Traffic Impact Study

2024-07-29 (DJK) reviewed, several comments:
- Trip Gen for 240k sf Med-Dental Office does not look right, need to confirm.
- Trip gen may affect 2050 Site Trips and Full Build Out Volume figs (#8 and #10)
- Trip gen might affect Tables 4, 5 & 6
MUTCD Fig 4C-1 should be provided for 34th & Main Signal Warrant investigation
- Main & Warm Springs NB left turn being provided in 2026 with no evidence of being needed till 2050 build-out. Explanation required.

KH Responses
9/9/2024

Thank you Dean for your comments. Kimley-Horn's responses are provided in blue text boxes through out the document.

1) Understood, the trip generation calculation was based on 256k sf and is correct. The square footage of the office building listed in the report text was incorrect. The report text has been revised with the correct square footage of 256,135 throughout.
2) No changes related to project traffic assignment, total traffic volumes, and calculations since the trip generation calculation based on 256k sf was correct. Just the square footage was misrepresented in the text, which has been corrected
3) Same response as item 2.
4) A MUTCD Figure 4C-1 has been provided for 34th/Main Street. As shown, Table 7 and Figure 11 showing Figure 4C-1 both identify that a signal is not yet warranted.
5) The northbound left turn lane at Warm Springs along Main Street is recommended to be constructed to remove the left turning vehicles from the through travel lanes. Additional text has been added. This is typical practice to improve safety of the intersection to reduce crashes.

AdventHealth

Aurora, Colorado

Prepared for:

AdventHealth

Kimley»Horn

T R A F F I C I M P A C T S T U D Y

AdventHealth - Emergency Department

Aurora, Colorado

Prepared for
AdventHealth

Prepared by
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(303) 228-2300

June 2024

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1.0 EXECUTIVE SUMMARY

AdventHealth is proposing a new emergency department to be located along the west side of Main Street, between River Front Drive and Warm Springs Avenue within the overall Aurora Highlands development in Aurora, Colorado. The emergency department will be the first phase of development within the AdventHealth medical campus and is proposed to include approximately 29,530 square feet of emergency department and 58,060 square feet of medical office use area. This overall AdventHealth campus could potentially develop approximately 500,000 square feet of hospital space and 240,000 square feet of medical office area. It is expected that the project for will be completed in the next several years; therefore, analysis was conducted for the 2026 short-term buildout horizon as well as the 2050 long-term planning horizon.

The purpose of this traffic study is to identify project traffic generation characteristics to determine potential project traffic related impacts on the local street system and to develop the necessary mitigation measures required for the identified traffic impacts. The following intersections were incorporated into this traffic study based on the City of Aurora requested scope.

- 34th Avenue and Main Street
- Warm Springs Avenue and Main Street

Regional access to the first phase of AdventHealth will be provided by Interstate 70 (I-70) and E-470. Primary access will be provided by 38th Avenue/The Aurora Highlands Parkway and 26th Avenue. Direct access will be provided by driveways aligning as the west legs at the 34th Avenue/Main Steet and the Warm Springs Avenue/Main Street intersections. Of note, Warm Springs Avenue will be constructed along the south side of the hospital property prior to the buildout of the development. Direct access to AdventHealth will be provided from this roadway extension.

The AdventHealth first phase of development to include an emergency department and adjacent medical office building is expected to generate approximately 2,588 weekday daily trips, with 189 of these trips occurring during the morning peak hour and 210 of these trips occurring during the afternoon peak hour.

Based on the analysis presented in this report, Kimley-Horn believes AdventHealth - Emergency Department will be successfully incorporated into the existing and future roadway network. Analysis of the existing street network, the proposed project development, and expected traffic volumes resulted in the following recommendations:

Short-Term Recommendations

- A west leg will be constructed at the 34th Avenue and Main Street intersection to provide access to the AdventHealth – Emergency Department project. The intersection can operate under two-way stop control with separate eastbound left turn and shared through/right turn lanes. A R1-1 "STOP" sign is recommended to be placed on the eastbound approach, exiting the site. The existing westbound right turn lane is recommended to be restriped to be a shared through/right turn lane. The northbound left turn lane and southbound right turn lanes have already been constructed to provide turn lane lengths required by the City. Of note, based on the MUTCD Signal Warrant Analysis for Warrants 1, 2, and 3, none of the warrants were met for signalization for this phase of development.

- Prior to completion of the AdventHealth facility, Warm Springs Avenue will be constructed as a three-lane roadway along the south side of the property and open for public use. It is recommended separate left turn and shared through/right turn lanes be striped along Warm Springs Avenue. With this roadway construction, it is assumed that a 150-foot plus 100-foot taper northbound left turn lane would also be constructed at the Warm Springs Avenue and Main Street intersection within the existing raised median along Main Street.

Long-Term Recommendations

- With full buildout of the medical campus and remaining Aurora Highlands development, the 34th Avenue and Main Street intersection is anticipated to be signalized. Dual eastbound left turn lanes with a length of 200 feet are needed operationally and are recommended to operate with protected-only left turn phasing. The westbound left turn, northbound left, and southbound left turn movements can operate with single left turn lanes as already constructed, operating with protected-permissive left turn phasing.

- By the long-term horizon with full buildout of the entire AdventHealth medical campus, an additional access to align with River Front Drive will be constructed. The west leg is

recommended to be restricted to three-quarter turning movements to match the existing control on the east leg. An R1-1 “STOP” sign is recommended to be install on the exiting eastbound approach with a R3-2 No Left Turn sign placed under the R1-1 sign. Northbound left turn and southbound right turn lanes with lengths of 150 feet plus 100-foot taper are recommended along Main Street for the AdventHealth access to align with River Front Drive at this intersection.

- Lastly, with full buildout of the entire AdventHealth medical campus, a southbound right turn lane at the Warm Springs Avenue will be warranted. The right turn lane is recommended to be constructed with a length of 150 feet plus a 100-foot taper.

- Any onsite or offsite improvements should be incorporated into the Civil Drawings and conform to standards of the City of Aurora and the Manual on Uniform Traffic Control Devices (MUTCD) – 11th Edition, 2023.

2.0 INTRODUCTION

Kimley-Horn has prepared this report to document the results of a Traffic Impact Study for AdventHealth's proposed new emergency department development to be located along the west side of Main Street, between River Front Drive and Warm Springs Avenue within the overall Aurora Highlands development in Aurora, Colorado. A vicinity map illustrating the AdventHealth - Emergency Department location is shown in **Figure 1**. The emergency department will be the first phase of development within the AdventHealth medical campus and is proposed to include approximately 29,530 square feet of emergency department and 58,060 square feet of medical office use area. A conceptual site plan is attached in **Appendix A**. This overall AdventHealth campus could potentially develop approximately 500,000 square feet of hospital space and 240,000 square feet of medical office area. It is expected that the AdventHealth - Emergency Department for will be completed in the next several years; therefore, analysis was conducted for the 2026 short-term buildout horizon as well as the 2050 long-term planning horizon.

The purpose of this traffic study is to identify project traffic generation characteristics to determine potential project traffic related impacts on the local street system and to develop the necessary mitigation measures required for the identified traffic impacts. The following intersections were incorporated into this traffic study based on the City of Aurora requested scope.

- 34th Avenue and Main Street
- Warm Springs Avenue and Main Street

Regional access to the first phase of AdventHealth will be provided by Interstate 70 (I-70) and E-470. Primary access will be provided by 38th Avenue/The Aurora Highlands Parkway and 26th Avenue. Direct access will be provided by driveways aligning as the west legs at the 34th Avenue/Main Steet and the Warm Springs Avenue/Main Street intersections. Of note, Warm Springs Avenue will be constructed along the south side of the hospital property prior to the buildout of the development. Direct access to AdventHealth will be provided from this roadway extension.

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NORTH
NTS 196315000

FIGURE 1
AdventHealth – Emergency Department
Aurora, Colorado
Vicinity Map

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3.1 Existing Study Area

The existing site is currently vacant. The site is located within the Aurora Highlands development with portions of the overall development already constructed or currently being constructed. The surrounding area to the east is primarily recently built or future residential neighborhoods. Directly to the west of the site is E-470 which extends north-south and provides an interchange at 38th Avenue/Aurora Highlands Parkway.

3.2 Existing and Future Roadway Network

Main Street extends north-south with two through lanes in each direction between 26th Avenue and 42nd Avenue. The current posted speed limit is 30 miles per hour. Main Street is planned to be extended to 48th Avenue with completion of future Aurora Highlands developments.

34th Avenue currently extends from Main Street to Denali Street and serves the residential development east of Main Street. The roadway provides two lanes, one in each direction.

As of March 2024, Warm Springs Avenue was constructed but not yet open to the public for vehicular travel. However, this roadway extends primarily in the east-west direction from Main Street to 26th Avenue and is planned to provide one through lane in each direction.

The unsignalized intersection of 34th Avenue and Main Street operates with stop control on the westbound 34th Avenue approach. The northbound and southbound Main Street approaches each provide a left turn lane, two through lanes, and a right turn lane. The westbound approach provides a separate left and right turn lane. Of note, the west leg of the intersection is not yet constructed, however turn lanes have already been constructed along Main Street. An aerial photo of the existing intersection configuration is below.

34th Avenue & Main Street

The unsignalized intersection of Warm Springs Avenue and Main Street operates with stop control on the westbound Warm Springs Avenue approach. Of note, at the time of data collection, this intersection was not open to the public. The westbound approach provides separate left and right turn lanes. The northbound Main Street approach provides two through lanes and a right turn lane while the southbound approach provides a left turn lane and two through lanes. Of note, the west leg is anticipated to be constructed prior to the buildout of the project. The east leg provides pavement width for three approach lanes and will be restriped to a separate left, through, and right turn lane once the west leg is constructed. An aerial photo of the existing intersection configuration is below.

Warm Springs Avenue & Main Street

The intersection lane configuration and control for the study area intersections are shown in **Figure 2**.

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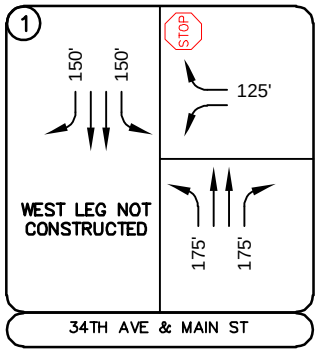

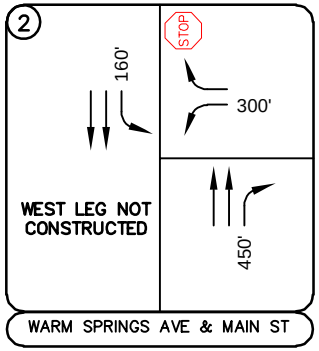

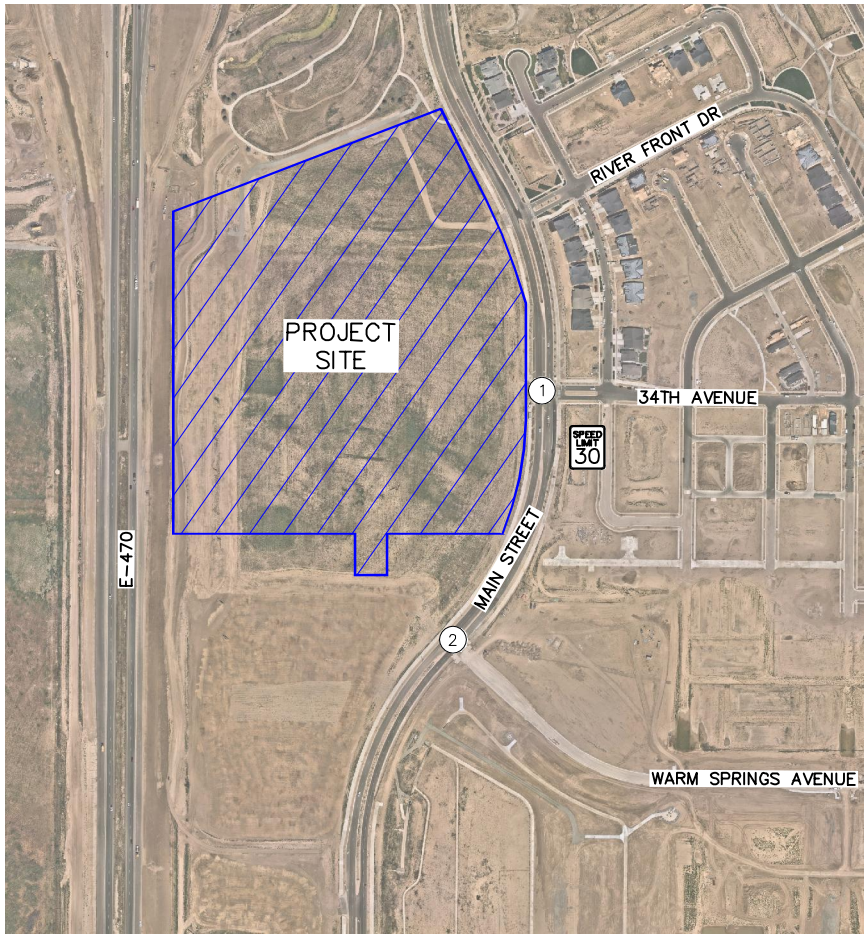

LEGEND
X Study Area Key Intersection
STOP Stop Controlled Approach
SPEED LIMIT XX Roadway Speed Limit
100' Turn Lane Length (feet)

FIGURE 2
AdventHealth – Emergency Department
Aurora, Colorado
Existing Geometry and Control

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3.3 Existing Traffic Volumes

Existing turning movement counts were conducted at 34th Avenue/Main Street intersection on Tuesday, March 19, 2024 during the weekday morning and afternoon peak hours. The counts were conducted during the morning and afternoon peak hours of adjacent street traffic in 15-minute intervals from 7:00 AM to 7:00 PM on this count date. Of note, Warm Springs Avenue was not open to the public during the count date since the roadway was under construction. Therefore, counts are not provided at the Warm Springs Avenue and Main Street intersection. The existing intersection traffic volumes are shown in **Figure 3** with count sheets provided in **Appendix B**.

3.4 Unspecified Development Traffic Growth

To generate background traffic volumes in year 2026, traffic volumes from the *Aurora Highlands Filing 10, The Aurora Highlands Filing Numbers 1,2 and Future Filing East of Filing No.2*, and *The Aurora Highlands – Filing 15* project traffic volumes were included in the background traffic. To provide a conservative analysis, all three of the background traffic studies were included in determining background traffic volumes. Therefore, an annual growth rate was not provided since the only growth to the surrounding area will be the background developments included. The calculated background traffic volumes for 2026 are shown in **Figure 4**.

To estimate long-term traffic volumes, *The Aurora Highlands Technical Memorandum* that based the turning movement projections on *The Aurora Highlands Master Traffic Impact Study* was used. These volumes included the overall Aurora Highlands development and the surrounding master planned communities. It should be noted that the Technical Memorandum is based on the Master Study that was prepared by Felsburg Hold and Ullevig (FHU) and is conservative compared to the daily traffic volumes identified in the City of Aurora Northeast Area Transportation Study (NEATS) for the overall Aurora Highlands development. Additionally, the master study identified that the traffic projections are conservative since it is not believed each planning area would be developed to its full potential. Of note, a long-term background condition is not provided since the long-term traffic volumes that have been developed include full buildout of the entire AdventHealth medical campus. The background traffic studies are provided in **Appendix C**.

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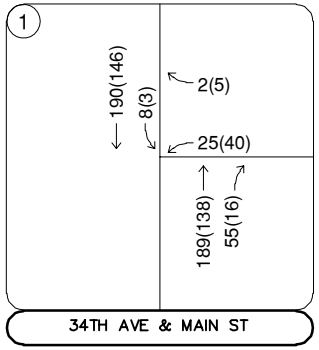
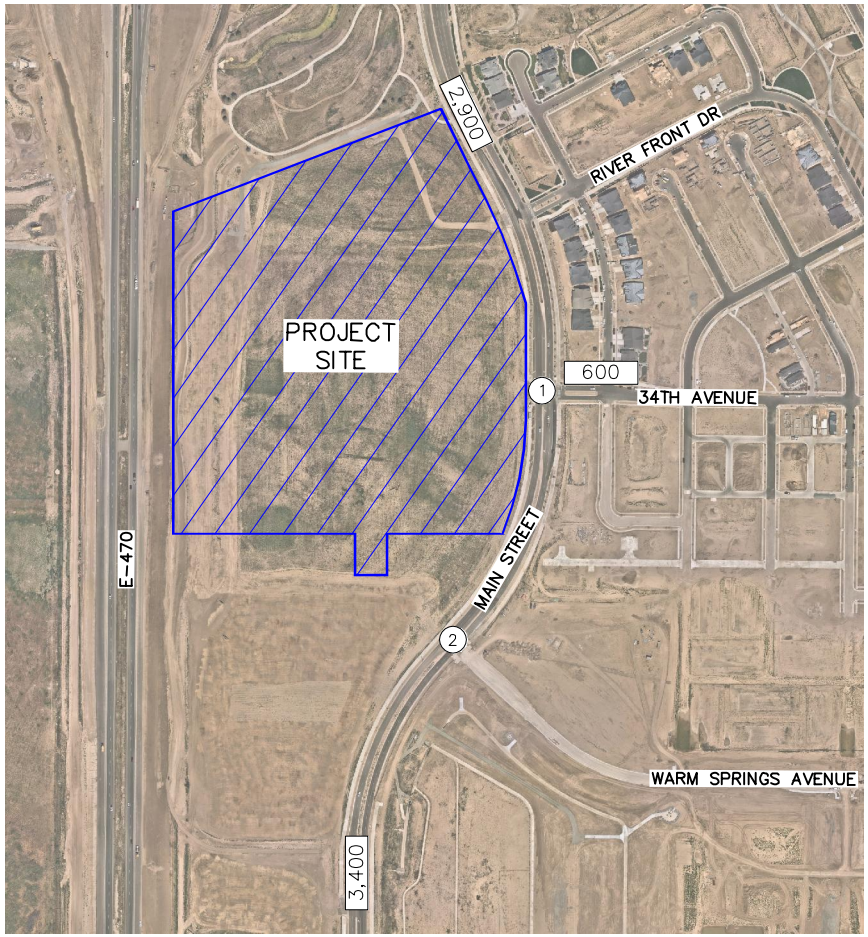


Tuesday, March 19, 2024
7:00 to 8:00AM (4:00 to 5:00PM)



LEGEND

(X)	Study Area Key Intersection
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

FIGURE 3
AdventHealth – Emergency Department
Aurora, Colorado
2024 Existing Traffic Volumes

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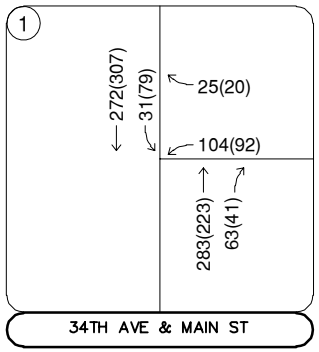

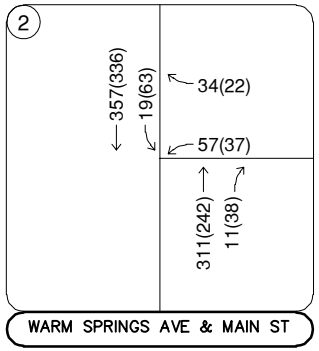

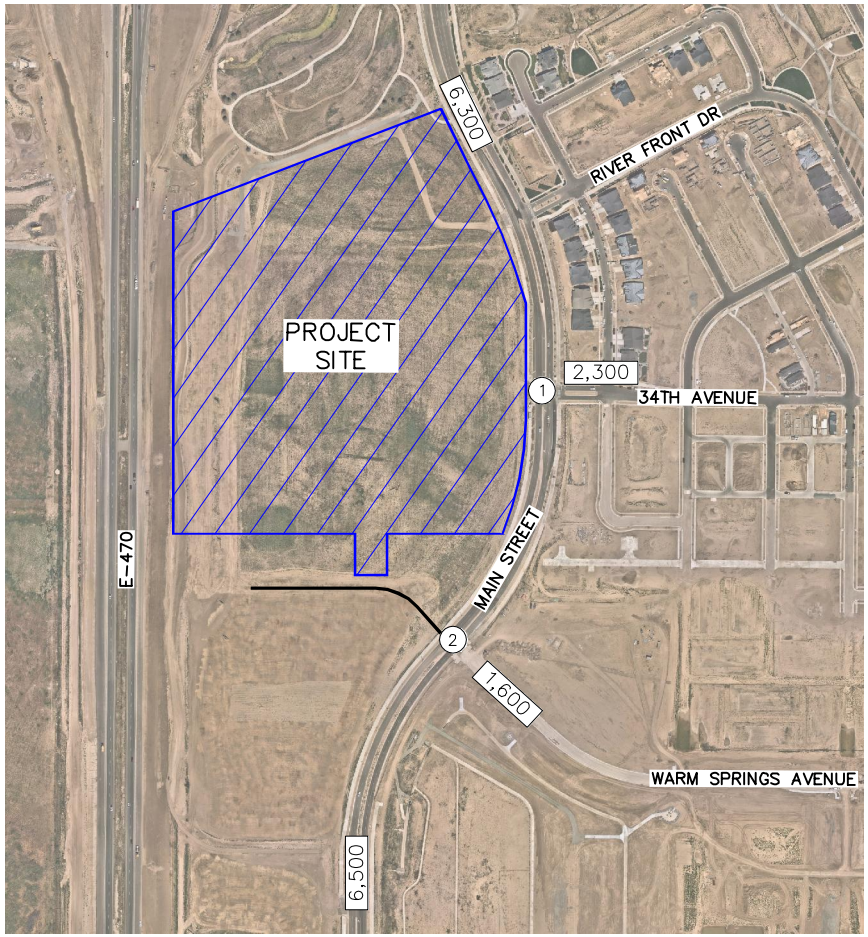

LEGEND

(X)	Study Area Key Intersection
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

FIGURE 4
AdventHealth – Emergency Department
Aurora, Colorado
2026 Background Traffic Volumes

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4.1 Trip Generation

Site-generated traffic estimates are determined through a process known as trip generation. Rates and equations are applied to the proposed land use to estimate traffic generated by the development during a specific time interval. The acknowledged source for trip generation rates is the *Trip Generation Manual*[1] published by the Institute of Transportation Engineers (ITE). ITE has established trip rates in nationwide studies of similar land uses. For this study, Kimley-Horn used the ITE Trip Generation Report average rates that apply to Free-Standing Emergency Room (ITE Land Use Code 650) and to Medical-Dental Office Building within/near Hospital Campus (ITE 720) for traffic associated with the development. Of note, the average rate equations were used based on the Trip Generation flow chart to determine which equation to use based on the number of data points and other factors.

The AdventHealth first phase of development to include an emergency department and adjacent medical office building is expected to generate approximately 2,588 weekday daily trips, with 189 of these trips occurring during the morning peak hour and 210 of these trips occurring during the afternoon peak hour. Calculations were based on the procedure and information provided in the ITE *Trip Generation Manual, 11th Edition – Volume 1: User's Guide and Handbook*, 2021. **Table 1** summarizes the estimated trip generation for the first phase proposed for AdventHealth. The trip generation worksheets are included in **Appendix D**.

Table 1 – AdventHealth - Emergency Department Traffic Generation

Land Use and Size	Weekday Vehicle Trips						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Free-Standing Emergency Room (ITE 650) – 29,530 Square Feet	738	17	16	33	21	24	45
Medical-Dental Office Building (ITE 720) – 58,060 Square Feet	1,850	126	30	156	41	124	165
Total Project Trips	**2,588**	**143**	**46**	**189**	**62**	**148**	**210**

[1] Institute of Transportation Engineers, *Trip Generation Manual*, Eleventh Edition, Washington DC, 2021.

Of note, the overall AdventHealth campus could potentially develop 501,450 square feet of hospital use space and 240,000 square feet of medical office use area. The development program has evolved since the original Aurora Highlands Master Plan prepared in 2018. Therefore, it is appropriate to update the long-term horizon with the new development program. The overall future medical campus may generate approximately 13,564 weekday daily trips, with 1,097 of these trips occurring during the morning peak hour and 1,158 of these trips occurring during the afternoon peak hour. **Table 2** summarizes the estimate trip generation for the overall AdventHealth medical campus.

Table 2 – AdventHealth Full Buildout Traffic Generation

Land Use and Size	Weekday Vehicle Trips						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Hospital (ITE 610) – 501,450 Square Feet	5,402	275	136	411	151	280	431
Medical-Dental Office Building (ITE 720) – 240,000 Square Feet	8,162	556	130	686	182	545	727
Total Project Trips	**13,564**	**831**	**266**	**1,097**	**333**	**825**	**1,158**

7646 521 122 643 170 513 682

LU 720 values I get with 'Within/Near'

The trip generation calculation was based on 256k sf and is correct. The square footage of the office building listed in the report text was incorrect. The report text has been revised with the correct building area.

4.2 Trip Distribution

Distribution of site traffic on the street system was based on [illegible] existing traffic patterns, existing and anticipated surrounding [illegible] proposed access system for the project. The directional distrib[illegible] the percentage of site-generated traffic that approaches th[illegible] departs the site back to the original source. The buildout ye[illegible] have the full area roadway connections constructed. However, the E-470 interchange at Aurora Highlands Parkway is planned to be fully constructed by buildout of the project. Therefore, the trip distribution for the short-term accounts for buildout of the E-470 interchange as shown in **Figure 5**. With the future long-term horizon, **Figure 6** illustrates the trip distribution with full roadway connections and buildout of the Aurora Highlands.

4.3 Traffic Assignment

AdventHealth traffic assignment was obtained by applying the project trip distribution to the estimated traffic generation of the development shown in **Table 1** for the short-term horizon and **Table 2** for the long-term horizon. Traffic assignment is shown in **Figure 7** for the short-term horizon and **Figure 8** for the long-term horizon.

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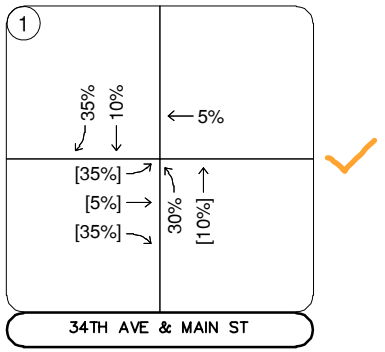

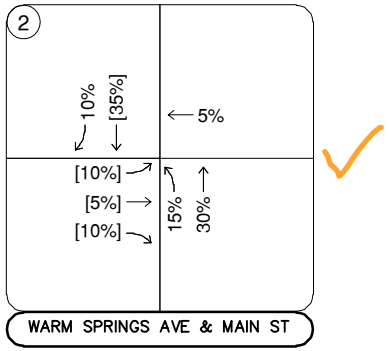

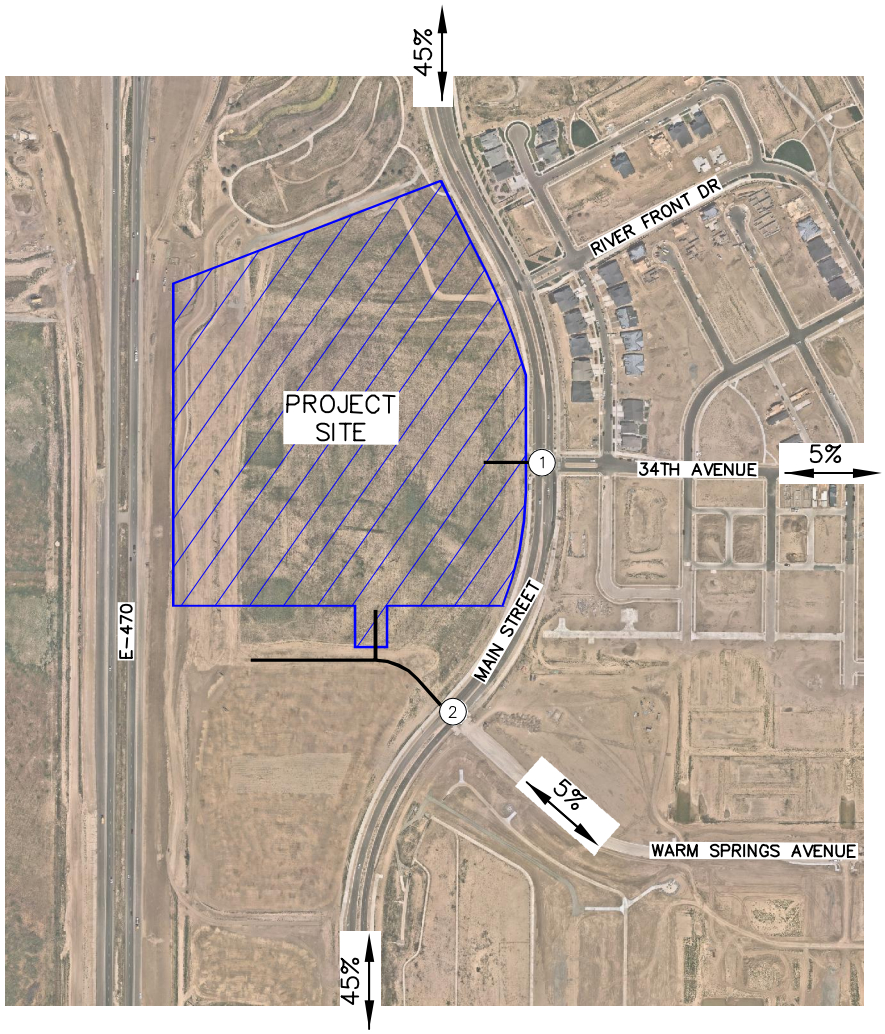

LEGEND

(X) Study Area Key Intersection

XX% External Trip Distribution Percentage

XX%[XX%] Entering[Exiting] Trip Distribution Percentage

FIGURE 5
AdventHealth – Emergency Department
Aurora, Colorado
2026 Project Trip Distribution

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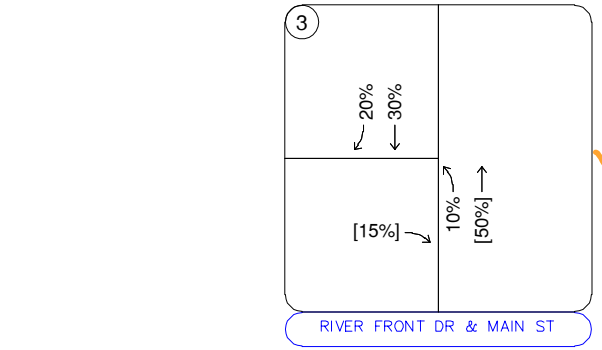

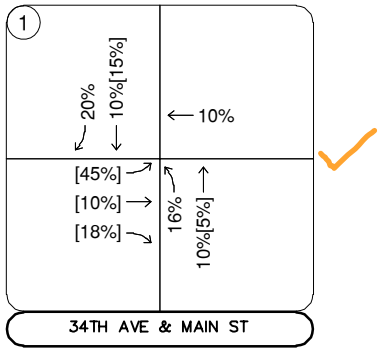

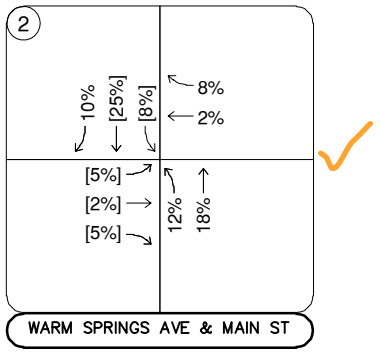

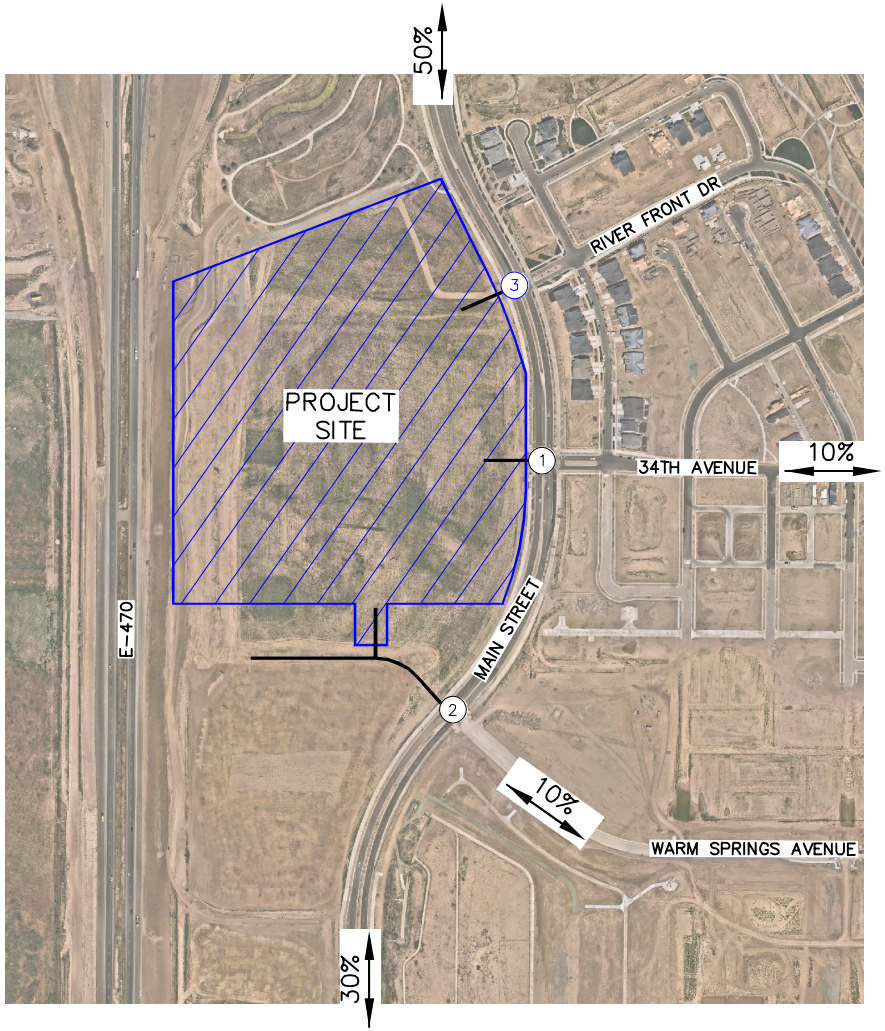

LEGEND

(X)	Study Area Key Intersection
(X)	Project Access Intersection
XX%	External Trip Distribution Percentage
XX%[XX%]	Entering[Exiting] Trip Distribution Percentage

FIGURE 6
AdventHealth – Emergency Department
Aurora, Colorado
2050 Project Trip Distribution

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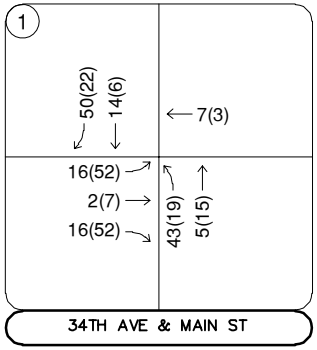

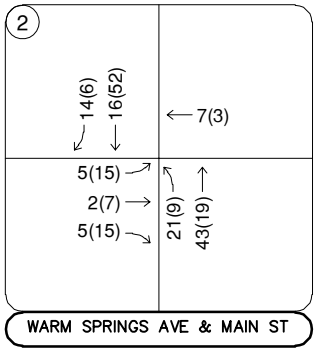

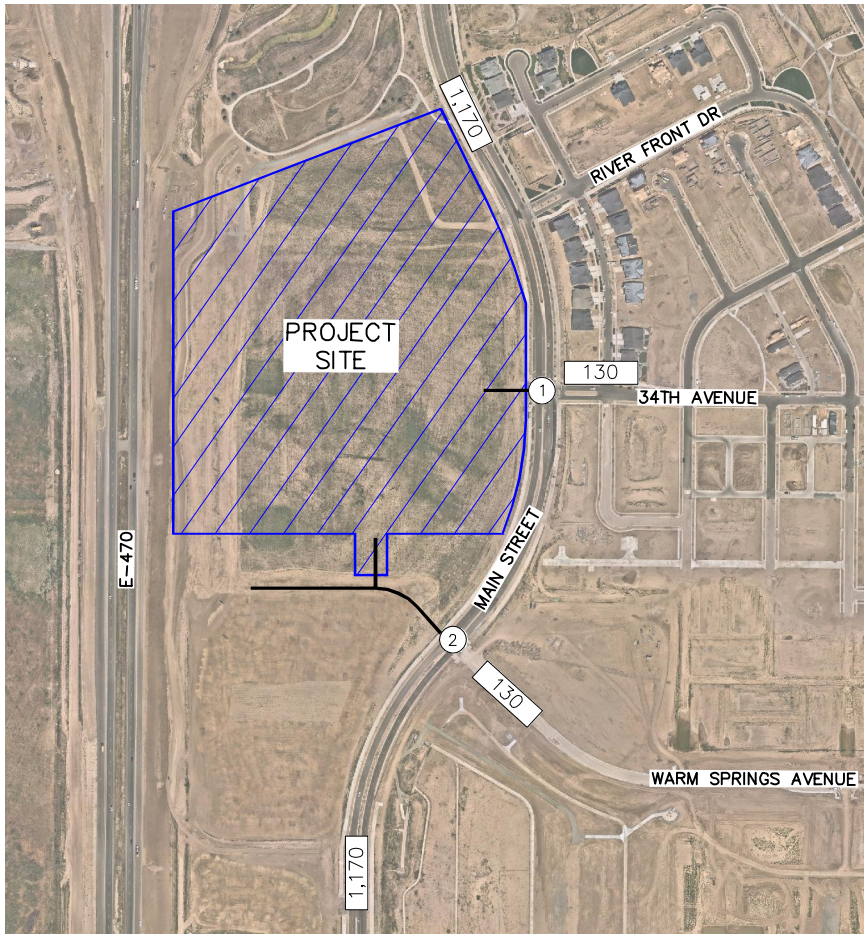

NOTE: DUE TO ROUNDING, THE ASSIGNMENT FIGURE MAY BE OFF +/- 1 TRIP. HOWEVER, THIS WILL NOT AFFECT THE FINDINGS IN THE ANALYSIS

LEGEND

(X)	Study Area Key Intersection
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

FIGURE 7
AdventHealth – Emergency Department
Aurora, Colorado
2026 Project Traffic Assignment

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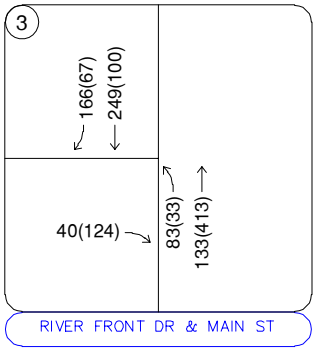
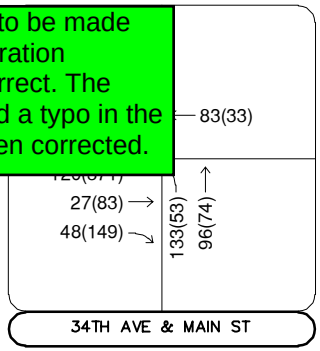
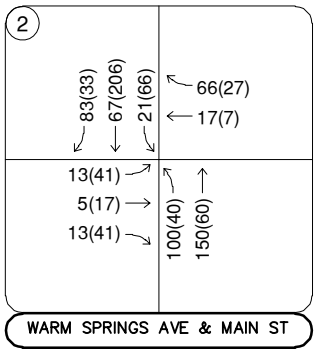
NORTH
NTS 196315000

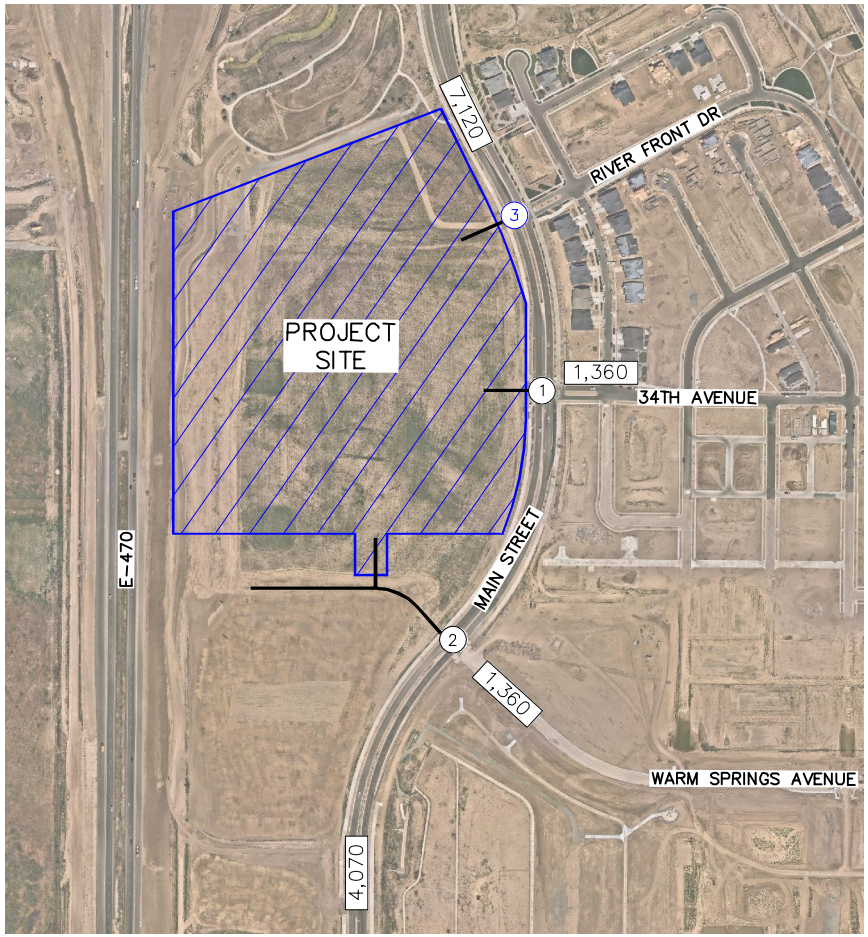
Double check Full Build-out Trip Gen values for Md-Dental Office Building

No changes need to be made since the trip generation calculation was correct. The square footage had a typo in the text, which has been corrected.









NOTE: DUE TO ROUNDING, THE ASSIGNMENT FIGURE MAY BE OFF +/- 1 TRIP. HOWEVER, THIS WILL NOT AFFECT THE FINDINGS IN THE ANALYSIS

LEGEND

(X)	Study Area Key Intersection
(X)	Project Access Intersection
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

FIGURE 8
AdventHealth – Emergency Department
Aurora, Colorado
2050 Project Traffic Assignment

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4.4 Total (Background Plus Project) Traffic

Site traffic volumes were added to the background volumes for the short-term horizon to represent estimated traffic conditions for the short-term 2026 buildout horizon. These total traffic volumes for the study area are illustrated for the 2026 horizon in **Figure 9.** The long-term traffic volumes are based on the overall Aurora Highlands development illustrated in the *Aurora Highlands Filing 15 Traffic Study*. The 2040 volumes were grown a conservative 0.25% annually to adjust for potential growth past full buildout of the site to 2050 conditions. However, the new development program for the medical campus was added to the west legs of the project access intersections along Main Street. The 2050 long-term horizon traffic volumes with the overall medical campus traffic and the buildout of the Highlands development are illustrated in **Figure 10**.

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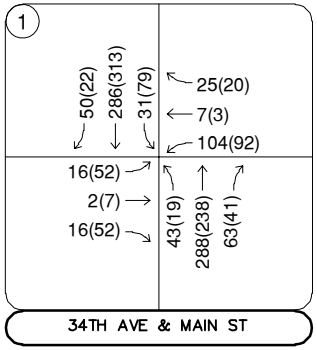

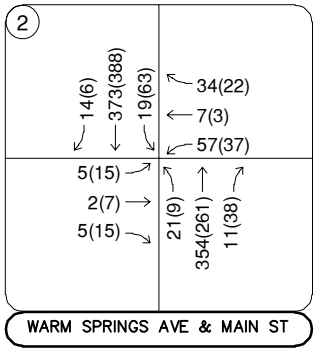

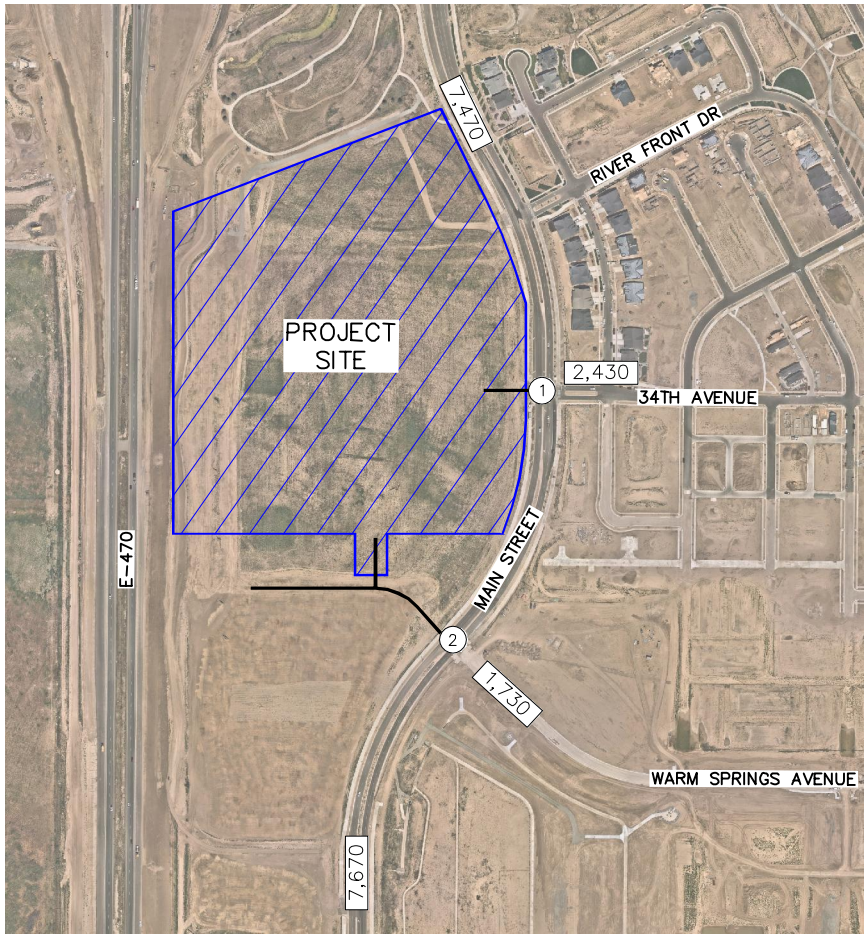

LEGEND

(X)	Study Area Key Intersection
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

FIGURE 9
AdventHealth – Emergency Department
Aurora, Colorado
2026 Total Traffic Volumes

Kimley»Horn

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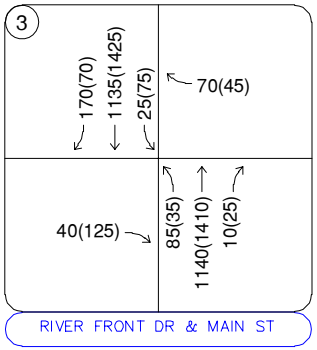
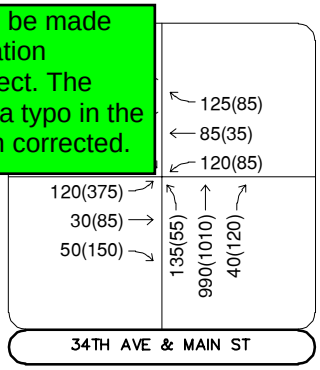
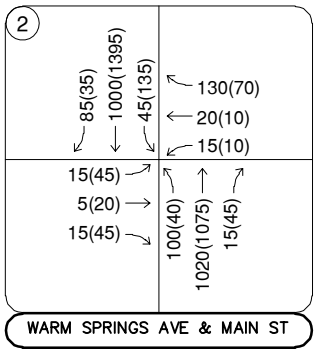
NORTH
NTS 196315000

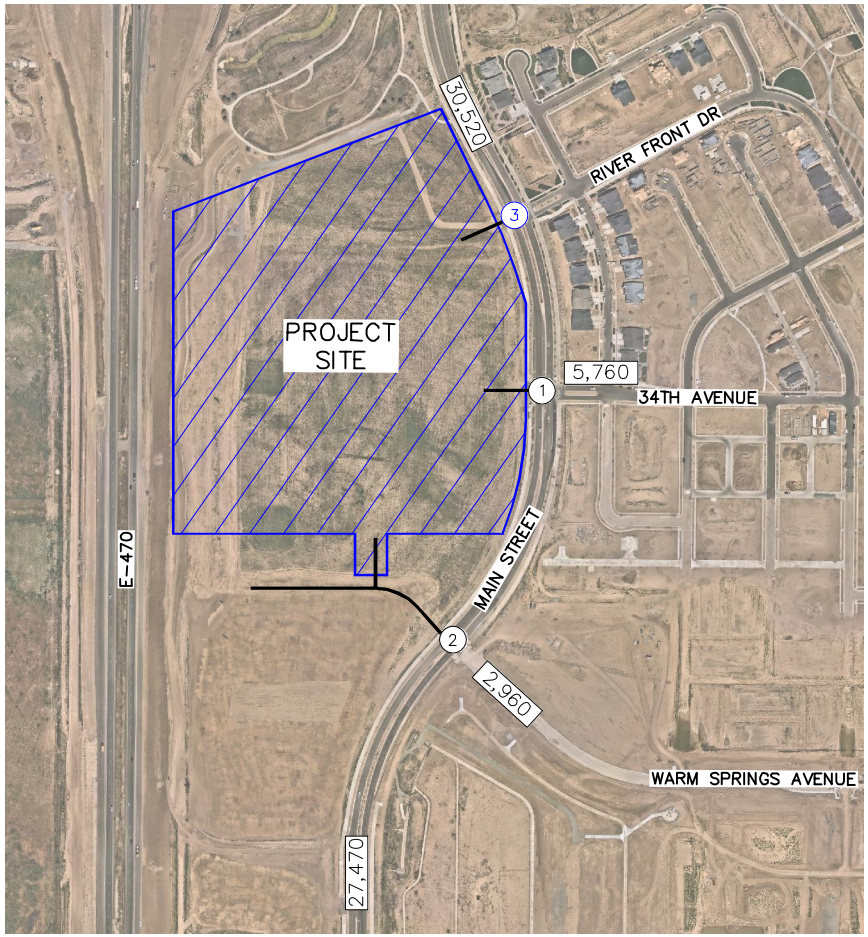
Double check Full Build-out Trip Gen values for Md-Dental Office Building

No changes need to be made since the trip generation calculation was correct. The square footage had a typo in the text, which has been corrected.









LEGEND

(X)	Study Area Key Intersection
(X)	Project Access Intersection
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

Kimley»Horn

FIGURE 10
AdventHealth – Emergency Department
Aurora, Colorado
2050 Total Traffic Volumes

Kimley-Horn's analysis of traffic operations in the site vicinity was conducted to determine potential capacity deficiencies in the 2026 and the long-term development horizons at the identified key intersections. The acknowledged source for determining overall capacity is the *Highway Capacity Manual (HCM)*[2].

5.1 Analysis Methodology

Capacity analysis results are listed in terms of Level of Service (LOS). LOS is a qualitative term describing operating conditions a driver will experience while traveling on a particular street or highway during a specific time interval. It ranges from A (very little delay) to F (long delays and congestion). According to City of Aurora guidelines for signalized intersections, individual movements may be allowed to fall to LOS E, but in most cases the overall intersection must operate (or be projected to operate) at a LOS D or better during morning and afternoon peak periods. If the existing LOS for an intersection is less than LOS D, potential alternatives to improve the intersection to achieve LOS D or to maintain the existing critical lane volume with the addition of site generated traffic are provided. Minor movements at unsignalized intersections, such as left turns onto a major arterial from a side street, may be allowed to fall below LOS D pending the specific conditions. Movements which have a light traffic demand as well as a viable travel alternative may be allowed to fall below LOS D. **Table 3** shows the definition of level of service for signalized and unsignalized intersections.

Table 3 – Level of Service Definitions

Level of Service	Signalized Intersection Average Total Delay (sec/veh)	Unsignalized Intersection Average Total Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10 and ≤ 20	> 10 and ≤ 15
C	> 20 and ≤ 35	> 15 and ≤ 25
D	> 35 and ≤ 55	> 25 and ≤ 35
E	> 55 and ≤ 80	> 35 and ≤ 50
F	> 80	> 50

Definitions provided from the Highway Capacity Manual, Sixth Edition, Transportation Research Board, 2016.

[2] Transportation Research Board, *Highway Capacity Manual*, Sixth Edition, Washington DC, 2016.

Study area intersections were analyzed based on average total delay analysis for signalized and unsignalized intersections. Under the unsignalized analysis, the LOS for a two-way stop-controlled intersection is determined by the computed or measured control delay and is defined for each minor movement. LOS for a two-way stop-controlled intersection is not defined for the whole intersection. LOS for signalized, roundabout, and all-way stop controlled intersections are defined for each approach and for the overall intersection.

5.2 Key Intersection Operational Analysis

Calculations for the operational level of service at the key intersections for the study area are provided in **Appendix E**. The existing year analysis is based on the lane geometry and intersection control shown in **Figure 2.** Existing peak hour factors were utilized in the existing and 2026 horizon analysis years while the HCM urban standard of 0.92 was used for the long-term 2050 horizon analysis. Synchro traffic analysis software was used to analyze the signalized and unsignalized key intersections for HCM level of service.

34th Avenue and Main Street

The unsignalized intersection of 34th Avenue and Main Street operates with stop control on the westbound 34th Avenue approach. The intersection movements operate acceptably at LOS B or better during both peak hours under existing conditions. With buildout of the emergency department and adjacent medical office for the first phase of AdventHealth, the west leg will be constructed to serve as the primary access to the medical campus. Therefore, the eastbound approach is recommended to operate under stop control and provide separate left turn and shared through/right turn lanes. The existing westbound right turn lane is recommended to be restriped to be a shared through/right turn lane. Of note, the northbound left turn and southbound right turn lanes have already been constructed along Main Street. With the fourth leg and project traffic, the intersection is anticipated to operate acceptably at LOS C or better during the morning and afternoon peak hours. As requested by the City, an MUTCD Signal Warrant Analysis was completed based on short-term traffic volumes with the addition of project traffic. None of the hours warrant signalization under Warrants 1, 2, or 3. The subsequent Section 5.3 provides an in-depth signal warrant analysis.

By the long-term horizon, this intersection will likely require signalization. This recommendation is consistent with the Aurora Highlands Filing 15 and Aurora Highlands Filing 10 traffic studies.

The signalized intersection is recommended to provide dual eastbound left turn lanes with a shared through/right turn lane. With signalization and the above-mentioned geometry, the intersection is anticipated to operate with LOS B during the morning peak hour and LOS C during the afternoon peak hour. **Table 4** provides the results of the LOS analysis conducted at this intersection.

Possible more reductions with trip gen update

No changes need to be made since the trip generation calculation was correct. The square footage had a typo in the text, which has been corrected.

Table 4 – 34th Avenue & Main Street LOS Results

Scenario	AM Peak Hour		PM Pe	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2024 Existing				
Westbound Left	10.4	B	9.8	A
Westbound Right	9.0	A	8.7	A
Southbound Left	7.9	A	7.6	A
2026 Background				
Westbound Left	13.2	B	12.6	B
Westbound Right	9.5	A	9.1	A
Southbound Left	8.4	A	8.0	A
2026 Background Plus Project #				
Northbound Left	8.3	A	8.1	A
Eastbound Left	14.8	B	15.5	C
Eastbound Through/Right	10.2	B	10.4	B
Westbound Left	19.0	C	16.6	C
Westbound Through/Right	10.9	B	9.9	A
Southbound Left	8.4	A	8.1	A
2050 Background Plus Project ##	**19.6**	**B**	**26.8**	**C**
Eastbound Approach	41.7	D	56.9	E
Eastbound Left	45.8	D	64.0	E
Eastbound Through/Right	35.6	D	45.5	D
Westbound Approach	43.5	D	39.3	D
Westbound Left	30.6	C	34.0	C
Westbound Through/Right	50.9	D	43.1	D
Northbound Approach	14.2	B	17.9	B
Northbound Left	11.7	B	15.9	B
Northbound Through	14.7	B	18.5	B
Northbound Right	9.8	A	13.1	B
Southbound Approach	14.5	B	20.1	C
Southbound Left	10.7	B	14.6	B
Southbound Through	15.7	B	21.2	C
Southbound Right	9.4	A	11.3	B

Addition of West Leg
= # + Signalized with Eastbound Dual left Turn Lanes

Warm Springs Avenue and Main Street

Warm Springs Avenue was being constructed, but not yet open for public use between Main Street and 26th Avenue on the date of the counts. However, Warm Springs Avenue will be open soon with future development of Filings 10 and 15. Of note, the west leg will be constructed prior to buildout of the project and provide an access intersection into the AdventHealth medical campus development. Warm Springs Avenue will be constructed as a three-lane roadway along the south side of the property and open for public use. It is recommended separate left turn and shared through/right turn lanes be striped along Warm Springs Avenue. With this roadway construction, it is assumed that a northbound left turn lane would also be constructed at the Warm Springs Avenue and Main Street intersection within the existing raised median along Main Street. The eastbound approach of Warm Springs Avenue is recommended to be striped with separate left turn and shared through/right turn lanes. The westbound approach includes width for a three-lane section, which can be restriped with separate left turn, through, and right turn lanes when Warm Springs Avenue is extended to the west of Main Street. Of note, there are no traffic volumes assumed to be entering and exiting the west leg in the background since the majority of traffic will be generated from the AdventHealth campus. Under stop control on the eastbound and westbound approaches of Warm Springs Avenue, the intersection movements will operate with LOS C or better with or without project traffic.

With full buildout of the AdventHealth medical campus and the remaining Aurora Highlands developments in 2050, some movements may operate with higher delays. If delays increase, there is sufficient capacity at the 34th Avenue/Main Street intersection to accommodate additional left turning vehicles. Of note, the minor approach left turn volumes are not nearing the 80 vehicle per hour minor approach volume to warrant signalization. As mentioned previously, if 2050 volumes are realized, then vehicles along Warm Springs Avenue will reroute to adjacent intersections with additional capacity. However, this intersection is recommended to be monitored in the future with buildout of the surrounding developments. **Table 5** provides the results of the LOS analysis conducted at this intersection.

Table 5 – Warm Springs Avenue & Main Street LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2026 Background				
Westbound Left	11.8	B	11.8	B
Westbound Right	9.3	A	9.3	A
Southbound Left	8.0	A	8.0	A
2026 Background Plus Project				
Northbound Left	8.2	A	8.2	A
Eastbound Left	14.0	B	14.9	B
Eastbound Through/Right	11.1	B	11.6	B
Westbound Left	14.9	B	14.5	B
Westbound Through	14.9	B	15.0	C
Westbound Right	9.7	A	9.3	A
Southbound Left	8.2	A	8.1	A
2050 Background Plus Project				
Northbound Left	9.1	A	9.9	A
Eastbound Left	41.0	E	84.9	F
Eastbound Through/Right	18.3	C	64.1	F
Westbound Left	40.7	E	46.7	E
Westbound Through	42.3	E	59.3	F
Westbound Right	15.9	C	14.9	B
Southbound Left	11.3	B	13.5	B

Possible reductions with trip gen update

No changes need to be made since the trip generation calculation was correct. The square footage had a typo in the text, which has been corrected.

Project Accesses

A project access analysis has been provided for the long-term horizon with a future west leg to the existing River Front Drive and Main Street intersection. As identified in Filing 15, this intersection will be restricted to three-quarter turning movements only with the left turn exiting movements restricted from the minor approach. An R1-1 "STOP" sign is recommended to be installed on the exiting eastbound approach with a R3-2 No Left Turn sign placed underneath the "STOP" sign. Northbound left turn and southbound right turn lanes are recommended along Main Street for the AdventHealth access to align with River Front Drive at this intersection. **Table 6** provides the results of the level of service analysis for this project street access intersection. As shown in the table, the River Front Drive and Main Street intersection is anticipated to have all movements operating with acceptable LOS C or better during the peak hours in the long-term horizon with the planned configuration.

Table 6 – Project Access Level of Service Results

Intersection	2050 Total			
	AM Peak Hour		PM Peak Hour	
	Delay (sec/ veh)	LOS	Delay (sec/ veh)	LOS
River Front Dr & Main St				
Northbound Left	14.4	B	15.1	C
Eastbound Right	14.2	B	22.4	C
Westbound Right	11.6	B	13.3	B
Southbound Left	9.0	A	10.6	B

Possible reductions with trip gen update

No changes need to be made since the trip generation calculation was correct. The square footage had a typo in the text, which has been corrected.

5.3 Signal Warrant Analysis

As requested in the City's pre-application notes for this project, a MUTCD Signal Warrant Analysis for Warrants 1, 2, and 3 was completed at the 34th Avenue and Main Street intersection. The signal warrant analysis included 12-hours of continuous turning movement volumes with existing, background developments (Filings 1, 2, 10, and 15), and project traffic. As shown in **Table 7**, Warrants, 1, 2, or 3 are not met by buildout of the emergency department. Four (4) hours are met for Warrant 1 and one (1) hour is met for Warrants 2 and 3. Therefore, a signal is not warranted or needed operationally with the development of the project in the short-term horizon. However, by full buildout of the medical campus and remaining Aurora Highlands development, a signal has been identified to be needed.

Table 7 – Signal Warrant Analysis of 34th Avenue & Main Street

			MAJOR ST BOTH APPROACHES MAIN STREET	MINOR ST HIGHEST APPROACH 34TH AVENUE	Warrant 1 - Condition A MAJOR STREET	Warrant 1 - Condition A MINOR STREET	Warrant 1 - Condition A BOTH MET	Warrant 1 - Condition B MAJOR STREET	Warrant 1 - Condition B MINOR STREET	Warrant 1 - Condition B BOTH MET	WARRANT 2	WARRANT 3
THRESHOLD VALUES →					600	150		900	75			
06:00 AM	TO	07:00 AM	0	0								
07:00 AM	TO	08:00 AM	819	130	Y				Y			
08:00 AM	TO	09:00 AM	665	130	Y				Y			
09:00 AM	TO	10:00 AM	574	148					Y			
10:00 AM	TO	11:00 AM	552	163		Y			Y			
11:00 AM	TO	12:00 PM	540	201		Y			Y			
12:00 PM	TO	01:00 PM	547	169		Y			Y			
01:00 PM	TO	02:00 PM	612	112	Y				Y			
02:00 PM	TO	03:00 PM	655	150	Y	Y	**Y**		Y			
03:00 PM	TO	04:00 PM	621	177	Y	Y	**Y**		Y			
04:00 PM	TO	05:00 PM	609	210	Y	Y	**Y**		Y			
05:00 PM	TO	06:00 PM	644	188	Y	Y	**Y**		Y			
06:00 PM	TO	07:00 PM	475	95					Y			
07:00 PM	TO	08:00 PM	0	0								
08:00 PM	TO	09:00 PM	0	0								
09:00 PM	TO	10:00 PM	0	0								
			7,313	1,872			**4**			**0**	**0**	**0**
					8 HOURS NEEDED **NOT SATISFIED**			8 HOURS NEEDED **NOT SATISFIED**			4 HRS NEEDED **NOT SATISFIED**	1 HR NEEDED **NOT SATISFIED**

The table above shows that none of the volumes for the Four Hour warrant are met. As requested, an MUTCDO Figure 4C-1 has been provided to illustrate each hour being below the threshold graphically as well.

MUTCD's Fig 4C-1 should be provided just to identify that it won't meet either

5.4 Turn Lane Requirement Analysis

The City of Aurora has directed Kimley-Horn to use the Colorado Department of Transportation (CDOT) State Highway Access Code (SHAC) guidelines to determine if turn lanes are warranted for access into the project. CDOT classifies their state highways based on roadway types. The Non-Rural Arterial Category NR-C (low to moderate travel speeds and moderate volumes) was assigned to Main Street based on matching the characteristics of the CDOT roadways.

According to the State Highway Access Code for category NR-C roadways, the following thresholds apply for an auxiliary lane:

- A left turn lane with storage length plus taper is required for any access with a projected peak hour left ingress turning volume greater than 25 vehicles per hour (vph). If the posted speed limit is greater than 40 miles per hour, a deceleration lane and taper is required for any access with a projected peak hour left ingress turning volumes greater than 10 vph. The taper length will be included within the deceleration length.
- A right turn lane with storage length plus taper is required for any access with a projected peak hour right ingress turning volume greater than 50 vehicles per hour (vph). If the posted speed limit is greater than 40 miles per hour, a right turn lane deceleration lane and taper is required for any access with a project peak hour right ingress turning volume greater than 25 vehicles per hour.

The Main Street speed limit is 30 miles per hour. Based on total traffic volume projections, right and left turn lane requirements at the project intersections along Main Street are as follows:

Main Street and 34th Avenue

- A northbound left turn lane **is** warranted along Main Street at the 34th Avenue intersection based on projected 2026 background plus project traffic volumes being 43 northbound left turns during the peak hour and the threshold being 25 vph. A northbound left turn lane is already constructed with a length of 175 feet.
- A southbound right turn lane **is not** warranted along Main Street at the 34th Avenue intersection based on projected 2026 background plus project traffic volumes being 50 southbound right turns during the peak hour and the threshold being 50 vph. However, by the long-term full buildout of AdventHealth, a right turn lane will be warranted based on

the project traffic volumes being 170 vph. Of note, a southbound right turn lane is currently constructed with a length of 150 feet.

Main Street and Warm Springs Avenue

- A northbound left turn lane **is not** warranted along Main Street at the Warm Springs Avenue intersection based on projected 2026 background plus project traffic volumes being 21 northbound left turns during the peak hour and the threshold being 25 vph. However, a northbound left turn lane should be provided with a length of 150 feet with a 100-foot taper. Based on what, 2050 build-out? Provide context for lane
- A southbound right turn lane **is not** warranted along Main Street at the Warm Springs Avenue intersection based on projected 2026 background plus project traffic volumes being 14 southbound right turns during the pea A northbound left turn lane should be provided for safety purposes since it is not typical on this type of roadway with these volumes to have left turns occurring from a through lane. However, by the long-term full buildout of Advent based on the project traffic volumes being 85 vph. Therefore, the southbound right turn lane should provide a length of 150 feet with a 100-foot taper.

Main Street and River Front Drive

- A northbound left turn lane **is** warranted along Main Street at the Riverfront Drive intersection based on projected 2050 background plus project traffic volumes being 85 northbound left turns during the peak hour and the threshold being 25 vph. This turn lane is recommended to provide a length of 150 feet with a 100-foot taper.
- A southbound right turn lane **is** warranted along Main Street at the Riverfront Drive intersection based on projected 2050 background plus project traffic volumes being 170 southbound right turns during the peak hour and the threshold being 50 vph. Therefore, a southbound right turn lane with a length of 150-feet and a 100-foot taper is recommended to be provided.

5.5 Vehicle Queuing Analysis

A vehicle queuing analysis was conducted for the study area intersections. The queuing analysis was performed using Synchro presenting the results of the 95th percentile queue lengths. Results are shown in the following **Table 8** with calculations provided within the level of service operational sheets of **Appendix E** for unsignalized intersections and **Appendix F** for signalized intersections. Of note, the minimum 95th percentile queue length is reported as 25 feet.

Table 8 – Turn Lane Queuing Analysis Results

Intersection Turn Lane	Existing Turn Lane Length (feet)	2026 Calculated Queue (feet)	2026 Recommended Length (feet)	2050 Calculated Queue (feet)	2050 Recommended Length (feet)
Main St & 34th Ave					
Eastbound Left	DNE	25’	**150’**	207’ DL	**200’ DL**
Westbound Left	C	50’	C	97’	C
Northbound Left	175’	25’	175’	65’	175’
Northbound Right	175’	25’	175’	25’	175’
Southbound Left	150’	25’	150’	91’	150’
Southbound Right	150’	25’	150’	29’	150’
Warm Springs & Main St					
Northbound Left	DNE	25’	**150’+100’T**	25’	**150’+100’T**
Eastbound Left	DNE	25’	**150’+100’T**	75’	**150’+100’T**
Westbound Left	300’	25’	**150’+100’T**	25’	**150’+100’T**
Westbound Right	C	25’	**175’**	50’	**175’**
Southbound Left	150’	25’	150’	25’	150’
River Front & Main St					
Northbound Left	DNE	Not Constructed		25’	**150’+100’T**
Eastbound Right	DNE			50’	**C**
Southbound Right	DNE			0’	**150’+100’T**

DNE = Does Not Exist; C = Continuous; **Red** Text = Turn Lane Constraint; **Blue** Text = Recommendation

As shown in the queueing table, turn lanes should follow CDOT SHAC turn lane length of 150 feet with a 100-foot taper for a 30 mile per hour speed limit along Main Street if the turn lane has not yet been constructed.

The eastbound left turn lane in the short-term horizon at Main Street / 34th Avenue is recommended to provide a throat depth of 150 feet to accommodate six (6) vehicles. However, by the full buildout of the medical campus in the long-term, the intersection is recommended to be signalized and provide dual eastbound left turn lanes. The queue lengths can be accommodated by 200-foot-long dual left turn lanes in 2050.

The Warm Springs Avenue and Main Street intersection is currently under construction and will be completed by buildout of the emergency department. Of note, the southbound left turn lane currently provides a turn lane bay for 150 feet of storage. The eastbound, westbound, and northbound left turn lanes are recommended to provide a length of 150 feet. The westbound right turn lane is currently striped as a continuous lane from the westbound through; however, the existing storage bay will provide 175 feet which can be striped when the westbound through lane is restriped for traffic traveling across Main Street.

Lastly, 150-foot plus 100-foot taper northbound left turn and southbound right turn lanes are recommended to be constructed along Main Street at River Front Drive in the long-term horizon. A 150-foot northbound left turn lane can be constructed within the existing raised median and accommodate the reported queue lengths with the turn lane standards outlined in CDOT SHAC.

5.6 Improvement Summary

Based on the results of the intersection operational and vehicle queuing analysis, the key intersection recommended improvements and control are shown in **Figure 11** for the short-term horizon and **Figure 12** for the long-term horizon.

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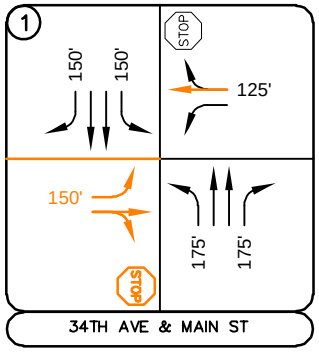
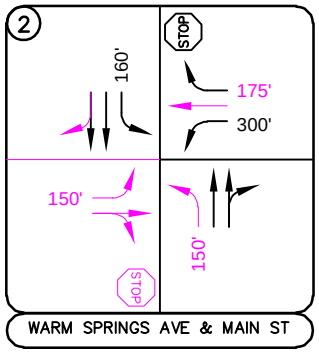
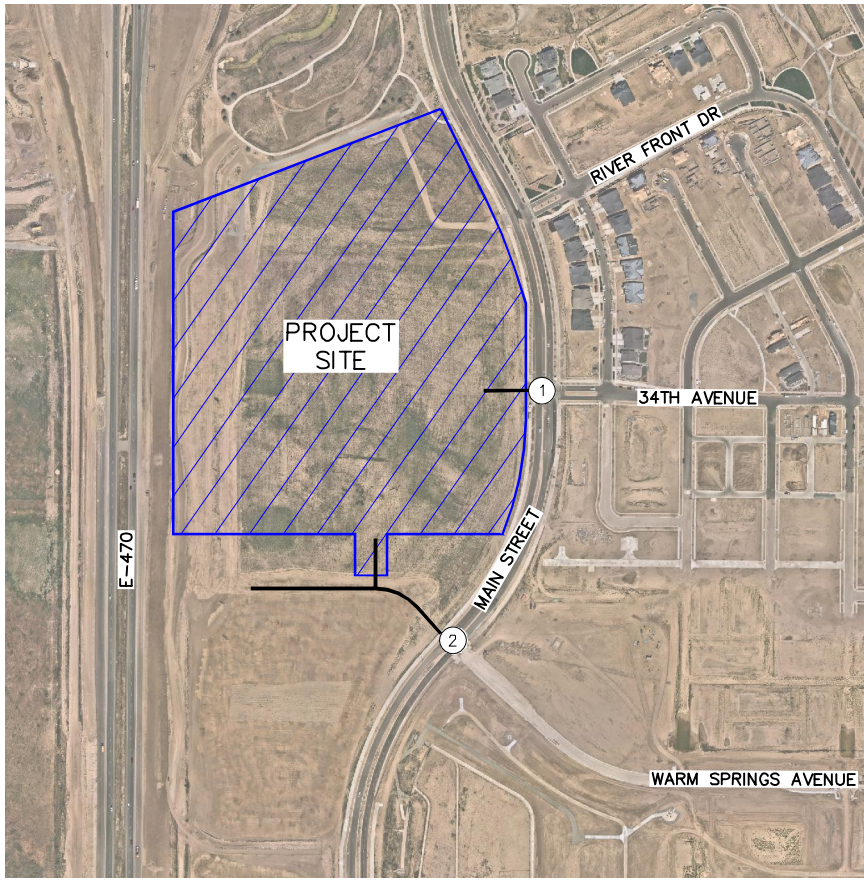




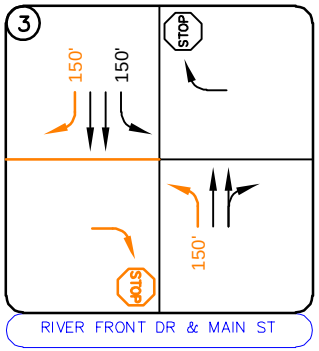


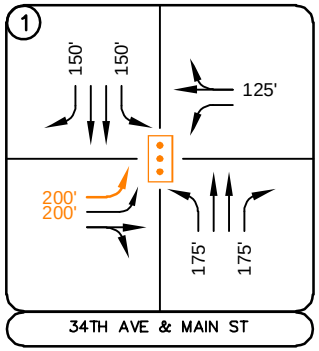
LEGEND

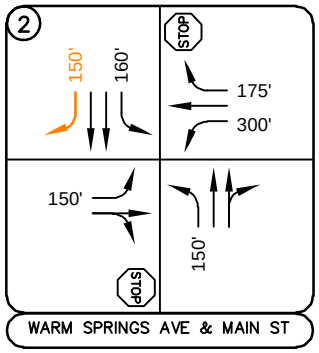
- Study Area Key Intersection
- Project Access Intersection
- STOP Stop Controlled Approach
- Site-Specific Improvement
- Improvement by Others
- 100' Turn Lane Length (feet)

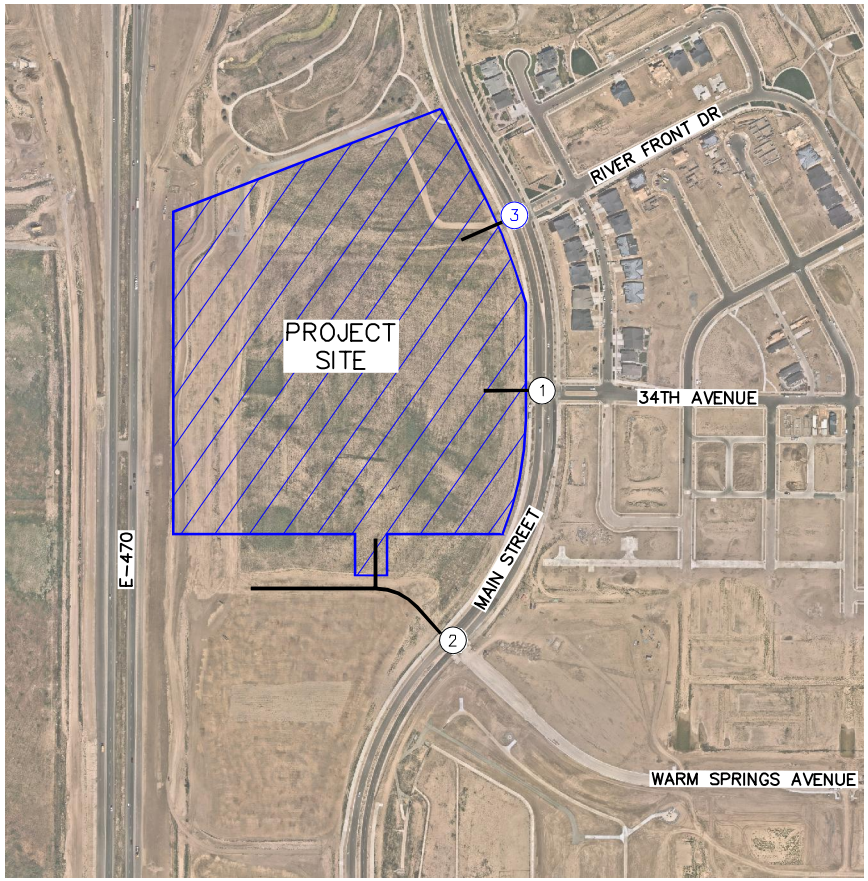
Kimley»Horn

FIGURE 11
AdventHealth – Emergency Department
Aurora, Colorado
2026 Recommended Geometry and Control









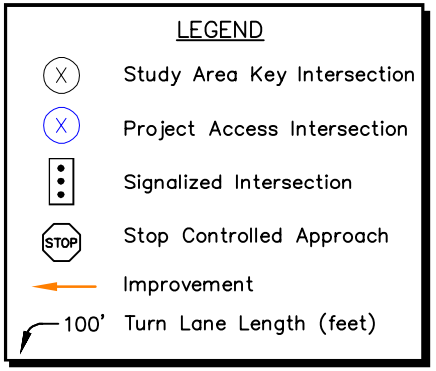


FIGURE 12
AdventHealth – Emergency Department
Aurora, Colorado
2050 Recommended Geometry and Control

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis presented in this report, Kimley-Horn believes AdventHealth - Emergency Department will be successfully incorporated into the existing and future roadway network. Analysis of the existing street network, the proposed project development, and expected traffic volumes resulted in the following recommendations:

Short-Term Recommendations

- A west leg will be constructed at the 34th Avenue and Main Street intersection to provide access to the AdventHealth – Emergency Department project. The intersection can operate under two-way stop control with separate eastbound left turn and shared through/right turn lanes. A R1-1 “STOP” sign is recommended to be placed on the eastbound approach, exiting the site. The existing westbound right turn lane is recommended to be restriped to be a shared through/right turn lane. The northbound left turn lane and southbound right turn lanes have already been constructed to provide turn lane lengths required by the City. Of note, based on the MUTCD Signal Warrant Analysis for Warrants 1, 2, and 3, none of the warrants were met for signalization for this phase of development.

- Prior to completion of the AdventHealth facility, Warm Springs Avenue will be constructed as a three-lane roadway along the south side of the property and open for public use. It is recommended separate left turn and shared through/right turn lanes be striped along Warm Springs Avenue. With this roadway construction, it is assumed that a 150-foot plus 100-foot taper northbound left turn lane would also be constructed at the Warm Springs Avenue and Main Street intersection within the existing raised median along Main Street.

Long-Term Recommendations

- With full buildout of the medical campus and remaining Aurora Highlands development, the 34th Avenue and Main Street intersection is anticipated to be signalized. Dual eastbound left turn lanes with a length of 200 feet are needed operationally and are recommended to operate with protected-only left turn phasing. The westbound left turn, northbound left, and southbound left turn movements can operate with single left turn lanes as already constructed, operating with protected-permissive left turn phasing.

- By the long-term horizon with full buildout of the entire AdventHealth medical campus, an additional access to align with River Front Drive will be constructed. The west leg is recommended to be restricted to three-quarter turning movements to match the existing control on the east leg. An R1-1 “STOP” sign is recommended to be install on the exiting eastbound approach with a R3-2 No Left Turn sign placed under the R1-1 sign. Northbound left turn and southbound right turn lanes with lengths of 150 feet plus 100-foot taper are recommended along Main Street for the AdventHealth access to align with River Front Drive at this intersection.

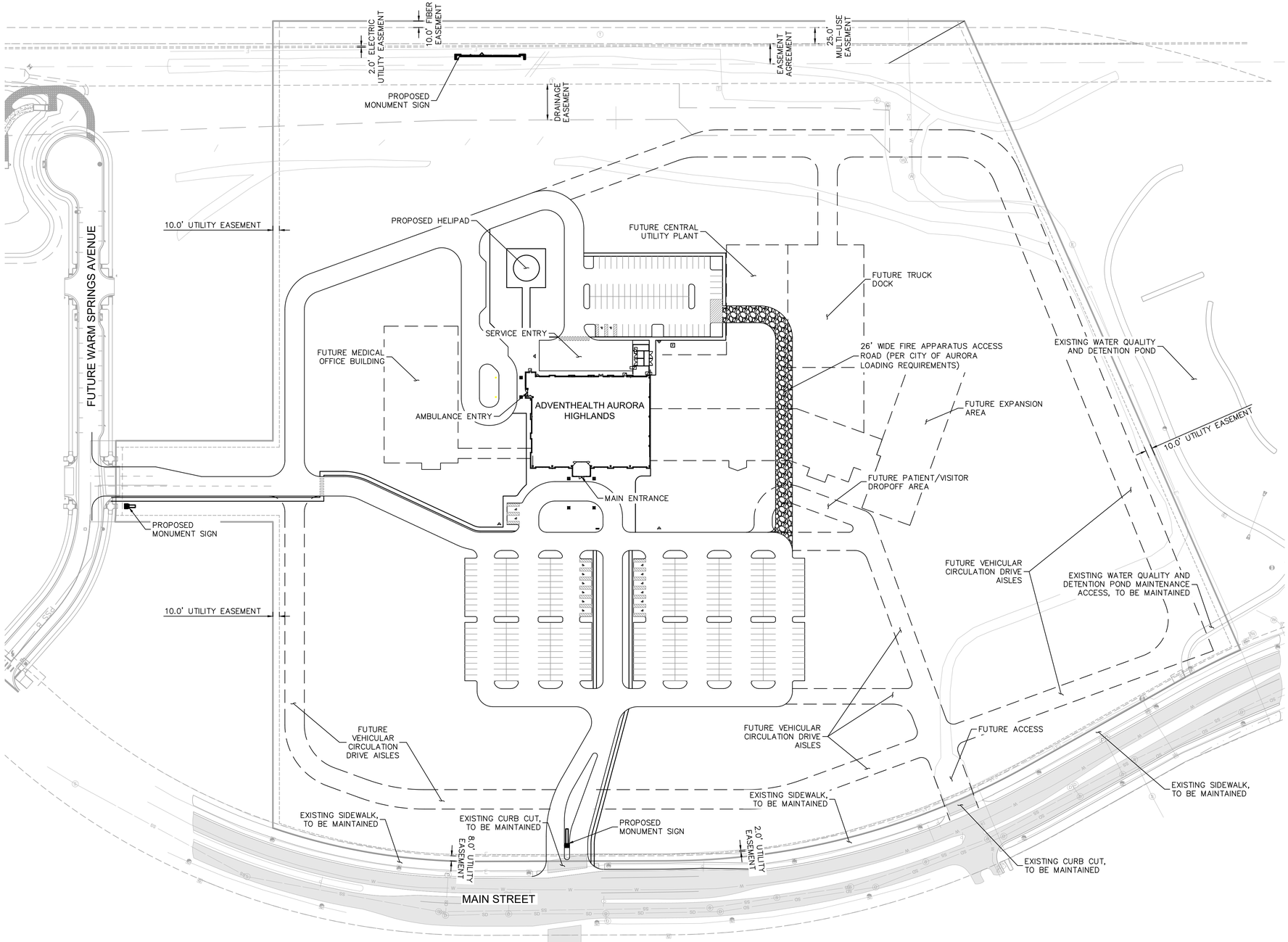
- Lastly, with full buildout of the entire AdventHealth medical campus, a southbound right turn lane at the Warm Springs Avenue will be warranted. The right turn lane is recommended to be constructed with a length of 150 feet plus a 100-foot taper.

- Any onsite or offsite improvements should be incorporated into the Civil Drawings and conform to standards of the City of Aurora and the Manual on Uniform Traffic Control Devices (MUTCD) – 11th Edition, 2023.

APPENDICES

APPENDIX A

Conceptual Site Plan



LEGEND

———	PROPERTY LINE
- - - - - - - - - -	EASEMENT LINE
▨	PROP. GRAVEL ROAD

SITE DATA:

CONSTRUCTION TYPE: IA
BUILDING SF: 81,007
TOTAL MINIMUM REQUIRED PARKING (2.5 SP PER 1000 SF): 203 SP
TOTAL MAXIMUM PARKING (4 SP PER 1000 SF): 325 SP
TOTAL PROVIDED PARKING: 349 SP (333 STANDARD,16 ADA)

NORTH

GRAPHIC SCALE IN FEET
0 40 80 160

ADVENTHEALTH AURORA HIGHLANDS
SCHEMATIC DESIGN - SITE PLAN
02/20/2024

Kimley»Horn

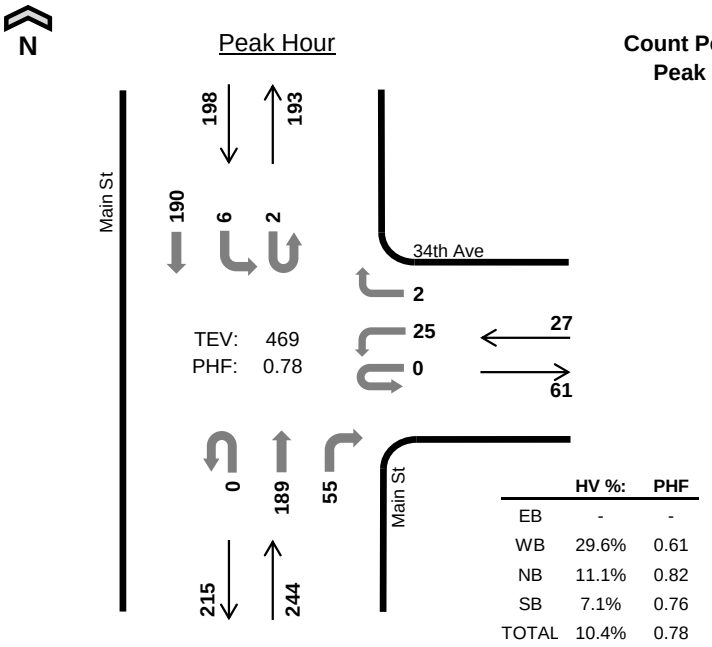
6200 SOUTH SYRACUSE WAY SUITE 300 GREENWOOD VILLAGE CO, 80111
PHONE: 303-228-2300

APPENDIX B

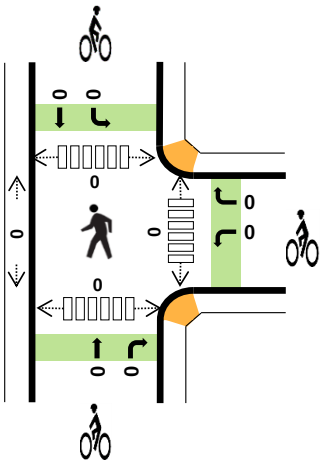
Intersection Count Sheets

Main St
34th Ave

Date: 03/19/2024
Count Period: 7:00 AM to 10:00 AM
Peak Hour: 7:00 AM to 8:00 AM



	HV %:	PHF
EB	-	-
WB	29.6%	0.61
NB	11.1%	0.82
SB	7.1%	0.76
TOTAL	10.4%	0.78



Three-Hour Count Summaries

Interval Start		N/A Eastbound				34th Ave Westbound				Main St Northbound				Main St Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	0	0	0	1	0	0	0	0	42	14	1	2	35	0	95	0
7:15 AM		0	0	0	0	0	5	0	1	0	0	58	9	0	2	39	0	114	0
7:30 AM		0	0	0	0	0	10	0	1	0	0	57	17	1	2	62	0	150	0
7:45 AM		0	0	0	0	0	9	0	0	0	0	32	15	0	0	54	0	110	469
Peak Hour	All	0	0	0	0	0	25	0	2	0	0	189	55	2	6	190	0	469	0
	HV	0	0	0	0	0	6	0	2	0	0	16	11	1	1	12	0	49	0
	HV%	-	-	-	-	-	24%	-	100%	-	-	8%	20%	50%	17%	6%	-	10%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	7	4	*11*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	0	1	10	3	*14*	0	0	0	0	*0*	0	0	0	0	*0*
7:30 AM	0	2	4	5	*11*	0	0	0	0	*0*	0	0	0	0	*0*
7:45 AM	0	5	6	2	*13*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hour	0	8	27	14	*49*	0	0	0	0	*0*	0	0	0	0	*0*

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Three-Hour Count Summaries

Interval Start	N/A Eastbound				34th Ave Westbound				Main St Northbound				Main St Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**42**	**14**	**1**	**2**	**35**	**0**	**95**	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**1**	**0**	**0**	**58**	**9**	**0**	**2**	**39**	**0**	**114**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**10**	**0**	**1**	**0**	**0**	**57**	**17**	**1**	**2**	**62**	**0**	**150**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**32**	**15**	**0**	**0**	**54**	**0**	**110**	**469**
8:00 AM	0	0	0	0	0	9	0	0	0	0	34	12	0	2	33	0	90	464
8:15 AM	0	0	0	0	0	6	0	1	0	0	23	8	0	0	21	0	59	409
8:30 AM	0	0	0	0	0	7	0	1	0	0	18	4	0	1	29	0	60	319
8:45 AM	0	0	0	0	0	3	0	0	0	0	20	10	0	0	24	0	57	266
9:00 AM	0	0	0	0	0	7	0	4	0	0	20	6	0	1	19	0	57	233
9:15 AM	0	0	0	0	0	8	0	0	0	0	20	5	0	1	33	0	67	241
9:30 AM	0	0	0	0	0	6	0	0	0	0	21	14	0	0	19	0	60	241
9:45 AM	0	0	0	0	0	4	0	0	0	0	22	9	0	0	17	0	52	236
Count Total	0	0	0	0	0	75	0	8	0	0	367	123	2	11	385	0	971	0
Peak Hour All	**0**	**0**	**0**	**0**	**0**	**25**	**0**	**2**	**0**	**0**	**189**	**55**	**2**	**6**	**190**	**0**	**469**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**2**	**0**	**0**	**16**	**11**	**1**	**1**	**12**	**0**	**49**	**0**
Peak Hour HV%	**-**	**-**	**-**	**-**	**-**	**24%**	**-**	**100%**	**-**	**-**	**8%**	**20%**	**50%**	**17%**	**6%**	**-**	**10%**	**0**

Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	**0**	**0**	**7**	**4**	***11***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
7:15 AM	**0**	**1**	**10**	**3**	***14***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
7:30 AM	**0**	**2**	**4**	**5**	***11***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
7:45 AM	**0**	**5**	**6**	**2**	***13***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:00 AM	0	3	3	1	*7*	0	0	0	0	*0*	0	0	0	0	*0*
8:15 AM	0	1	4	1	*6*	0	0	0	0	*0*	0	0	0	0	*0*
8:30 AM	0	2	3	0	*5*	0	0	0	0	*0*	0	0	0	0	*0*
8:45 AM	0	0	2	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
9:00 AM	0	2	5	0	*7*	0	0	0	0	*0*	0	0	0	0	*0*
9:15 AM	0	0	1	2	*3*	0	0	0	0	*0*	0	0	0	0	*0*
9:30 AM	0	0	3	1	*4*	0	0	0	0	*0*	0	0	0	0	*0*
9:45 AM	0	2	3	3	*8*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	18	51	22	*91*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hr	**0**	**8**	**27**	**14**	***49***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

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Three-Hour Count Summaries - Heavy Vehicles

Interval Start	N/A				34th Ave				Main St				Main St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**3**	**0**	**1**	**3**	**0**	**11**	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**8**	**2**	**0**	**0**	**3**	**0**	**14**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**2**	**2**	**1**	**0**	**4**	**0**	**11**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**2**	**4**	**0**	**0**	**2**	**0**	**13**	**49**
8:00 AM	0	0	0	0	0	3	0	0	0	0	2	1	0	0	1	0	7	45
8:15 AM	0	0	0	0	0	1	0	0	0	0	3	1	0	0	1	0	6	37
8:30 AM	0	0	0	0	0	2	0	0	0	0	1	2	0	0	0	0	5	31
8:45 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	20
9:00 AM	0	0	0	0	0	1	0	1	0	0	4	1	0	0	0	0	7	20
9:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	3	17
9:30 AM	0	0	0	0	0	0	0	0	0	0	1	2	0	0	1	0	4	16
9:45 AM	0	0	0	0	0	2	0	0	0	0	2	1	0	0	3	0	8	22
Count Total	0	0	0	0	0	15	0	3	0	0	32	19	1	1	20	0	91	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**2**	**0**	**0**	**16**	**11**	**1**	**1**	**12**	**0**	**49**	**0**

Three-Hour Count Summaries - Bikes

Interval Start	N/A			34th Ave			Main St			Main St			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

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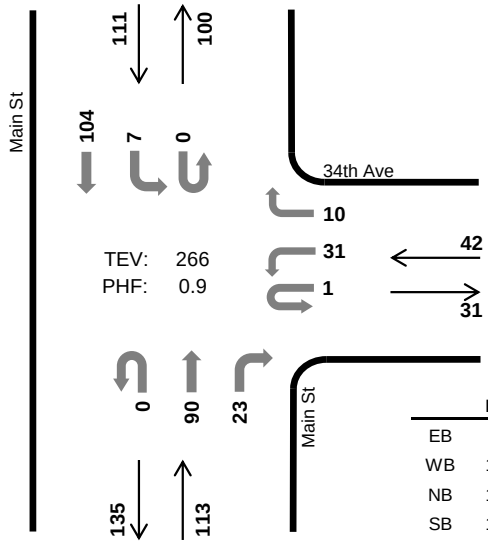
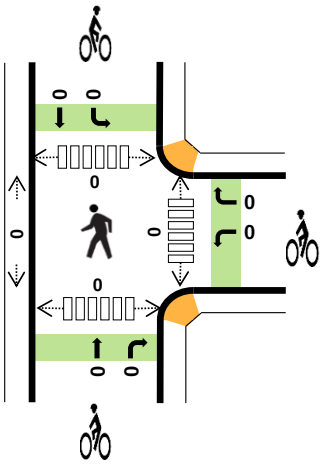
Main St
34th Ave

N

Peak Hour



	HV %:	PHF
EB	-	-
WB	16.7%	0.66
NB	17.7%	0.86
SB	13.5%	0.82
TOTAL	15.8%	0.90



Date: 03/19/2024
Count Period: 10:00 AM to 1:00 PM
Peak Hour: 12:00 PM to 1:00 PM

Three-Hour Count Summaries

Interval Start		N/A Eastbound				34th Ave Westbound				Main St Northbound				Main St Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
12:00 PM		0	0	0	0	1	11	0	4	0	0	13	5	0	1	20	0	55	0
12:15 PM		0	0	0	0	0	6	0	2	0	0	29	3	0	1	33	0	74	0
12:30 PM		0	0	0	0	0	6	0	2	0	0	22	8	0	2	26	0	66	0
12:45 PM		0	0	0	0	0	8	0	2	0	0	26	7	0	3	25	0	71	266
Peak Hour	All	0	0	0	0	1	31	0	10	0	0	90	23	0	7	104	0	266	0
	HV	0	0	0	0	0	5	0	2	0	0	18	2	0	4	11	0	42	0
	HV%	-	-	-	-	0%	16%	-	20%	-	-	20%	9%	-	57%	11%	-	16%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
12:00 PM	0	3	1	1	*5*	0	0	0	0	*0*	0	0	0	0	*0*
12:15 PM	0	0	9	5	*14*	0	0	0	0	*0*	0	0	0	0	*0*
12:30 PM	0	2	4	2	*8*	0	0	0	0	*0*	0	0	0	0	*0*
12:45 PM	0	2	6	7	*15*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hour	0	7	20	15	*42*	0	0	0	0	*0*	0	0	0	0	*0*

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Three-Hour Count Summaries

Interval Start	N/A Eastbound				34th Ave Westbound				Main St Northbound				Main St Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
10:00 AM	0	0	0	0	0	3	0	1	0	0	21	8	0	1	23	0	57	0
10:15 AM	0	0	0	0	0	6	0	1	0	0	15	7	0	0	24	0	53	0
10:30 AM	0	0	0	0	0	7	0	3	0	0	16	5	0	3	26	0	60	0
10:45 AM	0	0	0	0	0	7	0	3	0	0	14	7	0	3	18	0	52	222
11:00 AM	0	0	0	0	0	8	0	1	0	0	20	8	0	1	29	0	67	232
11:15 AM	0	0	0	0	0	7	0	1	0	0	19	8	0	0	24	0	59	238
11:30 AM	0	0	0	0	0	8	0	1	0	0	18	7	0	2	25	0	61	239
11:45 AM	0	0	0	0	0	3	0	3	0	0	19	5	0	3	29	0	62	249
12:00 PM	**0**	**0**	**0**	**0**	**1**	**11**	**0**	**4**	**0**	**0**	**13**	**5**	**0**	**1**	**20**	**0**	**55**	237
12:15 PM	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**2**	**0**	**0**	**29**	**3**	**0**	**1**	**33**	**0**	**74**	252
12:30 PM	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**2**	**0**	**0**	**22**	**8**	**0**	**2**	**26**	**0**	**66**	257
12:45 PM	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**2**	**0**	**0**	**26**	**7**	**0**	**3**	**25**	**0**	**71**	**266**
Count Total	0	0	0	0	1	80	0	24	0	0	232	78	0	20	302	0	737	0
Peak Hour All	**0**	**0**	**0**	**0**	**1**	**31**	**0**	**10**	**0**	**0**	**90**	**23**	**0**	**7**	**104**	**0**	**266**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**2**	**0**	**0**	**18**	**2**	**0**	**4**	**11**	**0**	**42**	**0**
Peak Hour HV%	**-**	**-**	**-**	**-**	**0%**	**16%**	**-**	**20%**	**-**	**-**	**20%**	**9%**	**-**	**57%**	**11%**	**-**	**16%**	**0**

Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
10:00 AM	0	0	6	1	*7*	0	0	0	0	*0*	0	0	0	0	*0*
10:15 AM	0	0	2	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
10:30 AM	0	4	3	5	*12*	0	0	0	0	*0*	0	0	0	0	*0*
10:45 AM	0	0	2	3	*5*	0	0	0	0	*0*	0	0	0	0	*0*
11:00 AM	0	3	7	1	*11*	0	0	0	0	*0*	0	1	0	0	*1*
11:15 AM	0	0	1	2	*3*	0	0	0	0	*0*	0	0	0	0	*0*
11:30 AM	0	1	5	5	*11*	0	0	0	0	*0*	0	0	0	0	*0*
11:45 AM	0	0	5	8	*13*	0	0	0	0	*0*	0	0	0	0	*0*
12:00 PM	**0**	**3**	**1**	**1**	***5***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
12:15 PM	**0**	**0**	**9**	**5**	***14***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
12:30 PM	**0**	**2**	**4**	**2**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
12:45 PM	**0**	**2**	**6**	**7**	***15***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
Count Total	0	15	51	40	*106*	0	0	0	0	*0*	0	1	0	0	*1*
Peak Hr	**0**	**7**	**20**	**15**	***42***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

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Three-Hour Count Summaries - Heavy Vehicles

Interval Start	N/A				34th Ave				Main St				Main St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
10:00 AM	0	0	0	0	0	0	0	0	0	0	3	3	0	0	1	0	7	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0
10:30 AM	0	0	0	0	0	4	0	0	0	0	2	1	0	0	5	0	12	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	1	2	0	5	26
11:00 AM	0	0	0	0	0	3	0	0	0	0	7	0	0	0	1	0	11	30
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	3	31
11:30 AM	0	0	0	0	0	1	0	0	0	0	5	0	0	1	4	0	11	30
11:45 AM	0	0	0	0	0	0	0	0	0	0	4	1	0	2	6	0	13	38
12:00 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**5**	32
12:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**0**	**1**	**4**	**0**	**14**	43
12:30 PM	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**2**	**0**	**8**	40
12:45 PM	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**5**	**1**	**0**	**3**	**4**	**0**	**15**	**42**
Count Total	0	0	0	0	0	13	0	2	0	0	41	10	0	8	32	0	106	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**2**	**0**	**0**	**18**	**2**	**0**	**4**	**11**	**0**	**42**	**0**

Three-Hour Count Summaries - Bikes

Interval Start	N/A			34th Ave			Main St			Main St			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
12:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
12:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
12:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

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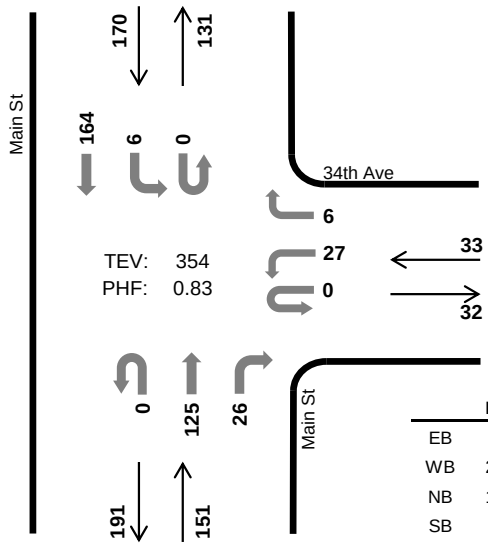
Main St
34th Ave

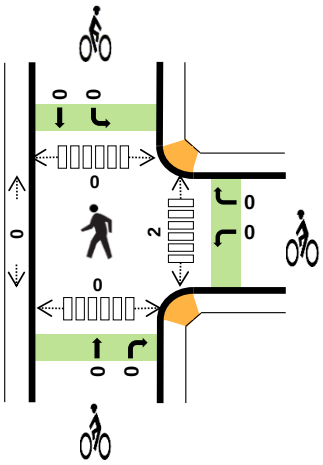
Date: 03/19/2024
Count Period: 1:00 PM to 4:00 PM
Peak Hour: 2:15 PM to 3:15 PM

N

Peak Hour



	HV %:	PHF
EB	-	-
WB	21.2%	0.69
NB	12.6%	0.66
SB	7.6%	0.65
TOTAL	11.0%	0.83



Three-Hour Count Summaries

Interval Start		N/A Eastbound				34th Ave Westbound				Main St Northbound				Main St Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:15 PM		0	0	0	0	0	5	0	0	0	0	45	12	0	4	26	0	92	0
2:30 PM		0	0	0	0	0	4	0	2	0	0	28	8	0	0	65	0	107	0
2:45 PM		0	0	0	0	0	11	0	1	0	0	27	5	0	1	44	0	89	0
3:00 PM		0	0	0	0	0	7	0	3	0	0	25	1	0	1	29	0	66	354
Peak Hour	All	0	0	0	0	0	27	0	6	0	0	125	26	0	6	164	0	354	0
	HV	0	0	0	0	0	4	0	3	0	0	15	4	0	3	10	0	39	0
	HV%	-	-	-	-	-	15%	-	50%	-	-	12%	15%	-	50%	6%	-	11%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
2:15 PM	0	1	8	2	*11*	0	0	0	0	*0*	0	0	0	0	*0*
2:30 PM	0	2	6	3	*11*	0	0	0	0	*0*	0	0	0	0	*0*
2:45 PM	0	1	2	4	*7*	0	0	0	0	*0*	0	0	0	0	*0*
3:00 PM	0	3	3	4	*10*	0	0	0	0	*0*	2	0	0	0	*2*
Peak Hour	0	7	19	13	*39*	0	0	0	0	*0*	2	0	0	0	*2*

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Three-Hour Count Summaries

Interval Start	N/A Eastbound				34th Ave Westbound				Main St Northbound				Main St Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
1:00 PM	0	0	0	0	0	9	0	1	0	0	22	5	0	1	26	0	64	0
1:15 PM	0	0	0	0	0	9	0	1	0	0	25	5	0	0	41	0	81	0
1:30 PM	0	0	0	0	0	3	0	1	0	0	17	3	0	1	34	0	59	0
1:45 PM	0	0	0	0	0	4	0	1	0	0	31	10	0	2	20	0	68	272
2:00 PM	0	0	0	0	0	6	0	0	0	0	23	5	0	2	19	0	55	263
2:15 PM	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**45**	**12**	**0**	**4**	**26**	**0**	**92**	274
2:30 PM	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**2**	**0**	**0**	**28**	**8**	**0**	**0**	**65**	**0**	**107**	322
2:45 PM	**0**	**0**	**0**	**0**	**0**	**11**	**0**	**1**	**0**	**0**	**27**	**5**	**0**	**1**	**44**	**0**	**89**	343
3:00 PM	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**3**	**0**	**0**	**25**	**1**	**0**	**1**	**29**	**0**	**66**	**354**
3:15 PM	0	0	0	0	0	15	0	1	0	0	26	4	0	3	43	0	92	354
3:30 PM	0	0	0	0	0	6	0	1	0	0	25	7	0	1	32	0	72	319
3:45 PM	0	0	0	0	1	11	0	1	0	0	30	1	0	0	39	0	83	313
Count Total	0	0	0	0	1	90	0	13	0	0	324	66	0	16	418	0	928	0
Peak Hour All	**0**	**0**	**0**	**0**	**0**	**27**	**0**	**6**	**0**	**0**	**125**	**26**	**0**	**6**	**164**	**0**	**354**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**3**	**0**	**0**	**15**	**4**	**0**	**3**	**10**	**0**	**39**	**0**
Peak Hour HV%	**-**	**-**	**-**	**-**	**-**	**15%**	**-**	**50%**	**-**	**-**	**12%**	**15%**	**-**	**50%**	**6%**	**-**	**11%**	**0**

Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
1:00 PM	0	0	3	7	*10*	0	0	0	0	*0*	0	0	0	0	*0*
1:15 PM	0	1	1	3	*5*	0	0	0	0	*0*	0	0	0	0	*0*
1:30 PM	0	1	1	2	*4*	0	0	0	0	*0*	0	0	0	0	*0*
1:45 PM	0	0	8	2	*10*	0	0	0	0	*0*	0	0	0	0	*0*
2:00 PM	0	0	8	0	*8*	0	0	0	0	*0*	0	0	0	0	*0*
2:15 PM	**0**	**1**	**8**	**2**	***11***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
2:30 PM	**0**	**2**	**6**	**3**	***11***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
2:45 PM	**0**	**1**	**2**	**4**	***7***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
3:00 PM	**0**	**3**	**3**	**4**	***10***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**0**	**0**	***2***
3:15 PM	0	1	2	5	*8*	0	0	0	0	*0*	0	0	0	0	*0*
3:30 PM	0	1	0	3	*4*	0	0	0	0	*0*	0	0	0	0	*0*
3:45 PM	0	2	2	3	*7*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	13	44	38	*95*	0	0	0	0	*0*	2	0	0	0	*2*
Peak Hr	**0**	**7**	**19**	**13**	***39***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**0**	**0**	***2***

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Three-Hour Count Summaries - Heavy Vehicles

Interval Start	N/A				34th Ave				Main St				Main St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
1:00 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	1	6	0	10	0
1:15 PM	0	0	0	0	0	1	0	0	0	0	1	0	0	0	3	0	5	0
1:30 PM	0	0	0	0	0	1	0	0	0	0	1	0	0	0	2	0	4	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	7	1	0	1	1	0	10	29
2:00 PM	0	0	0	0	0	0	0	0	0	0	5	3	0	0	0	0	8	27
2:15 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**6**	**2**	**0**	**1**	**1**	**0**	**11**	33
2:30 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**4**	**2**	**0**	**0**	**3**	**0**	**11**	40
2:45 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**3**	**0**	**7**	37
3:00 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**3**	**0**	**0**	**1**	**3**	**0**	**10**	**39**
3:15 PM	0	0	0	0	0	1	0	0	0	0	2	0	0	2	3	0	8	36
3:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	0	4	29
3:45 PM	0	0	0	0	0	2	0	0	0	0	2	0	0	0	3	0	7	29
Count Total	0	0	0	0	0	9	0	4	0	0	36	8	0	7	31	0	95	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**3**	**0**	**0**	**15**	**4**	**0**	**3**	**10**	**0**	**39**	**0**

Three-Hour Count Summaries - Bikes

Interval Start	N/A			34th Ave			Main St			Main St			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
2:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
2:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
3:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

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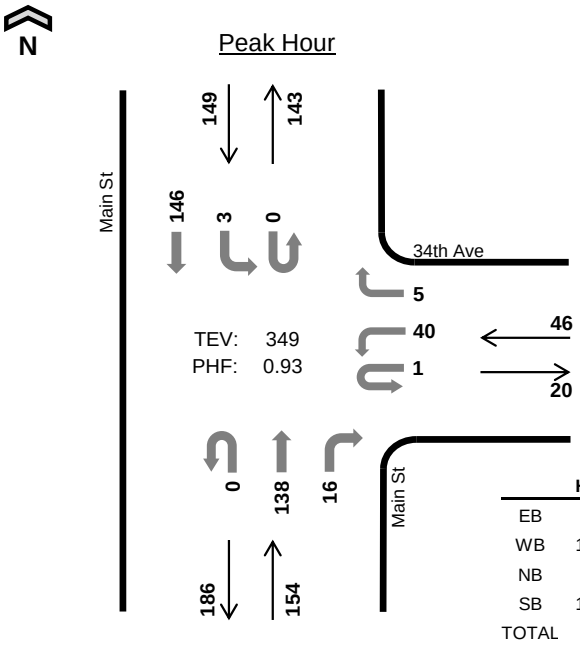
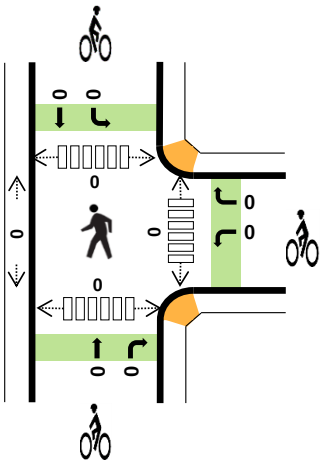
Main St
34th Ave

Date: 03/19/2024
Count Period: 4:00 PM to 7:00 PM
Peak Hour: 4:00 PM to 5:00 PM



	HV %:	PHF
EB	-	-
WB	17.4%	0.82
NB	5.8%	0.84
SB	10.7%	0.89
TOTAL	9.5%	0.93



Three-Hour Count Summaries

Interval Start		N/A Eastbound				34th Ave Westbound				Main St Northbound				Main St Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	0	0	1	8	0	2	0	0	43	3	0	0	37	0	94	0
4:15 PM		0	0	0	0	0	9	0	1	0	0	22	3	0	2	40	0	77	0
4:30 PM		0	0	0	0	0	13	0	1	0	0	35	6	0	1	29	0	85	0
4:45 PM		0	0	0	0	0	10	0	1	0	0	38	4	0	0	40	0	93	349
Peak Hour	All	0	0	0	0	1	40	0	5	0	0	138	16	0	3	146	0	349	0
	HV	0	0	0	0	0	6	0	2	0	0	6	3	0	1	15	0	33	0
	HV%	-	-	-	-	0%	15%	-	40%	-	-	4%	19%	-	33%	10%	-	9%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	1	3	4	*8*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	0	2	1	4	*7*	0	0	0	0	*0*	0	0	0	0	*0*
4:30 PM	0	3	2	4	*9*	0	0	0	0	*0*	0	0	0	0	*0*
4:45 PM	0	2	3	4	*9*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hour	0	8	9	16	*33*	0	0	0	0	*0*	0	0	0	0	*0*

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Three-Hour Count Summaries

Interval Start	N/A Eastbound				34th Ave Westbound				Main St Northbound				Main St Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**0**	**0**	**0**	**1**	**8**	**0**	**2**	**0**	**0**	**43**	**3**	**0**	**0**	**37**	**0**	**94**	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**1**	**0**	**0**	**22**	**3**	**0**	**2**	**40**	**0**	**77**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**13**	**0**	**1**	**0**	**0**	**35**	**6**	**0**	**1**	**29**	**0**	**85**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**10**	**0**	**1**	**0**	**0**	**38**	**4**	**0**	**0**	**40**	**0**	**93**	**349**
5:00 PM	0	0	0	0	0	9	0	0	0	0	33	2	0	0	33	0	77	332
5:15 PM	0	0	0	0	0	3	0	0	0	0	27	2	0	0	34	0	66	321
5:30 PM	0	0	0	0	0	10	0	1	0	0	29	2	0	0	27	0	69	305
5:45 PM	0	0	0	0	0	10	0	1	0	0	24	3	0	1	22	0	61	273
6:00 PM	0	0	0	0	0	9	0	6	0	0	22	0	0	1	33	0	71	267
6:15 PM	0	0	0	0	0	10	0	1	0	0	25	5	0	0	27	0	68	269
6:30 PM	0	0	0	0	0	5	0	1	0	0	28	2	0	0	22	0	58	258
6:45 PM	0	0	0	0	0	4	0	3	0	0	33	6	0	1	28	0	75	272
Count Total	0	0	0	0	1	100	0	18	0	0	359	38	0	6	372	0	894	0
Peak Hour All	**0**	**0**	**0**	**0**	**1**	**40**	**0**	**5**	**0**	**0**	**138**	**16**	**0**	**3**	**146**	**0**	**349**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**2**	**0**	**0**	**6**	**3**	**0**	**1**	**15**	**0**	**33**	**0**
Peak Hour HV%	**-**	**-**	**-**	**-**	**0%**	**15%**	**-**	**40%**	**-**	**-**	**4%**	**19%**	**-**	**33%**	**10%**	**-**	**9%**	**0**

Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	**0**	**1**	**3**	**4**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:15 PM	**0**	**2**	**1**	**4**	***7***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:30 PM	**0**	**3**	**2**	**4**	***9***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**0**	**2**	**3**	**4**	***9***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
5:00 PM	0	1	1	2	*4*	0	0	0	0	*0*	0	0	0	0	*0*
5:15 PM	0	2	0	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	0	1	1	1	*3*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	0	1	0	1	*2*	0	0	0	0	*0*	0	0	0	0	*0*
6:00 PM	0	3	0	0	*3*	0	0	0	0	*0*	0	0	0	0	*0*
6:15 PM	0	0	1	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
6:30 PM	0	1	0	1	*2*	0	0	0	0	*0*	0	0	0	0	*0*
6:45 PM	0	0	0	1	*1*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	17	12	22	*51*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hr	**0**	**8**	**9**	**16**	***33***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

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Three-Hour Count Summaries - Heavy Vehicles

Interval Start	N/A Eastbound				34th Ave Westbound				Main St Northbound				Main St Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**4**	**0**	**8**	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**1**	**3**	**0**	**7**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**1**	**1**	**0**	**0**	**4**	**0**	**9**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**4**	**0**	**9**	**33**
5:00 PM	0	0	0	0	0	1	0	0	0	0	1	0	0	0	2	0	4	29
5:15 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	24
5:30 PM	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	3	18
5:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2	11
6:00 PM	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	3	10
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	9
6:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	2	8
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	7
Count Total	0	0	0	0	0	12	0	5	0	0	7	5	0	2	20	0	51	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**2**	**0**	**0**	**6**	**3**	**0**	**1**	**15**	**0**	**33**	**0**

Three-Hour Count Summaries - Bikes

Interval Start	N/A Eastbound			34th Ave Westbound			Main St Northbound			Main St Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

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APPENDIX C

Background Traffic Study Excerpts

THE AURORA HIGHLANDS
AURORA, COLORADO

Transportation Impact Study

Prepared for:

CGF Management
6550 S Pecos Road, Suite 124
Las Vegas, NV 89120

Prepared by:

Felsburg Holt & Ullevig
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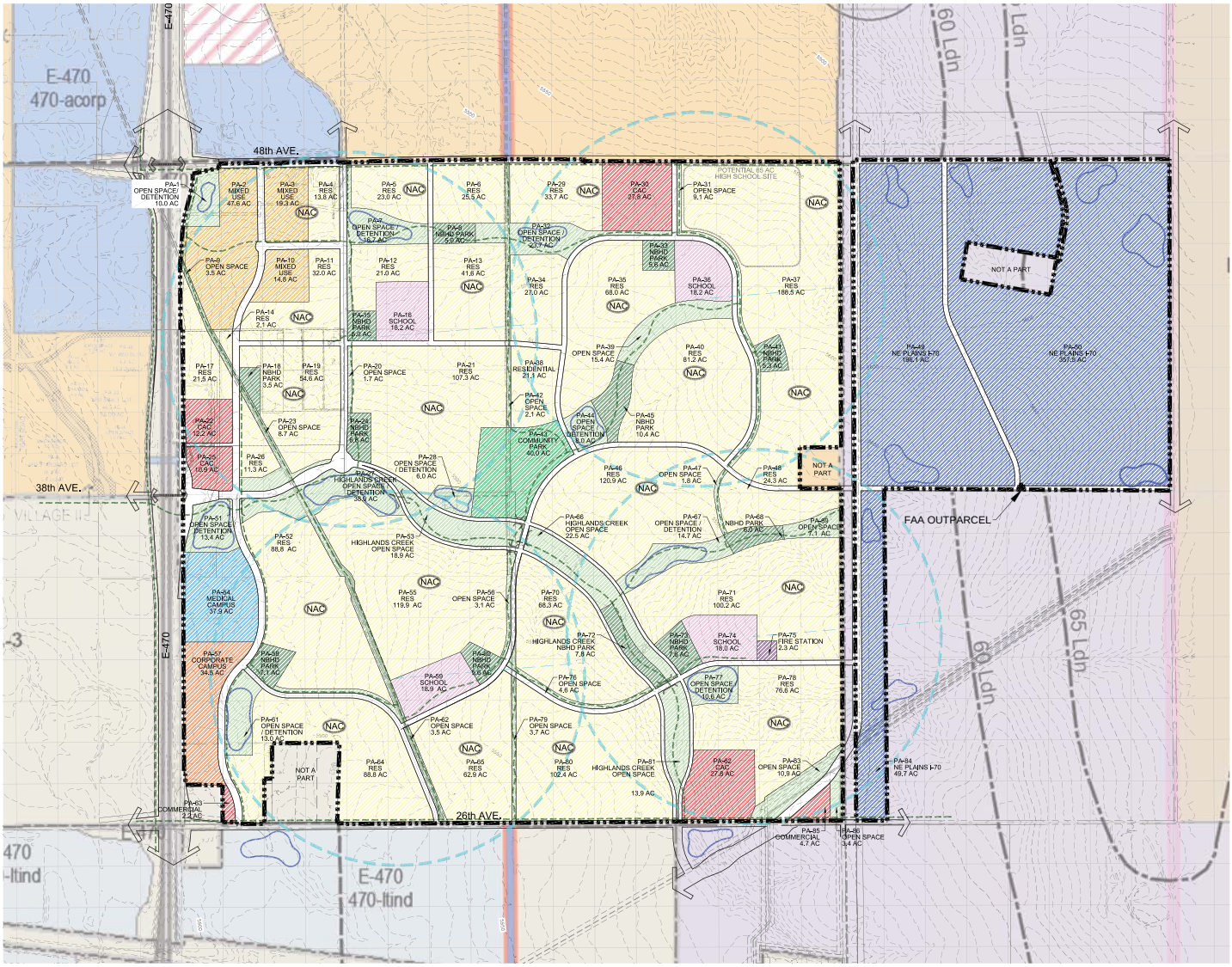
Centennial, CO 80111
303.721.1440

Project Manager: Christopher J. Fasching, PE
Project Planner: Shea Suski

FELSBURG HOLT & ULLEVIG
connecting & enhancing communities

FHU Reference No. 115-396

July 2018



NORTH

FELSBURG HOLT & ULLEVIG

Land Use Plan

FIGURE 2

The Aurora Highlands @ I-70/E-470 - REPORT 15-396 7/9/18

Table 1. Aurora Highlands Build-Out Trip Generation Estimates

TAZ	Use	ITE Code	Use Size (1000 sf)	Housing Units	Daily Trips
5	Retail	820	777.5	-	33,201
	Apartments	220	-	378	2,513
	SUBTOTAL		**777.5**	**378**	**35,714**
6	Apartments	220	-	538	3,578
	Library	590	53.1	-	2,989
	Government	733	47.5	-	1,326
	SUBTOTAL		**100.6**	**538**	**7,893**
7	Single Family	210	-	61	581
	SUBTOTAL		**-**	**61**	**581**
8	Retail	820	315.3	-	13,462
	Apartments	220	-	408	2,713
	SUBTOTAL		**315.3**	**408**	**16,175**
9	Single Family	210	-	433	4,122
	Retail	820	241.8	-	10,323
	Apartments	220	-	802	5,333
	SUBTOTAL		**241.8**	**1,235**	**19,778**
10	Single Family	210	-	310	2,951
	Apartments	220	-	264	1,755
	SUBTOTAL		**-**	**574**	**4,706**
11	Single Family	210	-	917	8,730
	SUBTOTAL		**-**	**917**	**8,730**
12	Elementary School	520	79.3	-	1,223
	SUBTOTAL		**79.3**	**-**	**1,223**
13	Single Family	210	-	169	1,609
	Apartments	220	-	185	1,230
	Retail	820	302.7	-	12,927
	SUBTOTAL		**302.7**	**354**	**15,766**
14	Single Family	210	-	627	5,969
	SUBTOTAL		**-**	**627**	**5,969**
15	Single Family	210	-	1,065	10,138
	Apartments	220	-	420	2,793
	SUBTOTAL		**-**	**1,485**	**12,931**

Table 1. Aurora Highlands Build-Out Trip Generation Estimates

TAZ	Use	ITE Code	Use Size (1000 sf)	Housing Units	Daily Trips
16	Elementary School	520	79.3	-	1,223
	SUBTOTAL		**79.3**	**-**	**1,223**
17	Single Family	210	-	1,091	10,387
	SUBTOTAL		**-**	**1,091**	**10,387**
18	Medical Office	720	577.8	-	20,877
	Retail	820	24.0	-	1,023
	Corporate HQ	714	450.8	-	3,598
	SUBTOTAL		**1,052.6**	**-**	**25,498**
19	Single Family	210	-	480	4,570
	SUBTOTAL		**-**	**480**	**4,570**
20	Single Family	210	-	647	6,159
	Elementary School	520	82.3	-	1,270
	SUBTOTAL		**82.3**	**647**	**7,429**
21	Single Family	210	-	369	3,513
	SUBTOTAL		**-**	**369**	**3,513**
22	Single Family	210	-	1,020	9,711
	Apartments	220	-	448	2,979
	Office	710	10.0	-	111
	SUBTOTAL		**10.0**	**1,468**	**12,801**
23	Elementary School	520	78.4	-	1,210
	SUBTOTAL		**78.4**	**-**	**1,210**
24	Retail	820	302.7	-	12,927
	SUBTOTAL		**302.7**	**-**	**12,927**
25	Retail	820	51.2	-	2,186
	SUBTOTAL		**51.2**	**-**	**2,186**
26	Industrial	110	173.2	-	1,207
	SUBTOTAL		**173.2**	**-**	**1,207**
27	Industrial	110	3,858.4	-	26,893
	SUBTOTAL		**3,858.4**	**-**	**26,893**

Table 1. Aurora Highlands Build-Out Trip Generation Estimates

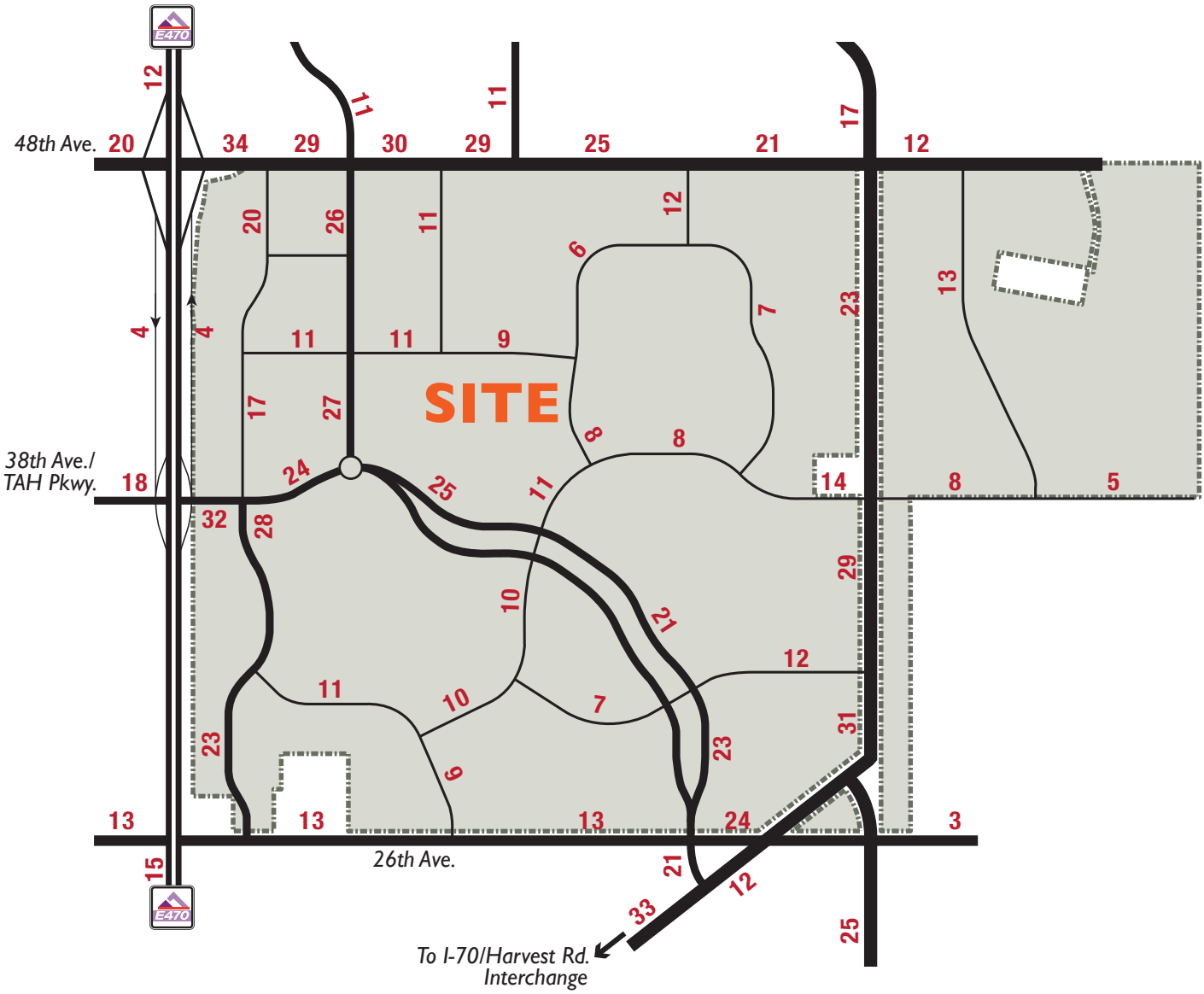
TAZ	Use	ITE Code	Use Size (1000 sf)	Housing Units	Daily Trips
29	Single Family	210	-	444	4,227
	Apartments	220	-	245	1,629
	SUBTOTAL		**-**	**689**	**5,856**
30	Single Family	210	-	346	3,294
	SUBTOTAL		**-**	**346**	**3,294**
31	Single Family	210	-	512	4,874
	Apartments	220	-	308	2,048
	SUBTOTAL		**-**	**820**	**6,922**
Gross Residential Totals				12,487	107,406
Gross Non-Residential Totals			7,505.4		147,976
Gross Totals					255,382
Commercial Pass-By Reductions			-15%		-12,906
Internal Capture					-33,492
Net External Trip Generation					**208,984**

*TAZs 5, 8, and 9 contain Mixed Use parcels, which assumed 75% retail and 25% multi-family
**TAZs 1-4 were removed from the site plan, TAZ 28 was deemed undevelopable

In addition to pass-by adjustments, the nature of the uses and the mix thereof will produce internal trip-making. That is, some of the trips generated by Aurora Highlands uses will have an origin or destination to other Aurora Highlands uses. ITE also provides guidelines on estimating these. A planning-area by planning-area assessment was made with respect to internal trips taking place between planning area zones. Given the size and nature of the uses, approximately 33,500 trips per day are estimated to be of this nature, representing roughly 13 percent of the total generation. These trips were not discarded from the analysis (other than trips internal to a particular planning area TAZ), but rather they were assigned onto the roadways between Aurora Highlands planning areas.

Given these adjustments, the Aurora Highlands master plan is estimated to generate a net external generation of 209,000 trips per day if each planning area were developed to its full potential across the 3100 acres. By comparison, the 2040 NEATS travel demand model shows approximately 53,000 vehicle-trips per day being generated by the Aurora Highlands zones; this study reflects a four-fold increase in Aurora Highlands trip-making. The build-out NEATS scenario reflects approximately 117,000 vehicle-trips per day by Aurora Highlands zones.

The trip distribution percentages for the long-range (2040) planning horizon were developed from the NEATS modeling that is currently nearing completion. Numerous routes will be available for Aurora Highlands trips at build-out including E-470, 26th Avenue, 38th Avenue (which will interchange with E-470 in the future), 48th Avenue (which will interchange and potentially connect to 38th Avenue via one-way frontage road connections), and Powhaton Road that is proposed to be aligned (south of 26th Avenue)



LEGEND

XXXX = Volumes in 1000's

= Aurora Highlands

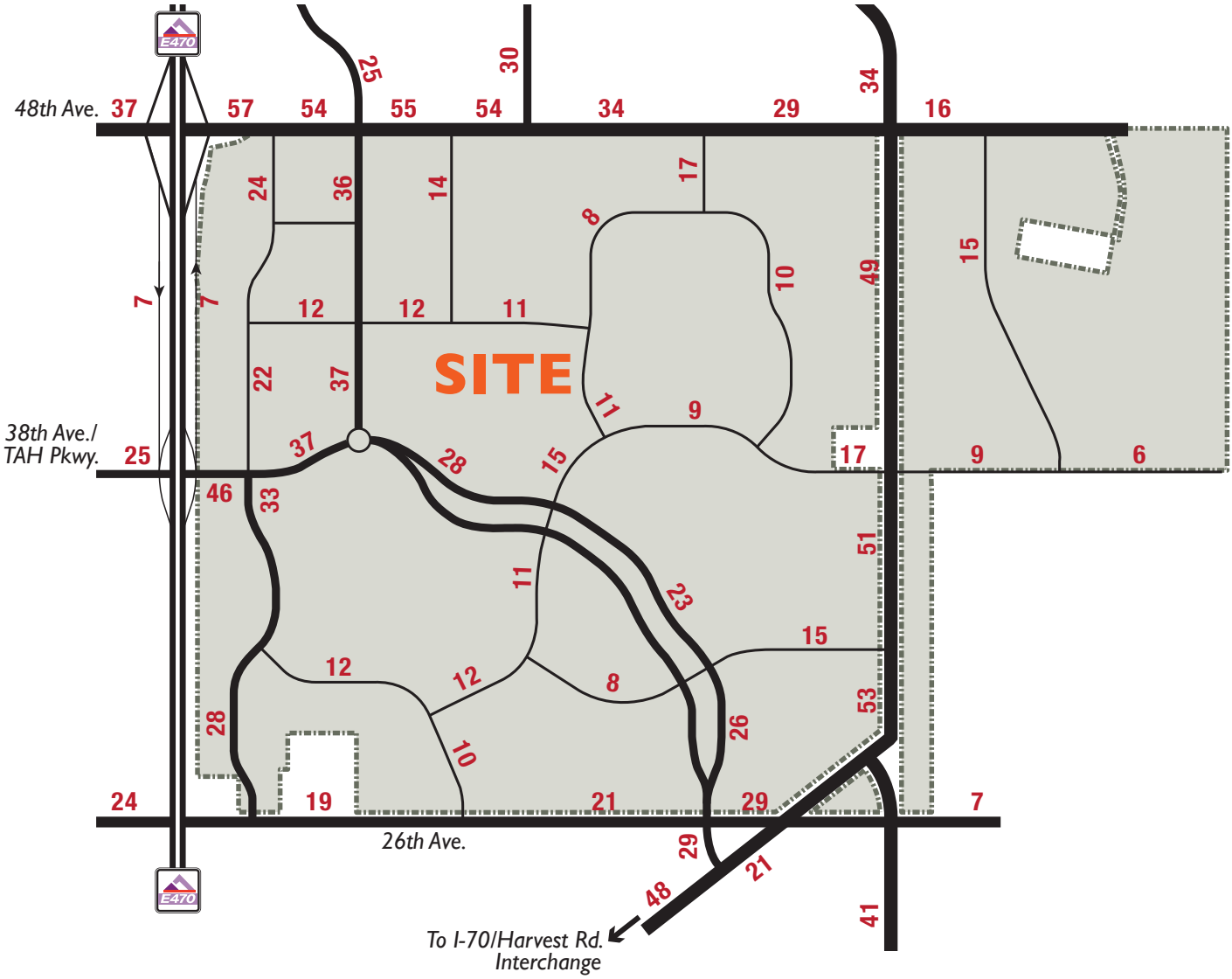
NORTH

FELSBURG HOLT & ULLEVIG

Aurora Highlands Only Traffic

FIGURE 4

The Aurora Highlands @ I-70/E-470 - REPORT 15-396 7/9/18



LEGEND

XXXX = Volumes in 1000's

= Aurora Highlands

NORTH

FELSBURG HOLT & ULLEVIG

2040 Total Traffic

FIGURE 6

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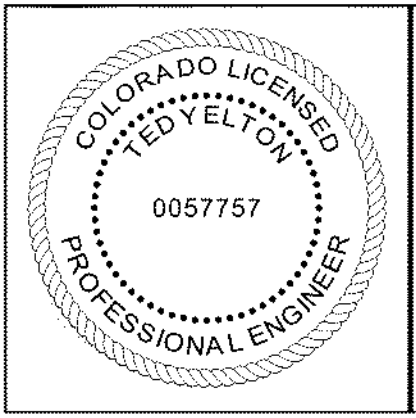
REFERENCES

The Aurora Highlands Transportation Impact Study – Felsburg Holt & Ullevig (July 2018)
Technical Memo – The Aurora Highlands – HR Green (September 2018)



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Colorado.

Ted Yelton 11/13/2020

TED YELTON, P.E. DATE .....
License Number: 0057757
My license renewal date is October 31, 2021.
Pages or sheets covered by this seal:
- All

Trip Generation

Traffic generated by the proposed study area was estimated by utilizing the 10th edition of the *Institute of Transportation Engineers (ITE) Trip Generation Manual*. The tables in the *ITE Trip Generation Manual* estimate the ingress and egress traffic for both morning and evening peak traffic conditions for various types of land uses.

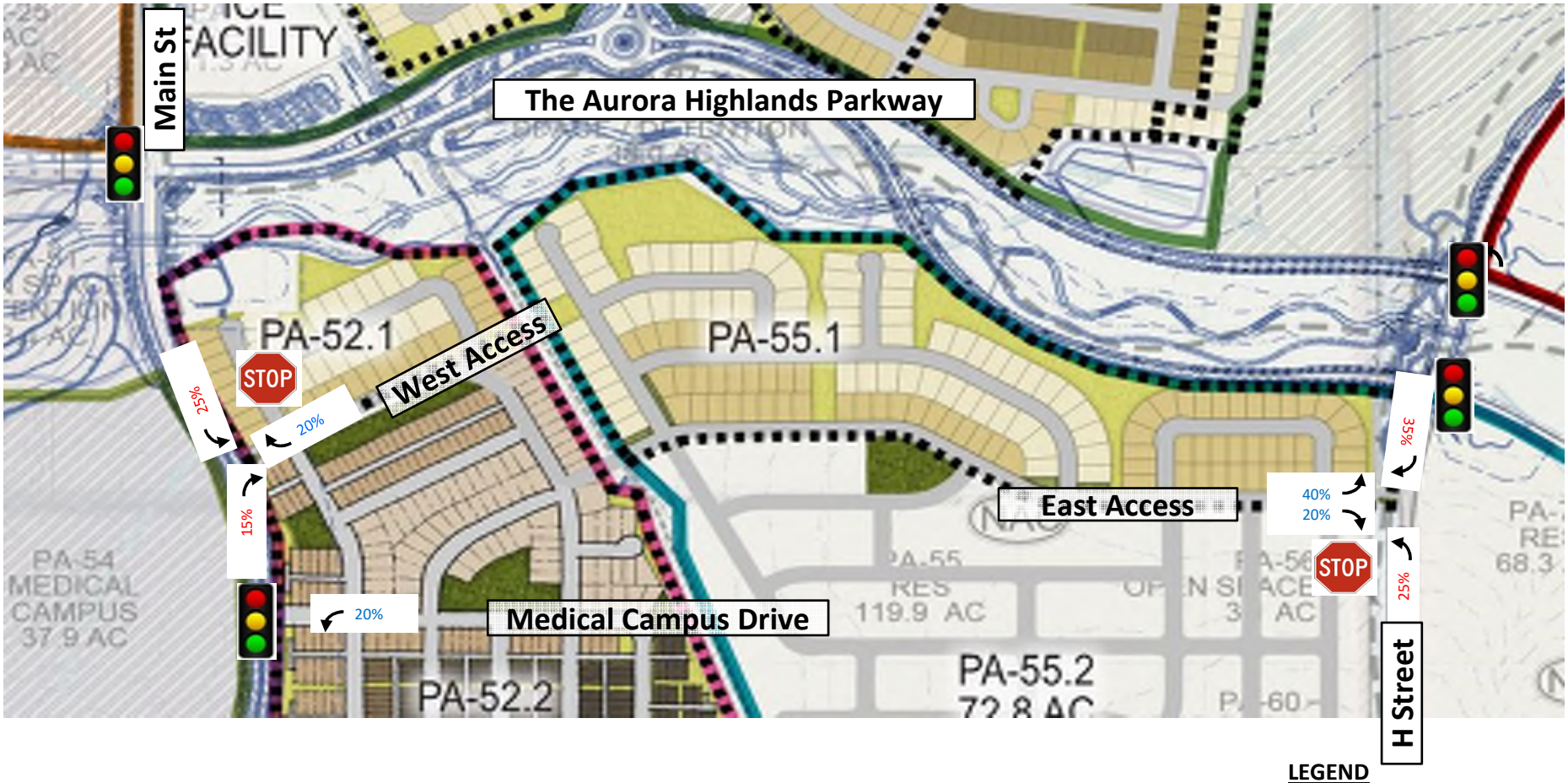
The build-out of the study area in 2022 will include 179 homes. The trip generation for these homes was derived from ITE Land Use Code 210, Single-Family Detached Housing. Trip generation estimates were derived from the fitted curve equations provided by ITE. The full estimate for the proposed development can be seen in **Table 1**.

Land Use	ITE Code	Units	AM Peak Hour		PM Peak Hour		Weekday Overall	
			In	Out	In	Out	In	Out
Planning Area 52.1								
Single-Family Detached Housing	210	41 dwellings	10	25	25	15	230	230
Planning Area 55.1								
Single-Family Detached Housing	210	138 dwellings	25	75	85	50	700	700
TOTAL NEW TRIPS			**35**	**100**	**110**	**65**	**930**	**930**

Table 1 – Study Area Proposed Trip Generation

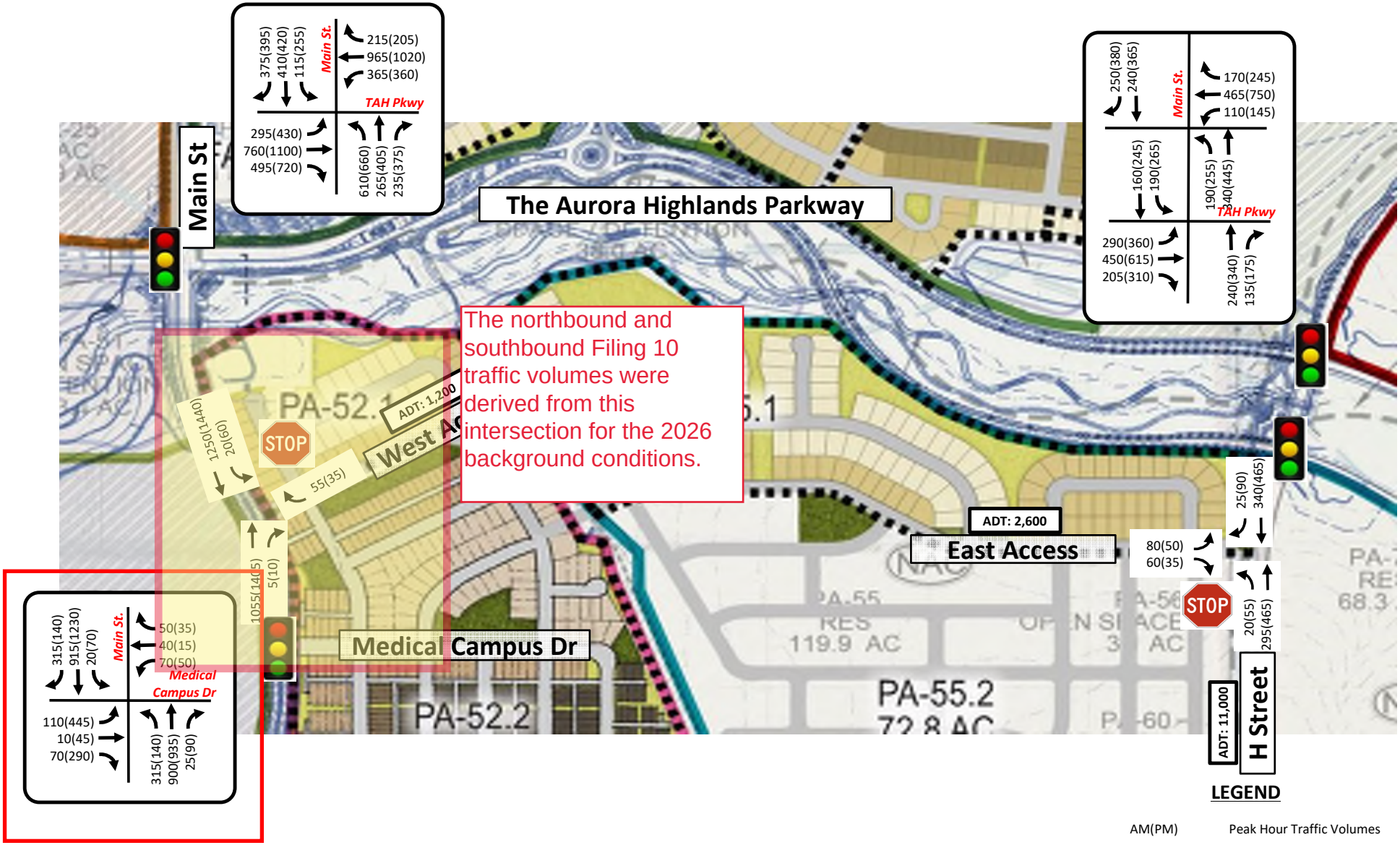
This study will consider the traffic operations of the adjacent roadways and intersections in the build-out year of the study area, assumed to be 2022. Along with the build-out of this residential subdivision, other residential areas within The Aurora Highlands will be partially completed with construction ongoing. Immediately north of the study area, construction of homes in the areas including Filings 1, 2, 4, and 5 will be ongoing. It is estimated that approximately 500 homes will be complete, and it is assumed that construction will be ongoing for the approximately 250 more in those filing areas. Similarly, it is anticipated that approximately 400 homes are planned to be constructed south of West Village Avenue, associated with other filing areas. Therefore, the 2022 build-out year analysis will include traffic from the constructed homes and the homes under construction throughout The Aurora Highlands.

Publicly available research conducted by Fehr & Peers for a similar residential construction project was used to estimate the number of construction trips for this project. The research was used to determine that the construction of 100 homes requires approximately 66,300 total trips, or 255 trips per day. The research indicated that approximately 20% of the daily trips occurred in each peak hour. 85% of the peak hour trips were entering in the AM peak, and 85% were exiting during the PM peak. These values were extrapolated for the number of homes under



HRGreen

Figure 7
2040 Traffic Distribution



LEGEND

AM(PM) Peak Hour Traffic Volumes

HRGreen

Figure 8
2040 Traffic Volumes

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REFERENCES

The Aurora Highlands Transportation Impact Study – Felsburg Holt & Ullevig (July 2018)
Technical Memo – The Aurora Highlands – HR Green (September 2018)
Memorandum – E-470/38th Avenue Interchange – Felsburg Holt & Ullevig (January 2019)

COLORADO LICENSED
DANIEL THOMAS SHANE
54712
PROFESSIONAL ENGINEER

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Colorado.

DANIEL THOMAS SHANE, P.E. DATE 7/17/2019
License Number: 54712
My license renewal date is October 31, 2019.
Pages or sheets covered by this seal:
1-34, APPENDIX A, APPENDIX B

HRGreen

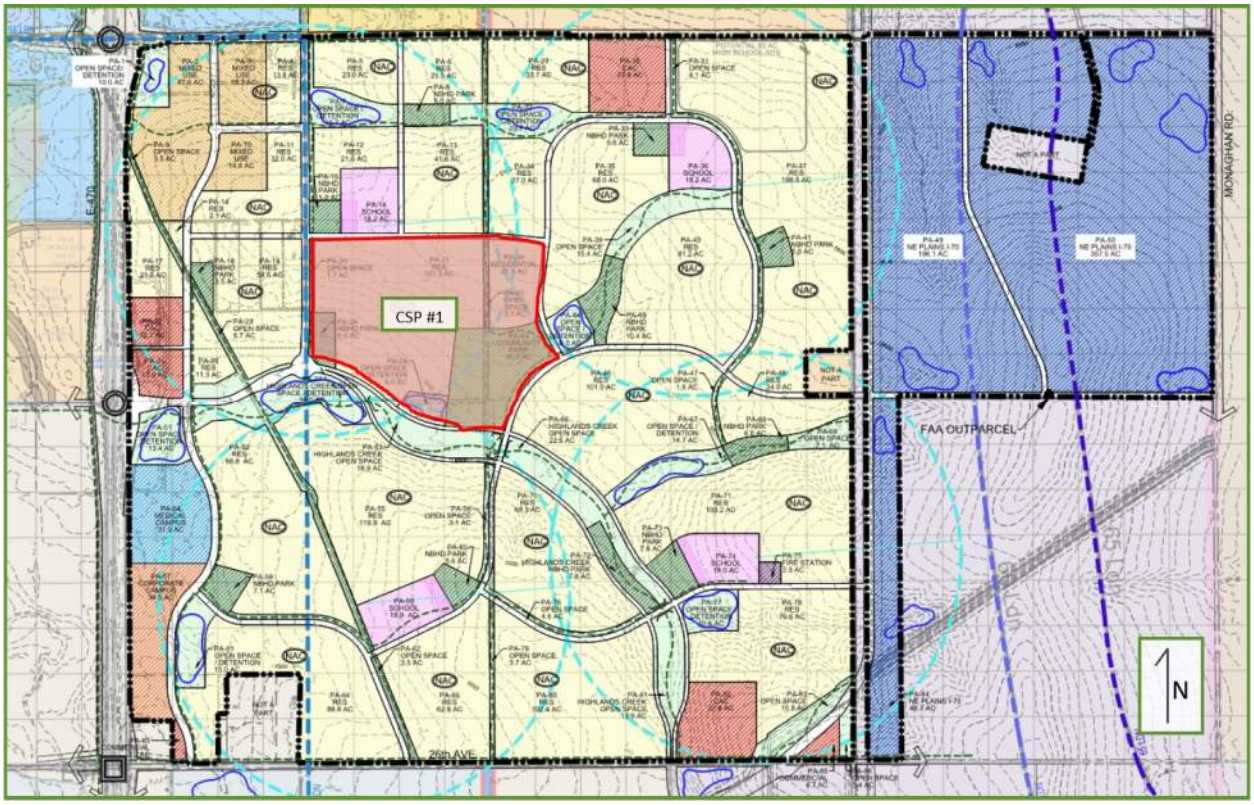
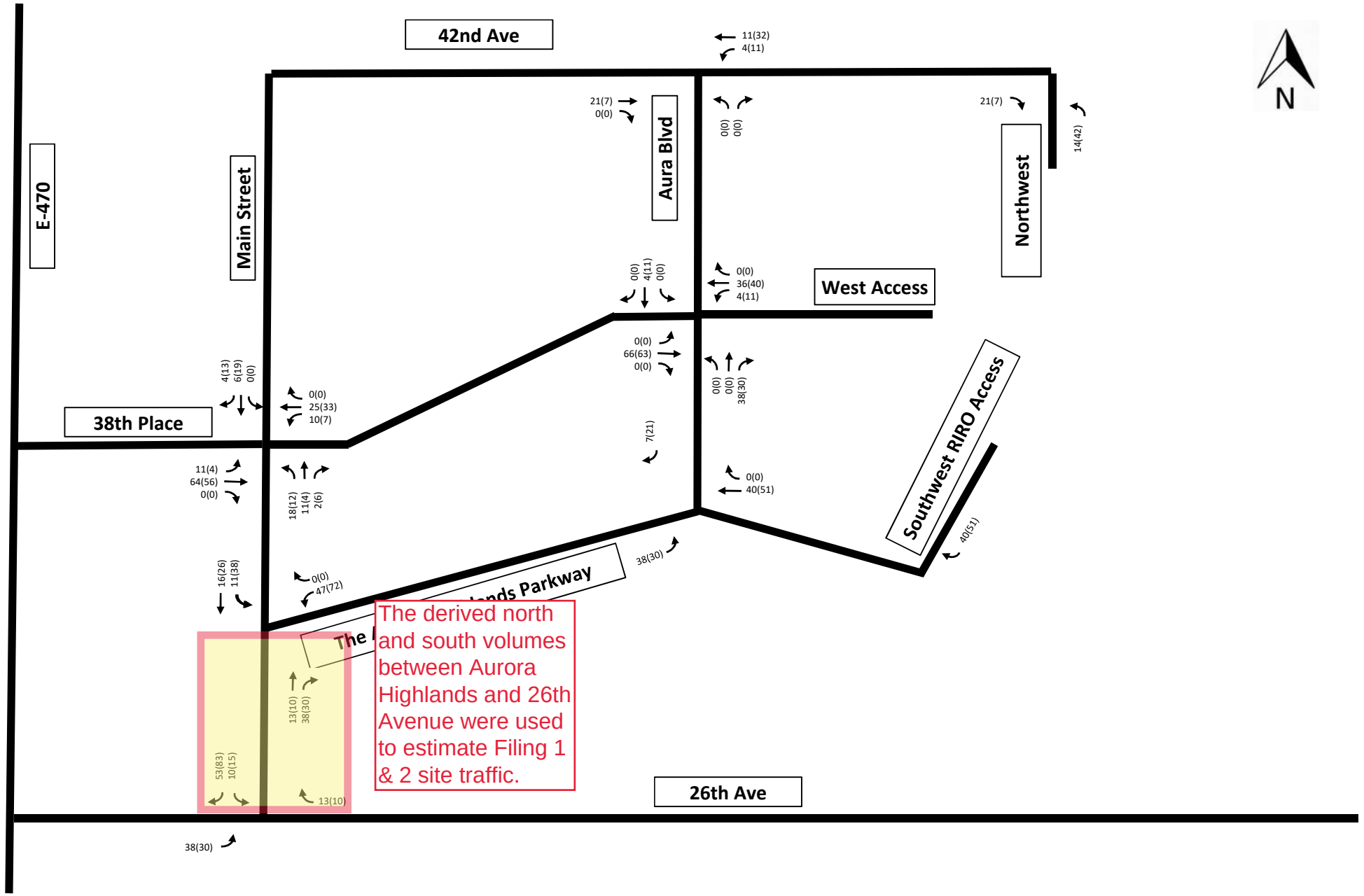


Figure 2 – Land Use Map


42nd Ave
E-470
Main Street
Aura Blvd
Northwest
West Access
38th Place
Southwest RIRO Access
26th Ave
N
11(32)
4(11)
21(7)
0(0)
14(42)
4(13)
6(19)
0(0)
25(33)
10(7)
66(63)
36(40)
38(30)
7(21)
40(51)
11(4)
64(56)
18(12)
2(6)
16(26)
11(38)
47(72)
38(30)
53(83)
10(15)
13(10)
The derived north and south volumes between Aurora Highlands and 26th Avenue were used to estimate Filing 1 & 2 site traffic.

T R A F F I C I M P A C T S T U D Y

The Aurora Highlands – Filing 15
Taylor Morrison Homes

Aurora, Colorado

Prepared for
Enertia Consulting Group, LLC
1529 Market Street
Suite 200
Denver, CO 80202

Prepared by
Kimley-Horn and Associates, Inc.
4582 South Ulster Street
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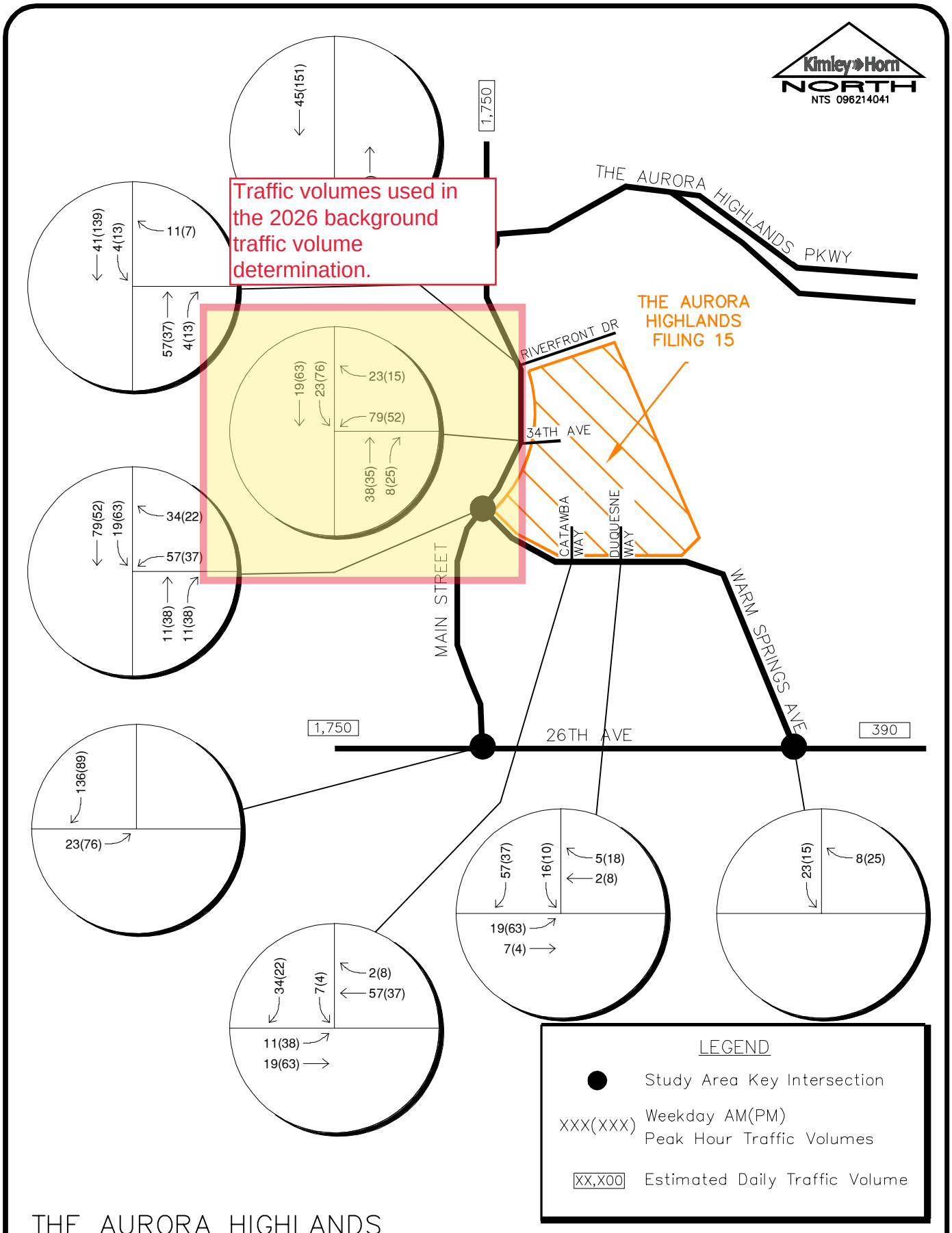
Denver, Colorado 80237
(303) 228-2300

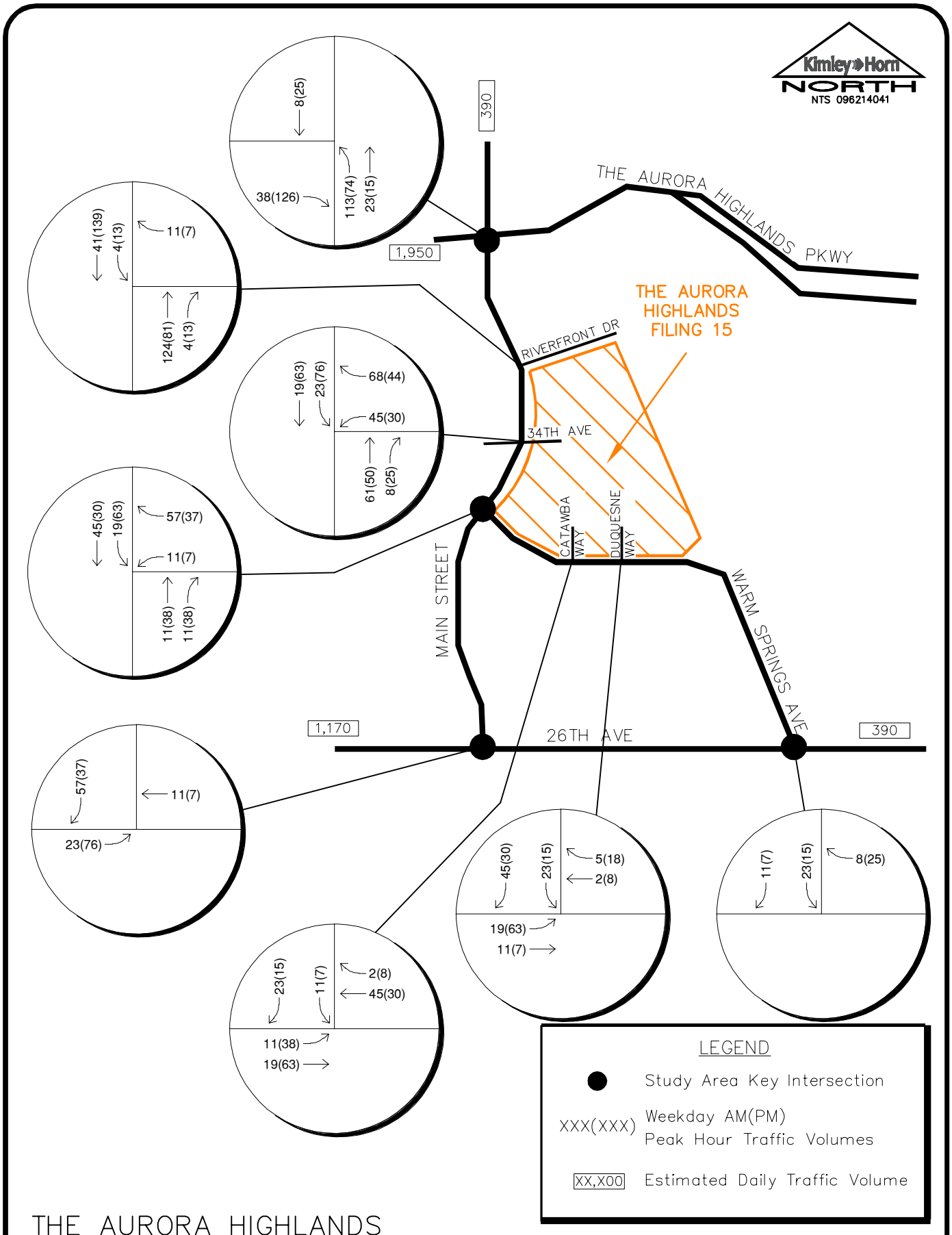
April 2022



THE AURORA HIGHLANDS
FILING 15
2023 PROJECT TRAFFIC ASSIGNMENT

FIGURE 6

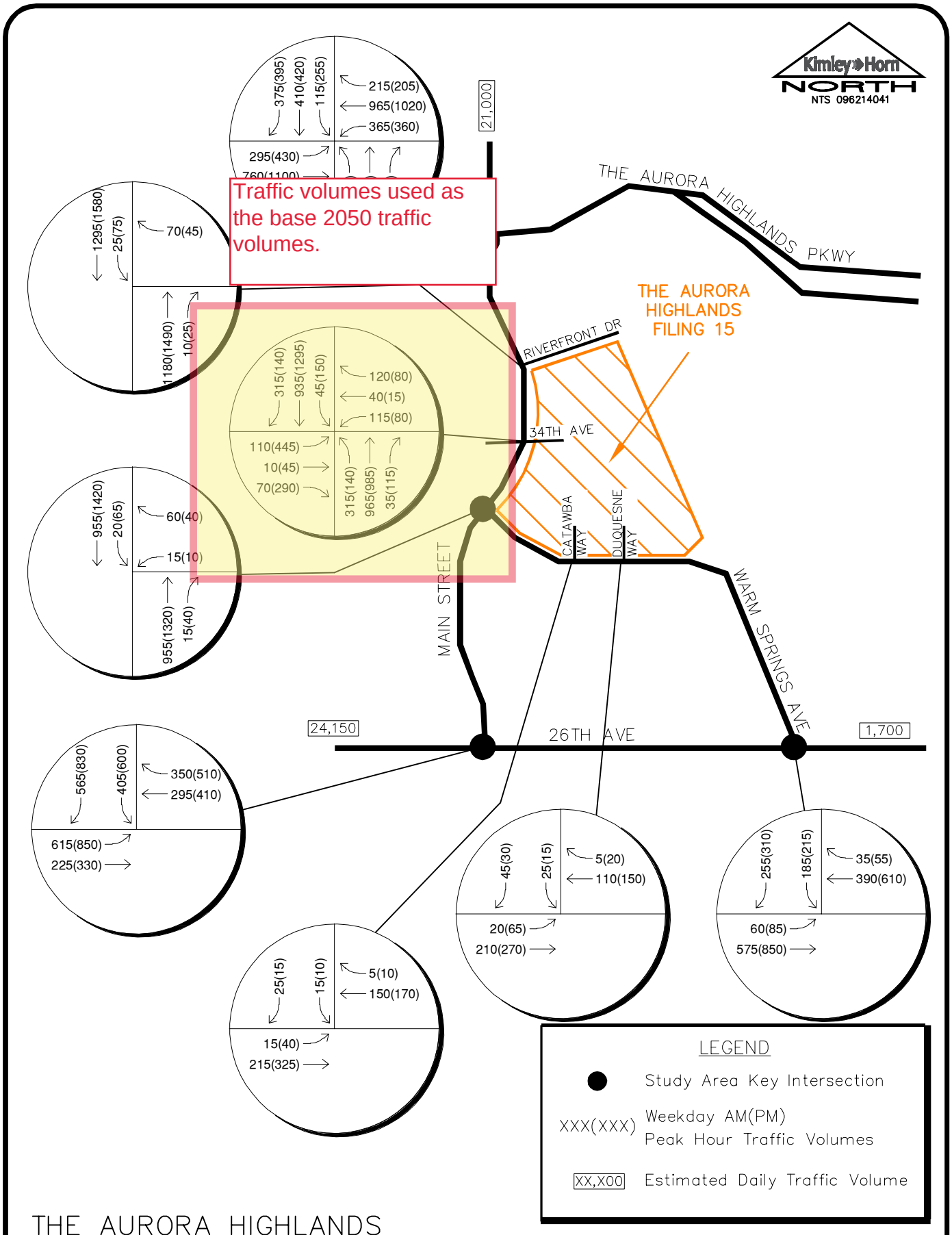
Kimley»Horn



THE AURORA HIGHLANDS
FILING 15
2040 PROJECT TRAFFIC ASSIGNMENT

FIGURE 7

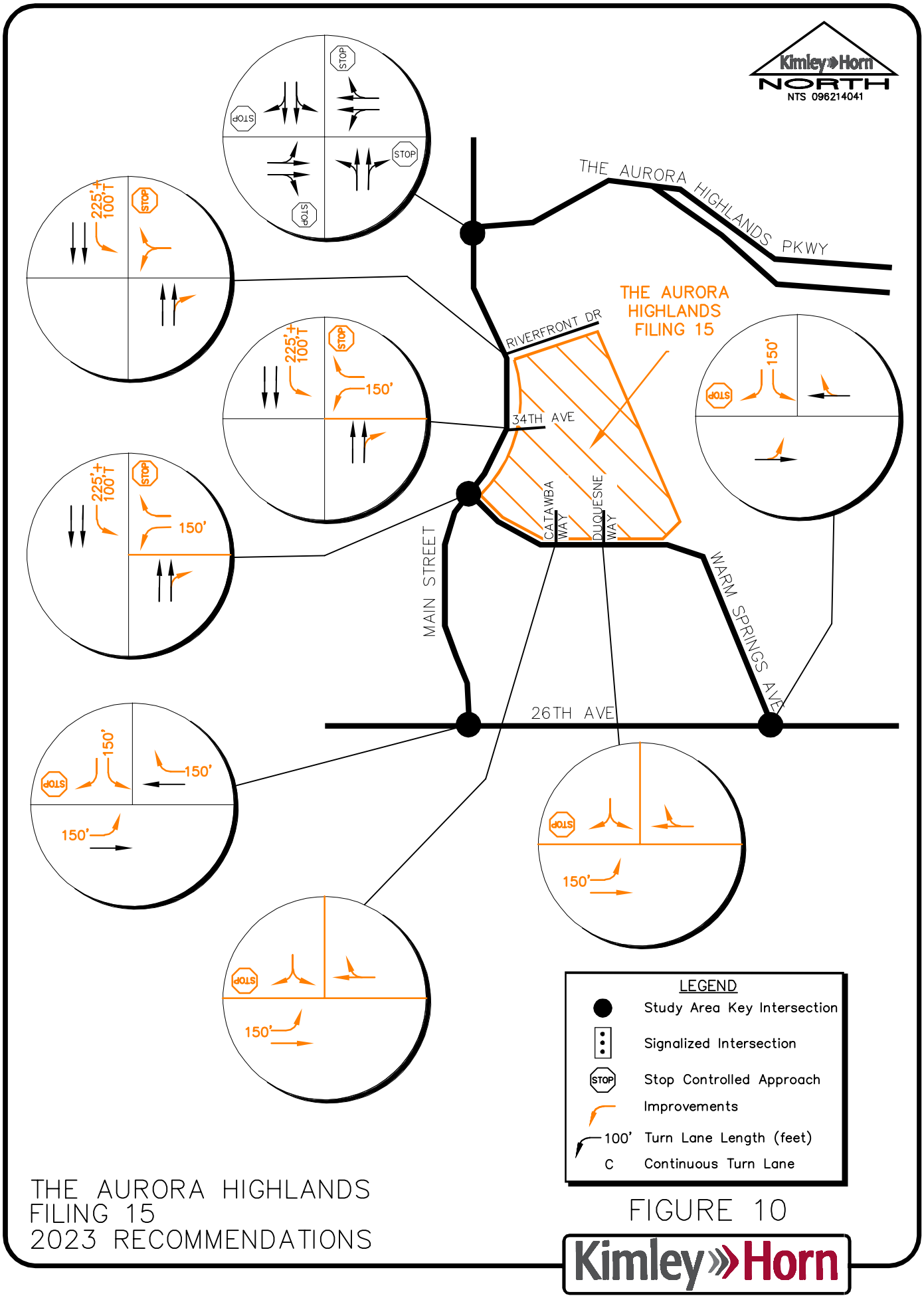
Kimley»Horn



THE AURORA HIGHLANDS
FILING 15
2040 TOTAL TRAFFIC VOLUMES

FIGURE 9

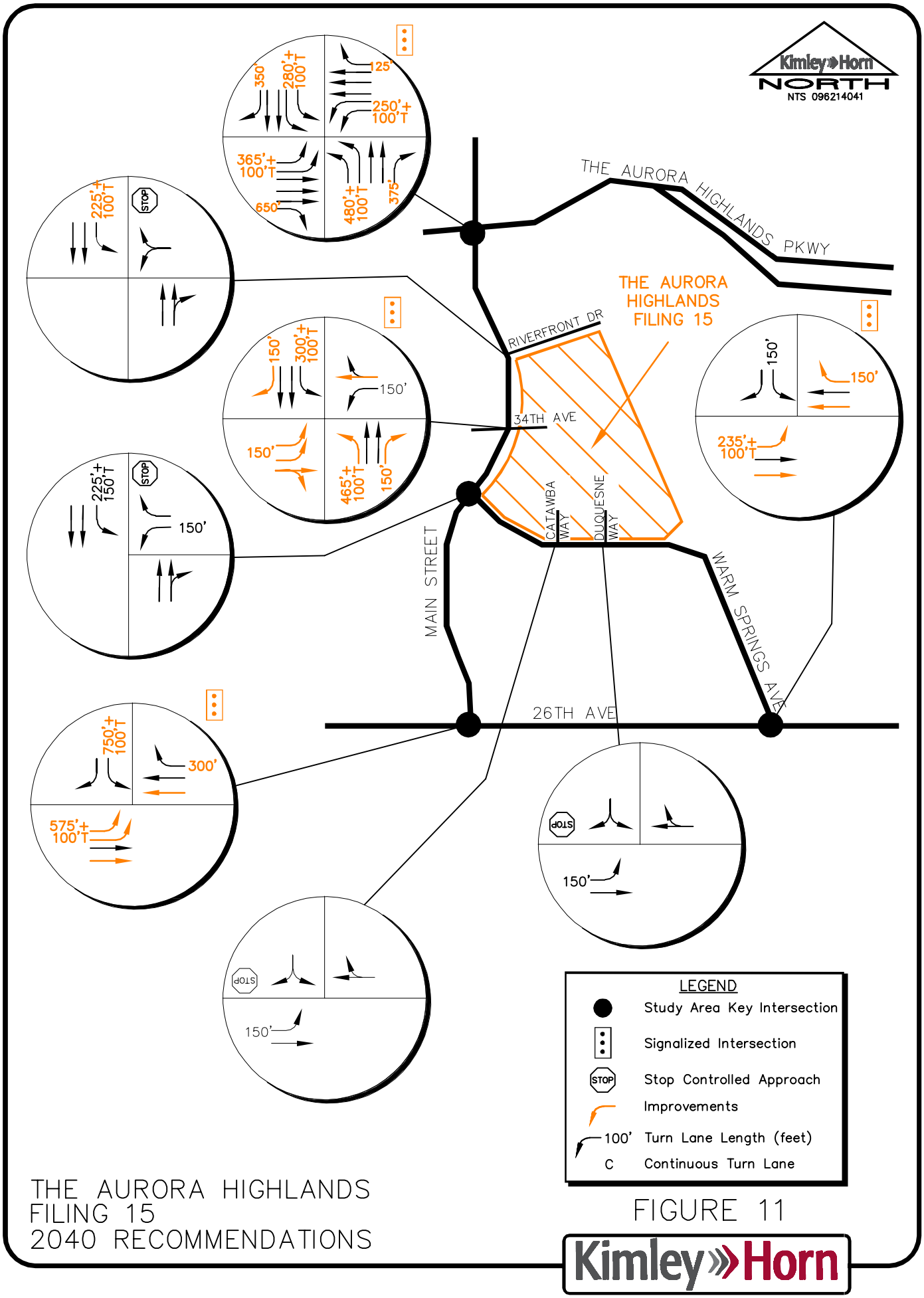
Kimley»Horn



THE AURORA HIGHLANDS
FILING 15
2023 RECOMMENDATIONS

FIGURE 10

Kimley»Horn



THE AURORA HIGHLANDS FILING 15 2040 RECOMMENDATIONS

FIGURE 11

Kimley»Horn

APPENDIX D

Trip Generation Worksheets

Kimley»Horn

Project	AdventHealth - Emergency Department (2026)				
Subject	Trip Generation for Free-Standing Emergency Room				
Designed by	MAG	*Date*	March 27, 2024	*Job No.*	196315000
Checked by		*Date*		*Sheet No.*	of

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rates

Land Use Code - Free-Standing Emergency Room (630)

Independent Variable - 1000 Square Feet (X)
SF = 29,530
X = 29.530
T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (600 Series Page 703)

Directional Distribution: 50% ent. 50% exit.
(T) = 1.12 (X) T = 33 Average Vehicle Trip Ends
(T) = 1.12 * (29.5) 17 entering 17 exiting

17 + 16 = 33

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (600 Series Page 704)

Directional Distribution: 46% ent. 54% exit.
(T) = 1.52 (X) T = 45 Average Vehicle Trip Ends
(T) = 1.52 * (29.5) 21 entering 24 exiting

21 + 24 = 45

Weekday (600 Series Page 702)

Average Weekday Directional Distribution: 50% ent. 50% exit.
(T) = 24.94 (X) T = 738 Average Vehicle Trip Ends
(T) = 24.94 * (29.5) 369 entering 369 exiting

369 + 369 = 738

Kimley»Horn

Project	AdventHealth - Emergency Department (2026)				
Subject	Trip Generation for General Medical-Dental Office Building - Within/Near Hospital Campus				
Designed by	MAG	*Date*	March 27, 2024	*Job No.*	196315000
Checked by				*Sheet No.*	1 *of* 1

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rates

Land Use Code - Medical-Dental Office Building (720)

Independent Variable - 1000 Square Feet (X)
SF = 58,060
X = 58.060
T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (700 Series Page 780)

Directional Distribution: 81% ent. 19% exit.
(T) = 2.68 (X) T = 156 Average Vehicle Trip Ends
(T) = 2.68 * (58.1) 126 entering 30 exiting

126 + 30 = 156

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (700 Series Page 781)

Directional Distribution: 25% ent. 75% exit.
(T) = 2.84 (X) T = 165 Average Vehicle Trip Ends
(T) = 2.84 * (58.1) 41 entering 124 exiting

41 + 124 = 165

Weekday (700 Series Page 779)

Directional Distribution: 50% ent. 50% exit.
(T) = 31.86 (X) T = 1850 Average Vehicle Trip Ends
(T) = 31.86 * (58.1) 925 entering 925 exiting

925 + 925 = 1850

Kimley»Horn

Project	AdventHealth - Aurora Highlands (2050)				
Subject	Trip Generation for Hospital				
Designed by	MAG	*Date*	March 27, 2024	*Job No.*	196315000
Checked by		*Date*		*Sheet No.*	1 *of* 1

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rates

Land Use Code - Hospital (610)

Independent Variable - 1000 Square Feet (X)
SF = 501,450
X = 501.450
T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (600 Series Page 622)

Directional Distribution: 67% ent. 33% exit.
(T) = 0.82 (X) T = 411 Average Vehicle Trip Ends
(T) = 0.82 * (501.5) 275 entering 136 exiting

275 + 136 = 411

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (600 Series Page 623)

Directional Distribution: 35% ent. 65% exit.
(T) = 0.86 (X) T = 431 Average Vehicle Trip Ends
(T) = 0.86 * (501.5) 151 entering 280 exiting

151 + 280 = 431

Weekday (600 Series Page 621)

Average Weekday Directional Distribution: 50% ent. 50% exit.
(T) = 10.77 (X) T = 5402 Average Vehicle Trip Ends
(T) = 10.77 * (501.5) 2701 entering 2701 exiting

2701 + 2701 = 5402

Kimley»Horn

Project	Advent Health - Aurora Highlands (2050)				
Subject	Trip Generation for General Medical-Dental Office Building - Within/Near Hospital Campus				
Designed by	MAG	*Date*	March 27, 2024	*Job No.*	196315000
Checked by				*Sheet No.*	1 *of* 1

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rates

Land Use Code - Medical-Dental Office Building (720)

Independent Variable - 1000 Square Feet (X)
SF = 256,135
X = 256.135
T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (700 Series Page 780)

Directional Distribution: 81% ent. 19% exit.
(T) = 2.68 (X) T = 686 Average Vehicle Trip Ends
(T) = 2.68 * (256.1) 556 entering 130 exiting

556 + 130 = 686

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (700 Series Page 781)

Directional Distribution: 25% ent. 75% exit.
(T) = 2.84 (X) T = 727 Average Vehicle Trip Ends
(T) = 2.84 * (256.1) 182 entering 545 exiting

182 + 545 = 727

Weekday (700 Series Page 779)

Directional Distribution: 50% ent. 50% exit.
(T) = 31.86 (X) T = 8162 Average Vehicle Trip Ends
(T) = 31.86 * (256.1) 4081 entering 4081 exiting

4081 + 4081 = 8162

APPENDIX E

Intersection Analysis Worksheets

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	2	189	55	8	190
Future Vol, veh/h	25	2	189	55	8	190
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	175	150	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	3	242	71	10	244

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	384	121	0	0	313	0
Stage 1	242	-	-	-	-	-
Stage 2	142	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	591	908	-	-	1244	-
Stage 1	776	-	-	-	-	-
Stage 2	870	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	586	908	-	-	1244	-
Mov Cap-2 Maneuver	697	-	-	-	-	-
Stage 1	776	-	-	-	-	-
Stage 2	863	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	697	908	1244	-
HCM Lane V/C Ratio	-	-	0.046	0.003	0.008	-
HCM Control Delay (s)	-	-	10.4	9	7.9	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	0	-

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	40	5	138	16	3	146
Future Vol, veh/h	40	5	138	16	3	146
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	175	150	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	5	148	17	3	157

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	233	74	0	0	165	0
Stage 1	148	-	-	-	-	-
Stage 2	85	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	735	973	-	-	1411	-
Stage 1	864	-	-	-	-	-
Stage 2	929	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	734	973	-	-	1411	-
Mov Cap-2 Maneuver	794	-	-	-	-	-
Stage 1	864	-	-	-	-	-
Stage 2	927	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	0.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	794	973	1411	-
HCM Lane V/C Ratio	-	-	0.054	0.006	0.002	-
HCM Control Delay (s)	-	-	9.8	8.7	7.6	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	0	-

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	104	25	283	63	31	272
Future Vol, veh/h	104	25	283	63	31	272
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	175	150	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	133	32	363	81	40	349

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	618	182	0	0	444	0
Stage 1	363	-	-	-	-	-
Stage 2	255	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	421	829	-	-	1112	-
Stage 1	674	-	-	-	-	-
Stage 2	764	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	406	829	-	-	1112	-
Mov Cap-2 Maneuver	572	-	-	-	-	-
Stage 1	674	-	-	-	-	-
Stage 2	736	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.5	0	0.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	572	829	1112	-
HCM Lane V/C Ratio	-	-	0.233	0.039	0.036	-
HCM Control Delay (s)	-	-	13.2	9.5	8.4	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.9	0.1	0.1	-

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	92	20	223	41	79	307
Future Vol, veh/h	92	20	223	41	79	307
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	175	150	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	99	22	240	44	85	330

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	575	120	0	0	284	0
Stage 1	240	-	-	-	-	-
Stage 2	335	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	448	909	-	-	1275	-
Stage 1	777	-	-	-	-	-
Stage 2	697	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	418	909	-	-	1275	-
Mov Cap-2 Maneuver	572	-	-	-	-	-
Stage 1	777	-	-	-	-	-
Stage 2	650	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12	0	1.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	572	909	1275	-
HCM Lane V/C Ratio	-	-	0.173	0.024	0.067	-
HCM Control Delay (s)	-	-	12.6	9.1	8	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.6	0.1	0.2	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	2	16	104	7	25	43	288	63	31	286	50
Future Vol, veh/h	16	2	16	104	7	25	43	288	63	31	286	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	0	-	175	150	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	78	92	78	92	78	78	78	78	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	2	17	133	8	32	47	369	81	40	367	54

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	730	991	184	728	964	185	421	0	0	450	0	0
Stage 1	447	447	-	463	463	-	-	-	-	-	-	-
Stage 2	283	544	-	265	501	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	310	245	827	311	254	826	1135	-	-	1107	-	-
Stage 1	560	572	-	548	562	-	-	-	-	-	-	-
Stage 2	700	517	-	717	541	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	276	226	827	285	235	826	1135	-	-	1107	-	-
Mov Cap-2 Maneuver	383	329	-	389	337	-	-	-	-	-	-	-
Stage 1	537	551	-	526	539	-	-	-	-	-	-	-
Stage 2	636	496	-	674	522	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.4	17.1	0.8	0.7
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1135	-	-	383	708	389	646	1107	-	-
HCM Lane V/C Ratio	0.041	-	-	0.045	0.028	0.343	0.061	0.036	-	-
HCM Control Delay (s)	8.3	-	-	14.8	10.2	19	10.9	8.4	-	-
HCM Lane LOS	A	-	-	B	B	C	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.1	1.5	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	52	7	52	92	3	20	19	238	41	79	313	22
Future Vol, veh/h	52	7	52	92	3	20	19	238	41	79	313	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	0	-	175	150	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	93	92	93	92	93	93	93	93	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	57	8	57	99	3	22	21	256	44	85	337	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	679	849	169	641	829	128	361	0	0	300	0	0
Stage 1	507	507	-	298	298	-	-	-	-	-	-	-
Stage 2	172	342	-	343	531	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	338	296	845	360	305	898	1194	-	-	1258	-	-
Stage 1	516	538	-	686	666	-	-	-	-	-	-	-
Stage 2	813	637	-	646	524	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	307	271	845	309	279	898	1194	-	-	1258	-	-
Mov Cap-2 Maneuver	400	361	-	409	369	-	-	-	-	-	-	-
Stage 1	507	501	-	674	654	-	-	-	-	-	-	-
Stage 2	776	626	-	554	488	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.8	15.3	0.5	1.5
HCM LOS	B	C		

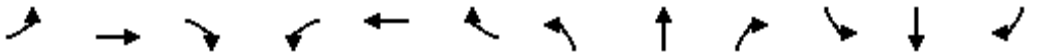
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1194	-	-	400	729	409	755	1258	-	-
HCM Lane V/C Ratio	0.017	-	-	0.141	0.088	0.242	0.033	0.068	-	-
HCM Control Delay (s)	8.1	-	-	15.5	10.4	16.6	9.9	8.1	-	-
HCM Lane LOS	A	-	-	C	B	C	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.3	0.9	0.1	0.2	-	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	120	30	120	85	135	990	40	50	960	170
Future Volume (vph)	120	30	120	85	135	990	40	50	960	170
Turn Type	Prot	NA	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+ov
Protected Phases	7	4	3	8	5	2		1	6	7
Permitted Phases			8		2		2	6		6
Detector Phase	7	4	3	8	5	2	2	1	6	7
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	22.5	9.5	22.5	9.5
Total Split (s)	11.0	23.1	11.0	23.1	14.0	45.8	45.8	10.1	41.9	11.0
Total Split (%)	12.2%	25.7%	12.2%	25.7%	15.6%	50.9%	50.9%	11.2%	46.6%	12.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max	None

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 1: Main Street & 34th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	30	50	120	85	125	135	990	40	50	960	170
Future Volume (veh/h)	120	30	50	120	85	125	135	990	40	50	960	170
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	130	33	54	130	92	136	147	1076	43	54	1043	185
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	198	92	151	336	109	160	363	1927	860	326	1862	921
Arrive On Green	0.06	0.14	0.14	0.07	0.16	0.16	0.06	0.54	0.54	0.04	0.52	0.52
Sat Flow, veh/h	3456	638	1044	1781	682	1007	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	130	0	87	130	0	228	147	1076	43	54	1043	185
Grp Sat Flow(s),veh/h/ln	1728	0	1682	1781	0	1689	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	3.3	0.0	4.2	5.6	0.0	11.8	3.4	17.9	1.1	1.2	17.8	5.0
Cycle Q Clear(g_c), s	3.3	0.0	4.2	5.6	0.0	11.8	3.4	17.9	1.1	1.2	17.8	5.0
Prop In Lane	1.00		0.62	1.00		0.60	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	198	0	243	336	0	269	363	1927	860	326	1862	921
V/C Ratio(X)	0.66	0.00	0.36	0.39	0.00	0.85	0.41	0.56	0.05	0.17	0.56	0.20
Avail Cap(c_a), veh/h	250	0	348	336	0	349	444	1927	860	364	1862	921
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.6	0.0	34.8	29.9	0.0	36.8	10.9	13.5	9.7	10.4	14.4	8.9
Incr Delay (d2), s/veh	4.2	0.0	0.9	0.7	0.0	14.1	0.7	1.2	0.1	0.2	1.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	1.8	2.4	0.0	5.8	1.3	6.9	0.4	0.5	7.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.8	0.0	35.6	30.6	0.0	50.9	11.7	14.7	9.8	10.7	15.7	9.4
LnGrp LOS	D	A	D	C	A	D	B	B	A	B	B	A
Approach Vol, veh/h		217			358			1266			1282	
Approach Delay, s/veh		41.7			43.5			14.2			14.5	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	53.3	11.0	17.5	9.9	51.7	9.6	18.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.6	41.3	6.5	18.6	9.5	37.4	6.5	18.6
Max Q Clear Time (g_c+I1), s	3.2	19.9	7.6	6.2	5.4	19.8	5.3	13.8
Green Ext Time (p_c), s	0.0	8.4	0.0	0.3	0.1	7.8	0.0	0.5

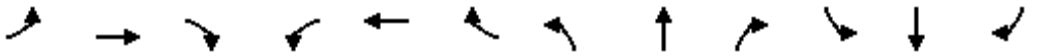
Intersection Summary	
HCM 6th Ctrl Delay	19.6
HCM 6th LOS	B

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	375	85	85	35	55	1010	120	155	1330	70
Future Volume (vph)	375	85	85	35	55	1010	120	155	1330	70
Turn Type	Prot	NA	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases			8		2		2	6		6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	16.0	28.1	10.4	22.5	9.5	38.5	38.5	13.0	42.0	42.0
Total Split (%)	17.8%	31.2%	11.6%	25.0%	10.6%	42.8%	42.8%	14.4%	46.7%	46.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary

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

Splits and Phases: 1: Main Street & 34th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	375	85	150	85	35	85	55	1010	120	155	1330	70
Future Volume (veh/h)	375	85	150	85	35	85	55	1010	120	155	1330	70
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	408	92	163	92	38	92	60	1098	130	168	1446	76
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	442	109	193	224	55	132	220	1747	779	321	1836	819
Arrive On Green	0.13	0.18	0.18	0.06	0.11	0.11	0.04	0.49	0.49	0.07	0.52	0.52
Sat Flow, veh/h	3456	605	1072	1781	485	1174	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	408	0	255	92	0	130	60	1098	130	168	1446	76
Grp Sat Flow(s),veh/h/ln	1728	0	1677	1781	0	1659	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	10.5	0.0	13.2	4.1	0.0	6.8	1.5	20.5	4.1	4.1	29.8	2.2
Cycle Q Clear(g_c), s	10.5	0.0	13.2	4.1	0.0	6.8	1.5	20.5	4.1	4.1	29.8	2.2
Prop In Lane	1.00		0.64	1.00		0.71	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	442	0	301	224	0	186	220	1747	779	321	1836	819
V/C Ratio(X)	0.92	0.00	0.85	0.41	0.00	0.70	0.27	0.63	0.17	0.52	0.79	0.09
Avail Cap(c_a), veh/h	442	0	440	233	0	332	242	1747	779	368	1836	819
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.8	0.0	35.7	32.8	0.0	38.5	15.2	16.8	12.7	13.3	17.7	11.0
Incr Delay (d2), s/veh	25.2	0.0	9.8	1.2	0.0	4.6	0.7	1.7	0.5	1.3	3.5	0.2
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	5.9	0.0	6.1	1.8	0.0	3.0	0.6	8.2	1.5	1.6	12.1	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.0	0.0	45.5	34.0	0.0	43.1	15.9	18.5	13.1	14.6	21.2	11.3
LnGrp LOS	E	A	D	C	A	D	B	B	B	B	C	B
Approach Vol, veh/h		663			222			1288			1690	
Approach Delay, s/veh		56.9			39.3			17.9			20.1	
Approach LOS		E			D			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	48.8	9.9	20.7	8.4	51.0	16.0	14.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.5	34.0	5.9	23.6	5.0	37.5	11.5	18.0
Max Q Clear Time (g_c+I1), s	6.1	22.5	6.1	15.2	3.5	31.8	12.5	8.8
Green Ext Time (p_c), s	0.1	6.2	0.0	0.9	0.0	4.3	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	26.8
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	37	22	242	38	63	336
Future Vol, veh/h	37	22	242	38	63	336
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	150	-
Veh in Median Storage, #	2	-	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	40	24	263	41	68	365

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	603	152	0	0	304	0
Stage 1	284	-	-	-	-	-
Stage 2	319	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	430	867	-	-	1254	-
Stage 1	739	-	-	-	-	-
Stage 2	710	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	407	867	-	-	1254	-
Mov Cap-2 Maneuver	572	-	-	-	-	-
Stage 1	739	-	-	-	-	-
Stage 2	672	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	1.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	572	867	1254	-
HCM Lane V/C Ratio	-	-	0.07	0.028	0.055	-
HCM Control Delay (s)	-	-	11.8	9.3	8	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0.1	0.2	-

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	37	22	242	38	63	336
Future Vol, veh/h	37	22	242	38	63	336
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	150	-
Veh in Median Storage, #	2	-	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	40	24	263	41	68	365

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	603	152	0	0	304	0
Stage 1	284	-	-	-	-	-
Stage 2	319	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	430	867	-	-	1254	-
Stage 1	739	-	-	-	-	-
Stage 2	710	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	407	867	-	-	1254	-
Mov Cap-2 Maneuver	572	-	-	-	-	-
Stage 1	739	-	-	-	-	-
Stage 2	672	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	1.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	572	867	1254	-
HCM Lane V/C Ratio	-	-	0.07	0.028	0.055	-
HCM Control Delay (s)	-	-	11.8	9.3	8	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0.1	0.2	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	2	5	57	7	34	21	354	11	19	373	14
Future Vol, veh/h	5	2	5	57	7	34	21	354	11	19	373	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	0	0	-	-	150	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	2	5	62	8	37	23	385	12	21	405	15

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	698	898	210	683	899	199	420	0	0	397	0	0
Stage 1	455	455	-	437	437	-	-	-	-	-	-	-
Stage 2	243	443	-	246	462	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	327	278	796	335	277	809	1136	-	-	1158	-	-
Stage 1	554	567	-	568	578	-	-	-	-	-	-	-
Stage 2	739	574	-	736	563	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	298	267	796	322	266	809	1136	-	-	1158	-	-
Mov Cap-2 Maneuver	406	373	-	425	371	-	-	-	-	-	-	-
Stage 1	543	557	-	557	566	-	-	-	-	-	-	-
Stage 2	682	563	-	715	553	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.3	13.1	0.4	0.4
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1136	-	-	406	601	425	371	809	1158	-	-
HCM Lane V/C Ratio	0.02	-	-	0.013	0.013	0.146	0.021	0.046	0.018	-	-
HCM Control Delay (s)	8.2	-	-	14	11.1	14.9	14.9	9.7	8.2	-	-
HCM Lane LOS	A	-	-	B	B	B	B	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0	0	0.5	0.1	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	7	15	37	3	22	9	261	38	63	388	6
Future Vol, veh/h	15	7	15	37	3	22	9	261	38	63	388	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	0	0	-	-	150	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	8	16	40	3	24	10	284	41	68	422	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	726	907	215	676	890	163	429	0	0	325	0	0
Stage 1	562	562	-	325	325	-	-	-	-	-	-	-
Stage 2	164	345	-	351	565	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	312	274	790	339	281	853	1127	-	-	1231	-	-
Stage 1	479	508	-	661	648	-	-	-	-	-	-	-
Stage 2	822	635	-	639	506	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	286	256	790	311	263	853	1127	-	-	1231	-	-
Mov Cap-2 Maneuver	381	352	-	419	362	-	-	-	-	-	-	-
Stage 1	475	480	-	655	642	-	-	-	-	-	-	-
Stage 2	788	629	-	582	478	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.9	12.7	0.2	1.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1127	-	-	381	566	419	362	853	1231	-	-
HCM Lane V/C Ratio	0.009	-	-	0.043	0.042	0.096	0.009	0.028	0.056	-	-
HCM Control Delay (s)	8.2	-	-	14.9	11.6	14.5	15	9.3	8.1	-	-
HCM Lane LOS	A	-	-	B	B	B	C	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0.3	0	0.1	0.2	-	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	5	15	15	20	130	100	1020	15	45	1000	85
Future Vol, veh/h	15	5	15	15	20	130	100	1020	15	45	1000	85
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	0	0	-	-	150	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	5	16	16	22	141	109	1109	16	49	1087	92

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1969	2528	544	1979	2612	563	1179	0	0	1125	0	0
Stage 1	1185	1185	-	1335	1335	-	-	-	-	-	-	-
Stage 2	784	1343	-	644	1277	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	72	26	*656	*70	~ 21	470	*981	-	-	617	-	-
Stage 1	616	540	-	*162	221	-	-	-	-	-	-	-
Stage 2	352	219	-	*619	465	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1		1	-	-		-	-
Mov Cap-1 Maneuver	37	21	*656	*57	~ 17	470	*981	-	-	617	-	-
Mov Cap-2 Maneuver	116	110	-	*117	118	-	-	-	-	-	-	-
Stage 1	548	498	-	*144	196	-	-	-	-	-	-	-
Stage 2	195	195	-	*549	428	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	28	21.4	0.8	0.5
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	* 981	-	-	116	293	117	118	470	617	-	-
HCM Lane V/C Ratio	0.111	-	-	0.141	0.074	0.139	0.184	0.301	0.079	-	-
HCM Control Delay (s)	9.1	-	-	41	18.3	40.7	42.3	15.9	11.3	-	-
HCM Lane LOS	A	-	-	E	C	E	E	C	B	-	-
HCM 95th %tile Q(veh)	0.4	-	-	0.5	0.2	0.5	0.6	1.3	0.3	-	-

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

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	20	45	10	10	70	40	1075	45	135	1395	35
Future Vol, veh/h	45	20	45	10	10	70	40	1075	45	135	1395	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	0	0	-	-	150	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	22	49	11	11	76	43	1168	49	147	1516	38

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2486	3113	758	2342	3127	609	1554	0	0	1217	0	0
Stage 1	1810	1810	-	1279	1279	-	-	-	-	-	-	-
Stage 2	676	1303	-	1063	1848	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 19	~ 4	*517	*32	~ 4	438	*774	-	-	569	-	-
Stage 1	246	256	-	*176	235	-	-	-	-	-	-	-
Stage 2	409	229	-	*488	236	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1		1	-	-		-	-
Mov Cap-1 Maneuver	~ 11	~ 3	*517	*15	~ 3	438	*774	-	-	569	-	-
Mov Cap-2 Maneuver	90	47	-	*97	77	-	-	-	-	-	-	-
Stage 1	233	190	-	*166	222	-	-	-	-	-	-	-
Stage 2	304	216	-	*290	175	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	72.6	23.4	0.3	1.2
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	* 774	-	-	90	127	97	77	438	569	-	-
HCM Lane V/C Ratio	0.056	-	-	0.543	0.556	0.112	0.141	0.174	0.258	-	-
HCM Control Delay (s)	9.9	-	-	84.9	64.1	46.7	59.3	14.9	13.5	-	-
HCM Lane LOS	A	-	-	F	F	E	F	B	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	2.4	2.7	0.4	0.5	0.6	1	-	-

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

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	40	0	0	70	85	1140	10	25	1135	170
Future Vol, veh/h	0	0	40	0	0	70	85	1140	10	25	1135	170
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	0	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	43	0	0	76	92	1239	11	27	1234	185

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	617	-	-	625	1419	0	0	1250	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	433	0	0	*621	476	-	-	*930	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %						1		-	-	1	-	-
Mov Cap-1 Maneuver	-	-	433	-	-	*621	476	-	-	*930	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.2	11.6	1	0.2
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	476	-	-	433	621	* 930	-	-
HCM Lane V/C Ratio	0.194	-	-	0.1	0.123	0.029	-	-
HCM Control Delay (s)	14.4	-	-	14.2	11.6	9	-	-
HCM Lane LOS	B	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.7	-	-	0.3	0.4	0.1	-	-

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

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	125	0	0	45	35	1410	25	75	1425	70
Future Vol, veh/h	0	0	125	0	0	45	35	1410	25	75	1425	70
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	0	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	136	0	0	49	38	1533	27	82	1549	76

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	775	-	-	780	1625	0	0	1560	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	341	0	0	*482	396	-	-	*722	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %						1		-	-	1	-	-
Mov Cap-1 Maneuver	-	-	341	-	-	*482	396	-	-	*722	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

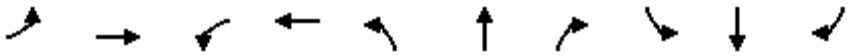
Approach	EB	WB	NB	SB
HCM Control Delay, s	22.4	13.3	0.4	0.5
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	396	-	-	341	482	* 722	-	-
HCM Lane V/C Ratio	0.096	-	-	0.398	0.101	0.113	-	-
HCM Control Delay (s)	15.1	-	-	22.4	13.3	10.6	-	-
HCM Lane LOS	C	-	-	C	B	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	1.9	0.3	0.4	-	-

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

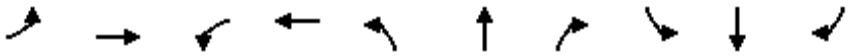
APPENDIX F

Queue Analysis Worksheets



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	130	87	130	228	147	1076	43	54	1043	185
v/c Ratio	0.53	0.30	0.41	0.72	0.47	0.57	0.05	0.18	0.60	0.18
Control Delay	48.5	17.5	29.2	37.0	12.7	17.1	0.1	9.5	19.8	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.5	17.5	29.2	37.0	12.7	17.1	0.1	9.5	19.8	2.1
Queue Length 50th (ft)	37	16	58	83	31	218	0	11	220	0
Queue Length 95th (ft)	66	55	97	151	65	311	0	28	325	29
Internal Link Dist (ft)		257		617		908			635	
Turn Bay Length (ft)							175	150		
Base Capacity (vph)	247	392	318	410	339	1888	903	293	1726	1037
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.22	0.41	0.56	0.43	0.57	0.05	0.18	0.60	0.18

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	408	255	92	130	60	1098	130	168	1446	76
v/c Ratio	0.93	0.64	0.41	0.51	0.28	0.67	0.16	0.55	0.79	0.08
Control Delay	69.2	28.7	29.5	20.0	12.2	22.8	1.5	16.9	24.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.2	28.7	29.5	20.0	12.2	22.8	1.5	16.9	24.1	0.2
Queue Length 50th (ft)	120	86	40	20	12	244	0	36	346	0
Queue Length 95th (ft)	#207	154	70	68	33	375	15	91	#578	0
Internal Link Dist (ft)		257		617		908			635	
Turn Bay Length (ft)							175	150		
Base Capacity (vph)	438	512	225	406	213	1634	829	311	1828	905
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.50	0.41	0.32	0.28	0.67	0.16	0.54	0.79	0.08

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.