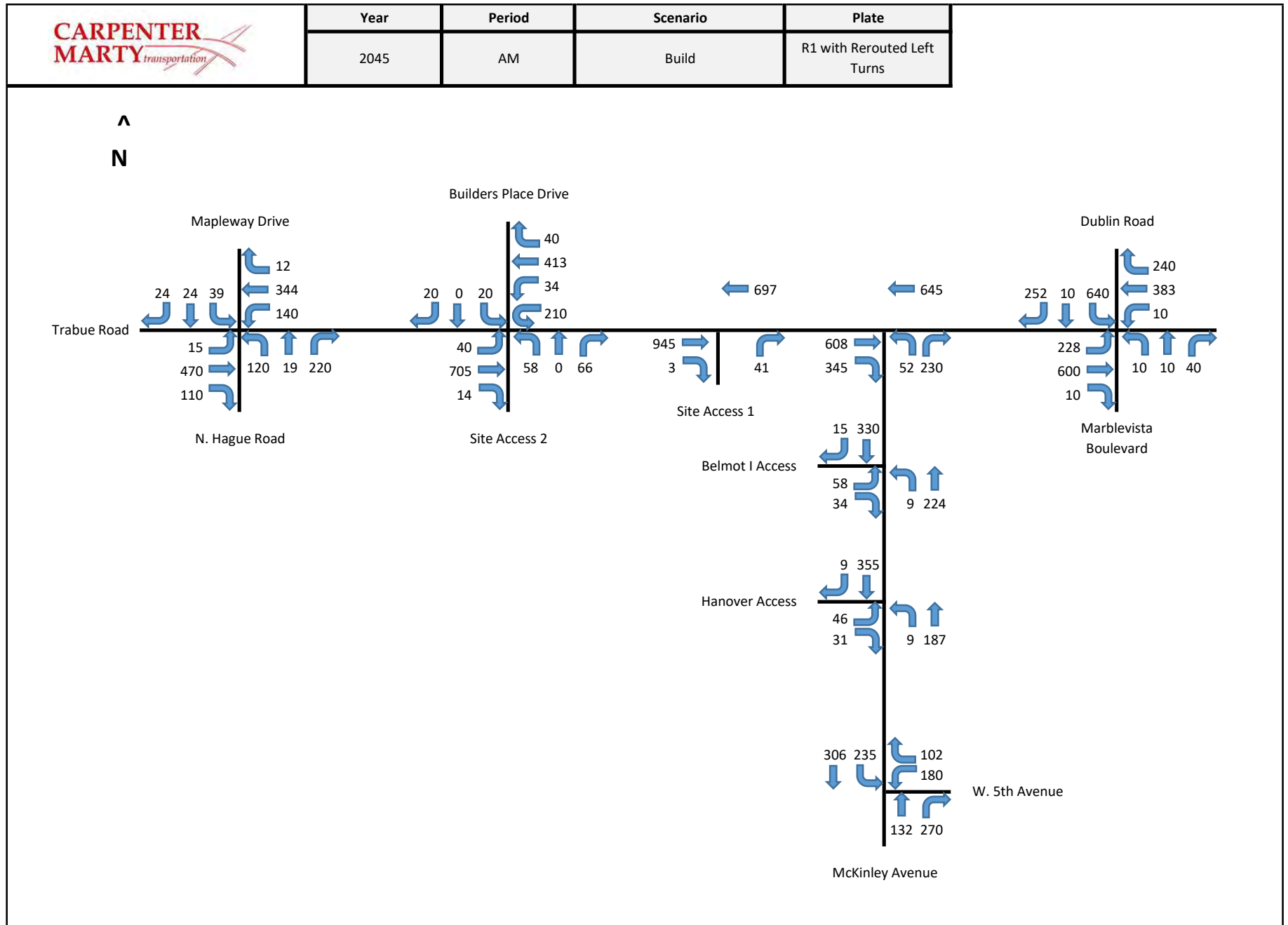


Belmont II TIS
Traffic Volume Calculations



Belmont II TIS

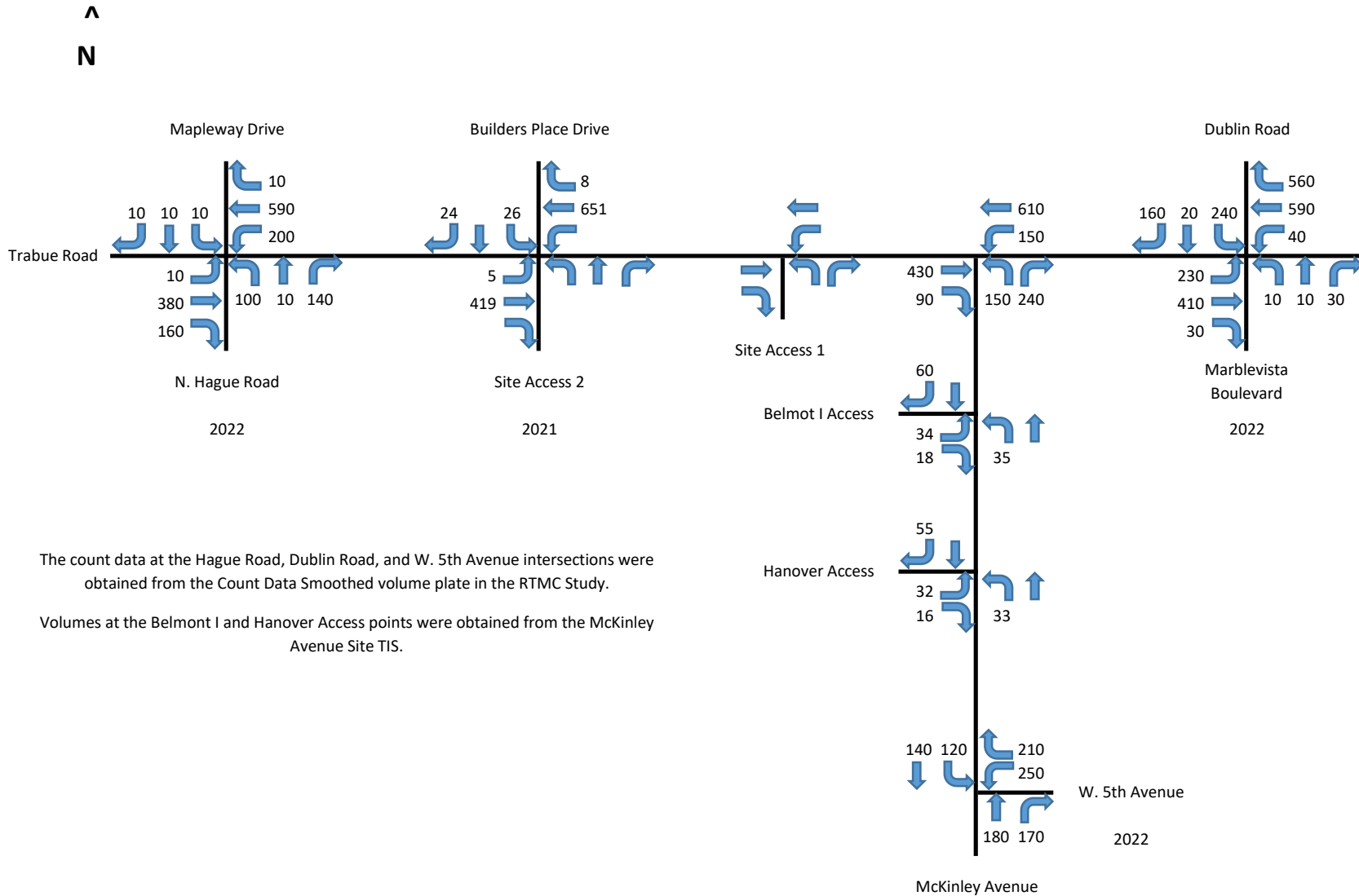
Traffic Volume Calculations



Belmont II TIS Traffic Volume Calculations



Year	Period	Scenario	Plate
Varies	PM	Count	A2

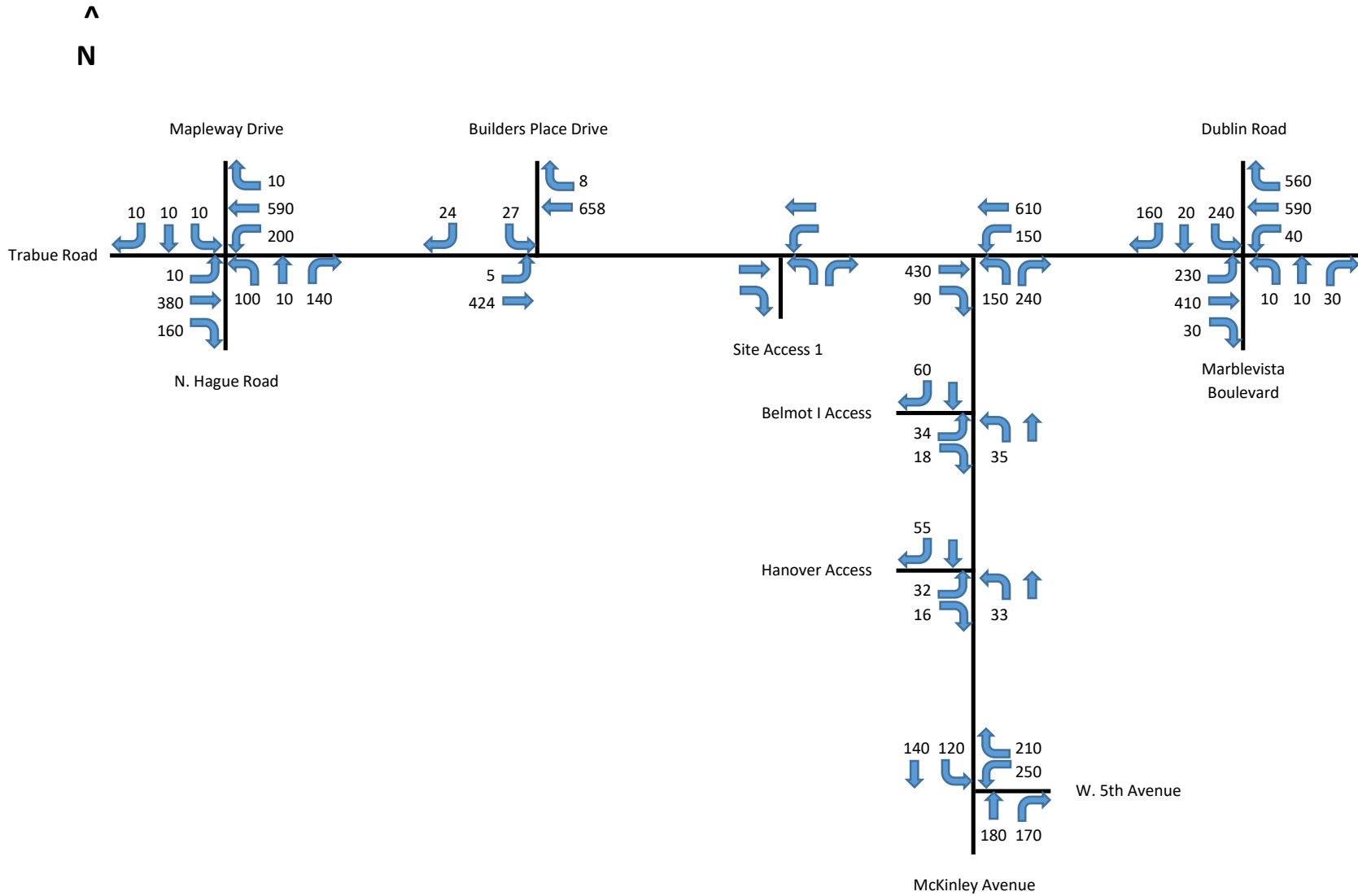


Belmont II TIS

Traffic Volume Calculations



Year	Period	Scenario	Plate
2022	PM	Builders Place Grown	B2 = A2 Grown

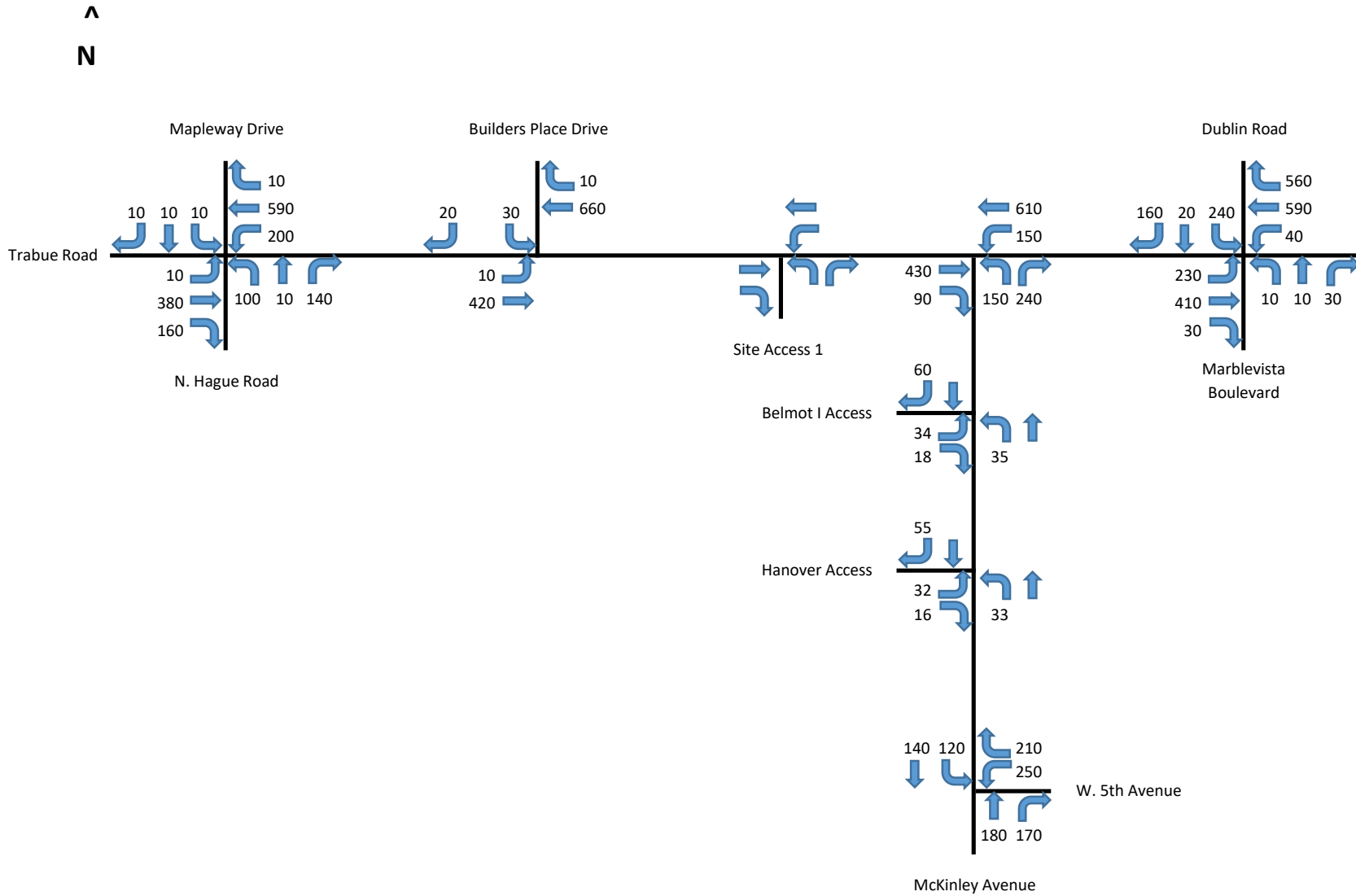


Belmont II TIS

Traffic Volume Calculations



Year	Period	Scenario	Plate
2022	PM	Builders Place Rounded	C2 = B2 Rounded

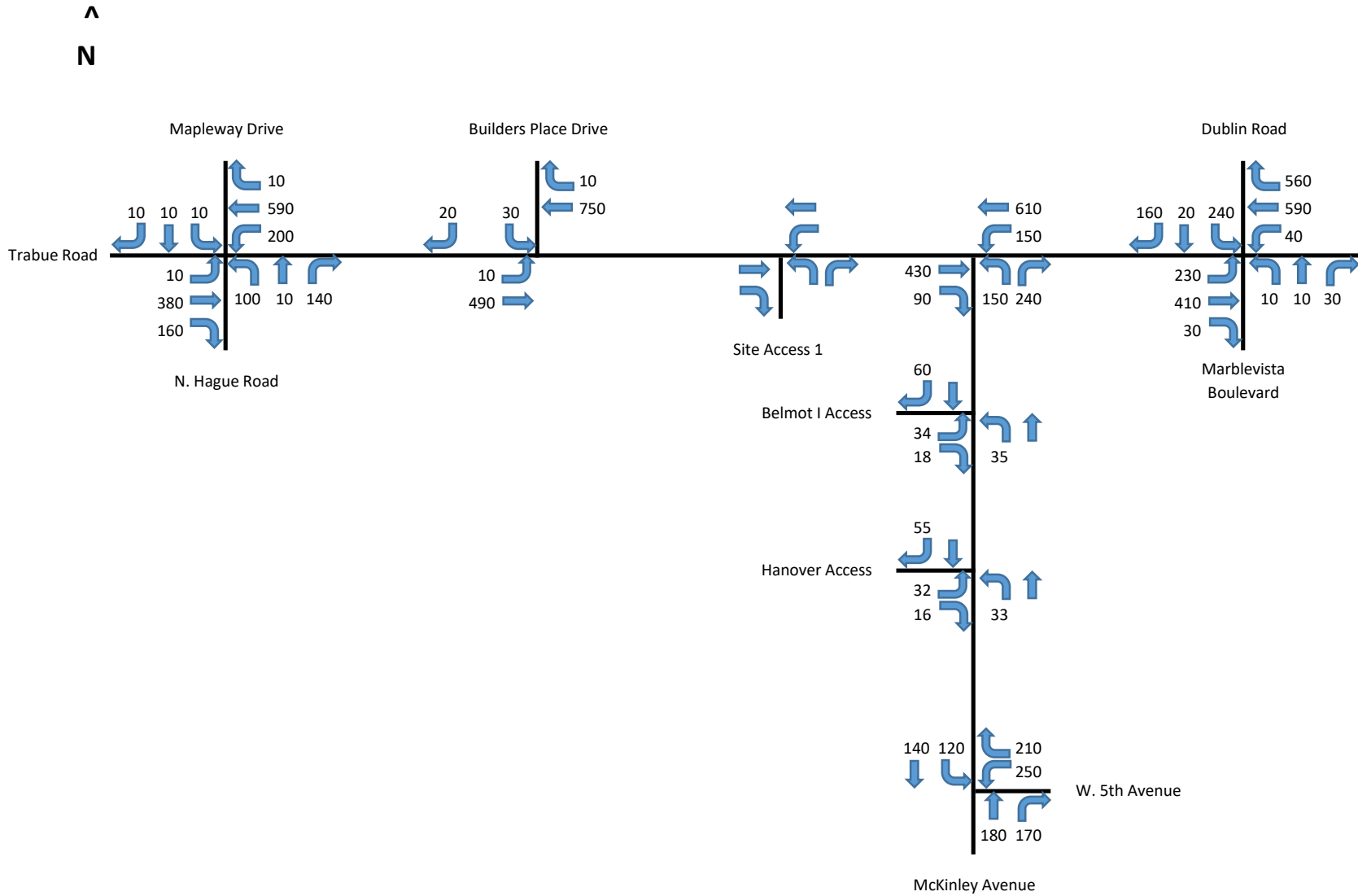


Belmont II TIS

Traffic Volume Calculations



Year	Period	Scenario	Plate
2022	PM	Smoothed	D2 = C2 Smoothed

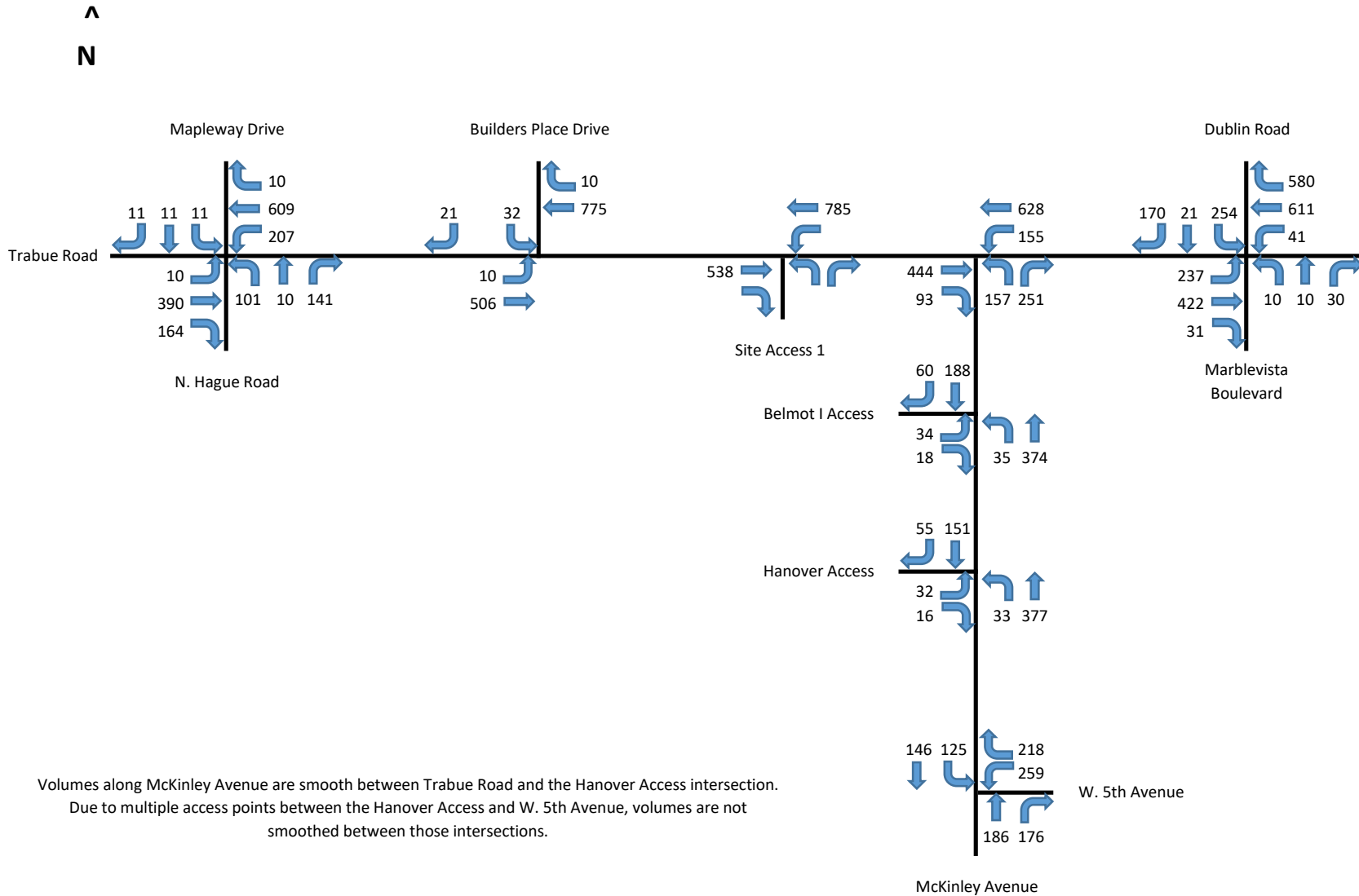


Belmont II TIS

Traffic Volume Calculations

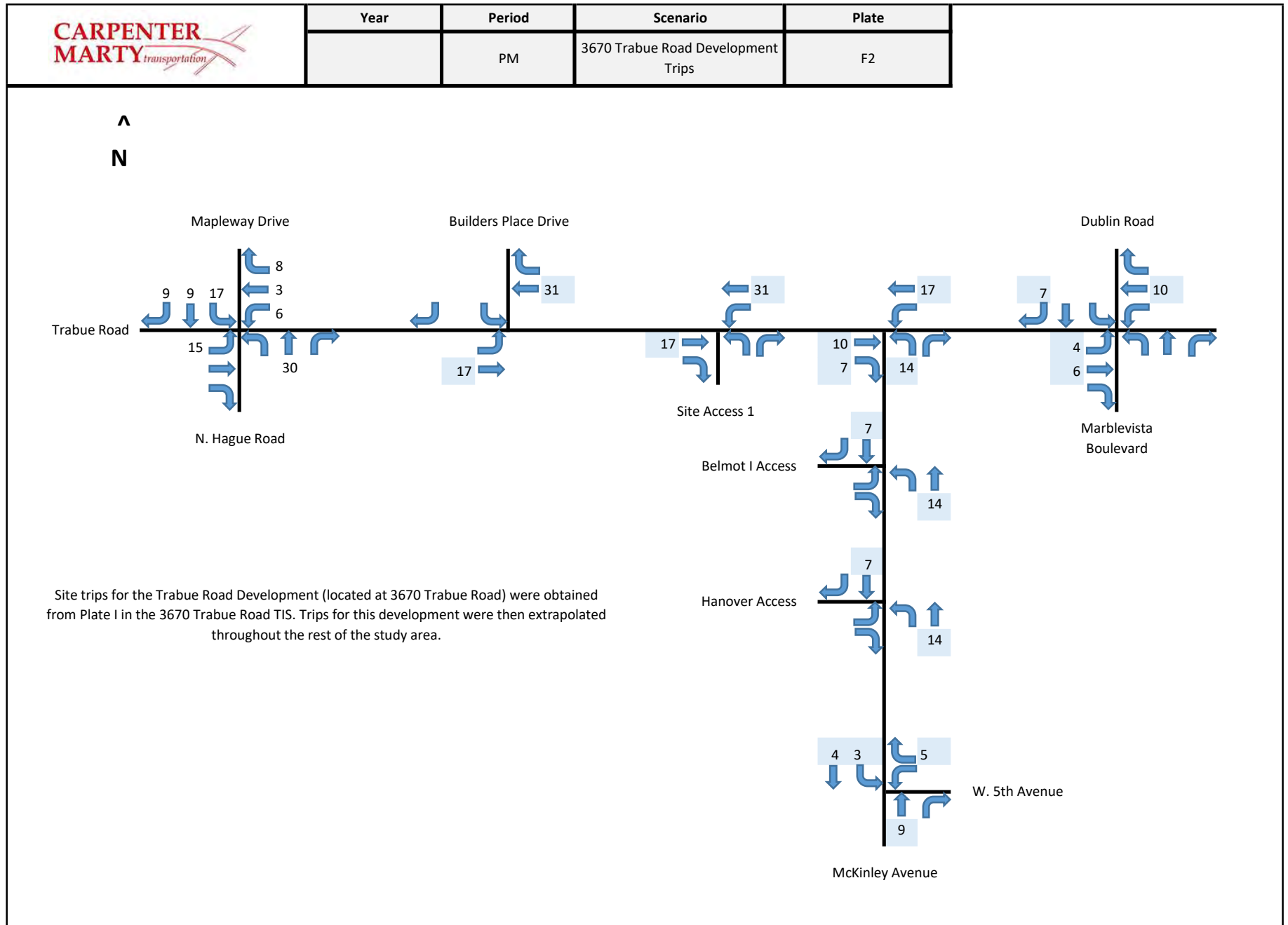


Year	Period	Scenario	Plate
2025	PM	Background Traffic	E2 = D2 Grown



Belmont II TIS

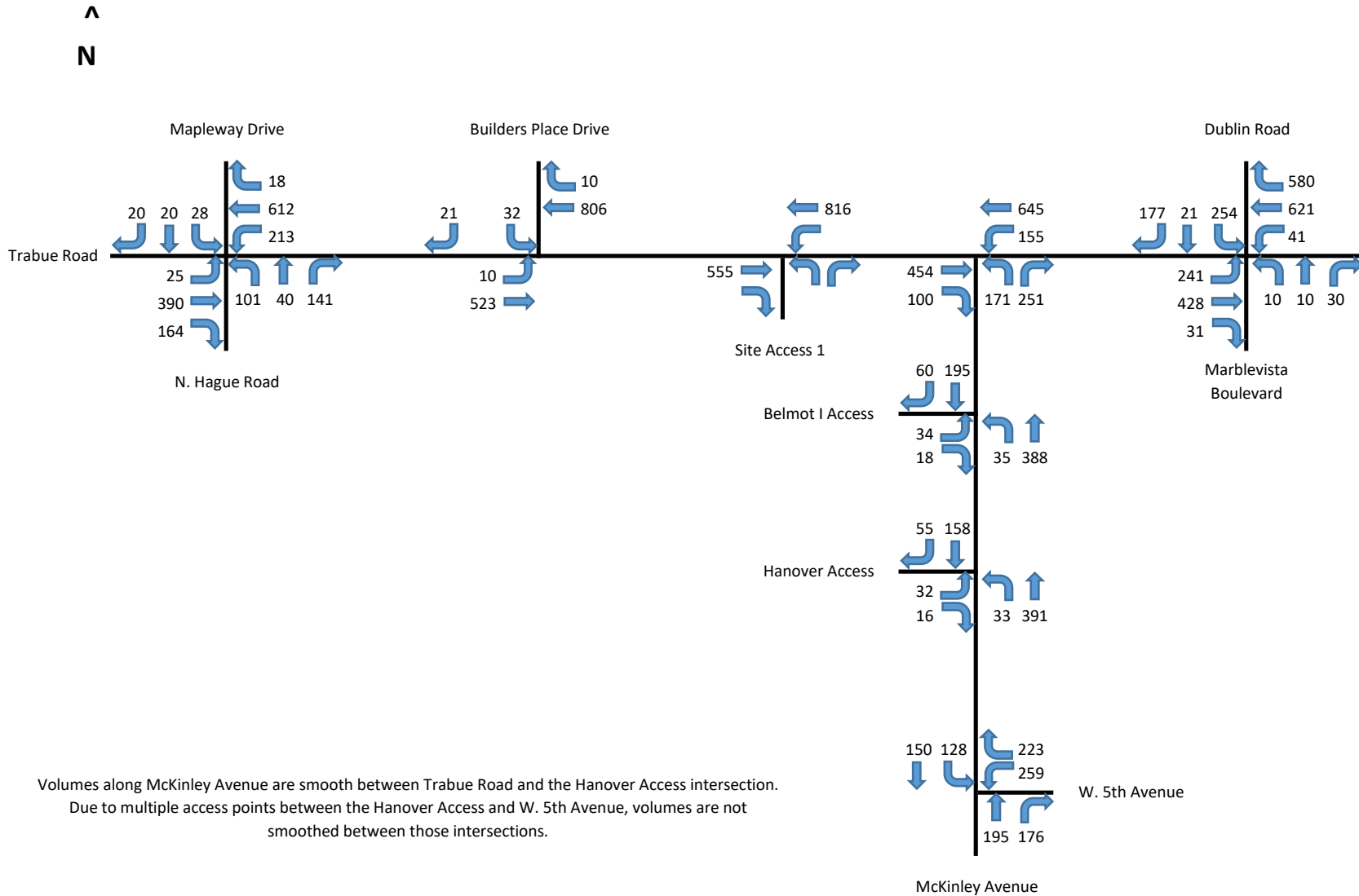
Traffic Volume Calculations



Belmont II TIS
Traffic Volume Calculations



Year	Period	Scenario	Plate
2025	PM	No Build	G2 = E2 + F2



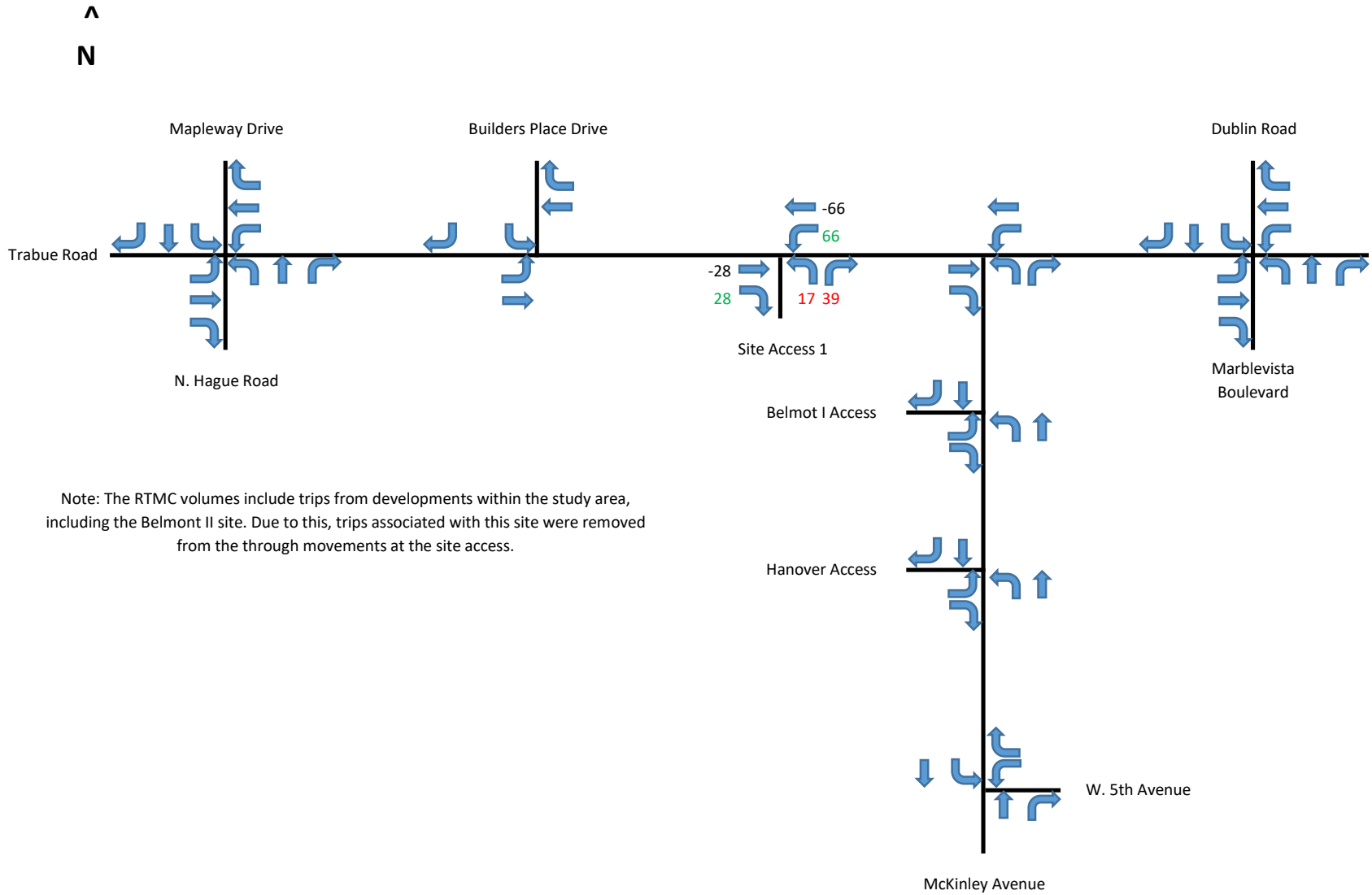
Belmont II TIS

Traffic Volume Calculations

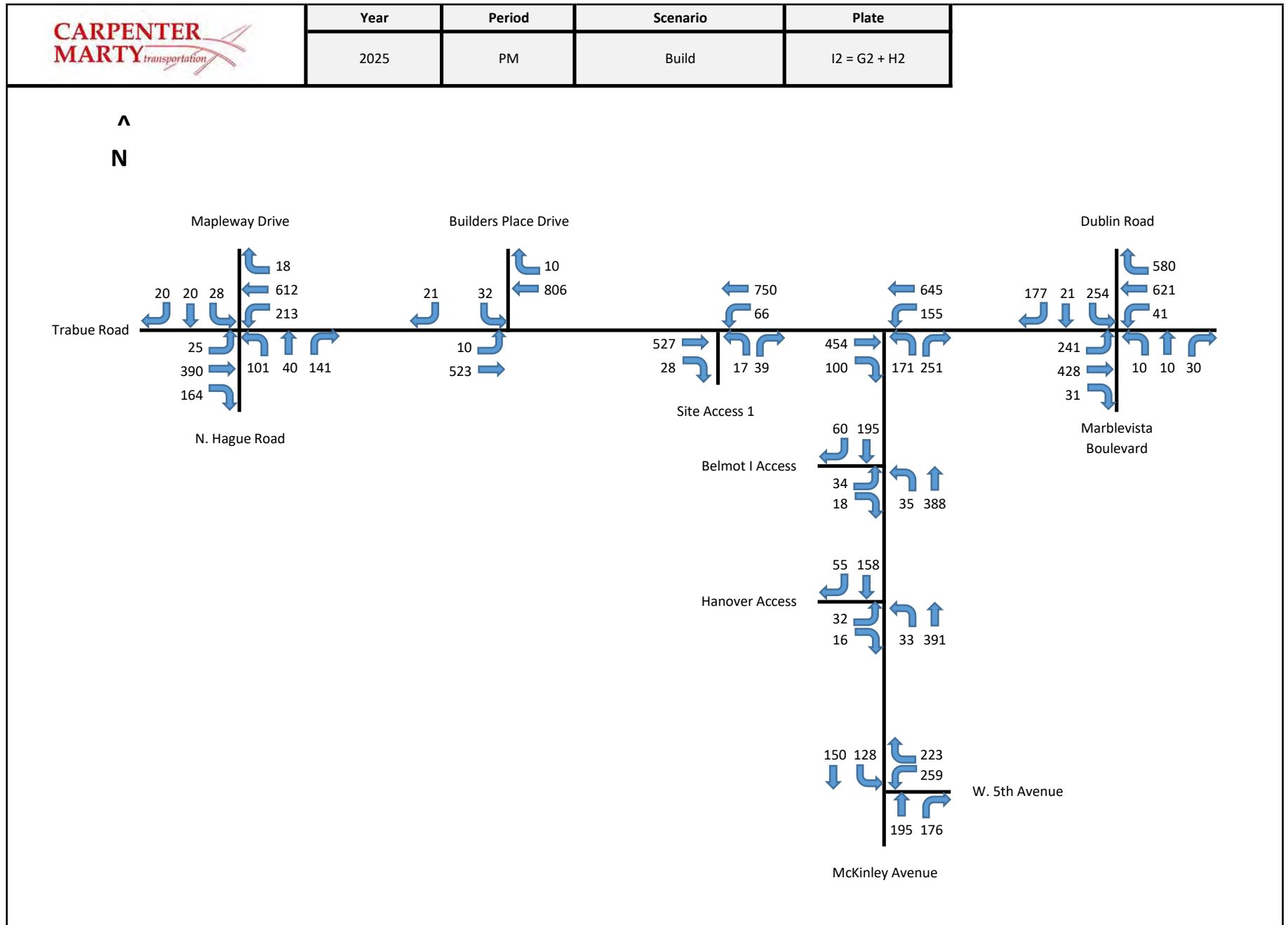


Year	Period	Scenario	Plate
2025	PM	Non-Pass-By Trips	H2

Enter 94
Exit 55

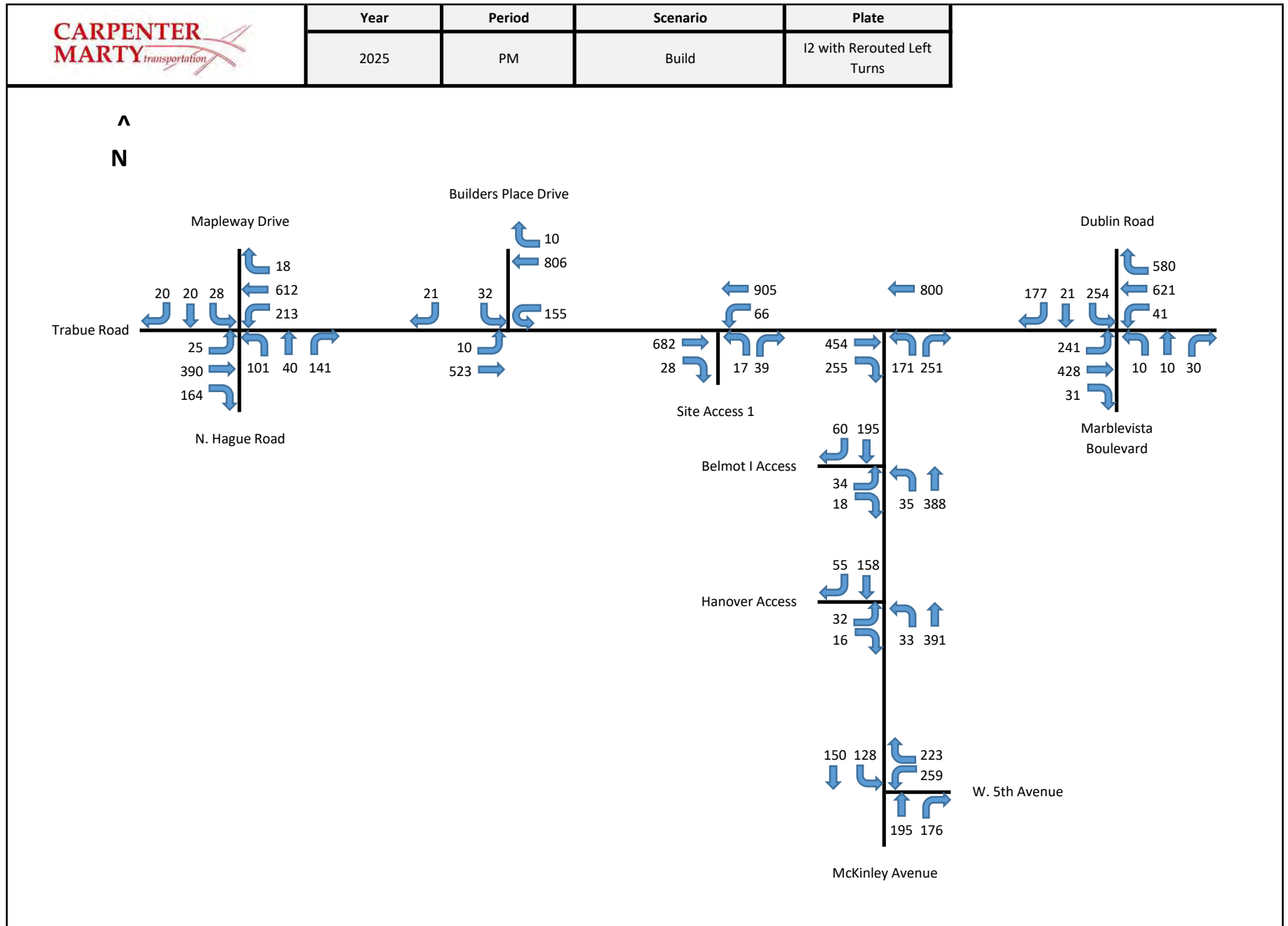


Belmont II TIS
Traffic Volume Calculations



Belmont II TIS

Traffic Volume Calculations

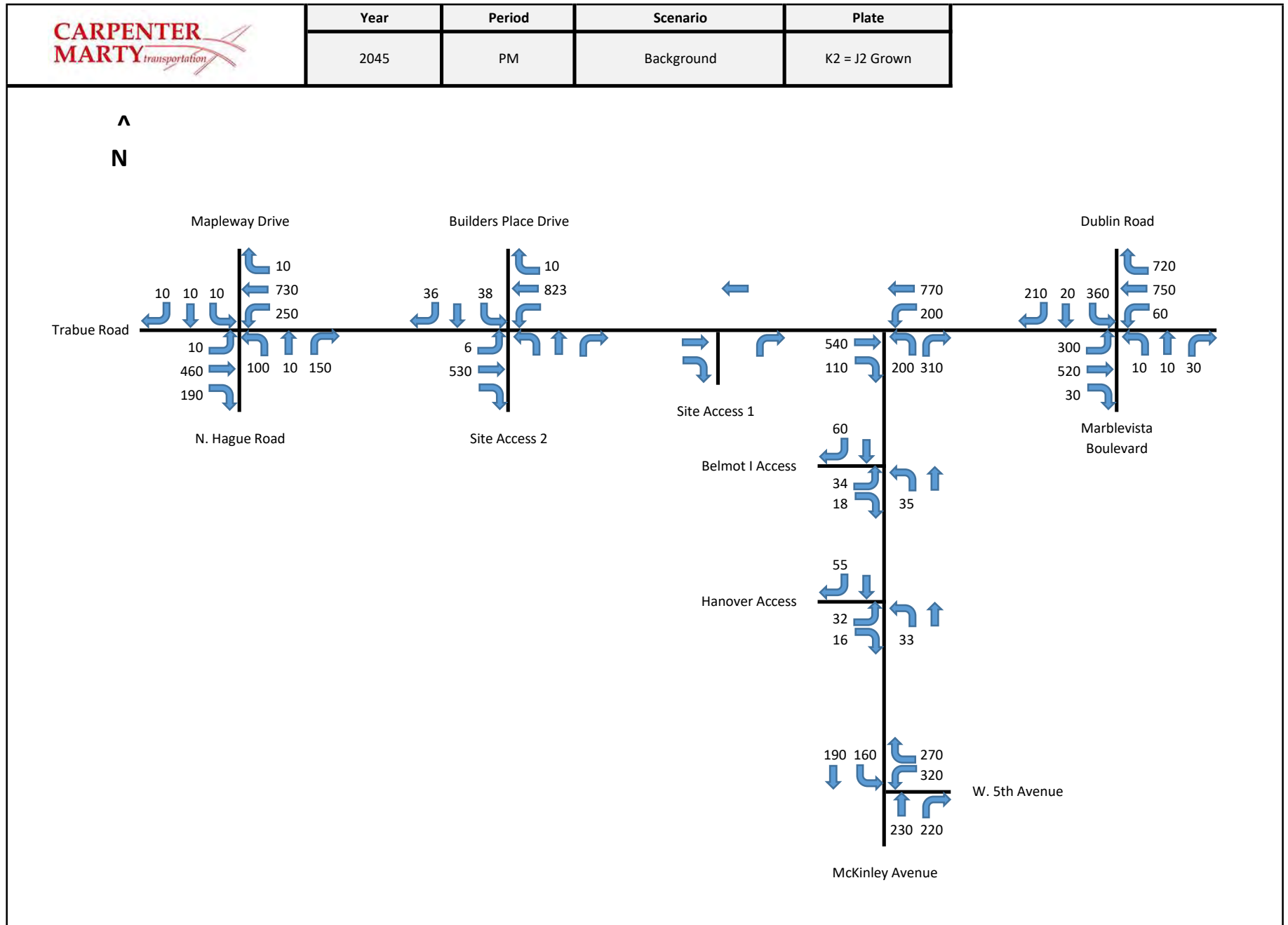


Traffic Volume Calculations

Year	Period	Scenario	Plate
Varies	PM	Count	J2



Belmont II TIS
Traffic Volume Calculations

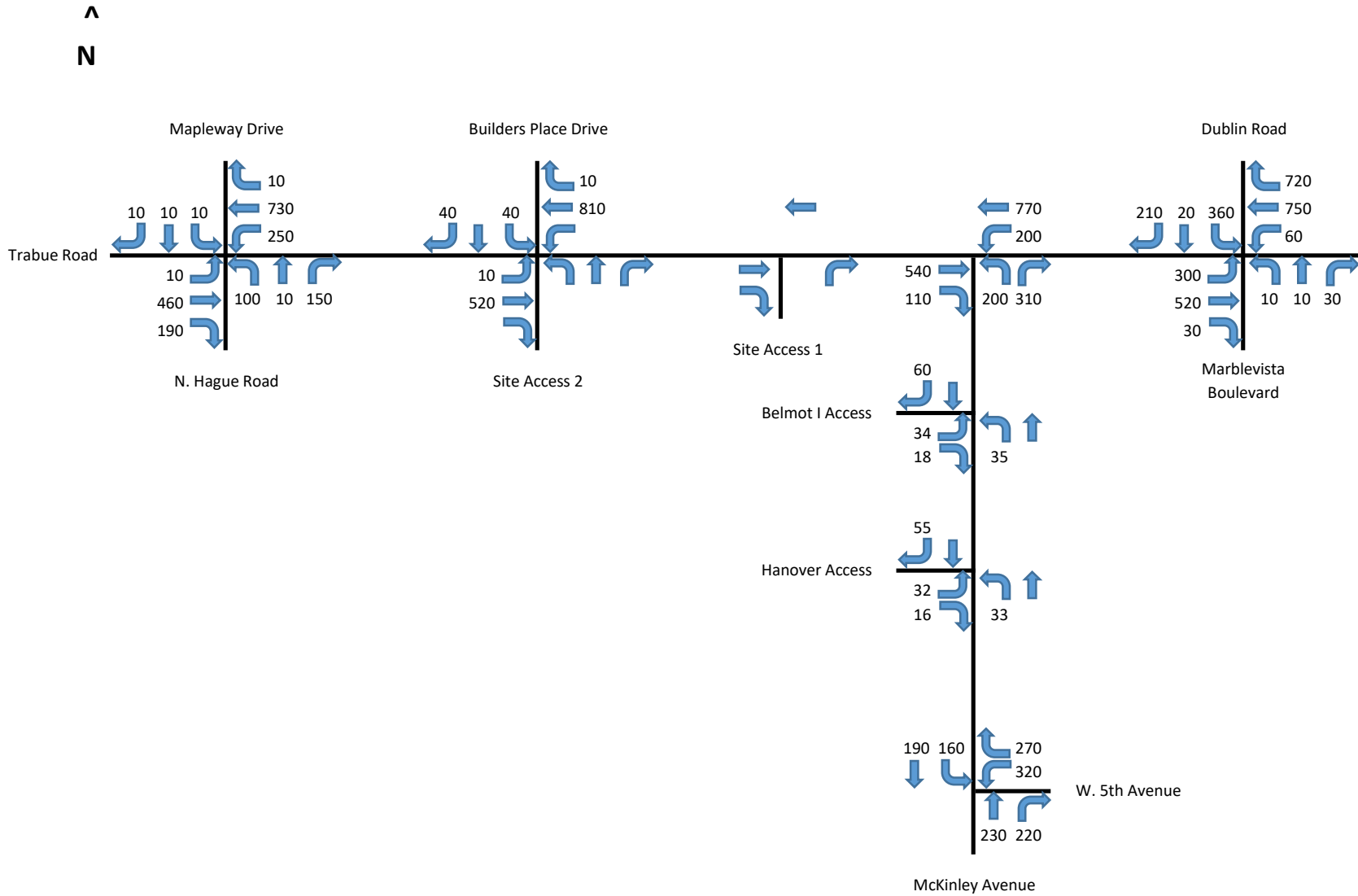


Belmont II TIS

Traffic Volume Calculations



Year	Period	Scenario	Plate
2045	PM	Builders Place Rounded	L2 = K2 Rounded

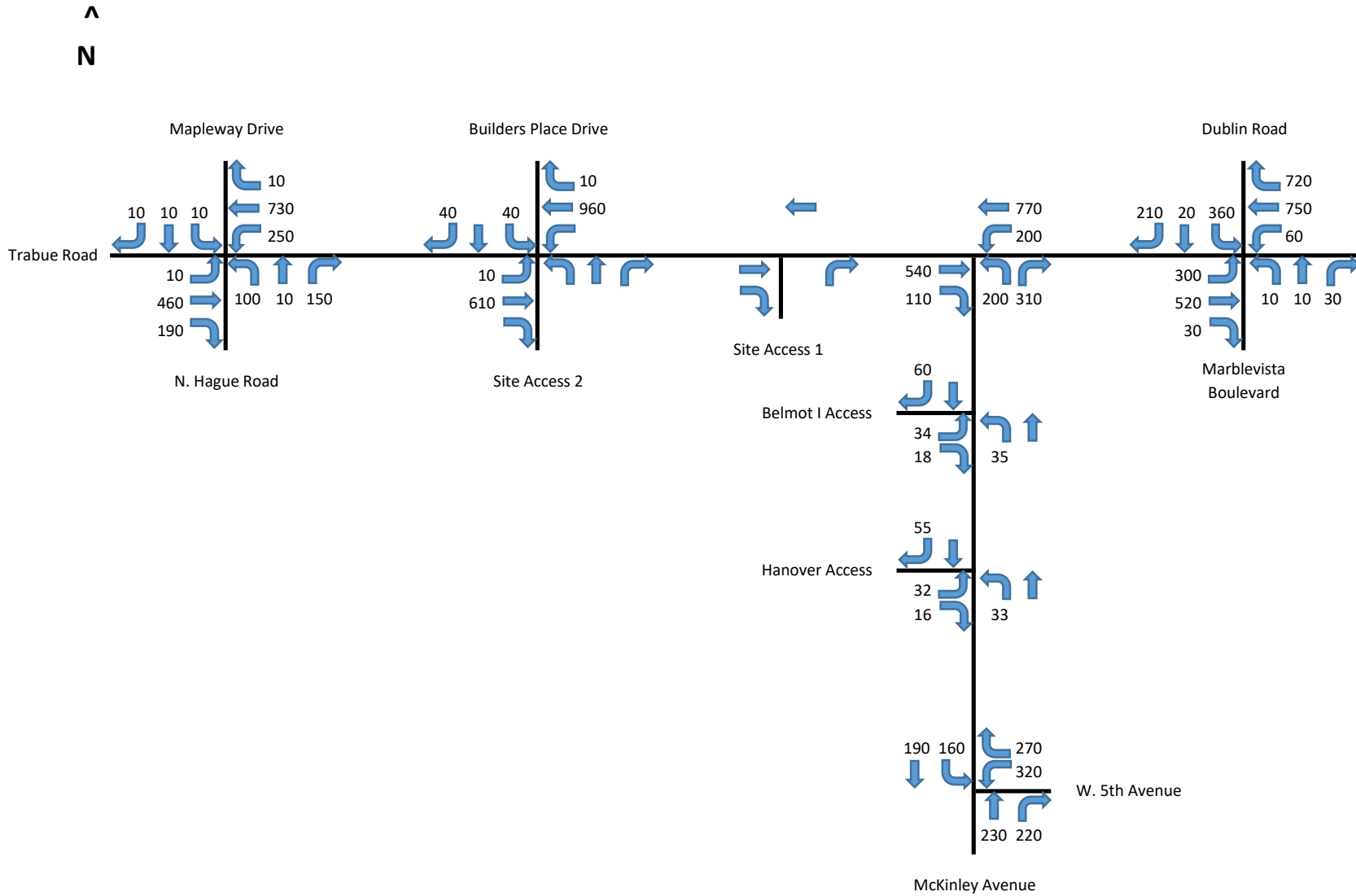


Belmont II TIS

Traffic Volume Calculations



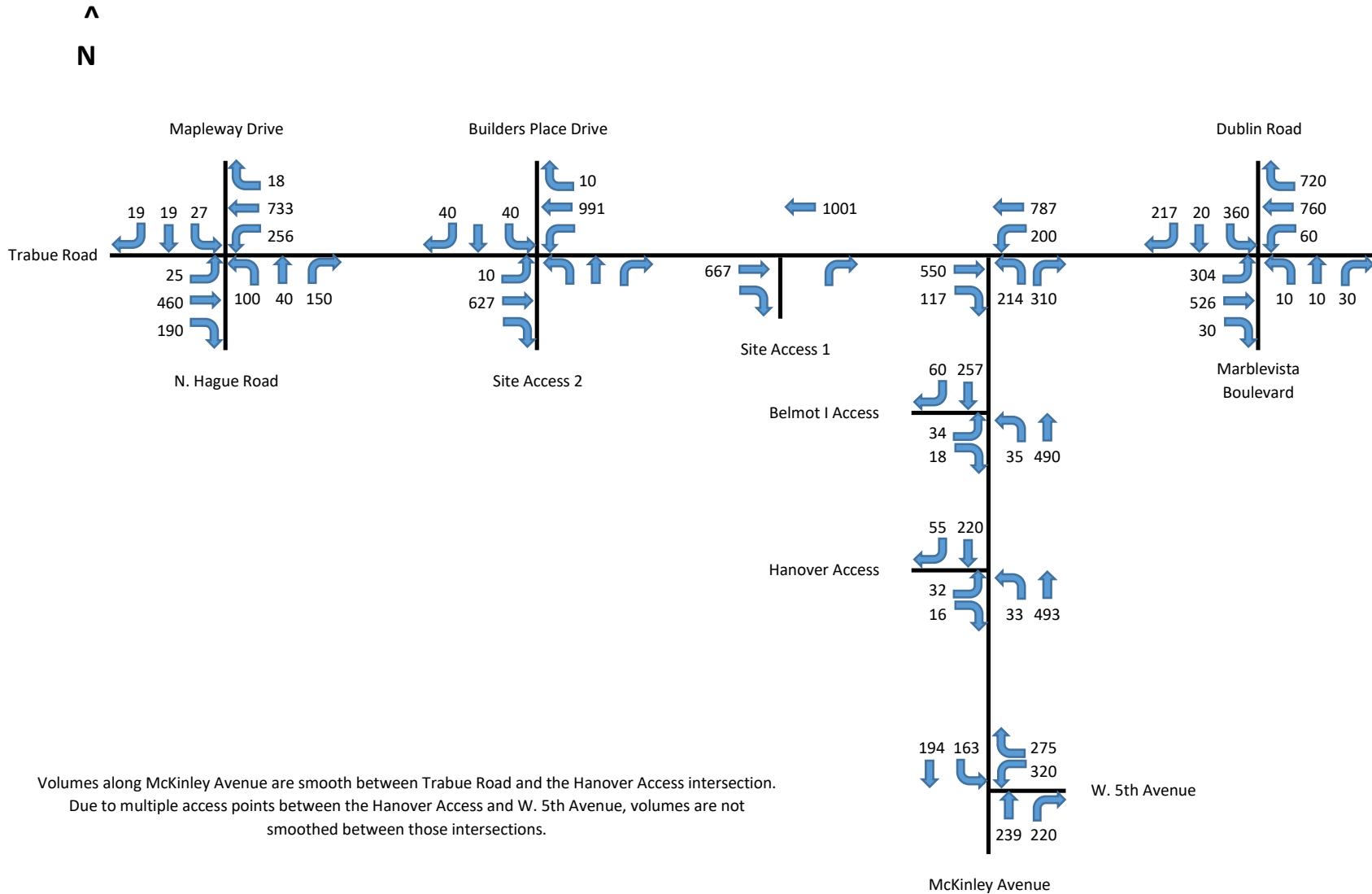
Year	Period	Scenario	Plate
2045	PM	Smoothed	M2 = L2 Smoothed



Belmont II TIS
Traffic Volume Calculations



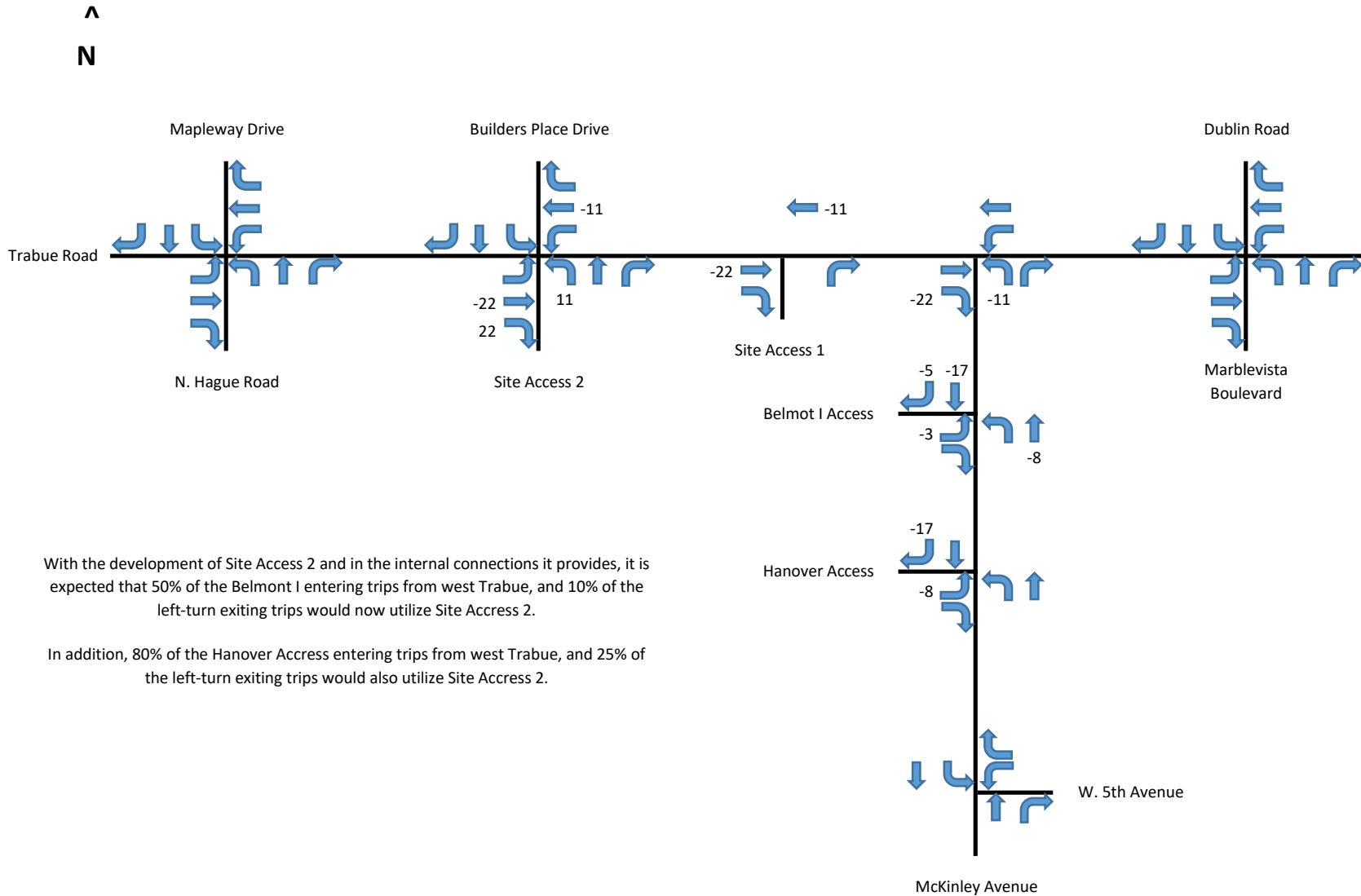
Year	Period	Scenario	Plate
2045	PM	No Build	N2 = F2 + M2



Belmont II TIS Traffic Volume Calculations



Year	Period	Scenario	Plate
2045	PM	Rerouted Belmont I and Hanover Traffic	O2



Traffic Volume Calculations

D47 of 51

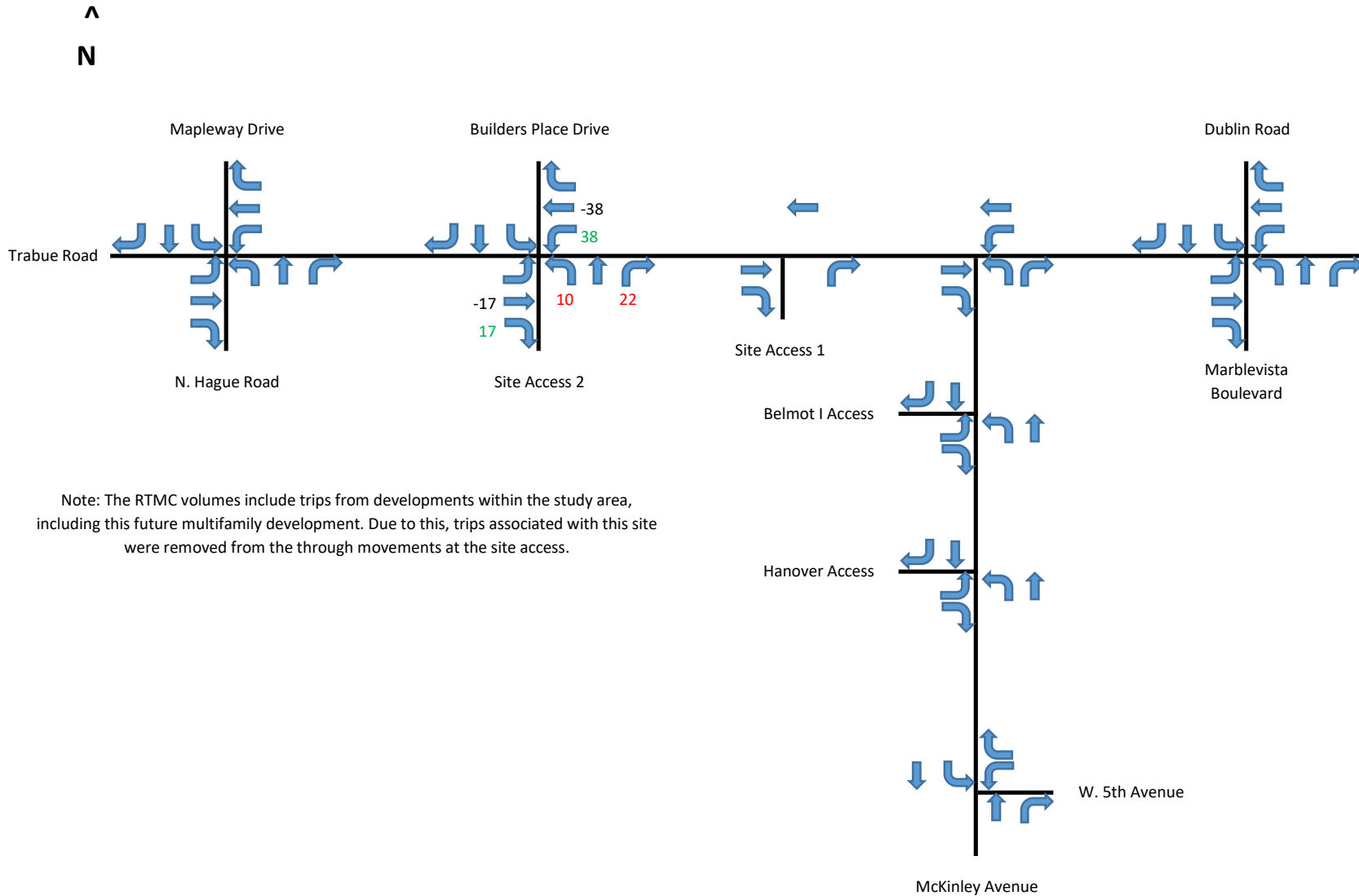
Belmont II TIS

Traffic Volume Calculations



Year	Period	Scenario	Plate
2045	PM	West Multifamily Site Non-Pass-By Trips	Q2

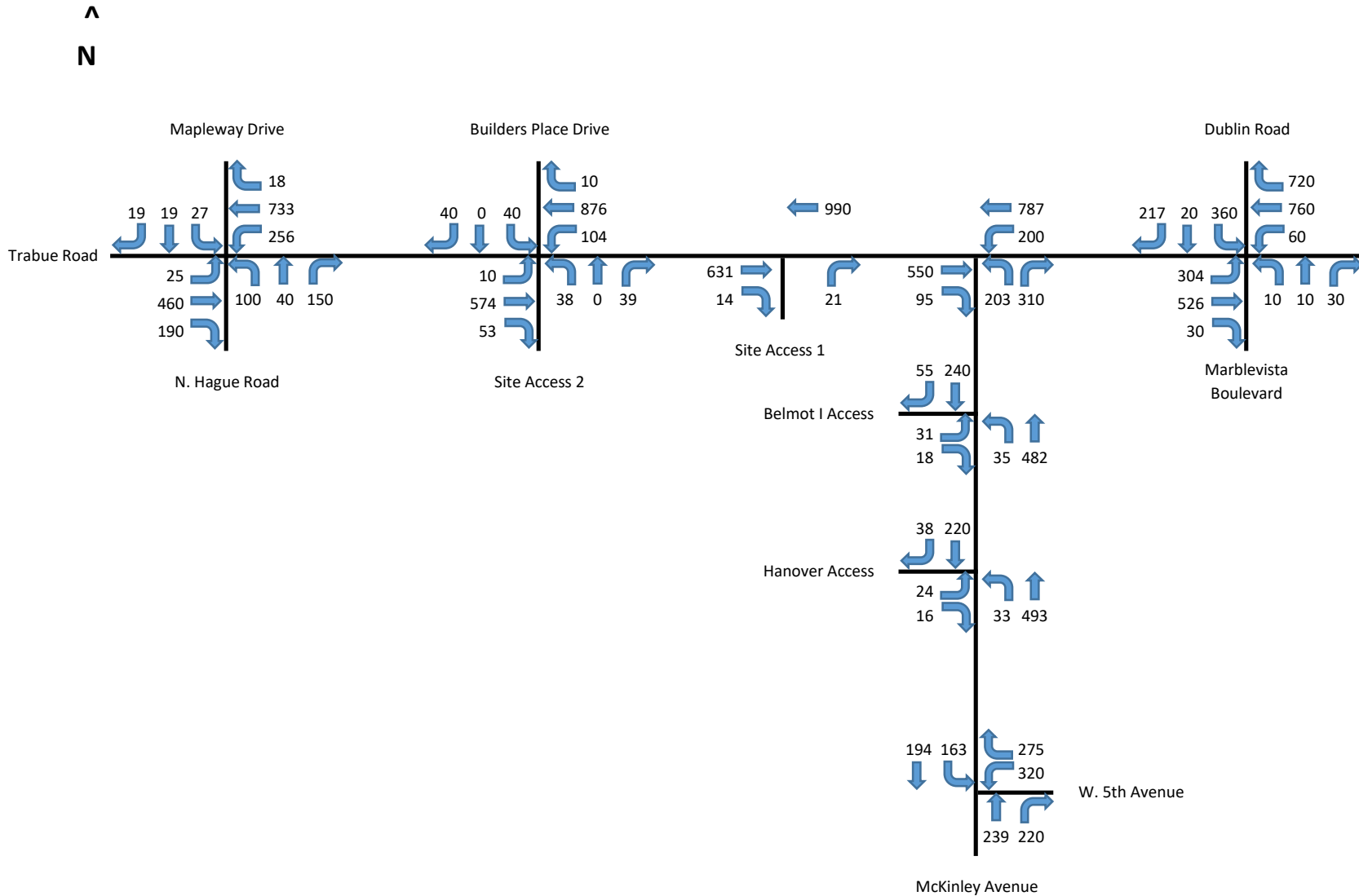
Enter 55
Exit 32



Belmont II TIS
Traffic Volume Calculations

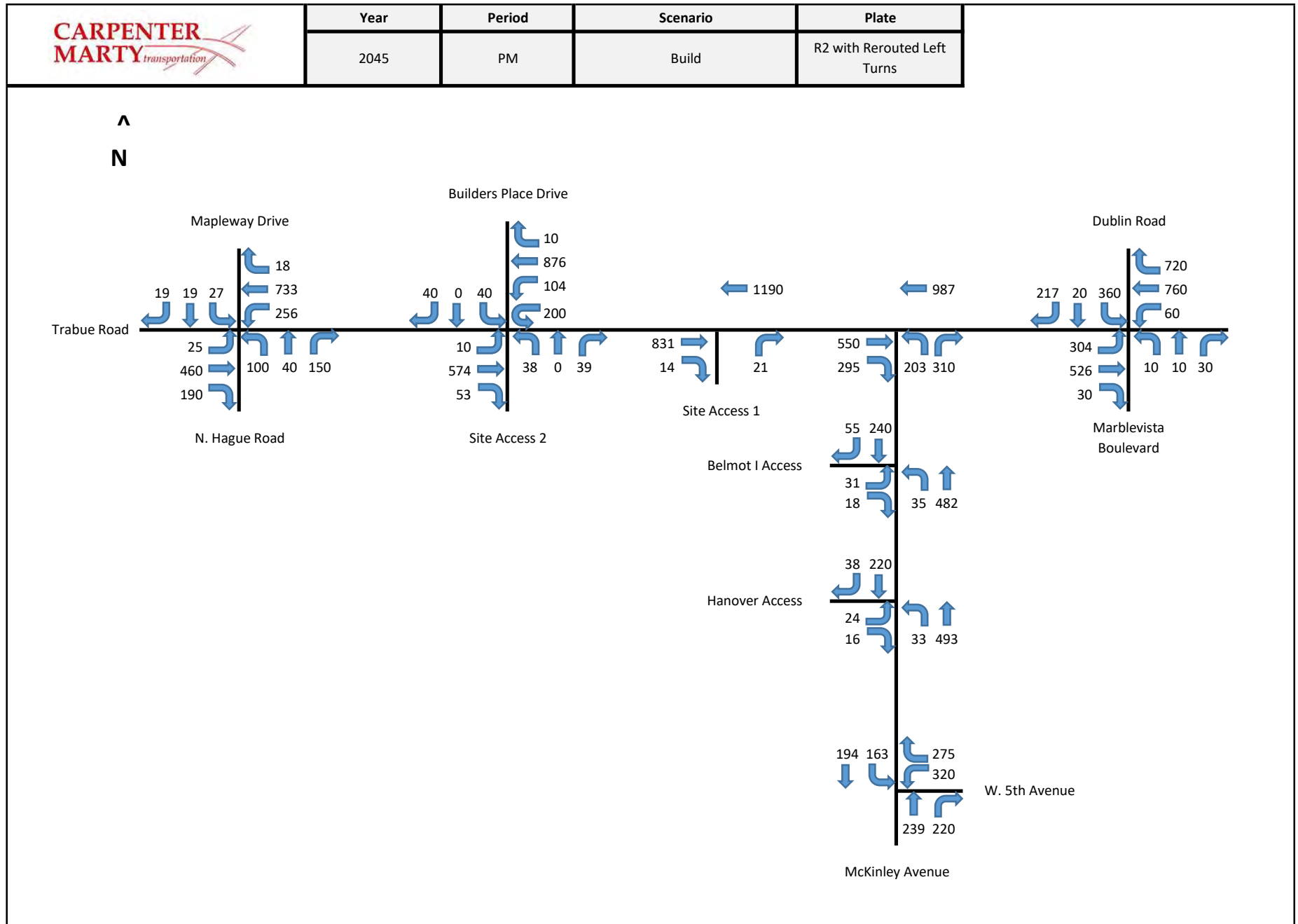


Year	Period	Scenario	Plate
2045	PM	Build	$R2 = N2 + O2 + P2 + Q2$



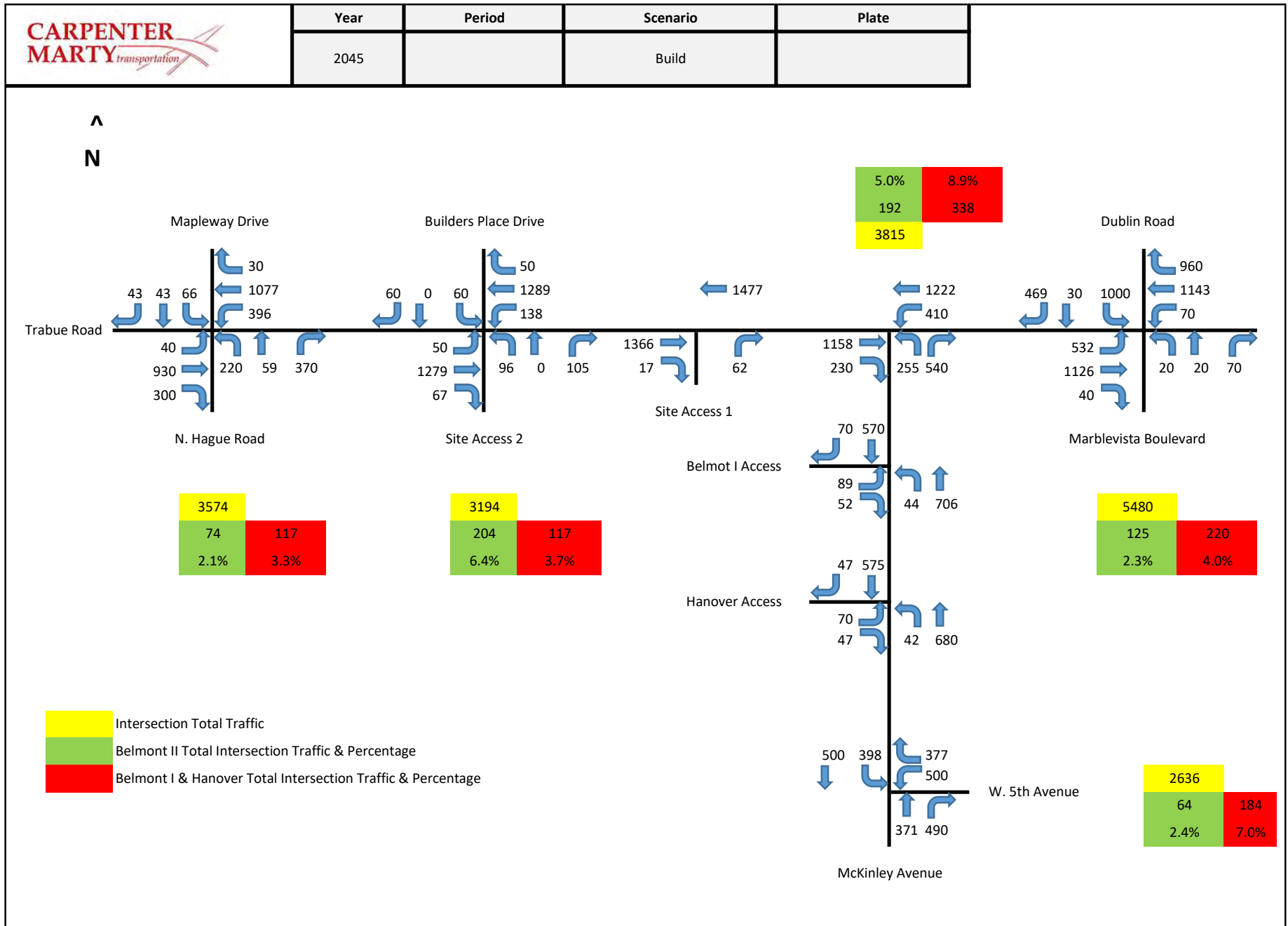
Belmont II TIS

Traffic Volume Calculations



Belmont II TIS

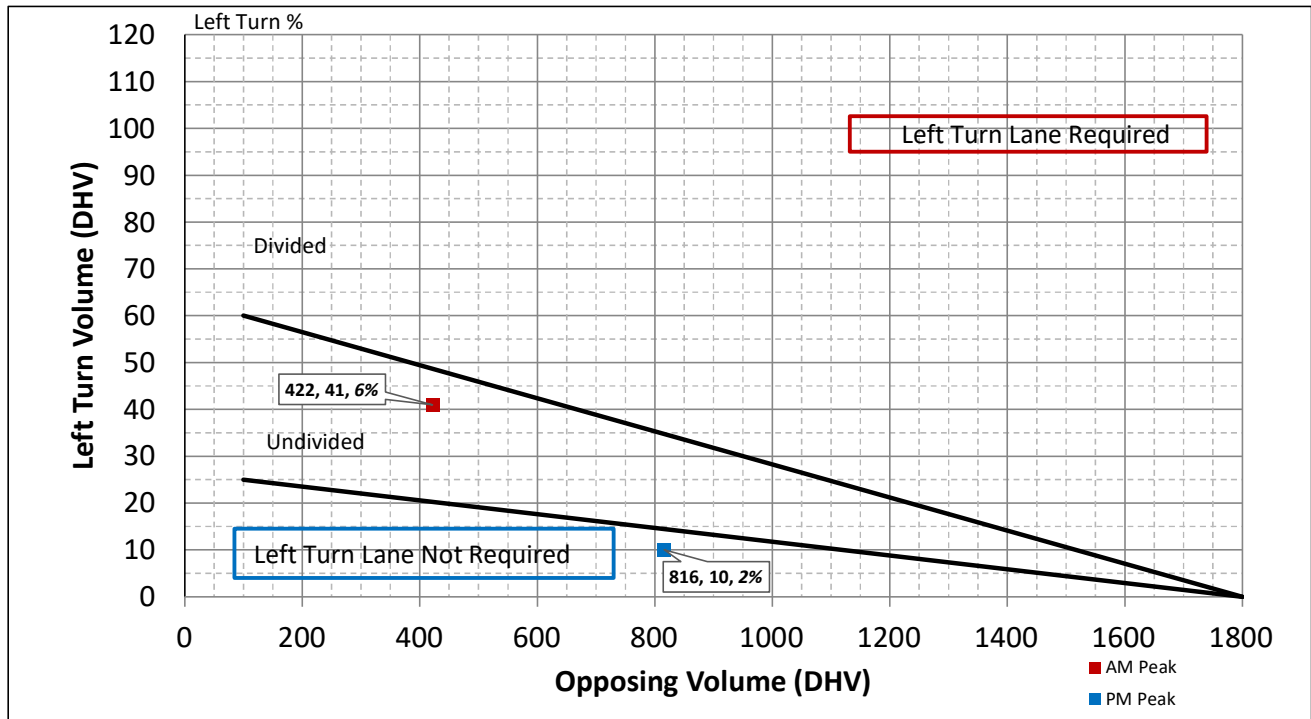
Traffic Volume Calculations



Appendix E

Turn Lane Warrant Analysis

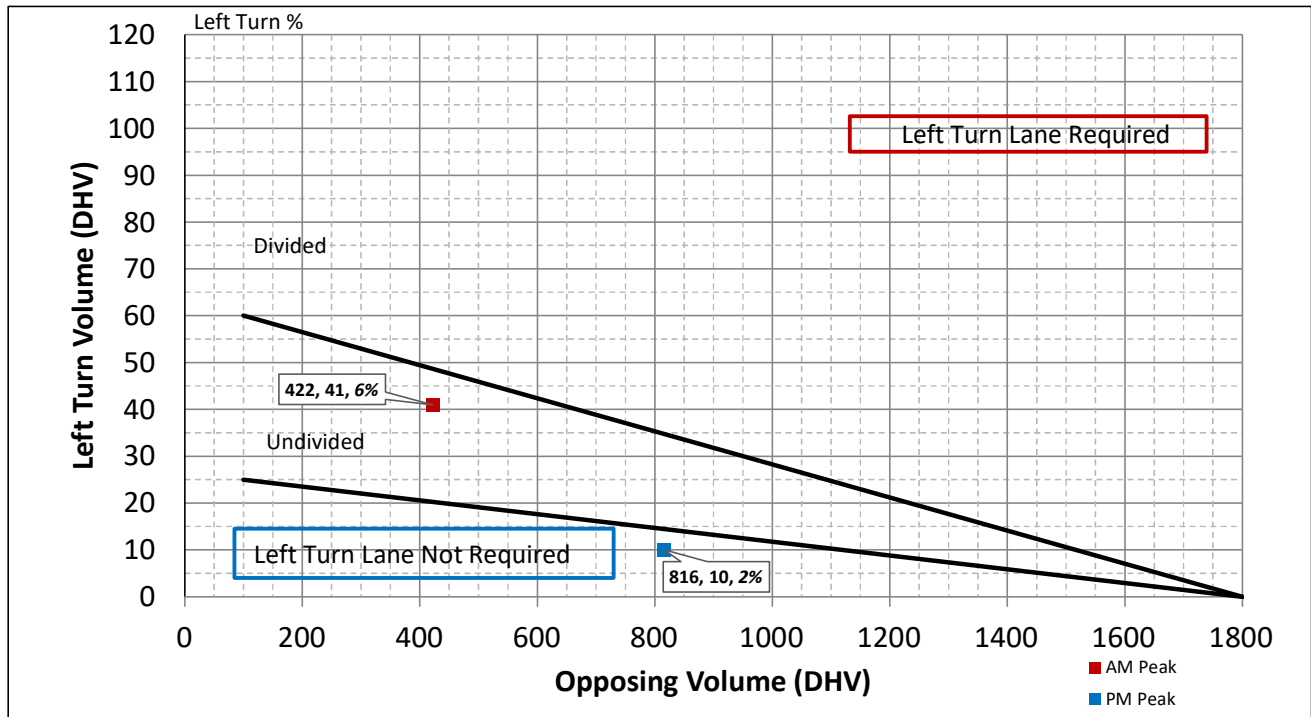
4-Lane Highway Left Turn Lane Warrant



Turn Lane Length Calculations

AM Peak	Design Speed	35	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	41	VPH
	Advancing Traffic	659	VPH
	Opposing Volume	422	VPH
	Left Turn Percentage	6%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	245	
PM Peak	Design Speed	35	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	10	VPH
	Advancing Traffic	533	VPH
	Opposing Volume	816	VPH
	Left Turn Percentage	2%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	245	
Is Left Turn Warrant Met		Yes	See Above

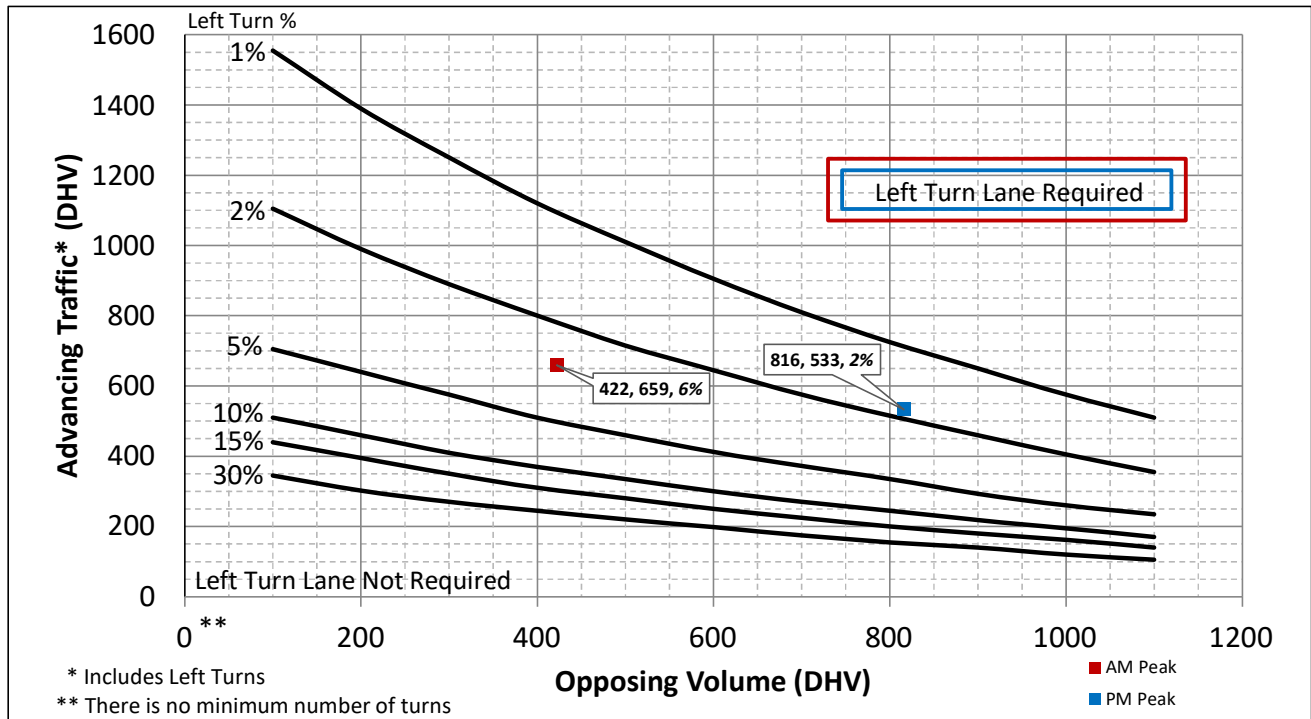
4-Lane Highway Left Turn Lane Warrant



Turn Lane Length Calculations

AM Peak	Design Speed	35	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	41	VPH
	Advancing Traffic	659	VPH
	Opposing Volume	422	VPH
	Left Turn Percentage	6%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	245	
PM Peak	Design Speed	35	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	10	VPH
	Advancing Traffic	533	VPH
	Opposing Volume	816	VPH
	Left Turn Percentage	2%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	245	
Is Left Turn Warrant Met		Yes	See Above

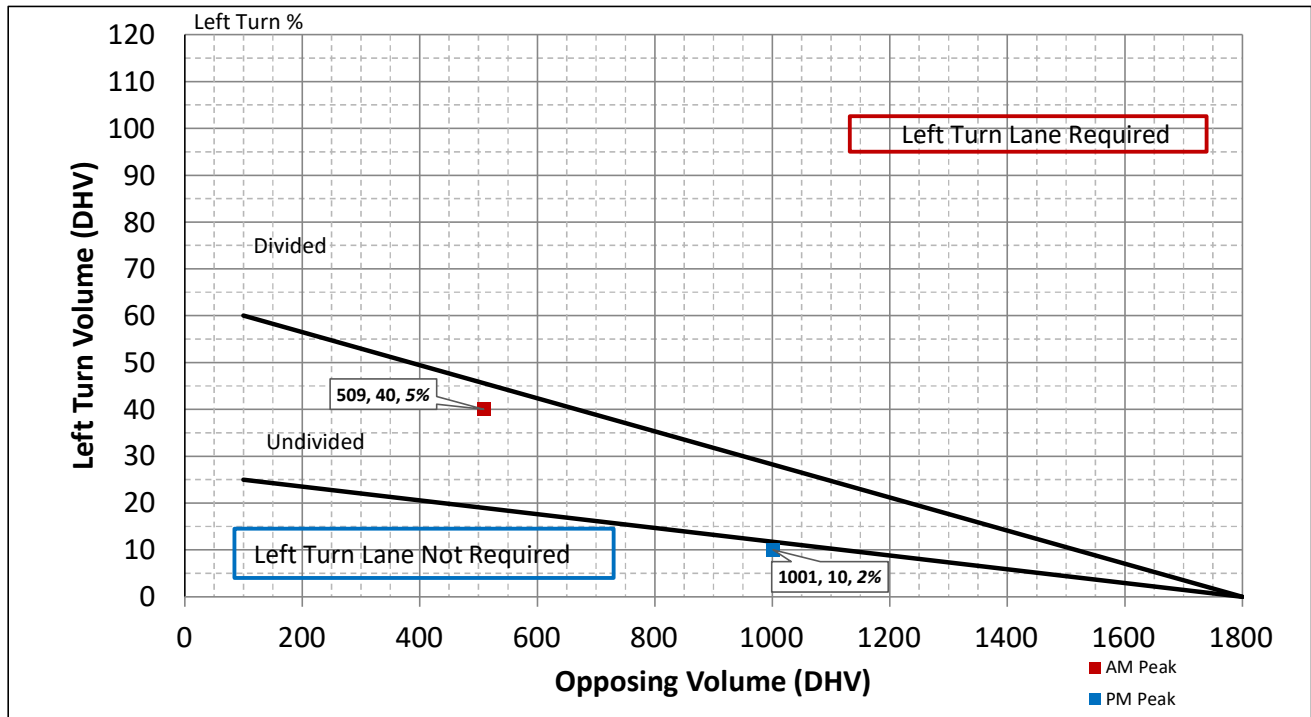
2-Lane Highway Left Turn Lane Warrant
(= < 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

AM Peak	Design Speed	35	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	41	VPH
	Advancing Traffic	659	VPH
	Opposing Volume	422	VPH
	Left Turn Percentage	6%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	245	
PM Peak	Design Speed	35	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	10	VPH
	Advancing Traffic	533	VPH
	Opposing Volume	816	VPH
	Left Turn Percentage	2%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	245	
Is Left Turn Warrant Met		Yes	See Above

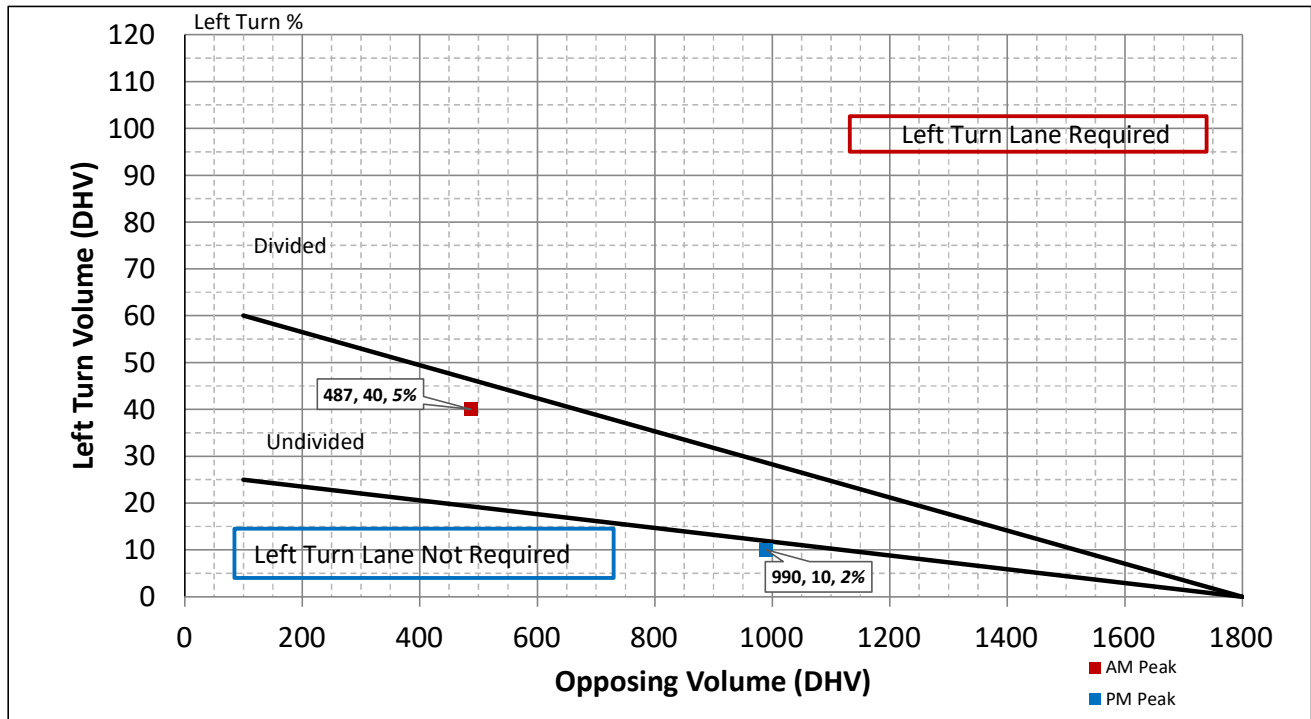
4-Lane Highway Left Turn Lane Warrant



Turn Lane Length Calculations

AM Peak	Design Speed	35	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	40	VPH
	Advancing Traffic	759	VPH
	Opposing Volume	509	VPH
	Left Turn Percentage	5%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	245	
PM Peak	Design Speed	35	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	10	VPH
	Advancing Traffic	637	VPH
	Opposing Volume	1001	VPH
	Left Turn Percentage	2%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	245	
Is Left Turn Warrant Met		Yes	See Above

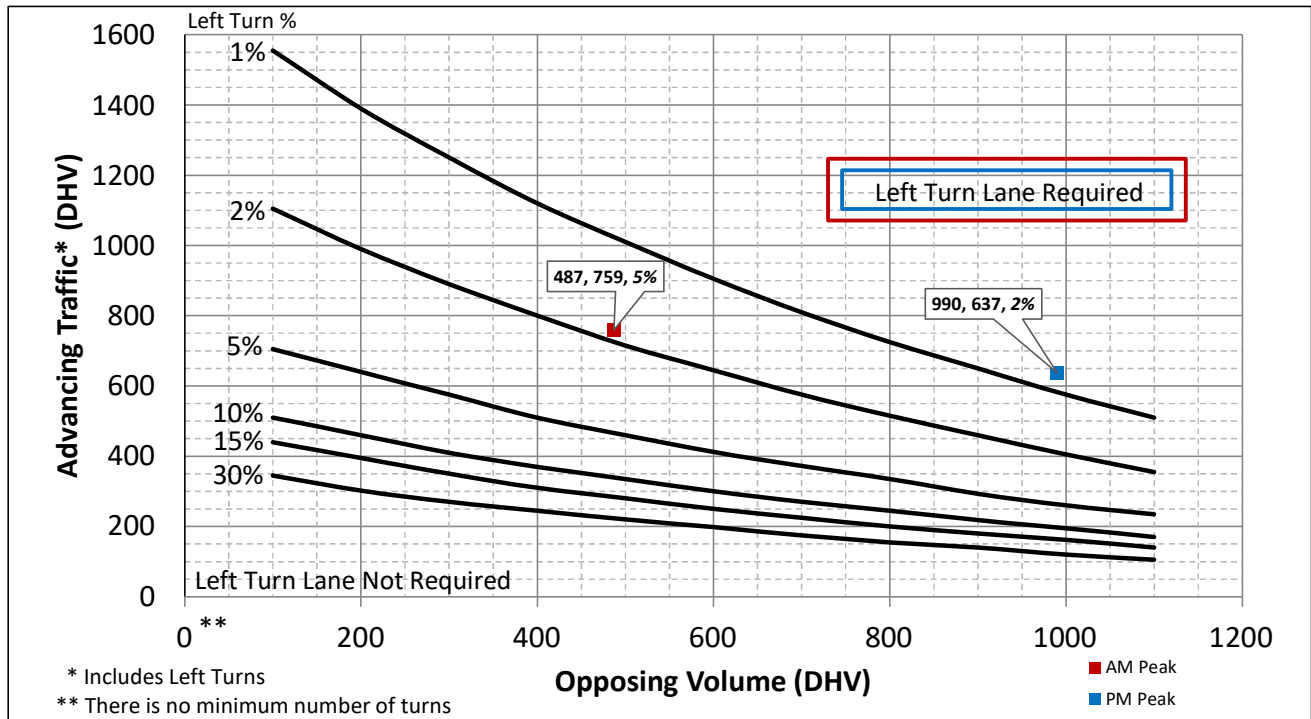
4-Lane Highway Left Turn Lane Warrant



Turn Lane Length Calculations

AM Peak	Design Speed	35	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	40	VPH
	Advancing Traffic	759	VPH
	Opposing Volume	487	VPH
	Left Turn Percentage	5%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	245	
PM Peak	Design Speed	35	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	10	VPH
	Advancing Traffic	637	VPH
	Opposing Volume	990	VPH
	Left Turn Percentage	2%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	245	
Is Left Turn Warrant Met		Yes	See Above

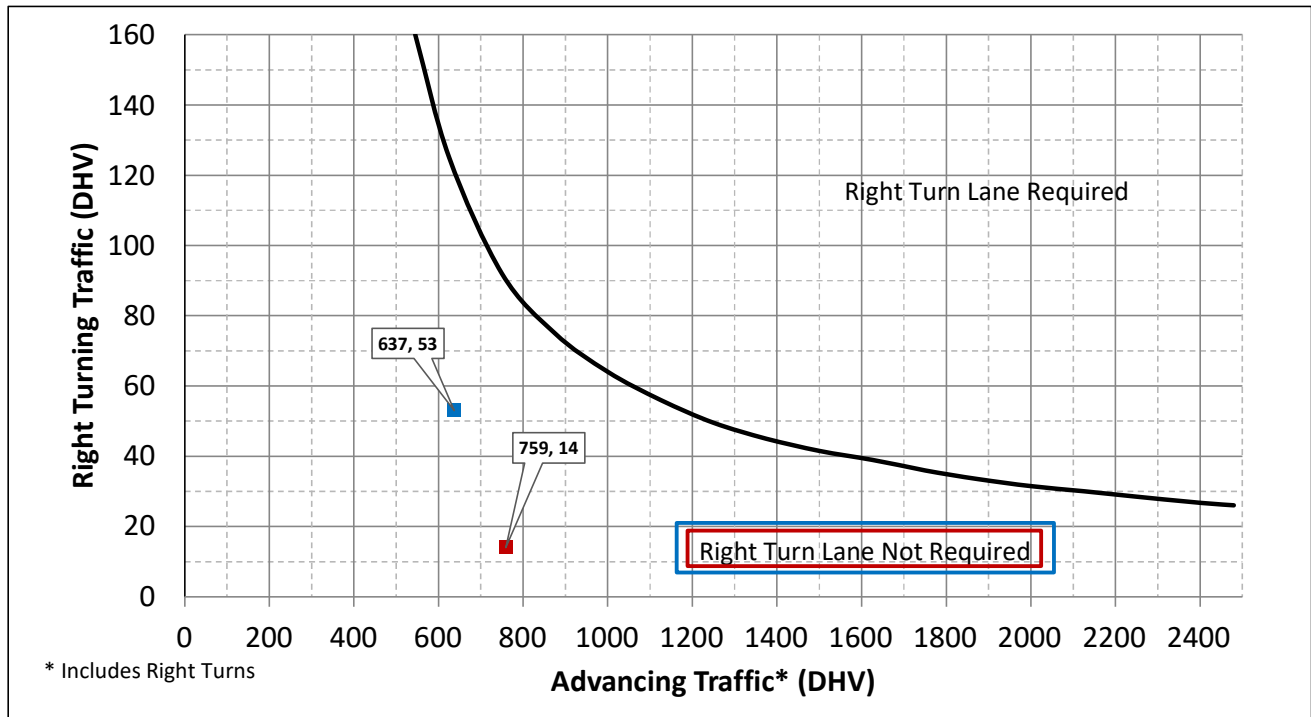
2-Lane Highway Left Turn Lane Warrant
(= < 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

AM Peak	Design Speed	35	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	40	VPH
	Advancing Traffic	759	VPH
	Opposing Volume	487	VPH
	Left Turn Percentage	5%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	245	
PM Peak	Design Speed	35	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	10	VPH
	Advancing Traffic	637	VPH
	Opposing Volume	990	VPH
	Left Turn Percentage	2%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	245	
Is Left Turn Warrant Met		Yes	See Above

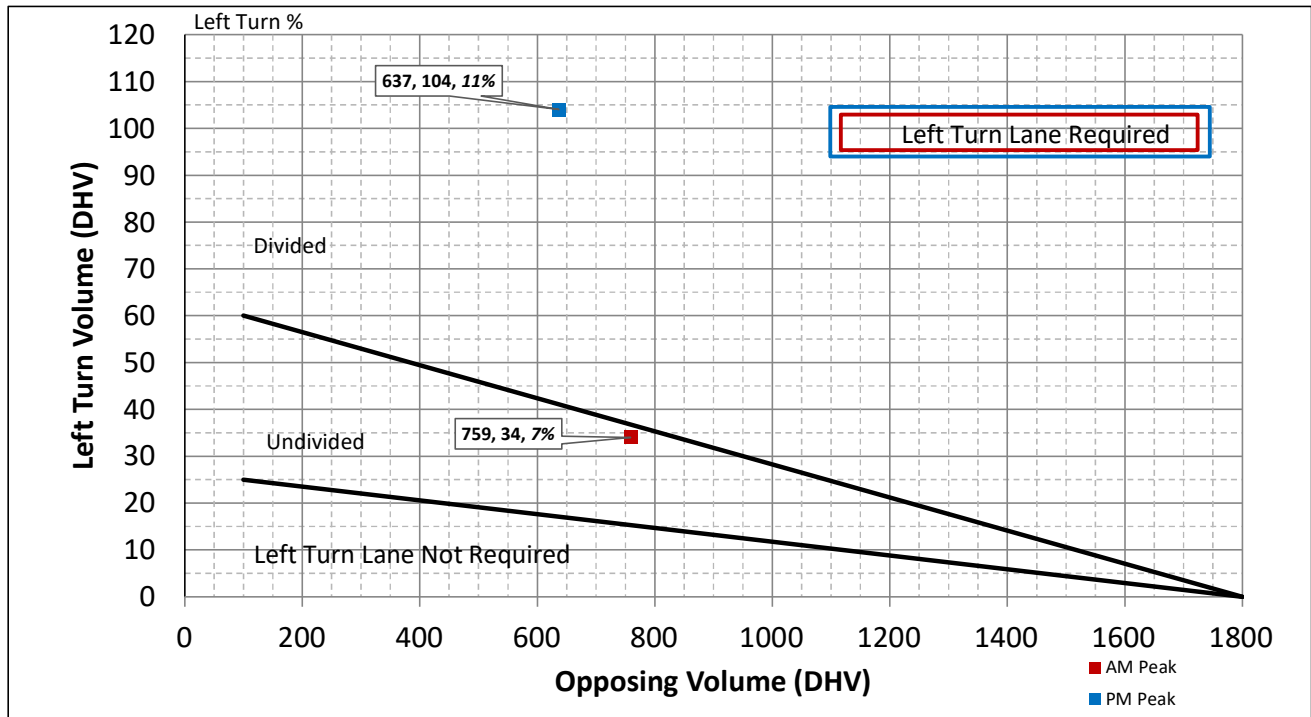
4-Lane Highway Right Turn Lane Warrant
(= < 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

AM Peak	Design Speed	35	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	14	VPH
	Advancing Traffic	759	VPH
	Right Turn Percentage	2%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	
	* Turn Lane Length includes 50 ft diverging taper		
PM Peak	Design Speed	35	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	53	VPH
	Advancing Traffic	637	VPH
	Right Turn Percentage	8%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	
	* Turn Lane Length includes 50 ft diverging taper		
Is Right Turn Warrant Met		No	No Right Turn Lane Required

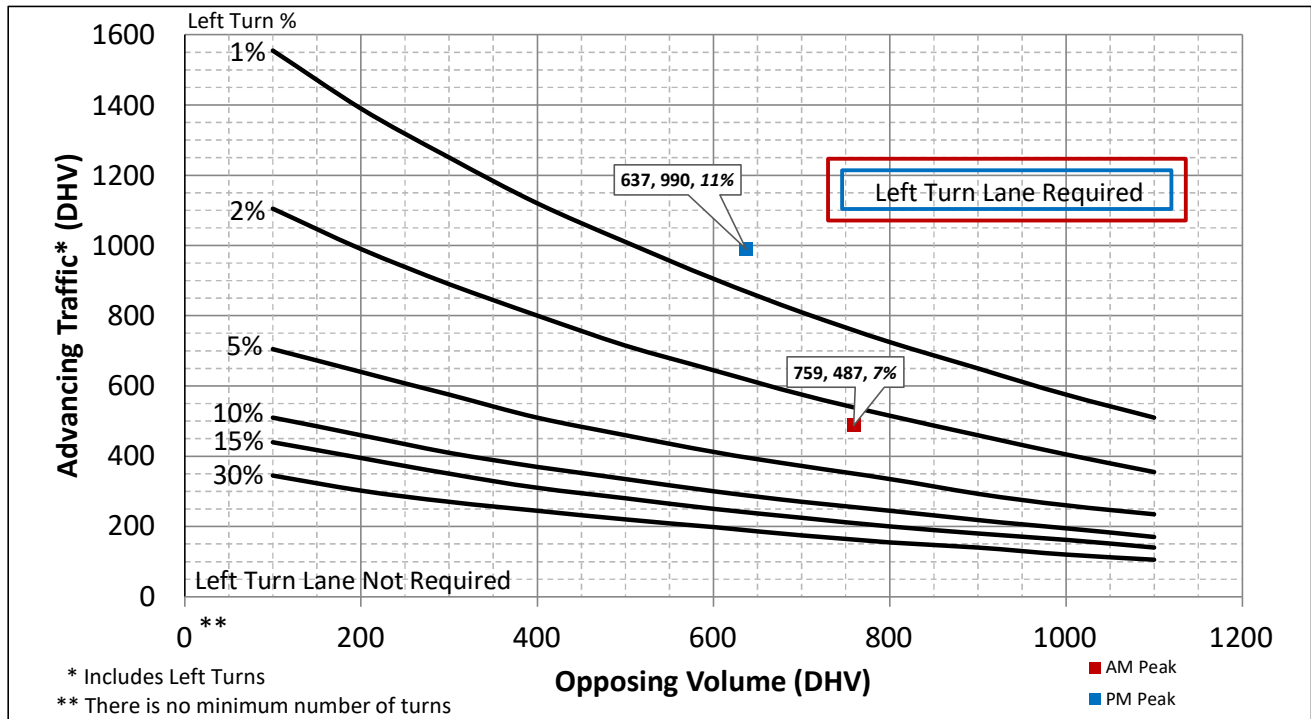
4-Lane Highway Left Turn Lane Warrant



Turn Lane Length Calculations

AM Peak	Design Speed	35	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	34	VPH
	Advancing Traffic	487	VPH
	Opposing Volume	759	VPH
	Left Turn Percentage	7%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	245	
PM Peak	Design Speed	35	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	104	VPH
	Advancing Traffic	990	VPH
	Opposing Volume	637	VPH
	Left Turn Percentage	11%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	2	
	Turn Lane Length	150	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	245	
Is Left Turn Warrant Met		Yes	See Above

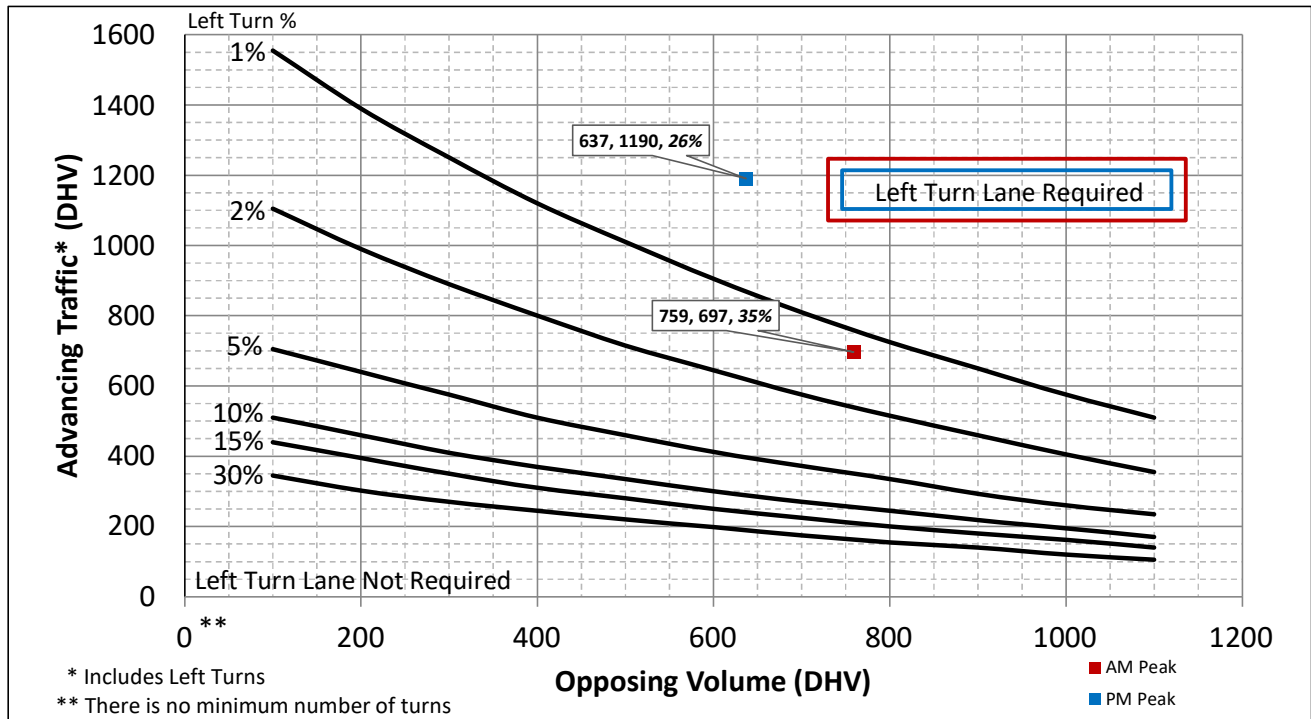
2-Lane Highway Left Turn Lane Warrant
(= < 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

AM Peak	Design Speed	35	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	34	VPH
	Advancing Traffic	487	VPH
	Opposing Volume	759	VPH
	Left Turn Percentage	7%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	245	
PM Peak	Design Speed	35	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	104	VPH
	Advancing Traffic	990	VPH
	Opposing Volume	637	VPH
	Left Turn Percentage	11%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	2	
	Turn Lane Length	150	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	245	
Is Left Turn Warrant Met		Yes	See Above

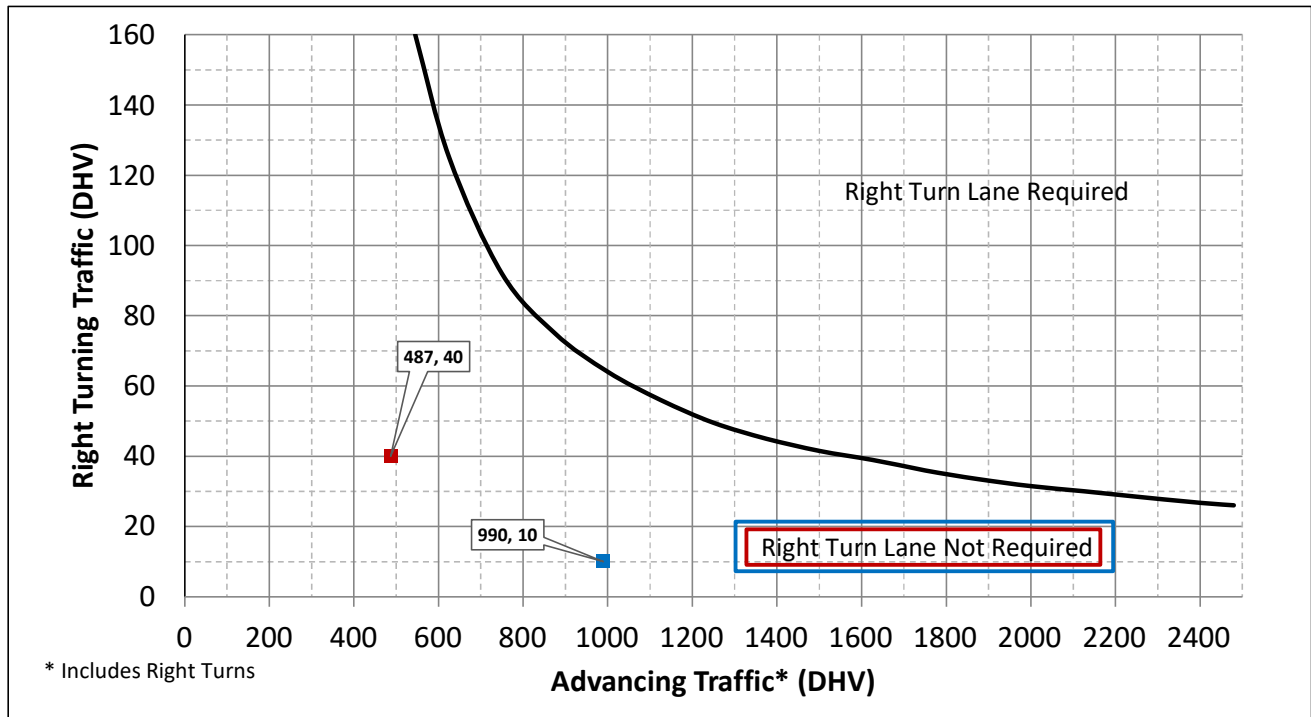
2-Lane Highway Left Turn Lane Warrant
(= < 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

AM Peak	Design Speed	35	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	244	VPH
	Advancing Traffic	697	VPH
	Opposing Volume	759	VPH
	Left Turn Percentage	35%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	5	
	Turn Lane Length	250	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	245	
PM Peak	Design Speed	35	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	304	VPH
	Advancing Traffic	1190	VPH
	Opposing Volume	637	VPH
	Left Turn Percentage	26%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	6	
	Turn Lane Length	300	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	245	
Is Left Turn Warrant Met		Yes	See Above

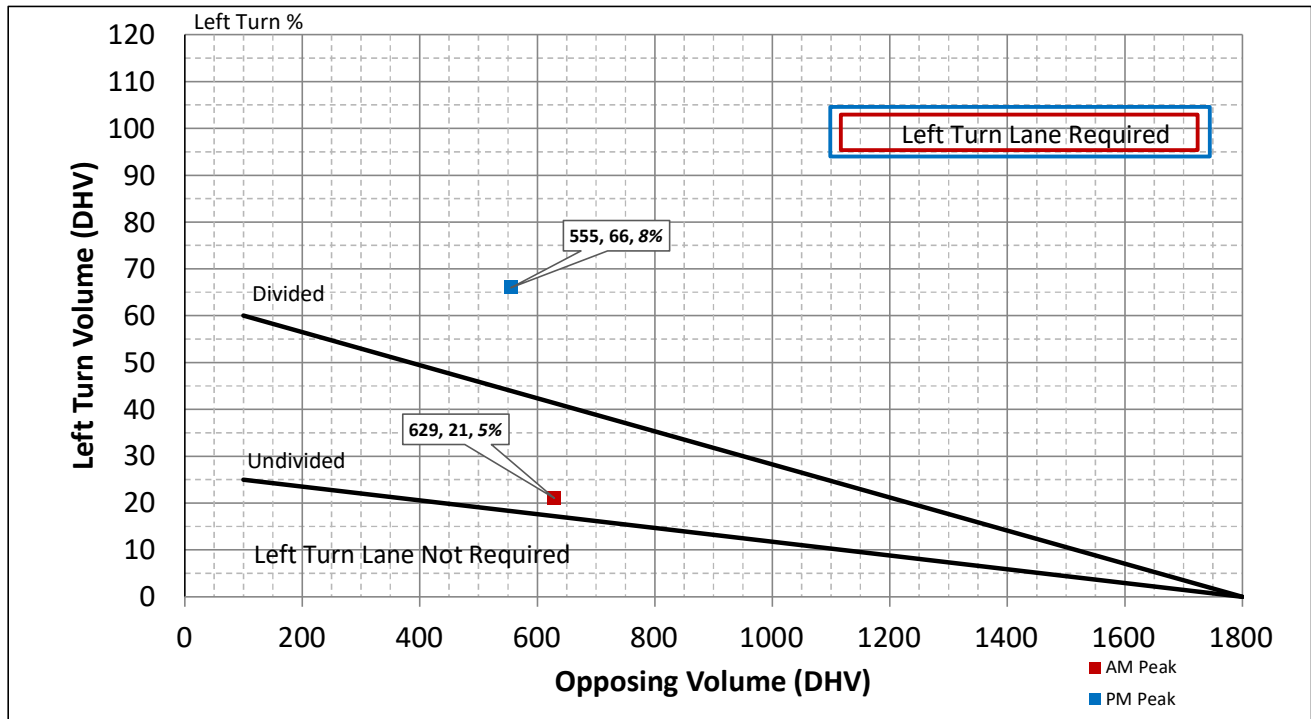
4-Lane Highway Right Turn Lane Warrant
(= < 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

AM Peak	Design Speed	35	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	40	VPH
	Advancing Traffic	487	VPH
	Right Turn Percentage	8%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	* Turn Lane Length includes 50 ft diverging taper
PM Peak	Design Speed	35	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	10	VPH
	Advancing Traffic	990	VPH
	Right Turn Percentage	1%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	* Turn Lane Length includes 50 ft diverging taper
Is Right Turn Warrant Met		No	No Right Turn Lane Required

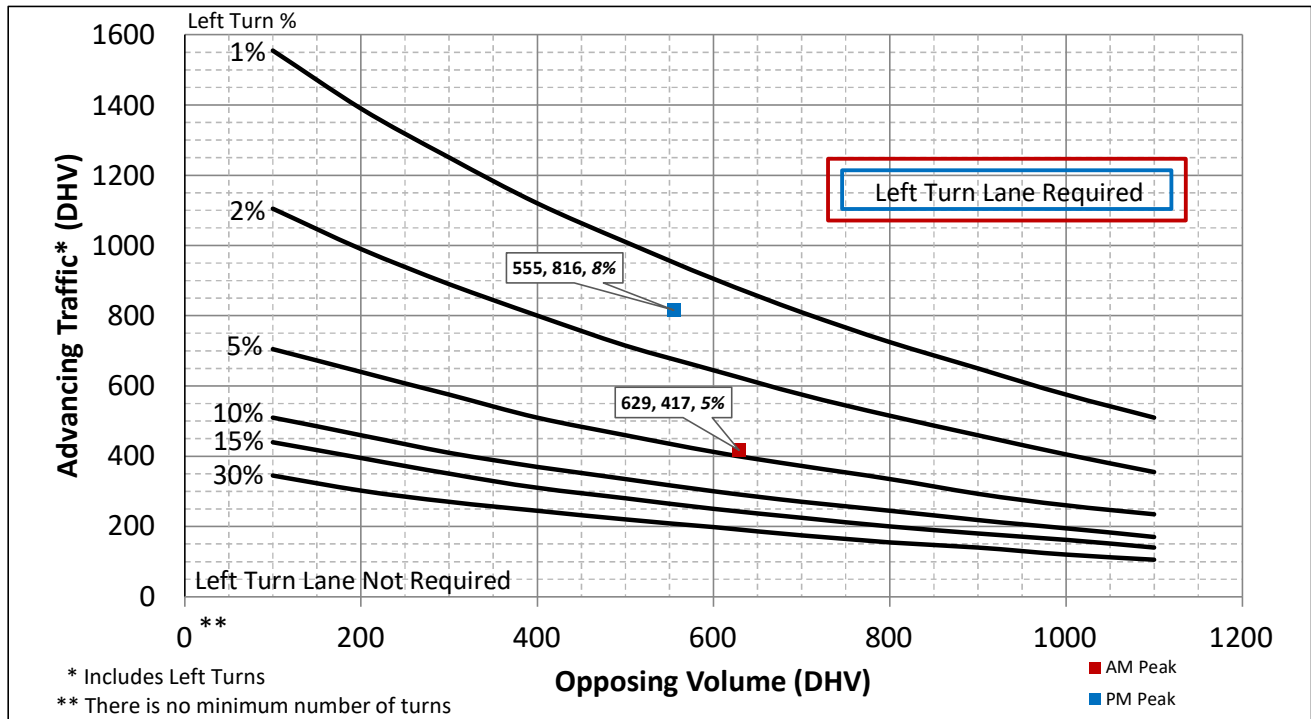
4-Lane Highway Left Turn Lane Warrant



Turn Lane Length Calculations

AM Peak	Design Speed	35	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	21	VPH
	Advancing Traffic	417	VPH
	Opposing Volume	629	VPH
	Left Turn Percentage	5%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	245	
PM Peak	Design Speed	35	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	66	VPH
	Advancing Traffic	816	VPH
	Opposing Volume	555	VPH
	Left Turn Percentage	8%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	2	
	Turn Lane Length	150	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	245	
Is Left Turn Warrant Met		Yes	See Above

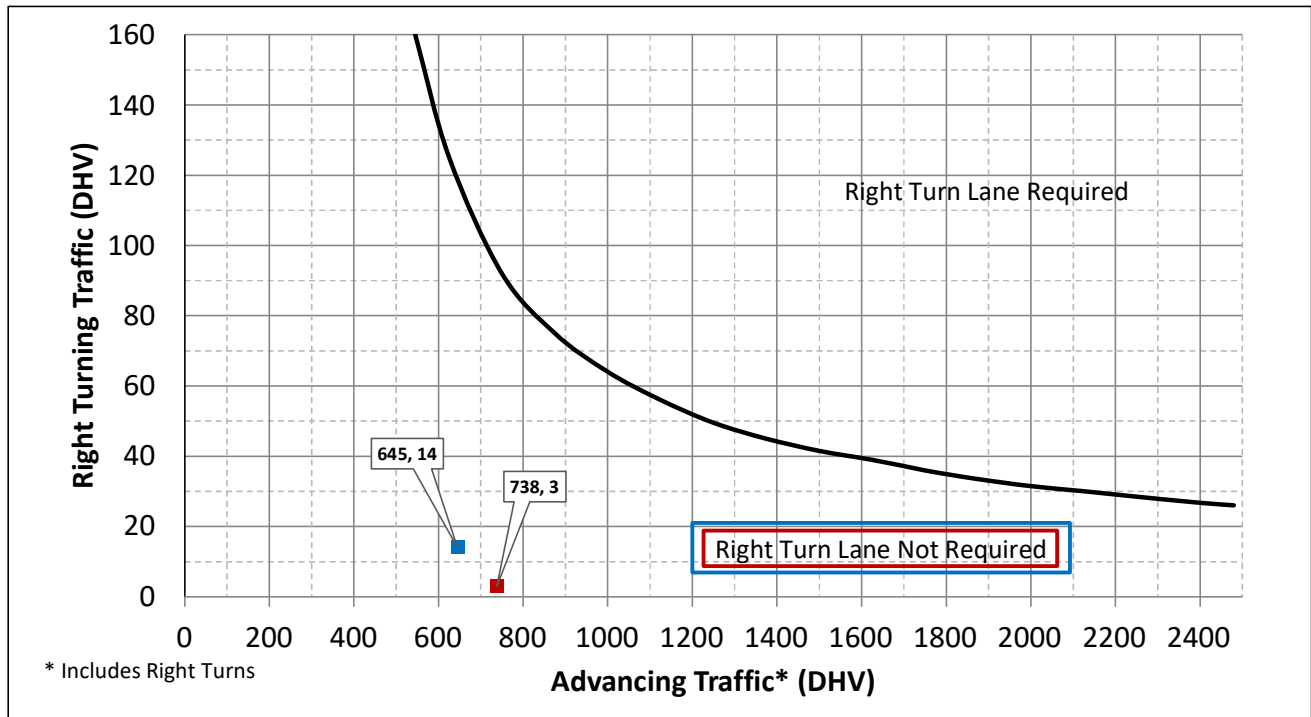
2-Lane Highway Left Turn Lane Warrant
(= < 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

AM Peak	Design Speed	35	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	21	VPH
	Advancing Traffic	417	VPH
	Opposing Volume	629	VPH
	Left Turn Percentage	5%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	245	
PM Peak	Design Speed	35	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	66	VPH
	Advancing Traffic	816	VPH
	Opposing Volume	555	VPH
	Left Turn Percentage	8%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	2	
	Turn Lane Length	150	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	245	
Is Left Turn Warrant Met		Yes	See Above

4-Lane Highway Right Turn Lane Warrant
(= < 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

AM Peak	Design Speed	35	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	3	VPH
	Advancing Traffic	738	VPH
	Right Turn Percentage	0%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	
	* Turn Lane Length includes 50 ft diverging taper		
PM Peak	Design Speed	35	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	14	VPH
	Advancing Traffic	645	VPH
	Right Turn Percentage	2%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	
	* Turn Lane Length includes 50 ft diverging taper		
Is Right Turn Warrant Met		No	No Right Turn Lane Required
		includes 50 ft diverging taper	

Appendix F

Signal Warrant Analysis

Count data at Trabue Road and Builders Place collected on 6/15/2021

	Southbound							Westbound							Northbound							Eastbound			
	Right	Thru	Left					Right	Thru	Left					Right	Thru	Left					Right	Thru	Left	
0:00																									
12:15																									
12:30																									
12:45																									
1:00																									
1:15																									
1:30																									
1:45																									
2:00																									
2:15																									
2:30																									
2:45																									
3:00																									
3:15																									
3:30																									
3:45																									
4:00																									
4:15																									
4:30																									
4:45																									
5:00																									
5:15																									
5:30																									
5:45																									
6:00	1		0					4	24													33	2		
6:15	0		9					2	34													61	6		
6:30	0		2					2	48													63	6		
6:45	2		2					3	62													76	7		
7:00	1		2					4	52													83	10		
7:15	1		2					4	57													102	4		
7:30	3		1					9	74													93	8		
7:45	6		2					8	105													130	11		
8:00	2		3					11	84													94	11		
8:15	1		2					4	81													99	4		
8:30	1		3					9	92													94	7		
8:45	1		3					3	64													88	6		
9:00	1		3					9	86													71	6		
9:15	2		1					6	66													77	3		
9:30	2		8					1	73													82	5		
9:45	5		2					4	93													81	13		
10:00	2		6					2	67													74	3		
10:15	2		1					2	74													93	3		
10:30	0		0					2	93													76	2		
10:45	3		3					7	75													53	3		
11:00	3		0					3	88													62	2		
11:15	5		5					1	96													72	7		
11:30	7		8					5	99													89	7		
11:45	12		11					2	128													86	8		
12:00	6		9					4	132													91	4		
12:15	7		3					5	107													106	7		
12:30	2		4					6	105													87	4		
12:45	1		7					8	111													88	8		
1:00	6		7					4	120													70	6		
1:15	3		4					5	91													83	9		
1:30	2		5					4	97													82	0		
1:45	2		2					5	113													64	1		
2:00	16		4					3	120													77	1		
2:15	3		9					5	116													70	2		
2:30	6		3					3	122													65	0		
2:45	4		6					4	122													93	3		
3:00	10		3					1	130													79	4		
3:15	8		1					5	143													88	4		
3:30	7		5					3	122													105	2		
3:45	11		3					2	117													73	5		
4:00	15		6					3	136													90	3		
4:15	5		7					8	174													95	2		
4:30	5		9					0	157													101	2		
4:45	7		6					0	159													111	0		
5:00	7		4					0	161													112	1		
5:15	7		3					2	182													91	1		
5:30	6		3					0	164													98	0		
5:45	1		7					2	169													75	2		
6:00	4		4					0	171													73	1		
6:15	6		3					0	172													87	1		
6:30	3		0					1	185													87	1		
6:45	3		1					0	145													59	0		
7:00																									
7:15																									
7:30																									
7:45																									
8:00																									
8:15																									
8:30																									
8:45																									
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10:30																									
10:45																									
11:00																									
11:15																									
11:30																									
11:45																									

Grown Count Data

	Southbound						Westbound						Northbound						Eastbound		
	Right	Thru	Left				Right	Thru	Left				Right	Thru	Left				Right	Thru	Left
0:00	0	0	0				0	0	0				0	0	0				0	0	0
12:15	0	0	0				0	0	0				0	0	0				0	0	0
12:30	0	0	0				0	0	0				0	0	0				0	0	0
12:45	0	0	0				0	0	0				0	0	0				0	0	0
1:00	0	0	0				0	0	0				0	0	0				0	0	0
1:15	0	0	0				0	0	0				0	0	0				0	0	0
1:30	0	0	0				0	0	0				0	0	0				0	0	0
1:45	0	0	0				0	0	0				0	0	0				0	0	0
2:00	0	0	0				0	0	0				0	0	0				0	0	0
2:15	0	0	0				0	0	0				0	0	0				0	0	0
2:30	0	0	0				0	0	0				0	0	0				0	0	0
2:45	0	0	0				0	0	0				0	0	0				0	0	0
3:00	0	0	0				0	0	0				0	0	0				0	0	0
3:15	0	0	0				0	0	0				0	0	0				0	0	0
3:30	0	0	0				0	0	0				0	0	0				0	0	0
3:45	0	0	0				0	0	0				0	0	0				0	0	0
4:00	0	0	0				0	0	0				0	0	0				0	0	0
4:15	0	0	0				0	0	0				0	0	0				0	0	0
4:30	0	0	0				0	0	0				0	0	0				0	0	0
4:45	0	0	0				0	0	0				0	0	0				0	0	0
5:00	0	0	0				0	0	0				0	0	0				0	0	0
5:15	0	0	0				0	0	0				0	0	0				0	0	0
5:30	0	0	0				0	0	0				0	0	0				0	0	0
5:45	0	0	0				0	0	0				0	0	0				0	0	0
6:00	1	0	0				4	25	0				0	0	0				0	34	2
6:15	0	0	10				2	35	0				0	0	0				0	64	6
6:30	0	0	2				2	50	0				0	0	0				0	66	6
6:45	2	0	2				3	65	0				0	0	0				0	79	7
7:00	1	0	2				4	54	0				0	0	0				0	87	10
7:15	1	0	2				4	60	0				0	0	0				0	106	4
7:30	3	0	1				9	77	0				0	0	0				0	97	8
7:45	6	0	2				8	110	0				0	0	0				0	136	11
8:00	2	0	3				11	88	0				0	0	0				0	98	11
8:15	1	0	2				4	85	0				0	0	0				0	103	4
8:30	1	0	3				9	96	0				0	0	0				0	98	7
8:45	1	0	3				3	67	0				0	0	0				0	92	6
9:00	1	0	3				9	90	0				0	0	0				0	74	6
9:15	2	0	1				6	69	0				0	0	0				0	80	3
9:30	2	0	9				1	76	0				0	0	0				0	86	5
9:45	5	0	2				4	97	0				0	0	0				0	85	14
10:00	2	0	6				2	70	0				0	0	0				0	77	3
10:15	2	0	1				2	77	0				0	0	0				0	97	3
10:30	0	0	0				2	97	0				0	0	0				0	79	2
10:45	3	0	3				7	78	0				0	0	0				0	55	3
11:00	3	0	0				3	92	0				0	0	0				0	65	2
11:15	5	0	5				1	100	0				0	0	0				0	75	7
11:30	8	0	9				5	103	0				0	0	0				0	93	7
11:45	13	0	12				2	134	0				0	0	0				0	90	8
12:00	6	0	10				4	138	0				0	0	0				0	95	4
12:15	8	0	3				5	112	0				0	0	0				0	111	7
12:30	2	0	4				6	110	0				0	0	0				0	91	4
12:45	1	0	8				8	116	0				0	0	0				0	92	8
1:00	6	0	8				4	125	0				0	0	0				0	73	6
1:15	3	0	4				5	95	0				0	0	0				0	87	9
1:30	2	0	5				4	101	0				0	0	0				0	86	0
1:45	2	0	2				5	118	0				0	0	0				0	87	1
2:00	17	0	4				3	125	0				0	0	0				0	80	1
2:15	3	0	10				5	121	0				0	0	0				0	73	2
2:30	6	0	3				3	127	0				0	0	0				0	68	0
2:45	4	0	6				4	127	0				0	0	0				0	97	3
3:00	11	0	3				1	136	0				0	0	0				0	82	4
3:15	9	0	1				5	149	0				0	0	0				0	92	4
3:30	8	0	5				3	127	0				0	0	0				0	110	2
3:45	12	0	3				2	122	0				0	0	0				0	76	5
4:00	16	0	6				3	142	0				0	0	0				0	94	3
4:15	5	0	8				8	182	0				0	0	0				0	99	2
4:30	5	0	10				0	164	0				0	0	0				0	105	2
4:45	8	0	6				0	166	0				0	0	0				0	116	0
5:00	8	0	4				0	168	0				0	0	0				0	117	1
5:15	8	0	3				2	190	0				0	0	0				0	95	1
5:30	6	0	3				0	171	0				0	0	0				0	102	0
5:45	1	0	8				2	176	0				0	0	0				0	78	2
6:00	4	0	4				0	179	0				0	0	0				0	76	1
6:15	6	0	3				0	180	0				0	0	0				0	91	1
6:30	3	0	0				1	193	0				0	0	0				0	91	1
6:45	3	0	1				0	151	0				0	0	0				0	62	0
7:00	0	0	0				0	0	0				0	0	0				0	0	0
7:15	0	0	0				0	0	0				0	0	0				0	0	0
7:30	0	0	0				0	0	0				0	0	0				0	0	0
7:45	0	0	0				0	0	0				0	0	0				0	0	0
8:00	0	0	0				0	0	0				0	0	0				0	0	0
8:15	0	0	0				0	0	0				0	0	0				0	0	0
8:30	0	0	0				0	0	0				0	0	0				0	0	0
8:45	0	0	0				0	0	0				0	0	0				0	0	0
9:00	0	0	0				0	0	0				0	0	0				0	0	0
9:15	0	0	0				0	0	0				0	0	0				0	0	0
9:30	0	0	0				0	0													

Trip Distribution (Belmont II) - Multifamily Housing (Low-Rise) No Close to Rail/Transit - Distribution matches the HY AM distribution seen in the Belmont II TIS

	Southbound			Westbound			Northbound			Eastbound			220 - Multifamily Housing (Low-Rise) No Close to Rail/Transit Entry %	220 - Multifamily Housing (Low-Rise) Exit %	220 Weekday Entry/Exit 999
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left			
0:00						2	0	0	0	0	0	0			
12:15						2	0	0	0	0	0	0			
12:30						2	0	0	0	0	0	0			
12:45						2	0	0	0	0	0	0			
1:00						1	0	0	0	0	0	0	0.5%	0.3%	
1:15						1	0	0	0	0	0	0			
1:30						1	0	0	0	0	0	0			
1:45						1	0	0	0	0	0	0			
2:00						1	0	0	0	0	0	0	0.4%	0.4%	
2:15						1	0	0	0	0	0	0			
2:30						1	0	0	0	0	0	0			
2:45						1	0	0	0	0	0	0			
3:00						1	0	0	0	0	0	0	0.4%	0.3%	
3:15						1	0	0	0	0	0	0			
3:30						1	0	0	0	0	0	0			
3:45						1	0	0	0	0	0	0			
4:00						1	1	1	1	0	0	0	0.3%	1.4%	
4:15						1	1	1	1	0	0	0			
4:30						1	1	1	1	0	0	0			
4:45						1	1	1	1	0	0	0			
5:00						1	2	2	2	0	0	0	0.5%	2.6%	
5:15						1	2	2	2	0	0	0			
5:30						1	2	2	2	0	0	0			
5:45						1	2	2	2	0	0	0			
6:00						3	5	4	4	1	0	0	1.4%	6.9%	
6:15						3	5	4	4	1	0	0			
6:30						3	5	4	4	1	0	0			
6:45						3	5	4	4	1	0	0			
7:00						4	8	7	7	1	1	1	2.0%	10.8%	
7:15						4	8	7	7	1	1	1			
7:30						4	8	7	7	1	1	1			
7:45						4	8	7	7	1	1	1			
8:00						6	6	5	5	1	1	1	3.1%	8.5%	
8:15						6	6	5	5	1	1	1			
8:30						6	6	5	5	1	1	1			
8:45						6	6	5	5	1	1	1			
9:00						5	4	3	3	1	1	1	2.9%	4.9%	
9:15						5	4	3	3	1	1	1			
9:30						5	4	3	3	1	1	1			
9:45						5	4	3	3	1	1	1			
10:00						5	4	3	3	1	1	1	2.4%	4.8%	
10:15						5	4	3	3	1	1	1			
10:30						5	4	3	3	1	1	1			
10:45						5	4	3	3	1	1	1			
11:00						7	4	3	3	1	1	1	3.8%	4.7%	
11:15						7	4	3	3	1	1	1			
11:30						7	4	3	3	1	1	1			
11:45						7	4	3	3	1	1	1			
12:00						8	3	3	3	2	1	1	4.5%	4.1%	
12:15						8	3	3	3	2	1	1			
12:30						8	3	3	3	2	1	1			
12:45						8	3	3	3	2	1	1			
1:00						7	3	3	3	1	1	1	4.0%	4.4%	
1:15						7	3	3	3	1	1	1			
1:30						7	3	3	3	1	1	1			
1:45						7	3	3	3	1	1	1			
2:00						11	4	3	3	2	1	1	5.6%	4.9%	
2:15						11	4	3	3	2	1	1			
2:30						11	4	3	3	2	1	1			
2:45						11	4	3	3	2	1	1			
3:00						13	4	3	3	3	2	2	6.9%	5.3%	
3:15						13	4	3	3	3	2	2			
3:30						13	4	3	3	3	2	2			
3:45						13	4	3	3	3	2	2			
4:00						19	4	4	4	4	3	3	10.1%	5.6%	
4:15						19	4	4	4	4	3	3			
4:30						19	4	4	4	4	3	3			
4:45						19	4	4	4	4	3	3			
5:00						21	6	5	5	4	3	3	11.4%	7.6%	
5:15						21	6	5	5	4	3	3			
5:30						21	6	5	5	4	3	3			
5:45						21	6	5	5	4	3	3			
6:00						18	5	4	4	4	2	2	9.7%	6.7%	
6:15						18	5	4	4	4	2	2			
6:30						18	5	4	4	4	2	2			
6:45						18	5	4	4	4	2	2			
7:00						15	4	3	3	3	2	2	8.1%	4.7%	
7:15						15	4	3	3	3	2	2			
7:30						15	4	3	3	4	2	2			
7:45						15	4	3	3	3	2	2			
8:00						14	3	3	3	3	2	2	7.7%	4.2%	
8:15						14	3	3	3	3	2	2			
8:30						14	3	3	3	3	2	2			
8:45						14	3	3	3	3	2	2			
9:00						11	2	2	2	2	2	2	6.0%	2.7%	
9:15						11	2	2	2	2	2	2			
9:30						11	2	2	2	2	2	2			
9:45						11	2	2	2	2	2	2			
10:00						9	2	1	1	2	1	1	4.7%	2.4%	
10:15						9	2	1	1	2	1	1			
10:30						9	2	1	1	2	1	1			
10:45						9	2	1	1	2	1	1			
11:00						5	1	1	1	1	1	1	2.5%	1.4%	
11:15						5	1	1	1	1	1	1			
11:30						5	1	1	1	1	1	1			
11:45						5	1	1	1	1	1	1			

40
Ex

220 Weekday
Entry/Exit
695

Build Volumes at Trabue Road and Builders Place

	Southbound						Westbound						Northbound						Eastbound		
	Right	Thru	Left				Right	Thru	Left				Right	Thru	Left				Right	Thru	Left
0:00	0	0	0				0	1	2				0	0	0				0	0	0
12:15	0	0	0				0	1	2				0	0	0				0	0	0
12:30	0	0	0				0	1	2				0	0	0				0	0	0
12:45	0	0	0				0	1	2				0	0	0				0	0	0
1:00	0	0	0				0	0	1				0	0	0				0	0	0
1:15	0	0	0				0	0	1				0	0	0				0	0	0
1:30	0	0	0				0	0	1				0	0	0				0	0	0
1:45	0	0	0				0	0	1				0	0	0				0	0	0
2:00	0	0	0				0	0	1				0	0	0				0	0	0
2:15	0	0	0				0	0	1				0	0	0				0	0	0
2:30	0	0	0				0	0	1				0	0	0				0	0	0
2:45	0	0	0				0	0	1				0	0	0				0	0	0
3:00	0	0	0				0	0	1				0	0	0				0	0	0
3:15	0	0	0				0	0	1				0	0	0				0	0	0
3:30	0	0	0				0	0	1				0	0	0				0	0	0
3:45	0	0	0				0	0	1				0	0	0				0	0	0
4:00	0	0	0				0	0	1				1	0	1				0	1	0
4:15	0	0	0				0	0	1				1	0	1				0	1	0
4:30	0	0	0				0	0	1				1	0	1				0	1	0
4:45	0	0	0				0	0	1				1	0	1				0	1	0
5:00	0	0	0				0	0	1				2	0	2				0	2	0
5:15	0	0	0				0	0	1				2	0	2				0	2	0
5:30	0	0	0				0	0	1				2	0	2				0	2	0
5:45	0	0	0				0	0	1				2	0	2				0	2	0
6:00	1	0	0				4	26	3				5	0	4				1	39	2
6:15	0	0	10				2	36	3				5	0	4				1	69	6
6:30	0	0	2				2	51	3				5	0	4				1	71	6
6:45	2	0	2				3	66	3				5	0	4				1	84	7
7:00	1	0	2				4	55	4				8	0	7				1	96	10
7:15	1	0	2				4	61	4				8	0	7				1	115	4
7:30	3	0	1				9	78	4				8	0	7				1	106	8
7:45	6	0	2				8	111	4				8	0	7				1	145	11
8:00	2	0	3				11	90	6				6	0	5				1	105	11
8:15	1	0	2				4	87	6				6	0	5				1	110	4
8:30	1	0	3				9	98	6				6	0	5				1	105	7
8:45	1	0	3				3	69	6				6	0	5				1	99	6
9:00	1	0	3				9	92	5				4	0	3				1	78	6
9:15	2	0	1				6	71	5				4	0	3				1	84	3
9:30	2	0	9				1	78	5				4	0	3				1	90	5
9:45	5	0	2				4	99	5				4	0	3				1	89	14
10:00	2	0	6				2	72	5				4	0	3				1	81	3
10:15	2	0	1				2	79	5				4	0	3				1	101	3
10:30	0	0	0				2	99	5				4	0	3				1	83	2
10:45	3	0	3				7	80	5				4	0	3				1	59	3
11:00	3	0	0				3	95	7				4	0	3				1	69	2
11:15	5	0	5				1	103	7				4	0	3				1	79	7
11:30	8	0	9				5	106	7				4	0	3				1	97	7
11:45	13	0	12				2	137	7				4	0	3				1	94	8
12:00	6	0	10				4	141	8				3	0	3				2	99	4
12:15	8	0	3				5	115	8				3	0	3				2	115	7
12:30	2	0	4				6	113	8				3	0	3				2	95	4
12:45	1	0	8				8	119	8				3	0	3				2	96	8
1:00	6	0	8				4	128	7				3	0	3				1	77	6
1:15	3	0	4				5	98	7				3	0	3				1	91	9
1:30	2	0	5				4	104	7				3	0	3				1	90	0
1:45	2	0	2				5	121	7				3	0	3				1	71	1
2:00	17	0	4				3	129	11				4	0	3				2	84	1
2:15	3	0	10				5	125	11				4	0	3				2	77	2
2:30	6	0	3				3	131	11				4	0	3				2	72	0
2:45	4	0	6				4	131	11				4	0	3				2	101	3
3:00	11	0	3				1	141	13				4	0	3				3	88	4
3:15	9	0	1				5	154	13				4	0	3				3	98	4
3:30	8	0	5				3	132	13				4	0	3				3	116	2
3:45	12	0	3				2	127	13				4	0	3				3	82	5
4:00	16	0	6				3	149	19				4	0	4				4	101	3
4:15	5	0	8				8	189	19				4	0	4				4	106	2
4:30	5	0	10				0	171	19				4	0	4				4	112	2
4:45	8	0	6				0	173	19				4	0	4				4	123	0
5:00	8	0	4				0	176	21				6	0	5				4	125	1
5:15	8	0	3				2	198	21				6	0	5				4	103	1
5:30	6	0	3				0	179	21				6	0	5				4	110	0
5:45	1	0	8				2	184	21				6	0	5				4	86	2
6:00	4	0	4				0	186	18				5	0	4				4	83	1
6:15	6	0	3				0	187	18				5	0	4				4	98	1
6:30	3	0	0				1	200	18				5	0	4				4	98	1
6:45	3	0	1				0	158	18				5	0	4				4	69	0
7:00	0	0	0				0	6	15				4	0	3				3	5	0
7:15	0	0	0				0	6	15				4	0	3				3	5	0
7:30	0	0	0				0	6	15				4	0	3				3	5	0
7:45	0	0	0				0	6	15				4	0	3				3	5	0
8:00	0	0	0				0	5	14				3	0	3				3	5	0
8:15	0	0																			

Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2025 Build - Road Diet

Study Date : 10/7/2024

Signal Warrants - Summary

Major Street Approaches

Eastbound: Trabue Road

Number of Lanes : 1

Total Approach Volume: 5,276

Westbound: Trabue Road

Number of Lanes : 1

Total Approach Volume: 7,124

Minor Street Approaches

Northbound: Site Access

Number of Lanes : 1

Total Approach Volume: 308

Southbound: Builders Place Drive

Number of Lanes : 1

Total Approach Volume: 282

Warrant Summary (Urban Values Apply)

Warrant 1 - Eight Hour Vehicular Volumes.....Not Satisfied

Warrant 1A - Minimum Vehicular Volume.....Not Satisfied

Required volumes reached for 0 hours, 8 are needed

Warrant 1B - Interruption of Continuous Traffic.....Not Satisfied

Required volumes reached for 0 hours, 8 are needed

Warrant 1C - Combination of Warrants.....Not Satisfied

Required 1A volumes reached for 0 hours, 8 are needed

Required 1B volumes reached for 0 hours, 8 are needed

Warrant 2 - Four Hour Volumes.....Not Satisfied

Number of hours (0) volumes exceed minimum < minimum required (4).

Warrant 3 - Peak Hour.....Not Evaluated

Warrant 3A - Peak Hour Delay.....Not Evaluated

Warrant 3B - Peak Hour Volumes.....Not Evaluated

Warrant 4 - Pedestrian Volumes.....Not Evaluated

Warrant 5 - School Crossing.....Not Evaluated

Warrant 6 - Coordinated Signal System.....Not Evaluated

Warrant 7 - Crash Experience.....Not Evaluated

Warrant 8 - Roadway Network.....Not Evaluated

Warrant 9 - Intersection Near a Grade Crossing.....Not Evaluated

Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2025 Build - Road Diet

Study Date : 10/7/2024

Warrant 1A - Minimum Volumes

Description

Intended for sites where the volume of intersecting traffic is the principal reason for consideration of a signal installation.

Summary

Only 0 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **False**
Number of Major Lanes = **1**
Number of Minor Lanes = **1**

Volume Requirements

Veh/Hr Major = **500**

Veh/Hr Minor = **150**

Major Road						Minor Road			
Trabue Road						Site Access			
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?	
16:45 - 17:45	479	+	810	=	1289	26	26	No	
16:30 - 17:30	483	+	800	=	1283	24	33	No	
16:15 - 17:15	487	+	795	=	1282	22	37	No	
17:00 - 18:00	444	+	825	=	1269	26	26	No	
17:15 - 18:15	405	+	832	=	1237	24	24	No	
16:00 - 17:00	465	+	769	=	1234	20	42	No	
17:45 - 18:45	389	+	835	=	1224	20	19	No	
17:30 - 18:30	400	+	816	=	1216	22	23	No	
18:00 - 19:00	370	+	804	=	1174	19	14	No	
15:45 - 16:45	428	+	719	=	1147	17	40	No	
15:30 - 16:30	431	+	677	=	1108	16	35	No	
15:15 - 16:15	424	+	633	=	1057	15	28	No	
14:45 - 15:45	427	+	621	=	1048	14	23	No	
15:00 - 16:00	411	+	617	=	1028	14	22	No	
14:30 - 15:30	380	+	618	=	998	14	21	No	
11:45 - 12:45	433	+	554	=	987	14	36	No	
11:30 - 12:30	437	+	545	=	982	14	43	No	
12:00 - 13:00	436	+	543	=	979	15	29	No	
12:15 - 13:15	415	+	529	=	944	14	27	No	
14:15 - 15:15	356	+	587	=	943	14	29	No	
07:45 - 08:45	502	+	440	=	942	27	12	No	
11:15 - 12:15	400	+	528	=	928	14	44	No	
14:00 - 15:00	348	+	575	=	923	14	31	No	
07:30 - 08:30	504	+	418	=	922	30	10	No	
18:15 - 19:15	287		621		908	18	9	No	

Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2025 Build - Road Diet

Study Date : 10/7/2024

Warrant 1B - Interruption of Continuous Traffic

Description

Intended for sites where the volume of the major street is so heavy that traffic on the minor street suffers excessive delay or hazard.

Summary

Only 0 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **False**
Number of Major Lanes = **1**
Number of Minor Lanes = **1**

Volume Requirements

Veh/Hr Major = **750**

Veh/Hr Minor = **75**

Major Road						Minor Road			
Trabue Road						Site Access			
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?	
16:45 - 17:45	479	+	810	=	1289	26	26	No	
16:30 - 17:30	483	+	800	=	1283	24	33	No	
16:15 - 17:15	487	+	795	=	1282	22	37	No	
17:00 - 18:00	444	+	825	=	1269	26	26	No	
17:15 - 18:15	405	+	832	=	1237	24	24	No	
16:00 - 17:00	465	+	769	=	1234	20	42	No	
17:45 - 18:45	389	+	835	=	1224	20	19	No	
17:30 - 18:30	400	+	816	=	1216	22	23	No	
18:00 - 19:00	370	+	804	=	1174	19	14	No	
15:45 - 16:45	428	+	719	=	1147	17	40	No	
15:30 - 16:30	431	+	677	=	1108	16	35	No	
15:15 - 16:15	424	+	633	=	1057	15	28	No	
14:45 - 15:45	427	+	621	=	1048	14	23	No	
15:00 - 16:00	411	+	617	=	1028	14	22	No	
14:30 - 15:30	380	+	618	=	998	14	21	No	
11:45 - 12:45	433	+	554	=	987	14	36	No	
11:30 - 12:30	437	+	545	=	982	14	43	No	
12:00 - 13:00	436	+	543	=	979	15	29	No	
12:15 - 13:15	415	+	529	=	944	14	27	No	
14:15 - 15:15	356	+	587	=	943	14	29	No	
07:45 - 08:45	502	+	440	=	942	27	12	No	
11:15 - 12:15	400	+	528	=	928	14	44	No	
14:00 - 15:00	348	+	575	=	923	14	31	No	
07:30 - 08:30	504	+	418	=	922	30	10	No	
18:15 - 19:15	287		621		908	18	9	No	

Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2025 Build - Road Diet

Study Date : 10/7/2024

Warrant 1C Combination of Warrants

Description

Intended for sites where the traffic volumes don't meet individual warrants but where Warrants 1A and 1B are both met to 80% of their stated values.

Summary

Only 0 hours meet 1A minimums.
Only 0 hours meet 1B minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **False**
Number of Major Lanes = **1**
Number of Minor Lanes = **1**

Volume Requirements

Warrant 1A 1B
Veh/Hr Major = **400 600**
Veh/Hr Minor = **120 60**

Major Road						Minor Road					
Trabue Road						Site Access					
Time	Major EB	+	Major WB	=	Total		Minor NB		Minor SB		Met1A?
16:45 - 17:45	479	+	810	=	1289		26		26		No
16:30 - 17:30	483	+	800	=	1283		24		33		No
16:15 - 17:15	487	+	795	=	1282		22		37		No
17:00 - 18:00	444	+	825	=	1269		26		26		No
17:15 - 18:15	405	+	832	=	1237		24		24		No
16:00 - 17:00	465	+	769	=	1234		20		42		No
17:45 - 18:45	389	+	835	=	1224		20		19		No
17:30 - 18:30	400	+	816	=	1216		22		23		No
18:00 - 19:00	370	+	804	=	1174		19		14		No
15:45 - 16:45	428	+	719	=	1147		17		40		No
15:30 - 16:30	431	+	677	=	1108		16		35		No
15:15 - 16:15	424		633		1057		15		28		No

Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met1B?	
16:45 - 17:45	479	+	810	=	1289	26	26	No	
16:30 - 17:30	483	+	800	=	1283	24	33	No	
16:15 - 17:15	487	+	795	=	1282	22	37	No	
17:00 - 18:00	444	+	825	=	1269	26	26	No	
17:15 - 18:15	405	+	832	=	1237	24	24	No	
16:00 - 17:00	465	+	769	=	1234	20	42	No	
17:45 - 18:45	389	+	835	=	1224	20	19	No	
17:30 - 18:30	400	+	816	=	1216	22	23	No	
18:00 - 19:00	370	+	804	=	1174	19	14	No	
15:45 - 16:45	428	+	719	=	1147	17	40	No	
15:30 - 16:30	431	+	677	=	1108	16	35	No	
15:15 - 16:15	424		633		1057	15	28	No	

Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2025 Build - Road Diet

Study Date : 10/7/2024

Warrant 2 - Four Hour Volumes

Description

Intended for sites where the volume of intersecting traffic during any four hours of the day is the principal reason for consideration of a signal installation.

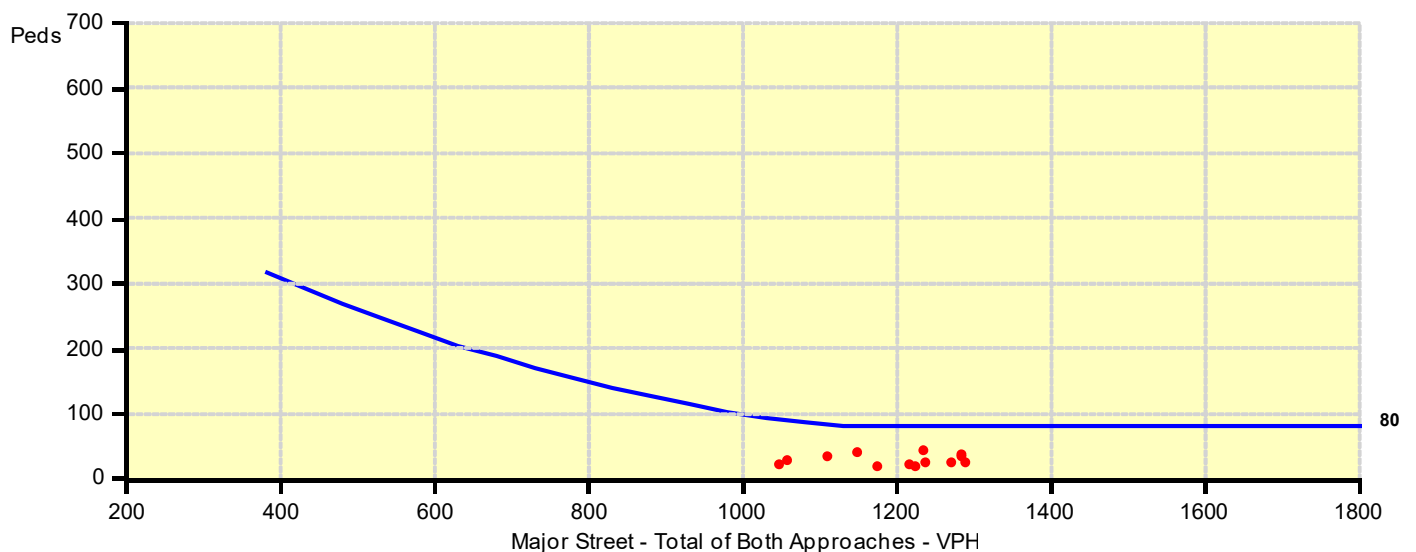
Summary

Only 0 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **False**
Number of Major Lanes = **1**
Number of Minor Lanes = **1**

Major Road Trabue Road						Minor Road Site Access		
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?
16:45 - 17:45	479	+	810	=	1289	26	26	No
16:30 - 17:30	483	+	800	=	1283	24	33	No
16:15 - 17:15	487	+	795	=	1282	22	37	No
17:00 - 18:00	444	+	825	=	1269	26	26	No
17:15 - 18:15	405	+	832	=	1237	24	24	No
16:00 - 17:00	465	+	769	=	1234	20	42	No
17:45 - 18:45	389	+	835	=	1224	20	19	No
17:30 - 18:30	400	+	816	=	1216	22	23	No
18:00 - 19:00	370	+	804	=	1174	19	14	No
15:45 - 16:45	428	+	719	=	1147	17	40	No
15:30 - 16:30	431	+	677	=	1108	16	35	No
15:15 - 16:15	424	+	633	=	1057	15	28	No



Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2025 Build - Road Diet

Study Date : 10/7/2024

Warrant 3A - Peak Hour Delay

Description

Intended for sites where for one hour of the day minor street traffic suffers undue traffic delay entering or crossing the major street.

Summary

50 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Number of Minor Lanes =1

Volume and Delay Requirements

Veh/Hr All Approaches = **800**

Veh/Hr Minor = **100**

Total Delay (Veh-Hrs) = **4**

Major Road						Minor Road			
Trabue Road						Site Access			
Time	Total of All Approaches	Met?	Minor NB	Delay NB	Met?	Minor SB	Delay SB	Met?	Warrant Met?
16:45 - 17:45	1341	Yes	26	-	---	26	-	No	No
16:15 - 17:15	1341	Yes	22	-	---	37	-	No	No
16:30 - 17:30	1340	Yes	24	-	---	33	-	No	No
17:00 - 18:00	1321	Yes	26	-	---	26	-	No	No
16:00 - 17:00	1296	Yes	20	-	---	42	-	No	No
17:15 - 18:15	1285	Yes	24	-	---	24	-	No	No
17:45 - 18:45	1263	Yes	20	-	No	19	-	---	No
17:30 - 18:30	1261	Yes	22	-	---	23	-	No	No
18:00 - 19:00	1207	Yes	19	-	No	14	-	---	No
15:45 - 16:45	1204	Yes	17	-	---	40	-	No	No
15:30 - 16:30	1159	Yes	16	-	---	35	-	No	No
15:15 - 16:15	1100	Yes	15	-	---	28	-	No	No
14:45 - 15:45	1085	Yes	14	-	---	23	-	No	No
15:00 - 16:00	1064	Yes	14	-	---	22	-	No	No
11:30 - 12:30	1039	Yes	14	-	---	43	-	No	No
11:45 - 12:45	1037	Yes	14	-	---	36	-	No	No
14:30 - 15:30	1033	Yes	14	-	---	21	-	No	No
12:00 - 13:00	1023	Yes	15	-	---	29	-	No	No
11:15 - 12:15	986	Yes	14	-	---	44	-	No	No
14:15 - 15:15	986	Yes	14	-	---	29	-	No	No
12:15 - 13:15	985	Yes	14	-	---	27	-	No	No
07:45 - 08:45	981	Yes	27	-	No	12	-	---	No
14:00 - 15:00	968	Yes	14	-	---	31	-	No	No
07:30 - 08:30	962	Yes	30	-	No	10	-	---	No
12:30 - 13:30	943	Yes	13	-	---	27	-	No	No

Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2025 Build - Road Diet

Study Date : 10/7/2024

Warrant 3B - Peak Hour Volumes

Description

Intended for sites where the volume of intersecting traffic during one hour of the day is the principal reason for consideration of a signal installation.

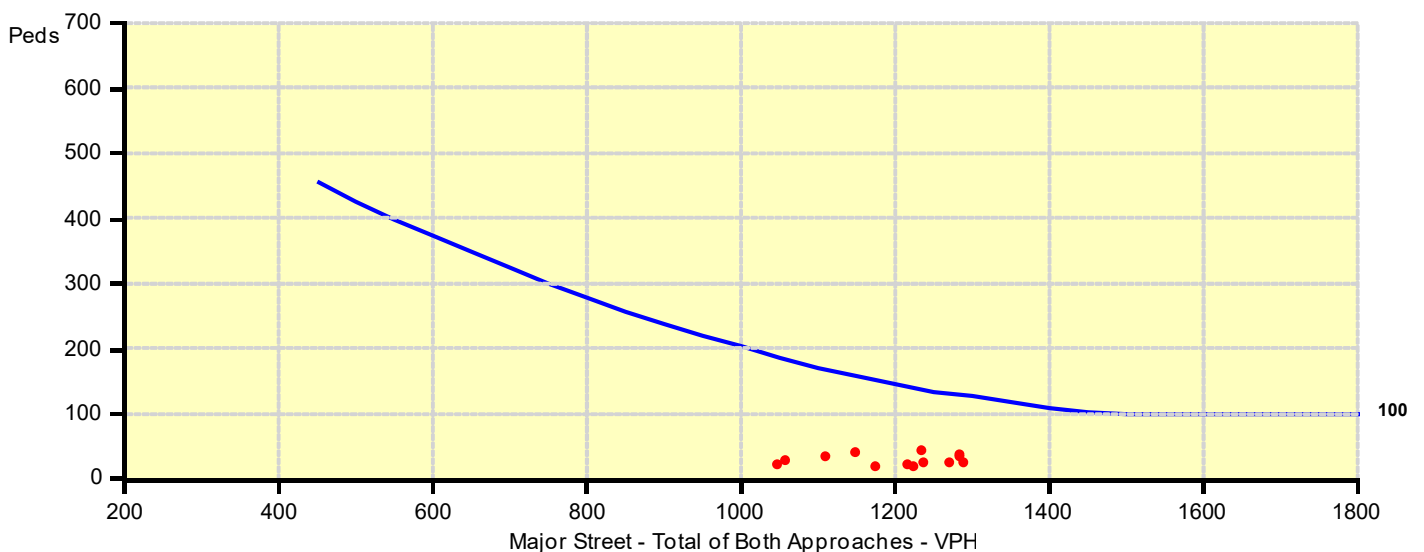
Summary

Only 0 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **False**
Number of Major Lanes = **1**
Number of Minor Lanes = **1**

Major Road Trabue Road						Minor Road Site Access		
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?
16:45 - 17:45	479	+	810	=	1289	26	26	No
16:30 - 17:30	483	+	800	=	1283	24	33	No
16:15 - 17:15	487	+	795	=	1282	22	37	No
17:00 - 18:00	444	+	825	=	1269	26	26	No
17:15 - 18:15	405	+	832	=	1237	24	24	No
16:00 - 17:00	465	+	769	=	1234	20	42	No
17:45 - 18:45	389	+	835	=	1224	20	19	No
17:30 - 18:30	400	+	816	=	1216	22	23	No
18:00 - 19:00	370	+	804	=	1174	19	14	No
15:45 - 16:45	428	+	719	=	1147	17	40	No
15:30 - 16:30	431	+	677	=	1108	16	35	No
15:15 - 16:15	424	+	633	=	1057	15	28	No



Count data at Trabue Road and Builders Place collected on 6/15/2021

	Southbound							Westbound						Northbound							Eastbound		
	Right	Thru	Left					Right	Thru	Left				Right	Thru	Left					Right	Thru	Left
0:00																							
12:15																							
12:30																							
12:45																							
1:00																							
1:15																							
1:30																							
1:45																							
2:00																							
2:15																							
2:30																							
2:45																							
3:00																							
3:15																							
3:30																							
3:45																							
4:00																							
4:15																							
4:30																							
4:45																							
5:00																							
5:15																							
5:30																							
5:45																							
6:00	1		0					4	24												33	2	
6:15	0		9					2	34												61	6	
6:30	0		2					2	48												63	6	
6:45	2		2					3	62												76	7	
7:00	1		2					4	52												83	10	
7:15	1		2					4	57												102	4	
7:30	3		1					9	74												93	8	
7:45	6		2					8	105												130	11	
8:00	2		3					11	84												94	11	
8:15	1		2					4	81												99	4	
8:30	1		3					9	92												94	7	
8:45	1		3					3	64												88	6	
9:00	1		3					9	86												71	6	
9:15	2		1					6	66												77	3	
9:30	2		8					1	73												82	5	
9:45	5		2					4	93												81	13	
10:00	2		6					2	67												74	3	
10:15	2		1					2	74												93	3	
10:30	0		0					2	93												76	2	
10:45	3		3					7	75												63	3	
11:00	3		0					3	88												62	2	
11:15	5		5					1	96												72	7	
11:30	7		8					5	99												89	7	
11:45	12		11					2	128												86	8	
12:00	6		9					4	132												91	4	
12:15	7		3					5	107												106	7	
12:30	2		4					6	105												87	4	
12:45	1		7					8	111												88	8	
1:00	6		7					4	120												70	6	
1:15	3		4					5	91												83	9	
1:30	2		5					4	97												82	0	
1:45	2		2					5	113												64	1	
2:00	16		4					3	120												77	1	
2:15	3		9					5	116												70	2	
2:30	6		3					3	122												65	0	
2:45	4		6					4	122												93	3	
3:00	10		3					1	130												79	4	
3:15	8		1					5	143												88	4	
3:30	7		5					3	122												105	2	
3:45	11		3					2	117												73	5	
4:00	15		6					3	136												90	3	
4:15	5		7					8	174												95	2	
4:30	5		9					0	157												101	2	
4:45	7		6					0	159												111	0	
5:00	7		4					0	161												112	1	
5:15	7		3					2	182												91	1	
5:30	6		3					0	164												98	0	
5:45	1		7					2	169												75	2	
6:00	4		4					0	171												73	1	
6:15	6		3					0	172												87	1	
6:30	3		0					1	185												87	1	
6:45	3		1					0	145												59	0	
7:00																							
7:15																							
7:30																							
7:45																							
8:00																							
8:15																							
8:30																							
8:45																							
9:00																							
9:15																							
9:30																							
9:45																							
10:00																							
10:15																							
10:30																							
10:45																							
11:00																							
11:15																							
11:30																							
11:45																							

Grown Count Data

	Southbound						Westbound						Northbound						Eastbound		
	Right	Thru	Left				Right	Thru	Left				Right	Thru	Left				Right	Thru	Left
0:00	0	0	0				0	0	0				0	0	0				0	0	0
12:15	0	0	0				0	0	0				0	0	0				0	0	0
12:30	0	0	0				0	0	0				0	0	0				0	0	0
12:45	0	0	0				0	0	0				0	0	0				0	0	0
1:00	0	0	0				0	0	0				0	0	0				0	0	0
1:15	0	0	0				0	0	0				0	0	0				0	0	0
1:30	0	0	0				0	0	0				0	0	0				0	0	0
1:45	0	0	0				0	0	0				0	0	0				0	0	0
2:00	0	0	0				0	0	0				0	0	0				0	0	0
2:15	0	0	0				0	0	0				0	0	0				0	0	0
2:30	0	0	0				0	0	0				0	0	0				0	0	0
2:45	0	0	0				0	0	0				0	0	0				0	0	0
3:00	0	0	0				0	0	0				0	0	0				0	0	0
3:15	0	0	0				0	0	0				0	0	0				0	0	0
3:30	0	0	0				0	0	0				0	0	0				0	0	0
3:45	0	0	0				0	0	0				0	0	0				0	0	0
4:00	0	0	0				0	0	0				0	0	0				0	0	0
4:15	0	0	0				0	0	0				0	0	0				0	0	0
4:30	0	0	0				0	0	0				0	0	0				0	0	0
4:45	0	0	0				0	0	0				0	0	0				0	0	0
5:00	0	0	0				0	0	0				0	0	0				0	0	0
5:15	0	0	0				0	0	0				0	0	0				0	0	0
5:30	0	0	0				0	0	0				0	0	0				0	0	0
5:45	0	0	0				0	0	0				0	0	0				0	0	0
6:00	1	0	0				5	30	0				0	0	0				0	42	3
6:15	0	0	13				3	43	0				0	0	0				0	77	8
6:30	0	0	3				3	61	0				0	0	0				0	80	8
6:45	3	0	3				4	78	0				0	0	0				0	96	9
7:00	1	0	3				5	66	0				0	0	0				0	105	13
7:15	1	0	3				5	72	0				0	0	0				0	129	5
7:30	4	0	1				11	94	0				0	0	0				0	118	10
7:45	9	0	3				10	133	0				0	0	0				0	164	14
8:00	3	0	4				14	106	0				0	0	0				0	119	14
8:15	1	0	3				5	102	0				0	0	0				0	125	5
8:30	1	0	4				11	116	0				0	0	0				0	119	9
8:45	1	0	4				4	81	0				0	0	0				0	111	8
9:00	1	0	4				11	109	0				0	0	0				0	90	8
9:15	3	0	1				8	83	0				0	0	0				0	97	4
9:30	3	0	12				1	92	0				0	0	0				0	104	6
9:45	7	0	3				5	118	0				0	0	0				0	102	16
10:00	3	0	9				3	85	0				0	0	0				0	94	4
10:15	3	0	1				3	94	0				0	0	0				0	118	4
10:30	0	0	0				3	118	0				0	0	0				0	96	3
10:45	4	0	4				9	95	0				0	0	0				0	67	4
11:00	4	0	0				4	111	0				0	0	0				0	78	3
11:15	7	0	7				1	121	0				0	0	0				0	91	9
11:30	10	0	12				6	125	0				0	0	0				0	112	9
11:45	18	0	16				3	162	0				0	0	0				0	109	10
12:00	9	0	13				5	167	0				0	0	0				0	115	5
12:15	10	0	4				6	135	0				0	0	0				0	134	9
12:30	3	0	6				8	133	0				0	0	0				0	110	5
12:45	1	0	10				10	140	0				0	0	0				0	111	10
1:00	9	0	10				5	152	0				0	0	0				0	88	8
1:15	4	0	6				6	115	0				0	0	0				0	105	11
1:30	3	0	7				5	123	0				0	0	0				0	104	0
1:45	3	0	3				6	143	0				0	0	0				0	81	1
2:00	24	0	6				4	152	0				0	0	0				0	97	1
2:15	4	0	13				6	147	0				0	0	0				0	88	3
2:30	9	0	4				4	154	0				0	0	0				0	82	0
2:45	6	0	9				5	154	0				0	0	0				0	118	4
3:00	15	0	4				1	164	0				0	0	0				0	100	5
3:15	12	0	1				6	181	0				0	0	0				0	111	5
3:30	10	0	7				4	154	0				0	0	0				0	133	3
3:45	16	0	4				3	148	0				0	0	0				0	92	6
4:00	22	0	9				4	172	0				0	0	0				0	114	4
4:15	7	0	10				10	220	0				0	0	0				0	120	3
4:30	7	0	13				0	198	0				0	0	0				0	128	3
4:45	10	0	9				0	201	0				0	0	0				0	140	0
5:00	10	0	6				0	204	0				0	0	0				0	142	1
5:15	10	0	4				3	230	0				0	0	0				0	115	1
5:30	9	0	4				0	207	0				0	0	0				0	124	0
5:45	1	0	10				3	214	0				0	0	0				0	95	3
6:00	6	0	6				0	216	0				0	0	0				0	92	1
6:15	9	0	4				0	217	0				0	0	0				0	110	1
6:30	4	0	0				1	234	0				0	0	0				0	110	1
6:45	4	0	1				0	183	0				0	0	0				0	75	0
7:00	0	0	0				0	0	0				0	0	0				0	0	0
7:15	0	0	0				0	0	0				0	0	0				0	0	0
7:30	0	0	0				0	0	0				0	0	0				0	0	0
7:45	0	0	0				0	0	0				0	0	0				0	0	0
8:00	0	0	0				0	0	0				0	0	0				0	0	0
8:15	0	0	0				0	0	0				0	0	0				0	0	0
8:30	0	0	0				0	0	0				0	0	0				0	0	0
8:45	0	0	0				0	0	0				0	0	0				0	0	0
9:00	0	0	0				0	0	0				0	0	0				0	0	0
9:15	0	0	0				0	0	0				0	0	0				0	0	0

Trip Distribution (Belmont I & Hanover) - Multifamily Housing (Low-Rise) Not Close to Rail/Transit - Distribution is extrapolated from the McKinley Avenue Site TIS and estimated rerouted volumes

	Southbound						Westbound						Northbound						Eastbound		
	Right	Thru	Left				Right	Thru	Left				Right	Thru	Left				Right	Thru	Left
0:00								0											1	0	
12:15								0											1	0	
12:30								0											1	0	
12:45								0											1	0	
1:00								0											0	0	
1:15								0											0	0	
1:30								0											0	0	
1:45								0											0	0	
2:00								0											0	0	
2:15								0											0	0	
2:30								0											0	0	
2:45								0											0	0	
3:00								0											0	0	
3:15								0											0	0	
3:30								0											0	0	
3:45								0											0	0	
4:00								1						1					0	0	
4:15								1						1					0	0	
4:30								1						1					0	0	
4:45								1						1					0	0	
5:00								1						1					0	0	
5:15								1						1					0	0	
5:30								1						1					0	0	
5:45								1						1					0	0	
6:00								3						3					1	1	
6:15								3						3					1	1	
6:30								3						3					1	1	
6:45								3						3					1	1	
7:00								4						4					1	1	
7:15								4						4					1	1	
7:30								4						4					1	1	
7:45								4						4					1	1	
8:00								3						3					2	1	
8:15								3						3					2	1	
8:30								3						3					2	1	
8:45								3						3					2	1	
9:00								2						2					2	1	
9:15								2						2					2	1	
9:30								2						2					2	1	
9:45								2						2					2	1	
10:00								2						2					1	1	
10:15								2						2					1	1	
10:30								2						2					1	1	
10:45								2						2					1	1	
11:00								2						2					2	2	
11:15								2						2					2	2	
11:30								2						2					2	2	
11:45								2						2					2	2	
12:00								2						2					3	2	
12:15								2						2					3	2	
12:30								2						2					3	2	
12:45								2						2					3	2	
1:00								2						2					2	2	
1:15								2						2					2	2	
1:30								2						2					2	2	
1:45								2						2					2	2	
2:00								2						2					3	2	
2:15								2						2					3	2	
2:30								2						2					3	2	
2:45								2						2					3	2	
3:00								2						2					4	3	
3:15								2						2					4	3	
3:30								2						2					4	3	
3:45								2						2					4	3	
4:00								2						2					6	4	
4:15								2						2					6	4	
4:30								2						2					6	4	
4:45								2						2					6	4	
5:00								3						3					7	5	
5:15								3						3					7	5	
5:30								3						3					7	5	
5:45								3						3					7	5	
6:00								3						3					6	4	
6:15								3						3					6	4	
6:30								3						3					6	4	
6:45								3						3					6	4	
7:00								2						2					5	3	
7:15								2						2					5	3	
7:30								2						2					5	3	
7:45								2						2					5	3	
8:00								2						2					5	3	
8:15								2						2					5	3	
8:30								2						2					5	3	
8:45								2						2					5	3	
9:00								1						1					4	2	
9:15								1						1					4	2	
9:30								1						1					4	2	
9:45								1						1					4	2	
10:00								1						1					3	2	
10:15								1						1					3	2	
10:30								1						1					3	2	
10:45								1						1					3	2	
11:00								1						1					2	1	
11:15								1						1					2	1	
11:30								1						1					2	1	
11:45								1						1					2	1	

220 - Multifamily
Housing (Low-Rise)
Not Close to
Rail/Transit
Entry %
0.9%

Exit %
0.4%

220 Weekday
Entry/Exit
1617

0.5% 0.3%

0.4% 0.4%

0.4% 0.3%

0.3% 1.4%

0.5% 2.6%

1.4% 6.9%

2.0% 10.8%

3.1% 8.5%

2.9% 4.9%

2.4% 4.8%

3.8% 4.7%

4.5% 4.1%

4.0% 4.4%

5.6% 4.9%

6.9% 5.3%

10.1% 5.6%

11.4% 7.6%

9.7% 6.7%

8.1% 4.7%

7.7% 4.2%

6.0% 2.7%

4.7% 2.4%

2.5% 1.4%

Trip Distribution (Belmont II) - Multifamily Housing (Low-Rise) Not Close to Rail/Transit - Distribution is the average of the HY AM and HY PM distribution seen in the Belmont II TIS

	75% Enter						30% Enter					25% Exit					15% Enter			10% Enter			220 - Multifamily Housing (Low-Rise) Not Close to Rail/Transit			220 Weekday Entry/Exit 999
	Southbound						Westbound					Northbound					Eastbound			Entry %			Exit %			
	Right	Thru	Left				Right	Thru	Left			Right	Thru	Left			Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
0:00																										
12:15																										
12:30																										
12:45																										
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9:45																										
10:00																										
10:15																										

Trip Distribution (West Multifamily) - Multifamily Housing (Low-Rise) Not Close to Rail/Transit - Distribution is the average of the HY AM and HY PM West Multifamily distribution seen in the Belmont II TIS

	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
0:00						1	0	0	0	0		
12:15						1	0	0	0	0		
12:30						1	0	0	0	0		
12:45						1	0	0	0	0		
1:00						1	0	0	0	0		
1:15						1	0	0	0	0		
1:30						1	0	0	0	0		
1:45						1	0	0	0	0		
2:00						0	0	0	0	0		
2:15						0	0	0	0	0		
2:30						0	0	0	0	0		
2:45						0	0	0	0	0		
3:00						0	0	0	0	0		
3:15						0	0	0	0	0		
3:30						0	0	0	0	0		
3:45						0	0	0	0	0		
4:00						0	1	0	0	0		
4:15						0	1	0	0	0		
4:30						0	1	0	0	0		
4:45						0	1	0	0	0		
5:00						1	3	1	0	0		
5:15						1	3	1	0	0		
5:30						1	3	1	0	0		
5:45						1	3	1	0	0		
6:00						1	7	2	0	0		
6:15						1	7	2	0	0		
6:30						1	7	2	0	0		
6:45						1	7	2	0	0		
7:00						2	11	4	1	1		
7:15						2	11	4	1	1		
7:30						2	11	4	1	1		
7:45						2	11	4	1	1		
8:00						3	9	3	1	1		
8:15						3	9	3	1	1		
8:30						3	9	3	1	1		
8:45						3	9	3	1	1		
9:00						3	5	2	1	1		
9:15						3	5	2	1	1		
9:30						3	5	2	1	1		
9:45						3	5	2	1	1		
10:00						2	5	2	1	1		
10:15						2	5	2	1	1		
10:30						2	5	2	1	1		
10:45						2	5	2	1	1		
11:00						4	5	2	1	1		
11:15						4	5	2	1	1		
11:30						4	5	2	1	1		
11:45						4	5	2	1	1		
12:00						5	4	1	2	2		
12:15						5	4	1	2	2		
12:30						5	4	1	2	2		
12:45						5	4	1	2	2		
1:00						4	4	1	1	1		
1:15						4	4	1	1	1		
1:30						4	4	1	1	1		
1:45						4	4	1	1	1		
2:00						6	5	2	2	2		
2:15						6	5	2	2	2		
2:30						6	5	2	2	2		
2:45						6	5	2	2	2		
3:00						7	5	2	2	2		
3:15						7	5	2	2	2		
3:30						7	5	2	2	2		
3:45						7	5	2	2	2		
4:00						10	6	2	3	3		
4:15						10	6	2	3	3		
4:30						10	6	2	3	3		
4:45						10	6	2	3	3		
5:00						12	8	3	4	4		
5:15						12	8	3	4	4		
5:30						12	8	3	4	4		
5:45						12	8	3	4	4		
6:00						10	7	2	3	3		
6:15						10	7	2	3	3		
6:30						10	7	2	3	3		
6:45						10	7	2	3	3		
7:00						8	5	2	3	3		
7:15						8	5	2	3	3		
7:30						8	5	2	3	3		
7:45						8	5	2	3	3		
8:00						8	4	1	3	3		
8:15						8	4	1	3	3		
8:30						8	4	1	3	3		
8:45						8	4	1	3	3		
9:00						6	3	1	2	2		
9:15						6	3	1	2	2		
9:30						6	3	1	2	2		
9:45						6	3	1	2	2		
10:00						5	2	1	2	2		
10:15						5	2	1	2	2		
10:30						5	2	1	2	2		
10:45						5	2	1	2	2		
11:00						3	1	0	1	1		
11:15						3	1	0	1	1		
11:30						3	1	0	1	1		
11:45						3	1	0	1	1		

220 - Multifamily
Housing (Low-Rise)
Not Close to
Rail/Transit
Entry % Exit %
0.9% 0.4%

220 Weekday
Entry/Exit
538

0.5% 0.3%

0.4% 0.4%

0.4% 0.3%

0.3% 1.4%

0.5% 2.6%

1.4% 6.9%

2.0% 10.8%

3.1% 8.5%

2.9% 4.9%

2.4% 4.8%

3.8% 4.7%

4.5% 4.1%

4.0% 4.4%

5.6% 4.9%

6.9% 5.3%

10.1% 5.6%

11.4% 7.6%

9.7% 6.7%

8.1% 4.7%

7.7% 4.2%

6.0% 2.7%

4.7% 2.4%

2.5% 1.4%

40%
Enter40
Ex

220 - Multifamily Housing (Low-Rise)	
Not Close to Rail/Transit	
Entry %	Exit %
0.9%	0.4%

220 Weekday
Entry/Exit
695

Build Volumes at Trabue Road and Builders Place

	Southbound						Westbound						Northbound						Eastbound		
	Right	Thru	Left				Right	Thru	Left				Right	Thru	Left				Right	Thru	Left
0:00	0	0	0				0	1	3				0	0	0				1	0	0
12:15	0	0	0				0	1	3				0	0	0				1	0	0
12:30	0	0	0				0	1	3				0	0	0				1	0	0
12:45	0	0	0				0	1	3				0	0	0				1	0	0
1:00	0	0	0				0	0	2				0	0	0				0	0	0
1:15	0	0	0				0	0	2				0	0	0				0	0	0
1:30	0	0	0				0	0	2				0	0	0				0	0	0
1:45	0	0	0				0	0	2				0	0	0				0	0	0
2:00	0	0	0				0	0	1				0	0	0				0	0	0
2:15	0	0	0				0	0	1				0	0	0				0	0	0
2:30	0	0	0				0	0	1				0	0	0				0	0	0
2:45	0	0	0				0	0	1				0	0	0				0	0	0
3:00	0	0	0				0	0	1				0	0	0				0	0	0
3:15	0	0	0				0	0	1				0	0	0				0	0	0
3:30	0	0	0				0	0	1				0	0	0				0	0	0
3:45	0	0	0				0	0	1				0	0	0				0	0	0
4:00	0	0	0				0	1	1				2	0	2				0	1	0
4:15	0	0	0				0	1	1				2	0	2				0	1	0
4:30	0	0	0				0	1	1				2	0	2				0	1	0
4:45	0	0	0				0	1	1				2	0	2				0	1	0
5:00	0	0	0				0	1	2				5	0	4				0	2	0
5:15	0	0	0				0	1	2				5	0	4				0	2	0
5:30	0	0	0				0	1	2				5	0	4				0	2	0
5:45	0	0	0				0	1	2				5	0	4				0	2	0
6:00	1	0	0				5	34	4				12	0	9				2	48	3
6:15	0	0	13				3	47	4				12	0	9				2	83	8
6:30	0	0	3				3	65	4				12	0	9				2	86	8
6:45	3	0	3				4	82	4				12	0	9				2	102	9
7:00	1	0	3				5	71	6				19	0	15				3	115	13
7:15	1	0	3				5	77	6				19	0	15				3	139	5
7:30	4	0	1				11	99	6				19	0	15				3	128	10
7:45	9	0	3				10	138	6				19	0	15				3	174	14
8:00	3	0	4				14	111	9				15	0	11				4	127	14
8:15	1	0	3				5	107	9				15	0	11				4	133	5
8:30	1	0	4				11	121	9				15	0	11				4	127	9
8:45	1	0	4				4	86	9				15	0	11				4	119	8
9:00	1	0	4				11	113	8				9	0	7				4	95	8
9:15	3	0	1				8	87	8				9	0	7				4	102	4
9:30	3	0	12				1	96	8				9	0	7				4	109	6
9:45	7	0	3				5	122	8				9	0	7				4	107	16
10:00	3	0	9				3	89	7				9	0	7				3	99	4
10:15	3	0	1				3	98	7				9	0	7				3	123	4
10:30	0	0	0				3	122	7				9	0	7				3	101	3
10:45	4	0	4				9	99	7				9	0	7				3	72	4
11:00	4	0	0				4	116	11				9	0	7				4	84	3
11:15	7	0	7				1	126	11				9	0	7				4	97	9
11:30	10	0	12				6	130	11				9	0	7				4	118	9
11:45	18	0	16				3	167	11				9	0	7				4	115	10
12:00	9	0	13				5	172	13				7	0	6				7	121	5
12:15	10	0	4				6	140	13				7	0	6				7	140	9
12:30	3	0	6				8	138	13				7	0	6				7	116	5
12:45	1	0	10				10	145	13				7	0	6				7	117	10
1:00	9	0	10				5	157	11				7	0	6				4	94	8
1:15	4	0	6				6	120	11				7	0	6				4	111	11
1:30	3	0	7				5	128	11				7	0	6				4	110	0
1:45	3	0	3				6	148	11				7	0	6				4	87	1
2:00	24	0	6				4	158	17				9	0	7				7	103	1
2:15	4	0	13				6	153	17				9	0	7				7	94	3
2:30	9	0	4				4	160	17				9	0	7				7	88	0
2:45	6	0	9				5	160	17				9	0	7				7	124	4
3:00	15	0	4				1	171	20				9	0	7				9	109	5
3:15	12	0	1				6	188	20				9	0	7				9	120	5
3:30	10	0	7				4	161	20				9	0	7				9	142	3
3:45	16	0	4				3	155	20				9	0	7				9	101	6
4:00	22	0	9				4	181	29				10	0	8				13	125	4
4:15	7	0	10				10	229	29				10	0	8				13	131	3
4:30	7	0	13				0	207	29				10	0	8				13	139	3
4:45	10	0	9				0	210	29				10	0	8				13	151	0
5:00	10	0	6				0	215	33				14	0	11				15	155	1
5:15	10	0	4				3	241	33				14	0	11				15	128	1
5:30	9	0	4				0	218	33				14	0	11				15	137	0
5:45	1	0	10				3	225	33				14	0	11				15	108	3
6:00	6	0	6				0	226	28				12	0	9				13	103	1
6:15	9	0	4				0	227	28				12	0	9				13	121	1
6:30	4	0	0				1	244	28				12	0	9				13	121	1
6:45	4	0	1				0	193	28				12	0	9				13	86	0
7:00	0	0	0				0	8	23				9	0	7				11	8	0
7:15	0	0	0				0	8	23				9	0	7				11	8	0
7:30	0	0	0				0	8	23				9	0	7				11	8	0
7:45	0	0	0				0	8	23				9	0	7				11	8	0
8:00	0	0	0																		

Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2045 Build without rerouted lefts

Study Date : 10/7/2024

Signal Warrants - Summary

Major Street Approaches

Eastbound: Trabue Road

Number of Lanes : 2+

Total Approach Volume: 6,817

Westbound: Trabue Road

Number of Lanes :2+

Total Approach Volume: 8,984

Minor Street Approaches

Northbound: Site Access

Number of Lanes :1

Total Approach Volume: 670

Southbound: Builders Place Drive

Number of Lanes :1

Total Approach Volume: 358

Warrant Summary (Urban Values Apply)

Warrant 1 - Eight Hour Vehicular Volumes.....Not Satisfied

Warrant 1A - Minimum Vehicular Volume.....Not Satisfied

Required volumes reached for 0 hours, 8 are needed

Warrant 1B - Interruption of Continuous Traffic.....Not Satisfied

Required volumes reached for 0 hours, 8 are needed

Warrant 1C - Combination of Warrants.....Not Satisfied

Required 1A volumes reached for 0 hours, 8 are needed

Required 1B volumes reached for 1 hours, 8 are needed

Warrant 2 - Four Hour Volumes.....Not Satisfied

Number of hours (0) volumes exceed minimum < minimum required (4).

Warrant 3 - Peak Hour.....Not Evaluated

Warrant 3A - Peak Hour Delay.....Not Evaluated

Warrant 3B - Peak Hour Volumes.....Not Evaluated

Warrant 4 - Pedestrian Volumes.....Not Evaluated

Warrant 5 - School Crossing.....Not Evaluated

Warrant 6 - Coordinated Signal System.....Not Evaluated

Warrant 7 - Crash Experience.....Not Evaluated

Warrant 8 - Roadway Network.....Not Evaluated

Warrant 9 - Intersection Near a Grade Crossing.....Not Evaluated

Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2045 Build without rerouted lefts

Study Date : 10/7/2024

Warrant 1A - Minimum Volumes

Description

Intended for sites where the volume of intersecting traffic is the principal reason for consideration of a signal installation.

Summary

Only 0 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **False**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

Volume Requirements

Veh/Hr Major = **600**

Veh/Hr Minor = **150**

Major Road						Minor Road		
Trabue Road						Site Access		
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?
16:45 - 17:45	631	+	1014	=	1645	47	31	No
16:30 - 17:30	634	+	999	=	1633	44	40	No
16:15 - 17:15	637	+	991	=	1628	41	46	No
17:00 - 18:00	593	+	1035	=	1628	53	32	No
17:15 - 18:15	539	+	1041	=	1580	51	32	No
16:00 - 17:00	608	+	957	=	1565	38	53	No
17:45 - 18:45	513	+	1042	=	1555	47	27	No
17:30 - 18:30	530	+	1020	=	1550	49	32	No
18:00 - 19:00	486	+	1003	=	1489	44	17	No
15:45 - 16:45	560	+	895	=	1455	37	48	No
15:30 - 16:30	559	+	844	=	1403	36	42	No
15:15 - 16:15	546	+	790	=	1336	35	33	No
14:45 - 15:45	546	+	773	=	1319	34	27	No
15:00 - 16:00	527	+	768	=	1295	34	24	No
14:30 - 15:30	487	+	769	=	1256	34	24	No
11:45 - 12:45	546	+	687	=	1233	28	45	No
12:00 - 13:00	551	+	675	=	1226	28	37	No
11:30 - 12:30	549	+	676	=	1225	30	53	No
14:15 - 15:15	457	+	731	=	1188	34	35	No
12:15 - 13:15	524	+	658	=	1182	28	34	No
07:45 - 08:45	618	+	550	=	1168	57	15	No
18:15 - 19:15	388	+	780	=	1168	42	9	No
14:00 - 15:00	445	+	718	=	1163	34	39	No
11:15 - 12:15	503	+	655	=	1158	32	55	No
07:30 - 08:30	619		525		1144	62	13	No

Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2045 Build without rerouted lefts

Study Date : 10/7/2024

Warrant 1B - Interruption of Continuous Traffic

Description

Intended for sites where the volume of the major street is so heavy that traffic on the minor street suffers excessive delay or hazard.

Summary

Only 0 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **False**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

Volume Requirements

Veh/Hr Major = **900**

Veh/Hr Minor = **75**

Major Road						Minor Road		
Trabue Road						Site Access		
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?
16:45 - 17:45	631	+	1014	=	1645	47	31	No
16:30 - 17:30	634	+	999	=	1633	44	40	No
16:15 - 17:15	637	+	991	=	1628	41	46	No
17:00 - 18:00	593	+	1035	=	1628	53	32	No
17:15 - 18:15	539	+	1041	=	1580	51	32	No
16:00 - 17:00	608	+	957	=	1565	38	53	No
17:45 - 18:45	513	+	1042	=	1555	47	27	No
17:30 - 18:30	530	+	1020	=	1550	49	32	No
18:00 - 19:00	486	+	1003	=	1489	44	17	No
15:45 - 16:45	560	+	895	=	1455	37	48	No
15:30 - 16:30	559	+	844	=	1403	36	42	No
15:15 - 16:15	546	+	790	=	1336	35	33	No
14:45 - 15:45	546	+	773	=	1319	34	27	No
15:00 - 16:00	527	+	768	=	1295	34	24	No
14:30 - 15:30	487	+	769	=	1256	34	24	No
11:45 - 12:45	546	+	687	=	1233	28	45	No
12:00 - 13:00	551	+	675	=	1226	28	37	No
11:30 - 12:30	549	+	676	=	1225	30	53	No
14:15 - 15:15	457	+	731	=	1188	34	35	No
12:15 - 13:15	524	+	658	=	1182	28	34	No
07:45 - 08:45	618	+	550	=	1168	57	15	No
18:15 - 19:15	388	+	780	=	1168	42	9	No
14:00 - 15:00	445	+	718	=	1163	34	39	No
11:15 - 12:15	503	+	655	=	1158	32	55	No
07:30 - 08:30	619		525		1144	62	13	No

Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2045 Build without rerouted lefts

Study Date : 10/7/2024

Warrant 1C Combination of Warrants

Description

Intended for sites where the traffic volumes don't meet individual warrants but where Warrants 1A and 1B are both met to 80% of their stated values.

Summary

Only 0 hours meet 1A minimums.
Only 1 hours meet 1B minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **False**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

Volume Requirements

Warrant 1A 1B
Veh/Hr Major = **480 720**
Veh/Hr Minor = **120 60**

Major Road						Minor Road					
Trabue Road						Site Access					
Time	Major EB	+	Major WB	=	Total		Minor NB		Minor SB		Met1A?
16:45 - 17:45	631	+	1014	=	1645		47		31		No
16:30 - 17:30	634	+	999	=	1633		44		40		No
17:00 - 18:00	593	+	1035	=	1628		53		32		No
16:15 - 17:15	637	+	991	=	1628		41		46		No
17:15 - 18:15	539	+	1041	=	1580		51		32		No
16:00 - 17:00	608	+	957	=	1565		38		53		No
17:45 - 18:45	513	+	1042	=	1555		47		27		No
17:30 - 18:30	530	+	1020	=	1550		49		32		No
18:00 - 19:00	486	+	1003	=	1489		44		17		No
15:45 - 16:45	560	+	895	=	1455		37		48		No
15:30 - 16:30	559	+	844	=	1403		36		42		No
15:15 - 16:15	546		790		1336		35		33		No

Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met1B?	
06:45 - 07:45	532	+	376	=	908	65	12	Yes	
16:45 - 17:45	631	+	1014	=	1645	47	31	No	
16:30 - 17:30	634	+	999	=	1633	44	40	No	
17:00 - 18:00	593	+	1035	=	1628	53	32	No	
16:15 - 17:15	637	+	991	=	1628	41	46	No	
17:15 - 18:15	539	+	1041	=	1580	51	32	No	
16:00 - 17:00	608	+	957	=	1565	38	53	No	
17:45 - 18:45	513	+	1042	=	1555	47	27	No	
17:30 - 18:30	530	+	1020	=	1550	49	32	No	
18:00 - 19:00	486	+	1003	=	1489	44	17	No	
15:45 - 16:45	560	+	895	=	1455	37	48	No	
15:30 - 16:30	559		844		1403	36	42	No	

Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2045 Build without rerouted lefts

Study Date : 10/7/2024

Warrant 2 - Four Hour Volumes

Description

Intended for sites where the volume of intersecting traffic during any four hours of the day is the principal reason for consideration of a signal installation.

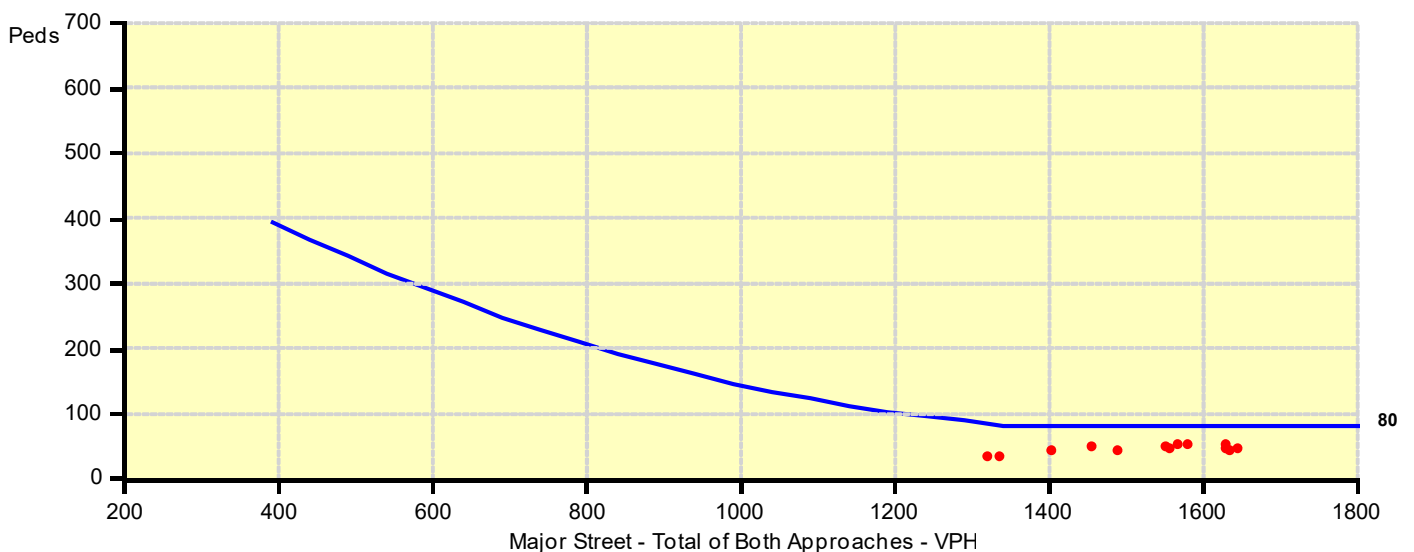
Summary

Only 0 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **False**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

Major Road Trabue Road						Minor Road Site Access		
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?
16:45 - 17:45	631	+	1014	=	1645	47	31	No
16:30 - 17:30	634	+	999	=	1633	44	40	No
16:15 - 17:15	637	+	991	=	1628	41	46	No
17:00 - 18:00	593	+	1035	=	1628	53	32	No
17:15 - 18:15	539	+	1041	=	1580	51	32	No
16:00 - 17:00	608	+	957	=	1565	38	53	No
17:45 - 18:45	513	+	1042	=	1555	47	27	No
17:30 - 18:30	530	+	1020	=	1550	49	32	No
18:00 - 19:00	486	+	1003	=	1489	44	17	No
15:45 - 16:45	560	+	895	=	1455	37	48	No
15:30 - 16:30	559	+	844	=	1403	36	42	No
15:15 - 16:15	546		790		1336	35	33	No



Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2045 Build without rerouted lefts

Study Date : 10/7/2024

Warrant 3A - Peak Hour Delay

Description

Intended for sites where for one hour of the day minor street traffic suffers undue traffic delay entering or crossing the major street.

Summary

50 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Number of Minor Lanes =1

Volume and Delay Requirements

Veh/Hr All Approaches = 800

Veh/Hr Minor = 100

Total Delay (Veh-Hrs) = 4

Major Road						Minor Road			
Trabue Road						Site Access			
Time	Total of All Approaches	Met?	Minor NB	Delay NB	Met?	Minor SB	Delay SB	Met?	Warrant Met?
16:45 - 17:45	1723	Yes	47	-	No	31	-	---	No
16:30 - 17:30	1717	Yes	44	-	No	40	-	---	No
16:15 - 17:15	1715	Yes	41	-	---	46	-	No	No
17:00 - 18:00	1713	Yes	53	-	No	32	-	---	No
17:15 - 18:15	1663	Yes	51	-	No	32	-	---	No
16:00 - 17:00	1656	Yes	38	-	---	53	-	No	No
17:30 - 18:30	1631	Yes	49	-	No	32	-	---	No
17:45 - 18:45	1629	Yes	47	-	No	27	-	---	No
18:00 - 19:00	1550	Yes	44	-	No	17	-	---	No
15:45 - 16:45	1540	Yes	37	-	---	48	-	No	No
15:30 - 16:30	1481	Yes	36	-	---	42	-	No	No
15:15 - 16:15	1404	Yes	35	-	No	33	-	---	No
14:45 - 15:45	1380	Yes	34	-	No	27	-	---	No
15:00 - 16:00	1353	Yes	34	-	No	24	-	---	No
14:30 - 15:30	1314	Yes	34	-	No	24	-	---	No
11:30 - 12:30	1308	Yes	30	-	---	53	-	No	No
11:45 - 12:45	1306	Yes	28	-	---	45	-	No	No
12:00 - 13:00	1291	Yes	28	-	---	37	-	No	No
14:15 - 15:15	1257	Yes	34	-	---	35	-	No	No
11:15 - 12:15	1245	Yes	32	-	---	55	-	No	No
12:15 - 13:15	1244	Yes	28	-	---	34	-	No	No
07:45 - 08:45	1240	Yes	57	-	No	15	-	---	No
14:00 - 15:00	1236	Yes	34	-	---	39	-	No	No
07:30 - 08:30	1219	Yes	62	-	No	13	-	---	No
18:15 - 19:15	1219	Yes	42	-	No	9	-	---	No

Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2045 Build without rerouted lefts

Study Date : 10/7/2024

Warrant 3B - Peak Hour Volumes

Description

Intended for sites where the volume of intersecting traffic during one hour of the day is the principal reason for consideration of a signal installation.

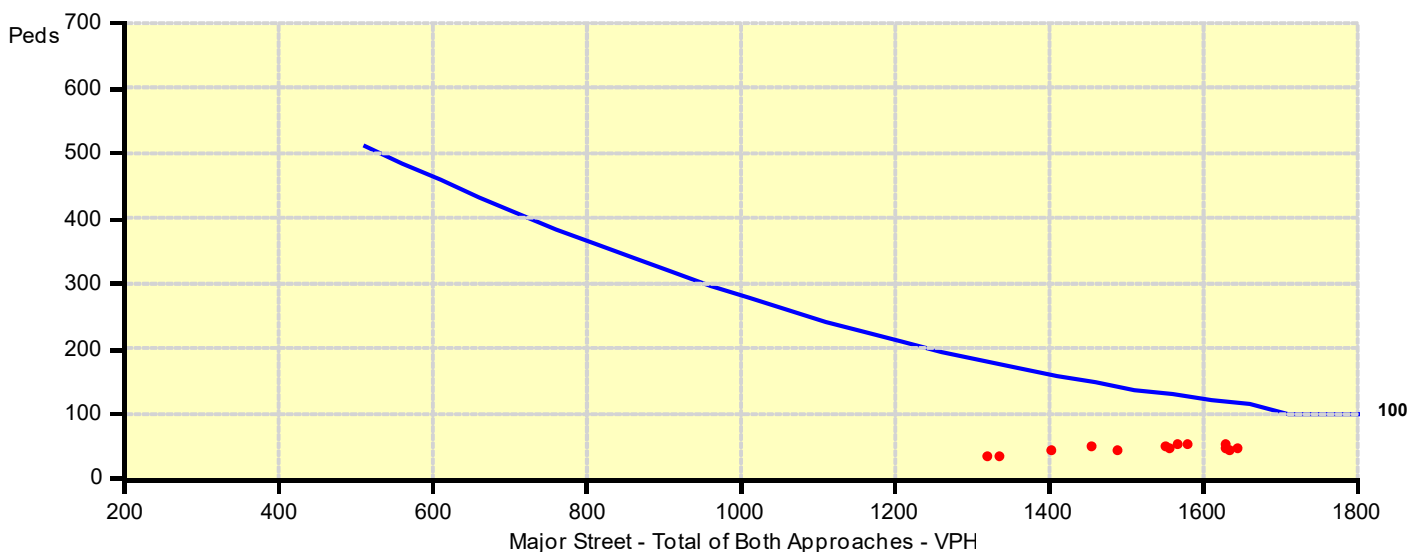
Summary

Only 0 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **False**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

Major Road Trabue Road						Minor Road Site Access		
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?
16:45 - 17:45	631	+	1014	=	1645	47	31	No
16:30 - 17:30	634	+	999	=	1633	44	40	No
16:15 - 17:15	637	+	991	=	1628	41	46	No
17:00 - 18:00	593	+	1035	=	1628	53	32	No
17:15 - 18:15	539	+	1041	=	1580	51	32	No
16:00 - 17:00	608	+	957	=	1565	38	53	No
17:45 - 18:45	513	+	1042	=	1555	47	27	No
17:30 - 18:30	530	+	1020	=	1550	49	32	No
18:00 - 19:00	486	+	1003	=	1489	44	17	No
15:45 - 16:45	560	+	895	=	1455	37	48	No
15:30 - 16:30	559	+	844	=	1403	36	42	No
15:15 - 16:15	546		790		1336	35	33	No



Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2045 Build without rerouted lefts - Road Diet

Study Date : 10/7/2024

Signal Warrants - Summary

Major Street Approaches

Eastbound: Trabue Road

Number of Lanes : 1

Total Approach Volume: 6,814

Westbound: Trabue Road

Number of Lanes : 1

Total Approach Volume: 8,984

Minor Street Approaches

Northbound: Site Access

Number of Lanes : 1

Total Approach Volume: 671

Southbound: Builders Place Drive

Number of Lanes : 1

Total Approach Volume: 348

Warrant Summary (Urban Values Apply)

Warrant 1 - Eight Hour Vehicular Volumes.....Not Satisfied

Warrant 1A - Minimum Vehicular Volume.....Not Satisfied

Required volumes reached for 0 hours, 8 are needed

Warrant 1B - Interruption of Continuous Traffic.....Not Satisfied

Required volumes reached for 0 hours, 8 are needed

Warrant 1C - Combination of Warrants.....Not Satisfied

Required 1A volumes reached for 0 hours, 8 are needed

Required 1B volumes reached for 1 hours, 8 are needed

Warrant 2 - Four Hour Volumes.....Not Satisfied

Number of hours (0) volumes exceed minimum < minimum required (4).

Warrant 3 - Peak Hour.....Not Evaluated

Warrant 3A - Peak Hour Delay.....Not Evaluated

Warrant 3B - Peak Hour Volumes.....Not Evaluated

Warrant 4 - Pedestrian Volumes.....Not Evaluated

Warrant 5 - School Crossing.....Not Evaluated

Warrant 6 - Coordinated Signal System.....Not Evaluated

Warrant 7 - Crash Experience.....Not Evaluated

Warrant 8 - Roadway Network.....Not Evaluated

Warrant 9 - Intersection Near a Grade Crossing.....Not Evaluated

Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2045 Build without rerouted lefts - Road Diet

Study Date : 10/7/2024

Warrant 1A - Minimum Volumes

Description

Intended for sites where the volume of intersecting traffic is the principal reason for consideration of a signal installation.

Summary

Only 0 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **False**
Number of Major Lanes = **1**
Number of Minor Lanes = **1**

Volume Requirements

Veh/Hr Major = **500**

Veh/Hr Minor = **150**

Major Road						Minor Road		
Trabue Road						Site Access		
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?
16:45 - 17:45	631	+	1014	=	1645	51	32	No
16:30 - 17:30	634	+	999	=	1633	47	41	No
16:15 - 17:15	637	+	991	=	1628	43	46	No
17:00 - 18:00	593	+	1035	=	1628	54	31	No
17:15 - 18:15	539	+	1041	=	1580	51	29	No
16:00 - 17:00	608	+	957	=	1565	39	52	No
17:45 - 18:45	513	+	1042	=	1555	45	23	No
17:30 - 18:30	530	+	1020	=	1550	48	28	No
18:00 - 19:00	486	+	1003	=	1489	45	17	No
15:45 - 16:45	560	+	895	=	1455	37	49	No
15:30 - 16:30	559	+	844	=	1403	36	42	No
15:15 - 16:15	546	+	790	=	1336	35	33	No
14:45 - 15:45	543	+	773	=	1316	34	26	No
15:00 - 16:00	524	+	768	=	1292	34	24	No
14:30 - 15:30	484	+	769	=	1253	34	23	No
11:45 - 12:45	546	+	687	=	1233	31	44	No
12:00 - 13:00	551	+	675	=	1226	29	36	No
11:30 - 12:30	549	+	676	=	1225	32	50	No
14:15 - 15:15	454	+	731	=	1185	34	34	No
12:15 - 13:15	524	+	658	=	1182	29	33	No
07:45 - 08:45	618	+	550	=	1168	59	16	No
18:15 - 19:15	388	+	780	=	1168	43	10	No
14:00 - 15:00	445	+	718	=	1163	34	38	No
11:15 - 12:15	503	+	655	=	1158	33	53	No
07:30 - 08:30	619		525		1144	64	13	No

Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2045 Build without rerouted lefts - Road Diet

Study Date : 10/7/2024

Warrant 1B - Interruption of Continuous Traffic

Description

Intended for sites where the volume of the major street is so heavy that traffic on the minor street suffers excessive delay or hazard.

Summary

Only 0 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **False**
Number of Major Lanes = **1**
Number of Minor Lanes = **1**

Volume Requirements

Veh/Hr Major = **750**

Veh/Hr Minor = **75**

Major Road						Minor Road		
Trabue Road						Site Access		
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?
16:45 - 17:45	631	+	1014	=	1645	51	32	No
16:30 - 17:30	634	+	999	=	1633	47	41	No
16:15 - 17:15	637	+	991	=	1628	43	46	No
17:00 - 18:00	593	+	1035	=	1628	54	31	No
17:15 - 18:15	539	+	1041	=	1580	51	29	No
16:00 - 17:00	608	+	957	=	1565	39	52	No
17:45 - 18:45	513	+	1042	=	1555	45	23	No
17:30 - 18:30	530	+	1020	=	1550	48	28	No
18:00 - 19:00	486	+	1003	=	1489	45	17	No
15:45 - 16:45	560	+	895	=	1455	37	49	No
15:30 - 16:30	559	+	844	=	1403	36	42	No
15:15 - 16:15	546	+	790	=	1336	35	33	No
14:45 - 15:45	543	+	773	=	1316	34	26	No
15:00 - 16:00	524	+	768	=	1292	34	24	No
14:30 - 15:30	484	+	769	=	1253	34	23	No
11:45 - 12:45	546	+	687	=	1233	31	44	No
12:00 - 13:00	551	+	675	=	1226	29	36	No
11:30 - 12:30	549	+	676	=	1225	32	50	No
14:15 - 15:15	454	+	731	=	1185	34	34	No
12:15 - 13:15	524	+	658	=	1182	29	33	No
07:45 - 08:45	618	+	550	=	1168	59	16	No
18:15 - 19:15	388	+	780	=	1168	43	10	No
14:00 - 15:00	445	+	718	=	1163	34	38	No
11:15 - 12:15	503	+	655	=	1158	33	53	No
07:30 - 08:30	619		525		1144	64	13	No

Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2045 Build without rerouted lefts - Road Diet

Study Date : 10/7/2024

Warrant 1C Combination of Warrants

Description

Intended for sites where the traffic volumes don't meet individual warrants but where Warrants 1A and 1B are both met to 80% of their stated values.

Summary

Only 0 hours meet 1A minimums.
Only 1 hours meet 1B minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **False**
Number of Major Lanes = **1**
Number of Minor Lanes = **1**

Volume Requirements

Warrant 1A 1B
Veh/Hr Major = **400 600**
Veh/Hr Minor = **120 60**

Major Road						Minor Road					
Trabue Road						Site Access					
Time	Major EB	+	Major WB	=	Total		Minor NB		Minor SB		Met1A?
16:45 - 17:45	631	+	1014	=	1645		51		32		No
16:30 - 17:30	634	+	999	=	1633		47		41		No
17:00 - 18:00	593	+	1035	=	1628		54		31		No
16:15 - 17:15	637	+	991	=	1628		43		46		No
17:15 - 18:15	539	+	1041	=	1580		51		29		No
16:00 - 17:00	608	+	957	=	1565		39		52		No
17:45 - 18:45	513	+	1042	=	1555		45		23		No
17:30 - 18:30	530	+	1020	=	1550		48		28		No
18:00 - 19:00	486	+	1003	=	1489		45		17		No
15:45 - 16:45	560	+	895	=	1455		37		49		No
15:30 - 16:30	559	+	844	=	1403		36		42		No
15:15 - 16:15	546		790		1336		35		33		No

Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met1B?	
06:45 - 07:45	532	+	376	=	908	66	10	Yes	
16:45 - 17:45	631	+	1014	=	1645	51	32	No	
16:30 - 17:30	634	+	999	=	1633	47	41	No	
17:00 - 18:00	593	+	1035	=	1628	54	31	No	
16:15 - 17:15	637	+	991	=	1628	43	46	No	
17:15 - 18:15	539	+	1041	=	1580	51	29	No	
16:00 - 17:00	608	+	957	=	1565	39	52	No	
17:45 - 18:45	513	+	1042	=	1555	45	23	No	
17:30 - 18:30	530	+	1020	=	1550	48	28	No	
18:00 - 19:00	486	+	1003	=	1489	45	17	No	
15:45 - 16:45	560	+	895	=	1455	37	49	No	
15:30 - 16:30	559		844		1403	36	42	No	

Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2045 Build without rerouted lefts - Road Diet

Study Date : 10/7/2024

Warrant 2 - Four Hour Volumes

Description

Intended for sites where the volume of intersecting traffic during any four hours of the day is the principal reason for consideration of a signal installation.

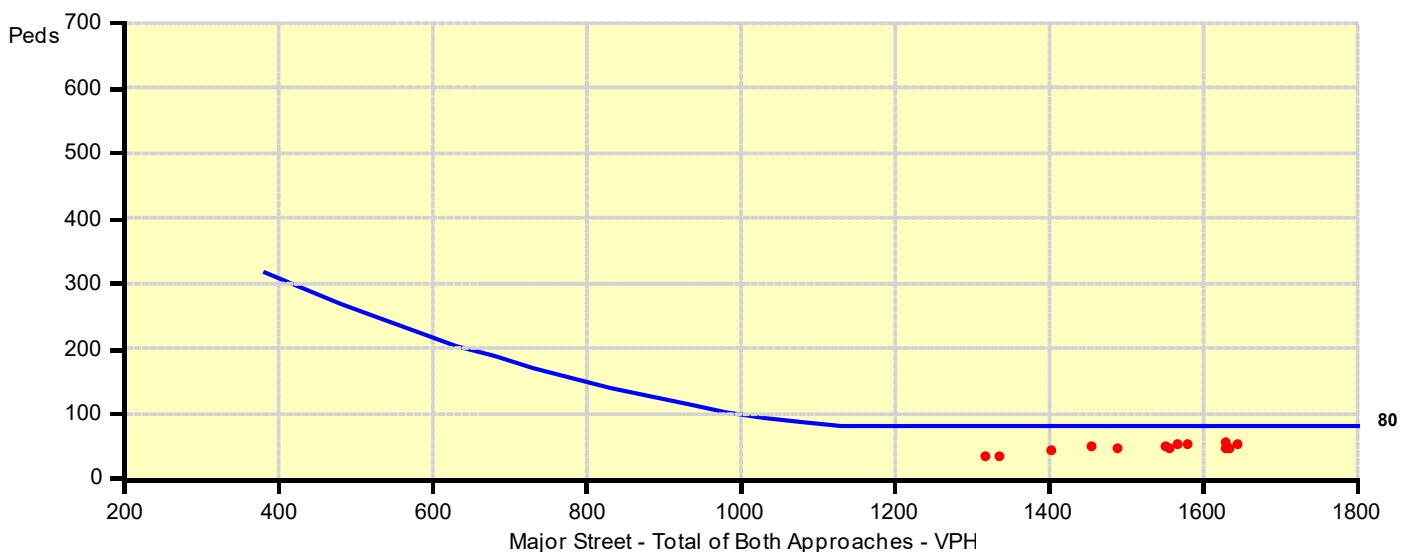
Summary

Only 0 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **False**
Number of Major Lanes = **1**
Number of Minor Lanes = **1**

Major Road Trabue Road						Minor Road Site Access		
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?
16:45 - 17:45	631	+	1014	=	1645	51	32	No
16:30 - 17:30	634	+	999	=	1633	47	41	No
16:15 - 17:15	637	+	991	=	1628	43	46	No
17:00 - 18:00	593	+	1035	=	1628	54	31	No
17:15 - 18:15	539	+	1041	=	1580	51	29	No
16:00 - 17:00	608	+	957	=	1565	39	52	No
17:45 - 18:45	513	+	1042	=	1555	45	23	No
17:30 - 18:30	530	+	1020	=	1550	48	28	No
18:00 - 19:00	486	+	1003	=	1489	45	17	No
15:45 - 16:45	560	+	895	=	1455	37	49	No
15:30 - 16:30	559	+	844	=	1403	36	42	No
15:15 - 16:15	546		790		1336	35	33	No



Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2045 Build without rerouted lefts - Road Diet

Study Date : 10/7/2024

Warrant 3A - Peak Hour Delay

Description

Intended for sites where for one hour of the day minor street traffic suffers undue traffic delay entering or crossing the major street.

Summary

50 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Number of Minor Lanes =1

Volume and Delay Requirements

Veh/Hr All Approaches = 800

Veh/Hr Minor = 100

Total Delay (Veh-Hrs) = 4

Major Road						Minor Road			
Trabue Road						Site Access			
Time	Total of All Approaches	Met?	Minor NB	Delay NB	Met?	Minor SB	Delay SB	Met?	Warrant Met?
16:45 - 17:45	1728	Yes	51	-	No	32	-	---	No
16:30 - 17:30	1721	Yes	47	-	No	41	-	---	No
16:15 - 17:15	1717	Yes	43	-	---	46	-	No	No
17:00 - 18:00	1713	Yes	54	-	No	31	-	---	No
17:15 - 18:15	1660	Yes	51	-	No	29	-	---	No
16:00 - 17:00	1656	Yes	39	-	---	52	-	No	No
17:30 - 18:30	1626	Yes	48	-	No	28	-	---	No
17:45 - 18:45	1623	Yes	45	-	No	23	-	---	No
18:00 - 19:00	1551	Yes	45	-	No	17	-	---	No
15:45 - 16:45	1541	Yes	37	-	---	49	-	No	No
15:30 - 16:30	1481	Yes	36	-	---	42	-	No	No
15:15 - 16:15	1404	Yes	35	-	No	33	-	---	No
14:45 - 15:45	1376	Yes	34	-	No	26	-	---	No
15:00 - 16:00	1350	Yes	34	-	No	24	-	---	No
14:30 - 15:30	1310	Yes	34	-	No	23	-	---	No
11:45 - 12:45	1308	Yes	31	-	---	44	-	No	No
11:30 - 12:30	1307	Yes	32	-	---	50	-	No	No
12:00 - 13:00	1291	Yes	29	-	---	36	-	No	No
14:15 - 15:15	1253	Yes	34	-	---	34	-	No	No
11:15 - 12:15	1244	Yes	33	-	---	53	-	No	No
12:15 - 13:15	1244	Yes	29	-	---	33	-	No	No
07:45 - 08:45	1243	Yes	59	-	No	16	-	---	No
14:00 - 15:00	1235	Yes	34	-	---	38	-	No	No
07:30 - 08:30	1221	Yes	64	-	No	13	-	---	No
18:15 - 19:15	1221	Yes	43	-	No	10	-	---	No

Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2045 Build without rerouted lefts - Road Diet

Study Date : 10/7/2024

Warrant 3B - Peak Hour Volumes

Description

Intended for sites where the volume of intersecting traffic during one hour of the day is the principal reason for consideration of a signal installation.

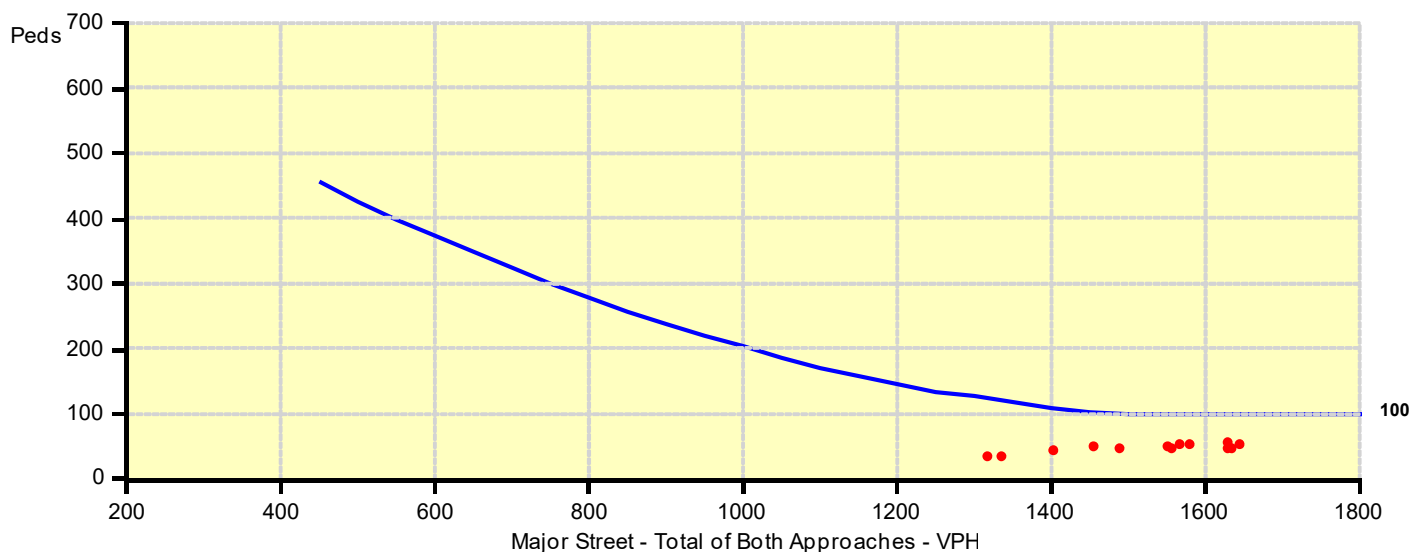
Summary

Only 0 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **False**
Number of Major Lanes = **1**
Number of Minor Lanes = **1**

Major Road						Minor Road		
Trabue Road						Site Access		
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?
16:45 - 17:45	631	+	1014	=	1645	51	32	No
16:30 - 17:30	634	+	999	=	1633	47	41	No
16:15 - 17:15	637	+	991	=	1628	43	46	No
17:00 - 18:00	593	+	1035	=	1628	54	31	No
17:15 - 18:15	539	+	1041	=	1580	51	29	No
16:00 - 17:00	608	+	957	=	1565	39	52	No
17:45 - 18:45	513	+	1042	=	1555	45	23	No
17:30 - 18:30	530	+	1020	=	1550	48	28	No
18:00 - 19:00	486	+	1003	=	1489	45	17	No
15:45 - 16:45	560	+	895	=	1455	37	49	No
15:30 - 16:30	559	+	844	=	1403	36	42	No
15:15 - 16:15	546		790		1336	35	33	No



Count data at Trabue Road and Builders Place collected on 6/15/2021

	Southbound							Westbound						Northbound							Eastbound		
	Right	Thru	Left					Right	Thru	Left				Right	Thru	Left					Right	Thru	Left
0:00																							
12:15																							
12:30																							
12:45																							
1:00																							
1:15																							
1:30																							
1:45																							
2:00																							
2:15																							
2:30																							
2:45																							
3:00																							
3:15																							
3:30																							
3:45																							
4:00																							
4:15																							
4:30																							
4:45																							
5:00																							
5:15																							
5:30																							
5:45																							
6:00	1		0					4	24												33	2	
6:15	0		9					2	34												61	6	
6:30	0		2					2	48												63	6	
6:45	2		2					3	62												76	7	
7:00	1		2					4	52												83	10	
7:15	1		2					4	57												102	4	
7:30	3		1					9	74												93	8	
7:45	6		2					8	105												130	11	
8:00	2		3					11	84												94	11	
8:15	1		2					4	81												99	4	
8:30	1		3					9	92												94	7	
8:45	1		3					3	64												88	6	
9:00	1		3					9	86												71	6	
9:15	2		1					6	66												77	3	
9:30	2		8					1	73												82	5	
9:45	5		2					4	93												81	13	
10:00	2		6					2	67												74	3	
10:15	2		1					2	74												93	3	
10:30	0		0					2	93												76	2	
10:45	3		3					7	75												63	3	
11:00	3		0					3	88												62	2	
11:15	5		5					1	96												72	7	
11:30	7		8					5	99												89	7	
11:45	12		11					2	128												86	8	
12:00	6		9					4	132												91	4	
12:15	7		3					5	107												106	7	
12:30	2		4					6	105												87	4	
12:45	1		7					8	111												88	8	
1:00	6		7					4	120												70	6	
1:15	3		4					5	91												83	9	
1:30	2		5					4	97												82	0	
1:45	2		2					5	113												64	1	
2:00	16		4					3	120												77	1	
2:15	3		9					5	116												70	2	
2:30	6		3					3	122												65	0	
2:45	4		6					4	122												93	3	
3:00	10		3					1	130												79	4	
3:15	8		1					5	143												88	4	
3:30	7		5					3	122												105	2	
3:45	11		3					2	117												73	5	
4:00	15		6					3	136												90	3	
4:15	5		7					8	174												95	2	
4:30	5		9					0	157												101	2	
4:45	7		6					0	159												111	0	
5:00	7		4					0	161												112	1	
5:15	7		3					2	182												91	1	
5:30	6		3					0	164												98	0	
5:45	1		7					2	169												75	2	
6:00	4		4					0	171												73	1	
6:15	6		3					0	172												87	1	
6:30	3		0					1	185												87	1	
6:45	3		1					0	145												59	0	
7:00																							
7:15																							
7:30																							
7:45																							
8:00																							
8:15																							
8:30																							
8:45																							
9:00																							
9:15																							
9:30																							
9:45																							
10:00																							
10:15																							
10:30																							
10:45																							
11:00																							
11:15																							
11:30																							
11:45																							

Grown Count Data

	Southbound						Westbound						Northbound						Eastbound		
	Right	Thru	Left				Right	Thru	Left				Right	Thru	Left				Right	Thru	Left
0:00	0	0	0				0	0	0				0	0	0				0	0	0
12:15	0	0	0				0	0	0				0	0	0				0	0	0
12:30	0	0	0				0	0	0				0	0	0				0	0	0
12:45	0	0	0				0	0	0				0	0	0				0	0	0
1:00	0	0	0				0	0	0				0	0	0				0	0	0
1:15	0	0	0				0	0	0				0	0	0				0	0	0
1:30	0	0	0				0	0	0				0	0	0				0	0	0
1:45	0	0	0				0	0	0				0	0	0				0	0	0
2:00	0	0	0				0	0	0				0	0	0				0	0	0
2:15	0	0	0				0	0	0				0	0	0				0	0	0
2:30	0	0	0				0	0	0				0	0	0				0	0	0
2:45	0	0	0				0	0	0				0	0	0				0	0	0
3:00	0	0	0				0	0	0				0	0	0				0	0	0
3:15	0	0	0				0	0	0				0	0	0				0	0	0
3:30	0	0	0				0	0	0				0	0	0				0	0	0
3:45	0	0	0				0	0	0				0	0	0				0	0	0
4:00	0	0	0				0	0	0				0	0	0				0	0	0
4:15	0	0	0				0	0	0				0	0	0				0	0	0
4:30	0	0	0				0	0	0				0	0	0				0	0	0
4:45	0	0	0				0	0	0				0	0	0				0	0	0
5:00	0	0	0				0	0	0				0	0	0				0	0	0
5:15	0	0	0				0	0	0				0	0	0				0	0	0
5:30	0	0	0				0	0	0				0	0	0				0	0	0
5:45	0	0	0				0	0	0				0	0	0				0	0	0
6:00	1	0	0				5	30	0				0	0	0				0	42	3
6:15	0	0	13				3	43	0				0	0	0				0	77	8
6:30	0	0	3				3	61	0				0	0	0				0	80	8
6:45	3	0	3				4	78	0				0	0	0				0	96	9
7:00	1	0	3				5	66	0				0	0	0				0	105	13
7:15	1	0	3				5	72	0				0	0	0				0	129	5
7:30	4	0	1				11	94	0				0	0	0				0	118	10
7:45	9	0	3				10	133	0				0	0	0				0	164	14
8:00	3	0	4				14	106	0				0	0	0				0	119	14
8:15	1	0	3				5	102	0				0	0	0				0	125	5
8:30	1	0	4				11	116	0				0	0	0				0	119	9
8:45	1	0	4				4	81	0				0	0	0				0	111	8
9:00	1	0	4				11	109	0				0	0	0				0	90	8
9:15	3	0	1				8	83	0				0	0	0				0	97	4
9:30	3	0	12				1	92	0				0	0	0				0	104	6
9:45	7	0	3				5	118	0				0	0	0				0	102	16
10:00	3	0	9				3	85	0				0	0	0				0	94	4
10:15	3	0	1				3	94	0				0	0	0				0	118	4
10:30	0	0	0				3	118	0				0	0	0				0	96	3
10:45	4	0	4				9	95	0				0	0	0				0	67	4
11:00	4	0	0				4	111	0				0	0	0				0	78	3
11:15	7	0	7				1	121	0				0	0	0				0	91	9
11:30	10	0	12				6	125	0				0	0	0				0	112	9
11:45	18	0	16				3	162	0				0	0	0				0	109	10
12:00	9	0	13				5	167	0				0	0	0				0	115	5
12:15	10	0	4				6	135	0				0	0	0				0	134	9
12:30	3	0	6				8	133	0				0	0	0				0	110	5
12:45	1	0	10				10	140	0				0	0	0				0	111	10
1:00	9	0	10				5	152	0				0	0	0				0	88	8
1:15	4	0	6				6	115	0				0	0	0				0	105	11
1:30	3	0	7				5	123	0				0	0	0				0	104	0
1:45	3	0	3				6	143	0				0	0	0				0	81	1
2:00	24	0	6				4	152	0				0	0	0				0	97	1
2:15	4	0	13				6	147	0				0	0	0				0	88	3
2:30	9	0	4				4	154	0				0	0	0				0	82	0
2:45	6	0	9				5	154	0				0	0	0				0	118	4
3:00	15	0	4				1	164	0				0	0	0				0	100	5
3:15	12	0	1				6	181	0				0	0	0				0	111	5
3:30	10	0	7				4	154	0				0	0	0				0	133	3
3:45	16	0	4				3	148	0				0	0	0				0	92	6
4:00	22	0	9				4	172	0				0	0	0				0	114	4
4:15	7	0	10				10	220	0				0	0	0				0	120	3
4:30	7	0	13				0	198	0				0	0	0				0	128	3
4:45	10	0	9				0	201	0				0	0	0				0	140	0
5:00	10	0	6				0	204	0				0	0	0				0	142	1
5:15	10	0	4				3	230	0				0	0	0				0	115	1
5:30	9	0	4				0	207	0				0	0	0				0	124	0
5:45	1	0	10				3	214	0				0	0	0				0	95	3
6:00	6	0	6				0	216	0				0	0	0				0	92	1
6:15	9	0	4				0	217	0				0	0	0				0	110	1
6:30	4	0	0				1	234	0				0	0	0				0	110	1
6:45	4	0	1				0	183	0				0	0	0				0	75	0
7:00	0	0	0				0	0	0				0	0	0				0	0	0
7:15	0	0	0				0	0	0				0	0	0				0	0	0
7:30	0	0	0				0	0	0				0	0	0				0	0	0
7:45	0	0	0				0	0	0				0	0	0				0	0	0
8:00	0	0	0				0	0	0				0	0	0				0	0	0
8:15	0	0	0				0	0	0				0	0	0				0	0	0
8:30	0	0	0				0	0	0				0	0	0				0	0	0
8:45	0	0	0				0	0	0				0	0	0				0	0	0
9:00	0	0	0				0	0	0				0	0	0				0	0	0
9:15	0	0	0				0	0	0				0	0	0				0	0	0

Trip Distribution (Belmont I & Hanover) - Multifamily Housing (Low-Rise) Not Close to Rail/Transit - Distribution is extrapolated from the McKinley Avenue Site TIS and estimated rerouted volumes

	Southbound						Westbound						Northbound						Eastbound		
	Right	Thru	Left				Right	Thru	Left				Right	Thru	Left				Right	Thru	Left
0:00								0											1	0	
12:15								0											1	0	
12:30								0											1	0	
12:45								0											1	0	
1:00								0											0	0	
1:15								0											0	0	
1:30								0											0	0	
1:45								0											0	0	
2:00								0											0	0	
2:15								0											0	0	
2:30								0											0	0	
2:45								0											0	0	
3:00								0											0	0	
3:15								0											0	0	
3:30								0											0	0	
3:45								0											0	0	
4:00								1						1					0	0	
4:15								1						1					0	0	
4:30								1						1					0	0	
4:45								1						1					0	0	
5:00								1						1					0	0	
5:15								1						1					0	0	
5:30								1						1					0	0	
5:45								1						1					0	0	
6:00								3						3					1	1	
6:15								3						3					1	1	
6:30								3						3					1	1	
6:45								3						3					1	1	
7:00								4						4					1	1	
7:15								4						4					1	1	
7:30								4						4					1	1	
7:45								4						4					1	1	
8:00								3						3					2	1	
8:15								3						3					2	1	
8:30								3						3					2	1	
8:45								3						3					2	1	
9:00								2						2					2	1	
9:15								2						2					2	1	
9:30								2						2					2	1	
9:45								2						2					2	1	
10:00								2						2					1	1	
10:15								2						2					1	1	
10:30								2						2					1	1	
10:45								2						2					1	1	
11:00								2						2					2	2	
11:15								2						2					2	2	
11:30								2						2					2	2	
11:45								2						2					2	2	
12:00								2						2					3	2	
12:15								2						2					3	2	
12:30								2						2					3	2	
12:45								2						2					3	2	
1:00								2						2					2	2	
1:15								2						2					2	2	
1:30								2						2					2	2	
1:45								2						2					2	2	
2:00								2						2					3	2	
2:15								2						2					3	2	
2:30								2						2					3	2	
2:45								2						2					3	2	
3:00								2						2					4	3	
3:15								2						2					4	3	
3:30								2						2					4	3	
3:45								2						2					4	3	
4:00								2						2					6	4	
4:15								2						2					6	4	
4:30								2						2					6	4	
4:45								2						2					6	4	
5:00								3						3					7	5	
5:15								3						3					7	5	
5:30								3						3					7	5	
5:45								3						3					7	5	
6:00								3						3					6	4	
6:15								3						3					6	4	
6:30								3						3					6	4	
6:45								3						3					6	4	
7:00								2						2					5	3	
7:15								2						2					5	3	
7:30								2						2					5	3	
7:45								2						2					5	3	
8:00								2						2					5	3	
8:15								2						2					5	3	
8:30								2						2					5	3	
8:45								2						2					5	3	
9:00								1						1					4	2	
9:15								1						1					4	2	
9:30								1						1					4	2	
9:45								1						1					4	2	
10:00								1						1					3	2	
10:15								1						1					3	2	
10:30								1						1					3	2	
10:45								1						1					3	2	
11:00								1						1					2	1	
11:15								1						1					2	1	
11:30								1						1					2	1	
11:45								1						1					2	1	

220 - Multifamily
Housing (Low-Rise)
Not Close to
Rail/Transit
Entry % Exit %
0.9% 0.4%

220 Weekday
Entry/Exit
1617

0.5% 0.3%

0.4% 0.4%

0.4% 0.3%

0.3% 1.4%

0.5% 2.6%

1.4% 6.9%

2.0% 10.8%

3.1% 8.5%

2.9% 4.9%

2.4% 4.8%

3.8% 4.7%

4.5% 4.1%

4.0% 4.4%

5.6% 4.9%

6.9% 5.3%

10.1% 5.6%

11.4% 7.6%

9.7% 6.7%

8.1% 4.7%

7.7% 4.2%

6.0% 2.7%

4.7% 2.4%

2.5% 1.4%

Trip Distribution (Belmont II) - Multifamily Housing (Low-Rise) Not Close to Rail/Transit - Distribution matches the HY AM distribution seen in the Belmont II TIS

	Southbound			Westbound			Northbound			Eastbound			15% Enter	10% Enter	220 - Multifamily Housing (Low-Rise) Not Close to Rail/Transit Entry % Exit %	220 Weekday Entry/Exit 999
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left				
0:00						2	0	0	0	0	0	0				
12:15						2	0	0	0	0	0	0				
12:30						2	0	0	0	0	0	0				
12:45						2	0	0	0	0	0	0				
1:00						1	0	0	0	0	0	0			0.5%	0.3%
1:15						1	0	0	0	0	0	0				
1:30						1	0	0	0	0	0	0				
1:45						1	0	0	0	0	0	0				
2:00						1	0	0	0	0	0	0			0.4%	0.4%
2:15						1	0	0	0	0	0	0				
2:30						1	0	0	0	0	0	0				
2:45						1	0	0	0	0	0	0				
3:00						1	0	0	0	0	0	0			0.4%	0.3%
3:15						1	0	0	0	0	0	0				
3:30						1	0	0	0	0	0	0				
3:45						1	0	0	0	0	0	0				
4:00						1	1	1	1	0	0	0			0.3%	1.4%
4:15						1	1	1	1	0	0	0				
4:30						1	1	1	1	0	0	0				
4:45						1	1	1	1	0	0	0				
5:00						1	2	2	2	0	0	0			0.5%	2.6%
5:15						1	2	2	2	0	0	0				
5:30						1	2	2	2	0	0	0				
5:45						1	2	2	2	0	0	0				
6:00						3	5	4	4	1	0	0			1.4%	6.9%
6:15						3	5	4	4	1	0	0				
6:30						3	5	4	4	1	0	0				
6:45						3	5	4	4	1	0	0				
7:00						4	8	7	7	1	1	1			2.0%	10.8%
7:15						4	8	7	7	1	1	1				
7:30						4	8	7	7	1	1	1				
7:45						4	8	7	7	1	1	1				
8:00						6	6	5	5	1	1	1			3.1%	8.5%
8:15						6	6	5	5	1	1	1				
8:30						6	6	5	5	1	1	1				
8:45						6	6	5	5	1	1	1				
9:00						5	4	3	3	1	1	1			2.9%	4.9%
9:15						5	4	3	3	1	1	1				
9:30						5	4	3	3	1	1	1				
9:45						5	4	3	3	1	1	1				
10:00						5	4	3	3	1	1	1			2.4%	4.8%
10:15						5	4	3	3	1	1	1				
10:30						5	4	3	3	1	1	1				
10:45						5	4	3	3	1	1	1				
11:00						7	4	3	3	1	1	1			3.8%	4.7%
11:15						7	4	3	3	1	1	1				
11:30						7	4	3	3	1	1	1				
11:45						7	4	3	3	1	1	1				
12:00						8	3	3	3	2	1	1			4.5%	4.1%
12:15						8	3	3	3	2	1	1				
12:30						8	3	3	3	2	1	1				
12:45						8	3	3	3	2	1	1				
1:00						7	3	3	3	1	1	1			4.0%	4.4%
1:15						7	3	3	3	1	1	1				
1:30						7	3	3	3	1	1	1				
1:45						7	3	3	3	1	1	1				
2:00						11	4	3	3	2	1	1			5.6%	4.9%
2:15						11	4	3	3	2	1	1				
2:30						11	4	3	3	2	1	1				
2:45						11	4	3	3	2	1	1				
3:00						13	4	3	3	3	2	2			6.9%	5.3%
3:15						13	4	3	3	3	2	2				
3:30						13	4	3	3	3	2	2				
3:45						13	4	3	3	3	2	2				
4:00						19	4	4	4	4	3	3			10.1%	5.6%
4:15						19	4	4	4	4	3	3				
4:30						19	4	4	4	4	3	3				
4:45						19	4	4	4	4	3	3				
5:00						21	6	5	5	4	3	3			11.4%	7.6%
5:15						21	6	5	5	4	3	3				
5:30						21	6	5	5	4	3	3				
5:45						21	6	5	5	4	3	3				
6:00						18	5	4	4	4	2	2			9.7%	6.7%
6:15						18	5	4	4	4	2	2				
6:30						18	5	4	4	4	2	2				
6:45						18	5	4	4	4	2	2				
7:00						15	4	3	3	3	2	2			8.1%	4.7%
7:15						15	4	3	3	3	2	2				
7:30						15	4	3	3	3	2	2				
7:45						15	4	3	3	3	2	2				
8:00						14	3	3	3	3	2	2			7.7%	4.2%
8:15						14	3	3	3	3	2	2				
8:30						14	3	3	3	3	2	2				
8:45						14	3	3	3	3	2	2				
9:00						11	2	2	2	2	2	2			6.0%	2.7%
9:15						11	2	2	2	2	2	2				
9:30						11	2	2	2	2	2	2				
9:45						11	2	2	2	2	2	2				
10:00						9	2	1	1	2	1	1			4.7%	2.4%
10:15						9	2	1	1	2	1	1				
10:30						9	2	1	1	2	1	1				
10:45						9	2	1	1	2	1	1				
11:00						5	1	1	1	1	1	1			2.5%	1.4%
11:15						5	1	1	1	1	1	1				
11:30						5	1	1	1	1	1	1				
11:45						5	1	1	1	1	1	1				

Trip Distribution (West Multifamily) - Multifamily Housing (Low-Rise) Not Close to Rail/Transit - Distribution matches the HY AM West Multifamily distribution seen in the Belmont II TIS

	Southbound			Westbound			Northbound			Eastbound			220 - Multifamily Housing (Low-Rise) Not Close to Rail/Transit Entry % Exit %	220 Weekday Entry/Exit 538
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left		
0:00						1	0	0	0	0				
12:15						1	0	0	0	0				
12:30						1	0	0	0	0				
12:45						1	0	0	0	0				
1:00						1	0	0	0	0			0.5%	0.3%
1:15						1	0	0	0	0				
1:30						1	0	0	0	0				
1:45						1	0	0	0	0				
2:00						0	0	0	0	0			0.4%	0.4%
2:15						0	0	0	0	0				
2:30						0	0	0	0	0				
2:45						0	0	0	0	0				
3:00						0	0	0	0	0			0.4%	0.3%
3:15						0	0	0	0	0				
3:30						0	0	0	0	0				
3:45						0	0	0	0	0				
4:00						0	1	0	0	0			0.3%	1.4%
4:15						0	1	0	0	0				
4:30						0	1	0	0	0				
4:45						0	1	0	0	0				
5:00						1	3	1	0	0			0.5%	2.6%
5:15						1	3	1	0	0				
5:30						1	3	1	0	0				
5:45						1	3	1	0	0				
6:00						1	7	2	0	0			1.4%	6.9%
6:15						1	7	2	0	0				
6:30						1	7	2	0	0				
6:45						1	7	2	0	0				
7:00						2	11	4	1	1			2.0%	10.8%
7:15						2	11	4	1	1				
7:30						2	11	4	1	1				
7:45						2	11	4	1	1				
8:00						3	9	3	1	1			3.1%	8.5%
8:15						3	9	3	1	1				
8:30						3	9	3	1	1				
8:45						3	9	3	1	1				
9:00						3	5	2	1	1			2.9%	4.9%
9:15						3	5	2	1	1				
9:30						3	5	2	1	1				
9:45						3	5	2	1	1				
10:00						2	5	2	1	1			2.4%	4.8%
10:15						2	5	2	1	1				
10:30						2	5	2	1	1				
10:45						2	5	2	1	1				
11:00						4	5	2	1	1			3.8%	4.7%
11:15						4	5	2	1	1				
11:30						4	5	2	1	1				
11:45						4	5	2	1	1				
12:00						5	4	1	2	2			4.5%	4.1%
12:15						5	4	1	2	2				
12:30						5	4	1	2	2				
12:45						5	4	1	2	2				
1:00						4	4	1	1	1			4.0%	4.4%
1:15						4	4	1	1	1				
1:30						4	4	1	1	1				
1:45						4	4	1	1	1				
2:00						6	5	2	2	2			5.6%	4.9%
2:15						6	5	2	2	2				
2:30						6	5	2	2	2				
2:45						6	5	2	2	2				
3:00						7	5	2	2	2			6.9%	5.3%
3:15						7	5	2	2	2				
3:30						7	5	2	2	2				
3:45						7	5	2	2	2				
4:00						10	6	2	3	3			10.1%	5.6%
4:15						10	6	2	3	3				
4:30						10	6	2	3	3				
4:45						10	6	2	3	3				
5:00						12	8	3	4	4			11.4%	7.6%
5:15						12	8	3	4	4				
5:30						12	8	3	4	4				
5:45						12	8	3	4	4				
6:00						10	7	2	3	3			9.7%	6.7%
6:15						10	7	2	3	3				
6:30						10	7	2	3	3				
6:45						10	7	2	3	3				
7:00						8	5	2	3	3			8.1%	4.7%
7:15						8	5	2	3	3				
7:30						8	5	2	3	3				
7:45						8	5	2	3	3				
8:00						8	4	1	3	3			7.7%	4.2%
8:15						8	4	1	3	3				
8:30						8	4	1	3	3				
8:45						8	4	1	3	3				
9:00						6	3	1	2	2			6.0%	2.7%
9:15						6	3	1	2	2				
9:30						6	3	1	2	2				
9:45						6	3	1	2	2				
10:00						5	2	1	2	2			4.7%	2.4%
10:15						5	2	1	2	2				
10:30						5	2	1	2	2				
10:45						5	2	1	2	2				
11:00						3	1	0	1	1			2.5%	1.4%
11:15						3	1	0	1	1				
11:30						3	1	0	1	1				
11:45						3	1	0	1	1				

40% Exit

220 Weekday
Entry/Exit
695

Westbound Left Volume at Trabue Road & McKinley Avenue (2023 Weekday StreetLight data) - To be rerouted as U-Turns at the Trabue Road & Builders Place signal if a westbound left restriction at Trabue Road & McKinley Avenue is implemented.
 Note, the U-turn volumes are shown as left turns due to the limitations of the signal warrant form.

	Southbound							Westbound							Northbound							Eastbound		
	Right	Thru	Left					Right	Thru	Left					Right	Thru	Left					Right	Thru	Left
0:00										1														
12:15										2														
12:30										2														
12:45										2														
1:00										0														
1:15										0														
1:30										0														
1:45										0														
2:00										0														
2:15										0														
2:30										0														
2:45										0														
3:00										0														
3:15										0														
3:30										0														
3:45										0														
4:00										0														
4:15										0														
4:30										6														
4:45										18														
5:00										4														
5:15										1														
5:30										2														
5:45										5														
6:00										13														
6:15										24														
6:30										19														
6:45										21														
7:00										43														
7:15										30														
7:30										26														
7:45										32														
8:00										26														
8:15										33														
8:30										40														
8:45										22														
9:00										17														
9:15										20														
9:30										24														
9:45										30														
10:00										17														
10:15										19														
10:30										17														
10:45										14														
11:00										18														
11:15										24														
11:30										22														
11:45										26														
12:00										21														
12:15										35														
12:30										26														
12:45										23														
1:00										21														
1:15										20														
1:30										22														
1:45										23														
2:00										28														
2:15										30														
2:30										19														
2:45										21														
3:00										22														
3:15										24														
3:30										21														
3:45										23														
4:00										27														
4:15										33														
4:30										34														
4:45										44														
5:00										29														
5:15										30														
5:30										29														
5:45										26														
6:00										23														
6:15										30														
6:30										21														
6:45										20														
7:00										16														
7:15										28														
7:30										19														
7:45										16														
8:00										17														
8:15										13														
8:30										14														
8:45										11														
9:00										13														
9:15										9														
9:30										11														
9:45										11														
10:00										9														
10:15										7														
10:30										6														
10:45										4														
11:00										4														
11:15										4														
11:30										3														
11:45										2														

Grown Rerouted Trabue Lefts

	Southbound						Westbound						Northbound						Eastbound		
	Right	Thru	Left				Right	Thru	Left				Right	Thru	Left				Right	Thru	Left
0:00									1												
0:15									2												
12:15									2												
12:30									2												
12:45									2												
1:00									0												
1:15									0												
1:30									0												
1:45									0												
2:00									0												
2:15									0												
2:30									0												
2:45									0												
3:00									0												
3:15									0												
3:30									0												
3:45									0												
4:00									0												
4:15									0												
4:30									7												
4:45									22												
5:00									5												
5:15									1												
5:30									2												
5:45									6												
6:00									16												
6:15									29												
6:30									23												
6:45									26												
7:00									52												
7:15									37												
7:30									32												
7:45									39												
8:00									32												
8:15									40												
8:30									49												
8:45									27												
9:00									21												
9:15									24												
9:30									29												
9:45									37												
10:00									21												
10:15									23												
10:30									21												
10:45									17												
11:00									22												
11:15									29												
11:30									27												
11:45									32												
12:00									26												
12:15									43												
12:30									32												
12:45									28												
1:00									26												
1:15									24												
1:30									27												
1:45									28												
2:00									34												
2:15									37												
2:30									23												
2:45									26												
3:00									27												
3:15									29												
3:30									26												
3:45									28												
4:00									33												
4:15									40												
4:30									41												
4:45									54												
5:00									35												
5:15									37												
5:30									35												
5:45									32												
6:00									28												
6:15									37												
6:30									26												
6:45									24												
7:00									20												
7:15									34												
7:30									23												
7:45									20												
8:00									21												
8:15									16												
8:30									17												
8:45									13												
9:00									16												
9:15									11												
9:30									13												
9:45									13												
10:00									11												
10:15									9												
10:30									7												
10:45									5												
11:00									5												
11:15									5												
11:30									4												
11:45									2												

Growth Percentage	
Southbound	2.0%
Eastbound	1.0%
Northbound	0.0%
Westbound	1.0%
Collection Year	2023
Design Year	2045

Grown Rerouted Trabue Lefts

Adjustment Factor
Westbound Left 1.2

	Southbound						Westbound						Northbound						Eastbound		
	Right	Thru	Left				Right	Thru	Left				Right	Thru	Left				Right	Thru	Left
0:00									1												
0:15									2												
12:30									2												
12:45									2												
1:00									0												
1:15									0												
1:30									0												
1:45									0												
2:00									0												
2:15									0												
2:30									0												
2:45									0												
3:00									0												
3:15									0												
3:30									0												
3:45									0												
4:00									0												
4:15									0												
4:30									8												
4:45									26												
5:00									6												
5:15									1												
5:30									2												
5:45									7												
6:00									19												
6:15									35												
6:30									28												
6:45									31												
7:00									62												
7:15									44												
7:30									38												
7:45									47												
8:00									38												
8:15									48												
8:30									59												
8:45									32												
9:00									25												
9:15									29												
9:30									35												
9:45									44												
10:00									25												
10:15									28												
10:30									25												
10:45									20												
11:00									26												
11:15									35												
11:30									32												
11:45									38												
12:00									31												
12:15									52												
12:30									38												
12:45									34												
1:00									31												
1:15									29												
1:30									32												
1:45									34												
2:00									41												
2:15									44												
2:30									28												
2:45									31												
3:00									32												
3:15									35												
3:30									31												
3:45									34												
4:00									40												
4:15									48												
4:30									49												
4:45									65												
5:00									42												
5:15									44												
5:30									42												
5:45									38												
6:00									34												
6:15									44												
6:30									31												
6:45									29												
7:00									24												
7:15									41												
7:30									28												
7:45									24												
8:00									25												
8:15									19												
8:30									20												
8:45									16												
9:00									19												
9:15									13												
9:30									16												
9:45									16												
10:00									13												
10:15									11												
10:30									8												
10:45									6												
11:00									6												
11:15									6												
11:30									5												
11:45									2												

Build Volumes at Trabue Road and Builders Place

	Southbound						Westbound						Northbound						Eastbound		
	Right	Thru	Left				Right	Thru	Left				Right	Thru	Left				Right	Thru	Left
0:00	0	0	0				0	1	4				0	0	0				1	0	0
12:15	0	0	0				0	1	5				0	0	0				1	0	0
12:30	0	0	0				0	1	5				0	0	0				1	0	0
12:45	0	0	0				0	1	5				0	0	0				1	0	0
1:00	0	0	0				0	0	2				0	0	0				0	0	0
1:15	0	0	0				0	0	2				0	0	0				0	0	0
1:30	0	0	0				0	0	2				0	0	0				0	0	0
1:45	0	0	0				0	0	2				0	0	0				0	0	0
2:00	0	0	0				0	0	1				0	0	0				0	0	0
2:15	0	0	0				0	0	1				0	0	0				0	0	0
2:30	0	0	0				0	0	1				0	0	0				0	0	0
2:45	0	0	0				0	0	1				0	0	0				0	0	0
3:00	0	0	0				0	0	1				0	0	0				0	0	0
3:15	0	0	0				0	0	1				0	0	0				0	0	0
3:30	0	0	0				0	0	1				0	0	0				0	0	0
3:45	0	0	0				0	0	1				0	0	0				0	0	0
4:00	0	0	0				0	1	1				2	0	2				0	1	0
4:15	0	0	0				0	1	1				2	0	2				0	1	0
4:30	0	0	0				0	1	9				2	0	2				0	1	0
4:45	0	0	0				0	1	27				2	0	2				0	1	0
5:00	0	0	0				0	1	8				5	0	4				0	2	0
5:15	0	0	0				0	1	3				5	0	4				0	2	0
5:30	0	0	0				0	1	4				5	0	4				0	2	0
5:45	0	0	0				0	1	9				5	0	4				0	2	0
6:00	1	0	0				5	34	23				12	0	9				2	48	3
6:15	0	0	13				3	47	39				12	0	9				2	83	8
6:30	0	0	3				3	65	32				12	0	9				2	86	8
6:45	3	0	3				4	82	35				12	0	9				2	102	9
7:00	1	0	3				5	71	68				19	0	15				3	115	13
7:15	1	0	3				5	77	50				19	0	15				3	139	5
7:30	4	0	1				11	99	44				19	0	15				3	128	10
7:45	9	0	3				10	138	53				19	0	15				3	174	14
8:00	3	0	4				14	111	47				15	0	11				4	127	14
8:15	1	0	3				5	107	57				15	0	11				4	133	5
8:30	1	0	4				11	121	68				15	0	11				4	127	9
8:45	1	0	4				4	86	41				15	0	11				4	119	8
9:00	1	0	4				11	113	33				9	0	7				4	95	8
9:15	3	0	1				8	87	37				9	0	7				4	102	4
9:30	3	0	12				1	96	43				9	0	7				4	109	6
9:45	7	0	3				5	122	52				9	0	7				4	107	16
10:00	3	0	9				3	89	32				9	0	7				3	99	4
10:15	3	0	1				3	98	35				9	0	7				3	123	4
10:30	0	0	0				3	122	32				9	0	7				3	101	3
10:45	4	0	4				9	99	27				9	0	7				3	72	4
11:00	4	0	0				4	116	37				9	0	7				4	84	3
11:15	7	0	7				1	126	46				9	0	7				4	97	9
11:30	10	0	12				6	130	43				9	0	7				4	118	9
11:45	18	0	16				3	167	49				9	0	7				4	115	10
12:00	9	0	13				5	172	44				7	0	6				7	121	5
12:15	10	0	4				6	140	65				7	0	6				7	140	9
12:30	3	0	6				8	138	51				7	0	6				7	116	5
12:45	1	0	10				10	145	47				7	0	6				7	117	10
1:00	9	0	10				5	157	42				7	0	6				4	94	8
1:15	4	0	6				6	120	40				7	0	6				4	111	11
1:30	3	0	7				5	128	43				7	0	6				4	110	0
1:45	3	0	3				6	148	45				7	0	6				4	87	1
2:00	24	0	6				4	158	58				9	0	7				7	103	1
2:15	4	0	13				6	153	61				9	0	7				7	94	3
2:30	9	0	4				4	160	45				9	0	7				7	88	0
2:45	6	0	9				5	160	48				9	0	7				7	124	4
3:00	15	0	4				1	171	52				9	0	7				9	109	5
3:15	12	0	1				6	188	55				9	0	7				9	120	5
3:30	10	0	7				4	161	51				9	0	7				9	142	3
3:45	16	0	4				3	155	54				9	0	7				9	101	6
4:00	22	0	9				4	181	69				10	0	8				13	125	4
4:15	7	0	10				10	229	77				10	0	8				13	131	3
4:30	7	0	13				0	207	78				10	0	8				13	139	3
4:45	10	0	9				0	210	94				10	0	8				13	151	0
5:00	10	0	6				0	215	75				14	0	11				15	155	1
5:15	10	0	4				3	241	77				14	0	11				15	128	1
5:30	9	0	4				0	218	75				14	0	11				15	137	0
5:45	1	0	10				3	225	71				14	0	11				15	108	3
6:00	6	0	6				0	226	62				12	0	9				13	103	1
6:15	9	0	4				0	227	72				12	0	9				13	121	1
6:30	4	0	0				1	244	59				12	0	9				13	121	1
6:45	4	0	1				0	193	57				12	0	9				13	86	0
7:00	0	0	0				0	8	47				9	0	7				11	8	0
7:15	0	0	0				0	8	64				9	0	7				11	8	0
7:30	0	0	0				0	8	51				9	0	7				11	8	0
7:45	0	0	0				0	8	47				9	0	7				11	8	0
8:00	0																				

Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2045 Build

Study Date : 10/7/2024

Signal Warrants - Summary

Major Street Approaches

Eastbound: Trabue Road

Number of Lanes : 2+

Total Approach Volume: 6,817

Westbound: Trabue Road

Number of Lanes :2+

Total Approach Volume: 11,265

Minor Street Approaches

Northbound: Site Access

Number of Lanes :1

Total Approach Volume: 671

Southbound: Builders Place Drive

Number of Lanes :1

Total Approach Volume: 358

Warrant Summary (Urban Values Apply)

Warrant 1 - Eight Hour Vehicular Volumes.....Not Satisfied

Warrant 1A - Minimum Vehicular Volume.....Not Satisfied

Required volumes reached for 0 hours, 8 are needed

Warrant 1B - Interruption of Continuous Traffic.....Not Satisfied

Required volumes reached for 0 hours, 8 are needed

Warrant 1C - Combination of Warrants.....Not Satisfied

Required 1A volumes reached for 0 hours, 8 are needed

Required 1B volumes reached for 1 hours, 8 are needed

Warrant 2 - Four Hour Volumes.....Not Satisfied

Number of hours (0) volumes exceed minimum < minimum required (4).

Warrant 3 - Peak Hour.....Not Evaluated

Warrant 3A - Peak Hour Delay.....Not Evaluated

Warrant 3B - Peak Hour Volumes.....Not Evaluated

Warrant 4 - Pedestrian Volumes.....Not Evaluated

Warrant 5 - School Crossing.....Not Evaluated

Warrant 6 - Coordinated Signal System.....Not Evaluated

Warrant 7 - Crash Experience.....Not Evaluated

Warrant 8 - Roadway Network.....Not Evaluated

Warrant 9 - Intersection Near a Grade Crossing.....Not Evaluated

Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2045 Build

Study Date : 10/7/2024

Warrant 1A - Minimum Volumes

Description

Intended for sites where the volume of intersecting traffic is the principal reason for consideration of a signal installation.

Summary

Only 0 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **False**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

Volume Requirements

Veh/Hr Major = **600**

Veh/Hr Minor = **150**

Major Road						Minor Road		
Trabue Road						Site Access		
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?
16:45 - 17:45	631	+	1207	=	1838	47	31	No
16:30 - 17:30	634	+	1199	=	1833	44	40	No
16:15 - 17:15	637	+	1195	=	1832	41	46	No
17:00 - 18:00	593	+	1201	=	1794	53	32	No
16:00 - 17:00	608	+	1159	=	1767	38	53	No
17:15 - 18:15	539	+	1199	=	1738	51	32	No
17:30 - 18:30	530	+	1178	=	1708	49	32	No
17:45 - 18:45	513	+	1189	=	1702	47	27	No
18:00 - 19:00	486	+	1141	=	1627	44	17	No
15:45 - 16:45	560	+	1066	=	1626	37	48	No
15:30 - 16:30	559	+	997	=	1556	36	42	No
15:15 - 16:15	546	+	930	=	1476	35	33	No
14:45 - 15:45	546	+	902	=	1448	34	27	No
15:00 - 16:00	527	+	900	=	1427	34	24	No
11:45 - 12:45	546	+	846	=	1392	28	45	No
14:30 - 15:30	487	+	895	=	1382	34	24	No
12:00 - 13:00	551	+	830	=	1381	28	37	No
11:30 - 12:30	549	+	829	=	1378	30	53	No
07:45 - 08:45	618	+	742	=	1360	57	15	No
12:15 - 13:15	524	+	813	=	1337	28	34	No
14:15 - 15:15	457	+	866	=	1323	34	35	No
07:30 - 08:30	619	+	696	=	1315	62	13	No
14:00 - 15:00	445	+	862	=	1307	34	39	No
18:15 - 19:15	388	+	908	=	1296	42	9	No
11:15 - 12:15	503		791		1294	32	55	No

Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2045 Build

Study Date : 10/7/2024

Warrant 1B - Interruption of Continuous Traffic

Description

Intended for sites where the volume of the major street is so heavy that traffic on the minor street suffers excessive delay or hazard.

Summary

Only 0 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **False**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

Volume Requirements

Veh/Hr Major = **900**

Veh/Hr Minor = **75**

Major Road						Minor Road		
Trabue Road						Site Access		
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?
16:45 - 17:45	631	+	1207	=	1838	47	31	No
16:30 - 17:30	634	+	1199	=	1833	44	40	No
16:15 - 17:15	637	+	1195	=	1832	41	46	No
17:00 - 18:00	593	+	1201	=	1794	53	32	No
16:00 - 17:00	608	+	1159	=	1767	38	53	No
17:15 - 18:15	539	+	1199	=	1738	51	32	No
17:30 - 18:30	530	+	1178	=	1708	49	32	No
17:45 - 18:45	513	+	1189	=	1702	47	27	No
18:00 - 19:00	486	+	1141	=	1627	44	17	No
15:45 - 16:45	560	+	1066	=	1626	37	48	No
15:30 - 16:30	559	+	997	=	1556	36	42	No
15:15 - 16:15	546	+	930	=	1476	35	33	No
14:45 - 15:45	546	+	902	=	1448	34	27	No
15:00 - 16:00	527	+	900	=	1427	34	24	No
11:45 - 12:45	546	+	846	=	1392	28	45	No
14:30 - 15:30	487	+	895	=	1382	34	24	No
12:00 - 13:00	551	+	830	=	1381	28	37	No
11:30 - 12:30	549	+	829	=	1378	30	53	No
07:45 - 08:45	618	+	742	=	1360	57	15	No
12:15 - 13:15	524	+	813	=	1337	28	34	No
14:15 - 15:15	457	+	866	=	1323	34	35	No
07:30 - 08:30	619	+	696	=	1315	62	13	No
14:00 - 15:00	445	+	862	=	1307	34	39	No
18:15 - 19:15	388	+	908	=	1296	42	9	No
11:15 - 12:15	503		791		1294	32	55	No

Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2045 Build

Study Date : 10/7/2024

Warrant 1C Combination of Warrants

Description

Intended for sites where the traffic volumes don't meet individual warrants but where Warrants 1A and 1B are both met to 80% of their stated values.

Summary

Only 0 hours meet 1A minimums.
Only 1 hours meet 1B minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **False**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

Volume Requirements

Warrant 1A 1B
Veh/Hr Major = **480 720**
Veh/Hr Minor = **120 60**

Major Road Trabue Road						Minor Road Site Access				
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met1A?		
16:45 - 17:45	631	+	1207	=	1838	47	31	No		
16:30 - 17:30	634	+	1199	=	1833	44	40	No		
16:15 - 17:15	637	+	1195	=	1832	41	46	No		
17:00 - 18:00	593	+	1201	=	1794	53	32	No		
16:00 - 17:00	608	+	1159	=	1767	38	53	No		
17:15 - 18:15	539	+	1199	=	1738	51	32	No		
17:30 - 18:30	530	+	1178	=	1708	49	32	No		
17:45 - 18:45	513	+	1189	=	1702	47	27	No		
18:00 - 19:00	486	+	1141	=	1627	44	17	No		
15:45 - 16:45	560	+	1066	=	1626	37	48	No		
15:30 - 16:30	559	+	997	=	1556	36	42	No		
15:15 - 16:15	546		930		1476	35	33	No		

Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met1B?		
06:45 - 07:45	532	+	551	=	1083	65	12	Yes		
16:45 - 17:45	631	+	1207	=	1838	47	31	No		
16:30 - 17:30	634	+	1199	=	1833	44	40	No		
16:15 - 17:15	637	+	1195	=	1832	41	46	No		
17:00 - 18:00	593	+	1201	=	1794	53	32	No		
16:00 - 17:00	608	+	1159	=	1767	38	53	No		
17:15 - 18:15	539	+	1199	=	1738	51	32	No		
17:30 - 18:30	530	+	1178	=	1708	49	32	No		
17:45 - 18:45	513	+	1189	=	1702	47	27	No		
18:00 - 19:00	486	+	1141	=	1627	44	17	No		
15:45 - 16:45	560	+	1066	=	1626	37	48	No		
15:30 - 16:30	559		997		1556	36	42	No		

Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2045 Build

Study Date : 10/7/2024

Warrant 2 - Four Hour Volumes

Description

Intended for sites where the volume of intersecting traffic during any four hours of the day is the principal reason for consideration of a signal installation.

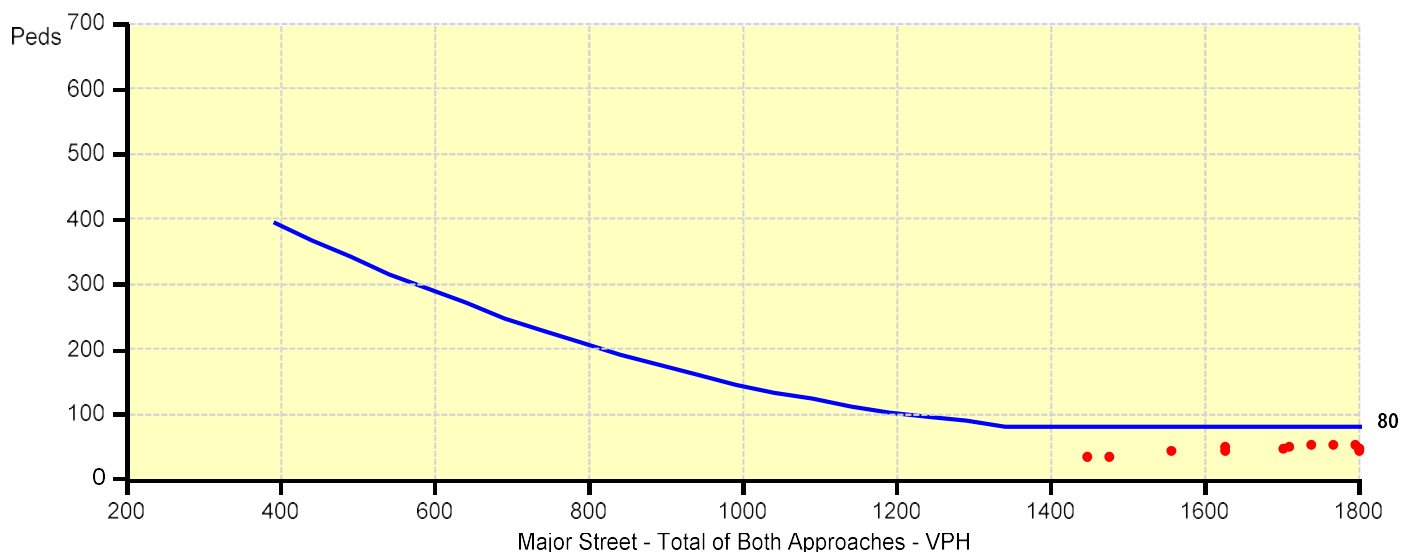
Summary

Only 0 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **False**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

Major Road Trabue Road						Minor Road Site Access		
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?
16:45 - 17:45	631	+	1207	=	1838	47	31	No
16:30 - 17:30	634	+	1199	=	1833	44	40	No
16:15 - 17:15	637	+	1195	=	1832	41	46	No
17:00 - 18:00	593	+	1201	=	1794	53	32	No
16:00 - 17:00	608	+	1159	=	1767	38	53	No
17:15 - 18:15	539	+	1199	=	1738	51	32	No
17:30 - 18:30	530	+	1178	=	1708	49	32	No
17:45 - 18:45	513	+	1189	=	1702	47	27	No
18:00 - 19:00	486	+	1141	=	1627	44	17	No
15:45 - 16:45	560	+	1066	=	1626	37	48	No
15:30 - 16:30	559	+	997	=	1556	36	42	No
15:15 - 16:15	546	+	930	=	1476	35	33	No



Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2045 Build

Study Date : 10/7/2024

Warrant 3A - Peak Hour Delay

Description

Intended for sites where for one hour of the day minor street traffic suffers undue traffic delay entering or crossing the major street.

Summary

Only 0 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Number of Minor Lanes =1

Volume and Delay Requirements

Veh/Hr All Approaches = 800

Veh/Hr Minor = 100

Total Delay (Veh-Hrs) = 0

Major Road						Minor Road			
Trabue Road						Site Access			
Time	Total of All Approaches	Met?	Minor NB	Delay NB	Met?	Minor SB	Delay SB	Met?	Warrant Met?
16:15 - 17:15	1919	Yes	41	-	---	46	-	No	No
16:30 - 17:30	1917	Yes	44	-	No	40	-	---	No
16:45 - 17:45	1916	Yes	47	-	No	31	-	---	No
17:00 - 18:00	1879	Yes	53	-	No	32	-	---	No
16:00 - 17:00	1858	Yes	38	-	---	53	-	No	No
17:15 - 18:15	1821	Yes	51	-	No	32	-	---	No
17:30 - 18:30	1789	Yes	49	-	No	32	-	---	No
17:45 - 18:45	1776	Yes	47	-	No	27	-	---	No
15:45 - 16:45	1711	Yes	37	-	---	48	-	No	No
18:00 - 19:00	1688	Yes	44	-	No	17	-	---	No
15:30 - 16:30	1634	Yes	36	-	---	42	-	No	No
15:15 - 16:15	1544	Yes	35	-	No	33	-	---	No
14:45 - 15:45	1509	Yes	34	-	No	27	-	---	No
15:00 - 16:00	1485	Yes	34	-	No	24	-	---	No
11:45 - 12:45	1465	Yes	28	-	---	45	-	No	No
11:30 - 12:30	1461	Yes	30	-	---	53	-	No	No
12:00 - 13:00	1446	Yes	28	-	---	37	-	No	No
14:30 - 15:30	1440	Yes	34	-	No	24	-	---	No
07:45 - 08:45	1432	Yes	57	-	No	15	-	---	No
12:15 - 13:15	1399	Yes	28	-	---	34	-	No	No
14:15 - 15:15	1392	Yes	34	-	---	35	-	No	No
07:30 - 08:30	1390	Yes	62	-	No	13	-	---	No
11:15 - 12:15	1381	Yes	32	-	---	55	-	No	No
14:00 - 15:00	1380	Yes	34	-	---	39	-	No	No
07:15 - 08:15	1363	Yes	67	-	No	13	-	---	No

Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2045 Build

Study Date : 10/7/2024

Warrant 3B - Peak Hour Volumes

Description

Intended for sites where the volume of intersecting traffic during one hour of the day is the principal reason for consideration of a signal installation.

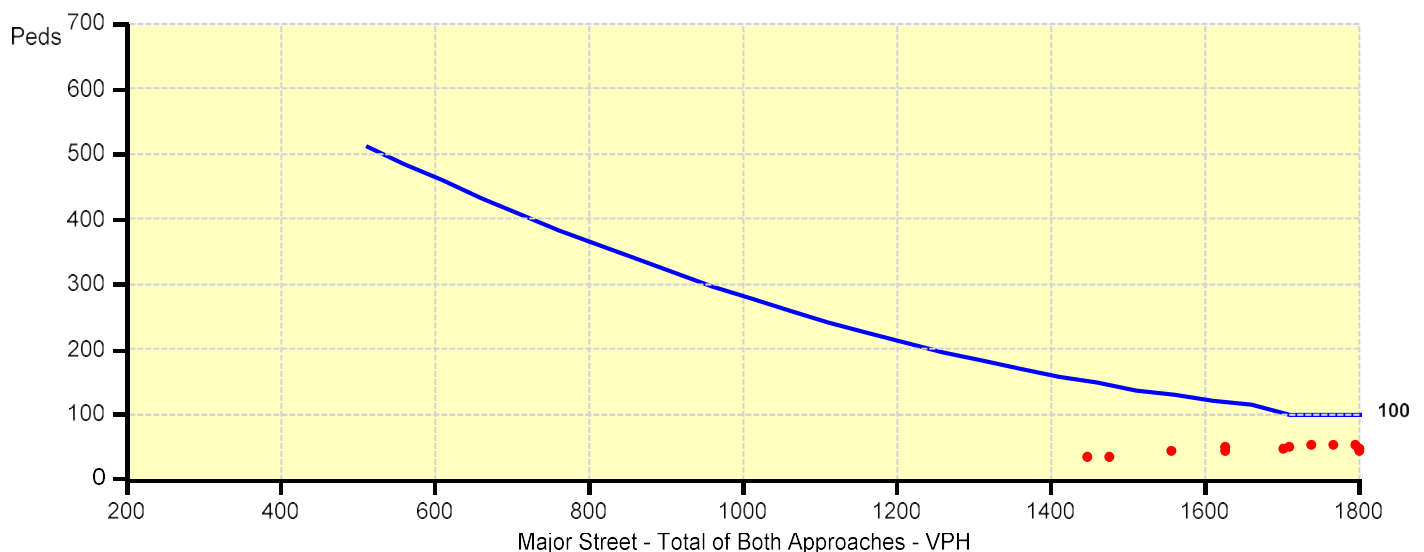
Summary

Only 0 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **False**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

Major Road Trabue Road						Minor Road Site Access		
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?
16:45 - 17:45	631	+	1207	=	1838	47	31	No
16:30 - 17:30	634	+	1199	=	1833	44	40	No
16:15 - 17:15	637	+	1195	=	1832	41	46	No
17:00 - 18:00	593	+	1201	=	1794	53	32	No
16:00 - 17:00	608	+	1159	=	1767	38	53	No
17:15 - 18:15	539	+	1199	=	1738	51	32	No
17:30 - 18:30	530	+	1178	=	1708	49	32	No
17:45 - 18:45	513	+	1189	=	1702	47	27	No
18:00 - 19:00	486	+	1141	=	1627	44	17	No
15:45 - 16:45	560	+	1066	=	1626	37	48	No
15:30 - 16:30	559	+	997	=	1556	36	42	No
15:15 - 16:15	546	+	930	=	1476	35	33	No



Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2045 Build - Road Diet

Study Date : 10/7/2024

Signal Warrants - Summary

Major Street Approaches

Eastbound: Trabue Road

Number of Lanes : 2+

Total Approach Volume: 6,817

Westbound: Trabue Road

Number of Lanes :2+

Total Approach Volume: 11,232

Minor Street Approaches

Northbound: Site Access

Number of Lanes :1

Total Approach Volume: 714

Southbound: Builders Place Drive

Number of Lanes :1

Total Approach Volume: 415

Warrant Summary (Urban Values Apply)

Warrant 1 - Eight Hour Vehicular Volumes.....Not Satisfied

Warrant 1A - Minimum Vehicular Volume.....Not Satisfied

Required volumes reached for 0 hours, 8 are needed

Warrant 1B - Interruption of Continuous Traffic.....Not Satisfied

Required volumes reached for 1 hours, 8 are needed

Warrant 1C - Combination of Warrants.....Not Satisfied

Required 1A volumes reached for 0 hours, 8 are needed

Required 1B volumes reached for 4 hours, 8 are needed

Warrant 2 - Four Hour Volumes.....Not Satisfied

Number of hours (0) volumes exceed minimum < minimum required (4).

Warrant 3 - Peak Hour.....Not Evaluated

Warrant 3A - Peak Hour Delay.....Not Evaluated

Warrant 3B - Peak Hour Volumes.....Not Evaluated

Warrant 4 - Pedestrian Volumes.....Not Evaluated

Warrant 5 - School Crossing.....Not Evaluated

Warrant 6 - Coordinated Signal System.....Not Evaluated

Warrant 7 - Crash Experience.....Not Evaluated

Warrant 8 - Roadway Network.....Not Evaluated

Warrant 9 - Intersection Near a Grade Crossing.....Not Evaluated

Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2045 Build - Road Diet

Study Date : 10/7/2024

Warrant 1A - Minimum Volumes

Description

Intended for sites where the volume of intersecting traffic is the principal reason for consideration of a signal installation.

Summary

Only 0 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **False**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

Volume Requirements

Veh/Hr Major = **600**

Veh/Hr Minor = **150**

Major Road						Minor Road			
Trabue Road						Site Access			
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?	
16:45 - 17:45	631	+	1207	=	1838	57	41	No	
16:30 - 17:30	634	+	1199	=	1833	52	50	No	
16:15 - 17:15	637	+	1195	=	1832	47	55	No	
17:00 - 18:00	593	+	1201	=	1794	58	39	No	
16:00 - 17:00	608	+	1159	=	1767	42	63	No	
17:15 - 18:15	539	+	1199	=	1738	55	37	No	
17:30 - 18:30	530	+	1178	=	1708	52	36	No	
17:45 - 18:45	513	+	1189	=	1702	49	30	No	
18:00 - 19:00	486	+	1141	=	1627	48	22	No	
15:45 - 16:45	560	+	1066	=	1626	40	60	No	
15:30 - 16:30	559	+	997	=	1556	39	54	No	
15:15 - 16:15	546	+	930	=	1476	38	45	No	
14:45 - 15:45	546	+	902	=	1448	37	38	No	
15:00 - 16:00	527	+	900	=	1427	37	35	No	
14:30 - 15:30	487	+	895	=	1382	37	34	No	
07:45 - 08:45	618	+	742	=	1360	64	18	No	
11:45 - 12:45	546	+	813	=	1359	34	52	No	
12:00 - 13:00	551	+	797	=	1348	31	41	No	
11:30 - 12:30	549	+	796	=	1345	35	59	No	
12:15 - 13:15	524	+	813	=	1337	31	37	No	
14:15 - 15:15	457	+	866	=	1323	37	43	No	
07:30 - 08:30	619	+	696	=	1315	69	16	No	
14:00 - 15:00	445	+	862	=	1307	37	48	No	
18:15 - 19:15	388	+	908	=	1296	45	13	No	
07:15 - 08:15	624		659		1283	74	16	No	

Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2045 Build - Road Diet

Study Date : 10/7/2024

Warrant 1B - Interruption of Continuous Traffic

Description

Intended for sites where the volume of the major street is so heavy that traffic on the minor street suffers excessive delay or hazard.

Summary

Only 1 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **False**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

Volume Requirements

Veh/Hr Major = **900**

Veh/Hr Minor = **75**

Major Road						Minor Road		
Trabue Road						Site Access		
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?
07:00 - 08:00	610	+	631	=	1241	79	14	Yes
16:45 - 17:45	631	+	1207	=	1838	57	41	No
16:30 - 17:30	634	+	1199	=	1833	52	50	No
16:15 - 17:15	637	+	1195	=	1832	47	55	No
17:00 - 18:00	593	+	1201	=	1794	58	39	No
16:00 - 17:00	608	+	1159	=	1767	42	63	No
17:15 - 18:15	539	+	1199	=	1738	55	37	No
17:30 - 18:30	530	+	1178	=	1708	52	36	No
17:45 - 18:45	513	+	1189	=	1702	49	30	No
18:00 - 19:00	486	+	1141	=	1627	48	22	No
15:45 - 16:45	560	+	1066	=	1626	40	60	No
15:30 - 16:30	559	+	997	=	1556	39	54	No
15:15 - 16:15	546	+	930	=	1476	38	45	No
14:45 - 15:45	546	+	902	=	1448	37	38	No
15:00 - 16:00	527	+	900	=	1427	37	35	No
14:30 - 15:30	487	+	895	=	1382	37	34	No
11:45 - 12:45	546	+	813	=	1359	34	52	No
12:00 - 13:00	551	+	797	=	1348	31	41	No
11:30 - 12:30	549	+	796	=	1345	35	59	No
12:15 - 13:15	524	+	813	=	1337	31	37	No
14:15 - 15:15	457	+	866	=	1323	37	43	No
14:00 - 15:00	445	+	862	=	1307	37	48	No
18:15 - 19:15	388	+	908	=	1296	45	13	No
12:30 - 13:30	494	+	768	=	1262	31	36	No
11:15 - 12:15	503		758		1261	36	60	No

Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2045 Build - Road Diet

Study Date : 10/7/2024

Warrant 1C Combination of Warrants

Description

Intended for sites where the traffic volumes don't meet individual warrants but where Warrants 1A and 1B are both met to 80% of their stated values.

Summary

Only 0 hours meet 1A minimums.
Only 4 hours meet 1B minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **False**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

Volume Requirements

Warrant 1A 1B
Veh/Hr Major = **480 720**
Veh/Hr Minor = **120 60**

Major Road						Minor Road					
Trabue Road						Site Access					
Time	Major EB	+	Major WB	=	Total		Minor NB		Minor SB		Met1A?
16:45 - 17:45	631	+	1207	=	1838		57		41		No
16:30 - 17:30	634	+	1199	=	1833		52		50		No
16:15 - 17:15	637	+	1195	=	1832		47		55		No
17:00 - 18:00	593	+	1201	=	1794		58		39		No
16:00 - 17:00	608	+	1159	=	1767		42		63		No
17:15 - 18:15	539	+	1199	=	1738		55		37		No
17:30 - 18:30	530	+	1178	=	1708		52		36		No
17:45 - 18:45	513	+	1189	=	1702		49		30		No
18:00 - 19:00	486	+	1141	=	1627		48		22		No
15:45 - 16:45	560	+	1066	=	1626		40		60		No
15:30 - 16:30	559	+	997	=	1556		39		54		No
15:15 - 16:15	546		930		1476		38		45		No

Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met1B?	
15:45 - 16:45	560	+	1066	=	1626	40	60	Yes	
07:30 - 08:30	619	+	696	=	1315	69	16	Yes	
11:15 - 12:15	503	+	758	=	1261	36	60	Yes	
06:30 - 07:30	487	+	496	=	983	62	13	Yes	
16:45 - 17:45	631	+	1207	=	1838	57	41	No	
17:00 - 18:00	593	+	1201	=	1794	58	39	No	
17:15 - 18:15	539	+	1199	=	1738	55	37	No	
17:30 - 18:30	530	+	1178	=	1708	52	36	No	
17:45 - 18:45	513	+	1189	=	1702	49	30	No	
18:00 - 19:00	486	+	1141	=	1627	48	22	No	
15:30 - 16:30	559	+	997	=	1556	39	54	No	
15:15 - 16:15	546		930		1476	38	45	No	

Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2045 Build - Road Diet

Study Date : 10/7/2024

Warrant 2 - Four Hour Volumes

Description

Intended for sites where the volume of intersecting traffic during any four hours of the day is the principal reason for consideration of a signal installation.

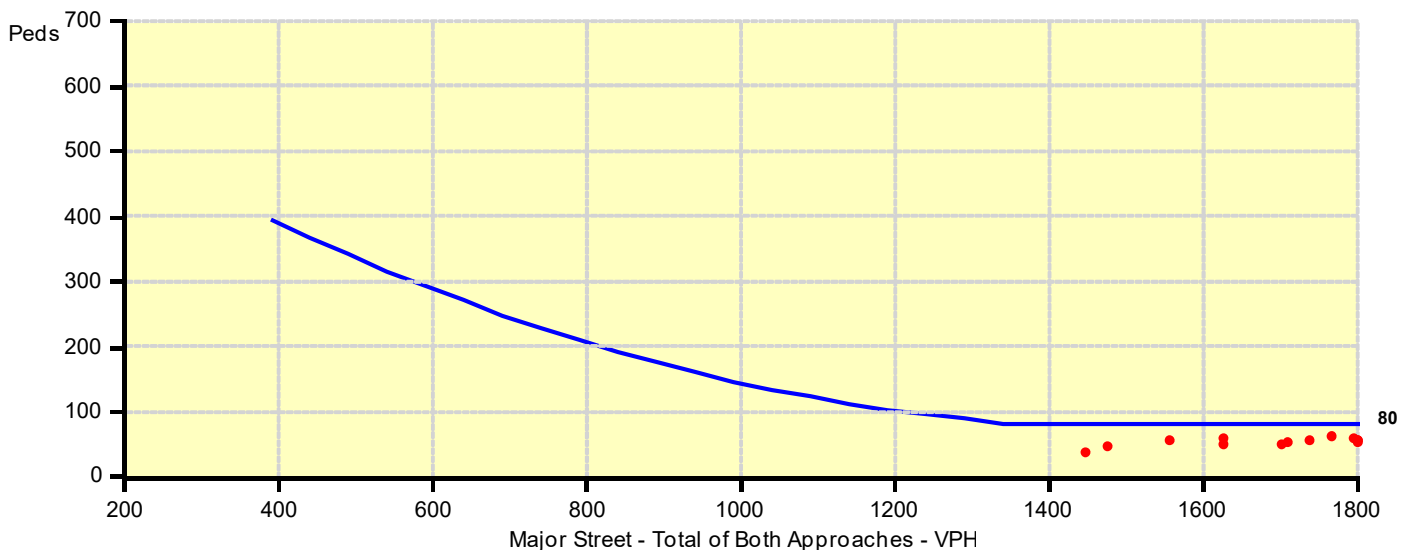
Summary

Only 0 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **False**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

Major Road Trabue Road						Minor Road Site Access		
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?
16:45 - 17:45	631	+	1207	=	1838	57	41	No
16:30 - 17:30	634	+	1199	=	1833	52	50	No
16:15 - 17:15	637	+	1195	=	1832	47	55	No
17:00 - 18:00	593	+	1201	=	1794	58	39	No
16:00 - 17:00	608	+	1159	=	1767	42	63	No
17:15 - 18:15	539	+	1199	=	1738	55	37	No
17:30 - 18:30	530	+	1178	=	1708	52	36	No
17:45 - 18:45	513	+	1189	=	1702	49	30	No
18:00 - 19:00	486	+	1141	=	1627	48	22	No
15:45 - 16:45	560	+	1066	=	1626	40	60	No
15:30 - 16:30	559	+	997	=	1556	39	54	No
15:15 - 16:15	546		930		1476	38	45	No



Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2045 Build - Road Diet

Study Date : 10/7/2024

Warrant 3A - Peak Hour Delay

Description

Intended for sites where for one hour of the day minor street traffic suffers undue traffic delay entering or crossing the major street.

Summary

37 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Number of Minor Lanes =1

Volume and Delay Requirements

Veh/Hr All Approaches = 800

Veh/Hr Minor = 100

Total Delay (Veh-Hrs) = 4

Major Road						Minor Road			
Trabue Road						Site Access			
Time	Total of All Approaches	Met?	Minor NB	Delay NB	Met?	Minor SB	Delay SB	Met?	Warrant Met?
16:45 - 17:45	1936	Yes	57	-	No	41	-	---	No
16:30 - 17:30	1935	Yes	52	-	No	50	-	---	No
16:15 - 17:15	1934	Yes	47	-	---	55	-	No	No
17:00 - 18:00	1891	Yes	58	-	No	39	-	---	No
16:00 - 17:00	1872	Yes	42	-	---	63	-	No	No
17:15 - 18:15	1830	Yes	55	-	No	37	-	---	No
17:30 - 18:30	1796	Yes	52	-	No	36	-	---	No
17:45 - 18:45	1781	Yes	49	-	No	30	-	---	No
15:45 - 16:45	1726	Yes	40	-	---	60	-	No	No
18:00 - 19:00	1697	Yes	48	-	No	22	-	---	No
15:30 - 16:30	1649	Yes	39	-	---	54	-	No	No
15:15 - 16:15	1559	Yes	38	-	---	45	-	No	No
14:45 - 15:45	1523	Yes	37	-	---	38	-	No	No
15:00 - 16:00	1499	Yes	37	-	No	35	-	---	No
14:30 - 15:30	1453	Yes	37	-	No	34	-	---	No
11:45 - 12:45	1445	Yes	34	-	---	52	-	No	No
07:45 - 08:45	1442	Yes	64	-	No	18	-	---	No
11:30 - 12:30	1439	Yes	35	-	---	59	-	No	No
12:00 - 13:00	1420	Yes	31	-	---	41	-	No	No
12:15 - 13:15	1405	Yes	31	-	---	37	-	No	No
14:15 - 15:15	1403	Yes	37	-	---	43	-	No	No
07:30 - 08:30	1400	Yes	69	-	No	16	-	---	No
14:00 - 15:00	1392	Yes	37	-	---	48	-	No	No
07:15 - 08:15	1373	Yes	74	-	No	16	-	---	No
11:15 - 12:15	1357	Yes	36	-	---	60	-	No	No

Report Title 1

Report Title 2

Report Title 3

Study Name: Trabue Road & Builders Place - 2045 Build - Road Diet

Study Date : 10/7/2024

Warrant 3B - Peak Hour Volumes

Description

Intended for sites where the volume of intersecting traffic during one hour of the day is the principal reason for consideration of a signal installation.

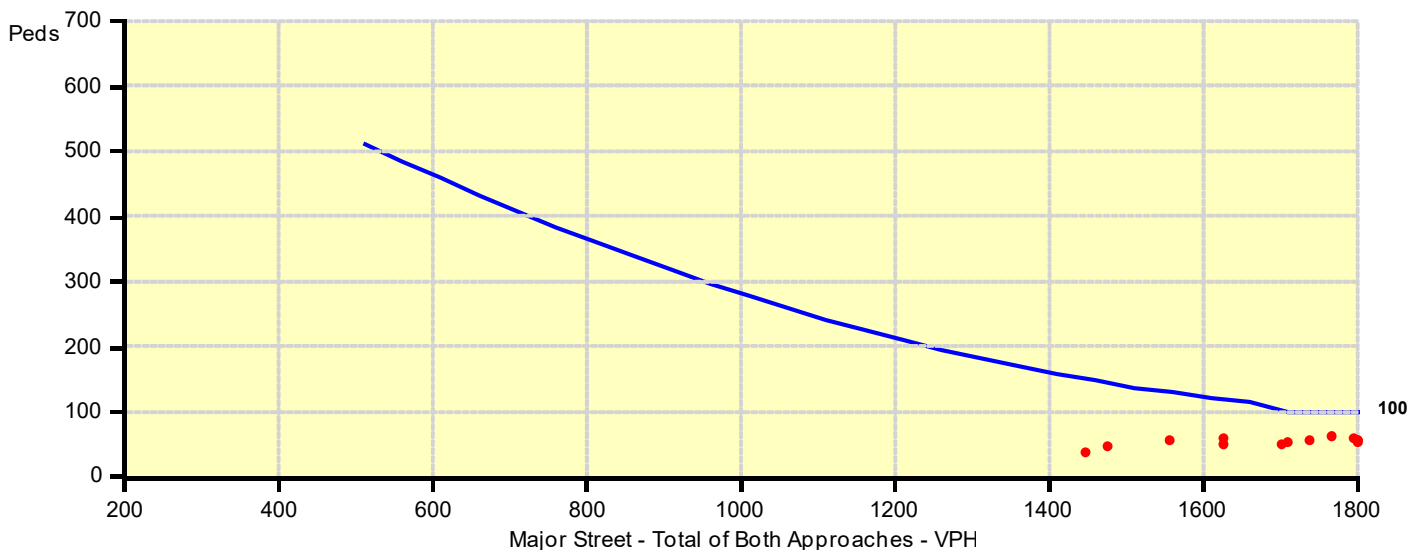
Summary

Only 0 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **False**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

Major Road Trabue Road						Minor Road Site Access		
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?
16:45 - 17:45	631	+	1207	=	1838	57	41	No
16:30 - 17:30	634	+	1199	=	1833	52	50	No
16:15 - 17:15	637	+	1195	=	1832	47	55	No
17:00 - 18:00	593	+	1201	=	1794	58	39	No
16:00 - 17:00	608	+	1159	=	1767	42	63	No
17:15 - 18:15	539	+	1199	=	1738	55	37	No
17:30 - 18:30	530	+	1178	=	1708	52	36	No
17:45 - 18:45	513	+	1189	=	1702	49	30	No
18:00 - 19:00	486	+	1141	=	1627	48	22	No
15:45 - 16:45	560	+	1066	=	1626	40	60	No
15:30 - 16:30	559	+	997	=	1556	39	54	No
15:15 - 16:15	546		930		1476	38	45	No



Appendix G

Capacity Analysis

HCM 6th TWSC

1: Trabue Road & Builders Place

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Vol, veh/h	41	618	391	31	11	11
Future Vol, veh/h	41	618	391	31	11	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	6	3	3	20	20
Mvmt Flow	45	672	425	34	12	12
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	459	0	-	0	868	230
Stage 1	-	-	-	-	442	-
Stage 2	-	-	-	-	426	-
Critical Hdwy	4.22	-	-	-	7.2	7.3
Critical Hdwy Stg 1	-	-	-	-	6.2	-
Critical Hdwy Stg 2	-	-	-	-	6.2	-
Follow-up Hdwy	2.26	-	-	-	3.7	3.5
Pot Cap-1 Maneuver	1071	-	-	-	259	720
Stage 1	-	-	-	-	565	-
Stage 2	-	-	-	-	577	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1071	-	-	-	242	720
Mov Cap-2 Maneuver	-	-	-	-	242	-
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	577	-
Approach	EB	WB		SE		
HCM Control Delay, s	0.8	0		15.6		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SELn1	
Capacity (veh/h)	1071	-	-	-	362	
HCM Lane V/C Ratio	0.042	-	-	-	0.066	
HCM Control Delay (s)	8.5	0.3	-	-	15.6	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	

Timing Report, Sorted By Phase

27: N Hague Avenue/Mapleway Drive & Trabue Road

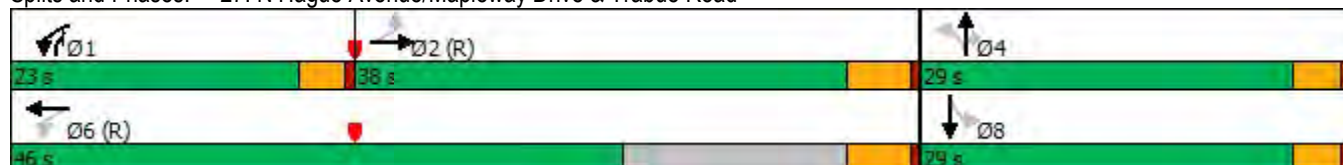


Phase Number	1	2	4	6	8
Movement	WBL	EBTL	NBTL	WBTL	SBTL
Lead/Lag	Lead	Lag			
Lead-Lag Optimize	Yes	Yes			
Recall Mode	None	C-Min	None	C-Min	None
Maximum Split (s)	23	38	29	46	29
Maximum Split (%)	25.6%	42.2%	32.2%	51.1%	32.2%
Minimum Split (s)	8.7	25	11.1	25	11.1
Yellow Time (s)	3	4.3	3.2	4.3	3.2
All-Red Time (s)	0.7	0.7	0.9	0.7	0.9
Minimum Initial (s)	5	20	7	20	7
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)					
Flash Dont Walk (s)					
Dual Entry	No	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	67	0	38	67	38
End Time (s)	0	38	67	38	67
Yield/Force Off (s)	86.3	33	62.9	33	62.9
Yield/Force Off 170(s)	86.3	33	62.9	33	62.9
Local Start Time (s)	67	0	38	67	38
Local Yield (s)	86.3	33	62.9	33	62.9
Local Yield 170(s)	86.3	33	62.9	33	62.9

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	45
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	

Splits and Phases: 27: N Hague Avenue/Mapleway Drive & Trabue Road



HCM 6th Signalized Intersection Summary 27: N Hague Avenue/Mapleway Drive & Trabue Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	401	92	124	283	12	111	19	212	40	25	25
Future Volume (veh/h)	15	401	92	124	283	12	111	19	212	40	25	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1826	1826	1826	1856	1856	1856	1841	1841	1841	1870	1870	1870
Adj Flow Rate, veh/h	16	436	100	135	308	13	121	21	230	43	27	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	3	3	3	4	4	4	2	2	2
Cap, veh/h	713	1719	391	641	2438	103	239	36	383	93	58	36
Arrive On Green	0.61	0.61	0.61	0.11	1.00	1.00	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1034	2807	639	1767	3447	145	858	186	1560	185	302	188
Grp Volume(v), veh/h	16	268	268	135	157	164	142	0	230	97	0	0
Grp Sat Flow(s),veh/h/ln	1034	1735	1711	1767	1763	1829	1044	0	1560	676	0	0
Q Serve(g_s), s	0.5	6.4	6.5	2.4	0.0	0.0	0.0	0.0	11.7	2.9	0.0	0.0
Cycle Q Clear(g_c), s	0.5	6.4	6.5	2.4	0.0	0.0	12.1	0.0	11.7	15.0	0.0	0.0
Prop In Lane	1.00		0.37	1.00		0.08	0.85		1.00	0.44		0.28
Lane Grp Cap(c), veh/h	713	1062	1048	641	1247	1294	274	0	383	187	0	0
V/C Ratio(X)	0.02	0.25	0.26	0.21	0.13	0.13	0.52	0.00	0.60	0.52	0.00	0.00
Avail Cap(c_a), veh/h	713	1062	1048	925	1247	1294	392	0	515	306	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.9	8.0	8.0	4.9	0.0	0.0	34.1	0.0	30.1	35.1	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.6	0.6	0.2	0.2	0.2	1.5	0.0	1.5	2.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.3	2.3	0.7	0.1	0.1	2.9	0.0	4.5	2.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.9	8.6	8.6	5.1	0.2	0.2	35.7	0.0	31.6	37.3	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	C	D	A	A
Approach Vol, veh/h	552			456			372			97		
Approach Delay, s/veh	8.5			1.6			33.1			37.3		
Approach LOS	A			A			C			D		
Timer - Assigned Phs	1	2	4			6	8					
Phs Duration (G+Y+Rc), s	8.5	60.1	21.4			68.6	21.4					
Change Period (Y+Rc), s	* 3.7	* 5	* 4.1			* 5	* 4.1					
Max Green Setting (Gmax), s	* 19	* 33	* 25			* 41	* 25					
Max Q Clear Time (g_c+l1), s	4.4	8.5	14.1			2.0	17.0					
Green Ext Time (p_c), s	0.3	3.3	1.1			1.9	0.3					
Intersection Summary												
HCM 6th Ctrl Delay			14.5									
HCM 6th LOS			B									
Notes												

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road

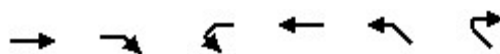
							Ø1	Ø7	Ø8
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR			
Lane Configurations	↑↑		↵	↑↑	↵	↵↵			
Traffic Volume (vph)	514	114	165	355	56	178			
Future Volume (vph)	514	114	165	355	56	178			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)		0	0		335	335			
Storage Lanes		0	1		1	1			
Taper Length (ft)			50		50				
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	0.88			
Frt	0.973					0.850			
Flt Protected			0.950		0.950				
Satd. Flow (prot)	3283	0	1671	3343	1641	2584			
Flt Permitted			0.292		0.950				
Satd. Flow (perm)	3283	0	514	3343	1641	2584			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	30					155			
Link Speed (mph)	35			35	50				
Link Distance (ft)	922			305	1567				
Travel Time (s)	18.0			5.9	21.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Heavy Vehicles (%)	7%	7%	8%	8%	10%	10%			
Adj. Flow (vph)	559	124	179	386	61	193			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	683	0	179	386	61	193			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	24			24	12				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)		9	15		15	9			
Number of Detectors	2		1	2	1	1			
Detector Template	Thru		Left	Thru	Left	Right			
Leading Detector (ft)	100		20	100	20	20			
Trailing Detector (ft)	0		0	0	0	0			
Detector 1 Position(ft)	0		0	0	0	0			
Detector 1 Size(ft)	6		20	6	20	20			
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel									
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0			
Detector 2 Position(ft)	94			94					
Detector 2 Size(ft)	6			6					
Detector 2 Type	Cl+Ex			Cl+Ex					
Detector 2 Channel									
Detector 2 Extend (s)	0.0			0.0					
Turn Type	NA		pm+pt	NA	Prot	pm+ov			
Protected Phases	6		5	2	3	5	1	7	8

OY AM No Build

Synchro 11 Report

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø1	Ø7	Ø8
Permitted Phases			2		3				
Detector Phase	6		5	2	3	5			
Switch Phase									
Minimum Initial (s)	19.0		10.0	19.0	7.0	10.0	10.0	10.0	7.0
Minimum Split (s)	24.1		15.2	24.1	27.4	15.2	15.2	17.5	12.3
Total Split (s)	31.7		16.0	30.3	42.3	16.0	17.4	30.0	12.3
Total Split (%)	35.2%		17.8%	33.7%	47.0%	17.8%	19%	33%	14%
Maximum Green (s)	26.6		10.8	25.2	34.9	10.8	12.2	22.5	7.0
Yellow Time (s)	3.6		3.6	3.6	5.0	3.6	3.6	4.5	3.6
All-Red Time (s)	1.5		1.6	1.5	2.4	1.6	1.6	3.0	1.7
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.1		5.2	5.1	7.4	5.2			
Lead/Lag	Lag		Lead	Lag		Lead	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes		Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Min		None	C-Min	None	None	None	None	None
Walk Time (s)	7.0			7.0	7.0				
Flash Dont Walk (s)	12.0			12.0	13.0				
Pedestrian Calls (#/hr)	0			0	0				
Act Effect Green (s)	35.5		45.2	34.8	26.3	44.2			
Actuated g/C Ratio	0.39		0.50	0.39	0.29	0.49			
v/c Ratio	0.52		0.46	0.30	0.13	0.14			
Control Delay	20.2		19.2	11.4	20.2	2.5			
Queue Delay	0.0		0.0	0.0	0.0	0.0			
Total Delay	20.2		19.2	11.4	20.2	2.5			
LOS	C		B	B	C	A			
Approach Delay	20.2			13.9	6.8				
Approach LOS	C			B	A				

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 17.4 (19%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 15.6

Intersection LOS: B

Intersection Capacity Utilization 47.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 30: McKinley Avenue & Trabue Road



Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	183	494	10	10	324	186	466	11	193	10	10	40
Future Volume (vph)	183	494	10	10	324	186	466	11	193	10	10	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		0	290		525	250		500	90		40
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.997				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.954		0.950		
Satd. Flow (prot)	1671	3333	0	1719	3438	1538	1681	1688	1583	1656	1743	1482
Flt Permitted	0.506			0.379			0.950	0.954		0.952		
Satd. Flow (perm)	890	3333	0	686	3438	1538	1681	1688	1583	1659	1743	1482
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				202			210			179
Link Speed (mph)		35			45			45			25	
Link Distance (ft)		305			829			768			535	
Travel Time (s)		5.9			12.6			11.6			14.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	8%	8%	5%	5%	5%	2%	2%	2%	9%	9%	9%
Adj. Flow (vph)	199	537	11	11	352	202	507	12	210	11	11	43
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	199	548	0	11	352	202	259	260	210	11	11	43
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	Split	NA	pm+ov	Perm	NA	Perm
Protected Phases	1	6		5	2	7	7	7	1		8	

OY AM No Build

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3

OY AM No Build

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Permitted Phases	6			2		2			7	8		8
Detector Phase	1	6		5	2	7	7	7	1	8	8	8
Switch Phase												
Minimum Initial (s)	10.0	19.0		10.0	19.0	10.0	10.0	10.0	10.0	7.0	7.0	7.0
Minimum Split (s)	15.2	24.1		15.2	24.1	17.5	17.5	17.5	15.2	12.3	12.3	12.3
Total Split (s)	17.4	31.7		16.0	30.3	30.0	30.0	30.0	17.4	12.3	12.3	12.3
Total Split (%)	19.3%	35.2%		17.8%	33.7%	33.3%	33.3%	33.3%	19.3%	13.7%	13.7%	13.7%
Maximum Green (s)	12.2	26.6		10.8	25.2	22.5	22.5	22.5	12.2	7.0	7.0	7.0
Yellow Time (s)	3.6	3.6		3.6	3.6	4.5	4.5	4.5	3.6	3.6	3.6	3.6
All-Red Time (s)	1.6	1.5		1.6	1.5	3.0	3.0	3.0	1.6	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.2	5.1		5.2	5.1	7.5	7.5	7.5	5.2	5.3	5.3	5.3
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min		None	C-Min	None	None	None	None	None	None	None
Walk Time (s)		7.0			7.0							
Flash Dont Walk (s)		12.0			12.0							
Pedestrian Calls (#/hr)		0			0							
Act Effect Green (s)	46.6	35.5		45.2	34.8	58.7	18.8	18.8	34.4	7.0	7.0	7.0
Actuated g/C Ratio	0.52	0.39		0.50	0.39	0.65	0.21	0.21	0.38	0.08	0.08	0.08
v/c Ratio	0.36	0.42		0.02	0.26	0.19	0.74	0.74	0.29	0.09	0.08	0.15
Control Delay	8.3	10.9		12.9	22.3	1.7	45.8	45.7	2.5	40.2	40.1	1.2
Queue Delay	0.0	0.1		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.3	11.0		12.9	22.3	1.7	45.8	45.7	2.5	40.2	40.1	1.2
LOS	A	B		B	C	A	D	D	A	D	D	A
Approach Delay		10.3			14.8			33.3			14.4	
Approach LOS		B			B			C			B	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 17.4 (19%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 19.6

Intersection LOS: B

Intersection Capacity Utilization 60.7%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 32: Marblevista Boulevard/Dublin Road & Trabue Road



Lanes, Volumes, Timings 32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	27.4
Total Split (s)	42.3
Total Split (%)	47%
Maximum Green (s)	34.9
Yellow Time (s)	5.0
All-Red Time (s)	2.4
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

HCM 6th TWSC

1: Trabue Road & Builders Place

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Vol, veh/h	41	618	391	31	11	11
Future Vol, veh/h	41	618	391	31	11	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	6	2	2	20	20
Mvmt Flow	45	672	425	34	12	12
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	459	0	-	0	868	230
Stage 1	-	-	-	-	442	-
Stage 2	-	-	-	-	426	-
Critical Hdwy	4.22	-	-	-	7.2	7.3
Critical Hdwy Stg 1	-	-	-	-	6.2	-
Critical Hdwy Stg 2	-	-	-	-	6.2	-
Follow-up Hdwy	2.26	-	-	-	3.7	3.5
Pot Cap-1 Maneuver	1071	-	-	-	259	720
Stage 1	-	-	-	-	565	-
Stage 2	-	-	-	-	577	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1071	-	-	-	242	720
Mov Cap-2 Maneuver	-	-	-	-	242	-
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	577	-
Approach	EB	WB		SE		
HCM Control Delay, s	0.8	0		15.6		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SELn1	
Capacity (veh/h)	1071	-	-	-	362	
HCM Lane V/C Ratio	0.042	-	-	-	0.066	
HCM Control Delay (s)	8.5	0.3	-	-	15.6	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	

HCM 6th TWSC 5: Site Access 1 & Trabue Road

Intersection						
Int Delay, s/veh	1.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑	
Traffic Vol, veh/h	622	7	21	396	22	66
Future Vol, veh/h	622	7	21	396	22	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	6	3	3	2	2
Mvmt Flow	676	8	23	430	24	72
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	684	0	941	342
Stage 1	-	-	-	-	680	-
Stage 2	-	-	-	-	261	-
Critical Hdwy	-	-	4.16	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.23	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	898	-	262	654
Stage 1	-	-	-	-	465	-
Stage 2	-	-	-	-	759	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	898	-	253	654
Mov Cap-2 Maneuver	-	-	-	-	253	-
Stage 1	-	-	-	-	465	-
Stage 2	-	-	-	-	733	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.6		14.7	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	468	-	-	898	-	
HCM Lane V/C Ratio	0.204	-	-	0.025	-	
HCM Control Delay (s)	14.7	-	-	9.1	0.1	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.8	-	-	0.1	-	

Timing Report, Sorted By Phase

27: N Hague Avenue/Mapleway Drive & Trabue Road

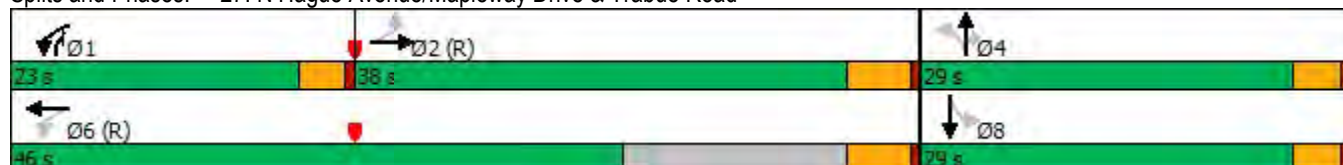


Phase Number	1	2	4	6	8
Movement	WBL	EBTL	NBTL	WBTL	SBTL
Lead/Lag	Lead	Lag			
Lead-Lag Optimize	Yes	Yes			
Recall Mode	None	C-Min	None	C-Min	None
Maximum Split (s)	23	38	29	46	29
Maximum Split (%)	25.6%	42.2%	32.2%	51.1%	32.2%
Minimum Split (s)	8.7	25	11.1	25	11.1
Yellow Time (s)	3	4.3	3.2	4.3	3.2
All-Red Time (s)	0.7	0.7	0.9	0.7	0.9
Minimum Initial (s)	5	20	7	20	7
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)					
Flash Dont Walk (s)					
Dual Entry	No	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	67	0	38	67	38
End Time (s)	0	38	67	38	67
Yield/Force Off (s)	86.3	33	62.9	33	62.9
Yield/Force Off 170(s)	86.3	33	62.9	33	62.9
Local Start Time (s)	67	0	38	67	38
Local Yield (s)	86.3	33	62.9	33	62.9
Local Yield 170(s)	86.3	33	62.9	33	62.9

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	45
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	

Splits and Phases: 27: N Hague Avenue/Mapleway Drive & Trabue Road



HCM 6th Signalized Intersection Summary 27: N Hague Avenue/Mapleway Drive & Trabue Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	401	92	124	283	12	111	19	212	40	25	25
Future Volume (veh/h)	15	401	92	124	283	12	111	19	212	40	25	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1826	1826	1826	1856	1856	1856	1841	1841	1841	1870	1870	1870
Adj Flow Rate, veh/h	16	436	100	135	308	13	121	21	230	43	27	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	3	3	3	4	4	4	2	2	2
Cap, veh/h	713	1719	391	641	2438	103	239	36	383	93	58	36
Arrive On Green	0.61	0.61	0.61	0.11	1.00	1.00	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1034	2807	639	1767	3447	145	858	186	1560	185	302	188
Grp Volume(v), veh/h	16	268	268	135	157	164	142	0	230	97	0	0
Grp Sat Flow(s),veh/h/ln	1034	1735	1711	1767	1763	1829	1044	0	1560	676	0	0
Q Serve(g_s), s	0.5	6.4	6.5	2.4	0.0	0.0	0.0	0.0	11.7	2.9	0.0	0.0
Cycle Q Clear(g_c), s	0.5	6.4	6.5	2.4	0.0	0.0	12.1	0.0	11.7	15.0	0.0	0.0
Prop In Lane	1.00		0.37	1.00		0.08	0.85		1.00	0.44		0.28
Lane Grp Cap(c), veh/h	713	1062	1048	641	1247	1294	274	0	383	187	0	0
V/C Ratio(X)	0.02	0.25	0.26	0.21	0.13	0.13	0.52	0.00	0.60	0.52	0.00	0.00
Avail Cap(c_a), veh/h	713	1062	1048	925	1247	1294	392	0	515	306	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.9	8.0	8.0	4.9	0.0	0.0	34.1	0.0	30.1	35.1	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.6	0.6	0.2	0.2	0.2	1.5	0.0	1.5	2.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.3	2.3	0.7	0.1	0.1	2.9	0.0	4.5	2.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.9	8.6	8.6	5.1	0.2	0.2	35.7	0.0	31.6	37.3	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	C	D	A	A
Approach Vol, veh/h	552				456				372			
Approach Delay, s/veh	8.5				1.6				33.1			
Approach LOS	A				A				C			
Approach LOS									D			
Timer - Assigned Phs	1	2	4			6		8				
Phs Duration (G+Y+Rc), s	8.5	60.1	21.4			68.6		21.4				
Change Period (Y+Rc), s	* 3.7	* 5	* 4.1			* 5		* 4.1				
Max Green Setting (Gmax), s	* 19	* 33	* 25			* 41		* 25				
Max Q Clear Time (g_c+l1), s	4.4	8.5	14.1			2.0		17.0				
Green Ext Time (p_c), s	0.3	3.3	1.1			1.9		0.3				
Intersection Summary												
HCM 6th Ctrl Delay			14.5									
HCM 6th LOS			B									
Notes												

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road

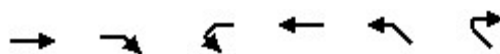
							Ø1	Ø7	Ø8
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR			
Lane Configurations	↑↑		↵	↑↑	↵	↵↵			
Traffic Volume (vph)	514	114	165	355	56	178			
Future Volume (vph)	514	114	165	355	56	178			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)		0	0		335	335			
Storage Lanes		0	1		1	1			
Taper Length (ft)			50		50				
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	0.88			
Frt	0.973					0.850			
Flt Protected			0.950		0.950				
Satd. Flow (prot)	3283	0	1671	3343	1641	2584			
Flt Permitted			0.292		0.950				
Satd. Flow (perm)	3283	0	514	3343	1641	2584			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	30					155			
Link Speed (mph)	35			35	50				
Link Distance (ft)	530			305	1567				
Travel Time (s)	10.3			5.9	21.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Heavy Vehicles (%)	7%	7%	8%	8%	10%	10%			
Adj. Flow (vph)	559	124	179	386	61	193			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	683	0	179	386	61	193			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	24			24	12				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)		9	15		15	9			
Number of Detectors	2		1	2	1	1			
Detector Template	Thru		Left	Thru	Left	Right			
Leading Detector (ft)	100		20	100	20	20			
Trailing Detector (ft)	0		0	0	0	0			
Detector 1 Position(ft)	0		0	0	0	0			
Detector 1 Size(ft)	6		20	6	20	20			
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel									
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0			
Detector 2 Position(ft)	94			94					
Detector 2 Size(ft)	6			6					
Detector 2 Type	Cl+Ex			Cl+Ex					
Detector 2 Channel									
Detector 2 Extend (s)	0.0			0.0					
Turn Type	NA		pm+pt	NA	Prot	pm+ov			
Protected Phases	6		5	2	3	5	1	7	8

OY AM Build

Synchro 11 Report

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø1	Ø7	Ø8
Permitted Phases			2		3				
Detector Phase	6		5	2	3	5			
Switch Phase									
Minimum Initial (s)	19.0		10.0	19.0	7.0	10.0	10.0	10.0	7.0
Minimum Split (s)	24.1		15.2	24.1	27.4	15.2	15.2	17.5	12.3
Total Split (s)	31.7		16.0	30.3	42.3	16.0	17.4	30.0	12.3
Total Split (%)	35.2%		17.8%	33.7%	47.0%	17.8%	19%	33%	14%
Maximum Green (s)	26.6		10.8	25.2	34.9	10.8	12.2	22.5	7.0
Yellow Time (s)	3.6		3.6	3.6	5.0	3.6	3.6	4.5	3.6
All-Red Time (s)	1.5		1.6	1.5	2.4	1.6	1.6	3.0	1.7
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.1		5.2	5.1	7.4	5.2			
Lead/Lag	Lag		Lead	Lag		Lead	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes		Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Min		None	C-Min	None	None	None	None	None
Walk Time (s)	7.0			7.0	7.0				
Flash Dont Walk (s)	12.0			12.0	13.0				
Pedestrian Calls (#/hr)	0			0	0				
Act Effect Green (s)	35.5		45.2	34.8	26.3	44.2			
Actuated g/C Ratio	0.39		0.50	0.39	0.29	0.49			
v/c Ratio	0.52		0.46	0.30	0.13	0.14			
Control Delay	20.6		19.2	11.4	20.2	2.5			
Queue Delay	0.0		0.0	0.0	0.0	0.0			
Total Delay	20.6		19.2	11.4	20.2	2.5			
LOS	C		B	B	C	A			
Approach Delay	20.6			13.9	6.8				
Approach LOS	C			B	A				

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 17.4 (19%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 15.7

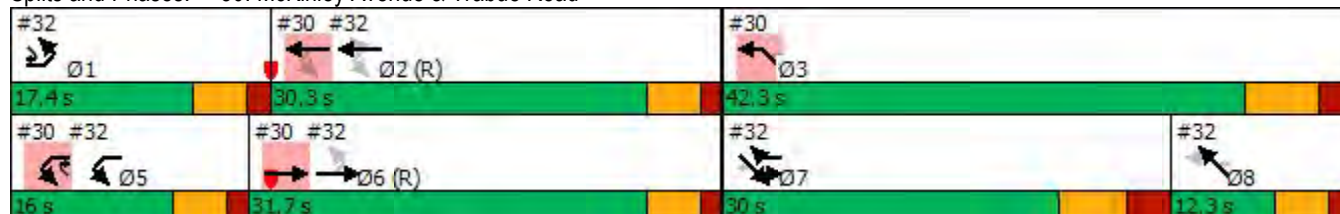
Intersection LOS: B

Intersection Capacity Utilization 47.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 30: McKinley Avenue & Trabue Road



Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	183	494	10	10	324	186	466	11	193	10	10	40
Future Volume (vph)	183	494	10	10	324	186	466	11	193	10	10	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		0	290		525	250		500	90		40
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.997				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.954		0.950		
Satd. Flow (prot)	1671	3333	0	1719	3438	1538	1681	1688	1583	1656	1743	1482
Flt Permitted	0.506			0.379			0.950	0.954		0.952		
Satd. Flow (perm)	890	3333	0	686	3438	1538	1681	1688	1583	1659	1743	1482
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				202			210			179
Link Speed (mph)		35			45			45			25	
Link Distance (ft)		305			829			768			535	
Travel Time (s)		5.9			12.6			11.6			14.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	8%	8%	5%	5%	5%	2%	2%	2%	9%	9%	9%
Adj. Flow (vph)	199	537	11	11	352	202	507	12	210	11	11	43
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	199	548	0	11	352	202	259	260	210	11	11	43
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	Split	NA	pm+ov	Perm	NA	Perm
Protected Phases	1	6		5	2	7	7	7	1		8	

OY AM Build

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3

OY AM Build

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Permitted Phases	6			2		2			7	8		8
Detector Phase	1	6		5	2	7	7	7	1	8	8	8
Switch Phase												
Minimum Initial (s)	10.0	19.0		10.0	19.0	10.0	10.0	10.0	10.0	7.0	7.0	7.0
Minimum Split (s)	15.2	24.1		15.2	24.1	17.5	17.5	17.5	15.2	12.3	12.3	12.3
Total Split (s)	17.4	31.7		16.0	30.3	30.0	30.0	30.0	17.4	12.3	12.3	12.3
Total Split (%)	19.3%	35.2%		17.8%	33.7%	33.3%	33.3%	33.3%	19.3%	13.7%	13.7%	13.7%
Maximum Green (s)	12.2	26.6		10.8	25.2	22.5	22.5	22.5	12.2	7.0	7.0	7.0
Yellow Time (s)	3.6	3.6		3.6	3.6	4.5	4.5	4.5	3.6	3.6	3.6	3.6
All-Red Time (s)	1.6	1.5		1.6	1.5	3.0	3.0	3.0	1.6	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.2	5.1		5.2	5.1	7.5	7.5	7.5	5.2	5.3	5.3	5.3
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min		None	C-Min	None	None	None	None	None	None	None
Walk Time (s)		7.0			7.0							
Flash Dont Walk (s)		12.0			12.0							
Pedestrian Calls (#/hr)		0			0							
Act Effect Green (s)	46.6	35.5		45.2	34.8	58.7	18.8	18.8	34.4	7.0	7.0	7.0
Actuated g/C Ratio	0.52	0.39		0.50	0.39	0.65	0.21	0.21	0.38	0.08	0.08	0.08
v/c Ratio	0.36	0.42		0.02	0.26	0.19	0.74	0.74	0.29	0.09	0.08	0.15
Control Delay	8.3	10.9		12.9	22.3	1.7	45.8	45.7	2.5	40.2	40.1	1.2
Queue Delay	0.0	0.1		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.3	11.0		12.9	22.3	1.7	45.8	45.7	2.5	40.2	40.1	1.2
LOS	A	B		B	C	A	D	D	A	D	D	A
Approach Delay		10.2			14.8			33.3			14.4	
Approach LOS		B			B			C			B	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 17.4 (19%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 19.6

Intersection LOS: B

Intersection Capacity Utilization 60.7%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 32: Marblevista Boulevard/Dublin Road & Trabue Road



Lanes, Volumes, Timings 32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	27.4
Total Split (s)	42.3
Total Split (%)	47%
Maximum Green (s)	34.9
Yellow Time (s)	5.0
All-Red Time (s)	2.4
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

HCM 6th TWSC

1: Trabue Road & Builders Place

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Vol, veh/h	10	523	806	10	32	21
Future Vol, veh/h	10	523	806	10	32	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	4	4
Mvmt Flow	11	568	876	11	35	23
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	887	0	-	0	1188	444
Stage 1	-	-	-	-	882	-
Stage 2	-	-	-	-	306	-
Critical Hdwy	4.14	-	-	-	6.88	6.98
Critical Hdwy Stg 1	-	-	-	-	5.88	-
Critical Hdwy Stg 2	-	-	-	-	5.88	-
Follow-up Hdwy	2.22	-	-	-	3.54	3.34
Pot Cap-1 Maneuver	759	-	-	-	178	556
Stage 1	-	-	-	-	360	-
Stage 2	-	-	-	-	714	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	759	-	-	-	174	556
Mov Cap-2 Maneuver	-	-	-	-	174	-
Stage 1	-	-	-	-	352	-
Stage 2	-	-	-	-	714	-
Approach	EB	WB		SE		
HCM Control Delay, s	0.3	0		24.8		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SELn1	
Capacity (veh/h)	759	-	-	-	239	
HCM Lane V/C Ratio	0.014	-	-	-	0.241	
HCM Control Delay (s)	9.8	0.1	-	-	24.8	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0	-	-	-	0.9	

Timing Report, Sorted By Phase

27: N Hague Avenue/Mapleway Drive & Trabue Road

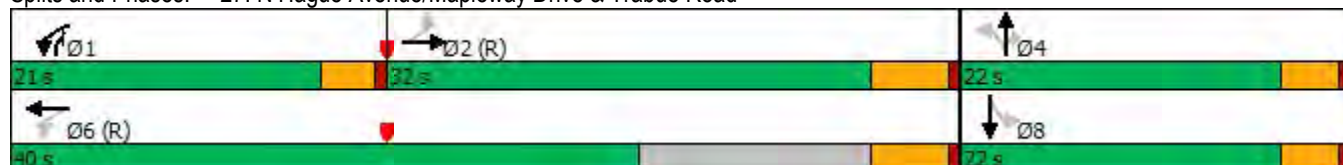


Phase Number	1	2	4	6	8
Movement	WBL	EBTL	NBTL	WBTL	SBTL
Lead/Lag	Lead	Lag			
Lead-Lag Optimize	Yes	Yes			
Recall Mode	None	C-Min	None	C-Min	None
Maximum Split (s)	21	32	22	40	22
Maximum Split (%)	28.0%	42.7%	29.3%	53.3%	29.3%
Minimum Split (s)	8.7	25	11.1	25	11.1
Yellow Time (s)	3	4.3	3.2	4.3	3.2
All-Red Time (s)	0.7	0.7	0.9	0.7	0.9
Minimum Initial (s)	5	20	7	20	7
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)					
Flash Dont Walk (s)					
Dual Entry	No	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	54	0	32	54	32
End Time (s)	0	32	54	32	54
Yield/Force Off (s)	71.3	27	49.9	27	49.9
Yield/Force Off 170(s)	71.3	27	49.9	27	49.9
Local Start Time (s)	54	0	32	54	32
Local Yield (s)	71.3	27	49.9	27	49.9
Local Yield 170(s)	71.3	27	49.9	27	49.9

Intersection Summary

Cycle Length	75
Control Type	Actuated-Coordinated
Natural Cycle	45
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	

Splits and Phases: 27: N Hague Avenue/Mapleway Drive & Trabue Road



HCM 6th Signalized Intersection Summary 27: N Hague Avenue/Mapleway Drive & Trabue Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	390	164	213	612	18	101	40	141	28	20	20
Future Volume (veh/h)	25	390	164	213	612	18	101	40	141	28	20	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	27	424	178	232	665	20	110	43	153	30	22	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	543	1447	601	653	2542	76	219	63	377	89	62	35
Arrive On Green	0.59	0.59	0.59	0.16	1.00	1.00	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	757	2447	1017	1781	3522	106	867	400	1585	134	395	224
Grp Volume(v), veh/h	27	307	295	232	335	350	153	0	153	74	0	0
Grp Sat Flow(s),veh/h/ln	757	1777	1687	1781	1777	1851	1267	0	1585	753	0	0
Q Serve(g_s), s	1.1	6.4	6.5	3.6	0.0	0.0	0.0	0.0	6.1	0.3	0.0	0.0
Cycle Q Clear(g_c), s	1.1	6.4	6.5	3.6	0.0	0.0	9.1	0.0	6.1	9.4	0.0	0.0
Prop In Lane	1.00		0.60	1.00		0.06	0.72		1.00	0.41		0.30
Lane Grp Cap(c), veh/h	543	1051	998	653	1282	1336	282	0	377	186	0	0
V/C Ratio(X)	0.05	0.29	0.30	0.36	0.26	0.26	0.54	0.00	0.41	0.40	0.00	0.00
Avail Cap(c_a), veh/h	543	1051	998	919	1282	1336	402	0	507	304	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.5	7.6	7.6	4.2	0.0	0.0	30.4	0.0	24.1	28.1	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.7	0.8	0.3	0.5	0.5	1.6	0.0	0.7	1.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.2	2.1	0.8	0.2	0.2	2.6	0.0	2.3	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.7	8.3	8.3	4.5	0.5	0.5	32.0	0.0	24.8	29.5	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	C	C	A	A
Approach Vol, veh/h	629			917			306			74		
Approach Delay, s/veh	8.2			1.5			28.4			29.5		
Approach LOS	A			A			C			C		
Timer - Assigned Phs	1	2	4			6	8					
Phs Duration (G+Y+Rc), s	9.8	49.3	15.9			59.1	15.9					
Change Period (Y+Rc), s	* 3.7	* 5	* 4.1			* 5	* 4.1					
Max Green Setting (Gmax), s	* 17	* 27	* 18			* 35	* 18					
Max Q Clear Time (g_c+I1), s	5.6	8.5	11.1			2.0	11.4					
Green Ext Time (p_c), s	0.5	3.7	0.7			4.5	0.1					
Intersection Summary												
HCM 6th Ctrl Delay				9.1								
HCM 6th LOS				A								
Notes												

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road

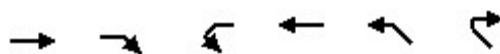
							Ø1	Ø7	Ø8
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR			
Lane Configurations	↑↑		↵	↑↑	↵	↵↵			
Traffic Volume (vph)	454	100	155	645	171	251			
Future Volume (vph)	454	100	155	645	171	251			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)		0	0		335	335			
Storage Lanes		0	1		1	1			
Taper Length (ft)			50		50				
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	0.88			
Frt	0.973					0.850			
Flt Protected			0.950		0.950				
Satd. Flow (prot)	3444	0	1770	3539	1770	2787			
Flt Permitted			0.347		0.950				
Satd. Flow (perm)	3444	0	646	3539	1770	2787			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	37					239			
Link Speed (mph)	35			35	50				
Link Distance (ft)	922			305	1567				
Travel Time (s)	18.0			5.9	21.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Adj. Flow (vph)	493	109	168	701	186	273			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	602	0	168	701	186	273			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	24			24	12				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)		9	15		15	9			
Number of Detectors	2		1	2	1	1			
Detector Template	Thru		Left	Thru	Left	Right			
Leading Detector (ft)	100		20	100	20	20			
Trailing Detector (ft)	0		0	0	0	0			
Detector 1 Position(ft)	0		0	0	0	0			
Detector 1 Size(ft)	6		20	6	20	20			
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel									
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0			
Detector 2 Position(ft)	94			94					
Detector 2 Size(ft)	6			6					
Detector 2 Type	Cl+Ex			Cl+Ex					
Detector 2 Channel									
Detector 2 Extend (s)	0.0			0.0					
Turn Type	NA		pm+pt	NA	Prot	pm+ov			
Protected Phases	6		5	2	3	5	1	7	8
Permitted Phases			2			3			

OY PM No Build

Synchro 11 Report

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø1	Ø7	Ø8
Detector Phase	6		5	2	3	5			
Switch Phase									
Minimum Initial (s)	19.0		10.0	19.0	7.0	10.0	10.0	10.0	7.0
Minimum Split (s)	24.1		15.2	24.1	27.4	15.2	15.2	17.5	12.3
Total Split (s)	28.5		15.2	27.7	31.3	15.2	16.0	19.0	12.3
Total Split (%)	38.0%		20.3%	36.9%	41.7%	20.3%	21%	25%	16%
Maximum Green (s)	23.4		10.0	22.6	23.9	10.0	10.8	11.5	7.0
Yellow Time (s)	3.6		3.6	3.6	5.0	3.6	3.6	4.5	3.6
All-Red Time (s)	1.5		1.6	1.5	2.4	1.6	1.6	3.0	1.7
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.1		5.2	5.1	7.4	5.2			
Lead/Lag	Lag		Lead	Lag		Lead	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes		Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Min		None	C-Min	None	None	None	None	None
Walk Time (s)	7.0			7.0	7.0				
Flash Dont Walk (s)	12.0			12.0	13.0				
Pedestrian Calls (#/hr)	0			0	0				
Act Effect Green (s)	28.7		38.2	28.3	18.6	36.0			
Actuated g/C Ratio	0.38		0.51	0.38	0.25	0.48			
v/c Ratio	0.45		0.35	0.53	0.42	0.19			
Control Delay	16.5		10.8	9.1	25.3	2.1			
Queue Delay	0.0		0.0	0.0	0.0	0.0			
Total Delay	16.5		10.8	9.1	25.3	2.1			
LOS	B		B	A	C	A			
Approach Delay	16.5			9.4	11.5				
Approach LOS	B			A	B				

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 16 (21%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 12.1

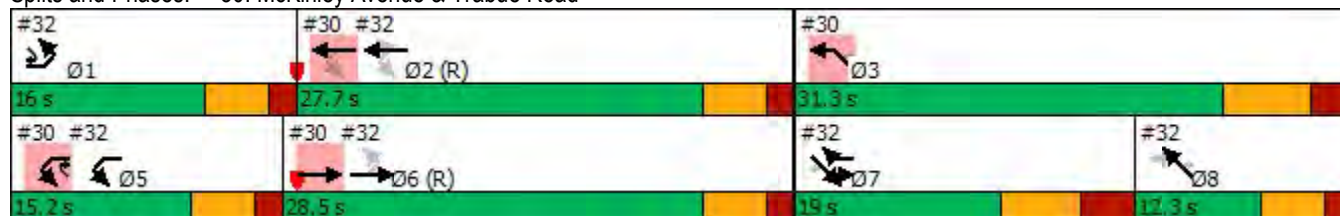
Intersection LOS: B

Intersection Capacity Utilization 48.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 30: McKinley Avenue & Trabue Road



Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	241	428	31	41	621	580	254	21	177	10	10	30
Future Volume (vph)	241	428	31	41	621	580	254	21	177	10	10	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		0	290		525	250		500	90		40
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.990				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.959		0.950		
Satd. Flow (prot)	1770	3504	0	1770	3539	1583	1681	1697	1583	1770	1863	1583
Flt Permitted	0.285			0.421			0.950	0.959		0.952		
Satd. Flow (perm)	531	3504	0	784	3539	1583	1681	1697	1583	1773	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				482			192			215
Link Speed (mph)		35			45			45			25	
Link Distance (ft)		305			829			768			535	
Travel Time (s)		5.9			12.6			11.6			14.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	262	465	34	45	675	630	276	23	192	11	11	33
Shared Lane Traffic (%)							46%					
Lane Group Flow (vph)	262	499	0	45	675	630	149	150	192	11	11	33
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	Split	NA	pm+ov	Perm	NA	Perm
Protected Phases	1	6		5	2	7	7	7	1		8	
Permitted Phases	6			2		2			7	8		8

OY PM No Build

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	

OY PM No Build

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Detector Phase	1	6		5	2	7	7	7	1	8	8	8
Switch Phase												
Minimum Initial (s)	10.0	19.0		10.0	19.0	10.0	10.0	10.0	10.0	7.0	7.0	7.0
Minimum Split (s)	15.2	24.1		15.2	24.1	17.5	17.5	17.5	15.2	12.3	12.3	12.3
Total Split (s)	16.0	28.5		15.2	27.7	19.0	19.0	19.0	16.0	12.3	12.3	12.3
Total Split (%)	21.3%	38.0%		20.3%	36.9%	25.3%	25.3%	25.3%	21.3%	16.4%	16.4%	16.4%
Maximum Green (s)	10.8	23.4		10.0	22.6	11.5	11.5	11.5	10.8	7.0	7.0	7.0
Yellow Time (s)	3.6	3.6		3.6	3.6	4.5	4.5	4.5	3.6	3.6	3.6	3.6
All-Red Time (s)	1.6	1.5		1.6	1.5	3.0	3.0	3.0	1.6	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.2	5.1		5.2	5.1	7.5	7.5	7.5	5.2	5.3	5.3	5.3
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min		None	C-Min	None	None	None	None	None	None	None
Walk Time (s)		7.0			7.0							
Flash Dont Walk (s)		12.0			12.0							
Pedestrian Calls (#/hr)		0			0							
Act Effect Green (s)	39.1	28.7		38.2	28.3	44.4	11.1	11.1	25.9	7.0	7.0	7.0
Actuated g/C Ratio	0.52	0.38		0.51	0.38	0.59	0.15	0.15	0.35	0.09	0.09	0.09
v/c Ratio	0.58	0.37		0.08	0.51	0.56	0.60	0.60	0.29	0.07	0.06	0.10
Control Delay	21.2	11.5		9.4	21.3	4.8	40.8	40.6	2.9	32.1	32.0	0.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.2	11.5		9.4	21.3	4.8	40.8	40.6	2.9	32.1	32.0	0.6
LOS	C	B		A	C	A	D	D	A	C	C	A
Approach Delay		14.9			13.2			25.9			13.2	
Approach LOS		B			B			C			B	

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 16 (21%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 16.0

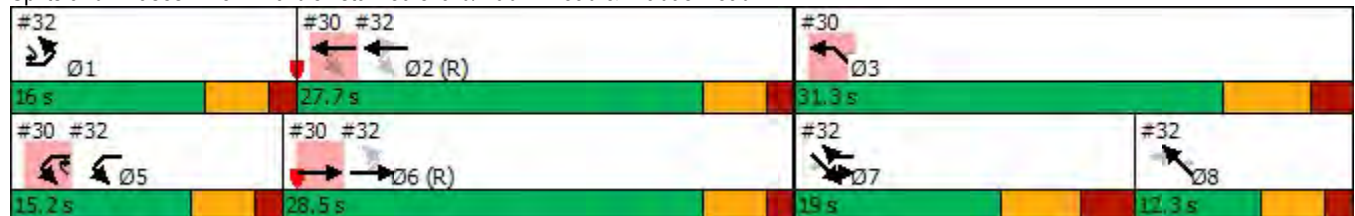
Intersection LOS: B

Intersection Capacity Utilization 70.1%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 32: Marblevista Boulevard/Dublin Road & Trabue Road



Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	27.4
Total Split (s)	31.3
Total Split (%)	42%
Maximum Green (s)	23.9
Yellow Time (s)	5.0
All-Red Time (s)	2.4
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

HCM 6th TWSC

1: Trabue Road & Builders Place

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Vol, veh/h	10	523	806	10	32	21
Future Vol, veh/h	10	523	806	10	32	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	4	4
Mvmt Flow	11	568	876	11	35	23
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	887	0	-	0	1188	444
Stage 1	-	-	-	-	882	-
Stage 2	-	-	-	-	306	-
Critical Hdwy	4.14	-	-	-	6.88	6.98
Critical Hdwy Stg 1	-	-	-	-	5.88	-
Critical Hdwy Stg 2	-	-	-	-	5.88	-
Follow-up Hdwy	2.22	-	-	-	3.54	3.34
Pot Cap-1 Maneuver	759	-	-	-	178	556
Stage 1	-	-	-	-	360	-
Stage 2	-	-	-	-	714	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	759	-	-	-	174	556
Mov Cap-2 Maneuver	-	-	-	-	174	-
Stage 1	-	-	-	-	352	-
Stage 2	-	-	-	-	714	-
Approach	EB	WB		SE		
HCM Control Delay, s	0.3	0		24.8		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SELn1	
Capacity (veh/h)	759	-	-	-	239	
HCM Lane V/C Ratio	0.014	-	-	-	0.241	
HCM Control Delay (s)	9.8	0.1	-	-	24.8	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0	-	-	-	0.9	

HCM 6th TWSC 5: Site Access 1 & Trabue Road

Intersection

Int Delay, s/veh 1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑	
Traffic Vol, veh/h	527	28	66	750	17	39
Future Vol, veh/h	527	28	66	750	17	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	573	30	72	815	18	42

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	603
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.22
Pot Cap-1 Maneuver	-	-	971
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	971
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	17.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	356	-	-	971	-
HCM Lane V/C Ratio	0.171	-	-	0.074	-
HCM Control Delay (s)	17.2	-	-	9	0.5
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0.2	-

Timing Report, Sorted By Phase

27: N Hague Avenue/Mapleway Drive & Trabue Road

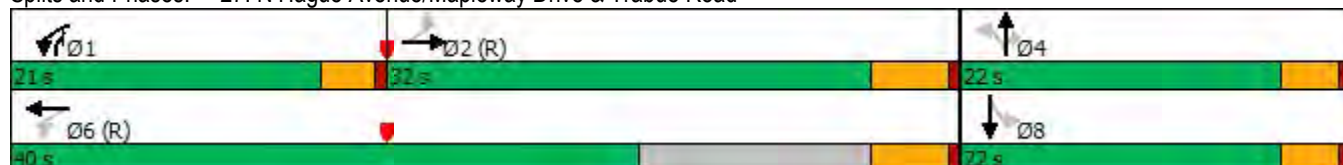


Phase Number	1	2	4	6	8
Movement	WBL	EBTL	NBTL	WBTL	SBTL
Lead/Lag	Lead	Lag			
Lead-Lag Optimize	Yes	Yes			
Recall Mode	None	C-Min	None	C-Min	None
Maximum Split (s)	21	32	22	40	22
Maximum Split (%)	28.0%	42.7%	29.3%	53.3%	29.3%
Minimum Split (s)	8.7	25	11.1	25	11.1
Yellow Time (s)	3	4.3	3.2	4.3	3.2
All-Red Time (s)	0.7	0.7	0.9	0.7	0.9
Minimum Initial (s)	5	20	7	20	7
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)					
Flash Dont Walk (s)					
Dual Entry	No	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	21	53	0	53
End Time (s)	21	53	0	53	0
Yield/Force Off (s)	17.3	48	70.9	48	70.9
Yield/Force Off 170(s)	17.3	48	70.9	48	70.9
Local Start Time (s)	54	0	32	54	32
Local Yield (s)	71.3	27	49.9	27	49.9
Local Yield 170(s)	71.3	27	49.9	27	49.9

Intersection Summary

Cycle Length	75
Control Type	Actuated-Coordinated
Natural Cycle	45
Offset: 21 (28%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	

Splits and Phases: 27: N Hague Avenue/Mapleway Drive & Trabue Road



HCM 6th Signalized Intersection Summary 27: N Hague Avenue/Mapleway Drive & Trabue Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	390	164	213	612	18	101	40	141	28	20	20
Future Volume (veh/h)	25	390	164	213	612	18	101	40	141	28	20	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	27	424	178	232	665	20	110	43	153	30	22	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	526	1459	606	649	2542	76	219	63	369	89	62	35
Arrive On Green	0.60	0.60	0.60	0.03	0.24	0.24	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	757	2447	1017	1781	3522	106	867	400	1585	134	395	224
Grp Volume(v), veh/h	27	307	295	232	335	350	153	0	153	74	0	0
Grp Sat Flow(s),veh/h/ln	757	1777	1687	1781	1777	1851	1267	0	1585	753	0	0
Q Serve(g_s), s	1.2	6.3	6.4	3.2	11.5	11.5	0.0	0.0	6.1	0.3	0.0	0.0
Cycle Q Clear(g_c), s	3.3	6.3	6.4	3.2	11.5	11.5	9.1	0.0	6.1	9.4	0.0	0.0
Prop In Lane	1.00		0.60	1.00		0.06	0.72		1.00	0.41		0.30
Lane Grp Cap(c), veh/h	526	1060	1006	649	1282	1336	282	0	369	186	0	0
V/C Ratio(X)	0.05	0.29	0.29	0.36	0.26	0.26	0.54	0.00	0.41	0.40	0.00	0.00
Avail Cap(c_a), veh/h	526	1060	1006	924	1282	1336	402	0	499	304	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.3	7.4	7.4	4.8	12.3	12.3	30.4	0.0	24.4	28.1	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.7	0.7	0.3	0.5	0.5	1.6	0.0	0.7	1.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.2	2.1	1.0	5.3	5.5	2.6	0.0	2.3	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.4	8.1	8.2	5.1	12.8	12.8	32.0	0.0	25.2	29.5	0.0	0.0
LnGrp LOS	A	A	A	A	B	B	C	A	C	C	A	A
Approach Vol, veh/h	629			917			306			74		
Approach Delay, s/veh	8.1			10.9			28.6			29.5		
Approach LOS	A			B			C			C		
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	9.4	49.7		15.9		59.1		15.9				
Change Period (Y+Rc), s	* 3.7	* 5		* 4.1		* 5		* 4.1				
Max Green Setting (Gmax), s	* 17	* 27		* 18		* 35		* 18				
Max Q Clear Time (g_c+I1), s	5.2	8.4		11.1		13.5		11.4				
Green Ext Time (p_c), s	0.5	3.7		0.7		4.1		0.1				
Intersection Summary												
HCM 6th Ctrl Delay	13.5											
HCM 6th LOS	B											
Notes												

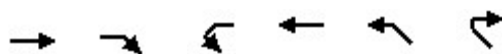
Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road

							Ø1	Ø7	Ø8
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR			
Lane Configurations	↑↑		↵	↑↑	↵	↵↵			
Traffic Volume (vph)	454	100	155	645	171	251			
Future Volume (vph)	454	100	155	645	171	251			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)		0	0		335	335			
Storage Lanes		0	1		1	1			
Taper Length (ft)			50		50				
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	0.88			
Frt	0.973					0.850			
Flt Protected			0.950		0.950				
Satd. Flow (prot)	3444	0	1770	3539	1770	2787			
Flt Permitted			0.347		0.950				
Satd. Flow (perm)	3444	0	646	3539	1770	2787			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	37					239			
Link Speed (mph)	35			35	50				
Link Distance (ft)	530			305	1567				
Travel Time (s)	10.3			5.9	21.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Adj. Flow (vph)	493	109	168	701	186	273			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	602	0	168	701	186	273			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	24			24	12				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)		9	15		15	9			
Number of Detectors	2		1	2	1	1			
Detector Template	Thru		Left	Thru	Left	Right			
Leading Detector (ft)	100		20	100	20	20			
Trailing Detector (ft)	0		0	0	0	0			
Detector 1 Position(ft)	0		0	0	0	0			
Detector 1 Size(ft)	6		20	6	20	20			
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel									
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0			
Detector 2 Position(ft)	94			94					
Detector 2 Size(ft)	6			6					
Detector 2 Type	Cl+Ex			Cl+Ex					
Detector 2 Channel									
Detector 2 Extend (s)	0.0			0.0					
Turn Type	NA		pm+pt	NA	Prot	pm+ov			
Protected Phases	6		5	2	3	5	1	7	8
Permitted Phases			2			3			

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø1	Ø7	Ø8
Detector Phase	6		5	2	3	5			
Switch Phase									
Minimum Initial (s)	19.0		10.0	19.0	7.0	10.0	10.0	10.0	7.0
Minimum Split (s)	24.1		15.2	24.1	27.4	15.2	15.2	17.5	12.3
Total Split (s)	28.5		15.2	27.7	31.3	15.2	16.0	19.0	12.3
Total Split (%)	38.0%		20.3%	36.9%	41.7%	20.3%	21%	25%	16%
Maximum Green (s)	23.4		10.0	22.6	23.9	10.0	10.8	11.5	7.0
Yellow Time (s)	3.6		3.6	3.6	5.0	3.6	3.6	4.5	3.6
All-Red Time (s)	1.5		1.6	1.5	2.4	1.6	1.6	3.0	1.7
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.1		5.2	5.1	7.4	5.2			
Lead/Lag	Lag		Lead	Lag		Lead	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes		Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Min		None	C-Min	None	None	None	None	None
Walk Time (s)	7.0			7.0	7.0				
Flash Dont Walk (s)	12.0			12.0	13.0				
Pedestrian Calls (#/hr)	0			0	0				
Act Effect Green (s)	28.7		38.2	28.3	18.6	36.0			
Actuated g/C Ratio	0.38		0.51	0.38	0.25	0.48			
v/c Ratio	0.45		0.35	0.53	0.42	0.19			
Control Delay	26.4		10.8	9.1	25.3	2.1			
Queue Delay	0.0		0.0	0.0	0.0	0.0			
Total Delay	26.4		10.8	9.1	25.3	2.1			
LOS	C		B	A	C	A			
Approach Delay	26.4			9.4	11.5				
Approach LOS	C			A	B				

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 16 (21%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 15.2

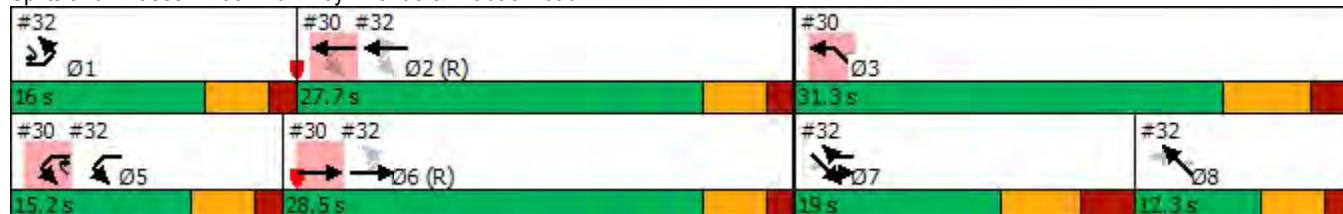
Intersection LOS: B

Intersection Capacity Utilization 48.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 30: McKinley Avenue & Trabue Road



Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	241	428	31	41	621	580	254	21	177	10	10	30
Future Volume (vph)	241	428	31	41	621	580	254	21	177	10	10	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		0	290		525	250		500	90		40
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.990				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.959		0.950		
Satd. Flow (prot)	1770	3504	0	1770	3539	1583	1681	1697	1583	1770	1863	1583
Flt Permitted	0.285			0.421			0.950	0.959		0.952		
Satd. Flow (perm)	531	3504	0	784	3539	1583	1681	1697	1583	1773	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				482			192			215
Link Speed (mph)		35			45			45			25	
Link Distance (ft)		305			829			768			535	
Travel Time (s)		5.9			12.6			11.6			14.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	262	465	34	45	675	630	276	23	192	11	11	33
Shared Lane Traffic (%)							46%					
Lane Group Flow (vph)	262	499	0	45	675	630	149	150	192	11	11	33
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	Split	NA	pm+ov	Perm	NA	Perm
Protected Phases	1	6		5	2	7	7	7	1		8	
Permitted Phases	6			2		2			7	8		8

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Detector Phase	1	6		5	2	7	7	7	1	8	8	8
Switch Phase												
Minimum Initial (s)	10.0	19.0		10.0	19.0	10.0	10.0	10.0	10.0	7.0	7.0	7.0
Minimum Split (s)	15.2	24.1		15.2	24.1	17.5	17.5	17.5	15.2	12.3	12.3	12.3
Total Split (s)	16.0	28.5		15.2	27.7	19.0	19.0	19.0	16.0	12.3	12.3	12.3
Total Split (%)	21.3%	38.0%		20.3%	36.9%	25.3%	25.3%	25.3%	21.3%	16.4%	16.4%	16.4%
Maximum Green (s)	10.8	23.4		10.0	22.6	11.5	11.5	11.5	10.8	7.0	7.0	7.0
Yellow Time (s)	3.6	3.6		3.6	3.6	4.5	4.5	4.5	3.6	3.6	3.6	3.6
All-Red Time (s)	1.6	1.5		1.6	1.5	3.0	3.0	3.0	1.6	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.2	5.1		5.2	5.1	7.5	7.5	7.5	5.2	5.3	5.3	5.3
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min		None	C-Min	None	None	None	None	None	None	None
Walk Time (s)		7.0			7.0							
Flash Dont Walk (s)		12.0			12.0							
Pedestrian Calls (#/hr)		0			0							
Act Effect Green (s)	39.1	28.7		38.2	28.3	44.4	11.1	11.1	25.9	7.0	7.0	7.0
Actuated g/C Ratio	0.52	0.38		0.51	0.38	0.59	0.15	0.15	0.35	0.09	0.09	0.09
v/c Ratio	0.58	0.37		0.08	0.51	0.56	0.60	0.60	0.29	0.07	0.06	0.10
Control Delay	21.9	9.1		9.4	21.3	4.8	40.8	40.6	2.9	32.1	32.0	0.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.9	9.1		9.4	21.3	4.8	40.8	40.6	2.9	32.1	32.0	0.6
LOS	C	A		A	C	A	D	D	A	C	C	A
Approach Delay		13.5			13.2			25.9			13.2	
Approach LOS		B			B			C			B	

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 16 (21%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 15.6

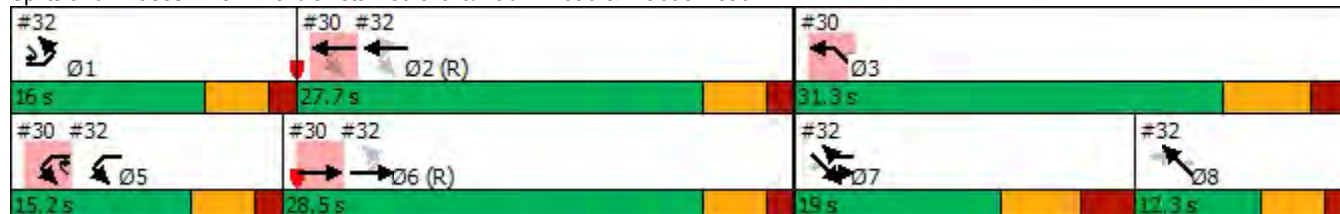
Intersection LOS: B

Intersection Capacity Utilization 70.1%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 32: Marblevista Boulevard/Dublin Road & Trabue Road



Lanes, Volumes, Timings 32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	27.4
Total Split (s)	31.3
Total Split (%)	42%
Maximum Green (s)	23.9
Yellow Time (s)	5.0
All-Red Time (s)	2.4
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

HCM 6th TWSC

1: Trabue Road & Builders Place

Intersection

Int Delay, s/veh 1

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Vol, veh/h	40	719	469	40	20	20
Future Vol, veh/h	40	719	469	40	20	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	6	3	3	20	20
Mvmt Flow	43	782	510	43	22	22

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	553	0	0 1009 277
Stage 1	-	-	- 532 -
Stage 2	-	-	- 477 -
Critical Hdwy	4.22	-	- 7.2 7.3
Critical Hdwy Stg 1	-	-	- 6.2 -
Critical Hdwy Stg 2	-	-	- 6.2 -
Follow-up Hdwy	2.26	-	- 3.7 3.5
Pot Cap-1 Maneuver	986	-	- 208 669
Stage 1	-	-	- 505 -
Stage 2	-	-	- 541 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	986	-	- 192 669
Mov Cap-2 Maneuver	-	-	- 192 -
Stage 1	-	-	- 466 -
Stage 2	-	-	- 541 -

Approach	EB	WB	SE
HCM Control Delay, s	0.7	0	19.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SELn1
Capacity (veh/h)	986	-	-	-	298
HCM Lane V/C Ratio	0.044	-	-	-	0.146
HCM Control Delay (s)	8.8	0.3	-	-	19.1
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

Timing Report, Sorted By Phase

27: N Hague Avenue/Mapleway Drive & Trabue Road



Phase Number	1	2	4	6	8
Movement	WBL	EBTL	NBTL	WBTL	SBTL
Lead/Lag	Lead	Lag			
Lead-Lag Optimize	Yes	Yes			
Recall Mode	None	C-Min	None	C-Min	None
Maximum Split (s)	20	40	30	45	30
Maximum Split (%)	22.2%	44.4%	33.3%	50.0%	33.3%
Minimum Split (s)	8.7	25	11.1	25	11.1
Yellow Time (s)	3	4.3	3.2	4.3	3.2
All-Red Time (s)	0.7	0.7	0.9	0.7	0.9
Minimum Initial (s)	5	20	7	20	7
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)					
Flash Dont Walk (s)					
Dual Entry	No	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	70	0	40	70	40
End Time (s)	0	40	70	40	70
Yield/Force Off (s)	86.3	35	65.9	35	65.9
Yield/Force Off 170(s)	86.3	35	65.9	35	65.9
Local Start Time (s)	70	0	40	70	40
Local Yield (s)	86.3	35	65.9	35	65.9
Local Yield 170(s)	86.3	35	65.9	35	65.9

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	45
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	

Splits and Phases: 27: N Hague Avenue/Mapleway Drive & Trabue Road



HCM 6th Signalized Intersection Summary 27: N Hague Avenue/Mapleway Drive & Trabue Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	470	110	140	344	12	120	19	220	39	24	24
Future Volume (veh/h)	15	470	110	140	344	12	120	19	220	39	24	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1856	1856	1856	1841	1841	1841	1870	1870	1870
Adj Flow Rate, veh/h	16	511	120	152	374	13	130	21	239	42	26	26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	3	3	3	4	4	4	2	2	2
Cap, veh/h	666	1681	393	581	2426	84	247	34	398	93	57	35
Arrive On Green	0.60	0.60	0.60	0.05	0.70	0.70	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	973	2791	652	1767	3476	121	858	171	1560	172	282	174
Grp Volume(v), veh/h	16	317	314	152	189	198	151	0	239	94	0	0
Grp Sat Flow(s),veh/h/ln	973	1735	1709	1767	1763	1834	1029	0	1560	628	0	0
Q Serve(g_s), s	0.6	8.0	8.1	2.7	3.3	3.3	0.0	0.0	12.1	2.8	0.0	0.0
Cycle Q Clear(g_c), s	0.6	8.0	8.1	2.7	3.3	3.3	13.1	0.0	12.1	15.8	0.0	0.0
Prop In Lane	1.00		0.38	1.00		0.07	0.86		1.00	0.45		0.28
Lane Grp Cap(c), veh/h	666	1045	1029	581	1230	1280	281	0	398	184	0	0
V/C Ratio(X)	0.02	0.30	0.31	0.26	0.15	0.15	0.54	0.00	0.60	0.51	0.00	0.00
Avail Cap(c_a), veh/h	666	1045	1029	805	1230	1280	401	0	534	304	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.2	8.7	8.7	5.8	4.6	4.6	33.8	0.0	29.5	34.6	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.7	0.8	0.2	0.3	0.3	1.6	0.0	1.5	2.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.9	2.8	0.8	1.0	1.1	3.1	0.0	4.7	2.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.3	9.4	9.5	6.0	4.9	4.9	35.4	0.0	30.9	36.7	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	C	D	A	A
Approach Vol, veh/h		647			539			390			94	
Approach Delay, s/veh		9.4			5.2			32.7			36.7	
Approach LOS		A			A			C			D	
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	8.6	59.2		22.2		67.8		22.2				
Change Period (Y+Rc), s	* 3.7	* 5		* 4.1		* 5		* 4.1				
Max Green Setting (Gmax), s	* 16	* 35		* 26		* 40		* 26				
Max Q Clear Time (g_c+I1), s	4.7	10.1		15.1		5.3		17.8				
Green Ext Time (p_c), s	0.3	4.0		1.2		2.3		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				15.0								
HCM 6th LOS				B								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road

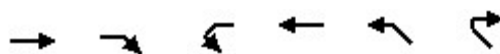
							Ø1	Ø7	Ø8
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR			
Lane Configurations	↑↑		↵	↑↑	↵	↵↵			
Traffic Volume (vph)	608	141	210	435	74	230			
Future Volume (vph)	608	141	210	435	74	230			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)		0	0		335	335			
Storage Lanes		0	1		1	1			
Taper Length (ft)			50		50				
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	0.88			
Frt	0.972					0.850			
Flt Protected			0.950		0.950				
Satd. Flow (prot)	3279	0	1671	3343	1641	2584			
Flt Permitted			0.196		0.950				
Satd. Flow (perm)	3279	0	345	3343	1641	2584			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	32					96			
Link Speed (mph)	35			35	50				
Link Distance (ft)	922			305	1567				
Travel Time (s)	18.0			5.9	21.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Heavy Vehicles (%)	7%	7%	8%	8%	10%	10%			
Adj. Flow (vph)	661	153	228	473	80	250			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	814	0	228	473	80	250			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	24			24	12				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)		9	15		15	9			
Number of Detectors	2		1	2	1	1			
Detector Template	Thru		Left	Thru	Left	Right			
Leading Detector (ft)	100		20	100	20	20			
Trailing Detector (ft)	0		0	0	0	0			
Detector 1 Position(ft)	0		0	0	0	0			
Detector 1 Size(ft)	6		20	6	20	20			
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel									
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0			
Detector 2 Position(ft)	94			94					
Detector 2 Size(ft)	6			6					
Detector 2 Type	Cl+Ex			Cl+Ex					
Detector 2 Channel									
Detector 2 Extend (s)	0.0			0.0					
Turn Type	NA		pm+pt	NA	Prot	pm+ov			
Protected Phases	6		5	2	3	5	1	7	8

HY AM No Build

Synchro 11 Report

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø1	Ø7	Ø8
Permitted Phases			2		3				
Detector Phase	6		5	2	3	5			
Switch Phase									
Minimum Initial (s)	19.0		10.0	19.0	7.0	10.0	10.0	10.0	7.0
Minimum Split (s)	24.1		15.2	24.1	27.4	15.2	15.2	17.5	12.3
Total Split (s)	31.7		16.0	30.3	42.3	16.0	17.4	30.0	12.3
Total Split (%)	35.2%		17.8%	33.7%	47.0%	17.8%	19%	33%	14%
Maximum Green (s)	26.6		10.8	25.2	34.9	10.8	12.2	22.5	7.0
Yellow Time (s)	3.6		3.6	3.6	5.0	3.6	3.6	4.5	3.6
All-Red Time (s)	1.5		1.6	1.5	2.4	1.6	1.6	3.0	1.7
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.1		5.2	5.1	7.4	5.2			
Lead/Lag	Lag		Lead	Lag		Lead	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes		Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Min		None	C-Min	None	None	None	None	None
Walk Time (s)	7.0			7.0	7.0				
Flash Dont Walk (s)	12.0			12.0	13.0				
Pedestrian Calls (#/hr)	0			0	0				
Act Effect Green (s)	32.6		42.6	32.0	29.0	47.1			
Actuated g/C Ratio	0.36		0.47	0.36	0.32	0.52			
v/c Ratio	0.67		0.71	0.40	0.15	0.18			
Control Delay	24.2		39.5	12.8	20.0	6.0			
Queue Delay	0.0		0.0	0.1	0.0	0.0			
Total Delay	24.2		39.5	12.9	20.0	6.0			
LOS	C		D	B	B	A			
Approach Delay	24.2			21.6	9.4				
Approach LOS	C			C	A				

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 17.4 (19%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 20.5

Intersection LOS: C

Intersection Capacity Utilization 53.5%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 30: McKinley Avenue & Trabue Road



Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	228	600	10	10	383	240	640	10	252	10	10	40
Future Volume (vph)	228	600	10	10	383	240	640	10	252	10	10	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		0	290		525	250		500	90		40
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.998				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.954		0.950		
Satd. Flow (prot)	1671	3336	0	1719	3438	1538	1681	1688	1583	1656	1743	1482
Flt Permitted	0.445			0.285			0.950	0.954		0.952		
Satd. Flow (perm)	783	3336	0	516	3438	1538	1681	1688	1583	1659	1743	1482
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				261			274			179
Link Speed (mph)		35			45			45			25	
Link Distance (ft)		305			829			768			535	
Travel Time (s)		5.9			12.6			11.6			14.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	8%	8%	5%	5%	5%	2%	2%	2%	9%	9%	9%
Adj. Flow (vph)	248	652	11	11	416	261	696	11	274	11	11	43
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	248	663	0	11	416	261	355	352	274	11	11	43
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	Split	NA	pm+ov	Perm	NA	Perm
Protected Phases	1	6		5	2	7	7	7	1		8	

HY AM No Build

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3

HY AM No Build

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Permitted Phases	6			2		2			7	8		8
Detector Phase	1	6		5	2	7	7	7	1	8	8	8
Switch Phase												
Minimum Initial (s)	10.0	19.0		10.0	19.0	10.0	10.0	10.0	10.0	7.0	7.0	7.0
Minimum Split (s)	15.2	24.1		15.2	24.1	17.5	17.5	17.5	15.2	12.3	12.3	12.3
Total Split (s)	17.4	31.7		16.0	30.3	30.0	30.0	30.0	17.4	12.3	12.3	12.3
Total Split (%)	19.3%	35.2%		17.8%	33.7%	33.3%	33.3%	33.3%	19.3%	13.7%	13.7%	13.7%
Maximum Green (s)	12.2	26.6		10.8	25.2	22.5	22.5	22.5	12.2	7.0	7.0	7.0
Yellow Time (s)	3.6	3.6		3.6	3.6	4.5	4.5	4.5	3.6	3.6	3.6	3.6
All-Red Time (s)	1.6	1.5		1.6	1.5	3.0	3.0	3.0	1.6	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.2	5.1		5.2	5.1	7.5	7.5	7.5	5.2	5.3	5.3	5.3
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min		None	C-Min	None	None	None	None	None	None	None
Walk Time (s)		7.0			7.0							
Flash Dont Walk (s)		12.0			12.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)	43.9	32.6		42.6	32.0	58.6	21.5	21.5	37.2	7.0	7.0	7.0
Actuated g/C Ratio	0.49	0.36		0.47	0.36	0.65	0.24	0.24	0.41	0.08	0.08	0.08
v/c Ratio	0.50	0.55		0.03	0.34	0.24	0.89	0.87	0.34	0.09	0.08	0.15
Control Delay	14.9	16.1		13.1	24.3	1.7	57.8	56.1	2.4	40.2	40.1	1.2
Queue Delay	0.0	0.2		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.9	16.3		13.1	24.3	1.7	57.8	56.1	2.4	40.2	40.1	1.2
LOS	B	B		B	C	A	E	E	A	D	D	A
Approach Delay		15.9			15.6			41.7			14.4	
Approach LOS		B			B			D			B	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 17.4 (19%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 25.4

Intersection LOS: C

Intersection Capacity Utilization 68.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 32: Marblevista Boulevard/Dublin Road & Trabue Road



Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	27.4
Total Split (s)	42.3
Total Split (%)	47%
Maximum Green (s)	34.9
Yellow Time (s)	5.0
All-Red Time (s)	2.4
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

HCM 6th TWSC

1: Site Access 2/Builders Place & Trabue Road

Intersection												
Int Delay, s/veh	5.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↔↔			↔↔			↕			↕	
Traffic Vol, veh/h	40	705	14	34	413	40	20	0	20	58	0	66
Future Vol, veh/h	40	705	14	34	413	40	20	0	20	58	0	66
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	6	6	6	3	3	3	20	20	20	2	2	2
Mvmt Flow	43	766	15	37	449	43	22	0	22	63	0	72
Major/Minor	Major1			Major2			Minor2			Minor1		
Conflicting Flow All	492	0	0	781	0	0	1014	1412	246	1159	1426	391
Stage 1	-	-	-	-	-	-	545	545	-	860	860	-
Stage 2	-	-	-	-	-	-	469	867	-	299	566	-
Critical Hdwy	4.22	-	-	4.16	-	-	7.9	6.9	7.3	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.9	5.9	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.9	5.9	-	6.54	5.54	-
Follow-up Hdwy	2.26	-	-	2.23	-	-	3.7	4.2	3.5	3.52	4.02	3.32
Pot Cap-1 Maneuver	1040	-	-	826	-	-	169	117	702	151	134	608
Stage 1	-	-	-	-	-	-	447	474	-	317	371	-
Stage 2	-	-	-	-	-	-	499	329	-	685	506	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1040	-	-	826	-	-	134	102	702	132	117	608
Mov Cap-2 Maneuver	-	-	-	-	-	-	134	102	-	132	117	-
Stage 1	-	-	-	-	-	-	414	445	-	294	344	-
Stage 2	-	-	-	-	-	-	408	305	-	623	475	-
Approach	EB			WB			SE			NW		
HCM Control Delay, s	0.7			0.9			24.8			42		
HCM LOS							C			E		
Minor Lane/Major Mvmt	NWLn1	EBL	EBT	EBR	WBL	WBT	WBR	SELn1				
Capacity (veh/h)	226	1040	-	-	826	-	-	225				
HCM Lane V/C Ratio	0.596	0.042	-	-	0.045	-	-	0.193				
HCM Control Delay (s)	42	8.6	0.3	-	9.6	0.3	-	24.8				
HCM Lane LOS	E	A	A	-	A	A	-	C				
HCM 95th %tile Q(veh)	3.4	0.1	-	-	0.1	-	-	0.7				

HCM 6th TWSC 5: Site Access 1 & Trabue Road

Intersection

Int Delay, s/veh 0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↑
Traffic Vol, veh/h	735	3	0	487	0	41
Future Vol, veh/h	735	3	0	487	0	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	6	3	3	2	2
Mvmt Flow	799	3	0	529	0	45

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	- - - 401
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - - 6.94
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - - 3.32
Pot Cap-1 Maneuver	-	- 0	- 0 599
Stage 1	-	- 0	- 0 -
Stage 2	-	- 0	- 0 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- - - 599
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	599	-	-	-
HCM Lane V/C Ratio	0.074	-	-	-
HCM Control Delay (s)	11.5	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Timing Report, Sorted By Phase

27: N Hague Avenue/Mapleway Drive & Trabue Road

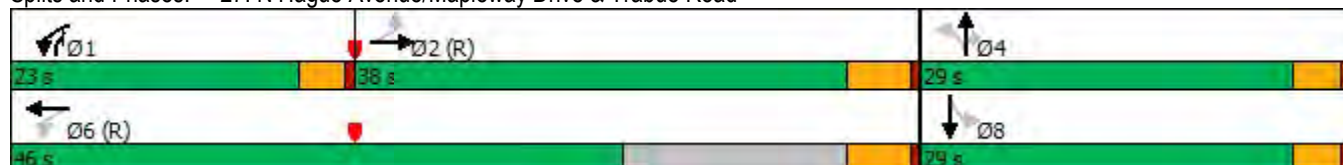


Phase Number	1	2	4	6	8
Movement	WBL	EBTL	NBTL	WBTL	SBTL
Lead/Lag	Lead	Lag			
Lead-Lag Optimize	Yes	Yes			
Recall Mode	None	C-Min	None	C-Min	None
Maximum Split (s)	23	38	29	46	29
Maximum Split (%)	25.6%	42.2%	32.2%	51.1%	32.2%
Minimum Split (s)	8.7	25	11.1	25	11.1
Yellow Time (s)	3	4.3	3.2	4.3	3.2
All-Red Time (s)	0.7	0.7	0.9	0.7	0.9
Minimum Initial (s)	5	20	7	20	7
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)					
Flash Dont Walk (s)					
Dual Entry	No	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	67	0	38	67	38
End Time (s)	0	38	67	38	67
Yield/Force Off (s)	86.3	33	62.9	33	62.9
Yield/Force Off 170(s)	86.3	33	62.9	33	62.9
Local Start Time (s)	67	0	38	67	38
Local Yield (s)	86.3	33	62.9	33	62.9
Local Yield 170(s)	86.3	33	62.9	33	62.9

Intersection Summary

Cycle Length 90
Control Type Actuated-Coordinated
Natural Cycle 45
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Splits and Phases: 27: N Hague Avenue/Mapleway Drive & Trabue Road



HCM 6th Signalized Intersection Summary 27: N Hague Avenue/Mapleway Drive & Trabue Road

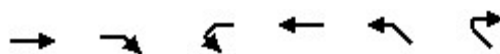
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	470	110	140	344	12	120	19	220	39	24	24
Future Volume (veh/h)	15	470	110	140	344	12	120	19	220	39	24	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1826	1826	1826	1856	1856	1856	1841	1841	1841	1870	1870	1870
Adj Flow Rate, veh/h	16	511	120	152	374	13	130	21	239	42	26	26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	3	3	3	4	4	4	2	2	2
Cap, veh/h	665	1678	392	582	2426	84	247	34	400	92	57	35
Arrive On Green	0.60	0.60	0.60	0.11	1.00	1.00	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	973	2791	652	1767	3476	121	857	171	1560	172	282	173
Grp Volume(v), veh/h	16	317	314	152	189	198	151	0	239	94	0	0
Grp Sat Flow(s),veh/h/ln	973	1735	1709	1767	1763	1834	1028	0	1560	627	0	0
Q Serve(g_s), s	0.6	8.0	8.1	2.8	0.0	0.0	0.0	0.0	12.1	2.8	0.0	0.0
Cycle Q Clear(g_c), s	0.6	8.0	8.1	2.8	0.0	0.0	13.1	0.0	12.1	15.9	0.0	0.0
Prop In Lane	1.00		0.38	1.00		0.07	0.86		1.00	0.45		0.28
Lane Grp Cap(c), veh/h	665	1043	1027	582	1230	1280	281	0	400	184	0	0
V/C Ratio(X)	0.02	0.30	0.31	0.26	0.15	0.15	0.54	0.00	0.60	0.51	0.00	0.00
Avail Cap(c_a), veh/h	665	1043	1027	862	1230	1280	386	0	519	289	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.3	8.8	8.8	5.4	0.0	0.0	33.8	0.0	29.4	34.6	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.8	0.8	0.2	0.3	0.3	1.6	0.0	1.4	2.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.9	2.9	0.8	0.1	0.1	3.1	0.0	4.6	2.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.3	9.5	9.5	5.7	0.3	0.3	35.4	0.0	30.8	36.8	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	C	D	A	A
Approach Vol, veh/h	647				539				390			
Approach Delay, s/veh	9.5				1.8				32.6			
Approach LOS	A				A				C			
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	8.7	59.1		22.2		67.8		22.2				
Change Period (Y+Rc), s	* 3.7	* 5		* 4.1		* 5		* 4.1				
Max Green Setting (Gmax), s	* 19	* 33		* 25		* 41		* 25				
Max Q Clear Time (g_c+I1), s	4.8	10.1		15.1		2.0		17.9				
Green Ext Time (p_c), s	0.3	4.0		1.1		2.3		0.2				
Intersection Summary												
HCM 6th Ctrl Delay	13.9											
HCM 6th LOS	B											
Notes												

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road

							Ø1	Ø7	Ø8
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR			
Lane Configurations	↑↑		↵	↑↑	↵	↵↵			
Traffic Volume (vph)	608	135	210	435	52	230			
Future Volume (vph)	608	135	210	435	52	230			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)		0	0		335	335			
Storage Lanes		0	1		1	1			
Taper Length (ft)			50		50				
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	0.88			
Frt	0.973					0.850			
Flt Protected			0.950		0.950				
Satd. Flow (prot)	3283	0	1671	3343	1641	2584			
Flt Permitted			0.199		0.950				
Satd. Flow (perm)	3283	0	350	3343	1641	2584			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	30					96			
Link Speed (mph)	35			35	50				
Link Distance (ft)	530			305	1567				
Travel Time (s)	10.3			5.9	21.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Heavy Vehicles (%)	7%	7%	8%	8%	10%	10%			
Adj. Flow (vph)	661	147	228	473	57	250			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	808	0	228	473	57	250			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	24			24	12				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)		9	15		15	9			
Number of Detectors	2		1	2	1	1			
Detector Template	Thru		Left	Thru	Left	Right			
Leading Detector (ft)	100		20	100	20	20			
Trailing Detector (ft)	0		0	0	0	0			
Detector 1 Position(ft)	0		0	0	0	0			
Detector 1 Size(ft)	6		20	6	20	20			
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel									
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0			
Detector 2 Position(ft)	94			94					
Detector 2 Size(ft)	6			6					
Detector 2 Type	Cl+Ex			Cl+Ex					
Detector 2 Channel									
Detector 2 Extend (s)	0.0			0.0					
Turn Type	NA		pm+pt	NA	Prot	pm+ov			
Protected Phases	6		5	2	3	5	1	7	8

Lanes, Volumes, Timings 30: McKinley Avenue & Trabue Road



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø1	Ø7	Ø8
Permitted Phases			2		3				
Detector Phase	6		5	2	3	5			
Switch Phase									
Minimum Initial (s)	19.0		10.0	19.0	7.0	10.0	10.0	10.0	7.0
Minimum Split (s)	24.1		15.2	24.1	27.4	15.2	15.2	17.5	12.3
Total Split (s)	31.7		16.0	30.3	42.3	16.0	17.4	30.0	12.3
Total Split (%)	35.2%		17.8%	33.7%	47.0%	17.8%	19%	33%	14%
Maximum Green (s)	26.6		10.8	25.2	34.9	10.8	12.2	22.5	7.0
Yellow Time (s)	3.6		3.6	3.6	5.0	3.6	3.6	4.5	3.6
All-Red Time (s)	1.5		1.6	1.5	2.4	1.6	1.6	3.0	1.7
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.1		5.2	5.1	7.4	5.2			
Lead/Lag	Lag		Lead	Lag		Lead	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes		Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Min		None	C-Min	None	None	None	None	None
Walk Time (s)	7.0			7.0	7.0				
Flash Dont Walk (s)	12.0			12.0	13.0				
Pedestrian Calls (#/hr)	0			0	0				
Act Effect Green (s)	32.6		42.6	32.0	29.0	47.1			
Actuated g/C Ratio	0.36		0.47	0.36	0.32	0.52			
v/c Ratio	0.67		0.71	0.40	0.11	0.18			
Control Delay	24.7		39.0	12.8	19.1	6.0			
Queue Delay	0.0		0.0	0.1	0.0	0.0			
Total Delay	24.7		39.0	12.9	19.1	6.0			
LOS	C		D	B	B	A			
Approach Delay	24.7			21.4	8.5				
Approach LOS	C			C	A				

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 17.4 (19%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 20.7

Intersection LOS: C

Intersection Capacity Utilization 53.3%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 30: McKinley Avenue & Trabue Road



Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	228	600	10	10	383	240	640	10	252	10	10	40
Future Volume (vph)	228	600	10	10	383	240	640	10	252	10	10	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		0	290		525	250		500	90		40
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.998				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.954		0.950		
Satd. Flow (prot)	1671	3336	0	1719	3438	1538	1681	1688	1583	1656	1743	1482
Flt Permitted	0.445			0.285			0.950	0.954		0.952		
Satd. Flow (perm)	783	3336	0	516	3438	1538	1681	1688	1583	1659	1743	1482
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				261			274			179
Link Speed (mph)		35			45			45			25	
Link Distance (ft)		305			829			768			535	
Travel Time (s)		5.9			12.6			11.6			14.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	8%	8%	5%	5%	5%	2%	2%	2%	9%	9%	9%
Adj. Flow (vph)	248	652	11	11	416	261	696	11	274	11	11	43
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	248	663	0	11	416	261	355	352	274	11	11	43
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	Split	NA	pm+ov	Perm	NA	Perm
Protected Phases	1	6		5	2	7	7	7	1		8	

HY AM Build

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Permitted Phases	6			2		2			7	8		8
Detector Phase	1	6		5	2	7	7	7	1	8	8	8
Switch Phase												
Minimum Initial (s)	10.0	19.0		10.0	19.0	10.0	10.0	10.0	10.0	7.0	7.0	7.0
Minimum Split (s)	15.2	24.1		15.2	24.1	17.5	17.5	17.5	15.2	12.3	12.3	12.3
Total Split (s)	17.4	31.7		16.0	30.3	30.0	30.0	30.0	17.4	12.3	12.3	12.3
Total Split (%)	19.3%	35.2%		17.8%	33.7%	33.3%	33.3%	33.3%	19.3%	13.7%	13.7%	13.7%
Maximum Green (s)	12.2	26.6		10.8	25.2	22.5	22.5	22.5	12.2	7.0	7.0	7.0
Yellow Time (s)	3.6	3.6		3.6	3.6	4.5	4.5	4.5	3.6	3.6	3.6	3.6
All-Red Time (s)	1.6	1.5		1.6	1.5	3.0	3.0	3.0	1.6	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.2	5.1		5.2	5.1	7.5	7.5	7.5	5.2	5.3	5.3	5.3
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min		None	C-Min	None	None	None	None	None	None	None
Walk Time (s)		7.0			7.0							
Flash Dont Walk (s)		12.0			12.0							
Pedestrian Calls (#/hr)		0			0							
Act Effect Green (s)	43.9	32.6		42.6	32.0	58.6	21.5	21.5	37.2	7.0	7.0	7.0
Actuated g/C Ratio	0.49	0.36		0.47	0.36	0.65	0.24	0.24	0.41	0.08	0.08	0.08
v/c Ratio	0.50	0.55		0.03	0.34	0.24	0.89	0.87	0.34	0.09	0.08	0.15
Control Delay	15.0	16.0		13.1	24.3	1.7	57.8	56.1	2.4	40.2	40.1	1.2
Queue Delay	0.0	0.2		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.0	16.2		13.1	24.3	1.7	57.8	56.1	2.4	40.2	40.1	1.2
LOS	B	B		B	C	A	E	E	A	D	D	A
Approach Delay		15.8			15.6			41.7			14.4	
Approach LOS		B			B			D			B	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 17.4 (19%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 25.3

Intersection LOS: C

Intersection Capacity Utilization 68.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 32: Marblevista Boulevard/Dublin Road & Trabue Road



Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	27.4
Total Split (s)	42.3
Total Split (%)	47%
Maximum Green (s)	34.9
Yellow Time (s)	5.0
All-Red Time (s)	2.4
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

HCM 6th TWSC

1: Site Access 2/Builders Place & Trabue Road

Intersection													
Int Delay, s/veh	55.2												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations													
Traffic Vol, veh/h	40	705	14	210	34	413	40	20	0	20	58	0	66
Future Vol, veh/h	40	705	14	210	34	413	40	20	0	20	58	0	66
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	6	6	6	3	3	3	3	20	20	20	2	2	2
Mvmt Flow	43	766	15	228	37	449	43	22	0	22	63	0	72
Major/Minor	Major1			Major2			Minor2			Minor1			
Conflicting Flow All	492	0	0	782	781	0	0	1470	1868	246	1615	1882	391
Stage 1	-	-	-	-	-	-	-	1001	1001	-	860	860	-
Stage 2	-	-	-	-	-	-	-	469	867	-	755	1022	-
Critical Hdwy	4.22	-	-	6.46	4.16	-	-	7.9	6.9	7.3	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.9	5.9	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.9	5.9	-	6.54	5.54	-
Follow-up Hdwy	2.26	-	-	2.53	2.23	-	-	3.7	4.2	3.5	3.52	4.02	3.32
Pot Cap-1 Maneuver	1040	-	-	455	826	-	-	75	59	702	69	70	608
Stage 1	-	-	-	-	-	-	-	229	282	-	317	371	-
Stage 2	-	-	-	-	-	-	-	499	329	-	367	312	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	1040	-	-	437	437	-	-	32	22	702	~ 33	26	608
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	32	22	-	~ 33	26	-
Stage 1	-	-	-	-	-	-	-	212	111	-	294	344	-
Stage 2	-	-	-	-	-	-	-	408	305	-	140	123	-
Approach	EB			WB			SE			NW			
HCM Control Delay, s	0.7			8.8			151.4			\$ 618.2			
HCM LOS							F			F			
Minor Lane/Major Mvmt	NWLn1	EBL	EBT	EBR	WBL	WBT	WBR	SELn1					
Capacity (veh/h)	66	1040	-	-	437	-	-	61					
HCM Lane V/C Ratio	2.042	0.042	-	-	0.607	-	-	0.713					
HCM Control Delay (s)	\$ 618.2	8.6	0.3	-	25.2	-	-	151.4					
HCM Lane LOS	F	A	A	-	D	-	-	F					
HCM 95th %tile Q(veh)	12.6	0.1	-	-	3.9	-	-	3.1					
Notes													
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon							

HCM 6th TWSC 5: Site Access 1 & Trabue Road

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↱			↑↑		↱
Traffic Vol, veh/h	945	3	0	697	0	41
Future Vol, veh/h	945	3	0	697	0	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	6	3	3	2	2
Mvmt Flow	1027	3	0	758	0	45
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	515
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	505
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	505
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		12.8	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	505	-	-	-		
HCM Lane V/C Ratio	0.088	-	-	-		
HCM Control Delay (s)	12.8	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile Q(veh)	0.3	-	-	-		

Timing Report, Sorted By Phase

27: N Hague Avenue/Mapleway Drive & Trabue Road

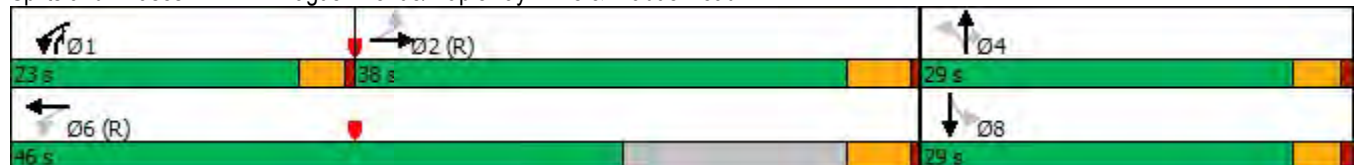


Phase Number	1	2	4	6	8
Movement	WBL	EBTL	NBTL	WBTL	SBTL
Lead/Lag	Lead	Lag			
Lead-Lag Optimize	Yes	Yes			
Recall Mode	None	C-Min	None	C-Min	None
Maximum Split (s)	23	38	29	46	29
Maximum Split (%)	25.6%	42.2%	32.2%	51.1%	32.2%
Minimum Split (s)	8.7	25	11.1	25	11.1
Yellow Time (s)	3	4.3	3.2	4.3	3.2
All-Red Time (s)	0.7	0.7	0.9	0.7	0.9
Minimum Initial (s)	5	20	7	20	7
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)					
Flash Dont Walk (s)					
Dual Entry	No	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	67	0	38	67	38
End Time (s)	0	38	67	38	67
Yield/Force Off (s)	86.3	33	62.9	33	62.9
Yield/Force Off 170(s)	86.3	33	62.9	33	62.9
Local Start Time (s)	67	0	38	67	38
Local Yield (s)	86.3	33	62.9	33	62.9
Local Yield 170(s)	86.3	33	62.9	33	62.9

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	45
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	

Splits and Phases: 27: N Hague Avenue/Mapleway Drive & Trabue Road



HCM 6th Signalized Intersection Summary 27: N Hague Avenue/Mapleway Drive & Trabue Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	470	110	140	344	12	120	19	220	39	24	24
Future Volume (veh/h)	15	470	110	140	344	12	120	19	220	39	24	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1826	1826	1826	1856	1856	1856	1841	1841	1841	1870	1870	1870
Adj Flow Rate, veh/h	16	511	120	152	374	13	130	21	239	42	26	26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	3	3	3	4	4	4	2	2	2
Cap, veh/h	665	1678	392	582	2426	84	247	34	400	92	57	35
Arrive On Green	0.60	0.60	0.60	0.11	1.00	1.00	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	973	2791	652	1767	3476	121	857	171	1560	172	282	173
Grp Volume(v), veh/h	16	317	314	152	189	198	151	0	239	94	0	0
Grp Sat Flow(s),veh/h/ln	973	1735	1709	1767	1763	1834	1028	0	1560	627	0	0
Q Serve(g_s), s	0.6	8.0	8.1	2.8	0.0	0.0	0.0	0.0	12.1	2.8	0.0	0.0
Cycle Q Clear(g_c), s	0.6	8.0	8.1	2.8	0.0	0.0	13.1	0.0	12.1	15.9	0.0	0.0
Prop In Lane	1.00		0.38	1.00		0.07	0.86		1.00	0.45		0.28
Lane Grp Cap(c), veh/h	665	1043	1027	582	1230	1280	281	0	400	184	0	0
V/C Ratio(X)	0.02	0.30	0.31	0.26	0.15	0.15	0.54	0.00	0.60	0.51	0.00	0.00
Avail Cap(c_a), veh/h	665	1043	1027	862	1230	1280	386	0	519	289	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.3	8.8	8.8	5.4	0.0	0.0	33.8	0.0	29.4	34.6	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.8	0.8	0.2	0.3	0.3	1.6	0.0	1.4	2.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.9	2.9	0.8	0.1	0.1	3.1	0.0	4.6	2.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.3	9.5	9.5	5.7	0.3	0.3	35.4	0.0	30.8	36.8	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	C	D	A	A
Approach Vol, veh/h	647				539				390			
Approach Delay, s/veh	9.5				1.8				32.6			
Approach LOS	A				A				C			
Timer - Assigned Phs	1	2	4			6		8				
Phs Duration (G+Y+Rc), s	8.7	59.1	22.2			67.8		22.2				
Change Period (Y+Rc), s	* 3.7	* 5	* 4.1			* 5		* 4.1				
Max Green Setting (Gmax), s	* 19	* 33	* 25			* 41		* 25				
Max Q Clear Time (g_c+I1), s	4.8	10.1	15.1			2.0		17.9				
Green Ext Time (p_c), s	0.3	4.0	1.1			2.3		0.2				
Intersection Summary												
HCM 6th Ctrl Delay	13.9											
HCM 6th LOS	B											
Notes												

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road

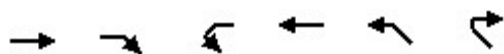
							Ø1	Ø7	Ø8
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR			
Lane Configurations	↑↑			↑↑	↵	↵↵			
Traffic Volume (vph)	608	345	0	645	52	230			
Future Volume (vph)	608	345	0	645	52	230			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)		0	0		335	335			
Storage Lanes		0	0		1	1			
Taper Length (ft)			50		50				
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	0.88			
Frt	0.946					0.850			
Flt Protected					0.950				
Satd. Flow (prot)	3192	0	0	3343	1641	2584			
Flt Permitted					0.950				
Satd. Flow (perm)	3192	0	0	3343	1641	2584			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	125					96			
Link Speed (mph)	35			35	50				
Link Distance (ft)	530			305	1567				
Travel Time (s)	10.3			5.9	21.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Heavy Vehicles (%)	7%	7%	8%	8%	10%	10%			
Adj. Flow (vph)	661	375	0	701	57	250			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	1036	0	0	701	57	250			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	12			12	12				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)		9	15		15	9			
Number of Detectors	2			2	1	1			
Detector Template	Thru			Thru	Left	Right			
Leading Detector (ft)	100			100	20	20			
Trailing Detector (ft)	0			0	0	0			
Detector 1 Position(ft)	0			0	0	0			
Detector 1 Size(ft)	6			6	20	20			
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel									
Detector 1 Extend (s)	0.0			0.0	0.0	0.0			
Detector 1 Queue (s)	0.0			0.0	0.0	0.0			
Detector 1 Delay (s)	0.0			0.0	0.0	0.0			
Detector 2 Position(ft)	94			94					
Detector 2 Size(ft)	6			6					
Detector 2 Type	Cl+Ex			Cl+Ex					
Detector 2 Channel									
Detector 2 Extend (s)	0.0			0.0					
Turn Type	NA			NA	Prot	custom			
Protected Phases	6			2	3	5	1	7	8

HY AM Build
Rerouted Lefts

Synchro 11 Report

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø1	Ø7	Ø8
Permitted Phases						3			
Detector Phase	6			2	3	5			
Switch Phase									
Minimum Initial (s)	19.0			19.0	7.0	10.0	10.0	10.0	7.0
Minimum Split (s)	24.1			24.1	27.4	15.2	15.2	17.5	12.3
Total Split (s)	31.7			30.3	42.3	16.0	17.4	30.0	12.3
Total Split (%)	35.2%			33.7%	47.0%	17.8%	19%	33%	14%
Maximum Green (s)	26.6			25.2	34.9	10.8	12.2	22.5	7.0
Yellow Time (s)	3.6			3.6	5.0	3.6	3.6	4.5	3.6
All-Red Time (s)	1.5			1.5	2.4	1.6	1.6	3.0	1.7
Lost Time Adjust (s)	0.0			0.0	0.0	0.0			
Total Lost Time (s)	5.1			5.1	7.4	5.2			
Lead/Lag	Lag			Lag		Lead	Lead	Lead	Lag
Lead-Lag Optimize?	Yes			Yes		Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0			3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Min			C-Min	None	None	None	None	None
Walk Time (s)	7.0			7.0	7.0				
Flash Dont Walk (s)	12.0			12.0	13.0				
Pedestrian Calls (#/hr)	0			0	0				
Act Effct Green (s)	33.3			32.0	29.0	46.4			
Actuated g/C Ratio	0.37			0.36	0.32	0.52			
v/c Ratio	0.82			0.59	0.11	0.18			
Control Delay	31.8			15.3	19.1	6.3			
Queue Delay	0.0			0.0	0.0	0.0			
Total Delay	31.8			15.3	19.1	6.3			
LOS	C			B	B	A			
Approach Delay	31.8			15.3	8.7				
Approach LOS	C			B	A				

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 17.4 (19%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 22.7

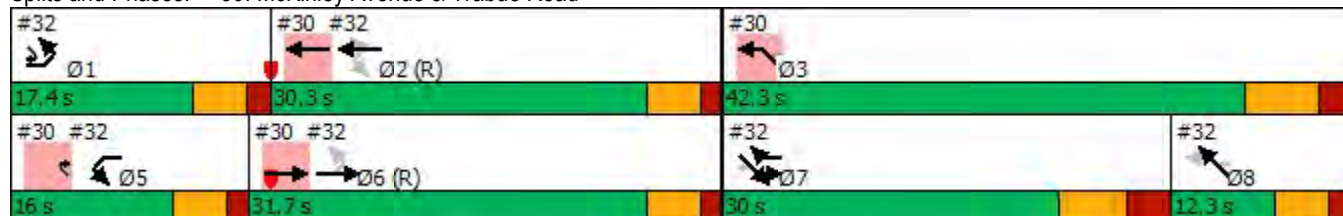
Intersection LOS: C

Intersection Capacity Utilization 44.8%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 30: McKinley Avenue & Trabue Road



Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	228	600	10	10	383	240	640	10	252	10	10	40
Future Volume (vph)	228	600	10	10	383	240	640	10	252	10	10	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		0	290		525	250		500	90		40
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.998				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.954		0.950		
Satd. Flow (prot)	1671	3336	0	1719	3438	1538	1681	1688	1583	1656	1743	1482
Flt Permitted	0.435			0.296			0.950	0.954		0.952		
Satd. Flow (perm)	765	3336	0	536	3438	1538	1681	1688	1583	1659	1743	1482
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				261			274			179
Link Speed (mph)		35			45			45			25	
Link Distance (ft)		305			829			768			535	
Travel Time (s)		5.9			12.6			11.6			14.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	8%	8%	5%	5%	5%	2%	2%	2%	9%	9%	9%
Adj. Flow (vph)	248	652	11	11	416	261	696	11	274	11	11	43
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	248	663	0	11	416	261	355	352	274	11	11	43
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	Split	NA	pm+ov	Perm	NA	Perm
Protected Phases	1	6		5	2	7	7	7	1		8	

HY AM Build
Rerouted Lefts

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3

HY AM Build
Rerouted Lefts

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Permitted Phases	6			2		2			7	8		8
Detector Phase	1	6		5	2	7	7	7	1	8	8	8
Switch Phase												
Minimum Initial (s)	10.0	19.0		10.0	19.0	10.0	10.0	10.0	10.0	7.0	7.0	7.0
Minimum Split (s)	15.2	24.1		15.2	24.1	17.5	17.5	17.5	15.2	12.3	12.3	12.3
Total Split (s)	17.4	31.7		16.0	30.3	30.0	30.0	30.0	17.4	12.3	12.3	12.3
Total Split (%)	19.3%	35.2%		17.8%	33.7%	33.3%	33.3%	33.3%	19.3%	13.7%	13.7%	13.7%
Maximum Green (s)	12.2	26.6		10.8	25.2	22.5	22.5	22.5	12.2	7.0	7.0	7.0
Yellow Time (s)	3.6	3.6		3.6	3.6	4.5	4.5	4.5	3.6	3.6	3.6	3.6
All-Red Time (s)	1.6	1.5		1.6	1.5	3.0	3.0	3.0	1.6	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.2	5.1		5.2	5.1	7.5	7.5	7.5	5.2	5.3	5.3	5.3
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min		None	C-Min	None	None	None	None	None	None	None
Walk Time (s)		7.0			7.0							
Flash Dont Walk (s)		12.0			12.0							
Pedestrian Calls (#/hr)		0			0							
Act Effect Green (s)	44.6	33.3		41.9	32.0	58.6	21.5	21.5	37.2	7.0	7.0	7.0
Actuated g/C Ratio	0.50	0.37		0.47	0.36	0.65	0.24	0.24	0.41	0.08	0.08	0.08
v/c Ratio	0.50	0.54		0.03	0.34	0.24	0.89	0.87	0.34	0.09	0.08	0.15
Control Delay	15.5	18.7		13.2	24.3	1.7	57.8	56.1	2.4	40.2	40.1	1.2
Queue Delay	0.0	0.3		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.5	19.0		13.2	24.3	1.7	57.8	56.1	2.4	40.2	40.1	1.2
LOS	B	B		B	C	A	E	E	A	D	D	A
Approach Delay		18.1			15.6			41.7			14.4	
Approach LOS		B			B			D			B	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 17.4 (19%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 26.1

Intersection LOS: C

Intersection Capacity Utilization 68.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 32: Marblevista Boulevard/Dublin Road & Trabue Road



Lanes, Volumes, Timings 32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	27.4
Total Split (s)	42.3
Total Split (%)	47%
Maximum Green (s)	34.9
Yellow Time (s)	5.0
All-Red Time (s)	2.4
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

HCM 6th TWSC

1: Trabue Road & Builders Place

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Vol, veh/h	10	627	991	10	40	40
Future Vol, veh/h	10	627	991	10	40	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	4	4
Mvmt Flow	11	682	1077	11	43	43
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	1088	0	-	0	1446	544
Stage 1	-	-	-	-	1083	-
Stage 2	-	-	-	-	363	-
Critical Hdwy	4.14	-	-	-	6.88	6.98
Critical Hdwy Stg 1	-	-	-	-	5.88	-
Critical Hdwy Stg 2	-	-	-	-	5.88	-
Follow-up Hdwy	2.22	-	-	-	3.54	3.34
Pot Cap-1 Maneuver	637	-	-	-	120	478
Stage 1	-	-	-	-	282	-
Stage 2	-	-	-	-	668	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	637	-	-	-	117	478
Mov Cap-2 Maneuver	-	-	-	-	117	-
Stage 1	-	-	-	-	274	-
Stage 2	-	-	-	-	668	-
Approach	EB	WB		SE		
HCM Control Delay, s	0.3	0		39.6		
HCM LOS				E		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SELn1	
Capacity (veh/h)	637	-	-	-	188	
HCM Lane V/C Ratio	0.017	-	-	-	0.463	
HCM Control Delay (s)	10.8	0.1	-	-	39.6	
HCM Lane LOS	B	A	-	-	E	
HCM 95th %tile Q(veh)	0.1	-	-	-	2.2	

Timing Report, Sorted By Phase

27: N Hague Avenue/Mapleway Drive & Trabue Road



Phase Number	1	2	4	6	8
Movement	WBL	EBTL	NBTL	WBTL	SBTL
Lead/Lag	Lead	Lag			
Lead-Lag Optimize	Yes	Yes			
Recall Mode	None	C-Min	None	C-Min	None
Maximum Split (s)	23	32	20	42	20
Maximum Split (%)	30.7%	42.7%	26.7%	56.0%	26.7%
Minimum Split (s)	8.7	25	11.1	25	11.1
Yellow Time (s)	3	4.3	3.2	4.3	3.2
All-Red Time (s)	0.7	0.7	0.9	0.7	0.9
Minimum Initial (s)	5	20	7	20	7
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)					
Flash Dont Walk (s)					
Dual Entry	No	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	52	0	32	52	32
End Time (s)	0	32	52	32	52
Yield/Force Off (s)	71.3	27	47.9	27	47.9
Yield/Force Off 170(s)	71.3	27	47.9	27	47.9
Local Start Time (s)	52	0	32	52	32
Local Yield (s)	71.3	27	47.9	27	47.9
Local Yield 170(s)	71.3	27	47.9	27	47.9

Intersection Summary

Cycle Length 75
Control Type Actuated-Coordinated
Natural Cycle 45
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Splits and Phases: 27: N Hague Avenue/Mapleway Drive & Trabue Road



HCM 6th Signalized Intersection Summary 27: N Hague Avenue/Mapleway Drive & Trabue Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	460	190	256	733	18	100	40	150	27	19	19
Future Volume (veh/h)	25	460	190	256	733	18	100	40	150	27	19	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	27	500	207	278	797	20	109	43	163	29	21	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	484	1423	586	616	2567	64	216	62	396	88	61	34
Arrive On Green	0.58	0.58	0.58	0.19	1.00	1.00	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	669	2454	1011	1781	3542	89	870	402	1585	131	393	220
Grp Volume(v), veh/h	27	361	346	278	400	417	152	0	163	71	0	0
Grp Sat Flow(s),veh/h/ln	669	1777	1688	1781	1777	1854	1272	0	1585	743	0	0
Q Serve(g_s), s	1.3	8.0	8.1	4.5	0.0	0.0	0.0	0.0	6.5	0.3	0.0	0.0
Cycle Q Clear(g_c), s	1.3	8.0	8.1	4.5	0.0	0.0	9.0	0.0	6.5	9.3	0.0	0.0
Prop In Lane	1.00		0.60	1.00		0.05	0.72		1.00	0.41		0.30
Lane Grp Cap(c), veh/h	484	1030	979	616	1287	1344	278	0	396	182	0	0
V/C Ratio(X)	0.06	0.35	0.35	0.45	0.31	0.31	0.55	0.00	0.41	0.39	0.00	0.00
Avail Cap(c_a), veh/h	484	1030	979	904	1287	1344	364	0	487	266	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.9	8.3	8.3	4.5	0.0	0.0	30.5	0.0	23.5	28.2	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.9	1.0	0.5	0.6	0.6	1.7	0.0	0.7	1.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.8	2.7	1.0	0.2	0.2	2.6	0.0	2.4	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.1	9.3	9.3	5.0	0.6	0.6	32.2	0.0	24.2	29.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	C	C	A	A
Approach Vol, veh/h		734			1095			315			71	
Approach Delay, s/veh		9.2			1.7			28.1			29.6	
Approach LOS		A			A			C			C	
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	10.9	48.5		15.7		59.3		15.7				
Change Period (Y+Rc), s	* 3.7	* 5		* 4.1		* 5		* 4.1				
Max Green Setting (Gmax), s	* 19	* 27		* 16		* 37		* 16				
Max Q Clear Time (g_c+I1), s	6.5	10.1		11.0		2.0		11.3				
Green Ext Time (p_c), s	0.6	4.3		0.6		5.6		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			8.9									
HCM 6th LOS			A									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road

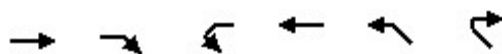
							Ø1	Ø7	Ø8
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR			
Lane Configurations	↑↑		↵	↑↑	↵	↑↑			
Traffic Volume (vph)	550	117	200	787	214	310			
Future Volume (vph)	550	117	200	787	214	310			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)		0	0		335	335			
Storage Lanes		0	1		1	1			
Taper Length (ft)			50		50				
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	0.88			
Frt	0.974					0.850			
Flt Protected			0.950		0.950				
Satd. Flow (prot)	3447	0	1770	3539	1770	2787			
Flt Permitted			0.280		0.950				
Satd. Flow (perm)	3447	0	522	3539	1770	2787			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	35					150			
Link Speed (mph)	35			35	50				
Link Distance (ft)	922			305	1567				
Travel Time (s)	18.0			5.9	21.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Adj. Flow (vph)	598	127	217	855	233	337			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	725	0	217	855	233	337			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	24			24	12				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)		9	15		15	9			
Number of Detectors	2		1	2	1	1			
Detector Template	Thru		Left	Thru	Left	Right			
Leading Detector (ft)	100		20	100	20	20			
Trailing Detector (ft)	0		0	0	0	0			
Detector 1 Position(ft)	0		0	0	0	0			
Detector 1 Size(ft)	6		20	6	20	20			
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel									
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0			
Detector 2 Position(ft)	94			94					
Detector 2 Size(ft)	6			6					
Detector 2 Type	Cl+Ex			Cl+Ex					
Detector 2 Channel									
Detector 2 Extend (s)	0.0			0.0					
Turn Type	NA		pm+pt	NA	Prot	pm+ov			
Protected Phases	6		5	2	3	5	1	7	8
Permitted Phases			2			3			

HY PM No Build

Synchro 11 Report

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø1	Ø7	Ø8
Detector Phase	6		5	2	3	5			
Switch Phase									
Minimum Initial (s)	19.0		10.0	19.0	7.0	10.0	10.0	10.0	7.0
Minimum Split (s)	24.1		15.2	24.1	27.4	15.2	15.2	17.5	12.3
Total Split (s)	28.5		15.2	27.7	31.3	15.2	16.0	19.0	12.3
Total Split (%)	38.0%		20.3%	36.9%	41.7%	20.3%	21%	25%	16%
Maximum Green (s)	23.4		10.0	22.6	23.9	10.0	10.8	11.5	7.0
Yellow Time (s)	3.6		3.6	3.6	5.0	3.6	3.6	4.5	3.6
All-Red Time (s)	1.5		1.6	1.5	2.4	1.6	1.6	3.0	1.7
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.1		5.2	5.1	7.4	5.2			
Lead/Lag	Lag		Lead	Lag		Lead	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes		Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Min		None	C-Min	None	None	None	None	None
Walk Time (s)	7.0			7.0	7.0				
Flash Dont Walk (s)	12.0			12.0	13.0				
Pedestrian Calls (#/hr)	0			0	0				
Act Effect Green (s)	28.2		36.1	26.2	19.1	36.5			
Actuated g/C Ratio	0.38		0.48	0.35	0.25	0.49			
v/c Ratio	0.55		0.52	0.69	0.52	0.24			
Control Delay	20.3		20.0	13.8	27.1	5.6			
Queue Delay	0.0		0.0	0.1	0.0	0.0			
Total Delay	20.3		20.0	13.9	27.1	5.6			
LOS	C		B	B	C	A			
Approach Delay	20.3			15.2	14.3				
Approach LOS	C			B	B				

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 16 (21%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 16.5

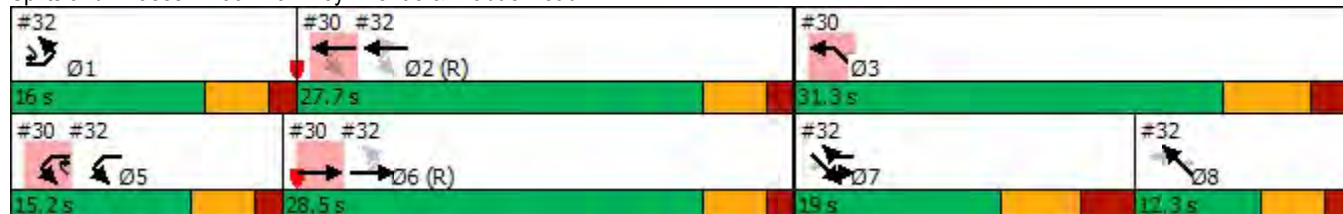
Intersection LOS: B

Intersection Capacity Utilization 56.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 30: McKinley Avenue & Trabue Road



Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	304	526	30	60	760	720	360	20	217	10	10	30
Future Volume (vph)	304	526	30	60	760	720	360	20	217	10	10	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		0	290		525	250		500	90		40
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.992				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.957		0.950		
Satd. Flow (prot)	1770	3511	0	1770	3539	1583	1681	1694	1583	1770	1863	1583
Flt Permitted	0.171			0.362			0.950	0.957		0.952		
Satd. Flow (perm)	319	3511	0	674	3539	1583	1681	1694	1583	1773	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8				391			189			215
Link Speed (mph)		35			45			45			25	
Link Distance (ft)		305			829			768			535	
Travel Time (s)		5.9			12.6			11.6			14.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	330	572	33	65	826	783	391	22	236	11	11	33
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	330	605	0	65	826	783	207	206	236	11	11	33
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	Split	NA	pm+ov	Perm	NA	Perm
Protected Phases	1	6		5	2	7	7	7	1		8	
Permitted Phases	6			2		2			7	8		8

HY PM No Build

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	

HY PM No Build

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Detector Phase	1	6		5	2	7	7	7	1	8	8	8
Switch Phase												
Minimum Initial (s)	10.0	19.0		10.0	19.0	10.0	10.0	10.0	10.0	7.0	7.0	7.0
Minimum Split (s)	15.2	24.1		15.2	24.1	17.5	17.5	17.5	15.2	12.3	12.3	12.3
Total Split (s)	16.0	28.5		15.2	27.7	19.0	19.0	19.0	16.0	12.3	12.3	12.3
Total Split (%)	21.3%	38.0%		20.3%	36.9%	25.3%	25.3%	25.3%	21.3%	16.4%	16.4%	16.4%
Maximum Green (s)	10.8	23.4		10.0	22.6	11.5	11.5	11.5	10.8	7.0	7.0	7.0
Yellow Time (s)	3.6	3.6		3.6	3.6	4.5	4.5	4.5	3.6	3.6	3.6	3.6
All-Red Time (s)	1.6	1.5		1.6	1.5	3.0	3.0	3.0	1.6	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.2	5.1		5.2	5.1	7.5	7.5	7.5	5.2	5.3	5.3	5.3
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min		None	C-Min	None	None	None	None	None	None	None
Walk Time (s)		7.0			7.0							
Flash Dont Walk (s)		12.0			12.0							
Pedestrian Calls (#/hr)		0			0							
Act Effect Green (s)	40.0	28.2		36.1	26.2	43.0	11.6	11.6	28.0	7.0	7.0	7.0
Actuated g/C Ratio	0.53	0.38		0.48	0.35	0.57	0.15	0.15	0.37	0.09	0.09	0.09
v/c Ratio	0.82	0.46		0.14	0.67	0.73	0.80	0.79	0.33	0.07	0.06	0.10
Control Delay	42.9	13.3		9.8	25.1	11.3	54.7	53.5	4.2	32.1	32.0	0.6
Queue Delay	0.0	0.1		0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.9	13.4		9.8	25.1	11.3	54.7	53.5	4.2	32.1	32.0	0.6
LOS	D	B		A	C	B	D	D	A	C	C	A
Approach Delay		23.8			18.1			36.0			13.2	
Approach LOS		C			B			D			B	

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 16 (21%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 23.1

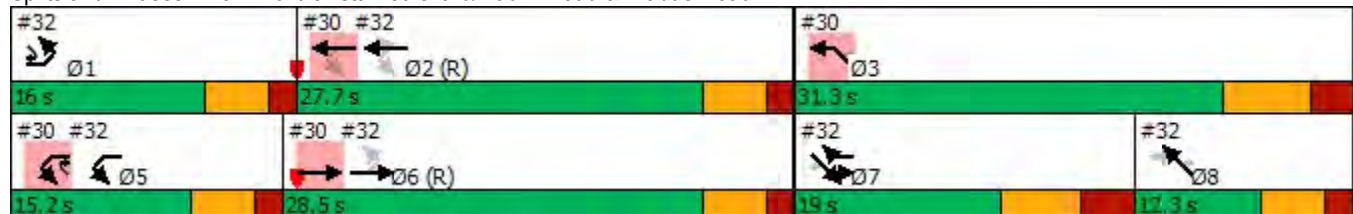
Intersection LOS: C

Intersection Capacity Utilization 82.2%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 32: Marblevista Boulevard/Dublin Road & Trabue Road



Lanes, Volumes, Timings
32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	27.4
Total Split (s)	31.3
Total Split (%)	42%
Maximum Green (s)	23.9
Yellow Time (s)	5.0
All-Red Time (s)	2.4
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

HCM 6th TWSC

1: Site Access 2/Builders Place & Trabue Road

Intersection												
Int Delay, s/veh	9.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		EB			EB			EB			EB	
Traffic Vol, veh/h	10	574	53	104	876	10	40	0	40	38	0	39
Future Vol, veh/h	10	574	53	104	876	10	40	0	40	38	0	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	4	4	4	2	2	2
Mvmt Flow	11	624	58	113	952	11	43	0	43	41	0	42
Major/Minor	Major1			Major2			Minor2			Minor1		
Conflicting Flow All	963	0	0	682	0	0	1518	1888	482	1377	1864	341
Stage 1	-	-	-	-	-	-	1184	1184	-	675	675	-
Stage 2	-	-	-	-	-	-	334	704	-	702	1189	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.58	6.58	6.98	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.58	5.58	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.58	5.58	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.54	4.04	3.34	3.52	4.02	3.32
Pot Cap-1 Maneuver	711	-	-	907	-	-	80	68	525	104	72	655
Stage 1	-	-	-	-	-	-	198	257	-	410	451	-
Stage 2	-	-	-	-	-	-	648	433	-	395	260	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	711	-	-	907	-	-	58	48	525	74	51	655
Mov Cap-2 Maneuver	-	-	-	-	-	-	58	48	-	74	51	-
Stage 1	-	-	-	-	-	-	193	188	-	400	440	-
Stage 2	-	-	-	-	-	-	591	422	-	265	190	-
Approach	EB			WB			SE			NW		
HCM Control Delay, s	0.2			1.9			122.7			68.6		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NWLn1	EBL	EBT	EBR	WBL	WBT	WBR	SELn1				
Capacity (veh/h)	134	711	-	-	907	-	-	104				
HCM Lane V/C Ratio	0.625	0.015	-	-	0.125	-	-	0.836				
HCM Control Delay (s)	68.6	10.1	0.1	-	9.5	1	-	122.7				
HCM Lane LOS	F	B	A	-	A	A	-	F				
HCM 95th %tile Q(veh)	3.3	0	-	-	0.4	-	-	4.7				

HCM 6th TWSC 5: Site Access 1 & Trabue Road

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↱			↑↑		↱
Traffic Vol, veh/h	631	14	0	990	0	21
Future Vol, veh/h	631	14	0	990	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	686	15	0	1076	0	23
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	351
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	645
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	645
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		10.8	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	645	-	-	-		
HCM Lane V/C Ratio	0.035	-	-	-		
HCM Control Delay (s)	10.8	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile Q(veh)	0.1	-	-	-		

Timing Report, Sorted By Phase

27: N Hague Avenue/Mapleway Drive & Trabue Road



Phase Number	1	2	4	6	8
Movement	WBL	EBTL	NBTL	WBTL	SBTL
Lead/Lag	Lead	Lag			
Lead-Lag Optimize	Yes	Yes			
Recall Mode	None	C-Min	None	C-Min	None
Maximum Split (s)	21	32	22	40	22
Maximum Split (%)	28.0%	42.7%	29.3%	53.3%	29.3%
Minimum Split (s)	8.7	25	11.1	25	11.1
Yellow Time (s)	3	4.3	3.2	4.3	3.2
All-Red Time (s)	0.7	0.7	0.9	0.7	0.9
Minimum Initial (s)	5	20	7	20	7
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)					
Flash Dont Walk (s)					
Dual Entry	No	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	21	53	0	53
End Time (s)	21	53	0	53	0
Yield/Force Off (s)	17.3	48	70.9	48	70.9
Yield/Force Off 170(s)	17.3	48	70.9	48	70.9
Local Start Time (s)	54	0	32	54	32
Local Yield (s)	71.3	27	49.9	27	49.9
Local Yield 170(s)	71.3	27	49.9	27	49.9

Intersection Summary

Cycle Length	75
Control Type	Actuated-Coordinated
Natural Cycle	45
Offset: 21 (28%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	

Splits and Phases: 27: N Hague Avenue/Mapleway Drive & Trabue Road



HCM 6th Signalized Intersection Summary 27: N Hague Avenue/Mapleway Drive & Trabue Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	460	190	256	733	18	100	40	150	27	19	19
Future Volume (veh/h)	25	460	190	256	733	18	100	40	150	27	19	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	27	500	207	278	797	20	109	43	163	29	21	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	456	1441	593	607	2562	64	218	63	384	89	62	35
Arrive On Green	0.59	0.59	0.59	0.03	0.24	0.24	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	669	2454	1011	1781	3542	89	874	406	1585	138	396	224
Grp Volume(v), veh/h	27	361	346	278	400	417	152	0	163	71	0	0
Grp Sat Flow(s),veh/h/ln	669	1777	1688	1781	1777	1854	1280	0	1585	758	0	0
Q Serve(g_s), s	1.5	7.9	8.0	3.9	13.9	13.9	0.0	0.0	6.5	0.3	0.0	0.0
Cycle Q Clear(g_c), s	5.1	7.9	8.0	3.9	13.9	13.9	8.9	0.0	6.5	9.3	0.0	0.0
Prop In Lane	1.00		0.60	1.00		0.05	0.72		1.00	0.41		0.30
Lane Grp Cap(c), veh/h	456	1043	991	607	1285	1341	281	0	384	185	0	0
V/C Ratio(X)	0.06	0.35	0.35	0.46	0.31	0.31	0.54	0.00	0.42	0.38	0.00	0.00
Avail Cap(c_a), veh/h	456	1043	991	863	1285	1341	404	0	516	306	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.3	8.0	8.0	5.4	13.2	13.2	30.4	0.0	24.0	28.1	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.9	1.0	0.5	0.6	0.6	1.6	0.0	0.7	1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.8	2.6	1.2	6.6	6.9	2.6	0.0	2.5	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.6	8.9	9.0	5.9	13.8	13.8	32.0	0.0	24.7	29.4	0.0	0.0
LnGrp LOS	A	A	A	A	B	B	C	A	C	C	A	A
Approach Vol, veh/h	734		1095				315			71		
Approach Delay, s/veh	9.0		11.8				28.3			29.4		
Approach LOS	A		B				C			C		
Timer - Assigned Phs	1	2	4		6		8					
Phs Duration (G+Y+Rc), s	10.2	49.0	15.8		59.2		15.8					
Change Period (Y+Rc), s	* 3.7	* 5	* 4.1		* 5		* 4.1					
Max Green Setting (Gmax), s	* 17	* 27	* 18		* 35		* 18					
Max Q Clear Time (g_c+I1), s	5.9	10.0	10.9		15.9		11.3					
Green Ext Time (p_c), s	0.6	4.3	0.7		4.9		0.1					
Intersection Summary												
HCM 6th Ctrl Delay			13.8									
HCM 6th LOS			B									
Notes												

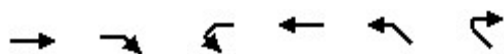
Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road

							Ø1	Ø7	Ø8
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR			
Lane Configurations	↑↑		↵	↑↑	↵	↵↵			
Traffic Volume (vph)	550	95	200	787	203	310			
Future Volume (vph)	550	95	200	787	203	310			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)		0	0		335	335			
Storage Lanes		0	1		1	1			
Taper Length (ft)			50		50				
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	0.88			
Frt	0.978					0.850			
Flt Protected			0.950		0.950				
Satd. Flow (prot)	3461	0	1770	3539	1770	2787			
Flt Permitted			0.297		0.950				
Satd. Flow (perm)	3461	0	553	3539	1770	2787			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	27					150			
Link Speed (mph)	35			35	50				
Link Distance (ft)	530			305	1567				
Travel Time (s)	10.3			5.9	21.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Adj. Flow (vph)	598	103	217	855	221	337			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	701	0	217	855	221	337			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	24			24	12				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)		9	15		15	9			
Number of Detectors	2		1	2	1	1			
Detector Template	Thru		Left	Thru	Left	Right			
Leading Detector (ft)	100		20	100	20	20			
Trailing Detector (ft)	0		0	0	0	0			
Detector 1 Position(ft)	0		0	0	0	0			
Detector 1 Size(ft)	6		20	6	20	20			
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel									
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0			
Detector 2 Position(ft)	94			94					
Detector 2 Size(ft)	6			6					
Detector 2 Type	Cl+Ex			Cl+Ex					
Detector 2 Channel									
Detector 2 Extend (s)	0.0			0.0					
Turn Type	NA		pm+pt	NA	Prot	pm+ov			
Protected Phases	6		5	2	3	5	1	7	8
Permitted Phases			2			3			

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø1	Ø7	Ø8
Detector Phase	6		5	2	3	5			
Switch Phase									
Minimum Initial (s)	19.0		10.0	19.0	7.0	10.0	10.0	10.0	7.0
Minimum Split (s)	24.1		15.2	24.1	27.4	15.2	15.2	17.5	12.3
Total Split (s)	28.5		15.2	27.7	31.3	15.2	16.0	19.0	12.3
Total Split (%)	38.0%		20.3%	36.9%	41.7%	20.3%	21%	25%	16%
Maximum Green (s)	23.4		10.0	22.6	23.9	10.0	10.8	11.5	7.0
Yellow Time (s)	3.6		3.6	3.6	5.0	3.6	3.6	4.5	3.6
All-Red Time (s)	1.5		1.6	1.5	2.4	1.6	1.6	3.0	1.7
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.1		5.2	5.1	7.4	5.2			
Lead/Lag	Lag		Lead	Lag		Lead	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes		Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Min		None	C-Min	None	None	None	None	None
Walk Time (s)	7.0			7.0	7.0				
Flash Dont Walk (s)	12.0			12.0	13.0				
Pedestrian Calls (#/hr)	0			0	0				
Act Effect Green (s)	28.3		36.2	26.3	19.0	36.4			
Actuated g/C Ratio	0.38		0.48	0.35	0.25	0.49			
v/c Ratio	0.53		0.51	0.69	0.49	0.24			
Control Delay	27.7		18.6	13.8	26.5	5.6			
Queue Delay	0.0		0.0	0.1	0.0	0.0			
Total Delay	27.7		18.6	13.9	26.5	5.6			
LOS	C		B	B	C	A			
Approach Delay	27.7			14.8	13.9				
Approach LOS	C			B	B				

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 16 (21%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 18.5

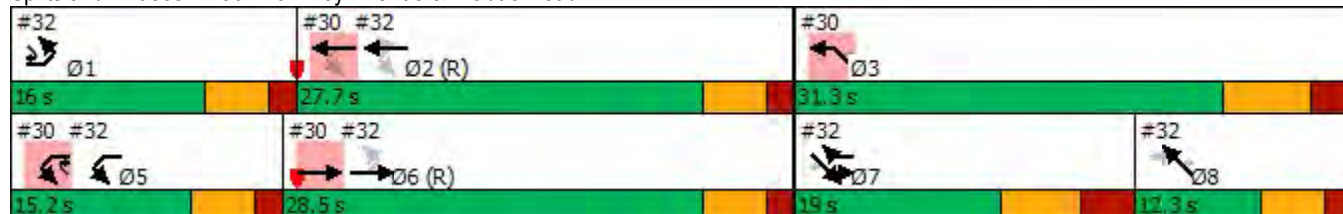
Intersection LOS: B

Intersection Capacity Utilization 55.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 30: McKinley Avenue & Trabue Road



Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	304	526	30	60	760	720	360	20	217	10	10	30
Future Volume (vph)	304	526	30	60	760	720	360	20	217	10	10	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		0	290		525	250		500	90		40
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.992				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.957		0.950		
Satd. Flow (prot)	1770	3511	0	1770	3539	1583	1681	1694	1583	1770	1863	1583
Flt Permitted	0.172			0.362			0.950	0.957		0.952		
Satd. Flow (perm)	320	3511	0	674	3539	1583	1681	1694	1583	1773	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8				392			189			215
Link Speed (mph)		35			45			45			25	
Link Distance (ft)		305			829			768			535	
Travel Time (s)		5.9			12.6			11.6			14.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	330	572	33	65	826	783	391	22	236	11	11	33
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	330	605	0	65	826	783	207	206	236	11	11	33
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	Split	NA	pm+ov	Perm	NA	Perm
Protected Phases	1	6		5	2	7	7	7	1		8	
Permitted Phases	6			2		2			7	8		8

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Detector Phase	1	6		5	2	7	7	7	1	8	8	8
Switch Phase												
Minimum Initial (s)	10.0	19.0		10.0	19.0	10.0	10.0	10.0	10.0	7.0	7.0	7.0
Minimum Split (s)	15.2	24.1		15.2	24.1	17.5	17.5	17.5	15.2	12.3	12.3	12.3
Total Split (s)	16.0	28.5		15.2	27.7	19.0	19.0	19.0	16.0	12.3	12.3	12.3
Total Split (%)	21.3%	38.0%		20.3%	36.9%	25.3%	25.3%	25.3%	21.3%	16.4%	16.4%	16.4%
Maximum Green (s)	10.8	23.4		10.0	22.6	11.5	11.5	11.5	10.8	7.0	7.0	7.0
Yellow Time (s)	3.6	3.6		3.6	3.6	4.5	4.5	4.5	3.6	3.6	3.6	3.6
All-Red Time (s)	1.6	1.5		1.6	1.5	3.0	3.0	3.0	1.6	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.2	5.1		5.2	5.1	7.5	7.5	7.5	5.2	5.3	5.3	5.3
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min		None	C-Min	None	None	None	None	None	None	None
Walk Time (s)		7.0			7.0							
Flash Dont Walk (s)		12.0			12.0							
Pedestrian Calls (#/hr)		0			0							
Act Effect Green (s)	40.1	28.3		36.2	26.3	43.0	11.5	11.5	27.9	7.0	7.0	7.0
Actuated g/C Ratio	0.53	0.38		0.48	0.35	0.57	0.15	0.15	0.37	0.09	0.09	0.09
v/c Ratio	0.82	0.46		0.14	0.66	0.73	0.80	0.79	0.33	0.07	0.06	0.10
Control Delay	43.8	11.8		9.8	25.0	11.2	55.6	54.3	4.2	32.1	32.0	0.6
Queue Delay	0.0	0.1		0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.8	11.9		9.8	25.0	11.2	55.6	54.3	4.2	32.1	32.0	0.6
LOS	D	B		A	C	B	E	D	A	C	C	A
Approach Delay		23.2			18.0			36.5			13.2	
Approach LOS		C			B			D			B	

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 16 (21%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 23.0

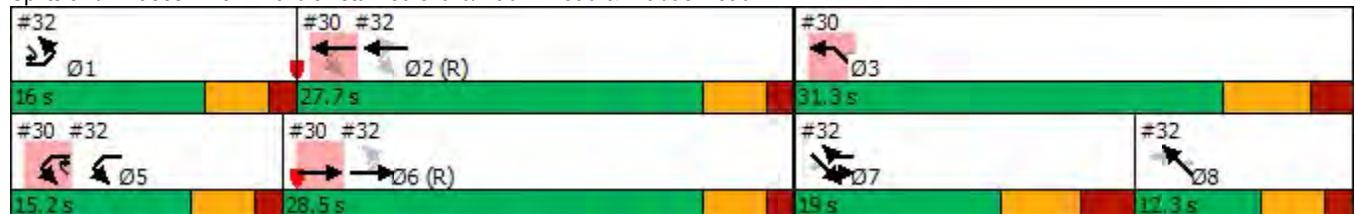
Intersection LOS: C

Intersection Capacity Utilization 82.2%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 32: Marblevista Boulevard/Dublin Road & Trabue Road



Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	27.4
Total Split (s)	31.3
Total Split (%)	42%
Maximum Green (s)	23.9
Yellow Time (s)	5.0
All-Red Time (s)	2.4
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

HCM 6th TWSC

1: Site Access 2/Builders Place & Trabue Road

Intersection													
Int Delay, s/veh	57.5												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations													
Traffic Vol, veh/h	10	574	53	200	104	876	10	40	0	40	38	0	39
Future Vol, veh/h	10	574	53	200	104	876	10	40	0	40	38	0	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	4	4	4	2	2	2
Mvmt Flow	11	624	58	217	113	952	11	43	0	43	41	0	42
Major/Minor	Major1			Major2			Minor2			Minor1			
Conflicting Flow All	963	0	0	682	682	0	0	1952	2322	482	1811	2298	341
Stage 1	-	-	-	-	-	-	-	1618	1618	-	675	675	-
Stage 2	-	-	-	-	-	-	-	334	704	-	1136	1623	-
Critical Hdwy	4.14	-	-	6.44	4.14	-	-	7.58	6.58	6.98	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.58	5.58	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.58	5.58	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.52	2.22	-	-	3.54	4.04	3.34	3.52	4.02	3.32
Pot Cap-1 Maneuver	711	-	-	530	907	-	-	~ 38	36	525	49	38	655
Stage 1	-	-	-	-	-	-	-	106	157	-	410	451	-
Stage 2	-	-	-	-	-	-	-	648	433	-	215	160	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	711	-	-	589	589	-	-	~ 19	15	525	~ 25	16	655
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 19	15	-	~ 25	16	-
Stage 1	-	-	-	-	-	-	-	103	69	-	400	440	-
Stage 2	-	-	-	-	-	-	-	591	422	-	87	70	-
Approach	EB			WB			SE			NW			
HCM Control Delay, s	0.2			4.8			\$ 847.9			\$ 523.9			
HCM LOS							F			F			
Minor Lane/Major Mvmt	NWLn1	EBL	EBT	EBR	WBL	WBT	WBR	SELn1					
Capacity (veh/h)	49	711	-	-	589	-	-	37					
HCM Lane V/C Ratio	1.708	0.015	-	-	0.561	-	-	2.35					
HCM Control Delay (s)	\$ 523.9	10.1	0.1	-	18.6	-	-	\$ 847.9					
HCM Lane LOS	F	B	A	-	C	-	-	F					
HCM 95th %tile Q(veh)	8.2	0	-	-	3.5	-	-	9.6					
Notes													
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon							

HCM 6th TWSC 5: Site Access 1 & Trabue Road

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↗
Traffic Vol, veh/h	831	14	0	1190	0	21
Future Vol, veh/h	831	14	0	1190	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	903	15	0	1293	0	23
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	459
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	549
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	549
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		11.8	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	549	-	-	-		
HCM Lane V/C Ratio	0.042	-	-	-		
HCM Control Delay (s)	11.8	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile Q(veh)	0.1	-	-	-		

Timing Report, Sorted By Phase

27: N Hague Avenue/Mapleway Drive & Trabue Road

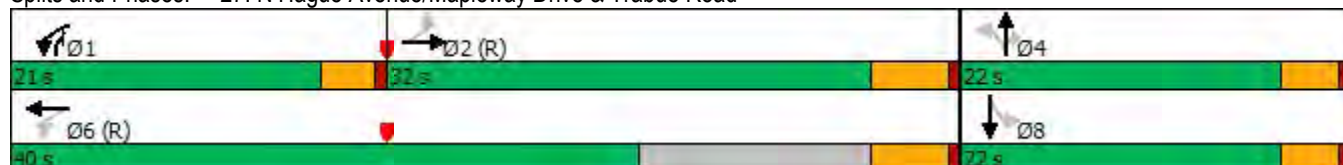


Phase Number	1	2	4	6	8
Movement	WBL	EBTL	NBTL	WBTL	SBTL
Lead/Lag	Lead	Lag			
Lead-Lag Optimize	Yes	Yes			
Recall Mode	None	C-Min	None	C-Min	None
Maximum Split (s)	21	32	22	40	22
Maximum Split (%)	28.0%	42.7%	29.3%	53.3%	29.3%
Minimum Split (s)	8.7	25	11.1	25	11.1
Yellow Time (s)	3	4.3	3.2	4.3	3.2
All-Red Time (s)	0.7	0.7	0.9	0.7	0.9
Minimum Initial (s)	5	20	7	20	7
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)					
Flash Dont Walk (s)					
Dual Entry	No	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	21	53	0	53
End Time (s)	21	53	0	53	0
Yield/Force Off (s)	17.3	48	70.9	48	70.9
Yield/Force Off 170(s)	17.3	48	70.9	48	70.9
Local Start Time (s)	54	0	32	54	32
Local Yield (s)	71.3	27	49.9	27	49.9
Local Yield 170(s)	71.3	27	49.9	27	49.9

Intersection Summary

Cycle Length	75
Control Type	Actuated-Coordinated
Natural Cycle	45
Offset: 21 (28%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	

Splits and Phases: 27: N Hague Avenue/Mapleway Drive & Trabue Road



HCM 6th Signalized Intersection Summary 27: N Hague Avenue/Mapleway Drive & Trabue Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	460	190	256	733	18	100	40	150	27	19	19
Future Volume (veh/h)	25	460	190	256	733	18	100	40	150	27	19	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	27	500	207	278	797	20	109	43	163	29	21	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	456	1441	593	607	2562	64	218	63	384	89	62	35
Arrive On Green	0.59	0.59	0.59	0.03	0.24	0.24	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	669	2454	1011	1781	3542	89	874	406	1585	138	396	224
Grp Volume(v), veh/h	27	361	346	278	400	417	152	0	163	71	0	0
Grp Sat Flow(s),veh/h/ln	669	1777	1688	1781	1777	1854	1280	0	1585	758	0	0
Q Serve(g_s), s	1.5	7.9	8.0	3.9	13.9	13.9	0.0	0.0	6.5	0.3	0.0	0.0
Cycle Q Clear(g_c), s	5.1	7.9	8.0	3.9	13.9	13.9	8.9	0.0	6.5	9.3	0.0	0.0
Prop In Lane	1.00		0.60	1.00		0.05	0.72		1.00	0.41		0.30
Lane Grp Cap(c), veh/h	456	1043	991	607	1285	1341	281	0	384	185	0	0
V/C Ratio(X)	0.06	0.35	0.35	0.46	0.31	0.31	0.54	0.00	0.42	0.38	0.00	0.00
Avail Cap(c_a), veh/h	456	1043	991	863	1285	1341	404	0	516	306	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.3	8.0	8.0	5.4	13.2	13.2	30.4	0.0	24.0	28.1	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.9	1.0	0.5	0.6	0.6	1.6	0.0	0.7	1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.8	2.6	1.2	6.6	6.9	2.6	0.0	2.5	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.6	8.9	9.0	5.9	13.8	13.8	32.0	0.0	24.7	29.4	0.0	0.0
LnGrp LOS	A	A	A	A	B	B	C	A	C	C	A	A
Approach Vol, veh/h	734			1095			315			71		
Approach Delay, s/veh	9.0			11.8			28.3			29.4		
Approach LOS	A			B			C			C		
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	10.2	49.0		15.8		59.2		15.8				
Change Period (Y+Rc), s	* 3.7	* 5		* 4.1		* 5		* 4.1				
Max Green Setting (Gmax), s	* 17	* 27		* 18		* 35		* 18				
Max Q Clear Time (g_c+I1), s	5.9	10.0		10.9		15.9		11.3				
Green Ext Time (p_c), s	0.6	4.3		0.7		4.9		0.1				

Intersection Summary

HCM 6th Ctrl Delay	13.8
HCM 6th LOS	B

Notes

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

Lanes, Volumes, Timings

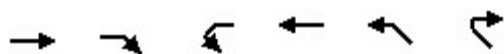
30: McKinley Avenue & Trabue Road

									
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø1	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	550	295	0	987	203	310			
Future Volume (vph)	550	295	0	987	203	310			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)		0	0		335	335			
Storage Lanes		0	0		1	1			
Taper Length (ft)			50		50				
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	0.88			
Frt	0.948					0.850			
Flt Protected					0.950				
Satd. Flow (prot)	3355	0	0	3539	1770	2787			
Flt Permitted					0.950				
Satd. Flow (perm)	3355	0	0	3539	1770	2787			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	137					150			
Link Speed (mph)	35			35	50				
Link Distance (ft)	530			305	1567				
Travel Time (s)	10.3			5.9	21.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Adj. Flow (vph)	598	321	0	1073	221	337			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	919	0	0	1073	221	337			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	12			12	12				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)		9	15		15	9			
Number of Detectors	2			2	1	1			
Detector Template	Thru			Thru	Left	Right			
Leading Detector (ft)	100			100	20	20			
Trailing Detector (ft)	0			0	0	0			
Detector 1 Position(ft)	0			0	0	0			
Detector 1 Size(ft)	6			6	20	20			
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel									
Detector 1 Extend (s)	0.0			0.0	0.0	0.0			
Detector 1 Queue (s)	0.0			0.0	0.0	0.0			
Detector 1 Delay (s)	0.0			0.0	0.0	0.0			
Detector 2 Position(ft)	94			94					
Detector 2 Size(ft)	6			6					
Detector 2 Type	Cl+Ex			Cl+Ex					
Detector 2 Channel									
Detector 2 Extend (s)	0.0			0.0					
Turn Type	NA			NA	Prot	custom			
Protected Phases	6			2	3	5	1	7	8
Permitted Phases						3			

HY PM Build
Rerouted Lefts

Synchro 11 Report

Lanes, Volumes, Timings 30: McKinley Avenue & Trabue Road



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø1	Ø7	Ø8
Detector Phase	6			2	3	5			
Switch Phase									
Minimum Initial (s)	19.0			19.0	7.0	10.0	10.0	10.0	7.0
Minimum Split (s)	24.1			24.1	27.4	15.2	15.2	17.5	12.3
Total Split (s)	28.5			27.7	31.3	15.2	16.0	19.0	12.3
Total Split (%)	38.0%			36.9%	41.7%	20.3%	21%	25%	16%
Maximum Green (s)	23.4			22.6	23.9	10.0	10.8	11.5	7.0
Yellow Time (s)	3.6			3.6	5.0	3.6	3.6	4.5	3.6
All-Red Time (s)	1.5			1.5	2.4	1.6	1.6	3.0	1.7
Lost Time Adjust (s)	0.0			0.0	0.0	0.0			
Total Lost Time (s)	5.1			5.1	7.4	5.2			
Lead/Lag	Lag			Lag		Lead	Lead	Lead	Lag
Lead-Lag Optimize?	Yes			Yes		Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0			3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Min			C-Min	None	None	None	None	None
Walk Time (s)	7.0			7.0	7.0				
Flash Dont Walk (s)	12.0			12.0	13.0				
Pedestrian Calls (#/hr)	0			0	0				
Act Effect Green (s)	28.3			26.4	19.0	36.4			
Actuated g/C Ratio	0.38			0.35	0.25	0.49			
v/c Ratio	0.68			0.86	0.49	0.24			
Control Delay	28.4			21.2	26.5	5.6			
Queue Delay	0.0			0.0	0.0	0.0			
Total Delay	28.4			21.2	26.5	5.6			
LOS	C			C	C	A			
Approach Delay	28.4			21.2	13.9				
Approach LOS	C			C	B				

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 16 (21%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 22.2

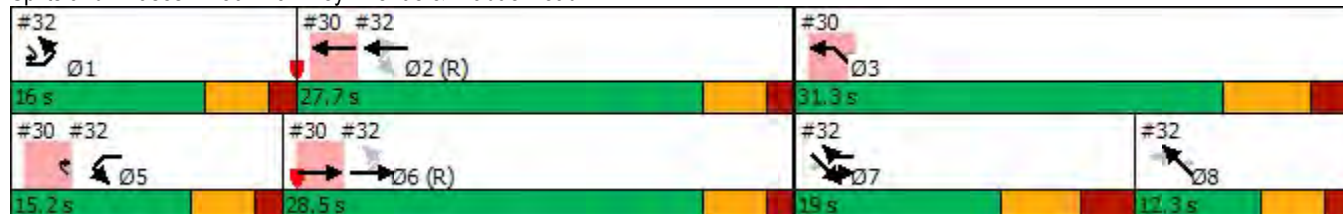
Intersection LOS: C

Intersection Capacity Utilization 48.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 30: McKinley Avenue & Trabue Road



Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	304	526	30	60	760	720	360	20	217	10	10	30
Future Volume (vph)	304	526	30	60	760	720	360	20	217	10	10	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		0	290		525	250		500	90		40
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.992				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.957		0.950		
Satd. Flow (prot)	1770	3511	0	1770	3539	1583	1681	1694	1583	1770	1863	1583
Flt Permitted	0.172			0.362			0.950	0.957		0.952		
Satd. Flow (perm)	320	3511	0	674	3539	1583	1681	1694	1583	1773	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8				392			189			215
Link Speed (mph)		35			45			45			25	
Link Distance (ft)		305			829			768			535	
Travel Time (s)		5.9			12.6			11.6			14.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	330	572	33	65	826	783	391	22	236	11	11	33
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	330	605	0	65	826	783	207	206	236	11	11	33
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	Split	NA	pm+ov	Perm	NA	Perm
Protected Phases	1	6		5	2	7	7	7	1		8	
Permitted Phases	6			2		2			7	8		8

HY PM Build
Rerouted Lefts

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	

HY PM Build
Rerouted Lefts

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Detector Phase	1	6		5	2	7	7	7	1	8	8	8
Switch Phase												
Minimum Initial (s)	10.0	19.0		10.0	19.0	10.0	10.0	10.0	10.0	7.0	7.0	7.0
Minimum Split (s)	15.2	24.1		15.2	24.1	17.5	17.5	17.5	15.2	12.3	12.3	12.3
Total Split (s)	16.0	28.5		15.2	27.7	19.0	19.0	19.0	16.0	12.3	12.3	12.3
Total Split (%)	21.3%	38.0%		20.3%	36.9%	25.3%	25.3%	25.3%	21.3%	16.4%	16.4%	16.4%
Maximum Green (s)	10.8	23.4		10.0	22.6	11.5	11.5	11.5	10.8	7.0	7.0	7.0
Yellow Time (s)	3.6	3.6		3.6	3.6	4.5	4.5	4.5	3.6	3.6	3.6	3.6
All-Red Time (s)	1.6	1.5		1.6	1.5	3.0	3.0	3.0	1.6	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.2	5.1		5.2	5.1	7.5	7.5	7.5	5.2	5.3	5.3	5.3
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min		None	C-Min	None	None	None	None	None	None	None
Walk Time (s)		7.0			7.0							
Flash Dont Walk (s)		12.0			12.0							
Pedestrian Calls (#/hr)		0			0							
Act Effect Green (s)	40.0	28.3		36.3	26.4	43.1	11.5	11.5	27.8	7.0	7.0	7.0
Actuated g/C Ratio	0.53	0.38		0.48	0.35	0.57	0.15	0.15	0.37	0.09	0.09	0.09
v/c Ratio	0.82	0.46		0.14	0.66	0.73	0.80	0.79	0.33	0.07	0.06	0.10
Control Delay	41.1	15.1		9.8	24.9	11.2	55.6	54.3	4.2	32.1	32.0	0.6
Queue Delay	0.0	0.1		0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.1	15.2		9.8	25.2	11.2	55.6	54.3	4.2	32.1	32.0	0.6
LOS	D	B		A	C	B	E	D	A	C	C	A
Approach Delay		24.4			18.1			36.5			13.2	
Approach LOS		C			B			D			B	

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 16 (21%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 23.4

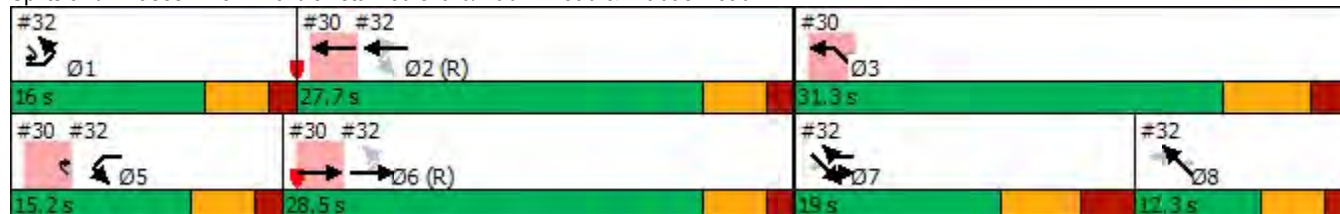
Intersection LOS: C

Intersection Capacity Utilization 82.2%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 32: Marblevista Boulevard/Dublin Road & Trabue Road



Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	27.4
Total Split (s)	31.3
Total Split (%)	42%
Maximum Green (s)	23.9
Yellow Time (s)	5.0
All-Red Time (s)	2.4
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

HCM 6th TWSC

1: Trabue Road & Builders Place

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Vol, veh/h	41	618	391	31	11	11
Future Vol, veh/h	41	618	391	31	11	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	6	3	3	20	20
Mvmt Flow	45	672	425	34	12	12
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	459	0	-	0	868	230
Stage 1	-	-	-	-	442	-
Stage 2	-	-	-	-	426	-
Critical Hdwy	4.22	-	-	-	7.2	7.3
Critical Hdwy Stg 1	-	-	-	-	6.2	-
Critical Hdwy Stg 2	-	-	-	-	6.2	-
Follow-up Hdwy	2.26	-	-	-	3.7	3.5
Pot Cap-1 Maneuver	1071	-	-	-	259	720
Stage 1	-	-	-	-	565	-
Stage 2	-	-	-	-	577	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1071	-	-	-	248	720
Mov Cap-2 Maneuver	-	-	-	-	248	-
Stage 1	-	-	-	-	541	-
Stage 2	-	-	-	-	577	-
Approach	EB	WB		SE		
HCM Control Delay, s	0.5	0		15.4		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SELn1	
Capacity (veh/h)	1071	-	-	-	369	
HCM Lane V/C Ratio	0.042	-	-	-	0.065	
HCM Control Delay (s)	8.5	-	-	-	15.4	
HCM Lane LOS	A	-	-	-	C	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	

Timing Report, Sorted By Phase

27: N Hague Avenue/Mapleway Drive & Trabue Road

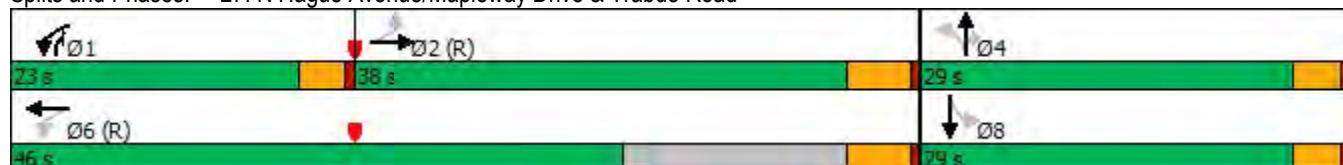


Phase Number	1	2	4	6	8
Movement	WBL	EBTL	NBTL	WBTL	SBTL
Lead/Lag	Lead	Lag			
Lead-Lag Optimize	Yes	Yes			
Recall Mode	None	C-Min	None	C-Min	None
Maximum Split (s)	23	38	29	46	29
Maximum Split (%)	25.6%	42.2%	32.2%	51.1%	32.2%
Minimum Split (s)	8.7	25	11.1	25	11.1
Yellow Time (s)	3	4.3	3.2	4.3	3.2
All-Red Time (s)	0.7	0.7	0.9	0.7	0.9
Minimum Initial (s)	5	20	7	20	7
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)					
Flash Dont Walk (s)					
Dual Entry	No	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	67	0	38	67	38
End Time (s)	0	38	67	38	67
Yield/Force Off (s)	86.3	33	62.9	33	62.9
Yield/Force Off 170(s)	86.3	33	62.9	33	62.9
Local Start Time (s)	67	0	38	67	38
Local Yield (s)	86.3	33	62.9	33	62.9
Local Yield 170(s)	86.3	33	62.9	33	62.9

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	45
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	

Splits and Phases: 27: N Hague Avenue/Mapleway Drive & Trabue Road



HCM 6th Signalized Intersection Summary 27: N Hague Avenue/Mapleway Drive & Trabue Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	401	92	124	283	12	111	19	212	40	25	25
Future Volume (veh/h)	15	401	92	124	283	12	111	19	212	40	25	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1826	1826	1826	1856	1856	1856	1841	1841	1841	1870	1870	1870
Adj Flow Rate, veh/h	16	436	100	135	308	13	121	21	230	43	27	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	3	3	3	4	4	4	2	2	2
Cap, veh/h	713	1719	391	641	2438	103	239	36	383	93	58	36
Arrive On Green	0.61	0.61	0.61	0.11	1.00	1.00	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1034	2807	639	1767	3447	145	858	186	1560	185	302	188
Grp Volume(v), veh/h	16	268	268	135	157	164	142	0	230	97	0	0
Grp Sat Flow(s),veh/h/ln	1034	1735	1711	1767	1763	1829	1044	0	1560	676	0	0
Q Serve(g_s), s	0.5	6.4	6.5	2.4	0.0	0.0	0.0	0.0	11.7	2.9	0.0	0.0
Cycle Q Clear(g_c), s	0.5	6.4	6.5	2.4	0.0	0.0	12.1	0.0	11.7	15.0	0.0	0.0
Prop In Lane	1.00		0.37	1.00		0.08	0.85		1.00	0.44		0.28
Lane Grp Cap(c), veh/h	713	1062	1048	641	1247	1294	274	0	383	187	0	0
V/C Ratio(X)	0.02	0.25	0.26	0.21	0.13	0.13	0.52	0.00	0.60	0.52	0.00	0.00
Avail Cap(c_a), veh/h	713	1062	1048	925	1247	1294	392	0	515	306	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.9	8.0	8.0	4.9	0.0	0.0	34.1	0.0	30.1	35.1	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.6	0.6	0.2	0.2	0.2	1.5	0.0	1.5	2.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.3	2.3	0.7	0.1	0.1	2.9	0.0	4.5	2.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.9	8.6	8.6	5.1	0.2	0.2	35.7	0.0	31.6	37.3	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	C	D	A	A
Approach Vol, veh/h	552				456				372			
Approach Delay, s/veh	8.5				1.6				33.1			
Approach LOS	A				A				C			
Timer - Assigned Phs	1	2	4			6		8				
Phs Duration (G+Y+Rc), s	8.5	60.1	21.4			68.6		21.4				
Change Period (Y+Rc), s	* 3.7	* 5	* 4.1			* 5		* 4.1				
Max Green Setting (Gmax), s	* 19	* 33	* 25			* 41		* 25				
Max Q Clear Time (g_c+l1), s	4.4	8.5	14.1			2.0		17.0				
Green Ext Time (p_c), s	0.3	3.3	1.1			1.9		0.3				
Intersection Summary												
HCM 6th Ctrl Delay			14.5									
HCM 6th LOS			B									
Notes												

Lanes, Volumes, Timings
30: McKinley Avenue & Trabue Road

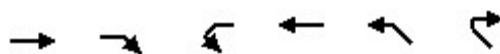
									
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø1	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	514	114	165	355	56	178			
Future Volume (vph)	514	114	165	355	56	178			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)		0	0		335	335			
Storage Lanes		0	1		1	1			
Taper Length (ft)			50		50				
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	0.88			
Frt	0.973					0.850			
Flt Protected			0.950		0.950				
Satd. Flow (prot)	3283	0	1671	3343	1641	2584			
Flt Permitted			0.292		0.950				
Satd. Flow (perm)	3283	0	514	3343	1641	2584			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	30					155			
Link Speed (mph)	35			35	50				
Link Distance (ft)	922			305	1567				
Travel Time (s)	18.0			5.9	21.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Heavy Vehicles (%)	7%	7%	8%	8%	10%	10%			
Adj. Flow (vph)	559	124	179	386	61	193			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	683	0	179	386	61	193			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	24			24	12				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)		9	15		15	9			
Number of Detectors	2		1	2	1	1			
Detector Template	Thru		Left	Thru	Left	Right			
Leading Detector (ft)	100		20	100	20	20			
Trailing Detector (ft)	0		0	0	0	0			
Detector 1 Position(ft)	0		0	0	0	0			
Detector 1 Size(ft)	6		20	6	20	20			
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel									
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0			
Detector 2 Position(ft)	94			94					
Detector 2 Size(ft)	6			6					
Detector 2 Type	Cl+Ex			Cl+Ex					
Detector 2 Channel									
Detector 2 Extend (s)	0.0			0.0					
Turn Type	NA		pm+pt	NA	Prot	pm+ov			
Protected Phases	6		5	2	3	5	1	7	8

OY AM No Build
With Improvements

Synchro 11 Report

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø1	Ø7	Ø8
Permitted Phases			2		3				
Detector Phase	6		5	2	3	5			
Switch Phase									
Minimum Initial (s)	19.0		10.0	19.0	7.0	10.0	10.0	10.0	7.0
Minimum Split (s)	24.1		15.2	24.1	27.4	15.2	15.2	17.5	12.3
Total Split (s)	31.7		16.0	30.3	42.3	16.0	17.4	30.0	12.3
Total Split (%)	35.2%		17.8%	33.7%	47.0%	17.8%	19%	33%	14%
Maximum Green (s)	26.6		10.8	25.2	34.9	10.8	12.2	22.5	7.0
Yellow Time (s)	3.6		3.6	3.6	5.0	3.6	3.6	4.5	3.6
All-Red Time (s)	1.5		1.6	1.5	2.4	1.6	1.6	3.0	1.7
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.1		5.2	5.1	7.4	5.2			
Lead/Lag	Lag		Lead	Lag		Lead	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes		Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Min		None	C-Min	None	None	None	None	None
Walk Time (s)	7.0			7.0	7.0				
Flash Dont Walk (s)	12.0			12.0	13.0				
Pedestrian Calls (#/hr)	0			0	0				
Act Effect Green (s)	35.5		45.2	34.8	26.3	44.2			
Actuated g/C Ratio	0.39		0.50	0.39	0.29	0.49			
v/c Ratio	0.52		0.46	0.30	0.13	0.14			
Control Delay	20.2		19.2	11.4	20.2	2.5			
Queue Delay	0.0		0.0	0.0	0.0	0.0			
Total Delay	20.2		19.2	11.4	20.2	2.5			
LOS	C		B	B	C	A			
Approach Delay	20.2			13.9	6.8				
Approach LOS	C			B	A				

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 17.4 (19%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 15.6

Intersection LOS: B

Intersection Capacity Utilization 47.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 30: McKinley Avenue & Trabue Road



OY AM No Build
With Improvements

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	183	494	10	10	324	186	466	11	193	10	10	40
Future Volume (vph)	183	494	10	10	324	186	466	11	193	10	10	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		0	290		525	250		500	90		40
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.997				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.954		0.950		
Satd. Flow (prot)	1671	3333	0	1719	3438	1538	1681	1688	1583	1656	1743	1482
Flt Permitted	0.506			0.379			0.950	0.954		0.952		
Satd. Flow (perm)	890	3333	0	686	3438	1538	1681	1688	1583	1659	1743	1482
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				202			210			179
Link Speed (mph)		35			45			45			25	
Link Distance (ft)		305			2865			768			535	
Travel Time (s)		5.9			43.4			11.6			14.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	8%	8%	5%	5%	5%	2%	2%	2%	9%	9%	9%
Adj. Flow (vph)	199	537	11	11	352	202	507	12	210	11	11	43
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	199	548	0	11	352	202	259	260	210	11	11	43
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Right	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	Split	NA	pm+ov	Perm	NA	Perm
Protected Phases	1	6		5	2	7	7	7	1		8	

OY AM No Build
With Improvements

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3

OY AM No Build
With Improvements

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Permitted Phases	6			2		2			7	8		8
Detector Phase	1	6		5	2	7	7	7	1	8	8	8
Switch Phase												
Minimum Initial (s)	10.0	19.0		10.0	19.0	10.0	10.0	10.0	10.0	7.0	7.0	7.0
Minimum Split (s)	15.2	24.1		15.2	24.1	17.5	17.5	17.5	15.2	12.3	12.3	12.3
Total Split (s)	17.4	31.7		16.0	30.3	30.0	30.0	30.0	17.4	12.3	12.3	12.3
Total Split (%)	19.3%	35.2%		17.8%	33.7%	33.3%	33.3%	33.3%	19.3%	13.7%	13.7%	13.7%
Maximum Green (s)	12.2	26.6		10.8	25.2	22.5	22.5	22.5	12.2	7.0	7.0	7.0
Yellow Time (s)	3.6	3.6		3.6	3.6	4.5	4.5	4.5	3.6	3.6	3.6	3.6
All-Red Time (s)	1.6	1.5		1.6	1.5	3.0	3.0	3.0	1.6	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.2	5.1		5.2	5.1	7.5	7.5	7.5	5.2	5.3	5.3	5.3
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min		None	C-Min	None	None	None	None	None	None	None
Walk Time (s)		7.0			7.0							
Flash Dont Walk (s)		12.0			12.0							
Pedestrian Calls (#/hr)		0			0							
Act Effect Green (s)	46.6	35.5		45.2	34.8	58.7	18.8	18.8	34.4	7.0	7.0	7.0
Actuated g/C Ratio	0.52	0.39		0.50	0.39	0.65	0.21	0.21	0.38	0.08	0.08	0.08
v/c Ratio	0.36	0.42		0.02	0.26	0.19	0.74	0.74	0.29	0.09	0.08	0.15
Control Delay	8.3	10.9		12.9	22.3	1.7	45.8	45.7	2.5	40.2	40.1	1.2
Queue Delay	0.0	0.1		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.3	11.0		12.9	22.3	1.7	45.8	45.7	2.5	40.2	40.1	1.2
LOS	A	B		B	C	A	D	D	A	D	D	A
Approach Delay		10.3			14.8			33.3			14.4	
Approach LOS		B			B			C			B	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 17.4 (19%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 19.6

Intersection LOS: B

Intersection Capacity Utilization 60.7%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 32: Marblevista Boulevard/Dublin Road & Trabue Road



OY AM No Build
With Improvements

Synchro 11 Report

Lanes, Volumes, Timings
32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	27.4
Total Split (s)	42.3
Total Split (%)	47%
Maximum Green (s)	34.9
Yellow Time (s)	5.0
All-Red Time (s)	2.4
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

HCM 6th TWSC

1: Trabue Road & Builders Place

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Vol, veh/h	41	618	391	31	11	11
Future Vol, veh/h	41	618	391	31	11	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	6	2	2	20	20
Mvmt Flow	45	672	425	34	12	12
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	459	0	-	0	1204	442
Stage 1	-	-	-	-	442	-
Stage 2	-	-	-	-	762	-
Critical Hdwy	4.16	-	-	-	6.6	6.4
Critical Hdwy Stg 1	-	-	-	-	5.6	-
Critical Hdwy Stg 2	-	-	-	-	5.6	-
Follow-up Hdwy	2.254	-	-	-	3.68	3.48
Pot Cap-1 Maneuver	1081	-	-	-	187	579
Stage 1	-	-	-	-	611	-
Stage 2	-	-	-	-	430	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1081	-	-	-	179	579
Mov Cap-2 Maneuver	-	-	-	-	179	-
Stage 1	-	-	-	-	585	-
Stage 2	-	-	-	-	430	-
Approach	EB	WB		SE		
HCM Control Delay, s	0.5	0		19.4		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SELn1	
Capacity (veh/h)	1081	-	-	-	273	
HCM Lane V/C Ratio	0.041	-	-	-	0.088	
HCM Control Delay (s)	8.5	-	-	-	19.4	
HCM Lane LOS	A	-	-	-	C	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3	

HCM 6th TWSC 5: Site Access 1 & Trabue Road

Intersection						
Int Delay, s/veh	1.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	622	7	21	396	22	66
Future Vol, veh/h	622	7	21	396	22	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	6	3	3	2	2
Mvmt Flow	676	8	23	430	24	72
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	684	0	1156	680
Stage 1	-	-	-	-	680	-
Stage 2	-	-	-	-	476	-
Critical Hdwy	-	-	4.13	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.227	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	905	-	217	451
Stage 1	-	-	-	-	503	-
Stage 2	-	-	-	-	625	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	905	-	212	451
Mov Cap-2 Maneuver	-	-	-	-	212	-
Stage 1	-	-	-	-	503	-
Stage 2	-	-	-	-	609	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.5		19	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	352	-	-	905	-	
HCM Lane V/C Ratio	0.272	-	-	0.025	-	
HCM Control Delay (s)	19	-	-	9.1	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile Q(veh)	1.1	-	-	0.1	-	

Timing Report, Sorted By Phase

27: N Hague Avenue/Mapleway Drive & Trabue Road

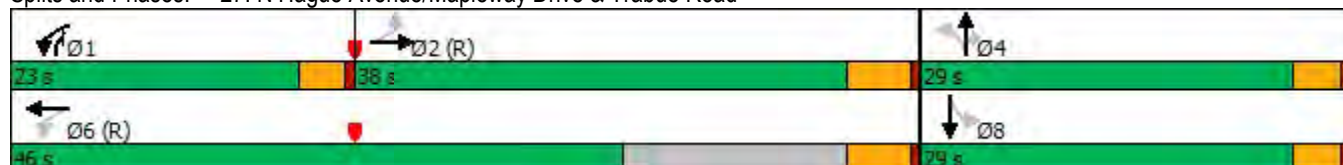


Phase Number	1	2	4	6	8
Movement	WBL	EBTL	NBTL	WBTL	SBTL
Lead/Lag	Lead	Lag			
Lead-Lag Optimize	Yes	Yes			
Recall Mode	None	C-Min	None	C-Min	None
Maximum Split (s)	23	38	29	46	29
Maximum Split (%)	25.6%	42.2%	32.2%	51.1%	32.2%
Minimum Split (s)	8.7	25	11.1	25	11.1
Yellow Time (s)	3	4.3	3.2	4.3	3.2
All-Red Time (s)	0.7	0.7	0.9	0.7	0.9
Minimum Initial (s)	5	20	7	20	7
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)					
Flash Dont Walk (s)					
Dual Entry	No	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	67	0	38	67	38
End Time (s)	0	38	67	38	67
Yield/Force Off (s)	86.3	33	62.9	33	62.9
Yield/Force Off 170(s)	86.3	33	62.9	33	62.9
Local Start Time (s)	67	0	38	67	38
Local Yield (s)	86.3	33	62.9	33	62.9
Local Yield 170(s)	86.3	33	62.9	33	62.9

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	45
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	

Splits and Phases: 27: N Hague Avenue/Mapleway Drive & Trabue Road



HCM 6th Signalized Intersection Summary 27: N Hague Avenue/Mapleway Drive & Trabue Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	401	92	124	283	12	111	19	212	40	25	25
Future Volume (veh/h)	15	401	92	124	283	12	111	19	212	40	25	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1826	1826	1826	1856	1856	1856	1841	1841	1841	1870	1870	1870
Adj Flow Rate, veh/h	16	436	100	135	308	13	121	21	230	43	27	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	3	3	3	4	4	4	2	2	2
Cap, veh/h	713	1719	391	641	2438	103	239	36	383	93	58	36
Arrive On Green	0.61	0.61	0.61	0.05	0.71	0.71	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1034	2807	639	1767	3447	145	858	186	1560	185	302	188
Grp Volume(v), veh/h	16	268	268	135	157	164	142	0	230	97	0	0
Grp Sat Flow(s),veh/h/ln	1034	1735	1711	1767	1763	1829	1044	0	1560	676	0	0
Q Serve(g_s), s	0.5	6.4	6.5	2.3	2.6	2.6	0.0	0.0	11.7	2.9	0.0	0.0
Cycle Q Clear(g_c), s	0.5	6.4	6.5	2.3	2.6	2.6	12.1	0.0	11.7	15.0	0.0	0.0
Prop In Lane	1.00		0.37	1.00		0.08	0.85		1.00	0.44		0.28
Lane Grp Cap(c), veh/h	713	1062	1048	641	1247	1294	274	0	383	187	0	0
V/C Ratio(X)	0.02	0.25	0.26	0.21	0.13	0.13	0.52	0.00	0.60	0.52	0.00	0.00
Avail Cap(c_a), veh/h	713	1062	1048	925	1247	1294	392	0	515	306	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.9	8.0	8.0	5.2	4.2	4.2	34.1	0.0	30.1	35.1	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.6	0.6	0.2	0.2	0.2	1.5	0.0	1.5	2.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.3	2.3	0.7	0.8	0.8	2.9	0.0	4.5	2.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.9	8.6	8.6	5.4	4.4	4.4	35.7	0.0	31.6	37.3	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	C	D	A	A
Approach Vol, veh/h	552			456			372			97		
Approach Delay, s/veh	8.5			4.7			33.1			37.3		
Approach LOS	A			A			C			D		
Timer - Assigned Phs	1	2	4			6	8					
Phs Duration (G+Y+Rc), s	8.5	60.1	21.4			68.6	21.4					
Change Period (Y+Rc), s	* 3.7	* 5	* 4.1			* 5	* 4.1					
Max Green Setting (Gmax), s	* 19	* 33	* 25			* 41	* 25					
Max Q Clear Time (g_c+I1), s	4.3	8.5	14.1			4.6	17.0					
Green Ext Time (p_c), s	0.3	3.3	1.1			1.9	0.3					
Intersection Summary												
HCM 6th Ctrl Delay			15.4									
HCM 6th LOS			B									
Notes												

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road

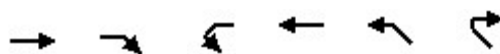
							Ø1	Ø7	Ø8
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR			
Lane Configurations	↑↑		↵	↑↑	↵	↵↵			
Traffic Volume (vph)	514	114	165	355	56	178			
Future Volume (vph)	514	114	165	355	56	178			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)		0	0		335	335			
Storage Lanes		0	1		1	1			
Taper Length (ft)			50		50				
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	0.88			
Frt	0.973					0.850			
Flt Protected			0.950		0.950				
Satd. Flow (prot)	3283	0	1671	3343	1641	2584			
Flt Permitted			0.292		0.950				
Satd. Flow (perm)	3283	0	514	3343	1641	2584			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	30					155			
Link Speed (mph)	35			35	50				
Link Distance (ft)	267			305	1567				
Travel Time (s)	5.2			5.9	21.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Heavy Vehicles (%)	7%	7%	8%	8%	10%	10%			
Adj. Flow (vph)	559	124	179	386	61	193			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	683	0	179	386	61	193			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	24			24	12				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)		9	15		15	9			
Number of Detectors	2		1	2	1	1			
Detector Template	Thru		Left	Thru	Left	Right			
Leading Detector (ft)	100		20	100	20	20			
Trailing Detector (ft)	0		0	0	0	0			
Detector 1 Position(ft)	0		0	0	0	0			
Detector 1 Size(ft)	6		20	6	20	20			
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel									
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0			
Detector 2 Position(ft)	94			94					
Detector 2 Size(ft)	6			6					
Detector 2 Type	Cl+Ex			Cl+Ex					
Detector 2 Channel									
Detector 2 Extend (s)	0.0			0.0					
Turn Type	NA		pm+pt	NA	Prot	pm+ov			
Protected Phases	6		5	2	3	5	1	7	8

OY AM Build
with Improvements

Synchro 11 Report

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø1	Ø7	Ø8
Permitted Phases			2		3				
Detector Phase	6		5	2	3	5			
Switch Phase									
Minimum Initial (s)	19.0		10.0	19.0	7.0	10.0	10.0	10.0	7.0
Minimum Split (s)	24.1		15.2	24.1	27.4	15.2	15.2	17.5	12.3
Total Split (s)	31.7		16.0	30.3	42.3	16.0	17.4	30.0	12.3
Total Split (%)	35.2%		17.8%	33.7%	47.0%	17.8%	19%	33%	14%
Maximum Green (s)	26.6		10.8	25.2	34.9	10.8	12.2	22.5	7.0
Yellow Time (s)	3.6		3.6	3.6	5.0	3.6	3.6	4.5	3.6
All-Red Time (s)	1.5		1.6	1.5	2.4	1.6	1.6	3.0	1.7
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.1		5.2	5.1	7.4	5.2			
Lead/Lag	Lag		Lead	Lag		Lead	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes		Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Min		None	C-Min	None	None	None	None	None
Walk Time (s)	7.0			7.0	7.0				
Flash Dont Walk (s)	12.0			12.0	13.0				
Pedestrian Calls (#/hr)	0			0	0				
Act Effect Green (s)	35.5		45.2	34.8	26.3	44.2			
Actuated g/C Ratio	0.39		0.50	0.39	0.29	0.49			
v/c Ratio	0.52		0.46	0.30	0.13	0.14			
Control Delay	20.5		19.2	11.4	20.2	2.5			
Queue Delay	0.0		0.0	0.0	0.0	0.0			
Total Delay	20.5		19.2	11.4	20.2	2.5			
LOS	C		B	B	C	A			
Approach Delay	20.5			13.9	6.8				
Approach LOS	C			B	A				

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 17.4 (19%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 15.7

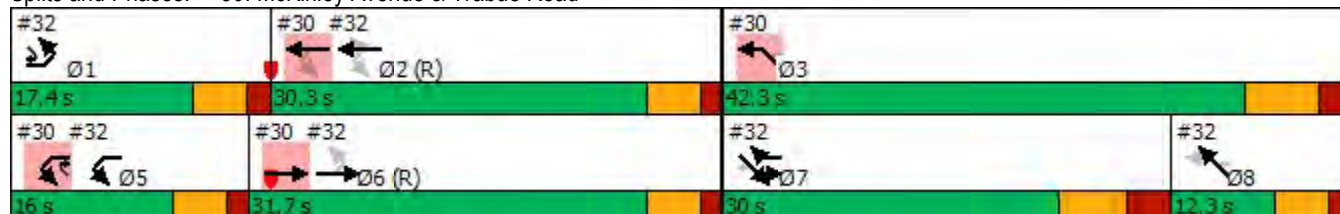
Intersection LOS: B

Intersection Capacity Utilization 47.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 30: McKinley Avenue & Trabue Road



Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	183	494	10	10	324	186	466	11	193	10	10	40
Future Volume (vph)	183	494	10	10	324	186	466	11	193	10	10	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		0	290		525	250		500	90		40
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.997				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.954		0.950		
Satd. Flow (prot)	1671	3333	0	1719	3438	1538	1681	1688	1583	1656	1743	1482
Flt Permitted	0.506			0.379			0.950	0.954		0.952		
Satd. Flow (perm)	890	3333	0	686	3438	1538	1681	1688	1583	1659	1743	1482
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				202			210			179
Link Speed (mph)		35			45			45			25	
Link Distance (ft)		305			2817			768			535	
Travel Time (s)		5.9			42.7			11.6			14.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	8%	8%	5%	5%	5%	2%	2%	2%	9%	9%	9%
Adj. Flow (vph)	199	537	11	11	352	202	507	12	210	11	11	43
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	199	548	0	11	352	202	259	260	210	11	11	43
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Right	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	Split	NA	pm+ov	Perm	NA	Perm
Protected Phases	1	6		5	2	7	7	7	1		8	

OY AM Build
with Improvements

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3

OY AM Build
with Improvements

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Permitted Phases	6			2		2			7	8		8
Detector Phase	1	6		5	2	7	7	7	1	8	8	8
Switch Phase												
Minimum Initial (s)	10.0	19.0		10.0	19.0	10.0	10.0	10.0	10.0	7.0	7.0	7.0
Minimum Split (s)	15.2	24.1		15.2	24.1	17.5	17.5	17.5	15.2	12.3	12.3	12.3
Total Split (s)	17.4	31.7		16.0	30.3	30.0	30.0	30.0	17.4	12.3	12.3	12.3
Total Split (%)	19.3%	35.2%		17.8%	33.7%	33.3%	33.3%	33.3%	19.3%	13.7%	13.7%	13.7%
Maximum Green (s)	12.2	26.6		10.8	25.2	22.5	22.5	22.5	12.2	7.0	7.0	7.0
Yellow Time (s)	3.6	3.6		3.6	3.6	4.5	4.5	4.5	3.6	3.6	3.6	3.6
All-Red Time (s)	1.6	1.5		1.6	1.5	3.0	3.0	3.0	1.6	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.2	5.1		5.2	5.1	7.5	7.5	7.5	5.2	5.3	5.3	5.3
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min		None	C-Min	None	None	None	None	None	None	None
Walk Time (s)		7.0			7.0							
Flash Dont Walk (s)		12.0			12.0							
Pedestrian Calls (#/hr)		0			0							
Act Effect Green (s)	46.6	35.5		45.2	34.8	58.7	18.8	18.8	34.4	7.0	7.0	7.0
Actuated g/C Ratio	0.52	0.39		0.50	0.39	0.65	0.21	0.21	0.38	0.08	0.08	0.08
v/c Ratio	0.36	0.42		0.02	0.26	0.19	0.74	0.74	0.29	0.09	0.08	0.15
Control Delay	8.3	10.9		12.9	22.3	1.7	45.8	45.7	2.5	40.2	40.1	1.2
Queue Delay	0.0	0.1		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.3	11.0		12.9	22.3	1.7	45.8	45.7	2.5	40.2	40.1	1.2
LOS	A	B		B	C	A	D	D	A	D	D	A
Approach Delay		10.2			14.8			33.3			14.4	
Approach LOS		B			B			C			B	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 17.4 (19%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 19.6

Intersection LOS: B

Intersection Capacity Utilization 60.7%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 32: Marblevista Boulevard/Dublin Road & Trabue Road



Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	27.4
Total Split (s)	42.3
Total Split (%)	47%
Maximum Green (s)	34.9
Yellow Time (s)	5.0
All-Red Time (s)	2.4
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

HCM 6th TWSC

1: Trabue Road & Builders Place

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Vol, veh/h	10	523	806	10	32	21
Future Vol, veh/h	10	523	806	10	32	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	4	4
Mvmt Flow	11	568	876	11	35	23
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	887	0	-	0	1188	444
Stage 1	-	-	-	-	882	-
Stage 2	-	-	-	-	306	-
Critical Hdwy	4.14	-	-	-	6.88	6.98
Critical Hdwy Stg 1	-	-	-	-	5.88	-
Critical Hdwy Stg 2	-	-	-	-	5.88	-
Follow-up Hdwy	2.22	-	-	-	3.54	3.34
Pot Cap-1 Maneuver	759	-	-	-	178	556
Stage 1	-	-	-	-	360	-
Stage 2	-	-	-	-	714	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	759	-	-	-	176	556
Mov Cap-2 Maneuver	-	-	-	-	176	-
Stage 1	-	-	-	-	355	-
Stage 2	-	-	-	-	714	-
Approach	EB	WB		SE		
HCM Control Delay, s	0.2	0		24.6		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SELn1	
Capacity (veh/h)	759	-	-	-	241	
HCM Lane V/C Ratio	0.014	-	-	-	0.239	
HCM Control Delay (s)	9.8	-	-	-	24.6	
HCM Lane LOS	A	-	-	-	C	
HCM 95th %tile Q(veh)	0	-	-	-	0.9	

Timing Report, Sorted By Phase

27: N Hague Avenue/Mapleway Drive & Trabue Road

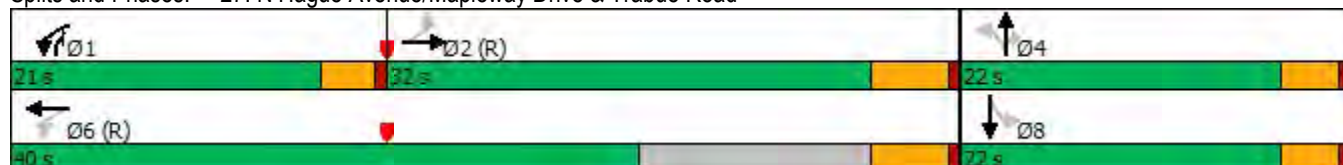


Phase Number	1	2	4	6	8
Movement	WBL	EBTL	NBTL	WBTL	SBTL
Lead/Lag	Lead	Lag			
Lead-Lag Optimize	Yes	Yes			
Recall Mode	None	C-Min	None	C-Min	None
Maximum Split (s)	21	32	22	40	22
Maximum Split (%)	28.0%	42.7%	29.3%	53.3%	29.3%
Minimum Split (s)	8.7	25	11.1	25	11.1
Yellow Time (s)	3	4.3	3.2	4.3	3.2
All-Red Time (s)	0.7	0.7	0.9	0.7	0.9
Minimum Initial (s)	5	20	7	20	7
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)					
Flash Dont Walk (s)					
Dual Entry	No	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	54	0	32	54	32
End Time (s)	0	32	54	32	54
Yield/Force Off (s)	71.3	27	49.9	27	49.9
Yield/Force Off 170(s)	71.3	27	49.9	27	49.9
Local Start Time (s)	54	0	32	54	32
Local Yield (s)	71.3	27	49.9	27	49.9
Local Yield 170(s)	71.3	27	49.9	27	49.9

Intersection Summary

Cycle Length	75
Control Type	Actuated-Coordinated
Natural Cycle	45
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	

Splits and Phases: 27: N Hague Avenue/Mapleway Drive & Trabue Road



HCM 6th Signalized Intersection Summary 27: N Hague Avenue/Mapleway Drive & Trabue Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	390	164	213	612	18	101	40	141	28	20	20
Future Volume (veh/h)	25	390	164	213	612	18	101	40	141	28	20	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	27	424	178	232	665	20	110	43	153	30	22	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	543	1447	601	653	2542	76	219	63	377	89	62	35
Arrive On Green	0.59	0.59	0.59	0.16	1.00	1.00	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	757	2447	1017	1781	3522	106	867	400	1585	134	395	224
Grp Volume(v), veh/h	27	307	295	232	335	350	153	0	153	74	0	0
Grp Sat Flow(s),veh/h/ln	757	1777	1687	1781	1777	1851	1267	0	1585	753	0	0
Q Serve(g_s), s	1.1	6.4	6.5	3.6	0.0	0.0	0.0	0.0	6.1	0.3	0.0	0.0
Cycle Q Clear(g_c), s	1.1	6.4	6.5	3.6	0.0	0.0	9.1	0.0	6.1	9.4	0.0	0.0
Prop In Lane	1.00		0.60	1.00		0.06	0.72		1.00	0.41		0.30
Lane Grp Cap(c), veh/h	543	1051	998	653	1282	1336	282	0	377	186	0	0
V/C Ratio(X)	0.05	0.29	0.30	0.36	0.26	0.26	0.54	0.00	0.41	0.40	0.00	0.00
Avail Cap(c_a), veh/h	543	1051	998	919	1282	1336	402	0	507	304	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.5	7.6	7.6	4.2	0.0	0.0	30.4	0.0	24.1	28.1	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.7	0.8	0.3	0.5	0.5	1.6	0.0	0.7	1.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.2	2.1	0.8	0.2	0.2	2.6	0.0	2.3	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.7	8.3	8.3	4.5	0.5	0.5	32.0	0.0	24.8	29.5	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	C	C	A	A
Approach Vol, veh/h	629			917			306			74		
Approach Delay, s/veh	8.2			1.5			28.4			29.5		
Approach LOS	A			A			C			C		
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	9.8	49.3		15.9		59.1		15.9				
Change Period (Y+Rc), s	* 3.7	* 5		* 4.1		* 5		* 4.1				
Max Green Setting (Gmax), s	* 17	* 27		* 18		* 35		* 18				
Max Q Clear Time (g_c+I1), s	5.6	8.5		11.1		2.0		11.4				
Green Ext Time (p_c), s	0.5	3.7		0.7		4.5		0.1				
Intersection Summary												
HCM 6th Ctrl Delay	9.1											
HCM 6th LOS	A											
Notes												

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road

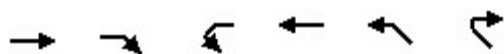
									
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø1	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	454	100	155	645	171	251			
Future Volume (vph)	454	100	155	645	171	251			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)		0	0		335	335			
Storage Lanes		0	1		1	1			
Taper Length (ft)			50		50				
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	0.88			
Frt	0.973					0.850			
Flt Protected			0.950		0.950				
Satd. Flow (prot)	3444	0	1770	3539	1770	2787			
Flt Permitted			0.347		0.950				
Satd. Flow (perm)	3444	0	646	3539	1770	2787			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	37					239			
Link Speed (mph)	35			35	50				
Link Distance (ft)	922			305	1567				
Travel Time (s)	18.0			5.9	21.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Adj. Flow (vph)	493	109	168	701	186	273			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	602	0	168	701	186	273			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	24			24	12				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)		9	15		15	9			
Number of Detectors	2		1	2	1	1			
Detector Template	Thru		Left	Thru	Left	Right			
Leading Detector (ft)	100		20	100	20	20			
Trailing Detector (ft)	0		0	0	0	0			
Detector 1 Position(ft)	0		0	0	0	0			
Detector 1 Size(ft)	6		20	6	20	20			
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel									
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0			
Detector 2 Position(ft)	94			94					
Detector 2 Size(ft)	6			6					
Detector 2 Type	Cl+Ex			Cl+Ex					
Detector 2 Channel									
Detector 2 Extend (s)	0.0			0.0					
Turn Type	NA		pm+pt	NA	Prot	pm+ov			
Protected Phases	6		5	2	3	5	1	7	8
Permitted Phases			2			3			

OY PM No Build
With Improvements

Synchro 11 Report

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø1	Ø7	Ø8
Detector Phase	6		5	2	3	5			
Switch Phase									
Minimum Initial (s)	19.0		10.0	19.0	7.0	10.0	10.0	10.0	7.0
Minimum Split (s)	24.1		15.2	24.1	27.4	15.2	15.2	17.5	12.3
Total Split (s)	28.5		15.2	27.7	31.3	15.2	16.0	19.0	12.3
Total Split (%)	38.0%		20.3%	36.9%	41.7%	20.3%	21%	25%	16%
Maximum Green (s)	23.4		10.0	22.6	23.9	10.0	10.8	11.5	7.0
Yellow Time (s)	3.6		3.6	3.6	5.0	3.6	3.6	4.5	3.6
All-Red Time (s)	1.5		1.6	1.5	2.4	1.6	1.6	3.0	1.7
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.1		5.2	5.1	7.4	5.2			
Lead/Lag	Lag		Lead	Lag		Lead	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes		Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Min		None	C-Min	None	None	None	None	None
Walk Time (s)	7.0			7.0	7.0				
Flash Dont Walk (s)	12.0			12.0	13.0				
Pedestrian Calls (#/hr)	0			0	0				
Act Effect Green (s)	28.7		38.2	28.3	18.6	36.0			
Actuated g/C Ratio	0.38		0.51	0.38	0.25	0.48			
v/c Ratio	0.45		0.35	0.53	0.42	0.19			
Control Delay	16.5		10.8	9.1	25.3	2.1			
Queue Delay	0.0		0.0	0.0	0.0	0.0			
Total Delay	16.5		10.8	9.1	25.3	2.1			
LOS	B		B	A	C	A			
Approach Delay	16.5			9.4	11.5				
Approach LOS	B			A	B				

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 16 (21%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 12.1

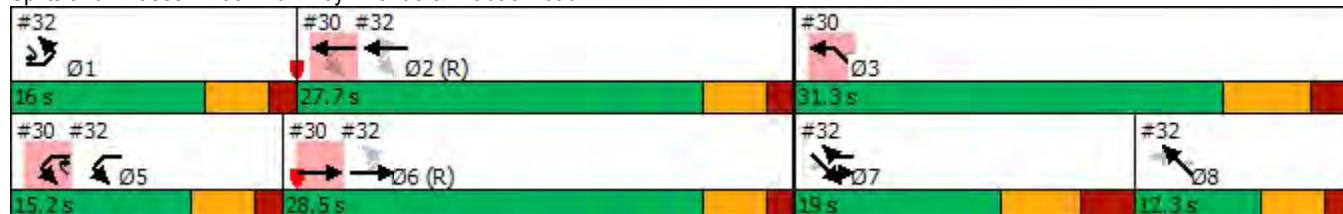
Intersection LOS: B

Intersection Capacity Utilization 48.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 30: McKinley Avenue & Trabue Road



Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	241	428	31	41	621	580	254	21	177	10	10	30
Future Volume (vph)	241	428	31	41	621	580	254	21	177	10	10	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		0	290		525	250		500	90		40
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.990				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.959		0.950		
Satd. Flow (prot)	1770	3504	0	1770	3539	1583	1681	1697	1583	1770	1863	1583
Flt Permitted	0.285			0.421			0.950	0.959		0.952		
Satd. Flow (perm)	531	3504	0	784	3539	1583	1681	1697	1583	1773	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				482			192			215
Link Speed (mph)		35			45			45			25	
Link Distance (ft)		305			2865			768			535	
Travel Time (s)		5.9			43.4			11.6			14.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	262	465	34	45	675	630	276	23	192	11	11	33
Shared Lane Traffic (%)							46%					
Lane Group Flow (vph)	262	499	0	45	675	630	149	150	192	11	11	33
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Right	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	Split	NA	pm+ov	Perm	NA	Perm
Protected Phases	1	6		5	2	7	7	7	1		8	
Permitted Phases	6			2		2			7	8		8

OY PM No Build
With Improvements

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	

OY PM No Build
With Improvements

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Detector Phase	1	6		5	2	7	7	7	1	8	8	8
Switch Phase												
Minimum Initial (s)	10.0	19.0		10.0	19.0	10.0	10.0	10.0	10.0	7.0	7.0	7.0
Minimum Split (s)	15.2	24.1		15.2	24.1	17.5	17.5	17.5	15.2	12.3	12.3	12.3
Total Split (s)	16.0	28.5		15.2	27.7	19.0	19.0	19.0	16.0	12.3	12.3	12.3
Total Split (%)	21.3%	38.0%		20.3%	36.9%	25.3%	25.3%	25.3%	21.3%	16.4%	16.4%	16.4%
Maximum Green (s)	10.8	23.4		10.0	22.6	11.5	11.5	11.5	10.8	7.0	7.0	7.0
Yellow Time (s)	3.6	3.6		3.6	3.6	4.5	4.5	4.5	3.6	3.6	3.6	3.6
All-Red Time (s)	1.6	1.5		1.6	1.5	3.0	3.0	3.0	1.6	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.2	5.1		5.2	5.1	7.5	7.5	7.5	5.2	5.3	5.3	5.3
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min		None	C-Min	None	None	None	None	None	None	None
Walk Time (s)		7.0			7.0							
Flash Dont Walk (s)		12.0			12.0							
Pedestrian Calls (#/hr)		0			0							
Act Effect Green (s)	39.1	28.7		38.2	28.3	44.4	11.1	11.1	25.9	7.0	7.0	7.0
Actuated g/C Ratio	0.52	0.38		0.51	0.38	0.59	0.15	0.15	0.35	0.09	0.09	0.09
v/c Ratio	0.58	0.37		0.08	0.51	0.56	0.60	0.60	0.29	0.07	0.06	0.10
Control Delay	21.2	11.5		9.4	21.3	4.8	40.8	40.6	2.9	32.1	32.0	0.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.2	11.5		9.4	21.3	4.8	40.8	40.6	2.9	32.1	32.0	0.6
LOS	C	B		A	C	A	D	D	A	C	C	A
Approach Delay		14.9			13.2			25.9			13.2	
Approach LOS		B			B			C			B	

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 16 (21%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 16.0

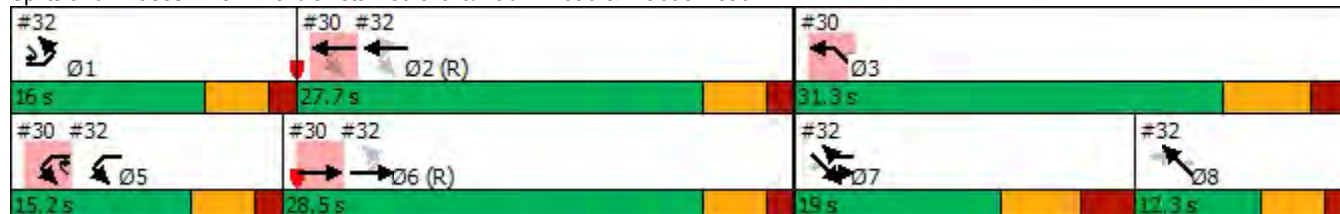
Intersection LOS: B

Intersection Capacity Utilization 70.1%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 32: Marblevista Boulevard/Dublin Road & Trabue Road



OY PM No Build
With Improvements

Synchro 11 Report

Lanes, Volumes, Timings
32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	27.4
Total Split (s)	31.3
Total Split (%)	42%
Maximum Green (s)	23.9
Yellow Time (s)	5.0
All-Red Time (s)	2.4
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

HCM 6th TWSC

1: Trabue Road & Builders Place

Intersection

Int Delay, s/veh 1.4

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Vol, veh/h	10	523	806	10	32	21
Future Vol, veh/h	10	523	806	10	32	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	4	4
Mvmt Flow	11	568	876	11	35	23

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	887	0	0 1472 882
Stage 1	-	-	- 882 -
Stage 2	-	-	- 590 -
Critical Hdwy	4.12	-	- 6.44 6.24
Critical Hdwy Stg 1	-	-	- 5.44 -
Critical Hdwy Stg 2	-	-	- 5.44 -
Follow-up Hdwy	2.218	-	- 3.536 3.336
Pot Cap-1 Maneuver	763	-	- 138 342
Stage 1	-	-	- 401 -
Stage 2	-	-	- 550 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	763	-	- 136 342
Mov Cap-2 Maneuver	-	-	- 136 -
Stage 1	-	-	- 395 -
Stage 2	-	-	- 550 -

Approach	EB	WB	SE
HCM Control Delay, s	0.2	0	34.4
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SELn1
Capacity (veh/h)	763	-	-	-	179
HCM Lane V/C Ratio	0.014	-	-	-	0.322
HCM Control Delay (s)	9.8	-	-	-	34.4
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	1.3

HCM 6th TWSC 5: Site Access 1 & Trabue Road

Intersection						
Int Delay, s/veh	1.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	527	28	66	750	17	39
Future Vol, veh/h	527	28	66	750	17	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	573	30	72	815	18	42
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	603	0	1547	588
Stage 1	-	-	-	-	588	-
Stage 2	-	-	-	-	959	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	975	-	126	509
Stage 1	-	-	-	-	555	-
Stage 2	-	-	-	-	372	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	975	-	117	509
Mov Cap-2 Maneuver	-	-	-	-	117	-
Stage 1	-	-	-	-	555	-
Stage 2	-	-	-	-	344	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.7		23.8		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	252	-	-	975	-	
HCM Lane V/C Ratio	0.242	-	-	0.074	-	
HCM Control Delay (s)	23.8	-	-	9	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile Q(veh)	0.9	-	-	0.2	-	

Timing Report, Sorted By Phase

27: N Hague Avenue/Mapleway Drive & Trabue Road



Phase Number	1	2	4	6	8
Movement	WBL	EBTL	NBTL	WBTL	SBTL
Lead/Lag	Lead	Lag			
Lead-Lag Optimize	Yes	Yes			
Recall Mode	None	C-Min	None	C-Min	None
Maximum Split (s)	21	32	22	40	22
Maximum Split (%)	28.0%	42.7%	29.3%	53.3%	29.3%
Minimum Split (s)	8.7	25	11.1	25	11.1
Yellow Time (s)	3	4.3	3.2	4.3	3.2
All-Red Time (s)	0.7	0.7	0.9	0.7	0.9
Minimum Initial (s)	5	20	7	20	7
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)					
Flash Dont Walk (s)					
Dual Entry	No	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	21	53	0	53
End Time (s)	21	53	0	53	0
Yield/Force Off (s)	17.3	48	70.9	48	70.9
Yield/Force Off 170(s)	17.3	48	70.9	48	70.9
Local Start Time (s)	54	0	32	54	32
Local Yield (s)	71.3	27	49.9	27	49.9
Local Yield 170(s)	71.3	27	49.9	27	49.9

Intersection Summary

Cycle Length	75
Control Type	Actuated-Coordinated
Natural Cycle	45
Offset: 21 (28%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	

Splits and Phases: 27: N Hague Avenue/Mapleway Drive & Trabue Road



HCM 6th Signalized Intersection Summary 27: N Hague Avenue/Mapleway Drive & Trabue Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	390	164	213	612	18	101	40	141	28	20	20
Future Volume (veh/h)	25	390	164	213	612	18	101	40	141	28	20	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	27	424	178	232	665	20	110	43	153	30	22	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	546	1455	604	650	2542	76	219	63	372	89	62	35
Arrive On Green	0.59	0.59	0.59	0.08	0.72	0.72	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	757	2447	1017	1781	3522	106	867	400	1585	134	395	224
Grp Volume(v), veh/h	27	307	295	232	335	350	153	0	153	74	0	0
Grp Sat Flow(s),veh/h/ln	757	1777	1687	1781	1777	1851	1267	0	1585	753	0	0
Q Serve(g_s), s	1.1	6.3	6.5	3.4	4.9	4.9	0.0	0.0	6.1	0.3	0.0	0.0
Cycle Q Clear(g_c), s	1.1	6.3	6.5	3.4	4.9	4.9	9.1	0.0	6.1	9.4	0.0	0.0
Prop In Lane	1.00		0.60	1.00		0.06	0.72		1.00	0.41		0.30
Lane Grp Cap(c), veh/h	546	1056	1003	650	1282	1336	282	0	372	186	0	0
V/C Ratio(X)	0.05	0.29	0.29	0.36	0.26	0.26	0.54	0.00	0.41	0.40	0.00	0.00
Avail Cap(c_a), veh/h	546	1056	1003	922	1282	1336	402	0	502	304	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.4	7.5	7.5	4.6	3.6	3.6	30.4	0.0	24.3	28.1	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.7	0.7	0.3	0.5	0.5	1.6	0.0	0.7	1.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.2	2.1	0.9	1.3	1.3	2.6	0.0	2.3	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.6	8.1	8.2	4.9	4.1	4.1	32.0	0.0	25.0	29.5	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	C	C	A	A
Approach Vol, veh/h	629			917			306			74		
Approach Delay, s/veh	8.1			4.3			28.5			29.5		
Approach LOS	A			A			C			C		
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	9.5	49.6		15.9		59.1		15.9				
Change Period (Y+Rc), s	* 3.7	* 5		* 4.1		* 5		* 4.1				
Max Green Setting (Gmax), s	* 17	* 27		* 18		* 35		* 18				
Max Q Clear Time (g_c+I1), s	5.4	8.5		11.1		6.9		11.4				
Green Ext Time (p_c), s	0.5	3.7		0.7		4.4		0.1				
Intersection Summary												
HCM 6th Ctrl Delay	10.4											
HCM 6th LOS	B											
Notes												

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road

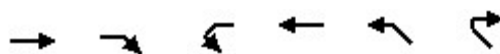
							Ø1	Ø7	Ø8
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR			
Lane Configurations	↑↑		↵	↑↑	↵	↵↵			
Traffic Volume (vph)	454	100	155	645	171	251			
Future Volume (vph)	454	100	155	645	171	251			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)		0	0		335	335			
Storage Lanes		0	1		1	1			
Taper Length (ft)			50		50				
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	0.88			
Frt	0.973					0.850			
Flt Protected			0.950		0.950				
Satd. Flow (prot)	3444	0	1770	3539	1770	2787			
Flt Permitted			0.347		0.950				
Satd. Flow (perm)	3444	0	646	3539	1770	2787			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	37					239			
Link Speed (mph)	35			35	50				
Link Distance (ft)	267			305	1567				
Travel Time (s)	5.2			5.9	21.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Adj. Flow (vph)	493	109	168	701	186	273			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	602	0	168	701	186	273			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	24			24	12				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)		9	15		15	9			
Number of Detectors	2		1	2	1	1			
Detector Template	Thru		Left	Thru	Left	Right			
Leading Detector (ft)	100		20	100	20	20			
Trailing Detector (ft)	0		0	0	0	0			
Detector 1 Position(ft)	0		0	0	0	0			
Detector 1 Size(ft)	6		20	6	20	20			
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel									
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0			
Detector 2 Position(ft)	94			94					
Detector 2 Size(ft)	6			6					
Detector 2 Type	Cl+Ex			Cl+Ex					
Detector 2 Channel									
Detector 2 Extend (s)	0.0			0.0					
Turn Type	NA		pm+pt	NA	Prot	pm+ov			
Protected Phases	6		5	2	3	5	1	7	8
Permitted Phases			2			3			

OY PM Build
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Synchro 11 Report

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø1	Ø7	Ø8
Detector Phase	6		5	2	3	5			
Switch Phase									
Minimum Initial (s)	19.0		10.0	19.0	7.0	10.0	10.0	10.0	7.0
Minimum Split (s)	24.1		15.2	24.1	27.4	15.2	15.2	17.5	12.3
Total Split (s)	28.5		15.2	27.7	31.3	15.2	16.0	19.0	12.3
Total Split (%)	38.0%		20.3%	36.9%	41.7%	20.3%	21%	25%	16%
Maximum Green (s)	23.4		10.0	22.6	23.9	10.0	10.8	11.5	7.0
Yellow Time (s)	3.6		3.6	3.6	5.0	3.6	3.6	4.5	3.6
All-Red Time (s)	1.5		1.6	1.5	2.4	1.6	1.6	3.0	1.7
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.1		5.2	5.1	7.4	5.2			
Lead/Lag	Lag		Lead	Lag		Lead	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes		Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Min		None	C-Min	None	None	None	None	None
Walk Time (s)	7.0			7.0	7.0				
Flash Dont Walk (s)	12.0			12.0	13.0				
Pedestrian Calls (#/hr)	0			0	0				
Act Effect Green (s)	28.7		38.2	28.3	18.6	36.0			
Actuated g/C Ratio	0.38		0.51	0.38	0.25	0.48			
v/c Ratio	0.45		0.35	0.53	0.42	0.19			
Control Delay	26.4		10.8	9.1	25.3	2.1			
Queue Delay	0.0		0.0	0.0	0.0	0.0			
Total Delay	26.4		10.8	9.1	25.3	2.1			
LOS	C		B	A	C	A			
Approach Delay	26.4			9.4	11.5				
Approach LOS	C			A	B				

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 16 (21%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 15.2

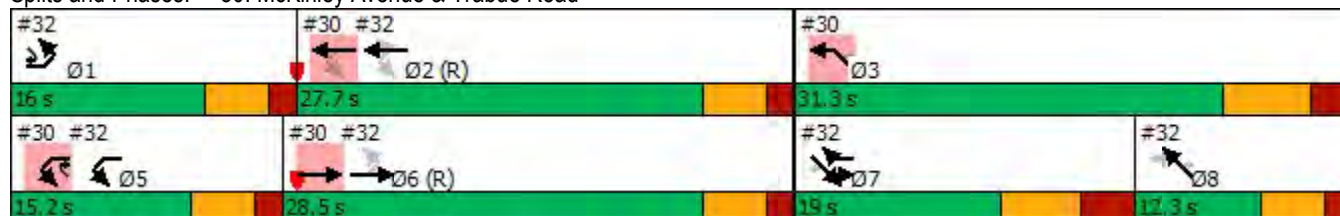
Intersection LOS: B

Intersection Capacity Utilization 48.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 30: McKinley Avenue & Trabue Road



Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	241	428	31	41	621	580	254	21	177	10	10	30
Future Volume (vph)	241	428	31	41	621	580	254	21	177	10	10	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		0	290		525	250		500	90		40
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.990				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.959		0.950		
Satd. Flow (prot)	1770	3504	0	1770	3539	1583	1681	1697	1583	1770	1863	1583
Flt Permitted	0.285			0.421			0.950	0.959		0.952		
Satd. Flow (perm)	531	3504	0	784	3539	1583	1681	1697	1583	1773	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				482			192			215
Link Speed (mph)		35			45			45			25	
Link Distance (ft)		305			2817			768			535	
Travel Time (s)		5.9			42.7			11.6			14.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	262	465	34	45	675	630	276	23	192	11	11	33
Shared Lane Traffic (%)							46%					
Lane Group Flow (vph)	262	499	0	45	675	630	149	150	192	11	11	33
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Right	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	Split	NA	pm+ov	Perm	NA	Perm
Protected Phases	1	6		5	2	7	7	7	1		8	
Permitted Phases	6			2		2			7	8		8

OY PM Build
with Improvements

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	

OY PM Build
with Improvements

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Detector Phase	1	6		5	2	7	7	7	1	8	8	8
Switch Phase												
Minimum Initial (s)	10.0	19.0		10.0	19.0	10.0	10.0	10.0	10.0	7.0	7.0	7.0
Minimum Split (s)	15.2	24.1		15.2	24.1	17.5	17.5	17.5	15.2	12.3	12.3	12.3
Total Split (s)	16.0	28.5		15.2	27.7	19.0	19.0	19.0	16.0	12.3	12.3	12.3
Total Split (%)	21.3%	38.0%		20.3%	36.9%	25.3%	25.3%	25.3%	21.3%	16.4%	16.4%	16.4%
Maximum Green (s)	10.8	23.4		10.0	22.6	11.5	11.5	11.5	10.8	7.0	7.0	7.0
Yellow Time (s)	3.6	3.6		3.6	3.6	4.5	4.5	4.5	3.6	3.6	3.6	3.6
All-Red Time (s)	1.6	1.5		1.6	1.5	3.0	3.0	3.0	1.6	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.2	5.1		5.2	5.1	7.5	7.5	7.5	5.2	5.3	5.3	5.3
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min		None	C-Min	None	None	None	None	None	None	None
Walk Time (s)		7.0			7.0							
Flash Dont Walk (s)		12.0			12.0							
Pedestrian Calls (#/hr)		0			0							
Act Effect Green (s)	39.1	28.7		38.2	28.3	44.4	11.1	11.1	25.9	7.0	7.0	7.0
Actuated g/C Ratio	0.52	0.38		0.51	0.38	0.59	0.15	0.15	0.35	0.09	0.09	0.09
v/c Ratio	0.58	0.37		0.08	0.51	0.56	0.60	0.60	0.29	0.07	0.06	0.10
Control Delay	21.9	9.0		9.4	21.3	4.8	40.8	40.6	2.9	32.1	32.0	0.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.9	9.0		9.4	21.3	4.8	40.8	40.6	2.9	32.1	32.0	0.6
LOS	C	A		A	C	A	D	D	A	C	C	A
Approach Delay		13.5			13.2			25.9			13.2	
Approach LOS		B			B			C			B	

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 16 (21%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 15.6

Intersection LOS: B

Intersection Capacity Utilization 70.1%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 32: Marblevista Boulevard/Dublin Road & Trabue Road

#32		#30 #32	#30
 Ø1	  Ø2 (R)	 Ø3	
16 s	27.7 s	31.3 s	
#30 #32		#30 #32	#32
  Ø5	  Ø6 (R)	  Ø7	 Ø8
15.2 s	28.5 s	19 s	12.3 s

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	27.4
Total Split (s)	31.3
Total Split (%)	42%
Maximum Green (s)	23.9
Yellow Time (s)	5.0
All-Red Time (s)	2.4
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

HCM 6th TWSC

1: Trabue Road & Builders Place

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Vol, veh/h	40	719	469	40	20	20
Future Vol, veh/h	40	719	469	40	20	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	6	3	3	20	20
Mvmt Flow	43	782	510	43	22	22
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	553	0	-	0	1009	277
Stage 1	-	-	-	-	532	-
Stage 2	-	-	-	-	477	-
Critical Hdwy	4.22	-	-	-	7.2	7.3
Critical Hdwy Stg 1	-	-	-	-	6.2	-
Critical Hdwy Stg 2	-	-	-	-	6.2	-
Follow-up Hdwy	2.26	-	-	-	3.7	3.5
Pot Cap-1 Maneuver	986	-	-	-	208	669
Stage 1	-	-	-	-	505	-
Stage 2	-	-	-	-	541	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	986	-	-	-	199	669
Mov Cap-2 Maneuver	-	-	-	-	199	-
Stage 1	-	-	-	-	483	-
Stage 2	-	-	-	-	541	-
Approach	EB	WB		SE		
HCM Control Delay, s	0.5	0		18.7		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SELn1	
Capacity (veh/h)	986	-	-	-	307	
HCM Lane V/C Ratio	0.044	-	-	-	0.142	
HCM Control Delay (s)	8.8	-	-	-	18.7	
HCM Lane LOS	A	-	-	-	C	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5	

Timing Report, Sorted By Phase

27: N Hague Avenue/Mapleway Drive & Trabue Road



Phase Number	1	2	4	6	8
Movement	WBL	EBTL	NBTL	WBTL	SBTL
Lead/Lag	Lead	Lag			
Lead-Lag Optimize	Yes	Yes			
Recall Mode	None	C-Min	None	C-Min	None
Maximum Split (s)	20	40	30	45	30
Maximum Split (%)	22.2%	44.4%	33.3%	50.0%	33.3%
Minimum Split (s)	8.7	25	11.1	25	11.1
Yellow Time (s)	3	4.3	3.2	4.3	3.2
All-Red Time (s)	0.7	0.7	0.9	0.7	0.9
Minimum Initial (s)	5	20	7	20	7
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)					
Flash Dont Walk (s)					
Dual Entry	No	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	70	0	40	70	40
End Time (s)	0	40	70	40	70
Yield/Force Off (s)	86.3	35	65.9	35	65.9
Yield/Force Off 170(s)	86.3	35	65.9	35	65.9
Local Start Time (s)	70	0	40	70	40
Local Yield (s)	86.3	35	65.9	35	65.9
Local Yield 170(s)	86.3	35	65.9	35	65.9

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	45
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	

Splits and Phases: 27: N Hague Avenue/Mapleway Drive & Trabue Road



HCM 6th Signalized Intersection Summary 27: N Hague Avenue/Mapleway Drive & Trabue Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	470	110	140	340	12	120	19	220	39	24	24
Future Volume (veh/h)	15	470	110	140	340	12	120	19	220	39	24	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1826	1826	1826	1856	1856	1856	1841	1841	1841	1870	1870	1870
Adj Flow Rate, veh/h	16	511	120	152	370	13	130	21	239	42	26	26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	3	3	3	4	4	4	2	2	2
Cap, veh/h	668	1681	393	581	2425	85	247	34	398	93	57	35
Arrive On Green	0.60	0.60	0.60	0.05	0.70	0.70	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	976	2791	652	1767	3475	122	858	171	1560	172	282	174
Grp Volume(v), veh/h	16	317	314	152	187	196	151	0	239	94	0	0
Grp Sat Flow(s),veh/h/ln	976	1735	1709	1767	1763	1834	1029	0	1560	628	0	0
Q Serve(g_s), s	0.6	8.0	8.1	2.7	3.2	3.2	0.0	0.0	12.1	2.8	0.0	0.0
Cycle Q Clear(g_c), s	0.6	8.0	8.1	2.7	3.2	3.2	13.1	0.0	12.1	15.8	0.0	0.0
Prop In Lane	1.00		0.38	1.00		0.07	0.86		1.00	0.45		0.28
Lane Grp Cap(c), veh/h	668	1045	1029	581	1230	1280	281	0	398	184	0	0
V/C Ratio(X)	0.02	0.30	0.31	0.26	0.15	0.15	0.54	0.00	0.60	0.51	0.00	0.00
Avail Cap(c_a), veh/h	668	1045	1029	805	1230	1280	401	0	534	304	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.2	8.7	8.7	5.8	4.6	4.6	33.8	0.0	29.5	34.6	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.7	0.8	0.2	0.3	0.3	1.6	0.0	1.5	2.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.9	2.8	0.8	1.0	1.1	3.1	0.0	4.7	2.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.3	9.4	9.5	6.0	4.9	4.9	35.4	0.0	30.9	36.7	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	C	D	A	A
Approach Vol, veh/h	647				535				390		94	
Approach Delay, s/veh	9.4				5.2				32.7		36.7	
Approach LOS	A				A				C		D	
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	8.6	59.2		22.2		67.8		22.2				
Change Period (Y+Rc), s	* 3.7	* 5		* 4.1		* 5		* 4.1				
Max Green Setting (Gmax), s	* 16	* 35		* 26		* 40		* 26				
Max Q Clear Time (g_c+I1), s	4.7	10.1		15.1		5.2		17.8				
Green Ext Time (p_c), s	0.3	4.0		1.2		2.3		0.3				
Intersection Summary												
HCM 6th Ctrl Delay	15.0											
HCM 6th LOS	B											
Notes												

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road

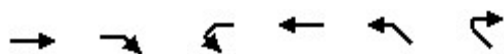
							Ø1	Ø7	Ø8
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR			
Lane Configurations	↑↑		↓	↑↑	↓	↓↓			
Traffic Volume (vph)	608	141	210	435	74	230			
Future Volume (vph)	608	141	210	435	74	230			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)		0	0		335	335			
Storage Lanes		0	1		1	1			
Taper Length (ft)			50		50				
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	0.88			
Frt	0.972					0.850			
Flt Protected			0.950		0.950				
Satd. Flow (prot)	3279	0	1671	3343	1641	2584			
Flt Permitted			0.196		0.950				
Satd. Flow (perm)	3279	0	345	3343	1641	2584			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	32					96			
Link Speed (mph)	35			35	50				
Link Distance (ft)	922			305	1567				
Travel Time (s)	18.0			5.9	21.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Heavy Vehicles (%)	7%	7%	8%	8%	10%	10%			
Adj. Flow (vph)	661	153	228	473	80	250			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	814	0	228	473	80	250			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	24			24	12				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)		9	15		15	9			
Number of Detectors	2		1	2	1	1			
Detector Template	Thru		Left	Thru	Left	Right			
Leading Detector (ft)	100		20	100	20	20			
Trailing Detector (ft)	0		0	0	0	0			
Detector 1 Position(ft)	0		0	0	0	0			
Detector 1 Size(ft)	6		20	6	20	20			
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel									
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0			
Detector 2 Position(ft)	94			94					
Detector 2 Size(ft)	6			6					
Detector 2 Type	Cl+Ex			Cl+Ex					
Detector 2 Channel									
Detector 2 Extend (s)	0.0			0.0					
Turn Type	NA		pm+pt	NA	Prot	pm+ov			
Protected Phases	6		5	2	3	5	1	7	8

HY AM No Build
With Improvements

Synchro 11 Report

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø1	Ø7	Ø8
Permitted Phases			2			3			
Detector Phase	6		5	2	3	5			
Switch Phase									
Minimum Initial (s)	19.0		10.0	19.0	7.0	10.0	10.0	10.0	7.0
Minimum Split (s)	24.1		15.2	24.1	27.4	15.2	15.2	17.5	12.3
Total Split (s)	31.7		16.0	30.3	42.3	16.0	17.4	30.0	12.3
Total Split (%)	35.2%		17.8%	33.7%	47.0%	17.8%	19%	33%	14%
Maximum Green (s)	26.6		10.8	25.2	34.9	10.8	12.2	22.5	7.0
Yellow Time (s)	3.6		3.6	3.6	5.0	3.6	3.6	4.5	3.6
All-Red Time (s)	1.5		1.6	1.5	2.4	1.6	1.6	3.0	1.7
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.1		5.2	5.1	7.4	5.2			
Lead/Lag	Lag		Lead	Lag		Lead	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes		Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Min		None	C-Min	None	None	None	None	None
Walk Time (s)	7.0			7.0	7.0				
Flash Dont Walk (s)	12.0			12.0	13.0				
Pedestrian Calls (#/hr)	0			0	0				
Act Effect Green (s)	32.6		42.6	32.0	29.0	47.1			
Actuated g/C Ratio	0.36		0.47	0.36	0.32	0.52			
v/c Ratio	0.67		0.71	0.40	0.15	0.18			
Control Delay	24.2		39.5	12.8	20.0	6.0			
Queue Delay	0.0		0.0	0.1	0.0	0.0			
Total Delay	24.2		39.5	12.9	20.0	6.0			
LOS	C		D	B	B	A			
Approach Delay	24.2			21.6	9.4				
Approach LOS	C			C	A				

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 17.4 (19%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 20.5

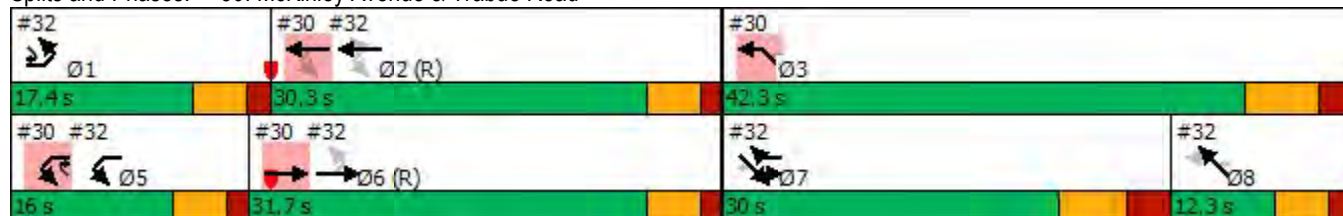
Intersection Capacity Utilization 53.5%

Analysis Period (min) 15

Intersection LOS: C

ICU Level of Service A

Splits and Phases: 30: McKinley Avenue & Trabue Road



HY AM No Build
With Improvements

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	228	600	10	10	383	240	640	10	252	10	10	40
Future Volume (vph)	228	600	10	10	383	240	640	10	252	10	10	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		0	290		525	250		500	90		40
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.998				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.954		0.950		
Satd. Flow (prot)	1671	3336	0	1719	3438	1538	1681	1688	1583	1656	1743	1482
Flt Permitted	0.445			0.285			0.950	0.954		0.952		
Satd. Flow (perm)	783	3336	0	516	3438	1538	1681	1688	1583	1659	1743	1482
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				261			274			179
Link Speed (mph)		35			45			45			25	
Link Distance (ft)		305			2865			768			535	
Travel Time (s)		5.9			43.4			11.6			14.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	8%	8%	5%	5%	5%	2%	2%	2%	9%	9%	9%
Adj. Flow (vph)	248	652	11	11	416	261	696	11	274	11	11	43
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	248	663	0	11	416	261	355	352	274	11	11	43
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Right	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	Split	NA	pm+ov	Perm	NA	Perm
Protected Phases	1	6		5	2	7	7	7	1		8	

HY AM No Build
With Improvements

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3

HY AM No Build
With Improvements

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Permitted Phases	6			2		2			7	8		8
Detector Phase	1	6		5	2	7	7	7	1	8	8	8
Switch Phase												
Minimum Initial (s)	10.0	19.0		10.0	19.0	10.0	10.0	10.0	10.0	7.0	7.0	7.0
Minimum Split (s)	15.2	24.1		15.2	24.1	17.5	17.5	17.5	15.2	12.3	12.3	12.3
Total Split (s)	17.4	31.7		16.0	30.3	30.0	30.0	30.0	17.4	12.3	12.3	12.3
Total Split (%)	19.3%	35.2%		17.8%	33.7%	33.3%	33.3%	33.3%	19.3%	13.7%	13.7%	13.7%
Maximum Green (s)	12.2	26.6		10.8	25.2	22.5	22.5	22.5	12.2	7.0	7.0	7.0
Yellow Time (s)	3.6	3.6		3.6	3.6	4.5	4.5	4.5	3.6	3.6	3.6	3.6
All-Red Time (s)	1.6	1.5		1.6	1.5	3.0	3.0	3.0	1.6	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.2	5.1		5.2	5.1	7.5	7.5	7.5	5.2	5.3	5.3	5.3
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min		None	C-Min	None	None	None	None	None	None	None
Walk Time (s)		7.0			7.0							
Flash Dont Walk (s)		12.0			12.0							
Pedestrian Calls (#/hr)		0			0							
Act Effect Green (s)	43.9	32.6		42.6	32.0	58.6	21.5	21.5	37.2	7.0	7.0	7.0
Actuated g/C Ratio	0.49	0.36		0.47	0.36	0.65	0.24	0.24	0.41	0.08	0.08	0.08
v/c Ratio	0.50	0.55		0.03	0.34	0.24	0.89	0.87	0.34	0.09	0.08	0.15
Control Delay	14.9	16.1		13.1	24.3	1.7	57.8	56.1	2.4	40.2	40.1	1.2
Queue Delay	0.0	0.2		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.9	16.3		13.1	24.3	1.7	57.8	56.1	2.4	40.2	40.1	1.2
LOS	B	B		B	C	A	E	E	A	D	D	A
Approach Delay		15.9			15.6			41.7			14.4	
Approach LOS		B			B			D			B	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 17.4 (19%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 25.4

Intersection LOS: C

Intersection Capacity Utilization 68.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 32: Marblevista Boulevard/Dublin Road & Trabue Road



HY AM No Build
With Improvements

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	27.4
Total Split (s)	42.3
Total Split (%)	47%
Maximum Green (s)	34.9
Yellow Time (s)	5.0
All-Red Time (s)	2.4
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

HCM 6th TWSC

1: Site Access 2/Builders Place & Trabue Road

Intersection												
Int Delay, s/veh	8.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Vol, veh/h	40	705	14	34	413	40	20	0	20	58	0	66
Future Vol, veh/h	40	705	14	34	413	40	20	0	20	58	0	66
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	6	6	6	3	3	3	20	20	20	2	2	2
Mvmt Flow	43	766	15	37	449	43	22	0	22	63	0	72

Major/Minor	Major1			Major2			Minor2			Minor1		
Conflicting Flow All	492	0	0	781	0	0	1441	1412	471	1416	1426	774
Stage 1	-	-	-	-	-	-	545	545	-	860	860	-
Stage 2	-	-	-	-	-	-	896	867	-	556	566	-
Critical Hdwy	4.16	-	-	4.13	-	-	7.3	6.7	6.4	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.3	5.7	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.3	5.7	-	6.12	5.52	-
Follow-up Hdwy	2.254	-	-	2.227	-	-	3.68	4.18	3.48	3.518	4.018	3.318
Pot Cap-1 Maneuver	1051	-	-	832	-	-	101	127	557	115	135	398
Stage 1	-	-	-	-	-	-	492	490	-	351	373	-
Stage 2	-	-	-	-	-	-	311	346	-	515	507	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1051	-	-	832	-	-	77	116	557	104	124	398
Mov Cap-2 Maneuver	-	-	-	-	-	-	77	116	-	104	124	-
Stage 1	-	-	-	-	-	-	472	468	-	337	358	-
Stage 2	-	-	-	-	-	-	245	332	-	473	485	-

Approach	EB			WB			SE			NW		
HCM Control Delay, s	0.5			0.7			43.8			77.1		
HCM LOS							E			F		

Minor Lane/Major Mvmt	NWLn1	EBL	EBT	EBR	WBL	WBT	WBR	SELn1
Capacity (veh/h)	171	1051	-	-	832	-	-	135
HCM Lane V/C Ratio	0.788	0.041	-	-	0.044	-	-	0.322
HCM Control Delay (s)	77.1	8.6	-	-	9.5	-	-	43.8
HCM Lane LOS	F	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	5.2	0.1	-	-	0.1	-	-	1.3

HCM 6th TWSC 5: Site Access 1 & Trabue Road

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱		↗
Traffic Vol, veh/h	735	3	0	487	0	41
Future Vol, veh/h	735	3	0	487	0	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	6	3	3	2	2
Mvmt Flow	799	3	0	529	0	45
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	-	-	-	801
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	384
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	384
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		15.6		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	384	-	-	-		
HCM Lane V/C Ratio	0.116	-	-	-		
HCM Control Delay (s)	15.6	-	-	-		
HCM Lane LOS	C	-	-	-		
HCM 95th %tile Q(veh)	0.4	-	-	-		

Timing Report, Sorted By Phase 27: N Hague Avenue/Mapleway Drive & Trabue Road

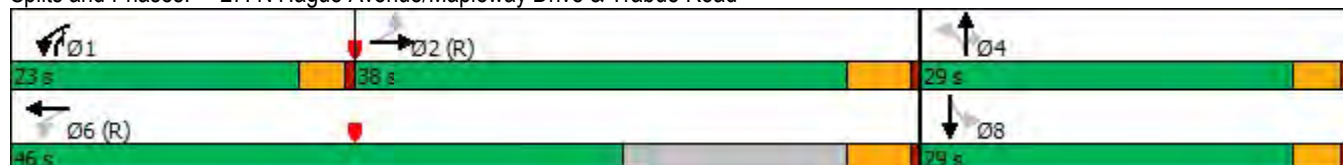


Phase Number	1	2	4	6	8
Movement	WBL	EBTL	NBTL	WBTL	SBTL
Lead/Lag	Lead	Lag			
Lead-Lag Optimize	Yes	Yes			
Recall Mode	None	C-Min	None	C-Min	None
Maximum Split (s)	23	38	29	46	29
Maximum Split (%)	25.6%	42.2%	32.2%	51.1%	32.2%
Minimum Split (s)	8.7	25	11.1	25	11.1
Yellow Time (s)	3	4.3	3.2	4.3	3.2
All-Red Time (s)	0.7	0.7	0.9	0.7	0.9
Minimum Initial (s)	5	20	7	20	7
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)					
Flash Dont Walk (s)					
Dual Entry	No	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	67	0	38	67	38
End Time (s)	0	38	67	38	67
Yield/Force Off (s)	86.3	33	62.9	33	62.9
Yield/Force Off 170(s)	86.3	33	62.9	33	62.9
Local Start Time (s)	67	0	38	67	38
Local Yield (s)	86.3	33	62.9	33	62.9
Local Yield 170(s)	86.3	33	62.9	33	62.9

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	45
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	

Splits and Phases: 27: N Hague Avenue/Mapleway Drive & Trabue Road



HCM 6th Signalized Intersection Summary 27: N Hague Avenue/Mapleway Drive & Trabue Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	470	110	140	344	12	120	19	220	39	24	24
Future Volume (veh/h)	15	470	110	140	344	12	120	19	220	39	24	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1826	1826	1826	1856	1856	1856	1841	1841	1841	1870	1870	1870
Adj Flow Rate, veh/h	16	511	120	152	374	13	130	21	239	42	26	26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	3	3	3	4	4	4	2	2	2
Cap, veh/h	666	1681	393	581	2426	84	247	34	399	92	57	35
Arrive On Green	0.60	0.60	0.60	0.05	0.70	0.70	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	973	2791	652	1767	3476	121	857	171	1560	172	282	173
Grp Volume(v), veh/h	16	317	314	152	189	198	151	0	239	94	0	0
Grp Sat Flow(s),veh/h/ln	973	1735	1709	1767	1763	1834	1028	0	1560	627	0	0
Q Serve(g_s), s	0.6	8.0	8.1	2.7	3.3	3.3	0.0	0.0	12.1	2.8	0.0	0.0
Cycle Q Clear(g_c), s	0.6	8.0	8.1	2.7	3.3	3.3	13.1	0.0	12.1	15.9	0.0	0.0
Prop In Lane	1.00		0.38	1.00		0.07	0.86		1.00	0.45		0.28
Lane Grp Cap(c), veh/h	666	1045	1029	581	1230	1280	281	0	399	184	0	0
V/C Ratio(X)	0.02	0.30	0.31	0.26	0.15	0.15	0.54	0.00	0.60	0.51	0.00	0.00
Avail Cap(c_a), veh/h	666	1045	1029	863	1230	1280	386	0	517	289	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.2	8.7	8.7	5.8	4.6	4.6	33.8	0.0	29.5	34.6	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.7	0.8	0.2	0.3	0.3	1.6	0.0	1.4	2.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.9	2.8	0.8	1.0	1.1	3.1	0.0	4.7	2.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.3	9.5	9.5	6.0	4.9	4.9	35.4	0.0	30.9	36.8	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	C	D	A	A
Approach Vol, veh/h	647				539				390		94	
Approach Delay, s/veh	9.4				5.2				32.7		36.8	
Approach LOS	A				A				C		D	
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	8.6	59.2		22.2		67.8		22.2				
Change Period (Y+Rc), s	* 3.7	* 5		* 4.1		* 5		* 4.1				
Max Green Setting (Gmax), s	* 19	* 33		* 25		* 41		* 25				
Max Q Clear Time (g_c+I1), s	4.7	10.1		15.1		5.3		17.9				
Green Ext Time (p_c), s	0.3	4.0		1.1		2.3		0.2				
Intersection Summary												
HCM 6th Ctrl Delay	15.0											
HCM 6th LOS	B											
Notes												

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road

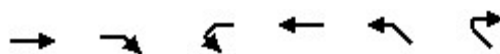
							Ø1	Ø7	Ø8
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR			
Lane Configurations	↑↑		↵	↑↑	↵	↵↵			
Traffic Volume (vph)	608	135	210	435	52	230			
Future Volume (vph)	608	135	210	435	52	230			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)		0	0		335	335			
Storage Lanes		0	1		1	1			
Taper Length (ft)			50		50				
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	0.88			
Frt	0.973					0.850			
Flt Protected			0.950		0.950				
Satd. Flow (prot)	3283	0	1671	3343	1641	2584			
Flt Permitted			0.199		0.950				
Satd. Flow (perm)	3283	0	350	3343	1641	2584			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	30					96			
Link Speed (mph)	35			35	50				
Link Distance (ft)	317			305	1567				
Travel Time (s)	6.2			5.9	21.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Heavy Vehicles (%)	7%	7%	8%	8%	10%	10%			
Adj. Flow (vph)	661	147	228	473	57	250			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	808	0	228	473	57	250			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	24			24	12				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)		9	15		15	9			
Number of Detectors	2		1	2	1	1			
Detector Template	Thru		Left	Thru	Left	Right			
Leading Detector (ft)	100		20	100	20	20			
Trailing Detector (ft)	0		0	0	0	0			
Detector 1 Position(ft)	0		0	0	0	0			
Detector 1 Size(ft)	6		20	6	20	20			
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel									
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0			
Detector 2 Position(ft)	94			94					
Detector 2 Size(ft)	6			6					
Detector 2 Type	Cl+Ex			Cl+Ex					
Detector 2 Channel									
Detector 2 Extend (s)	0.0			0.0					
Turn Type	NA		pm+pt	NA	Prot	pm+ov			
Protected Phases	6		5	2	3	5	1	7	8

HY AM Build with Improvements

Synchro 11 Report

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø1	Ø7	Ø8
Permitted Phases			2		3				
Detector Phase	6		5	2	3	5			
Switch Phase									
Minimum Initial (s)	19.0		10.0	19.0	7.0	10.0	10.0	10.0	7.0
Minimum Split (s)	24.1		15.2	24.1	27.4	15.2	15.2	17.5	12.3
Total Split (s)	31.7		16.0	30.3	42.3	16.0	17.4	30.0	12.3
Total Split (%)	35.2%		17.8%	33.7%	47.0%	17.8%	19%	33%	14%
Maximum Green (s)	26.6		10.8	25.2	34.9	10.8	12.2	22.5	7.0
Yellow Time (s)	3.6		3.6	3.6	5.0	3.6	3.6	4.5	3.6
All-Red Time (s)	1.5		1.6	1.5	2.4	1.6	1.6	3.0	1.7
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.1		5.2	5.1	7.4	5.2			
Lead/Lag	Lag		Lead	Lag		Lead	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes		Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Min		None	C-Min	None	None	None	None	None
Walk Time (s)	7.0			7.0	7.0				
Flash Dont Walk (s)	12.0			12.0	13.0				
Pedestrian Calls (#/hr)	0			0	0				
Act Effect Green (s)	32.6		42.6	32.0	29.0	47.1			
Actuated g/C Ratio	0.36		0.47	0.36	0.32	0.52			
v/c Ratio	0.67		0.71	0.40	0.11	0.18			
Control Delay	24.7		39.0	12.8	19.1	6.0			
Queue Delay	0.0		0.0	0.1	0.0	0.0			
Total Delay	24.7		39.0	12.9	19.1	6.0			
LOS	C		D	B	B	A			
Approach Delay	24.7			21.4	8.5				
Approach LOS	C			C	A				

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 17.4 (19%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 20.7

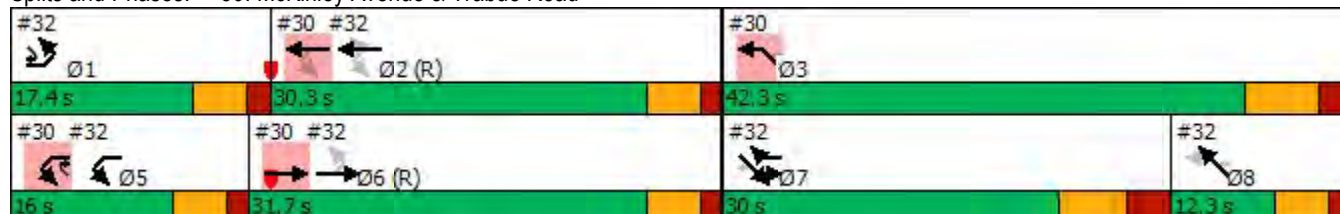
Intersection LOS: C

Intersection Capacity Utilization 53.3%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 30: McKinley Avenue & Trabue Road



Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	228	600	10	10	383	240	640	10	252	10	10	40
Future Volume (vph)	228	600	10	10	383	240	640	10	252	10	10	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		0	290		525	250		500	90		40
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.998				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.954		0.950		
Satd. Flow (prot)	1671	3336	0	1719	3438	1538	1681	1688	1583	1656	1743	1482
Flt Permitted	0.445			0.285			0.950	0.954		0.952		
Satd. Flow (perm)	783	3336	0	516	3438	1538	1681	1688	1583	1659	1743	1482
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				261			274			179
Link Speed (mph)		35			45			45			25	
Link Distance (ft)		305			2848			768			535	
Travel Time (s)		5.9			43.2			11.6			14.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	8%	8%	5%	5%	5%	2%	2%	2%	9%	9%	9%
Adj. Flow (vph)	248	652	11	11	416	261	696	11	274	11	11	43
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	248	663	0	11	416	261	355	352	274	11	11	43
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Right	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	Split	NA	pm+ov	Perm	NA	Perm
Protected Phases	1	6		5	2	7	7	7	1		8	

HY AM Build with Improvements

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3

HY AM Build with Improvements

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Permitted Phases	6			2		2			7	8		8
Detector Phase	1	6		5	2	7	7	7	1	8	8	8
Switch Phase												
Minimum Initial (s)	10.0	19.0		10.0	19.0	10.0	10.0	10.0	10.0	7.0	7.0	7.0
Minimum Split (s)	15.2	24.1		15.2	24.1	17.5	17.5	17.5	15.2	12.3	12.3	12.3
Total Split (s)	17.4	31.7		16.0	30.3	30.0	30.0	30.0	17.4	12.3	12.3	12.3
Total Split (%)	19.3%	35.2%		17.8%	33.7%	33.3%	33.3%	33.3%	19.3%	13.7%	13.7%	13.7%
Maximum Green (s)	12.2	26.6		10.8	25.2	22.5	22.5	22.5	12.2	7.0	7.0	7.0
Yellow Time (s)	3.6	3.6		3.6	3.6	4.5	4.5	4.5	3.6	3.6	3.6	3.6
All-Red Time (s)	1.6	1.5		1.6	1.5	3.0	3.0	3.0	1.6	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.2	5.1		5.2	5.1	7.5	7.5	7.5	5.2	5.3	5.3	5.3
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min		None	C-Min	None	None	None	None	None	None	None
Walk Time (s)		7.0			7.0							
Flash Dont Walk (s)		12.0			12.0							
Pedestrian Calls (#/hr)		0			0							
Act Effect Green (s)	43.9	32.6		42.6	32.0	58.6	21.5	21.5	37.2	7.0	7.0	7.0
Actuated g/C Ratio	0.49	0.36		0.47	0.36	0.65	0.24	0.24	0.41	0.08	0.08	0.08
v/c Ratio	0.50	0.55		0.03	0.34	0.24	0.89	0.87	0.34	0.09	0.08	0.15
Control Delay	15.0	16.0		13.1	24.3	1.7	57.8	56.1	2.4	40.2	40.1	1.2
Queue Delay	0.0	0.2		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.0	16.2		13.1	24.3	1.7	57.8	56.1	2.4	40.2	40.1	1.2
LOS	B	B		B	C	A	E	E	A	D	D	A
Approach Delay		15.8			15.6			41.7			14.4	
Approach LOS		B			B			D			B	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 17.4 (19%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 25.3

Intersection LOS: C

Intersection Capacity Utilization 68.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 32: Marblevista Boulevard/Dublin Road & Trabue Road



Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	27.4
Total Split (s)	42.3
Total Split (%)	47%
Maximum Green (s)	34.9
Yellow Time (s)	5.0
All-Red Time (s)	2.4
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

HCM 6th TWSC

1: Site Access 2/Builders Place & Trabue Road

Intersection												
Int Delay, s/veh	84.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Vol, veh/h	10	574	53	304	876	10	40	0	40	38	0	39
Future Vol, veh/h	10	574	53	304	876	10	40	0	40	38	0	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	325	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	4	4	4	2	2	2
Mvmt Flow	11	624	58	330	952	11	43	0	43	41	0	42

Major/Minor	Major1			Major2			Minor2			Minor1		
Conflicting Flow All	963	0	0	682	0	0	2314	2322	958	2314	2298	653
Stage 1	-	-	-	-	-	-	1618	1618	-	675	675	-
Stage 2	-	-	-	-	-	-	696	704	-	1639	1623	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.14	6.54	6.24	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.536	4.036	3.336	3.518	4.018	3.318
Pot Cap-1 Maneuver	715	-	-	911	-	-	~ 26	37	309	~ 27	39	467
Stage 1	-	-	-	-	-	-	129	160	-	444	453	-
Stage 2	-	-	-	-	-	-	429	437	-	127	161	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	715	-	-	911	-	-	~ 17	23	309	~ 16	24	467
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 17	23	-	~ 16	24	-
Stage 1	-	-	-	-	-	-	127	102	-	437	446	-
Stage 2	-	-	-	-	-	-	384	430	-	70	103	-

Approach	EB			WB			SE			NW		
HCM Control Delay, s	0.2			2.9			\$ 1039.5			\$ 1039.7		
HCM LOS							F			F		

Minor Lane/Major Mvmt	NWLn1	EBL	EBT	EBR	WBL	WBT	WBR	SELn1
Capacity (veh/h)	31	715	-	-	911	-	-	32
HCM Lane V/C Ratio	2.7	0.015	-	-	0.363	-	-	2.717
HCM Control Delay (s)	\$ 1039.7	10.1	-	-	11.2	-	-	\$ 1039.5
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	9.8	0	-	-	1.7	-	-	10.1

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

HCM 6th TWSC 5: Site Access 1 & Trabue Road

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	945	3	0	697	0	41
Future Vol, veh/h	945	3	0	697	0	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	6	3	3	2	2
Mvmt Flow	1027	3	0	758	0	45
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	-	-	-	1029
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	284
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	284
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		20		
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	284	-	-	-		
HCM Lane V/C Ratio	0.157	-	-	-		
HCM Control Delay (s)	20	-	-	-		
HCM Lane LOS	C	-	-	-		
HCM 95th %tile Q(veh)	0.5	-	-	-		

Timing Report, Sorted By Phase 27: N Hague Avenue/Mapleway Drive & Trabue Road

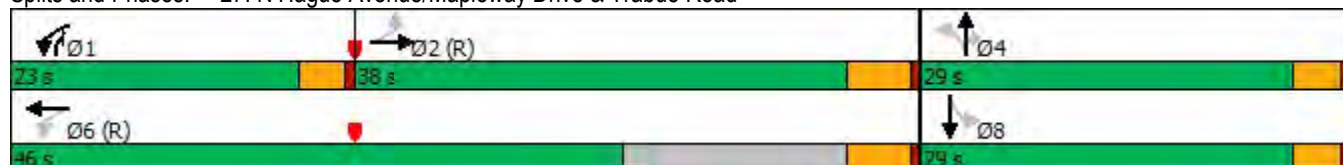


Phase Number	1	2	4	6	8
Movement	WBL	EBTL	NBTL	WBTL	SBTL
Lead/Lag	Lead	Lag			
Lead-Lag Optimize	Yes	Yes			
Recall Mode	None	C-Min	None	C-Min	None
Maximum Split (s)	23	38	29	46	29
Maximum Split (%)	25.6%	42.2%	32.2%	51.1%	32.2%
Minimum Split (s)	8.7	25	11.1	25	11.1
Yellow Time (s)	3	4.3	3.2	4.3	3.2
All-Red Time (s)	0.7	0.7	0.9	0.7	0.9
Minimum Initial (s)	5	20	7	20	7
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)					
Flash Dont Walk (s)					
Dual Entry	No	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	67	0	38	67	38
End Time (s)	0	38	67	38	67
Yield/Force Off (s)	86.3	33	62.9	33	62.9
Yield/Force Off 170(s)	86.3	33	62.9	33	62.9
Local Start Time (s)	67	0	38	67	38
Local Yield (s)	86.3	33	62.9	33	62.9
Local Yield 170(s)	86.3	33	62.9	33	62.9

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	45
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	

Splits and Phases: 27: N Hague Avenue/Mapleway Drive & Trabue Road



HCM 6th Signalized Intersection Summary 27: N Hague Avenue/Mapleway Drive & Trabue Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	470	110	140	344	12	120	19	220	39	24	24
Future Volume (veh/h)	15	470	110	140	344	12	120	19	220	39	24	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1826	1826	1826	1856	1856	1856	1841	1841	1841	1870	1870	1870
Adj Flow Rate, veh/h	16	511	120	152	374	13	130	21	239	42	26	26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	3	3	3	4	4	4	2	2	2
Cap, veh/h	666	1681	393	581	2426	84	247	34	399	92	57	35
Arrive On Green	0.60	0.60	0.60	0.05	0.70	0.70	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	973	2791	652	1767	3476	121	857	171	1560	172	282	173
Grp Volume(v), veh/h	16	317	314	152	189	198	151	0	239	94	0	0
Grp Sat Flow(s),veh/h/ln	973	1735	1709	1767	1763	1834	1028	0	1560	627	0	0
Q Serve(g_s), s	0.6	8.0	8.1	2.7	3.3	3.3	0.0	0.0	12.1	2.8	0.0	0.0
Cycle Q Clear(g_c), s	0.6	8.0	8.1	2.7	3.3	3.3	13.1	0.0	12.1	15.9	0.0	0.0
Prop In Lane	1.00		0.38	1.00		0.07	0.86		1.00	0.45		0.28
Lane Grp Cap(c), veh/h	666	1045	1029	581	1230	1280	281	0	399	184	0	0
V/C Ratio(X)	0.02	0.30	0.31	0.26	0.15	0.15	0.54	0.00	0.60	0.51	0.00	0.00
Avail Cap(c_a), veh/h	666	1045	1029	863	1230	1280	386	0	517	289	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.2	8.7	8.7	5.8	4.6	4.6	33.8	0.0	29.5	34.6	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.7	0.8	0.2	0.3	0.3	1.6	0.0	1.4	2.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.9	2.8	0.8	1.0	1.1	3.1	0.0	4.7	2.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.3	9.5	9.5	6.0	4.9	4.9	35.4	0.0	30.9	36.8	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	C	D	A	A
Approach Vol, veh/h	647			539			390			94		
Approach Delay, s/veh	9.4			5.2			32.7			36.8		
Approach LOS	A			A			C			D		
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	8.6	59.2		22.2		67.8		22.2				
Change Period (Y+Rc), s	* 3.7	* 5		* 4.1		* 5		* 4.1				
Max Green Setting (Gmax), s	* 19	* 33		* 25		* 41		* 25				
Max Q Clear Time (g_c+I1), s	4.7	10.1		15.1		5.3		17.9				
Green Ext Time (p_c), s	0.3	4.0		1.1		2.3		0.2				
Intersection Summary												
HCM 6th Ctrl Delay	15.0											
HCM 6th LOS	B											
Notes												

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road

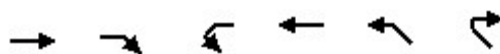
							Ø1	Ø7	Ø8
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR			
Lane Configurations	↑↑			↑↑	↑	↑↑			
Traffic Volume (vph)	608	345	0	645	52	230			
Future Volume (vph)	608	345	0	645	52	230			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)		0	0		335	335			
Storage Lanes		0	0		1	1			
Taper Length (ft)			50		50				
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	0.88			
Frt	0.946					0.850			
Flt Protected					0.950				
Satd. Flow (prot)	3192	0	0	3343	1641	2584			
Flt Permitted					0.950				
Satd. Flow (perm)	3192	0	0	3343	1641	2584			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	125					96			
Link Speed (mph)	35			35	50				
Link Distance (ft)	317			305	1567				
Travel Time (s)	6.2			5.9	21.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Heavy Vehicles (%)	7%	7%	8%	8%	10%	10%			
Adj. Flow (vph)	661	375	0	701	57	250			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	1036	0	0	701	57	250			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	12			12	12				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)		9	15		15	9			
Number of Detectors	2			2	1	1			
Detector Template	Thru			Thru	Left	Right			
Leading Detector (ft)	100			100	20	20			
Trailing Detector (ft)	0			0	0	0			
Detector 1 Position(ft)	0			0	0	0			
Detector 1 Size(ft)	6			6	20	20			
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel									
Detector 1 Extend (s)	0.0			0.0	0.0	0.0			
Detector 1 Queue (s)	0.0			0.0	0.0	0.0			
Detector 1 Delay (s)	0.0			0.0	0.0	0.0			
Detector 2 Position(ft)	94			94					
Detector 2 Size(ft)	6			6					
Detector 2 Type	Cl+Ex			Cl+Ex					
Detector 2 Channel									
Detector 2 Extend (s)	0.0			0.0					
Turn Type	NA			NA	Prot	custom			
Protected Phases	6			2	3	5	1	7	8

HY AM Build Rerouted Lefts with Improvements

Synchro 11 Report

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø1	Ø7	Ø8
Permitted Phases						3			
Detector Phase	6			2	3	5			
Switch Phase									
Minimum Initial (s)	19.0			19.0	7.0	10.0	10.0	10.0	7.0
Minimum Split (s)	24.1			24.1	27.4	15.2	15.2	17.5	12.3
Total Split (s)	31.7			30.3	42.3	16.0	17.4	30.0	12.3
Total Split (%)	35.2%			33.7%	47.0%	17.8%	19%	33%	14%
Maximum Green (s)	26.6			25.2	34.9	10.8	12.2	22.5	7.0
Yellow Time (s)	3.6			3.6	5.0	3.6	3.6	4.5	3.6
All-Red Time (s)	1.5			1.5	2.4	1.6	1.6	3.0	1.7
Lost Time Adjust (s)	0.0			0.0	0.0	0.0			
Total Lost Time (s)	5.1			5.1	7.4	5.2			
Lead/Lag	Lag			Lag		Lead	Lead	Lead	Lag
Lead-Lag Optimize?	Yes			Yes		Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0			3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Min			C-Min	None	None	None	None	None
Walk Time (s)	7.0			7.0	7.0				
Flash Dont Walk (s)	12.0			12.0	13.0				
Pedestrian Calls (#/hr)	0			0	0				
Act Effct Green (s)	33.3			32.0	29.0	46.4			
Actuated g/C Ratio	0.37			0.36	0.32	0.52			
v/c Ratio	0.82			0.59	0.11	0.18			
Control Delay	28.5			15.3	19.1	6.3			
Queue Delay	0.0			0.0	0.0	0.0			
Total Delay	28.5			15.3	19.1	6.3			
LOS	C			B	B	A			
Approach Delay	28.5			15.3	8.7				
Approach LOS	C			B	A				

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 17.4 (19%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 21.0

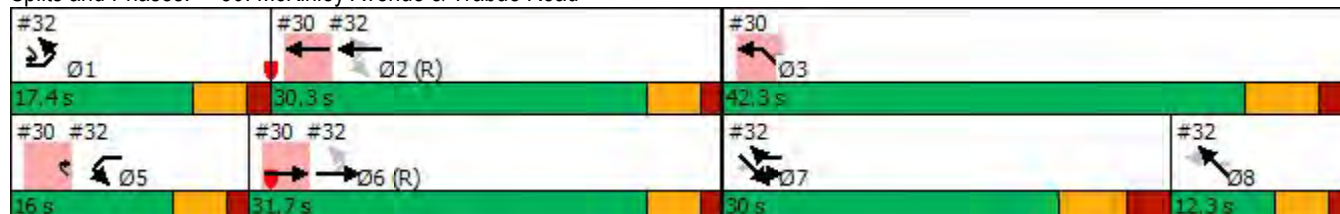
Intersection LOS: C

Intersection Capacity Utilization 44.8%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 30: McKinley Avenue & Trabue Road



Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	228	600	10	10	383	240	640	10	252	10	10	40
Future Volume (vph)	228	600	10	10	383	240	640	10	252	10	10	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		0	290		525	250		500	90		40
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.998				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.954		0.950		
Satd. Flow (prot)	1671	3336	0	1719	3438	1538	1681	1688	1583	1656	1743	1482
Flt Permitted	0.435			0.296			0.950	0.954		0.952		
Satd. Flow (perm)	765	3336	0	536	3438	1538	1681	1688	1583	1659	1743	1482
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				261			274			179
Link Speed (mph)		35			45			45			25	
Link Distance (ft)		305			2885			768			535	
Travel Time (s)		5.9			43.7			11.6			14.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	8%	8%	5%	5%	5%	2%	2%	2%	9%	9%	9%
Adj. Flow (vph)	248	652	11	11	416	261	696	11	274	11	11	43
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	248	663	0	11	416	261	355	352	274	11	11	43
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Right	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	Split	NA	pm+ov	Perm	NA	Perm
Protected Phases	1	6		5	2	7	7	7	1		8	

HY AM Build Rerouted Lefts with Improvements

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Permitted Phases	6			2		2			7	8		8
Detector Phase	1	6		5	2	7	7	7	1	8	8	8
Switch Phase												
Minimum Initial (s)	10.0	19.0		10.0	19.0	10.0	10.0	10.0	10.0	7.0	7.0	7.0
Minimum Split (s)	15.2	24.1		15.2	24.1	17.5	17.5	17.5	15.2	12.3	12.3	12.3
Total Split (s)	17.4	31.7		16.0	30.3	30.0	30.0	30.0	17.4	12.3	12.3	12.3
Total Split (%)	19.3%	35.2%		17.8%	33.7%	33.3%	33.3%	33.3%	19.3%	13.7%	13.7%	13.7%
Maximum Green (s)	12.2	26.6		10.8	25.2	22.5	22.5	22.5	12.2	7.0	7.0	7.0
Yellow Time (s)	3.6	3.6		3.6	3.6	4.5	4.5	4.5	3.6	3.6	3.6	3.6
All-Red Time (s)	1.6	1.5		1.6	1.5	3.0	3.0	3.0	1.6	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.2	5.1		5.2	5.1	7.5	7.5	7.5	5.2	5.3	5.3	5.3
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min		None	C-Min	None	None	None	None	None	None	None
Walk Time (s)		7.0			7.0							
Flash Dont Walk (s)		12.0			12.0							
Pedestrian Calls (#/hr)		0			0							
Act Effect Green (s)	44.6	33.3		41.9	32.0	58.6	21.5	21.5	37.2	7.0	7.0	7.0
Actuated g/C Ratio	0.50	0.37		0.47	0.36	0.65	0.24	0.24	0.41	0.08	0.08	0.08
v/c Ratio	0.50	0.54		0.03	0.34	0.24	0.89	0.87	0.34	0.09	0.08	0.15
Control Delay	15.4	18.4		13.2	24.3	1.7	57.8	56.1	2.4	40.2	40.1	1.2
Queue Delay	0.0	0.3		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.4	18.7		13.2	24.3	1.7	57.8	56.1	2.4	40.2	40.1	1.2
LOS	B	B		B	C	A	E	E	A	D	D	A
Approach Delay		17.8			15.6			41.7			14.4	
Approach LOS		B			B			D			B	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 17.4 (19%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 26.0

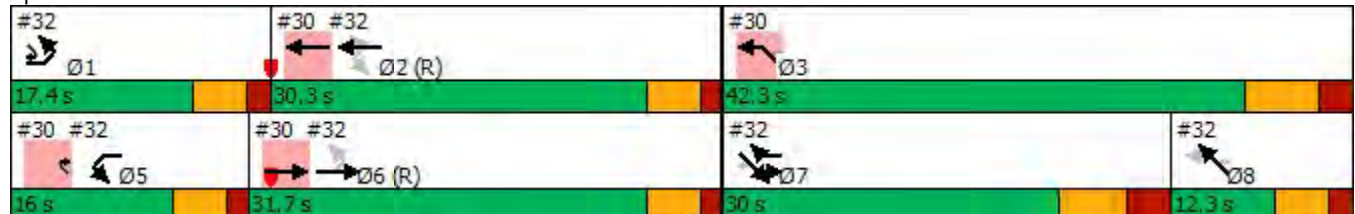
Intersection LOS: C

Intersection Capacity Utilization 68.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 32: Marblevista Boulevard/Dublin Road & Trabue Road



Lanes, Volumes, Timings
 32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	27.4
Total Split (s)	42.3
Total Split (%)	47%
Maximum Green (s)	34.9
Yellow Time (s)	5.0
All-Red Time (s)	2.4
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

HCM 6th TWSC

1: Trabue Road & Builders Place

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Vol, veh/h	10	627	991	10	40	40
Future Vol, veh/h	10	627	991	10	40	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	4	4
Mvmt Flow	11	682	1077	11	43	43
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	1088	0	-	0	1446	544
Stage 1	-	-	-	-	1083	-
Stage 2	-	-	-	-	363	-
Critical Hdwy	4.14	-	-	-	6.88	6.98
Critical Hdwy Stg 1	-	-	-	-	5.88	-
Critical Hdwy Stg 2	-	-	-	-	5.88	-
Follow-up Hdwy	2.22	-	-	-	3.54	3.34
Pot Cap-1 Maneuver	637	-	-	-	120	478
Stage 1	-	-	-	-	282	-
Stage 2	-	-	-	-	668	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	637	-	-	-	118	478
Mov Cap-2 Maneuver	-	-	-	-	118	-
Stage 1	-	-	-	-	277	-
Stage 2	-	-	-	-	668	-
Approach	EB	WB		SE		
HCM Control Delay, s	0.2	0		39.3		
HCM LOS				E		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SELn1	
Capacity (veh/h)	637	-	-	-	189	
HCM Lane V/C Ratio	0.017	-	-	-	0.46	
HCM Control Delay (s)	10.8	-	-	-	39.3	
HCM Lane LOS	B	-	-	-	E	
HCM 95th %tile Q(veh)	0.1	-	-	-	2.2	

Timing Report, Sorted By Phase

27: N Hague Avenue/Mapleway Drive & Trabue Road



Phase Number	1	2	4	6	8
Movement	WBL	EBTL	NBTL	WBTL	SBTL
Lead/Lag	Lead	Lag			
Lead-Lag Optimize	Yes	Yes			
Recall Mode	None	C-Min	None	C-Min	None
Maximum Split (s)	23	32	20	42	20
Maximum Split (%)	30.7%	42.7%	26.7%	56.0%	26.7%
Minimum Split (s)	8.7	25	11.1	25	11.1
Yellow Time (s)	3	4.3	3.2	4.3	3.2
All-Red Time (s)	0.7	0.7	0.9	0.7	0.9
Minimum Initial (s)	5	20	7	20	7
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)					
Flash Dont Walk (s)					
Dual Entry	No	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	52	0	32	52	32
End Time (s)	0	32	52	32	52
Yield/Force Off (s)	71.3	27	47.9	27	47.9
Yield/Force Off 170(s)	71.3	27	47.9	27	47.9
Local Start Time (s)	52	0	32	52	32
Local Yield (s)	71.3	27	47.9	27	47.9
Local Yield 170(s)	71.3	27	47.9	27	47.9

Intersection Summary

Cycle Length	75
Control Type	Actuated-Coordinated
Natural Cycle	45
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	

Splits and Phases: 27: N Hague Avenue/Mapleway Drive & Trabue Road



HCM 6th Signalized Intersection Summary 27: N Hague Avenue/Mapleway Drive & Trabue Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	460	190	256	733	18	100	40	150	27	19	19
Future Volume (veh/h)	25	460	190	256	733	18	100	40	150	27	19	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	27	500	207	278	797	20	109	43	163	29	21	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	484	1423	586	616	2567	64	216	62	396	88	61	34
Arrive On Green	0.58	0.58	0.58	0.19	1.00	1.00	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	669	2454	1011	1781	3542	89	870	402	1585	131	393	220
Grp Volume(v), veh/h	27	361	346	278	400	417	152	0	163	71	0	0
Grp Sat Flow(s),veh/h/ln	669	1777	1688	1781	1777	1854	1272	0	1585	743	0	0
Q Serve(g_s), s	1.3	8.0	8.1	4.5	0.0	0.0	0.0	0.0	6.5	0.3	0.0	0.0
Cycle Q Clear(g_c), s	1.3	8.0	8.1	4.5	0.0	0.0	9.0	0.0	6.5	9.3	0.0	0.0
Prop In Lane	1.00		0.60	1.00		0.05	0.72		1.00	0.41		0.30
Lane Grp Cap(c), veh/h	484	1030	979	616	1287	1344	278	0	396	182	0	0
V/C Ratio(X)	0.06	0.35	0.35	0.45	0.31	0.31	0.55	0.00	0.41	0.39	0.00	0.00
Avail Cap(c_a), veh/h	484	1030	979	904	1287	1344	364	0	487	266	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.9	8.3	8.3	4.5	0.0	0.0	30.5	0.0	23.5	28.2	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.9	1.0	0.5	0.6	0.6	1.7	0.0	0.7	1.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.8	2.7	1.0	0.2	0.2	2.6	0.0	2.4	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.1	9.3	9.3	5.0	0.6	0.6	32.2	0.0	24.2	29.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	C	C	A	A
Approach Vol, veh/h		734			1095			315			71	
Approach Delay, s/veh		9.2			1.7			28.1			29.6	
Approach LOS		A			A			C			C	
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	10.9	48.5		15.7		59.3		15.7				
Change Period (Y+Rc), s	* 3.7	* 5		* 4.1		* 5		* 4.1				
Max Green Setting (Gmax), s	* 19	* 27		* 16		* 37		* 16				
Max Q Clear Time (g_c+I1), s	6.5	10.1		11.0		2.0		11.3				
Green Ext Time (p_c), s	0.6	4.3		0.6		5.6		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			8.9									
HCM 6th LOS			A									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road

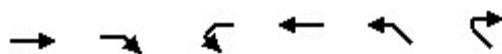
									
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø1	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	550	117	200	787	214	310			
Future Volume (vph)	550	117	200	787	214	310			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)		0	0		335	335			
Storage Lanes		0	1		1	1			
Taper Length (ft)			50		50				
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	0.88			
Frt	0.974					0.850			
Flt Protected			0.950		0.950				
Satd. Flow (prot)	3447	0	1770	3539	1770	2787			
Flt Permitted			0.280		0.950				
Satd. Flow (perm)	3447	0	522	3539	1770	2787			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	35					150			
Link Speed (mph)	35			35	50				
Link Distance (ft)	922			305	1567				
Travel Time (s)	18.0			5.9	21.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Adj. Flow (vph)	598	127	217	855	233	337			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	725	0	217	855	233	337			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	24			24	12				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)		9	15		15	9			
Number of Detectors	2		1	2	1	1			
Detector Template	Thru		Left	Thru	Left	Right			
Leading Detector (ft)	100		20	100	20	20			
Trailing Detector (ft)	0		0	0	0	0			
Detector 1 Position(ft)	0		0	0	0	0			
Detector 1 Size(ft)	6		20	6	20	20			
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel									
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0			
Detector 2 Position(ft)	94			94					
Detector 2 Size(ft)	6			6					
Detector 2 Type	Cl+Ex			Cl+Ex					
Detector 2 Channel									
Detector 2 Extend (s)	0.0			0.0					
Turn Type	NA		pm+pt	NA	Prot	pm+ov			
Protected Phases	6		5	2	3	5	1	7	8
Permitted Phases			2			3			

HY PM No Build
With Improvements

Synchro 11 Report

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø1	Ø7	Ø8
Detector Phase	6		5	2	3	5			
Switch Phase									
Minimum Initial (s)	19.0		10.0	19.0	7.0	10.0	10.0	10.0	7.0
Minimum Split (s)	24.1		15.2	24.1	27.4	15.2	15.2	17.5	12.3
Total Split (s)	28.5		15.2	27.7	31.3	15.2	16.0	19.0	12.3
Total Split (%)	38.0%		20.3%	36.9%	41.7%	20.3%	21%	25%	16%
Maximum Green (s)	23.4		10.0	22.6	23.9	10.0	10.8	11.5	7.0
Yellow Time (s)	3.6		3.6	3.6	5.0	3.6	3.6	4.5	3.6
All-Red Time (s)	1.5		1.6	1.5	2.4	1.6	1.6	3.0	1.7
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.1		5.2	5.1	7.4	5.2			
Lead/Lag	Lag		Lead	Lag		Lead	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes		Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Min		None	C-Min	None	None	None	None	None
Walk Time (s)	7.0			7.0	7.0				
Flash Dont Walk (s)	12.0			12.0	13.0				
Pedestrian Calls (#/hr)	0			0	0				
Act Effect Green (s)	28.2		36.1	26.2	19.1	36.5			
Actuated g/C Ratio	0.38		0.48	0.35	0.25	0.49			
v/c Ratio	0.55		0.52	0.69	0.52	0.24			
Control Delay	20.3		20.0	13.8	27.1	5.6			
Queue Delay	0.0		0.0	0.1	0.0	0.0			
Total Delay	20.3		20.0	13.9	27.1	5.6			
LOS	C		B	B	C	A			
Approach Delay	20.3			15.2	14.3				
Approach LOS	C			B	B				

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 16 (21%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 16.5

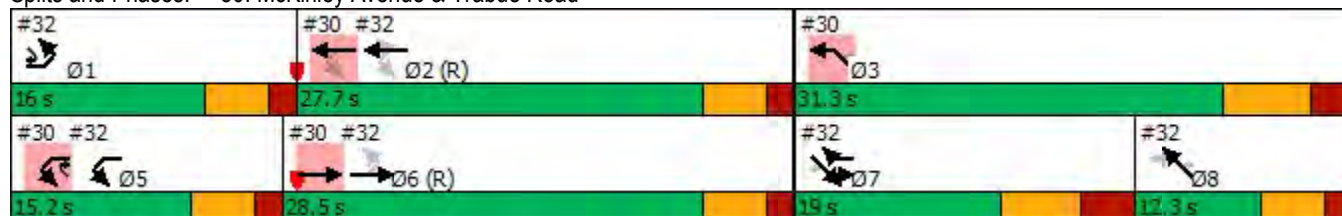
Intersection LOS: B

Intersection Capacity Utilization 56.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 30: McKinley Avenue & Trabue Road



Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	304	526	30	60	760	720	360	20	217	10	10	30
Future Volume (vph)	304	526	30	60	760	720	360	20	217	10	10	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		0	290		525	250		500	90		40
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.992				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.957		0.950		
Satd. Flow (prot)	1770	3511	0	1770	3539	1583	1681	1694	1583	1770	1863	1583
Flt Permitted	0.171			0.362			0.950	0.957		0.952		
Satd. Flow (perm)	319	3511	0	674	3539	1583	1681	1694	1583	1773	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8				391			189			215
Link Speed (mph)		35			45			45			25	
Link Distance (ft)		305			2865			768			535	
Travel Time (s)		5.9			43.4			11.6			14.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	330	572	33	65	826	783	391	22	236	11	11	33
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	330	605	0	65	826	783	207	206	236	11	11	33
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Right	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	Split	NA	pm+ov	Perm	NA	Perm
Protected Phases	1	6		5	2	7	7	7	1		8	
Permitted Phases	6			2		2			7	8		8

HY PM No Build
With Improvements

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	

HY PM No Build
With Improvements

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Detector Phase	1	6		5	2	7	7	7	1	8	8	8
Switch Phase												
Minimum Initial (s)	10.0	19.0		10.0	19.0	10.0	10.0	10.0	10.0	7.0	7.0	7.0
Minimum Split (s)	15.2	24.1		15.2	24.1	17.5	17.5	17.5	15.2	12.3	12.3	12.3
Total Split (s)	16.0	28.5		15.2	27.7	19.0	19.0	19.0	16.0	12.3	12.3	12.3
Total Split (%)	21.3%	38.0%		20.3%	36.9%	25.3%	25.3%	25.3%	21.3%	16.4%	16.4%	16.4%
Maximum Green (s)	10.8	23.4		10.0	22.6	11.5	11.5	11.5	10.8	7.0	7.0	7.0
Yellow Time (s)	3.6	3.6		3.6	3.6	4.5	4.5	4.5	3.6	3.6	3.6	3.6
All-Red Time (s)	1.6	1.5		1.6	1.5	3.0	3.0	3.0	1.6	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.2	5.1		5.2	5.1	7.5	7.5	7.5	5.2	5.3	5.3	5.3
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min		None	C-Min	None	None	None	None	None	None	None
Walk Time (s)		7.0			7.0							
Flash Dont Walk (s)		12.0			12.0							
Pedestrian Calls (#/hr)		0			0							
Act Effect Green (s)	40.0	28.2		36.1	26.2	43.0	11.6	11.6	28.0	7.0	7.0	7.0
Actuated g/C Ratio	0.53	0.38		0.48	0.35	0.57	0.15	0.15	0.37	0.09	0.09	0.09
v/c Ratio	0.82	0.46		0.14	0.67	0.73	0.80	0.79	0.33	0.07	0.06	0.10
Control Delay	42.9	13.3		9.8	25.1	11.3	54.7	53.5	4.2	32.1	32.0	0.6
Queue Delay	0.0	0.1		0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.9	13.4		9.8	25.1	11.3	54.7	53.5	4.2	32.1	32.0	0.6
LOS	D	B		A	C	B	D	D	A	C	C	A
Approach Delay		23.8			18.1			36.0			13.2	
Approach LOS		C			B			D			B	

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 16 (21%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 23.1

Intersection LOS: C

Intersection Capacity Utilization 82.2%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 32: Marblevista Boulevard/Dublin Road & Trabue Road

#32 	#30 #32   Ø2 (R)	#30 	
16 s	27.7 s	31.3 s	
#30 #32   Ø5	#30 #32   Ø6 (R)	#32 	#32 
15.2 s	28.5 s	19 s	12.3 s

HY PM No Build
With Improvements

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	27.4
Total Split (s)	31.3
Total Split (%)	42%
Maximum Green (s)	23.9
Yellow Time (s)	5.0
All-Red Time (s)	2.4
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

HCM 6th TWSC

1: Site Access 2/Builders Place & Trabue Road

Intersection												
Int Delay, s/veh	20.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Vol, veh/h	10	574	53	104	876	10	40	0	40	38	0	39
Future Vol, veh/h	10	574	53	104	876	10	40	0	40	38	0	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	200	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	4	4	4	2	2	2
Mvmt Flow	11	624	58	113	952	11	43	0	43	41	0	42

Major/Minor	Major1			Major2			Minor2			Minor1		
Conflicting Flow All	963	0	0	682	0	0	1880	1888	958	1880	1864	653
Stage 1	-	-	-	-	-	-	1184	1184	-	675	675	-
Stage 2	-	-	-	-	-	-	696	704	-	1205	1189	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.14	6.54	6.24	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.536	4.036	3.336	3.518	4.018	3.318
Pot Cap-1 Maneuver	715	-	-	911	-	-	54	70	309	54	73	467
Stage 1	-	-	-	-	-	-	229	261	-	444	453	-
Stage 2	-	-	-	-	-	-	429	437	-	225	261	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	715	-	-	911	-	-	44	60	309	42	63	467
Mov Cap-2 Maneuver	-	-	-	-	-	-	44	60	-	42	63	-
Stage 1	-	-	-	-	-	-	226	229	-	437	446	-
Stage 2	-	-	-	-	-	-	384	430	-	169	229	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	0.2	1	237.7	217.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NWLn1	EBL	EBT	EBR	WBL	WBT	WBR	SELn1
Capacity (veh/h)	78	715	-	-	911	-	-	77
HCM Lane V/C Ratio	1.073	0.015	-	-	0.124	-	-	1.129
HCM Control Delay (s)	217.8	10.1	-	-	9.5	-	-	237.7
HCM Lane LOS	F	B	-	-	A	-	-	F
HCM 95th %tile Q(veh)	6	0	-	-	0.4	-	-	6.4

HCM 6th TWSC 5: Site Access 1 & Trabue Road

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱		↱
Traffic Vol, veh/h	631	14	0	990	0	21
Future Vol, veh/h	631	14	0	990	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	686	15	0	1076	0	23
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	-	-	-	694
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	443
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	443
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		13.6		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	443	-	-	-		
HCM Lane V/C Ratio	0.052	-	-	-		
HCM Control Delay (s)	13.6	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile Q(veh)	0.2	-	-	-		

Timing Report, Sorted By Phase

27: N Hague Avenue/Mapleway Drive & Trabue Road

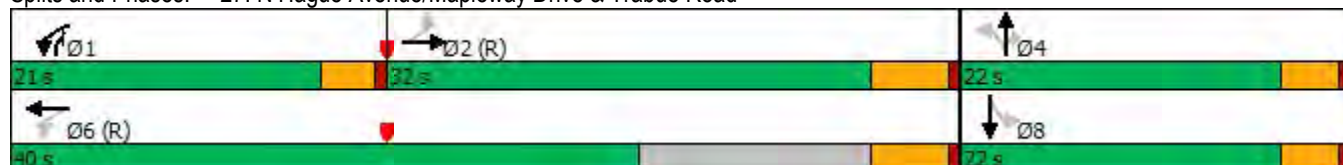


Phase Number	1	2	4	6	8
Movement	WBL	EBTL	NBTL	WBTL	SBTL
Lead/Lag	Lead	Lag			
Lead-Lag Optimize	Yes	Yes			
Recall Mode	None	C-Min	None	C-Min	None
Maximum Split (s)	21	32	22	40	22
Maximum Split (%)	28.0%	42.7%	29.3%	53.3%	29.3%
Minimum Split (s)	8.7	25	11.1	25	11.1
Yellow Time (s)	3	4.3	3.2	4.3	3.2
All-Red Time (s)	0.7	0.7	0.9	0.7	0.9
Minimum Initial (s)	5	20	7	20	7
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)					
Flash Dont Walk (s)					
Dual Entry	No	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	21	53	0	53
End Time (s)	21	53	0	53	0
Yield/Force Off (s)	17.3	48	70.9	48	70.9
Yield/Force Off 170(s)	17.3	48	70.9	48	70.9
Local Start Time (s)	54	0	32	54	32
Local Yield (s)	71.3	27	49.9	27	49.9
Local Yield 170(s)	71.3	27	49.9	27	49.9

Intersection Summary

Cycle Length	75
Control Type	Actuated-Coordinated
Natural Cycle	45
Offset: 21 (28%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	

Splits and Phases: 27: N Hague Avenue/Mapleway Drive & Trabue Road



HCM 6th Signalized Intersection Summary 27: N Hague Avenue/Mapleway Drive & Trabue Road

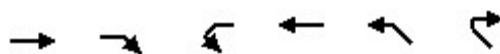
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	460	190	256	733	18	100	40	150	27	19	19
Future Volume (veh/h)	25	460	190	256	733	18	100	40	150	27	19	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	27	500	207	278	797	20	109	43	163	29	21	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	487	1434	590	610	2562	64	218	63	389	89	62	35
Arrive On Green	0.58	0.58	0.58	0.09	0.72	0.72	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	669	2454	1011	1781	3542	89	874	406	1585	138	396	224
Grp Volume(v), veh/h	27	361	346	278	400	417	152	0	163	71	0	0
Grp Sat Flow(s),veh/h/ln	669	1777	1688	1781	1777	1854	1280	0	1585	758	0	0
Q Serve(g_s), s	1.3	8.0	8.0	4.2	6.0	6.0	0.0	0.0	6.5	0.3	0.0	0.0
Cycle Q Clear(g_c), s	1.3	8.0	8.0	4.2	6.0	6.0	8.9	0.0	6.5	9.3	0.0	0.0
Prop In Lane	1.00		0.60	1.00		0.05	0.72		1.00	0.41		0.30
Lane Grp Cap(c), veh/h	487	1038	986	610	1285	1341	281	0	389	185	0	0
V/C Ratio(X)	0.06	0.35	0.35	0.46	0.31	0.31	0.54	0.00	0.42	0.38	0.00	0.00
Avail Cap(c_a), veh/h	487	1038	986	860	1285	1341	404	0	521	306	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.8	8.1	8.2	5.1	3.7	3.7	30.4	0.0	23.8	28.1	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.9	1.0	0.5	0.6	0.6	1.6	0.0	0.7	1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.8	2.7	1.1	1.6	1.7	2.6	0.0	2.4	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.0	9.1	9.1	5.6	4.3	4.3	32.0	0.0	24.5	29.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	C	C	A	A
Approach Vol, veh/h	734		1095				315			71		
Approach Delay, s/veh	9.0		4.6				28.2			29.4		
Approach LOS	A		A				C			C		
Timer - Assigned Phs	1	2	4		6		8					
Phs Duration (G+Y+Rc), s	10.4	48.8	15.8		59.2		15.8					
Change Period (Y+Rc), s	* 3.7	* 5	* 4.1		* 5		* 4.1					
Max Green Setting (Gmax), s	* 17	* 27	* 18		* 35		* 18					
Max Q Clear Time (g_c+I1), s	6.2	10.0	10.9		8.0		11.3					
Green Ext Time (p_c), s	0.6	4.3	0.7		5.4		0.1					
Intersection Summary												
HCM 6th Ctrl Delay			10.2									
HCM 6th LOS			B									
Notes												

Lanes, Volumes, Timings
30: McKinley Avenue & Trabue Road

							Ø1	Ø7	Ø8
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR			
Lane Configurations	↑↑		↵	↑↑	↵	↵↵			
Traffic Volume (vph)	550	95	200	787	203	310			
Future Volume (vph)	550	95	200	787	203	310			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)		0	0		335	335			
Storage Lanes		0	1		1	1			
Taper Length (ft)			50		50				
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	0.88			
Frt	0.978					0.850			
Flt Protected			0.950		0.950				
Satd. Flow (prot)	3461	0	1770	3539	1770	2787			
Flt Permitted			0.297		0.950				
Satd. Flow (perm)	3461	0	553	3539	1770	2787			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	27					150			
Link Speed (mph)	35			35	50				
Link Distance (ft)	317			305	1567				
Travel Time (s)	6.2			5.9	21.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Adj. Flow (vph)	598	103	217	855	221	337			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	701	0	217	855	221	337			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	24			24	12				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)		9	15		15	9			
Number of Detectors	2		1	2	1	1			
Detector Template	Thru		Left	Thru	Left	Right			
Leading Detector (ft)	100		20	100	20	20			
Trailing Detector (ft)	0		0	0	0	0			
Detector 1 Position(ft)	0		0	0	0	0			
Detector 1 Size(ft)	6		20	6	20	20			
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel									
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0			
Detector 2 Position(ft)	94			94					
Detector 2 Size(ft)	6			6					
Detector 2 Type	Cl+Ex			Cl+Ex					
Detector 2 Channel									
Detector 2 Extend (s)	0.0			0.0					
Turn Type	NA		pm+pt	NA	Prot	pm+ov			
Protected Phases	6		5	2	3	5	1	7	8
Permitted Phases			2			3			

Lanes, Volumes, Timings

30: McKinley Avenue & Trabue Road



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø1	Ø7	Ø8
Detector Phase	6		5	2	3	5			
Switch Phase									
Minimum Initial (s)	19.0		10.0	19.0	7.0	10.0	10.0	10.0	7.0
Minimum Split (s)	24.1		15.2	24.1	27.4	15.2	15.2	17.5	12.3
Total Split (s)	28.5		15.2	27.7	31.3	15.2	16.0	19.0	12.3
Total Split (%)	38.0%		20.3%	36.9%	41.7%	20.3%	21%	25%	16%
Maximum Green (s)	23.4		10.0	22.6	23.9	10.0	10.8	11.5	7.0
Yellow Time (s)	3.6		3.6	3.6	5.0	3.6	3.6	4.5	3.6
All-Red Time (s)	1.5		1.6	1.5	2.4	1.6	1.6	3.0	1.7
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.1		5.2	5.1	7.4	5.2			
Lead/Lag	Lag		Lead	Lag		Lead	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes		Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Min		None	C-Min	None	None	None	None	None
Walk Time (s)	7.0			7.0	7.0				
Flash Dont Walk (s)	12.0			12.0	13.0				
Pedestrian Calls (#/hr)	0			0	0				
Act Effect Green (s)	28.3		36.2	26.3	19.0	36.4			
Actuated g/C Ratio	0.38		0.48	0.35	0.25	0.49			
v/c Ratio	0.53		0.51	0.69	0.49	0.24			
Control Delay	26.9		18.6	13.8	26.5	5.6			
Queue Delay	0.0		0.0	0.1	0.0	0.0			
Total Delay	26.9		18.6	13.9	26.5	5.6			
LOS	C		B	B	C	A			
Approach Delay	26.9			14.8	13.9				
Approach LOS	C			B	B				

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 16 (21%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 18.3

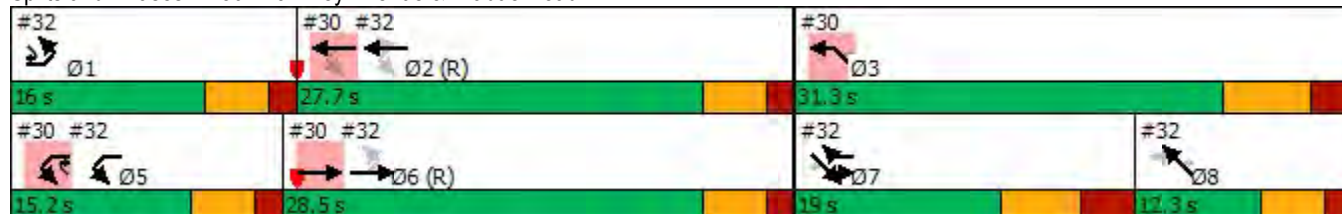
Intersection LOS: B

Intersection Capacity Utilization 55.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 30: McKinley Avenue & Trabue Road



Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	304	526	30	60	760	720	360	20	217	10	10	30
Future Volume (vph)	304	526	30	60	760	720	360	20	217	10	10	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		0	290		525	250		500	90		40
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.992				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.957		0.950		
Satd. Flow (prot)	1770	3511	0	1770	3539	1583	1681	1694	1583	1770	1863	1583
Flt Permitted	0.172			0.362			0.950	0.957		0.952		
Satd. Flow (perm)	320	3511	0	674	3539	1583	1681	1694	1583	1773	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8				392			189			215
Link Speed (mph)		35			45			45			25	
Link Distance (ft)		305			2848			768			535	
Travel Time (s)		5.9			43.2			11.6			14.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	330	572	33	65	826	783	391	22	236	11	11	33
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	330	605	0	65	826	783	207	206	236	11	11	33
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Right	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	Split	NA	pm+ov	Perm	NA	Perm
Protected Phases	1	6		5	2	7	7	7	1		8	
Permitted Phases	6			2		2			7	8		8

HY PM Build with Improvements

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Detector Phase	1	6		5	2	7	7	7	1	8	8	8
Switch Phase												
Minimum Initial (s)	10.0	19.0		10.0	19.0	10.0	10.0	10.0	10.0	7.0	7.0	7.0
Minimum Split (s)	15.2	24.1		15.2	24.1	17.5	17.5	17.5	15.2	12.3	12.3	12.3
Total Split (s)	16.0	28.5		15.2	27.7	19.0	19.0	19.0	16.0	12.3	12.3	12.3
Total Split (%)	21.3%	38.0%		20.3%	36.9%	25.3%	25.3%	25.3%	21.3%	16.4%	16.4%	16.4%
Maximum Green (s)	10.8	23.4		10.0	22.6	11.5	11.5	11.5	10.8	7.0	7.0	7.0
Yellow Time (s)	3.6	3.6		3.6	3.6	4.5	4.5	4.5	3.6	3.6	3.6	3.6
All-Red Time (s)	1.6	1.5		1.6	1.5	3.0	3.0	3.0	1.6	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.2	5.1		5.2	5.1	7.5	7.5	7.5	5.2	5.3	5.3	5.3
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min		None	C-Min	None	None	None	None	None	None	None
Walk Time (s)		7.0			7.0							
Flash Dont Walk (s)		12.0			12.0							
Pedestrian Calls (#/hr)		0			0							
Act Effect Green (s)	40.1	28.3		36.2	26.3	43.0	11.5	11.5	27.9	7.0	7.0	7.0
Actuated g/C Ratio	0.53	0.38		0.48	0.35	0.57	0.15	0.15	0.37	0.09	0.09	0.09
v/c Ratio	0.82	0.46		0.14	0.66	0.73	0.80	0.79	0.33	0.07	0.06	0.10
Control Delay	43.8	11.5		9.8	25.0	11.2	55.6	54.3	4.2	32.1	32.0	0.6
Queue Delay	0.0	0.1		0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.8	11.6		9.8	25.0	11.2	55.6	54.3	4.2	32.1	32.0	0.6
LOS	D	B		A	C	B	E	D	A	C	C	A
Approach Delay		22.9			18.0			36.5			13.2	
Approach LOS		C			B			D			B	

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 16 (21%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 22.9

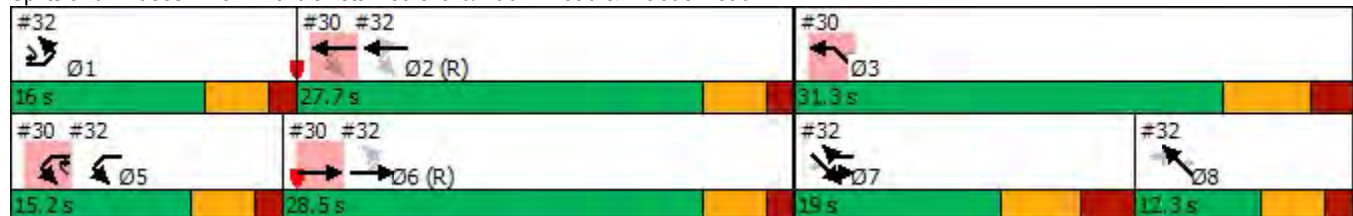
Intersection LOS: C

Intersection Capacity Utilization 82.2%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 32: Marblevista Boulevard/Dublin Road & Trabue Road



Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	27.4
Total Split (s)	31.3
Total Split (%)	42%
Maximum Green (s)	23.9
Yellow Time (s)	5.0
All-Red Time (s)	2.4
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

HCM 6th TWSC

1: Site Access 2/Builders Place & Trabue Road

Intersection													
Int Delay, s/veh	14.8												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations													
Traffic Vol, veh/h	10	574	53	200	104	876	10	40	0	40	38	0	39
Future Vol, veh/h	10	574	53	200	104	876	10	40	0	40	38	0	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	325	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	4	4	4	2	2	2
Mvmt Flow	11	624	58	217	113	952	11	43	0	43	41	0	42
Major/Minor	Major1			Major2			Minor2			Minor1			
Conflicting Flow All	963	0	0	-	682	0	0	1880	2322	958	1880	2298	653
Stage 1	-	-	-	-	-	-	-	1184	1618	-	675	675	-
Stage 2	-	-	-	-	-	-	-	696	704	-	1205	1623	-
Critical Hdwy	4.12	-	-	-	4.12	-	-	7.14	6.54	6.24	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.14	5.54	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.14	5.54	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	-	2.218	-	-	3.536	4.036	3.336	3.518	4.018	3.318
Pot Cap-1 Maneuver	715	-	-	-	911	-	-	54	37	309	54	39	467
Stage 1	-	-	-	-	-	-	-	229	160	-	444	453	-
Stage 2	-	-	-	-	-	-	-	429	437	-	225	161	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	715	-	-	~	~	-	-	49	36	309	46	38	467
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	49	36	-	46	38	-
Stage 1	-	-	-	-	-	-	-	226	160	-	437	446	-
Stage 2	-	-	-	-	-	-	-	384	430	-	193	161	-
Approach	EB			WB			SE			NW			
HCM Control Delay, s	0.2						192.3			180.9			
HCM LOS							F			F			
Minor Lane/Major Mvmt	NWLn1	EBL	EBT	EBR	WBL	WBT	WBR	SELn1					
Capacity (veh/h)	85	715	-	-	~	-	-	85					
HCM Lane V/C Ratio	0.985	0.015	-	-	~	-	-	1.023					
HCM Control Delay (s)	180.9	10.1	-	-	-	-	-	192.3					
HCM Lane LOS	F	B	-	-	-	-	-	F					
HCM 95th %tile Q(veh)	5.5	0	-	-	~	-	-	5.8					
Notes													
~: Volume exceeds capacity		\$: Delay exceeds 300s				+: Computation Not Defined				*: All major volume in platoon			

HCM 6th TWSC 5: Site Access 1 & Trabue Road

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	831	14	0	1190	0	21
Future Vol, veh/h	831	14	0	1190	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	903	15	0	1293	0	23
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	911
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	332
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	332
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		16.6	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	332	-	-	-		
HCM Lane V/C Ratio	0.069	-	-	-		
HCM Control Delay (s)	16.6	-	-	-		
HCM Lane LOS	C	-	-	-		
HCM 95th %tile Q(veh)	0.2	-	-	-		

Timing Report, Sorted By Phase 27: N Hague Avenue/Mapleway Drive & Trabue Road



Phase Number	1	2	4	6	8
Movement	WBL	EBTL	NBTL	WBTL	SBTL
Lead/Lag	Lead	Lag			
Lead-Lag Optimize	Yes	Yes			
Recall Mode	None	C-Min	None	C-Min	None
Maximum Split (s)	21	32	22	40	22
Maximum Split (%)	28.0%	42.7%	29.3%	53.3%	29.3%
Minimum Split (s)	8.7	25	11.1	25	11.1
Yellow Time (s)	3	4.3	3.2	4.3	3.2
All-Red Time (s)	0.7	0.7	0.9	0.7	0.9
Minimum Initial (s)	5	20	7	20	7
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)					
Flash Dont Walk (s)					
Dual Entry	No	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	21	53	0	53
End Time (s)	21	53	0	53	0
Yield/Force Off (s)	17.3	48	70.9	48	70.9
Yield/Force Off 170(s)	17.3	48	70.9	48	70.9
Local Start Time (s)	54	0	32	54	32
Local Yield (s)	71.3	27	49.9	27	49.9
Local Yield 170(s)	71.3	27	49.9	27	49.9

Intersection Summary

Cycle Length	75
Control Type	Actuated-Coordinated
Natural Cycle	45
Offset: 21 (28%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	

Splits and Phases: 27: N Hague Avenue/Mapleway Drive & Trabue Road



HCM 6th Signalized Intersection Summary 27: N Hague Avenue/Mapleway Drive & Trabue Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	460	190	256	733	18	100	10	150	27	19	19
Future Volume (veh/h)	25	460	190	256	733	18	100	10	150	27	19	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	27	500	207	278	797	20	109	11	163	29	21	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	505	1499	617	627	2642	66	241	16	347	89	60	34
Arrive On Green	0.61	0.61	0.61	0.09	0.75	0.75	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	669	2454	1011	1781	3542	89	1125	120	1585	162	455	259
Grp Volume(v), veh/h	27	361	346	278	400	417	120	0	163	71	0	0
Grp Sat Flow(s),veh/h/ln	669	1777	1688	1781	1777	1854	1245	0	1585	876	0	0
Q Serve(g_s), s	1.2	7.5	7.5	3.8	5.5	5.5	0.0	0.0	6.7	0.3	0.0	0.0
Cycle Q Clear(g_c), s	1.2	7.5	7.5	3.8	5.5	5.5	7.3	0.0	6.7	7.5	0.0	0.0
Prop In Lane	1.00		0.60	1.00		0.05	0.91		1.00	0.41		0.30
Lane Grp Cap(c), veh/h	505	1085	1031	627	1325	1383	257	0	347	184	0	0
V/C Ratio(X)	0.05	0.33	0.34	0.44	0.30	0.30	0.47	0.00	0.47	0.39	0.00	0.00
Avail Cap(c_a), veh/h	505	1085	1031	885	1325	1383	405	0	514	339	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.9	7.1	7.1	4.4	3.1	3.1	31.3	0.0	25.5	29.6	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.8	0.9	0.5	0.6	0.6	1.3	0.0	1.0	1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.5	2.4	1.0	1.3	1.4	2.0	0.0	2.6	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.1	8.0	8.0	4.9	3.7	3.7	32.7	0.0	26.5	30.9	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	C	C	A	A
Approach Vol, veh/h	734		1095				283		71			
Approach Delay, s/veh	7.9		4.0				29.1		30.9			
Approach LOS	A		A				C		C			
Timer - Assigned Phs	1	2	4		6		8					
Phs Duration (G+Y+Rc), s	10.1	50.8	14.1		60.9		14.1					
Change Period (Y+Rc), s	* 3.7	* 5	* 4.1		* 5		* 4.1					
Max Green Setting (Gmax), s	* 17	* 27	* 18		* 35		* 18					
Max Q Clear Time (g_c+l1), s	5.8	9.5	9.3		7.5		9.5					
Green Ext Time (p_c), s	0.6	4.3	0.7		5.4		0.2					
Intersection Summary												
HCM 6th Ctrl Delay				9.4								
HCM 6th LOS				A								
Notes												

Lanes, Volumes, Timings

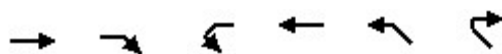
30: McKinley Avenue & Trabue Road

							Ø1	Ø7	Ø8
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR			
Lane Configurations	↑↑			↑↑	↵	↵↵			
Traffic Volume (vph)	550	295	0	987	203	310			
Future Volume (vph)	550	295	0	987	203	310			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Storage Length (ft)		0	0		335	335			
Storage Lanes		0	0		1	1			
Taper Length (ft)			50		50				
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	0.88			
Frt	0.948					0.850			
Flt Protected					0.950				
Satd. Flow (prot)	3355	0	0	3539	1770	2787			
Flt Permitted					0.950				
Satd. Flow (perm)	3355	0	0	3539	1770	2787			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)	137					150			
Link Speed (mph)	35			35	50				
Link Distance (ft)	317			305	1567				
Travel Time (s)	6.2			5.9	21.4				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Adj. Flow (vph)	598	321	0	1073	221	337			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	919	0	0	1073	221	337			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	12			12	12				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)		9	15		15	9			
Number of Detectors	2			2	1	1			
Detector Template	Thru			Thru	Left	Right			
Leading Detector (ft)	100			100	20	20			
Trailing Detector (ft)	0			0	0	0			
Detector 1 Position(ft)	0			0	0	0			
Detector 1 Size(ft)	6			6	20	20			
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel									
Detector 1 Extend (s)	0.0			0.0	0.0	0.0			
Detector 1 Queue (s)	0.0			0.0	0.0	0.0			
Detector 1 Delay (s)	0.0			0.0	0.0	0.0			
Detector 2 Position(ft)	94			94					
Detector 2 Size(ft)	6			6					
Detector 2 Type	Cl+Ex			Cl+Ex					
Detector 2 Channel									
Detector 2 Extend (s)	0.0			0.0					
Turn Type	NA			NA	Prot	custom			
Protected Phases	6			2	3	5	1	7	8
Permitted Phases						3			

HY PM Build Rerouted Lefts with Improvements

Synchro 11 Report

Lanes, Volumes, Timings 30: McKinley Avenue & Trabue Road



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø1	Ø7	Ø8
Detector Phase	6			2	3	5			
Switch Phase									
Minimum Initial (s)	19.0			19.0	7.0	10.0	10.0	10.0	7.0
Minimum Split (s)	24.1			24.1	27.4	15.2	15.2	17.5	12.3
Total Split (s)	28.5			27.7	31.3	15.2	16.0	19.0	12.3
Total Split (%)	38.0%			36.9%	41.7%	20.3%	21%	25%	16%
Maximum Green (s)	23.4			22.6	23.9	10.0	10.8	11.5	7.0
Yellow Time (s)	3.6			3.6	5.0	3.6	3.6	4.5	3.6
All-Red Time (s)	1.5			1.5	2.4	1.6	1.6	3.0	1.7
Lost Time Adjust (s)	0.0			0.0	0.0	0.0			
Total Lost Time (s)	5.1			5.1	7.4	5.2			
Lead/Lag	Lag			Lag		Lead	Lead	Lead	Lag
Lead-Lag Optimize?	Yes			Yes		Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0			3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Min			C-Min	None	None	None	None	None
Walk Time (s)	7.0			7.0	7.0				
Flash Dont Walk (s)	12.0			12.0	13.0				
Pedestrian Calls (#/hr)	0			0	0				
Act Effect Green (s)	28.3			26.4	19.0	36.4			
Actuated g/C Ratio	0.38			0.35	0.25	0.49			
v/c Ratio	0.68			0.86	0.49	0.24			
Control Delay	27.6			21.2	26.5	5.6			
Queue Delay	0.0			0.0	0.0	0.0			
Total Delay	27.6			21.2	26.5	5.6			
LOS	C			C	C	A			
Approach Delay	27.6			21.2	13.9				
Approach LOS	C			C	B				

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 16 (21%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 21.9

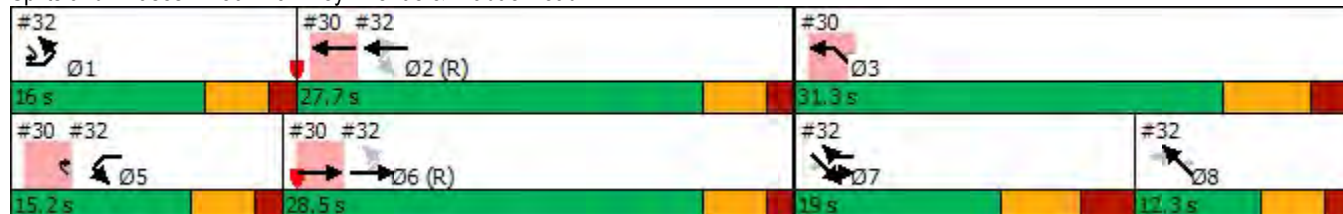
Intersection LOS: C

Intersection Capacity Utilization 48.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 30: McKinley Avenue & Trabue Road



Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	304	526	30	60	760	720	360	20	217	10	10	30
Future Volume (vph)	304	526	30	60	760	720	360	20	217	10	10	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		0	290		525	250		500	90		40
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.992				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950	0.957		0.950		
Satd. Flow (prot)	1770	3511	0	1770	3539	1583	1681	1694	1583	1770	1863	1583
Flt Permitted	0.172			0.362			0.950	0.957		0.952		
Satd. Flow (perm)	320	3511	0	674	3539	1583	1681	1694	1583	1773	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8				392			189			215
Link Speed (mph)		35			45			45			25	
Link Distance (ft)		305			2885			768			535	
Travel Time (s)		5.9			43.7			11.6			14.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	330	572	33	65	826	783	391	22	236	11	11	33
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	330	605	0	65	826	783	207	206	236	11	11	33
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Right	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	Split	NA	pm+ov	Perm	NA	Perm
Protected Phases	1	6		5	2	7	7	7	1		8	
Permitted Phases	6			2		2			7	8		8

HY PM Build Rerouted Lefts with Improvements

Synchro 11 Report

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	

Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Detector Phase	1	6		5	2	7	7	7	1	8	8	8
Switch Phase												
Minimum Initial (s)	10.0	19.0		10.0	19.0	10.0	10.0	10.0	10.0	7.0	7.0	7.0
Minimum Split (s)	15.2	24.1		15.2	24.1	17.5	17.5	17.5	15.2	12.3	12.3	12.3
Total Split (s)	16.0	28.5		15.2	27.7	19.0	19.0	19.0	16.0	12.3	12.3	12.3
Total Split (%)	21.3%	38.0%		20.3%	36.9%	25.3%	25.3%	25.3%	21.3%	16.4%	16.4%	16.4%
Maximum Green (s)	10.8	23.4		10.0	22.6	11.5	11.5	11.5	10.8	7.0	7.0	7.0
Yellow Time (s)	3.6	3.6		3.6	3.6	4.5	4.5	4.5	3.6	3.6	3.6	3.6
All-Red Time (s)	1.6	1.5		1.6	1.5	3.0	3.0	3.0	1.6	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.2	5.1		5.2	5.1	7.5	7.5	7.5	5.2	5.3	5.3	5.3
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min		None	C-Min	None	None	None	None	None	None	None
Walk Time (s)		7.0			7.0							
Flash Dont Walk (s)		12.0			12.0							
Pedestrian Calls (#/hr)		0			0							
Act Effect Green (s)	40.0	28.3		36.3	26.4	43.1	11.5	11.5	27.8	7.0	7.0	7.0
Actuated g/C Ratio	0.53	0.38		0.48	0.35	0.57	0.15	0.15	0.37	0.09	0.09	0.09
v/c Ratio	0.82	0.46		0.14	0.66	0.73	0.80	0.79	0.33	0.07	0.06	0.10
Control Delay	41.0	14.7		9.8	24.9	11.2	55.6	54.3	4.2	32.1	32.0	0.6
Queue Delay	0.0	0.1		0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.0	14.8		9.8	25.2	11.2	55.6	54.3	4.2	32.1	32.0	0.6
LOS	D	B		A	C	B	E	D	A	C	C	A
Approach Delay		24.0			18.1			36.5			13.2	
Approach LOS		C			B			D			B	

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 16 (21%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 23.3

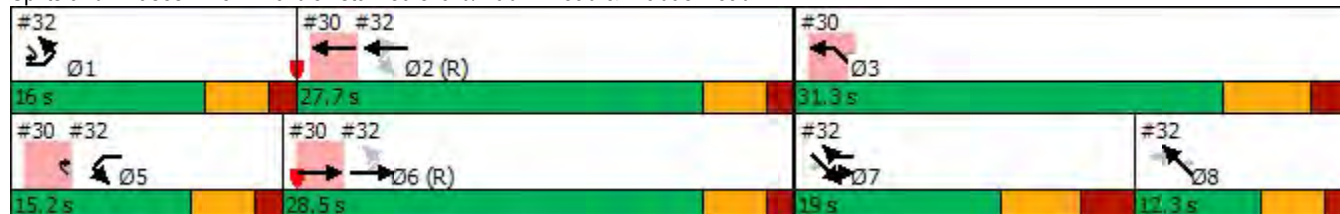
Intersection LOS: C

Intersection Capacity Utilization 82.2%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 32: Marblevista Boulevard/Dublin Road & Trabue Road



Lanes, Volumes, Timings

32: Marblevista Boulevard/Dublin Road & Trabue Road

Lane Group	Ø3
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	27.4
Total Split (s)	31.3
Total Split (%)	42%
Maximum Green (s)	23.9
Yellow Time (s)	5.0
All-Red Time (s)	2.4
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Appendix H

Queuing Analysis

Queuing and Blocking Report

Intersection: 1: Trabue Road & Builders Place

Movement	EB	WB	SE
Directions Served	L	TR	LR
Maximum Queue (ft)	59	4	64
Average Queue (ft)	13	0	20
95th Queue (ft)	42	3	52
Link Distance (ft)		276	720
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	100		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Site Access 1 & Trabue Road

Movement	WB	B3	B3	NB
Directions Served	L	T		LR
Maximum Queue (ft)	46	92	68	90
Average Queue (ft)	10	10	4	39
95th Queue (ft)	36	51	31	76
Link Distance (ft)		215	215	214
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	150			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 27: N Hague Avenue/Mapleway Drive & Trabue Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	LTR
Maximum Queue (ft)	51	181	138	91	50	58	176	85	121
Average Queue (ft)	9	69	25	31	7	7	88	45	52
95th Queue (ft)	34	147	78	64	26	32	152	72	97
Link Distance (ft)		738			509	509	916		278
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	125		250	275				275	
Storage Blk Time (%)		1	0						
Queuing Penalty (veh)		4	0						

Queuing and Blocking Report

Intersection: 30: McKinley Avenue & Trabue Road

Movement	EB	EB	B3	WB	WB	WB	NW	NW	NW
Directions Served	T	TR	T	L	T	T	L	R	R
Maximum Queue (ft)	264	251	80	150	160	171	104	93	45
Average Queue (ft)	138	138	4	74	72	74	28	38	10
95th Queue (ft)	237	232	38	132	139	143	73	75	33
Link Distance (ft)	215	215	264	174	174	174		1504	
Upstream Blk Time (%)	1	1		0	0	1			
Queuing Penalty (veh)	4	4		0	1	2			
Storage Bay Dist (ft)							335		335
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 32: Marblevita Boulevard/Dublin Road & Trabue Road

Movement	EB	EB	EB	WB	WB	WB	WB	SE	SE	SE	NW	NW
Directions Served	L	T	TR	L	T	T	R	L	LT	R	L	T
Maximum Queue (ft)	140	151	109	32	128	120	47	275	314	110	33	90
Average Queue (ft)	67	52	30	5	53	43	10	141	193	43	5	11
95th Queue (ft)	128	114	84	21	100	93	36	258	278	89	20	46
Link Distance (ft)		174	174		2750	2750			686			469
Upstream Blk Time (%)	0	0										
Queuing Penalty (veh)	0	1										
Storage Bay Dist (ft)	120			290			525	250		500	90	
Storage Blk Time (%)	3	0						0	2			3
Queuing Penalty (veh)	7	1						0	9			2

Intersection: 32: Marblevita Boulevard/Dublin Road & Trabue Road

Movement	NW
Directions Served	R
Maximum Queue (ft)	84
Average Queue (ft)	29
95th Queue (ft)	67
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	40
Storage Blk Time (%)	4
Queuing Penalty (veh)	1

Network Summary

Network wide Queuing Penalty: 37

Queuing and Blocking Report

Intersection: 1: Trabue Road & Builders Place

Movement	EB	SE
Directions Served	L	LR
Maximum Queue (ft)	31	65
Average Queue (ft)	6	28
95th Queue (ft)	25	58
Link Distance (ft)	720	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	100	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Site Access 1 & Trabue Road

Movement	WB	B3	B3	NB
Directions Served	L	T		LR
Maximum Queue (ft)	62	151	131	72
Average Queue (ft)	21	54	33	31
95th Queue (ft)	51	133	100	60
Link Distance (ft)		215	215	214
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	150			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 27: N Hague Avenue/Mapleway Drive & Trabue Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	LTR
Maximum Queue (ft)	47	166	110	110	73	84	146	65	96
Average Queue (ft)	15	75	37	49	21	28	81	34	38
95th Queue (ft)	42	142	90	87	54	69	127	59	82
Link Distance (ft)		738			509	509	916		278
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	125		250	275				275	
Storage Blk Time (%)		1							
Queuing Penalty (veh)		5							

Queuing and Blocking Report

Intersection: 30: McKinley Avenue & Trabue Road

Movement	EB	EB	WB	WB	WB	NW	NW	NW
Directions Served	T	TR	L	T	T	L	R	R
Maximum Queue (ft)	187	184	136	174	190	157	96	50
Average Queue (ft)	105	98	66	87	103	77	45	15
95th Queue (ft)	165	158	130	158	174	137	83	40
Link Distance (ft)	215	215	174	174	174		1504	
Upstream Blk Time (%)	0	0	1	1	3			
Queuing Penalty (veh)	0	0	2	3	9			
Storage Bay Dist (ft)						335		335
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 32: Marblevista Boulevard/Dublin Road & Trabue Road

Movement	EB	EB	EB	WB	WB	WB	WB	SE	SE	SE	NW	NW
Directions Served	L	T	TR	L	T	T	R	L	LT	R	L	T
Maximum Queue (ft)	166	192	133	59	198	184	215	185	204	147	23	23
Average Queue (ft)	102	53	27	17	93	88	87	65	127	56	4	6
95th Queue (ft)	162	134	93	43	173	167	182	171	193	122	17	22
Link Distance (ft)		174	174		2750	2750			686			469
Upstream Blk Time (%)	1	2	0									
Queuing Penalty (veh)	0	6	0									
Storage Bay Dist (ft)	120			290			525	250		500	90	
Storage Blk Time (%)	14	1			0				0			0
Queuing Penalty (veh)	31	1			0				0			0

Intersection: 32: Marblevista Boulevard/Dublin Road & Trabue Road

Movement	NW
Directions Served	R
Maximum Queue (ft)	52
Average Queue (ft)	20
95th Queue (ft)	47
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	40
Storage Blk Time (%)	1
Queuing Penalty (veh)	0

Network Summary

Network wide Queuing Penalty: 58

Queuing and Blocking Report

Intersection: 1: Site Access 2/Builders Place & Trabue Road

Movement	EB	EB	WB	SE	NW
Directions Served	L	TR	L	LTR	LTR
Maximum Queue (ft)	40	0	32	87	132
Average Queue (ft)	9	0	11	31	59
95th Queue (ft)	29	0	31	69	111
Link Distance (ft)		572		719	277
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	100		200		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 5: Site Access 1 & Trabue Road

Movement	WB	B7	B7	NB
Directions Served	T	T		R
Maximum Queue (ft)	63	153	105	57
Average Queue (ft)	2	24	16	24
95th Queue (ft)	46	95	65	50
Link Distance (ft)	244	267	267	214
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 27: N Hague Avenue/Mapleway Drive & Trabue Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	LTR
Maximum Queue (ft)	77	227	188	114	60	75	176	149	149
Average Queue (ft)	12	94	43	39	13	15	87	60	56
95th Queue (ft)	53	182	125	80	41	52	152	112	111
Link Distance (ft)		738			451	451	916		278
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	125		250	275				275	
Storage Blk Time (%)		5	0						
Queuing Penalty (veh)		17	0						

Queuing and Blocking Report

Intersection: 30: McKinley Avenue & Trabue Road

Movement	EB	EB	B7	WB	WB	WB	NW	NW	NW
Directions Served	T	TR	T	L	T	T	L	R	R
Maximum Queue (ft)	308	278	54	199	202	214	80	124	89
Average Queue (ft)	176	167	3	118	126	134	23	54	17
95th Queue (ft)	275	257	29	197	208	224	58	106	52
Link Distance (ft)	267	267	244	174	174	174		1504	
Upstream Blk Time (%)	1	0		8	10	21			
Queuing Penalty (veh)	3	2		18	21	47			
Storage Bay Dist (ft)							335		335
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 32: Marblevita Boulevard/Dublin Road & Trabue Road

Movement	EB	EB	EB	WB	WB	WB	WB	SE	SE	SE	NW	NW
Directions Served	L	T	TR	L	T	T	R	L	LT	R	L	T
Maximum Queue (ft)	159	178	157	42	179	181	81	300	547	364	42	58
Average Queue (ft)	89	76	55	4	80	71	18	217	354	165	7	7
95th Queue (ft)	151	156	130	20	161	163	53	335	641	483	28	30
Link Distance (ft)		174	174		2782	2782			686			469
Upstream Blk Time (%)	1	1	0						11			
Queuing Penalty (veh)	0	3	1						0			
Storage Bay Dist (ft)	120			290			525	250		500	90	
Storage Blk Time (%)	9	2			0			3	17	10		1
Queuing Penalty (veh)	26	6			0			20	99	63		1

Intersection: 32: Marblevita Boulevard/Dublin Road & Trabue Road

Movement	NW
Directions Served	R
Maximum Queue (ft)	80
Average Queue (ft)	30
95th Queue (ft)	63
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	40
Storage Blk Time (%)	4
Queuing Penalty (veh)	1

Network Summary

Network wide Queuing Penalty: 327

Queuing and Blocking Report

Intersection: 1: Site Access 2/Builders Place & Trabue Road

Movement	EB	EB	B8	WB	SE	NW
Directions Served	L	TR	T	UL	LTR	LTR
Maximum Queue (ft)	55	7	107	160	115	266
Average Queue (ft)	11	0	4	64	40	169
95th Queue (ft)	35	5	78	115	99	333
Link Distance (ft)		572	451		719	274
Upstream Blk Time (%)			0			26
Queuing Penalty (veh)			0			0
Storage Bay Dist (ft)	100			325		
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 5: Site Access 1 & Trabue Road

Movement	B7	B7	NB
Directions Served	T		R
Maximum Queue (ft)	186	175	66
Average Queue (ft)	76	58	26
95th Queue (ft)	161	137	54
Link Distance (ft)	264	264	215
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 27: N Hague Avenue/Mapleway Drive & Trabue Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	LTR
Maximum Queue (ft)	56	252	187	111	43	49	161	123	107
Average Queue (ft)	10	95	47	43	9	10	77	52	53
95th Queue (ft)	37	191	127	82	29	34	134	98	94
Link Distance (ft)		738			451	451	916		278
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	125		250	275				275	
Storage Blk Time (%)		3							
Queuing Penalty (veh)		11							

Queuing and Blocking Report

Intersection: 30: McKinley Avenue & Trabue Road

Movement	EB	EB	B7	WB	WB	NW	NW	NW
Directions Served	T	TR	T	T	T	L	R	R
Maximum Queue (ft)	269	283	10	163	183	89	131	88
Average Queue (ft)	132	155	0	88	110	23	56	19
95th Queue (ft)	224	255	8	152	169	65	101	57
Link Distance (ft)	264	264	212	177	177		1509	
Upstream Blk Time (%)	0	0		0	0			
Queuing Penalty (veh)	1	2		0	1			
Storage Bay Dist (ft)						335	335	
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 32: Marblevista Boulevard/Dublin Road & Trabue Road

Movement	EB	EB	EB	WB	WB	WB	WB	SE	SE	SE	NW	NW
Directions Served	L	T	TR	L	T	T	R	L	LT	R	L	T
Maximum Queue (ft)	151	179	122	34	150	157	69	298	458	207	44	61
Average Queue (ft)	73	61	39	5	66	62	17	225	293	66	7	10
95th Queue (ft)	133	135	100	19	123	126	51	322	471	207	25	39
Link Distance (ft)		177	177		2820	2820			700			470
Upstream Blk Time (%)	0	0	0						1			
Queuing Penalty (veh)	0	1	0						0			
Storage Bay Dist (ft)	120			290			525	250		500	90	
Storage Blk Time (%)	4	1						3	16			3
Queuing Penalty (veh)	11	2						18	95			1

Intersection: 32: Marblevista Boulevard/Dublin Road & Trabue Road

Movement	NW
Directions Served	R
Maximum Queue (ft)	76
Average Queue (ft)	25
95th Queue (ft)	58
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	40
Storage Blk Time (%)	3
Queuing Penalty (veh)	1

Network Summary

Network wide Queuing Penalty: 145

Queuing and Blocking Report

Intersection: 1: Site Access 2/Builders Place & Trabue Road

Movement	EB	EB	WB	SE	NW
Directions Served	L	TR	L	LTR	LTR
Maximum Queue (ft)	23	0	72	157	266
Average Queue (ft)	4	0	26	59	95
95th Queue (ft)	16	0	56	134	230
Link Distance (ft)		572		719	277
Upstream Blk Time (%)					6
Queuing Penalty (veh)					0
Storage Bay Dist (ft)	100		200		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 5: Site Access 1 & Trabue Road

Movement	B7	B7	NB
Directions Served	T		R
Maximum Queue (ft)	188	166	48
Average Queue (ft)	103	79	15
95th Queue (ft)	199	162	41
Link Distance (ft)	267	267	214
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 27: N Hague Avenue/Mapleway Drive & Trabue Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	LTR
Maximum Queue (ft)	150	249	200	150	127	135	182	104	99
Average Queue (ft)	24	115	67	71	47	62	74	36	39
95th Queue (ft)	75	198	155	122	99	116	138	79	79
Link Distance (ft)		738			451	451	916		278
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	125		250	275				275	
Storage Blk Time (%)		7	0				0		
Queuing Penalty (veh)		30	0				0		

Queuing and Blocking Report

Intersection: 30: McKinley Avenue & Trabue Road

Movement	EB	EB	WB	WB	WB	NW	NW	NW
Directions Served	T	TR	L	T	T	L	R	R
Maximum Queue (ft)	210	222	218	222	233	256	347	178
Average Queue (ft)	124	122	158	180	191	115	116	57
95th Queue (ft)	191	187	225	227	235	247	402	224
Link Distance (ft)	267	267	174	174	174		1504	
Upstream Blk Time (%)	0		11	21	48			
Queuing Penalty (veh)	0		37	67	157			
Storage Bay Dist (ft)						335		335
Storage Blk Time (%)						0	5	0
Queuing Penalty (veh)						1	18	0

Intersection: 32: Marblevista Boulevard/Dublin Road & Trabue Road

Movement	EB	EB	EB	WB	WB	WB	WB	SE	SE	SE	NW	NW
Directions Served	L	T	TR	L	T	T	R	L	LT	R	L	T
Maximum Queue (ft)	169	228	174	284	1247	1585	522	220	635	513	34	41
Average Queue (ft)	134	112	61	109	601	649	274	101	363	314	4	8
95th Queue (ft)	188	237	145	346	1646	1786	608	211	780	637	18	29
Link Distance (ft)		174	174		2782	2782			686			469
Upstream Blk Time (%)	7	13	0			0			25			
Queuing Penalty (veh)	0	56	1			0			0			
Storage Bay Dist (ft)	120			290			525	250		500	90	
Storage Blk Time (%)	38	3			39	22	0	0	1	33		1
Queuing Penalty (veh)	99	8			23	159	1	0	3	122		0

Intersection: 32: Marblevista Boulevard/Dublin Road & Trabue Road

Movement	NW
Directions Served	R
Maximum Queue (ft)	55
Average Queue (ft)	21
95th Queue (ft)	48
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	40
Storage Blk Time (%)	1
Queuing Penalty (veh)	0

Network Summary

Network wide Queuing Penalty: 782

Queuing and Blocking Report

Intersection: 1: Site Access 2/Builders Place & Trabue Road

Movement	EB	EB	WB	WB	SE	NW
Directions Served	L	TR	UL	TR	LTR	LTR
Maximum Queue (ft)	27	32	174	154	277	281
Average Queue (ft)	5	2	72	6	124	168
95th Queue (ft)	19	15	142	59	270	337
Link Distance (ft)		572		265	719	274
Upstream Blk Time (%)						35
Queuing Penalty (veh)						0
Storage Bay Dist (ft)	100		325			
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 5: Site Access 1 & Trabue Road

Movement	B7	B7	NB
Directions Served	T		R
Maximum Queue (ft)	234	212	43
Average Queue (ft)	156	125	14
95th Queue (ft)	229	198	40
Link Distance (ft)	264	264	215
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 27: N Hague Avenue/Mapleway Drive & Trabue Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	LTR
Maximum Queue (ft)	81	223	191	128	66	79	130	97	87
Average Queue (ft)	17	101	58	64	23	31	57	36	41
95th Queue (ft)	53	186	136	108	57	71	108	73	76
Link Distance (ft)		738			451	451	916		278
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	125		250	275				275	
Storage Blk Time (%)		5	0						
Queuing Penalty (veh)		21	0						

Queuing and Blocking Report

Intersection: 30: McKinley Avenue & Trabue Road

Movement	EB	EB	B7	WB	WB	NW	NW	NW
Directions Served	T	TR	T	T	T	L	R	R
Maximum Queue (ft)	248	260	22	178	196	163	196	166
Average Queue (ft)	113	139	1	121	145	81	70	31
95th Queue (ft)	192	226	16	191	209	144	150	109
Link Distance (ft)	264	264	212	177	177		1509	
Upstream Blk Time (%)	0	0		1	7			
Queuing Penalty (veh)	0	1		3	34			
Storage Bay Dist (ft)						335	335	
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 32: Marblevista Boulevard/Dublin Road & Trabue Road

Movement	EB	EB	EB	WB	WB	WB	WB	SE	SE	SE	NW	NW
Directions Served	L	T	TR	L	T	T	R	L	LT	R	L	T
Maximum Queue (ft)	170	225	181	48	212	316	355	256	282	180	33	27
Average Queue (ft)	123	95	50	19	119	124	150	143	192	70	6	7
95th Queue (ft)	181	218	129	39	198	231	290	245	265	143	24	24
Link Distance (ft)		177	177		2820	2820			700			470
Upstream Blk Time (%)	4	7	0									
Queuing Penalty (veh)	0	28	1									
Storage Bay Dist (ft)	120			290			525	250		500	90	
Storage Blk Time (%)	23	1				0	0	0	1			0
Queuing Penalty (veh)	61	2				0	1	0	5			0

Intersection: 32: Marblevista Boulevard/Dublin Road & Trabue Road

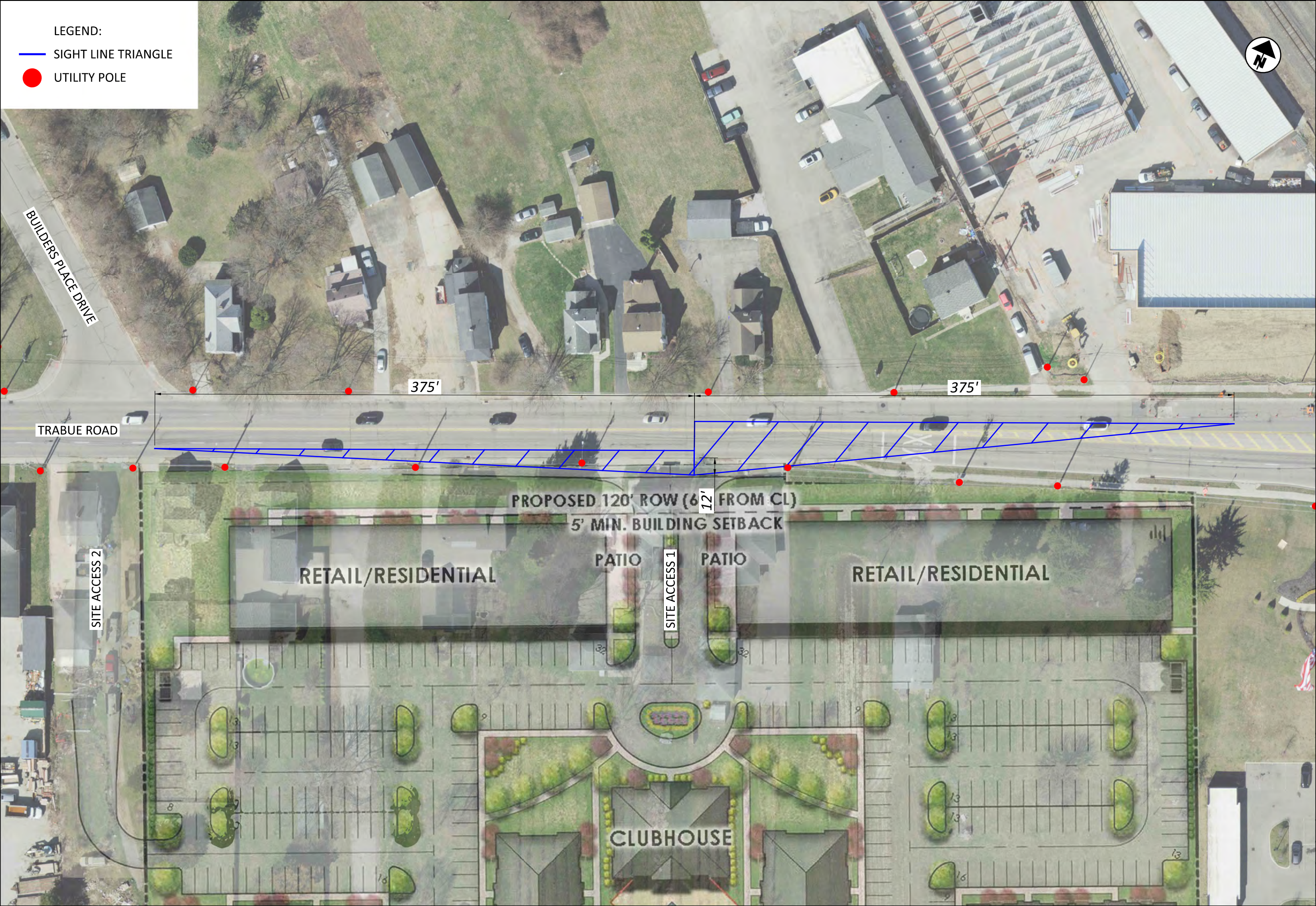
Movement	NW
Directions Served	R
Maximum Queue (ft)	48
Average Queue (ft)	18
95th Queue (ft)	43
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	40
Storage Blk Time (%)	1
Queuing Penalty (veh)	0

Network Summary

Network wide Queuing Penalty: 159

Appendix I

Sight Distance Analysis



BUILDERS PLACE DRIVE

TRABUE ROAD

SITE ACCESS 2

RETAIL/RESIDENTIAL

PATIO

SITE ACCESS 1

PATIO

RETAIL/RESIDENTIAL

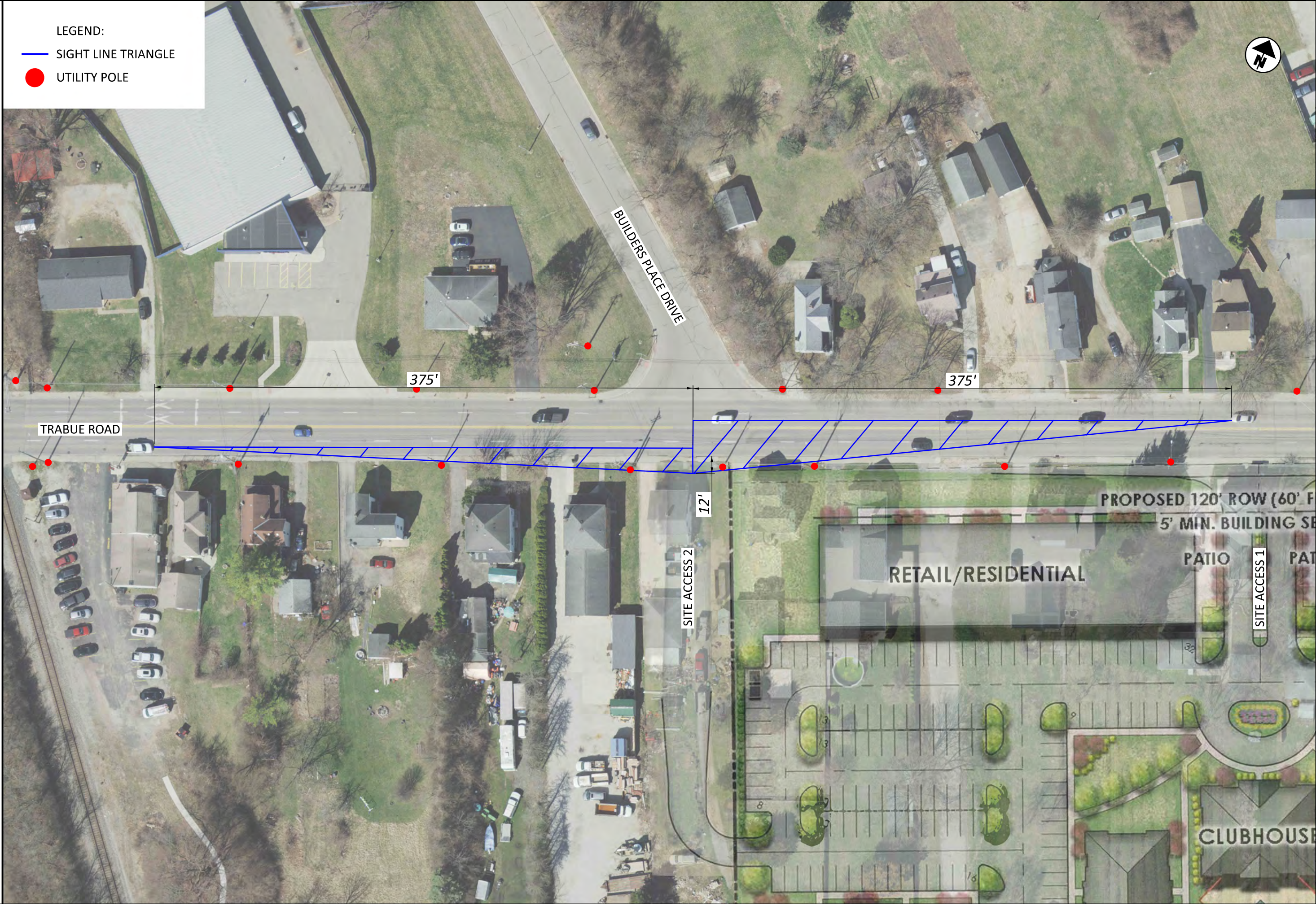
CLUBHOUSE

375'

375'

PROPOSED 120' ROW (6' FROM CL)
5' MIN. BUILDING SETBACK

12'



LEGEND:

SIGHT LINE TRIANGLE

UTILITY POLE

BELMONT II TIS

TRABUE ROAD & BUILDERS PLACE/SITE ACCESS 2 SIGHT DISTANCE EXHIBIT

DESIGN AGENCY

CARPENTER MARTY

DESIGNER

LRY

REVIEWER

XXX MM-DD-YY

PROJECT ID

0

SHEET

P.2

TOTAL

2

HORIZONTAL SCALE IN FEET

0

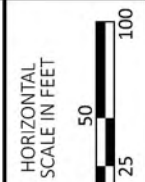
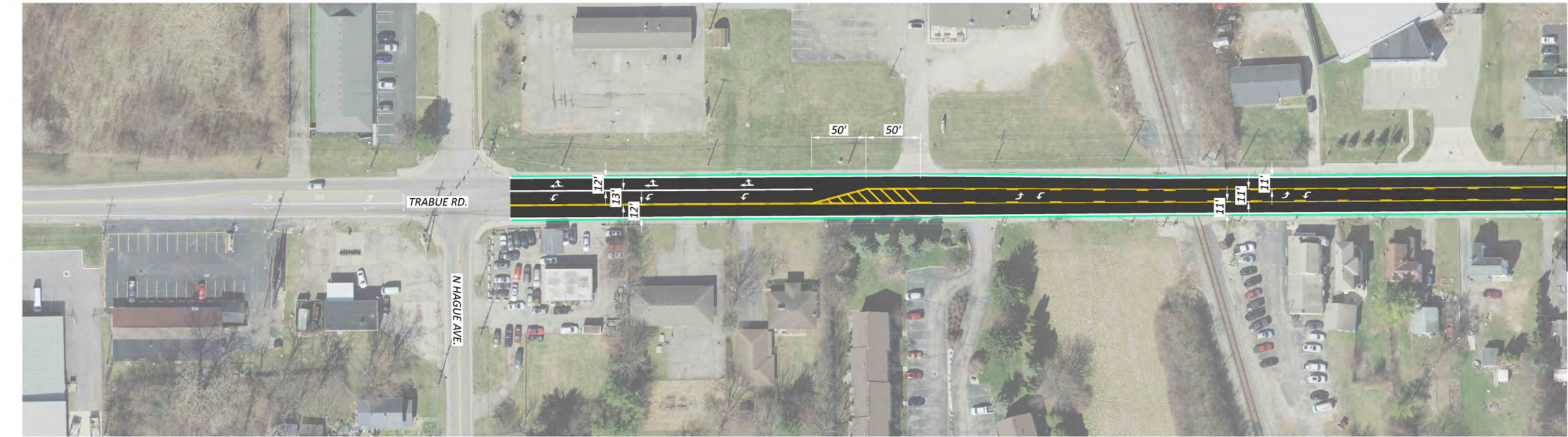
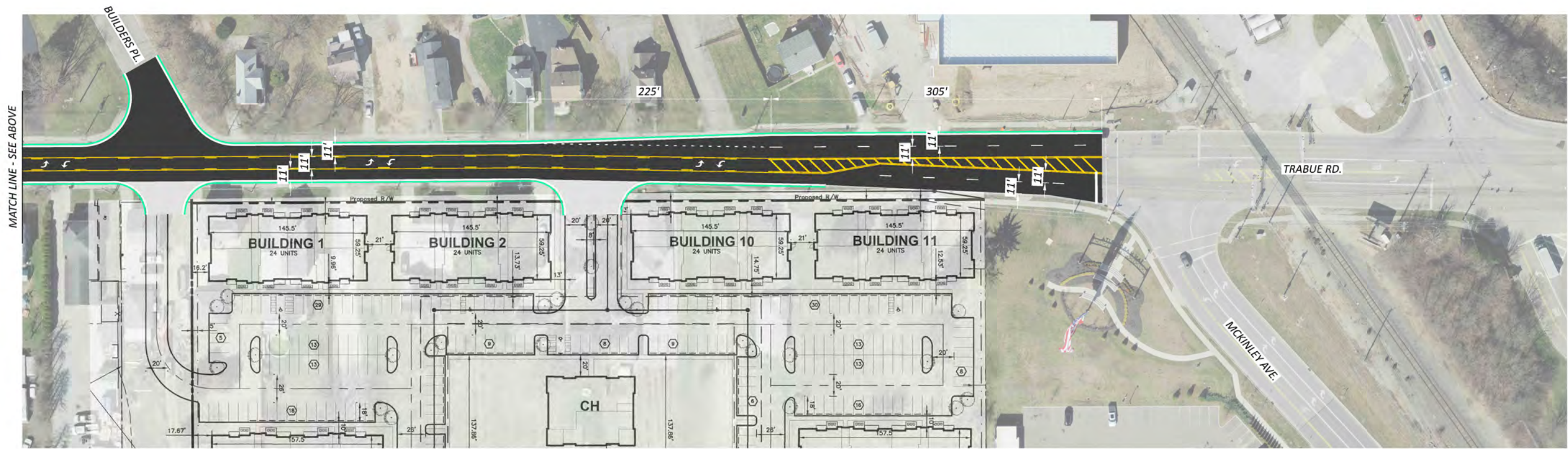
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30

60

Appendix J

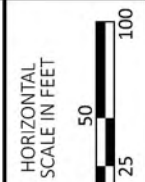
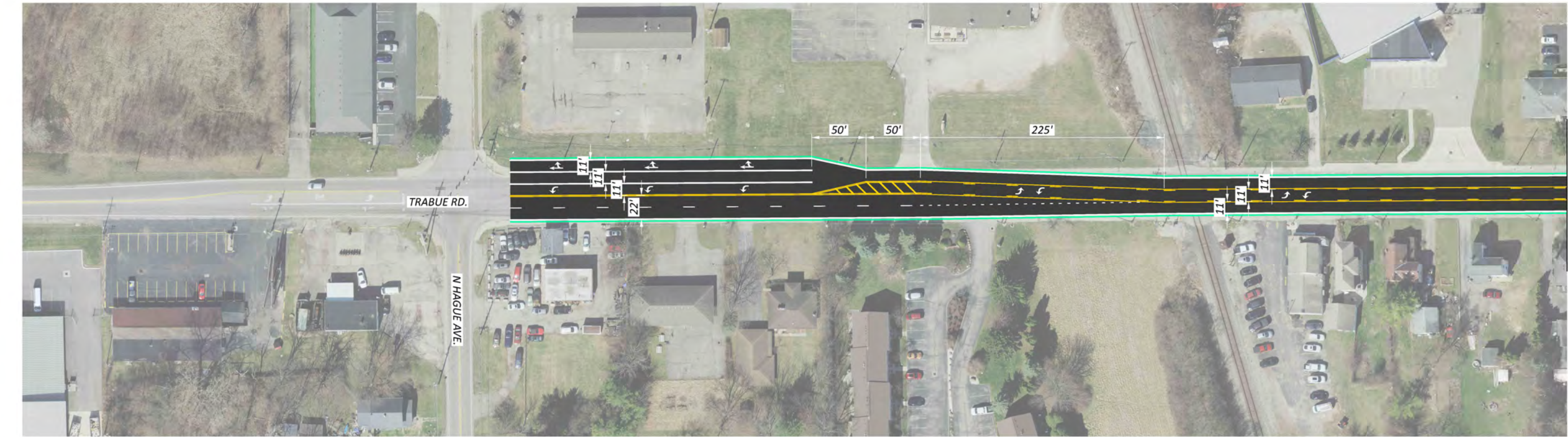
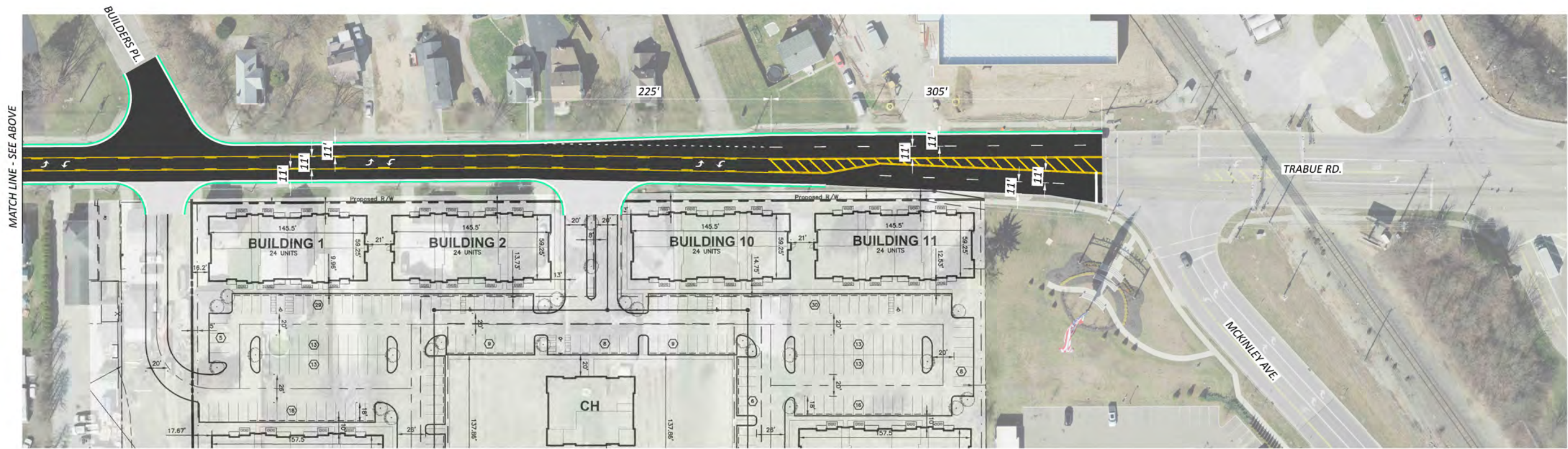
Improvements Exhibits



BELMONT II
TRABUE ROAD IMPROVEMENTS - EXISTING TRABUE/HAGUE

DESIGN AGENCY
**CARPENTER
MARTY**

DESIGNER	DMG
REVIEWER	AML
PROJECT ID	10/10/24
SHEET	0
TOTAL	1



BELMONT II
TRABUE ROAD IMPROVEMENTS - PROPOSED TRABUE/HAGUE

DESIGN AGENCY	
CARPENTER MARTY	
DESIGNER	
DMG	
REVIEWER	
AML 10/10/24	
PROJECT ID	
0	
SHEET	TOTAL
1	1