



Acheson & Big Lake Traffic Impact Assessment Update

Final v.1

Prepared for
Parkland County

Date
April 16, 2026

Project No.
03-25-0020

Bunt & Associates acknowledges and respects the Traditional Territories upon which our work spans, and from which we benefit. We are grateful for the unique cultures and histories of Indigenous Peoples that enrich our understanding and connection to the lands we call home. We honour learning, listening, and truth in our journey to reconciliation.

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Written with respect and gratitude for the Traditional Territories upon which we work and live.

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1. INTRODUCTION

1.1 Study Background

The Acheson Industrial area is an industrial hub within the Edmonton Metropolitan Region that is bounded by the City of Edmonton to the east, the City of Spruce Grove to the west, Highway 16 to the north, and Highway 628 to the south. The Big Lake area is a country residential area bounded by the City of Edmonton to the east, Highway 44 to the west, Big Lake and Atim Creek to the north, and Highway 16 to the south.

Parkland County retained Bunt & Associates (Bunt) in 2017/2018 to complete a transportation impact assessment (TIA) for the Acheson and Big Lake areas of the County. The TIA considered potential development opportunities and identified recommended roadway network development for the near-term, long-term, and ultimate horizons, roughly translating to 2027, 2037, and 2047 respectively.

Development within the Acheson and Big Lake areas has been steadily progressing since completion of the original TIA. The County has identified that the availability of the overarching TIA simplified review processes by removing the requirement for individual site TIAs for applications that aligned with the original land use assumptions included in the study. The information contained within the TIA also supported County initiatives regarding the establishment of capital improvement programs, including discussion with Alberta Transportation and Economic Corridors (TEC) and adjacent jurisdictions.

With development opportunities continuing to present themselves within the County, the completion of a number of key projects, and updated transportation planning within adjacent communities, Parkland County identified the need to update the 2018 TIA. As well, the County recently updated their Municipal Development Plan (MDP) and their Transportation Master Plan (TMP).

This updated TIA incorporates updated information regarding current conditions as well as the potential development programs and recommended transportation networks within the near-term, long-term, and ultimate horizons. As well, the study considers the policy objectives outlined within the updated MDP and TMP to confirm the recommended improvements continue to align with overall County direction.

1.2 Study Methodology

The completion of the Acheson and Big Lake TIA update represents the integration of a number of project tasks that provide the foundation for the evaluation of the roadway network in Acheson and Big Lake. Each task provided information that supported the completion of the TIA update as follows:

- Development of growth estimates for the regional roadway facilities within and adjacent to the plan area that account for external growth in the region, not including growth generated by the study area;
- Confirmation of industrial trip generation rates established in the 2018 TIA for the estimation of future traffic volumes in the study area; and
- Development of updated land use and roadway network maps for three study horizons to provide the basis for the completion of the technical assessments. The maps build upon information from other Parkland County publications or studies, adjusted based on information and discussions with Parkland County staff.

The information from the above noted tasks was incorporated into the TIA as part of a standard TIA process, which includes the following:

- The review of existing conditions in and around the plan area;
- The development of background traffic volumes on regional roadways within and adjacent to the study area;
- The estimation of site generated traffic based on the land use and roadway network assumptions, the recommended trip generation rates, and origin-destination assumptions for the study area;
- The development of total traffic volumes for the study area based on the sum of background and site generated traffic volume estimates;
- The evaluation of the roadway network based on the projected total daily volumes and the County's roadway classification standards; and
- The evaluation of study area intersections to determine the recommended geometry based on the County's analysis parameters and level of service standards.

2. EXISTING CONDITIONS

2.1 Site Location

Acheson and Big Lake are located within Parkland County immediately west of the City of Edmonton and east of the City of Spruce Grove as shown in **Exhibit 2.1**.

2.2 Existing Transportation System

2.2.1 Roadway Network

The existing roadway network within and adjacent to Acheson and Big Lake is illustrated on **Exhibit 2.2** and includes the following key roadways:

- **Highway 16** is a rural four-lane divided Provincial highway with a posted speed limit of 110 km/hr in the study area. Interchanges are currently constructed at the Highway 44 and Highway 60 intersections, and the Highway 16/231 Street intersection is constructed as an at-grade right-in/right-out intersection. Service roads are constructed on the north side of Highway 16 from Highway 44 through the study area and beyond 231 Street.
- **Highway 16A** is a rural four-lane divided Provincial highway with a posted speed limit varying between 80 km/hr and 100 km/hr in the study area. All-directional at grade intersections are currently constructed at Atim Road, 100 Avenue, Spruce Valley Road, Pinchbeck Road/Bevington Road, and 231 Street, and a Parclo AB4 interchange is constructed at the Highway 16A/Highway 60 intersection. The Highway 16A/279 Street intersection is developed as a right in/right out intersection that previously provided access to a weigh station on the northwest corner of the intersection.
- **Highway 628** is currently constructed as a rural two-lane roadway with a posted speed limit of 80 km/hr through the study area. A portion of Highway 628 has been re-aligned to the north at Highway 60, and the intersection operates under signal control.
- **Highway 44** is a rural two-lane highway that extends north of the Highway 16/Highway 44 interchange. An at-grade all-directional intersection is constructed at the TWP RD 532A/Highway 44 intersection. The posted speed limit on Highway 44 is 100 km/hr dropping to 80 km/hr just north of the Highway 16 interchange.
- **Highway 60** is generally developed as a rural four-lane Provincial highway from Highway 16 to Highway 628; however, approximately 1.0 km of the highway between 114 Avenue and Acheson Road is developed as a two-lane highway. The interchange at Highway 16A and Highway 60 currently includes one northbound and one southbound through lane plus additional ramp lanes. The posted speed limit along Highway 60 is 80 km/hr in the study area.

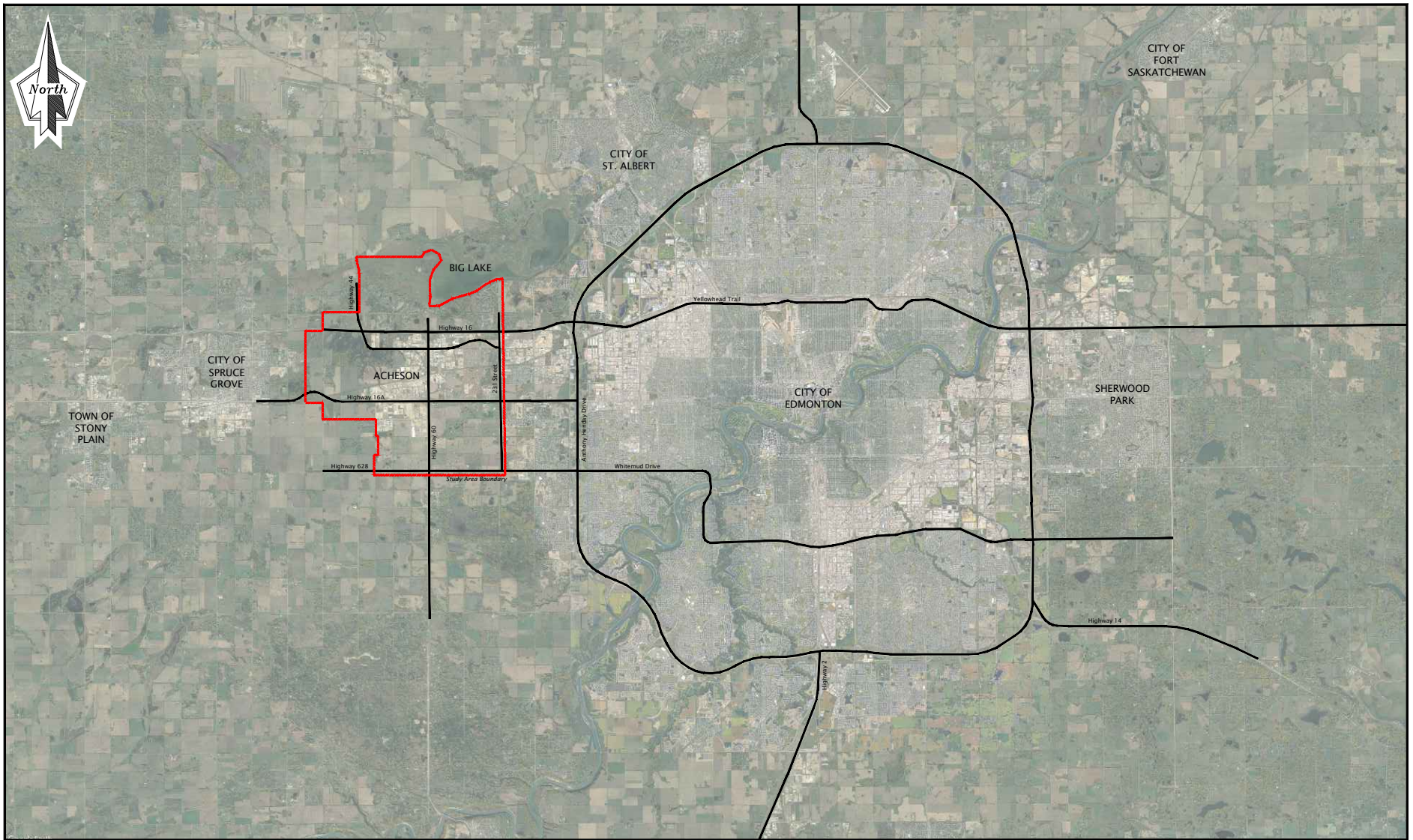


Exhibit 2.1

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Site Location



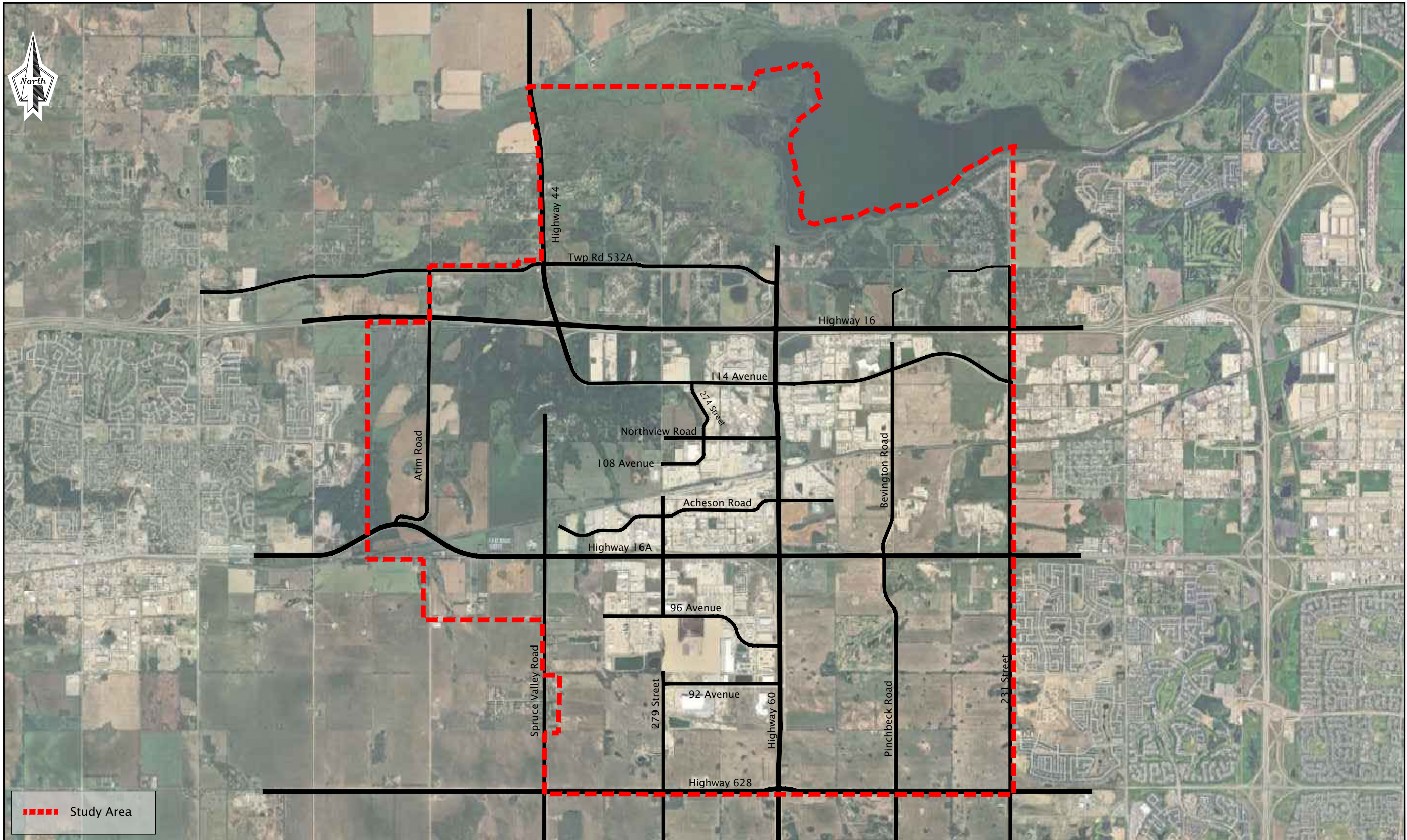


Exhibit 2.2

N.T.S.

Existing Roadway Network



- **231 Street** is generally constructed as a rural two-lane roadway with a posted speed limit of 80 km/hr between Highway 16 and Highway 628; however, portions of 231 Street along the Secord and Rosenthal neighbourhoods have been upgraded to an urban cross-section with a posted speed limit of 60 km/hr. North of Highway 16, 231 Street provides access to the Big Lake residential area and functions as a collector roadway.

Other notable roadways within the study area include:

- **TWP RD 532A** is an east-west rural collector roadway that provides access to agricultural and country residential properties north of Highway 16. The speed limit along TWP RD 532A is 80 km/hr west of Highway 44 and 60 km/hr east of Highway 44. In the eastern portion of the study area, TWP RD 532A is currently constructed as a rural two-lane roadway with a posted speed limit of 30 km/hr from 231 Street to west of Country Squire Estates and approximately 175 m east of Bevington Road.
- **114 Avenue** extends from the Highway 16/Highway 44 interchange at the west end of the study area to the City of Edmonton boundary at 231 Street. 114 Avenue is generally constructed as a two-lane collector roadway between the Highway 16/Highway 44 interchange and 266 Street. The roadway has been widened between 266 Street and 261 Street to accommodate additional turn bays at the 114 Avenue/Highway 60 intersection. The roadway is developed as a paved two-lane roadway between 261 Street and Bevington Road and has been upgraded to three-lane cross-section (one lane in each direction with a two-way centre left turn lane) for about 800 m east of Bevington Road. The remaining section to 231 Street is currently a gravel road. The posted speed limit along 114 Avenue is 60 km/hr from the Highway 16/Highway 44 interchange to 274 Street, 50 km/hr to Bevington Road, and 80 km/hr to 231 Street. It is anticipated the speed limit will be reduced to 50 km/hr along 114 Avenue once improvements are extended to 231 Street.
- **108 Avenue/274 Street** is currently developed as a rural two-lane rural roadway between 114 Avenue and 279 Street. The posted speed limit along 108 Avenue/274 Street is 60 km/hr.
- **Northview Road** is currently developed as a two-lane rural roadway between 279 Street and Highway 60. The posted speed limit along Northview Road is 60 km/hr. The connection to Highway 60 will ultimately be eliminated when the rail separation along Highway 60 is constructed.
- **Acheson Road** is currently constructed as a rural two-lane roadway from 200 m east of Spruce Valley Road to 255 Street. The posted speed limit on Acheson Road is 50 km/hr.
- **96 Avenue** is currently constructed as a two-lane rural roadway from 287 Street to Highway 60. The posted speed limit on 96 Avenue is 60 km/hr.
- **92 Avenue** is currently constructed with a rural three-lane cross-section between 279 Street and 266 Street and flares to accommodate additional geometry at the intersection with Highway 60. The posted speed limit along 92 Avenue is 60 km/hr.

- **Atim Road** is an existing north-south rural gravel roadway in the northwestern quadrant of Acheson between Highway 16 and Highway 16A. The speed limit on Atim Road is 80 km/hr.
- **Spruce Valley Road** is an existing north-south collector roadway that extends from about 1.75 km north of Highway 16A to south of Highway 628. An all-directional signalized intersection is currently constructed at the Highway 16A/Spruce Valley Road intersection, and an all-directional unsignalized intersection is currently constructed at the Highway 628/Spruce Valley Road intersection. An at-grade rail crossing is also provided along Spruce Valley Road at the CN Rail Line. The posted speed limit on Spruce Valley Road is 80 km/hr.
- **279 Street** is currently developed as a two-lane collector from the right in/right out at Highway 16A to south of 96 Avenue and from north of 92 Avenue to 85 Avenue. Between 85 Avenue and Highway 628, 279 Street is a two-lane rural roadway. The speed limit is 60 km/hr on the collector portions of 279 Street and 80 km/hr south of 85 Avenue. 279 Street is also constructed as a two-lane rural roadway north of Highway 16A and provides access to existing industrial developments south of the CN rail line.
- **Bevington Road** is currently a rural two-lane roadway running north-south in the northeast portion of Acheson and is paved for approximately 400m north of 114 Avenue and 600m south of 114 Avenue before transitioning to a gravel surface. Bevington Road was recently realigned to the west approximately 460m north of Highway 16A to align with the existing Highway 16A/Pinchbeck Road intersection. The posted speed limit is 80 km/hr.
- **Pinchbeck Road** is a two-lane rural roadway between Highway 16A and Highway 628. The majority of the roadway is gravel, with a portion of paved surface south of Highway 16A. The posted speed limit is 70 km/hr.

2.2.2 Traffic Volumes

The original TIA identified existing traffic volumes at 33 intersections through a combination of traffic volumes measured by Bunt and TEC between 2016 and 2018. To establish updated existing traffic volumes within the study area, Bunt completed traffic counts at 11 key intersections in 2025, focused in areas that have seen development growth since 2018. In addition, the most recent TEC data at highway intersections were pulled from the provincial database. **Table 2.1** presents the data sources and years used to establish existing traffic volumes, with the bolded intersections representing updated data. Detailed summaries of all traffic counts completed by Bunt are included in **Appendix A**.

In addition to turning movement counts, Bunt completed 24-hour link volume counts at seven key locations as part of the *Trip Generation Rates* report, which is included in **Appendix B** for reference. Consistent with the original TIA, measured AM and PM peak hour turning movements were multiplied by five to estimate existing daily link volumes.

Table 2.1: Traffic Count Locations

ID	LOCATION	COUNTED BY	YEAR
A1	Highway 16 & Atim Road	TEC	2022
A2	Highway 16 & Highway 44	TEC	2022
A3	Highway 16 & Highway 60	TEC	2023
A4	Highway 16 & 231 Street	TEC	2023
A6	114 Avenue & 274 Street	Bunt	2018
A7	114 Avenue & 269 Street	Bunt	2025
A8	114 Avenue & Highway 60	Bunt	2025
A9	114 Avenue & 261 Street	Bunt	2025
A10	114 Avenue & 259 Street	Bunt	2018
A11	114 Avenue & 255 Street	Bunt	2018
A12	114 Avenue & Bevington Road	Bunt	2016
A13	114 Avenue & 231 Street	Bunt	2016
A14	Northview Road & 279 Street	Bunt	2018
A15	Northview Road & 274 Street	Bunt	2018
A17	Northview Road & Highway 60	TEC	2020
A19	Acheson Road & Highway 60	Bunt	2025
A20	103 Avenue & Bevington Road (TM Only)	Bunt	2016
A21	Highway 16A & Atim Road	TEC	2022
A23	Highway 16A & Spruce Valley Road	TEC	2022
A24	Highway 16A & 279 Street	TEC	2022
A25	Highway 16A & Highway 60	TEC	2023
A26	Highway 16A & Pinchbeck Road	Bunt	2025
A29	Highway 16A & 231 Street	TEC	2023
A30	100 Avenue & 264 Street	Bunt	2018
A33	96 Avenue & 279 Street	Bunt	2018
A34	96 Avenue & 266 Street	Bunt	2025
A35	96 Avenue & Highway 60	Bunt	2025
A36	92 Avenue & Highway 60	Bunt	2025
A37	Highway 628 & Spruce Valley Road	Bunt	2018
A38	Highway 628 & 279 Street	Bunt	2025
A39	Highway 628 & Highway 60	Bunt	2025
A40	Highway 628 & Pinchbeck Road	Bunt	2018
A41	Highway 628 & 231 Street	TEC	2016
A48	114 Avenue & 266 Street	Bunt	2025
BL2	TWP RD 532A & Highway 44	TEC	2022
BL3	TWP RD 532A & RR 264	Bunt	2018
BL5	Service Road & Highway 60	Bunt	2025
BL6	Service Road & RR264	Bunt	2018
BL7	Service Road & Bevington Road	Bunt	2018
BL8	Service Road & RR 261A	Bunt	2018

2.2.3 Transit Routes

Parkland County provides on-demand local transit with service between Acheson, Parkland Village, Spruce Grove, and Stony Plain. The on-demand route operates within Acheson Monday to Friday from 5:00 – 9:00AM and 2:15 – 6:15PM.

Edmonton Transit no longer provides direct service between Edmonton and Acheson. Transit route 560 runs Monday to Friday as an express bus between Downtown Edmonton and the Spruce Grove Transit Centre and circulates through Spruce Grove. Edmonton transit riders destined for Acheson would then need to ride the on-demand local transit service from the Spruce Grove Transit Centre and vice versa.

2.2.4 Truck Routes

All Provincial highways and roadways within Acheson can accommodate truck traffic. Road bans may be implemented on roadways within Parkland County to protect municipal infrastructure during the spring thaw.

3. FUTURE TRANSPORTATION SYSTEM

3.1 Horizon Years

Through discussions with Parkland County, the horizon years selected for analysis are 2050, 2040, 2030, which reflect the ultimate, long term, and near term development scenarios.

3.2 Development Scenarios

The development scenario map established for the original TIA was updated to reflect development progress since 2018 and identify lands that are anticipated to be developed in the near term, long term, and ultimate horizons. The development scenarios were reviewed based on available information regarding current development applications and through discussions with Parkland County. **Exhibit 3.1** illustrates the development scenarios for the three study horizons.

The development of trip generation estimates requires the identification of development areas using the same variables as the trip generation rates selected for use. For the purposes of this study, trip generation for industrial developments is based on net developable area and trip generation for residential developments is based on number of dwelling units. The following assumptions were used to develop the net industrial developable area and residential dwelling unit estimates for the study:

- The net developable area for industrial lands is assumed to be 85% of the gross area. This is based on a review of existing areas in Acheson and is consistent with ratios used in previous Parkland County documents.
- The density of residential areas in Big Lake is assumed to be 2.5 dwelling units/net developable ha. The net developable residential area is assumed to be 70% of the gross area. These factors are based on a review of existing country residential subdivisions in Big Lake.

Table 3.1 summarizes the development assumptions used for each of the development horizons in the transportation assessment.

Table 3.1: Development Assumptions

LAND USE	NEAR TERM	LONG TERM	ULTIMATE
Industrial	909 ha (2,245 acres)	1,360 ha (3,361 acres)	2,431 ha (6,007 acres)
Residential	346 du	749 du	755 du

3.3 Future Roadway Network

Using engineering experience, knowledge of the area, information provided by the County, and build-out assumptions, the roadway networks were strategically identified for the ultimate, long term, and near term horizons. The roadway networks developed are provided in **Appendix C**.

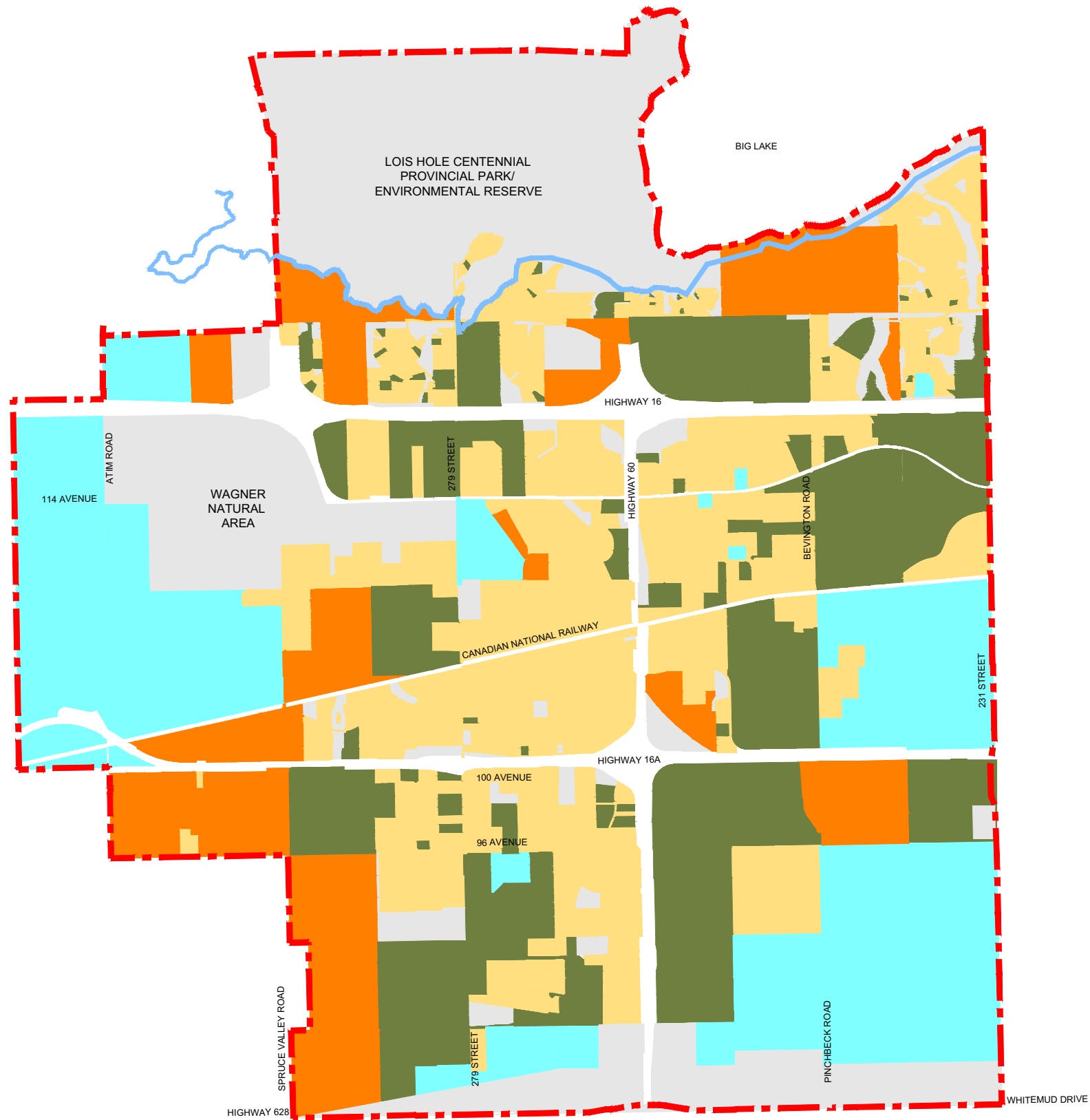


Exhibit 3.1

N.T.S.

Development Scenario Assumptions



The following provides key assumptions regarding the roadway network in each horizon:

Near Term (2030)

- TWP RD 532A connection between Highway 60 and 231 Street
- Closure of the Highway 16/Atim Road intersection
- Closure of the Highway 16/231 Street intersection
- Highway 16A/Highway 60 interchange upgrades
- Highway 60 twinning between Highway 16A and Highway 16
- Grade separation of the Highway 60 CN Rail crossing
- Closure of Northview Road/Highway 60 intersection
- Acheson Road connection to Bevington Road
- 96 Avenue connection to Spruce Valley Road and Pinchbeck Road
- Highway 628 upgrades to two-lane divided expressway

Long Term (2040)

- 108 Avenue connection to Spruce Valley Road
- Acheson Road connection to Spruce Valley Road
- Closure of the Highway 16A/100 Avenue intersection
- Development of a new arterial connection to Highway 16A at Sandhills Road
- 96 Avenue connection to Spruce Grove and extension east of Pinchbeck Road
- 92 Avenue connection to Spruce Valley Road
- Highway 16 & Highway 60 interchange upgrades
- Highway 16 & Highway 44 interchange upgrades

Ultimate (2050)

- 114 Avenue connection to Edmonton
- 108 Avenue connection to Atim Road
- Acheson Road connection to Edmonton
- 92 Avenue connection to Stony Plain and Edmonton
- Highway 628 interchanges at 231 Street, Highway 60, and Spruce Valley Road.
- Closure of the Highway 628/279 Street intersection
- Closure of the Highway 628/Pinchbeck Road intersection

It is noted that the 108 Avenue connection to Spruce Grove assumed in the previous TIA is no longer a future connection point. Therefore, the connection west of Atim Road was removed from the ultimate roadway network assumptions.

3.4 Background Traffic Volumes

Background traffic is the component of traffic on the adjacent road system that would be present regardless of development within Acheson and Big Lake proceeding. The majority of growth along arterial, collector, and local roadways is anticipated to be associated with development of Acheson and Big Lake, with the exception of 231 Street which may experience growth due to City of Edmonton developments within the Winterburn Industrial area and the Secord and Rosenthal neighbourhoods.

In addition to 231 Street, the Provincial Highways may experience growth due to population and development increases external to the study area. As the Highways within the study area have, in part, experienced historical growth due to development in Acheson, it is critical that growth rates are not overinflated as a result.

Historical growth rates were developed as part of the *Historical Growth Rates Review*, which is attached as **Appendix D** for reference. **Table 3.2** summarizes the growth rates proposed for each facility within the near term (2030), long term (2040), and ultimate (2050) horizons.

Table 3.2: Growth Rate Summary

ROADWAY	GROWTH RATE PER YEAR		
	Ultimate (25 years)	Long Term (15 years)	Near Term (6 years)
Highway 60 North of Highway 16	0.0%	0.0%	0.0%
Highway 60 South of Highway 16	0.5%	0.5%	0.5%
Highway 16	2.0%	2.0%	2.0%
Highway 16A	1.0%	1.0%	1.0%
Highway 44	1.4%	1.4%	1.4%
Highway 628	1.5%	1.5%	1.5%

The following steps were completed to estimate background traffic:

- Ultimate background volumes from the 2018 TIA were maintained along 231 Street north of Highway 16A. Long term and near term volumes were reduced to two-thirds and one half of the ultimate background volumes respectively.
- Ultimate background volumes from the 2018 TIA were maintained along 231 Street south of Highway 16A for the ultimate and long term horizons. Near term volumes were reduced to 80% of the ultimate background volume.
- Traffic volumes were reassigned to reflect the closure of the Highway 16/Atim Road, Highway 16/231 Street, and Northview Road/Highway 60 intersections.

- Highway 60 growth was applied to eastbound right, westbound left, and southbound through movements at the Highway 16A/Highway 60 intersection and to the northbound left/through/right movements at the Highway 628/Highway 60 intersection. Resulting growth was carried through adjacent intersections as through volumes. At the Highway 628/Highway 60 intersection, growth was distributed based on the proportion of existing turning movements. At the Highway 16/Highway 60 intersection the resulting growth was assumed to be northbound left and eastbound right turn movements to represent regional truck traffic destined to/from Highway 44. Traffic volumes were balanced to the highest volume along the entire Highway 60 corridor.
- Highway 16 growth was applied to the eastbound and westbound through volumes at the Highway 16/Highway 60 intersection, and intersections along the Highway 16 corridor were balanced to the highest volume.
- Growth rates identified for Highway 16A were applied to the eastbound and westbound through volumes at the Highway 16A/Highway 60 intersection, and traffic volumes were balanced to the highest volume.
- Highway 44 growth was applied to the eastbound left, westbound right, southbound left, and southbound right turn movements at the Highway 16/Highway 44 intersection. Traffic volumes were balanced to the highest volume along Highway 44 between Highway 16 and TWP RD 532A.
- Growth rates identified for Highway 628 were applied to the eastbound and westbound through volumes at the Highway 628/231 Street intersection, and traffic volumes were balanced to the highest volume along the corridor.
- To account for a potential shift in traffic volumes as a result of the upgrading of Highway 628, the total growth assigned to Highway 16, Highway 16A, and Highway 628 based on the above methodology was reviewed in combination with historical population growth rates and development plans in Spruce Grove, Stony Plain, and Parkland County. Eastbound and westbound through volumes along these three corridors were adjusted based on this review.

Exhibits 3.2, 3.3, and 3.4 illustrate the background traffic volumes during the AM and PM peak hours as well as daily traffic volume estimates for the ultimate, long term, and near term horizons respectively.

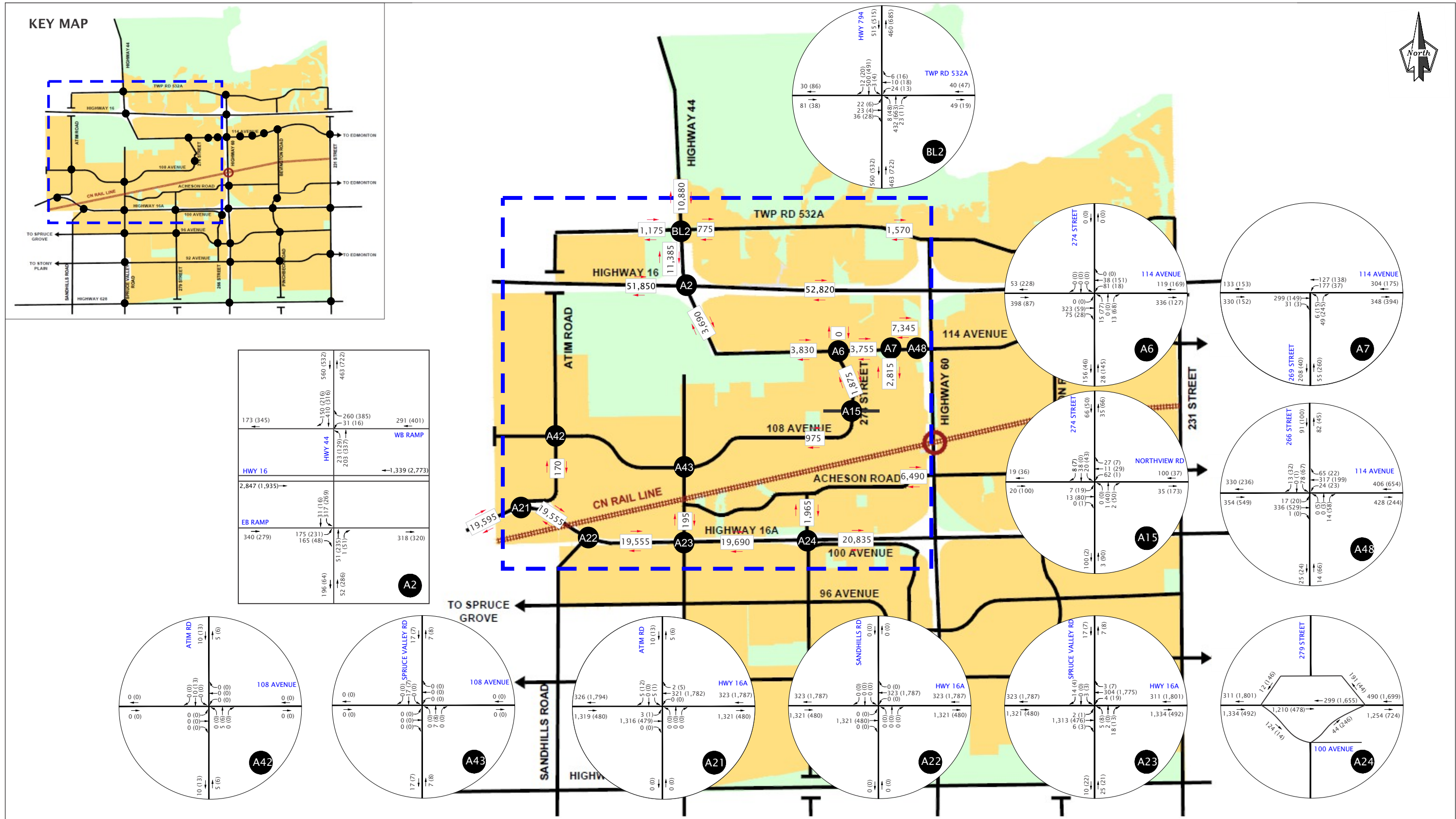


Exhibit 3.2a

Background Traffic Volumes - Ultimate Horizon

Disclaimer:
 - Roadway alignments are conceptual and are subject to change.
 - Local roadways are not shown.

Legend:
 45 (99) AM (PM) Peak Hour Volume
 31,965 Daily Two-Way Volume
 Developed Area
 Not to be Serviced Area



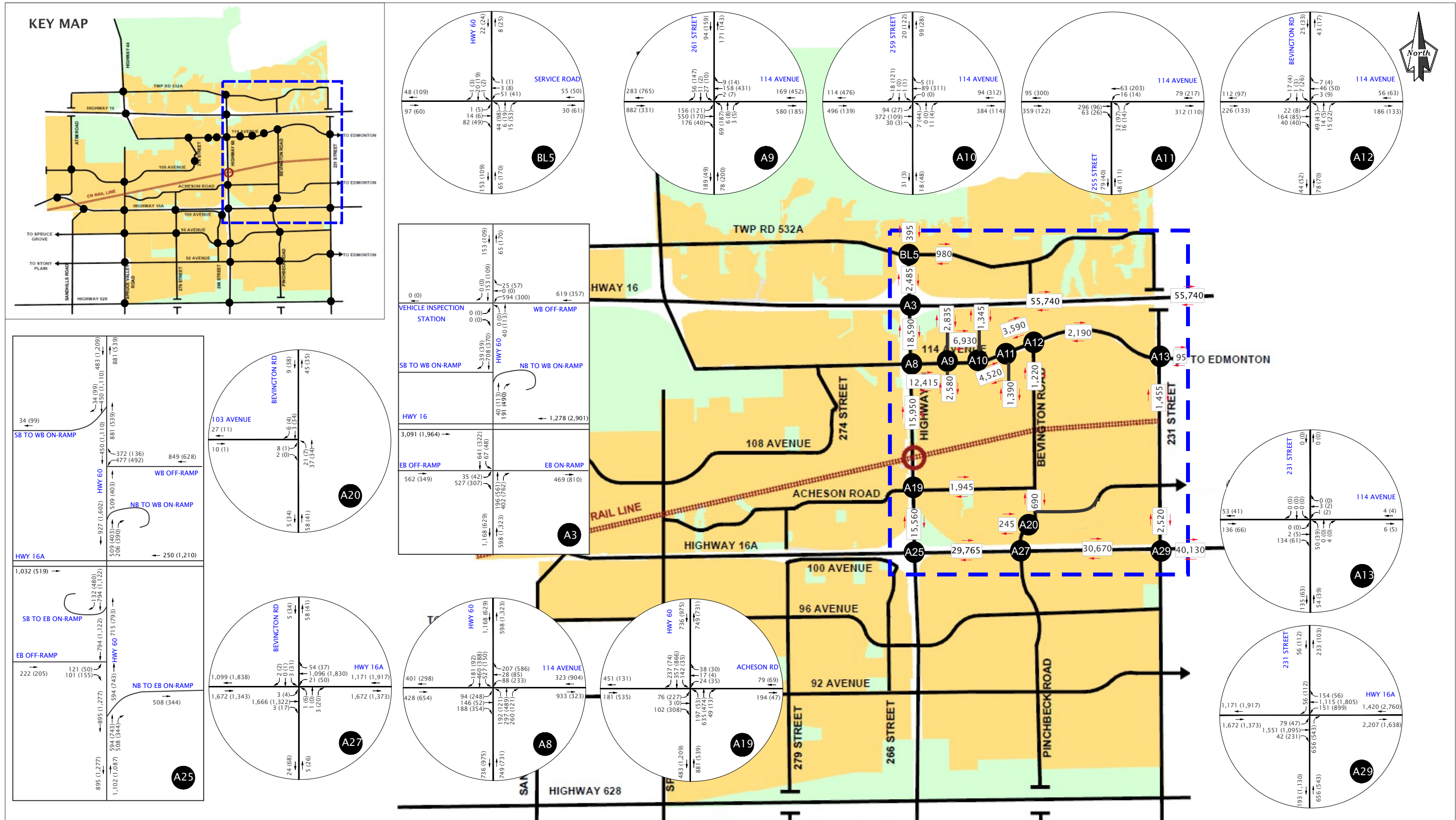


Exhibit 3.2b

Background Traffic Volumes - Ultimate Horizon



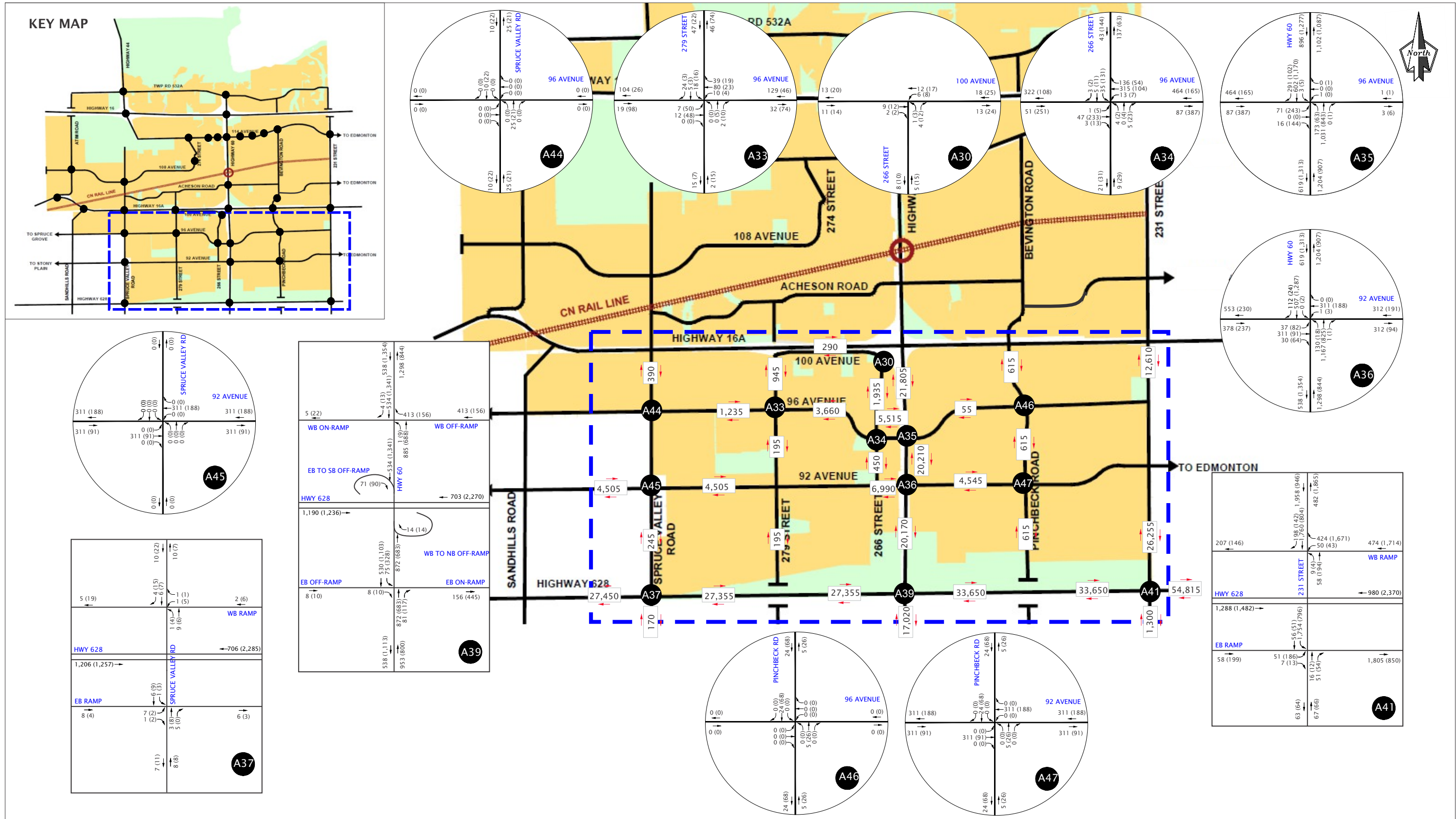


Exhibit 3.2c

Background Traffic Volumes - Ultimate Horizon

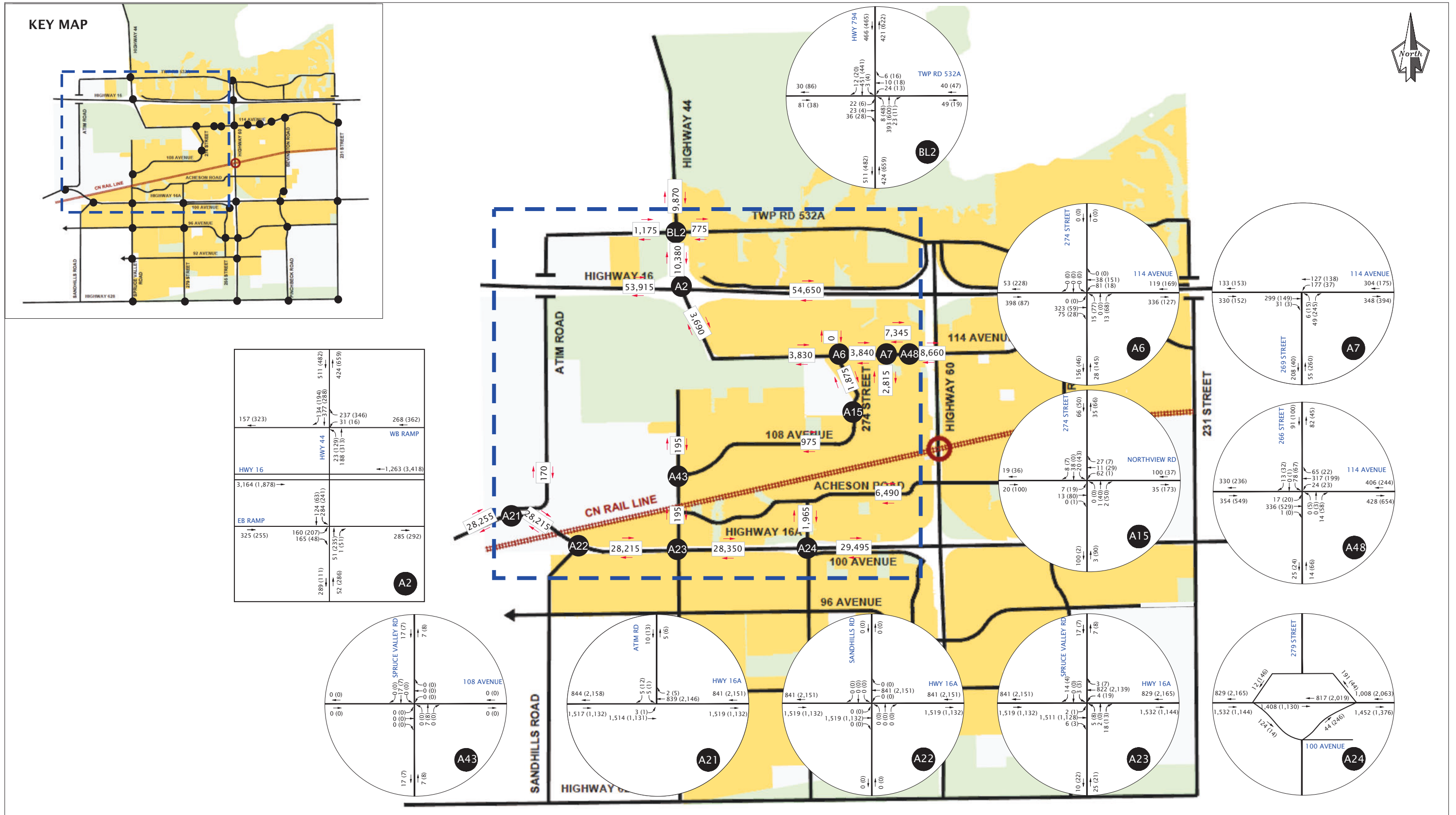


Exhibit 3.3a

Background Traffic Volumes - Long Term Horizon

Disclaimer:
 - Roadway alignments are conceptual and are subject to change.
 - Local roadways are not shown.

Legend:
 45 (99) AM (PM) Peak Hour Volume
 31,965 Daily Two-Way Volume
 Developed Area
 Not to be Serviced Area



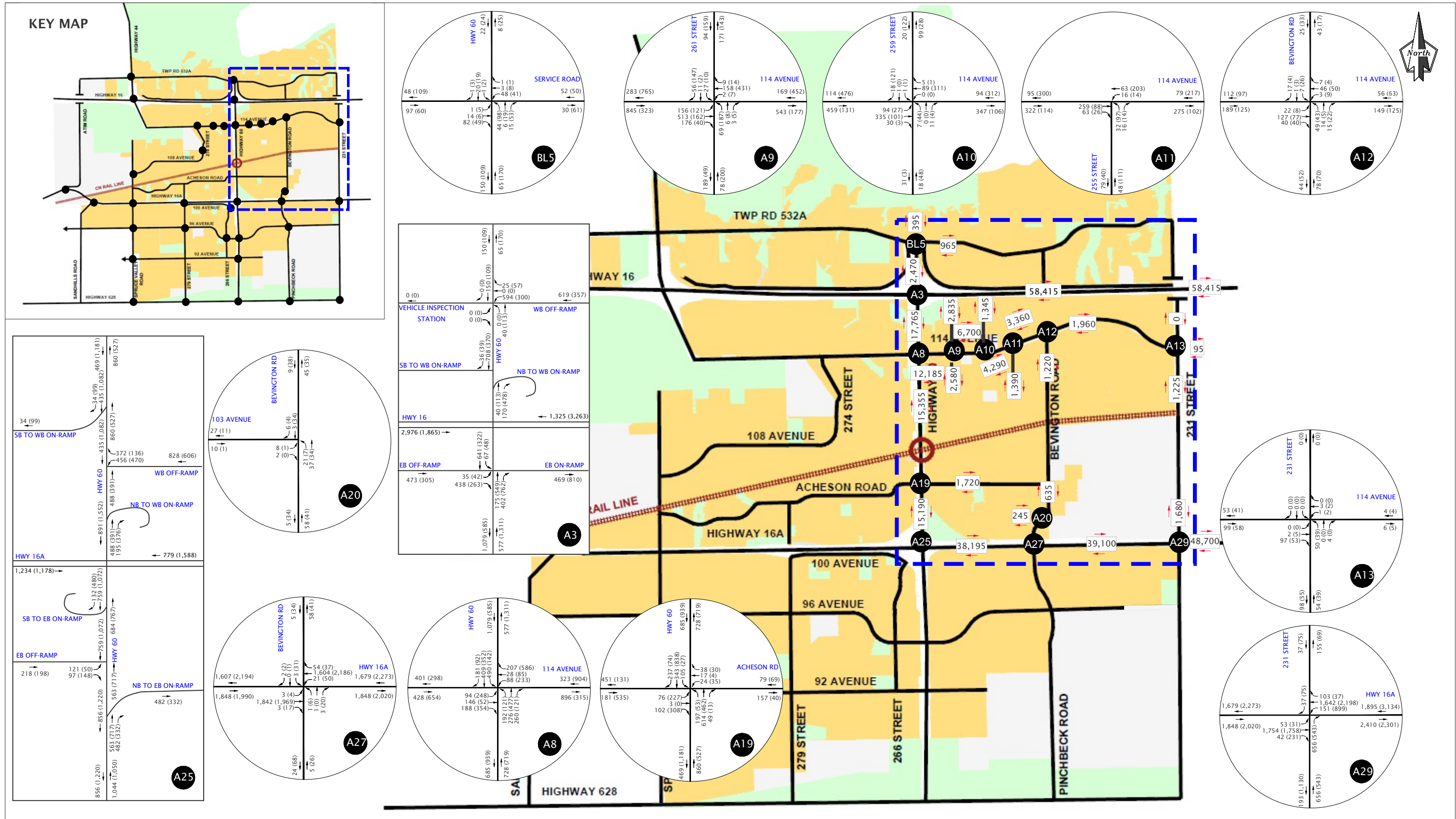


Exhibit 3.3b

Background Traffic Volumes - Long Term Horizon



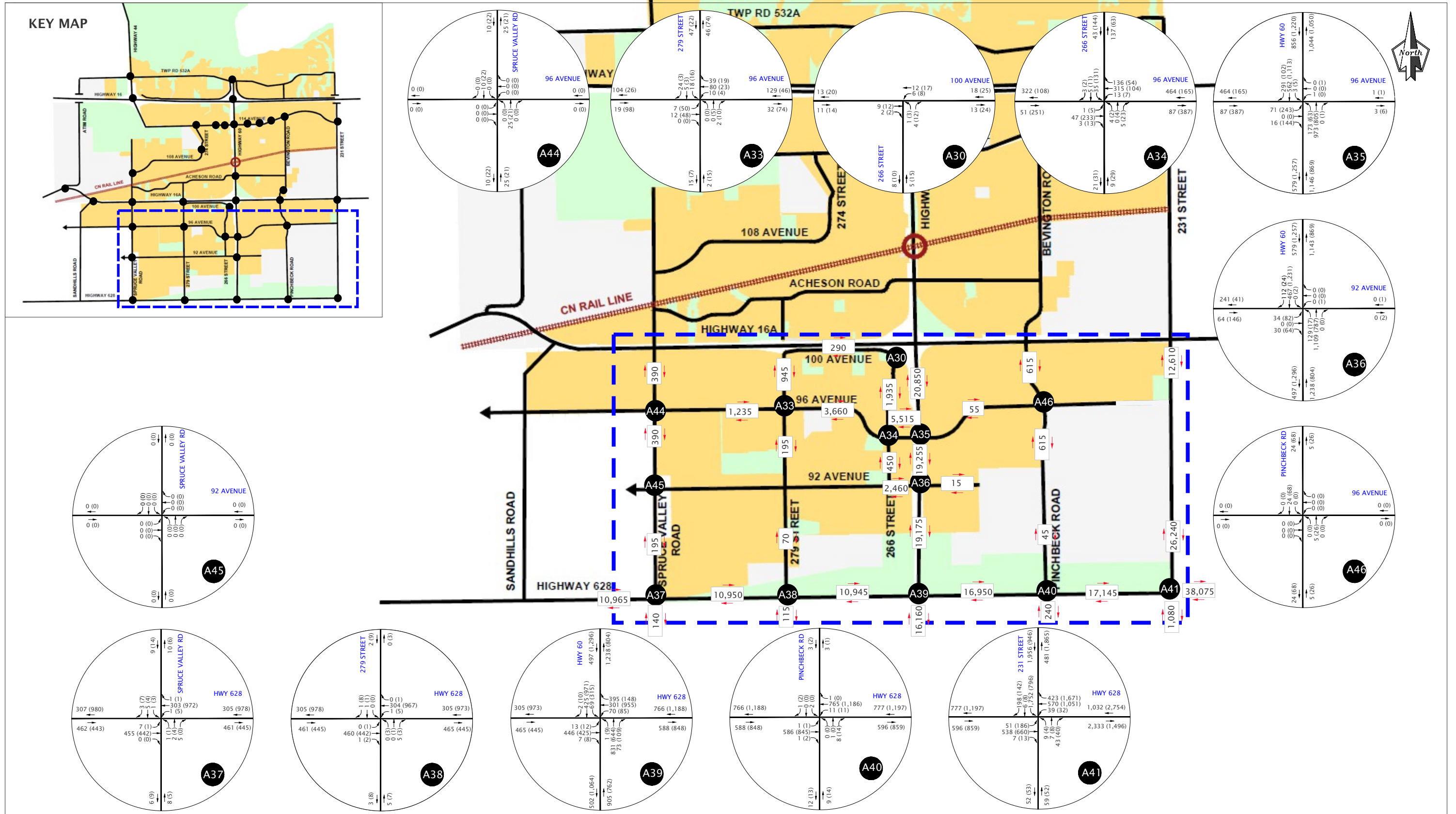


Exhibit 3.3c

Background Traffic Volumes - Long Term Horizon



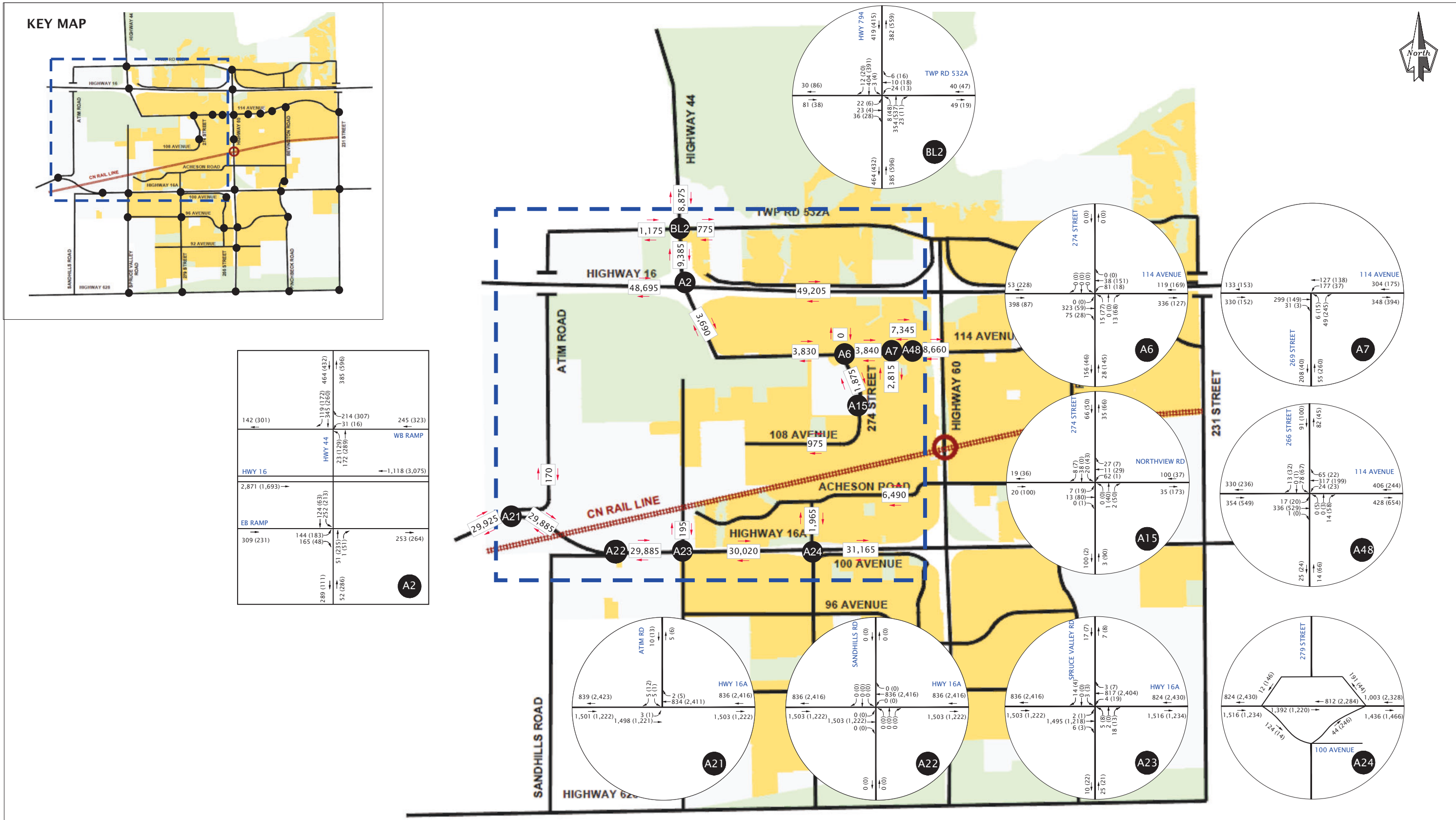


Exhibit 3.4a

Background Traffic Volumes - Near Term Horizon



142 (301)	119 (172) 345 (260)	464 (432)	245 (323)
	HWY 44		WB RAMP
HWY 16	32 (139) 172 (289)	214 (307) 31 (16)	← 1,118 (3,075)
2,871 (1,693)			
EB RAMP	124 (63)	252 (213)	
309 (231)	144 (183) 165 (48)		253 (264)
	289 (111) 52 (286)	51 (51) 1 (51)	
			A2



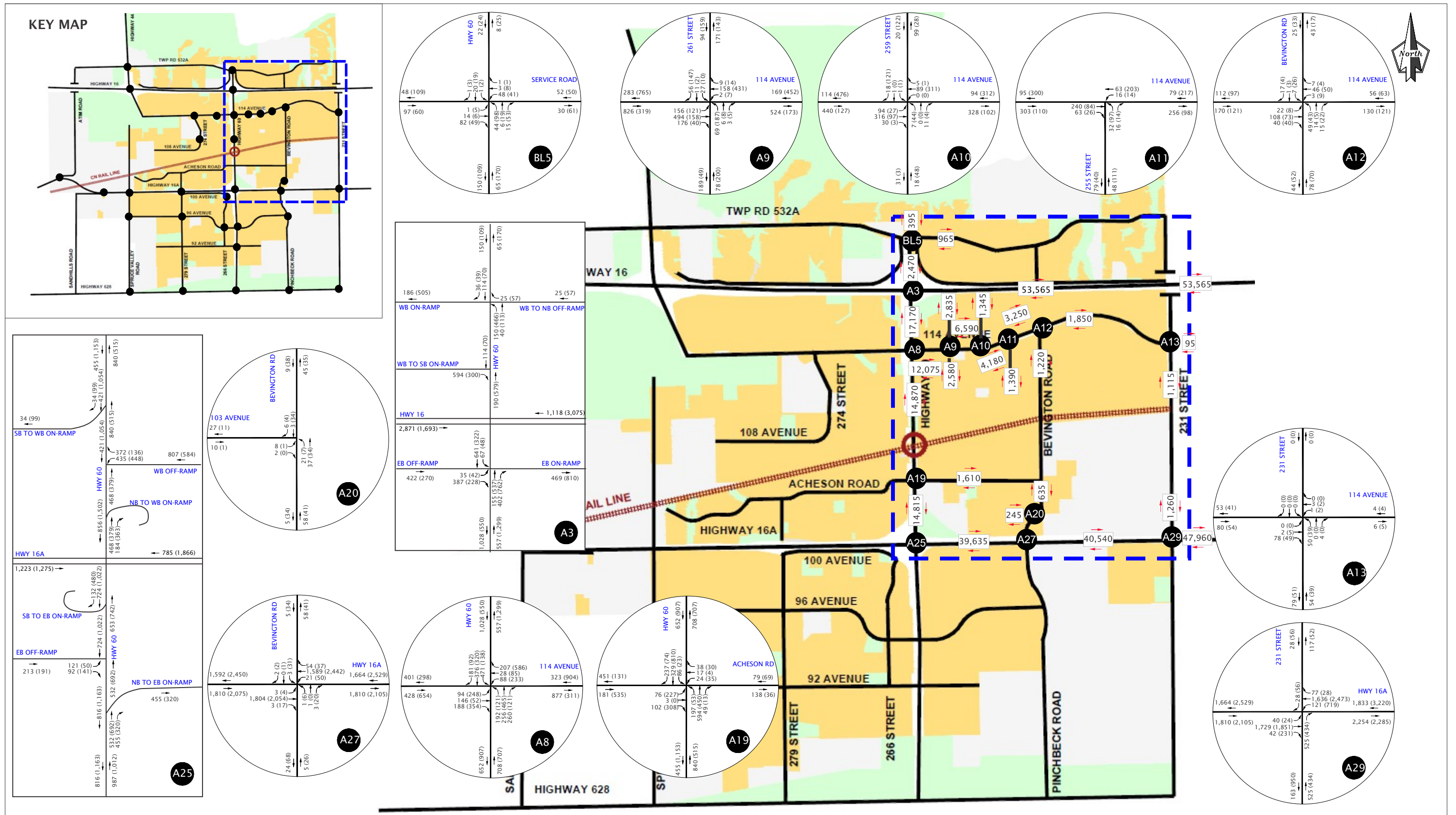


Exhibit 3.4b

Background Traffic Volumes - Near Term Horizon



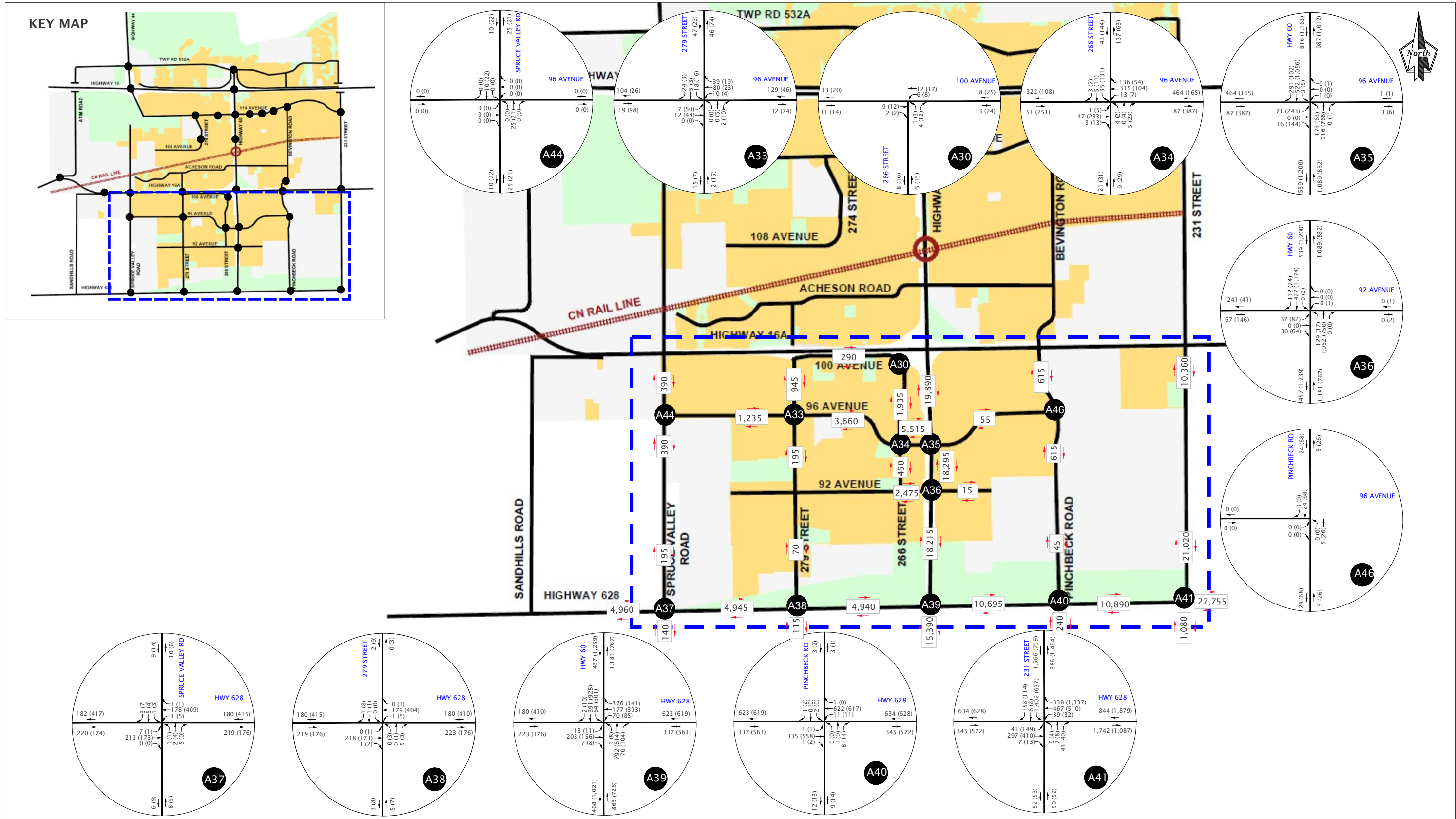


Exhibit 3.4c

Background Traffic Volumes - Near Term Horizon

Disclaimer:
 - Roadway alignments are conceptual and are subject to change.
 - Local roadways are not shown.

Legend:
 45 (99) AM (PM) Peak Hour Volume
 31,965 Daily Two-Way Volume
 Developed Area
 Not to be Serviced Area



4. SITE TRAFFIC CHARACTERISTICS

4.1 Trip Generation

The trip generation rates recommended in the *Trip Generation Rates* report were used in the assessment for land uses within Acheson, while Land Use Code 210 – Single-Family Detached Housing from the Institute of Transportation Engineers’ Trip Generation Manual, 11th Edition was applied to land uses within Big Lake. **Table 4.1** summarizes the industrial and residential trip generation rates used in the assessment.

Table 4.1: Trip Generation Rates

LAND USE	AM PEAK HOUR	PM PEAK HOUR	DAILY
Industrial	4.94 trips/ha	4.94 trips/ha	49.42 trips/ha
	or 2.00 trips/acre (80% in/20% out)	or 2.00 trips/acre (20% in/80% out)	or 20.00 trips/acre (50% in/50% out)
Residential	0.70 trips/du	0.94 trips/du	9.43 trips/du
	(25% in/75% out)	(63% in/37% out)	(50% in/50% out)

During the review of the future development scenarios, Parkland County identified three development sites that may have different trip generation characteristics than industrial/residential sites within the study area as follows:

- 11332 266 Street – Acheson Zone 1 Commercial (Tim Hortons)
- 9774 231 Street – Edmonton Minor Soccer Association Site
- SE-18-53-26-4 – Potential Truck Stop

4.1.1 Acheson Zone 1 Commercial (Tim Hortons)

The 11332 266 Street development within Acheson Zone 1 is located on the southwest corner of the 114 Avenue/Highway 60 intersection and is currently under construction. In May 2020, Bunt completed the *Acheson Zone 1 Commercial Traffic Impact Assessment* (2020 TIA) for the site. At the time of the preparation of the TIA, the development parcel was expected to accommodate approximately 40,245 SF of gross floor area including a gas bar, convenience store, two drive-through restaurants, a drive-through car wash, and two commercial retail buildings.

For the purposes of this assessment, the estimated trip generation characteristics, trip distribution, and assignment identified in the 2020 TIA were assumed for the 11332 266 Street parcel. A portion of the site was opened in December 2025; therefore, the complete development site was assumed in the near term horizon.

4.1.2 Edmonton Minor Soccer Association

The 9774 231 Street parcel is owned by the Edmonton Minor Soccer Association (EMSA) and currently accommodates outdoor soccer fields. EMSA is contemplating plans to develop a new indoor soccer facility on the site, intended to accommodate tournament soccer. For the purposes of this assessment, it was assumed that the future facility will be developed in the near term horizon and will include two indoor turf soccer fields and will primarily generate traffic during the weekday PM peak period and on weekends.

In 2017, Bunt collected PM trip generation information at the Edmonton Soccer Centre South to establish a local trip rate for the four existing indoor soccer fields. The study concluded that the existing soccer centre generated trips at a rate of 64.5 trips per field during the PM peak of generator and 27.3 trips per field during the PM peak hour of adjacent street.

For comparison purposes, ITE Land Use Code (LUC) 488 – Soccer Complex suggests a trip rate of 16.90 trips per field during the PM peak hour generator and 16.43 trips per field during the PM peak hour of adjacent street. As the locally measured PM peak hour trip rate is more conservative than the ITE rate, the local PM peak of adjacent street rate of 27.3 trips per field was assumed. Daily trips were estimated by multiplying the PM trips by 6.

4.1.3 Potential Truck Stop

A truck stop is being contemplated within Acheson north of Highway 16 and west of Highway 44. In order to estimate the potential trip making activity associated with the truck stop, Bunt reviewed a TIA completed in 2017 for a Flying J truck stop along a major highway in Medicine Hat, AB. At the time, the Flying J was anticipated to include a 6,383 SF building with fueling pumps and truck parking on a 4.77 ha site. The peak hour trip generation rates used in the 2017 TIA were based on data collected at a similar truck stop in Medicine Hat which were estimated to be 27.73 trips per 1,000 SF in the AM peak hour and 24.44 trips per 1,000 SF in the PM peak hour.

ITE LUC 950 – Truck Stop does not provide trip rates based on building floor area but rather fueling positions and are categorized as truck trips only.

Based on the above, a 4.77 ha truck stop site with the trip generation estimates consistent with the Medicine Hat Flying J was assumed in the study. Pass-by trips were estimated to be 50% of the gross trips and daily trips were estimated based on AM plus PM multiplied by 6.

The truck stop is assumed to be developed within the long-term horizon.

4.2 Trip Generation Estimates

Table 4.2 summarizes the projected two-way gross AM peak hour, PM peak hour, and daily vehicle trips anticipated to be generated by Acheson and Big Lake upon full build out in the ultimate horizon, while **Tables 4.3** and **4.4** summarize the gross trips anticipated to be generated within the long-term and near-term horizons.

Table 4.2: Ultimate Gross Trip Generation Estimates

LAND USE	INTENSITY (TOTAL)	AM PEAK HOUR		PM PEAK HOUR		DAILY	
		IN	OUT	IN	OUT	IN	OUT
Industrial	5,877 acres	9,403	2,351	2,351	9,403	58,770	58,770
Residential	755 du	132	396	447	263	3,560	3,560
Zone 1 Commercial	40,245 SF	262	229	181	203	2,506	2,506
EMSA	2 fields	0	0	32	23	164	164
Truck Stop	6,383 SF	85	92	78	78	999	999
TOTAL		9,882	3,068	3,089	9,970	65,999	65,999

As shown in Table 4.2, the area is anticipated to generate in the order of 12,950 two-way trips in the AM peak hour, 13,059 two-way trips in the PM peak hour, and 131,998 two-way trips on a typical weekday upon full build-out of the area.

Table 4.3: Long Term Gross Trip Generation Estimates

LAND USE	INTENSITY (TOTAL)	AM PEAK HOUR		PM PEAK HOUR		DAILY	
		IN	OUT	IN	OUT	IN	OUT
Industrial	3,231 acres	5,170	1,292	1,292	5,170	32,310	32,310
Residential	749 du	131	393	444	261	3,532	3,532
Zone 1 Commercial	40,245 SF	262	229	181	203	2,506	2,506
EMSA	2 fields	0	0	32	23	164	164
Truck Stop	6,383 SF	85	92	78	78	999	999
TOTAL		5,648	2,006	2,027	5,735	39,511	39,511

As shown in Table 4.3, the area is anticipated to generate in the order of 7,654 two-way trips in the AM peak hour, 7,762 two-way trips in the PM peak hour, and 79,022 two-way trips on a typical weekday in the long term horizon.

Table 4.4: Near Term Gross Trip Generation Estimates

LAND USE	INTENSITY (TOTAL)	AM PEAK HOUR		PM PEAK HOUR		DAILY	
		IN	OUT	IN	OUT	IN	OUT
Industrial	2,115 acres	3,384	846	846	3,384	21,150	21,150
Residential	346 du	61	182	205	120	1,631	1,631
Zone 1 Commercial	40,245 SF	262	229	181	203	2,506	2,506
EMSA	2 fields	0	0	32	23	164	164
Truck Stop	-	-	-	-	-	-	-
TOTAL		3,707	1,257	1,264	3,730	25,451	25,451

As shown in Table 4.4, the area is anticipated to generate in the order of 4,964 two-way trips in the AM peak hour, 4,994 two-way trips in the PM peak hour, and 50,902 two-way trips on a typical weekday in the near term horizon.

4.3 Trip Distribution

4.3.1 Residential Trip Distribution

The distribution of residential trips was based on the City of Edmonton's Origin-Destination Car Drive Trips July 2018 spreadsheets, which are included in **Appendix E** for reference. Generally, the distribution of residential trips assumes the majority of trips (~70%) are to/from the west within Parkland County on a daily basis with about 20% of trips to/from the east. The remaining 10% of trips are assumed to travel to/from the north or south.

4.3.2 Industrial Trip Distribution

Existing traffic volumes into and out of Acheson were reviewed to inform the distribution of industrial trips. The distribution varies by time-of-day, but generally, the majority of industrial trips are estimated to be to/from the east (~50-65%) and west (~25-30%). Trips to/from the south are estimated to be in the order of 10-20% with less than 5% of trips to/from the north.

It is noted that the existing traffic patterns in and out of Acheson have shifted since the 2018 TIA. Changes to the travel patterns throughout Metro Edmonton are not surprising due to the impacts of the pandemic and changes to the way people travel and the time of day they choose to travel.

In the AM peak hour, approximately 10% more trips enter Acheson from the east on Highway 16A rather than from the west on Highway 16 and approximately 8% of trips exiting Acheson are using Highway 16A west rather than Highway 16 east.

In the PM peak hour, less trips are entering from Highway 16 east but rather from Highway 16 west and Highway 60 south of Highway 628. Trips exiting Acheson in the PM peak hour were relatively consistent with the 2018 TIA.

On a daily basis, the trips entering Acheson were relatively consistent with the 2018 TIA, while exiting trips shifted to Highway 60 south of Highway 628 from Highway 16A east.

The updated trip distribution characteristics measured in and out of Acheson based on TEC 2024 factored traffic volumes within the study area were used in this assessment as they reflect latest travel patterns in the region.

4.4 Trip Assignment

The trips were assigned to the roadway network using the above noted distributions, the availability of collector and arterial accesses, and the location of land uses in relation to the collector and arterial roadways. **Exhibits 4.1, 4.2, and 4.3** illustrate the AM and PM peak hour site generated traffic estimates in the ultimate, long term, and near term horizons respectively.

PTV Vistro software was used to assign trips on the network. Vistro will not calculate and assign a fraction of a trip and converts all trips to integers; therefore, the volumes noted in Exhibits 4.1 through 4.3 may not match the values in Table 4.2 due to rounding. However, it is projected that the difference between the calculated and assigned volumes is less than 1%.

4.5 Total Traffic Volume Estimates

The site generated traffic volumes were superimposed on the background traffic volumes to determine total traffic volumes for use in the assessment. **Exhibits 4.4, 4.5, and 4.6** illustrate the ultimate, long term, and near term total AM and PM peak hour and daily volumes respectively.

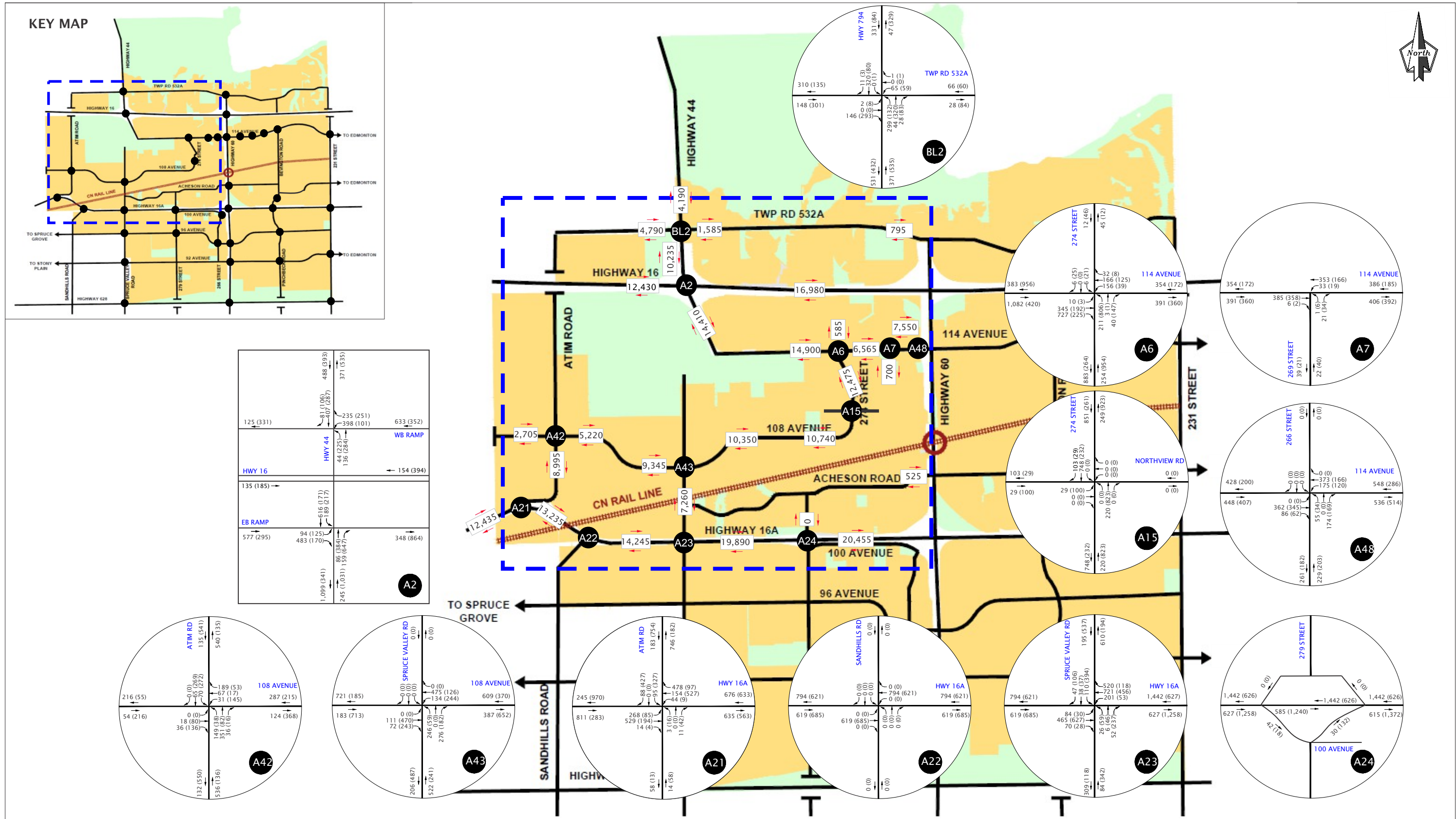


Exhibit 4.1a

Site Generated Traffic Volumes - Ultimate Horizon

Disclaimer:
 - Roadway alignments are conceptual and are subject to change.
 - Local roadways are not shown.

Legend:
 45 (99) AM (PM) Peak Hour Volume
 31,965 Daily Two-Way Volume
 Developed Area
 Not to be Serviced Area



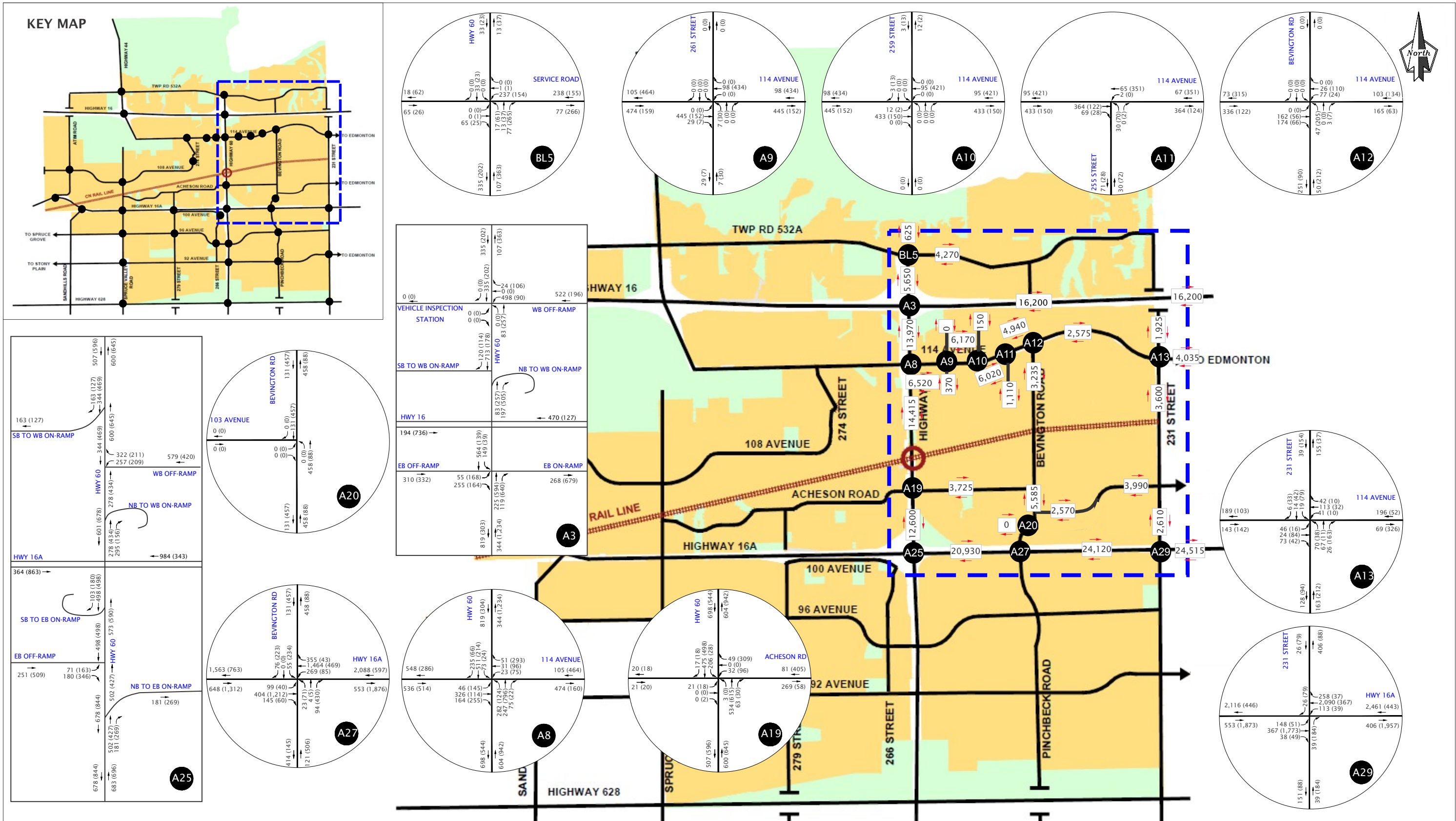


Exhibit 4.1b

Site Generated Traffic Volumes - Ultimate Horizon

Disclaimer:
 - Roadway alignments are conceptual and are subject to change.
 - Local roadways are not shown.

Legend:
 45 (99) AM (PM) Peak Hour Volume
 31,965 Daily Two-Way Volume
 Developed Area
 Not to be Serviced Area



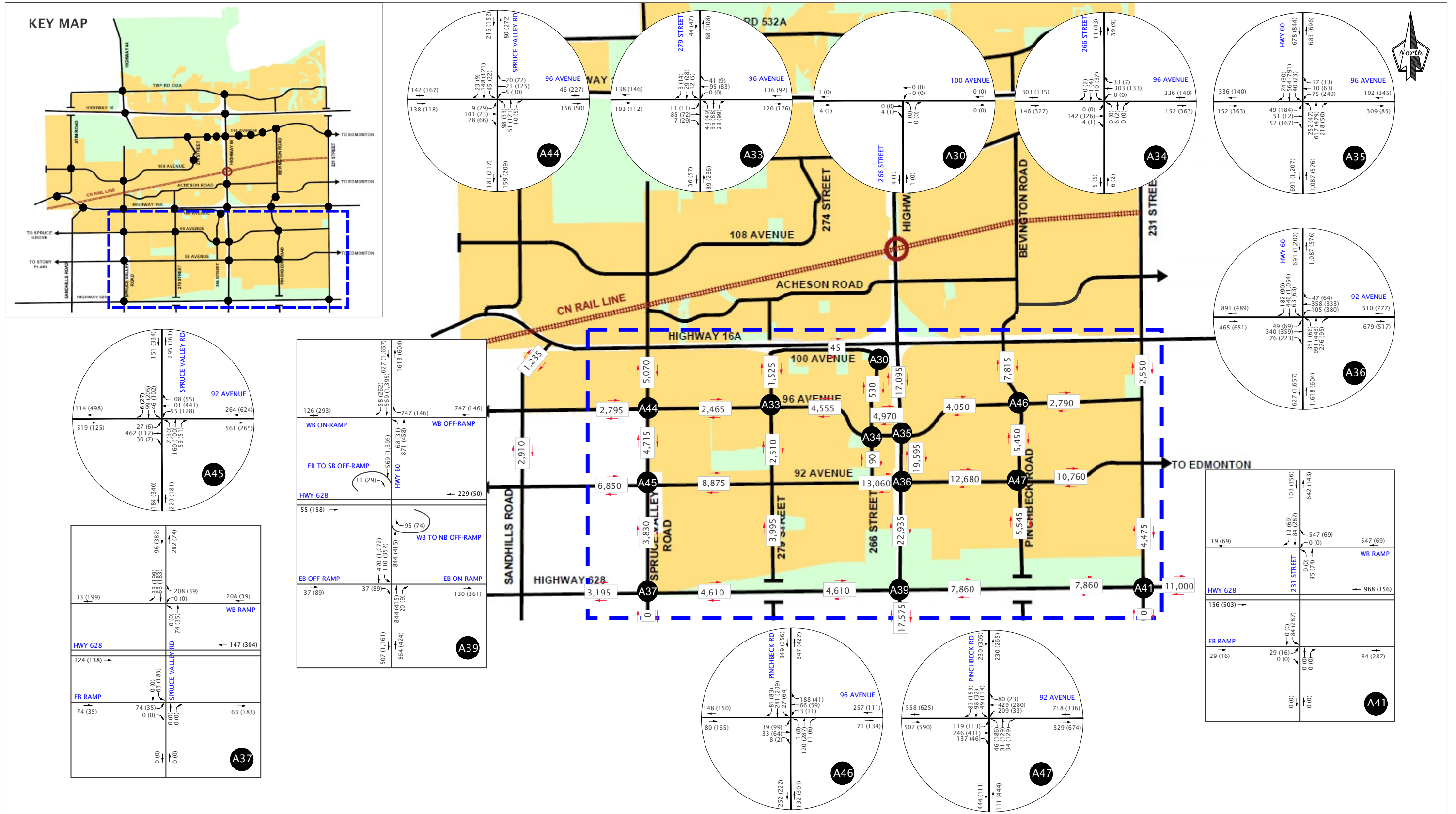


Exhibit 4.1c

Site Generated Traffic Volumes - Ultimate Horizon



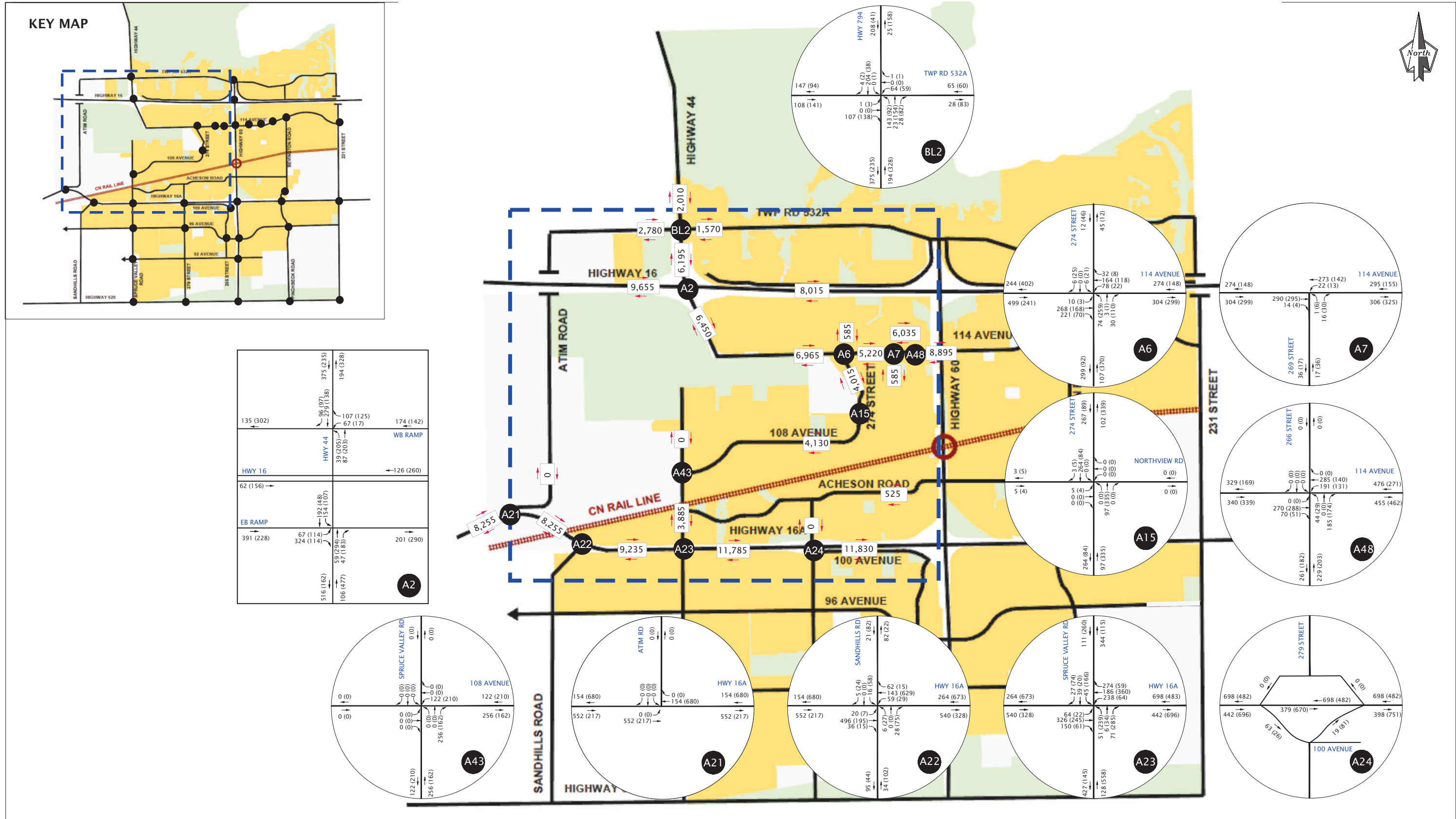


Exhibit 4.2a

Site Generated Traffic Volumes - Long Term Horizon



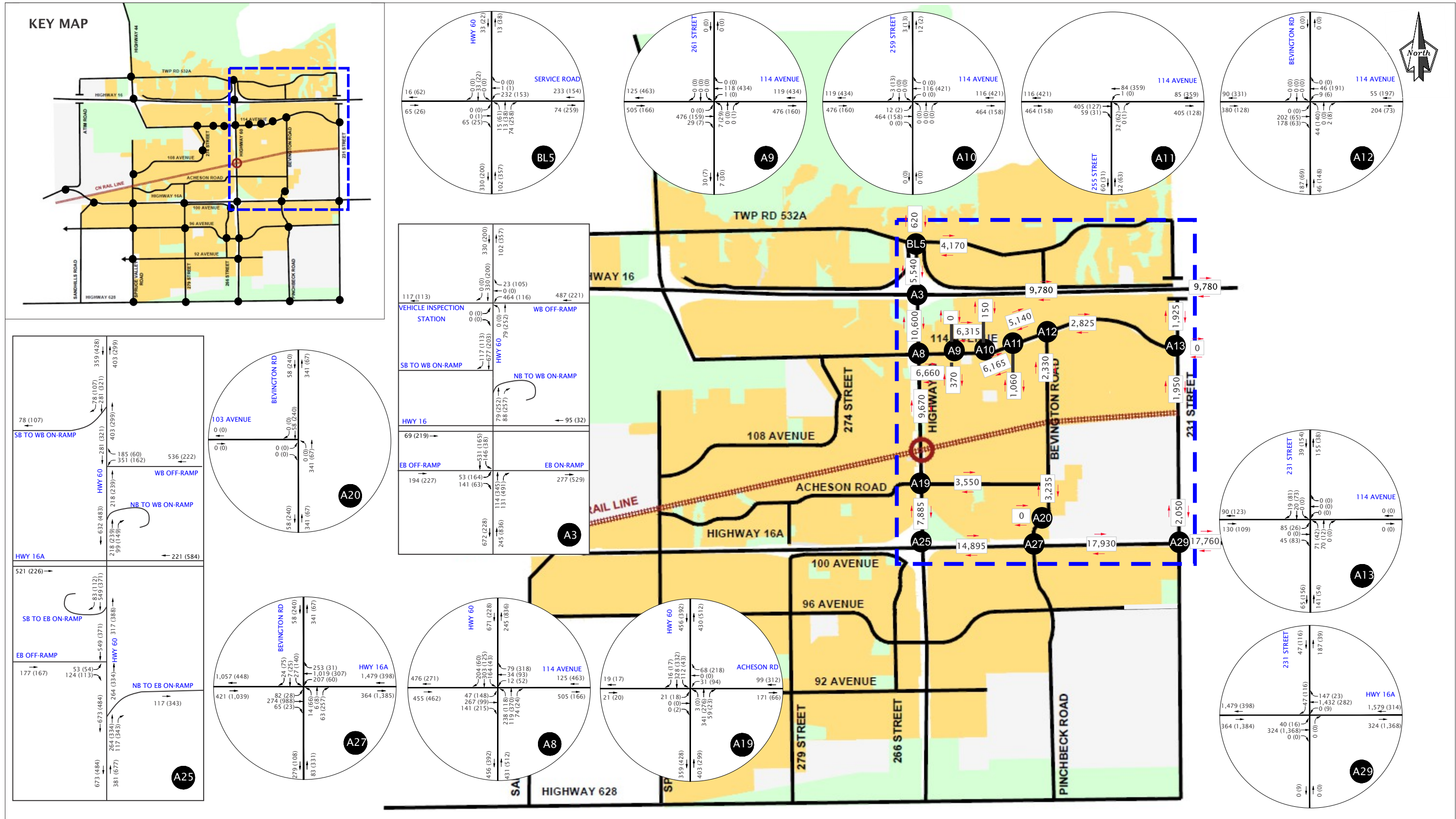


Exhibit 4.2b

Site Generated Traffic Volumes - Long Term Horizon

Disclaimer:
 - Roadway alignments are conceptual and are subject to change.
 - Local roadways are not shown.

Legend:
 45 (99) AM (PM) Peak Hour Volume
 31,965 Daily Two-Way Volume
 Developed Area
 Not to be Serviced Area



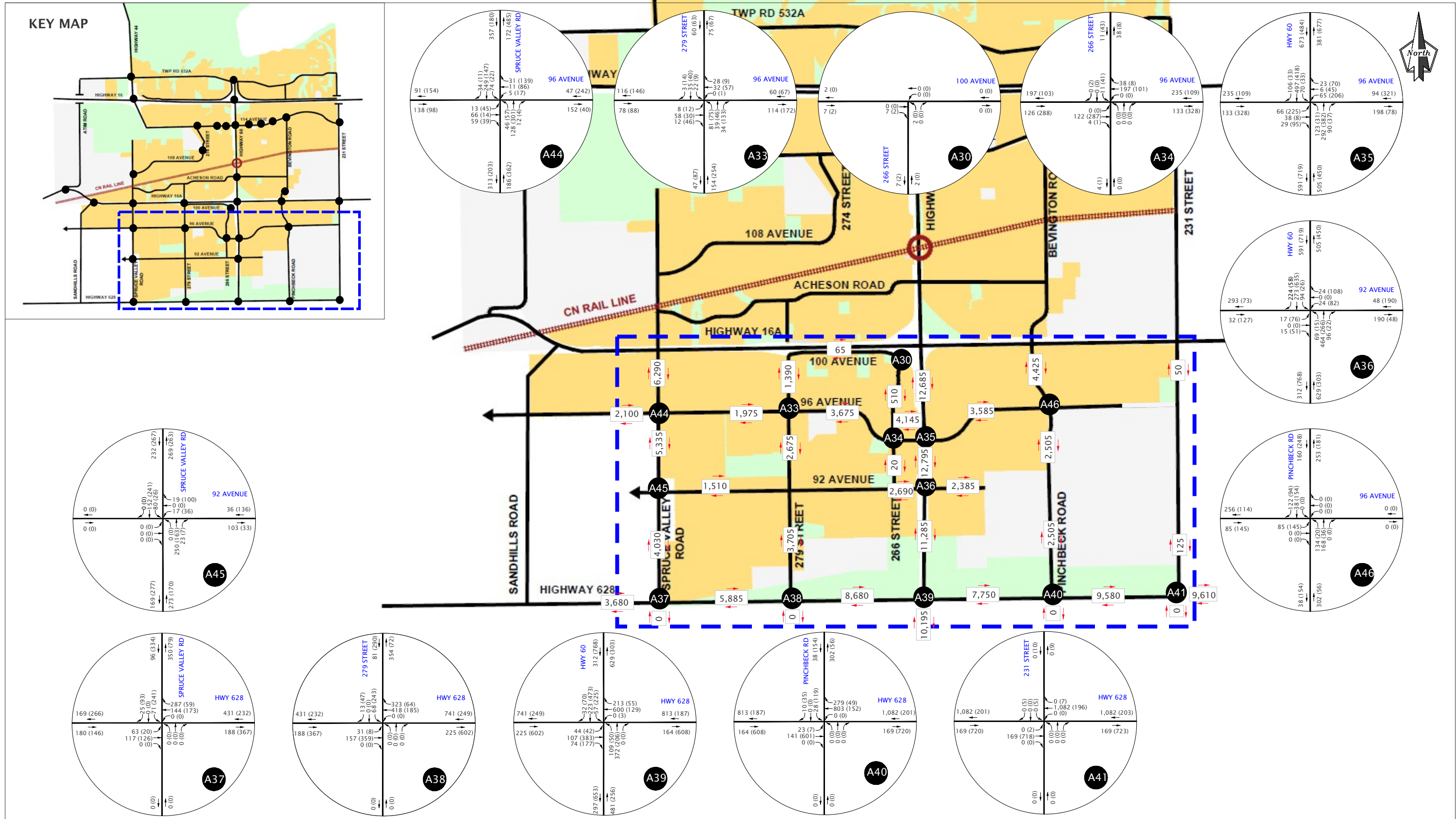


Exhibit 4.2c

Site Generated Traffic Volumes - Long Term Horizon

Disclaimer:
 - Roadway alignments are conceptual and are subject to change.
 - Local roadways are not shown.

Legend:
 45 (99) AM (PM) Peak Hour Volume
 31,965 Daily Two-Way Volume
 Developed Area
 Not to be Serviced Area



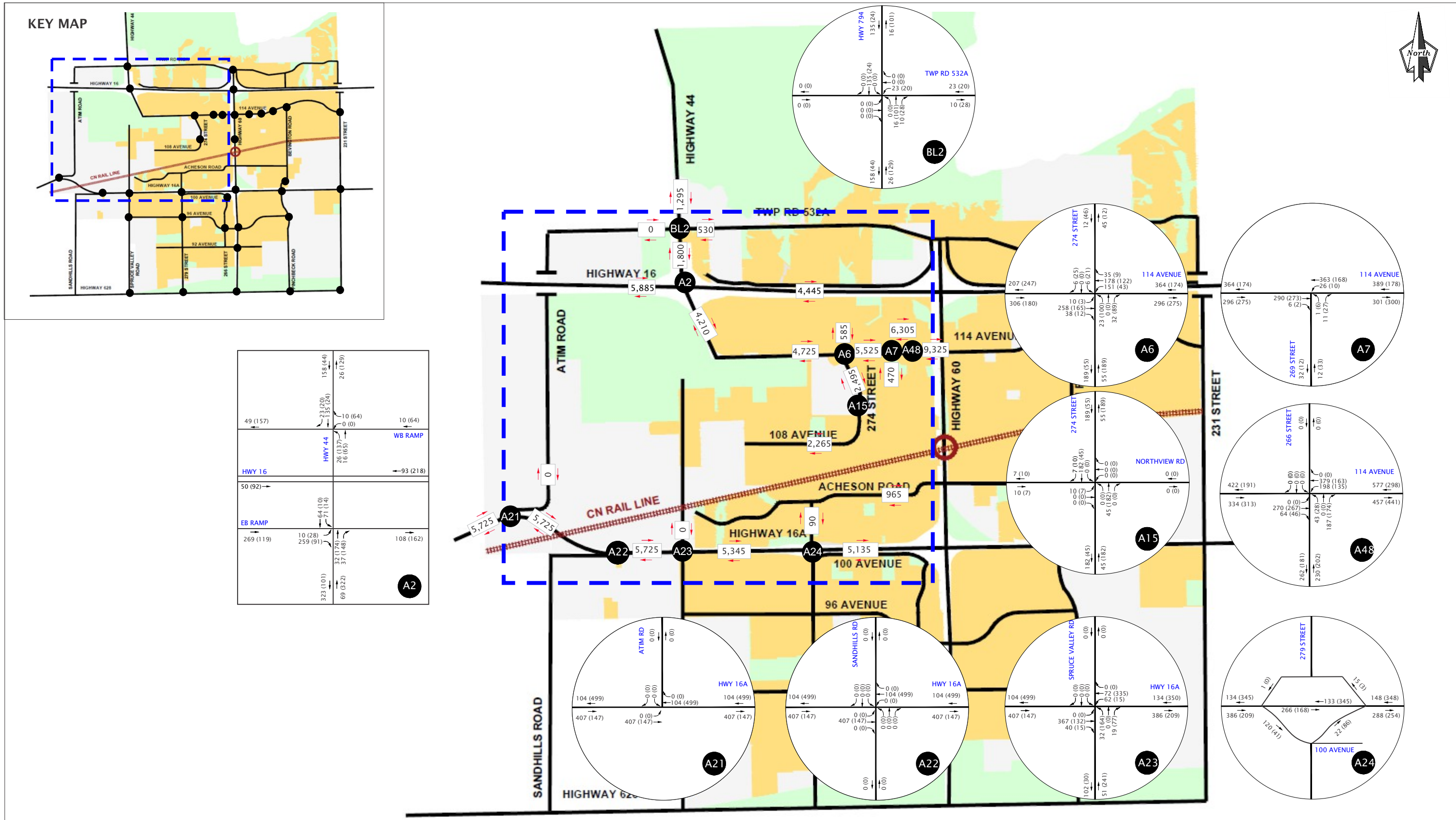


Exhibit 4.3a

Site Generated Traffic Volumes - Near Term Horizon



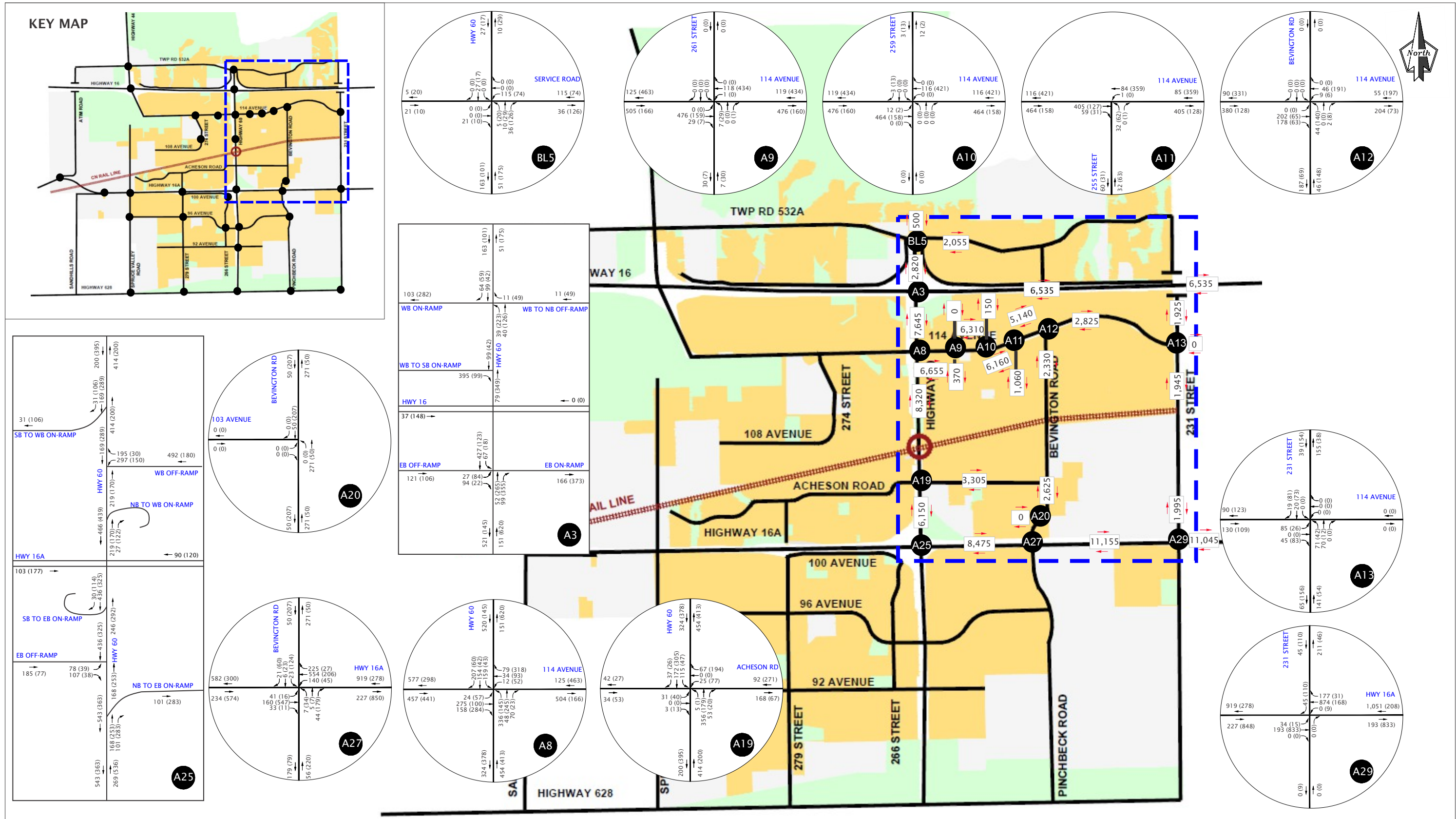


Exhibit 4.3b

Site Generated Traffic Volumes - Near Term Horizon



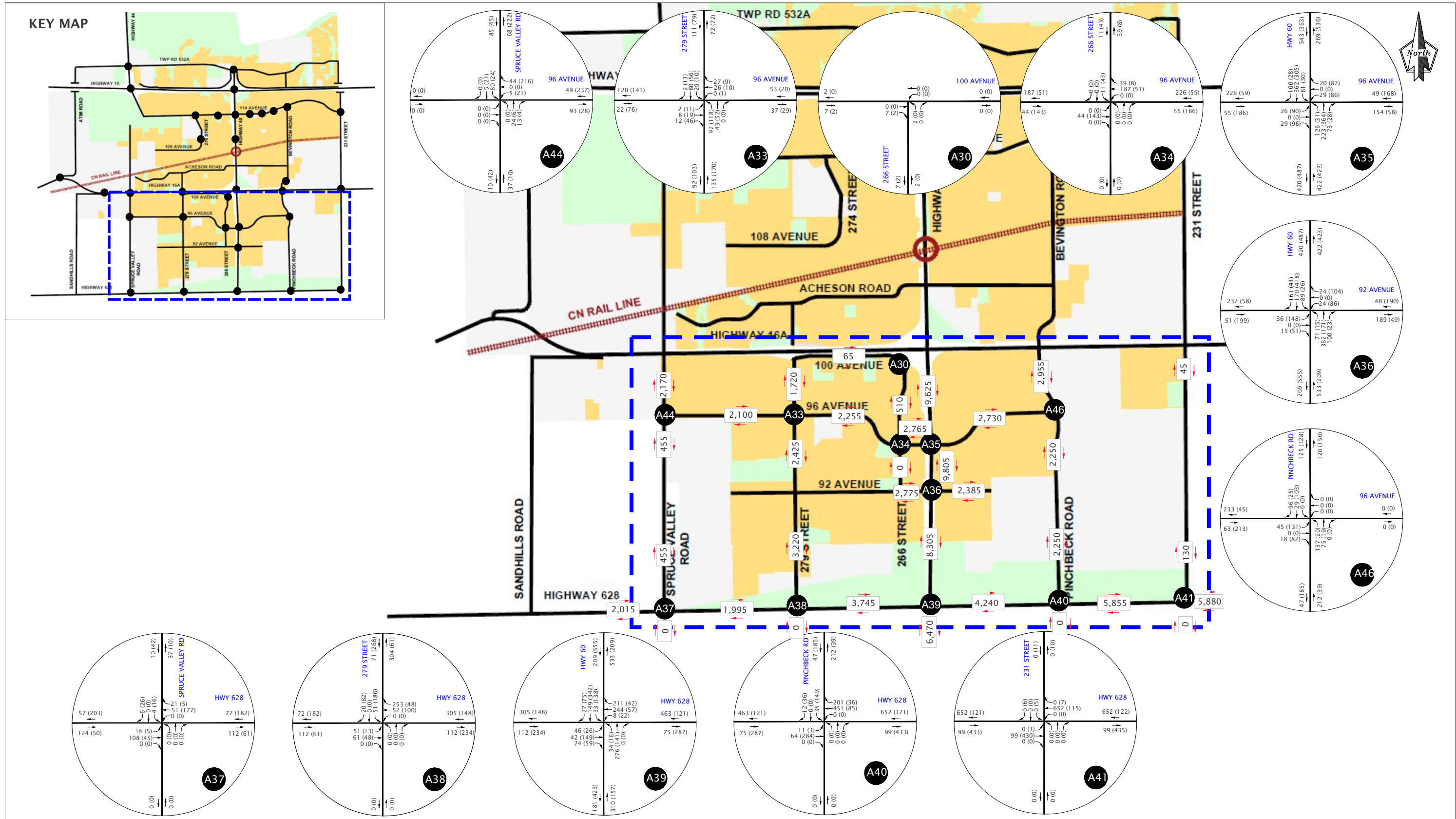


Exhibit 4.3c

Site Generated Traffic Volumes - Near Term Horizon



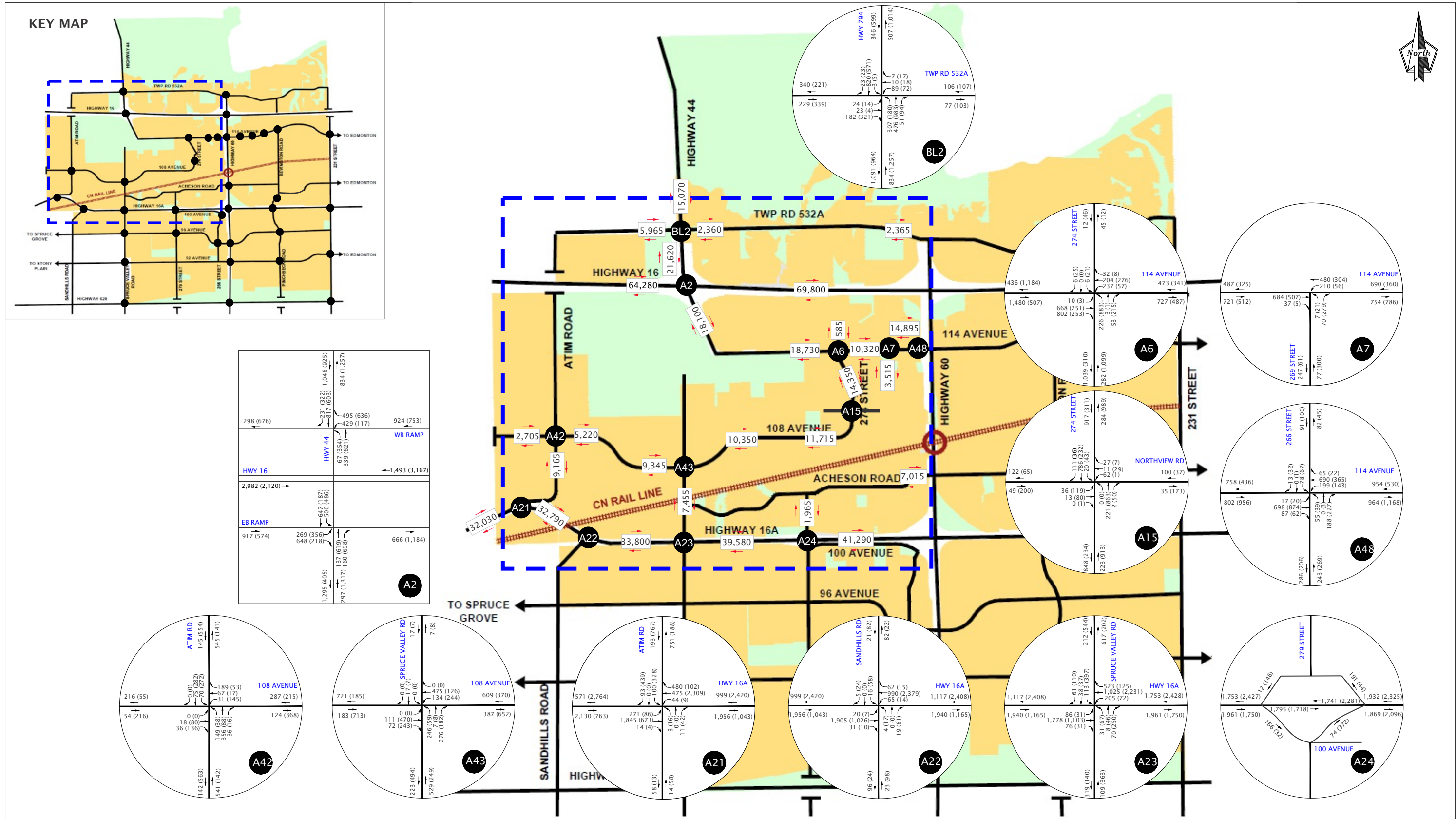


Exhibit 4.4a

Total Traffic Volumes - Ultimate Horizon



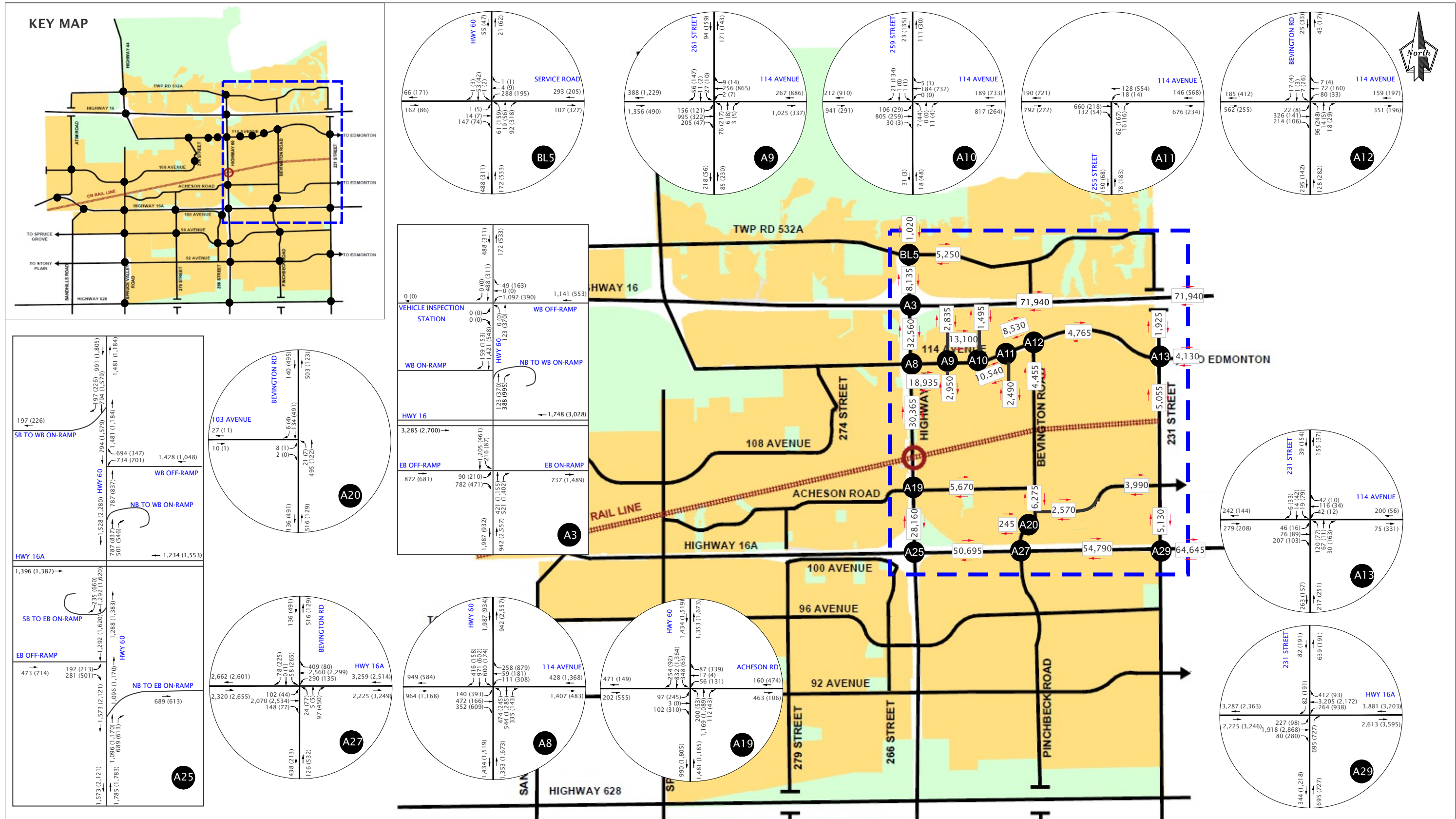


Exhibit 4.4b
Total Traffic Volumes - Ultimate Horizon

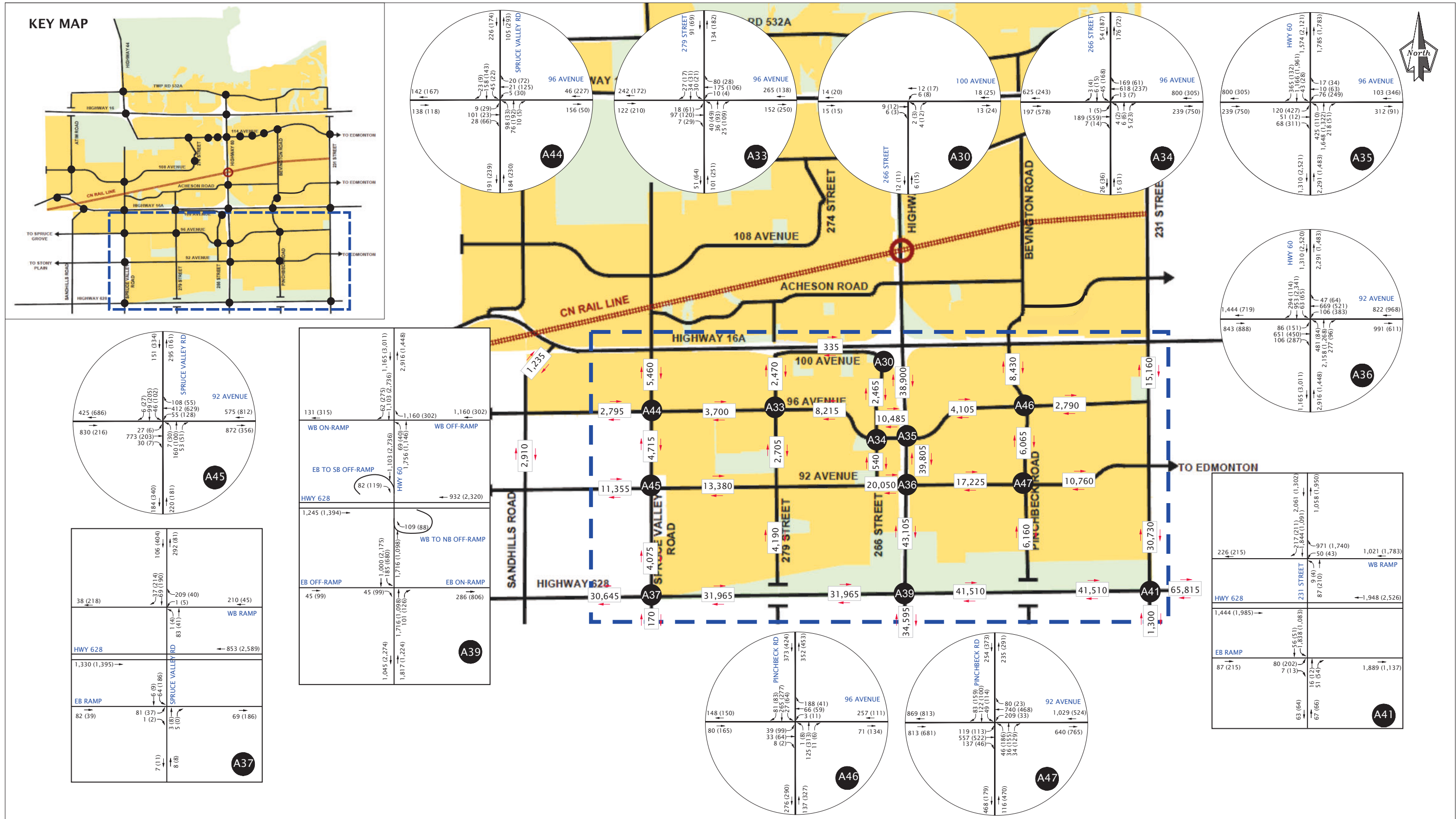


Exhibit 4.4c

Total Traffic Volumes - Ultimate Horizon



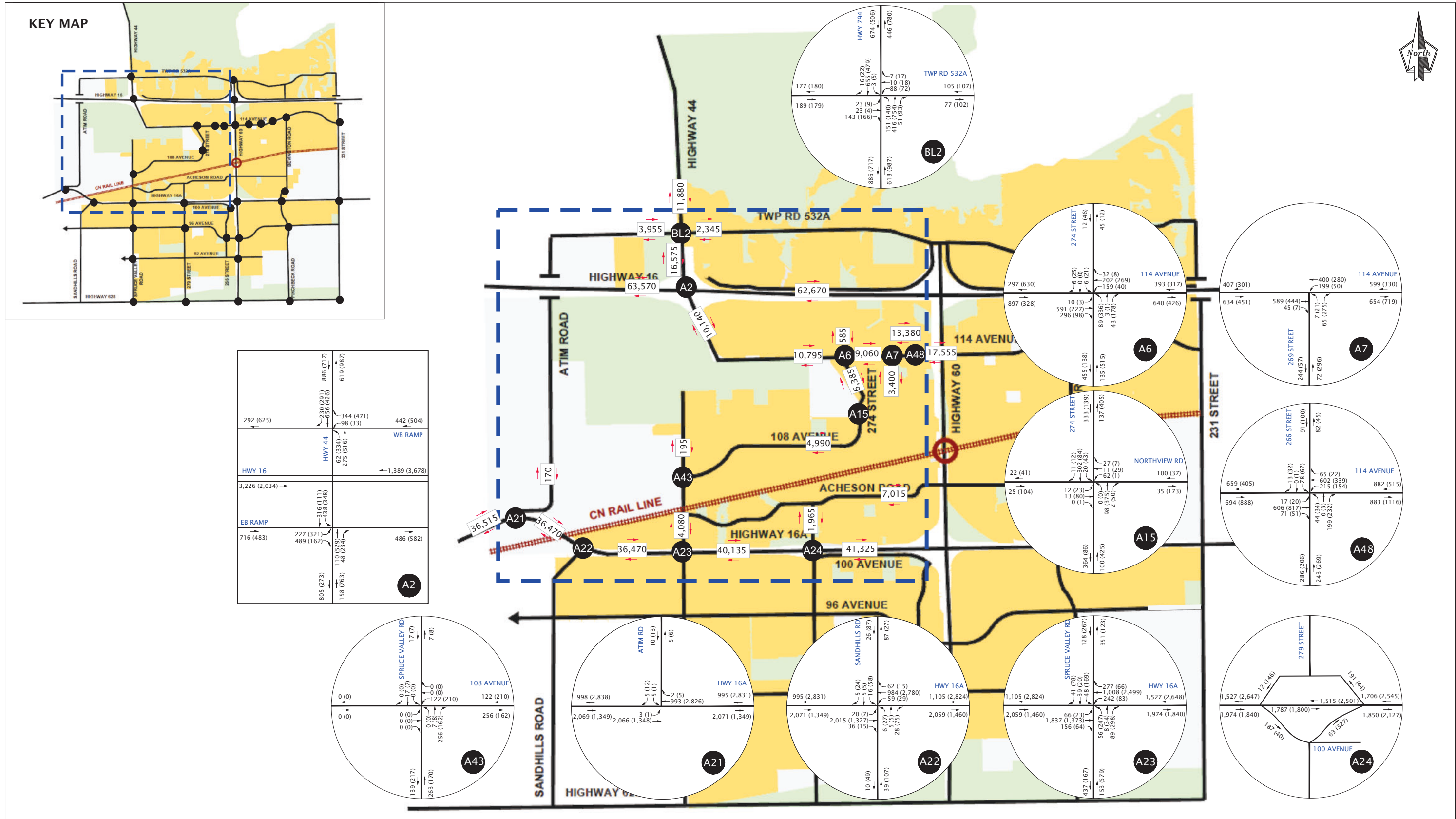


Exhibit 4.5a

Total Traffic Volumes - Long Term Horizon

Disclaimer:
 - Roadway alignments are conceptual and are subject to change.
 - Local roadways are not shown.

Legend:
 45 (99) AM (PM) Peak Hour Volume
 31,965 Daily Two-Way Volume
 Developed Area
 Not to be Serviced Area



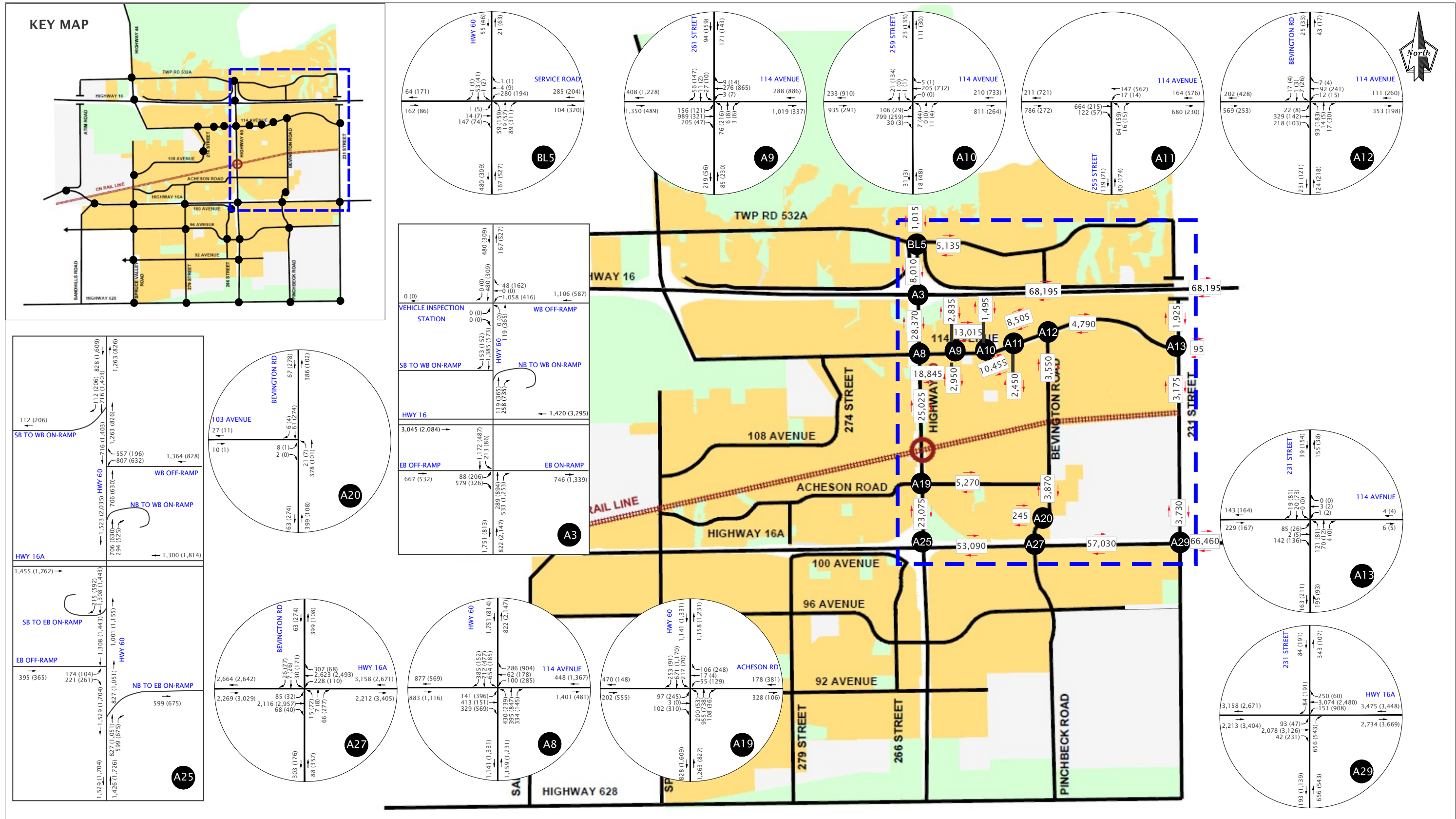


Exhibit 4.5b

Total Traffic Volumes - Long Term Horizon

Disclaimer:
 - Roadway alignments are conceptual and are subject to change.
 - Local roadways are not shown.

Legend:
 45 (99) AM (PM) Peak Hour Volume
 31,965 Daily Two-Way Volume
 Developed Area
 Not to be Serviced Area



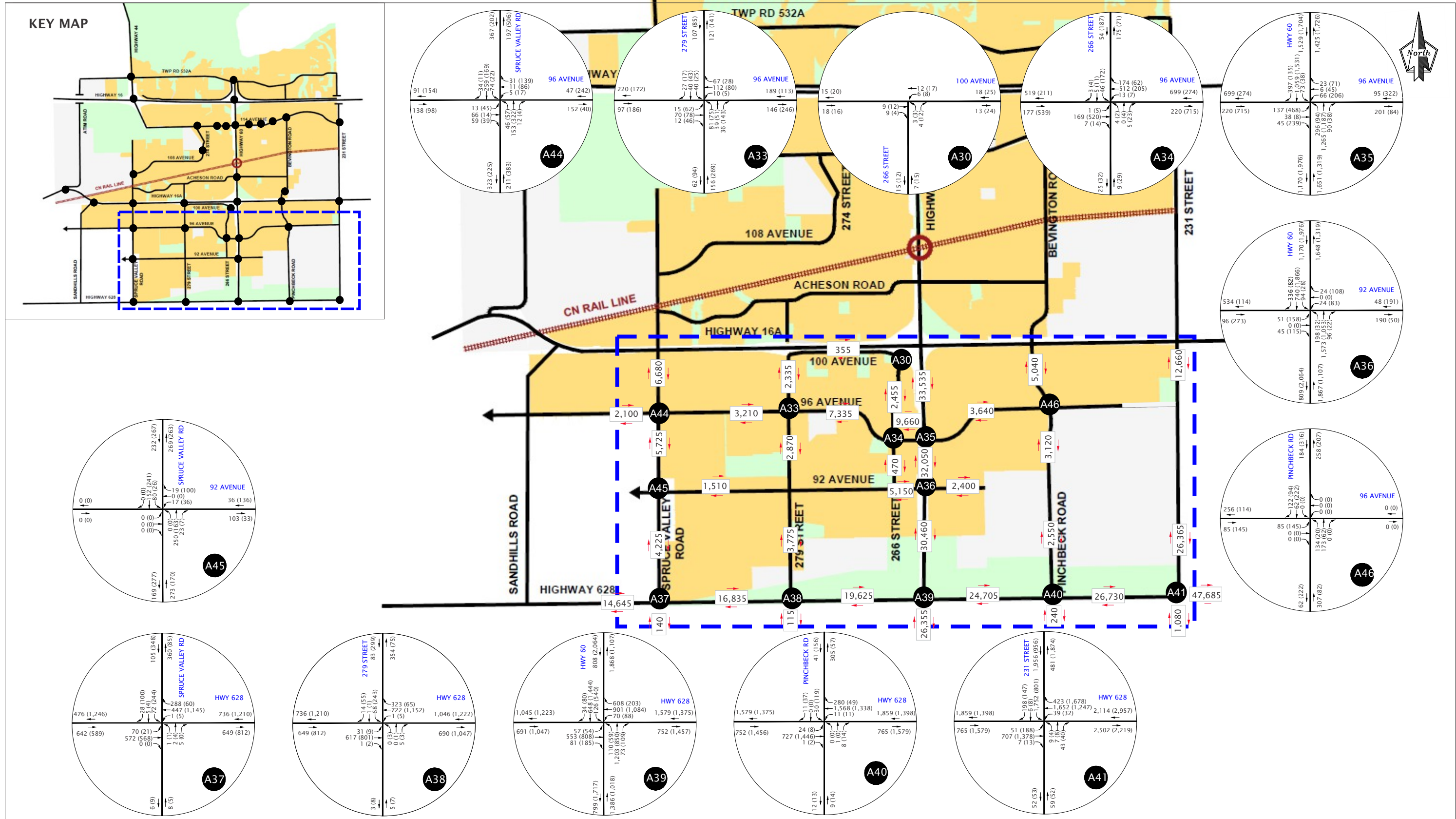


Exhibit 4.5c

Total Traffic Volumes - Long Term Horizon

Disclaimer:
 - Roadway alignments are conceptual and are subject to change.
 - Local roadways are not shown.

Legend:
 45 (99) AM (PM) Peak Hour Volume
 31,965 Daily Two-Way Volume
 Developed Area
 Not to be Serviced Area

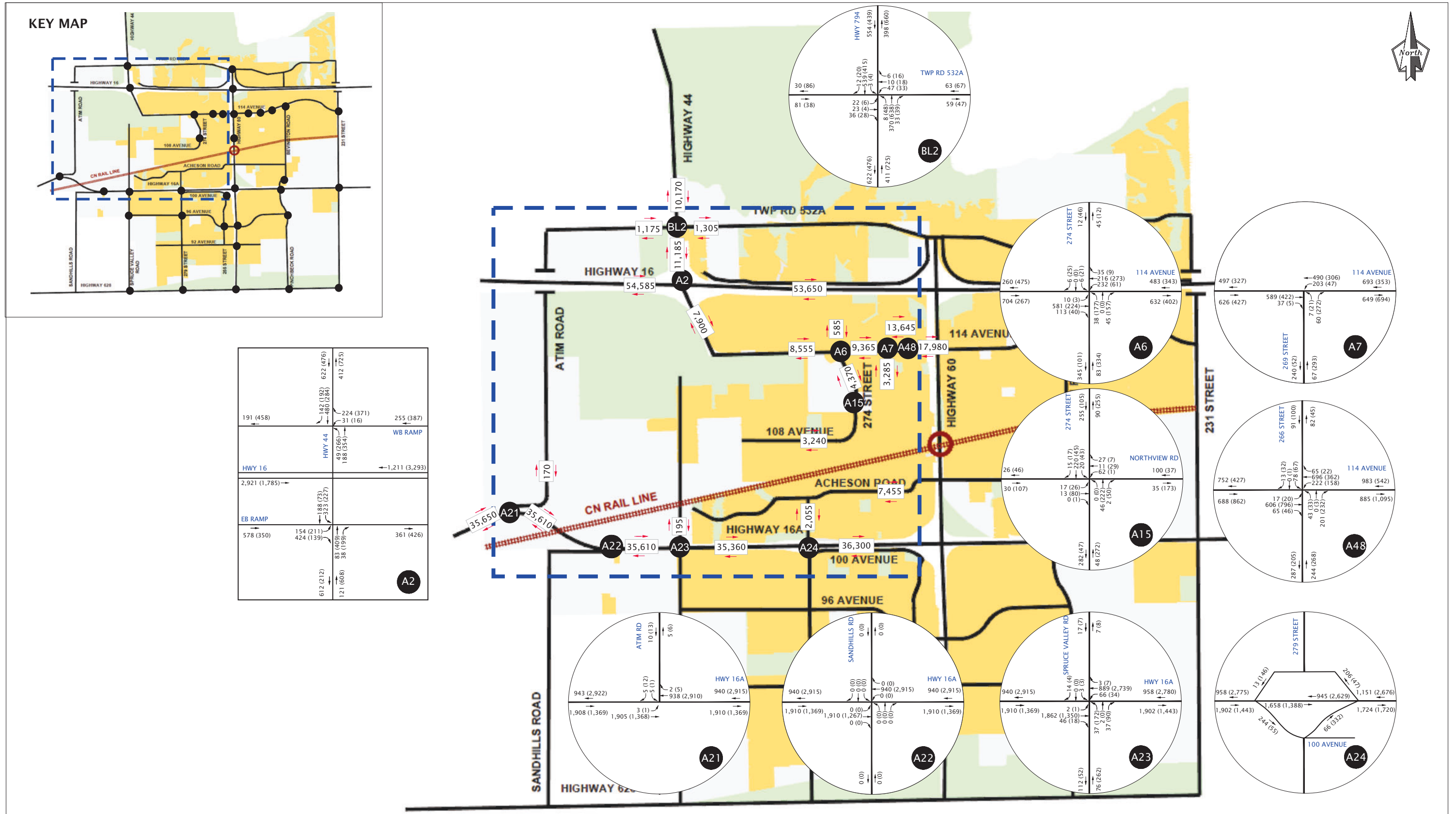


Exhibit 4.6a

Total Traffic Volumes - Near Term Horizon

Disclaimer:
 - Roadway alignments are conceptual and are subject to change.
 - Local roadways are not shown.

Legend:
 45 (99) AM (PM) Peak Hour Volume
 31,965 Daily Two-Way Volume
 Developed Area
 Not to be Serviced Area



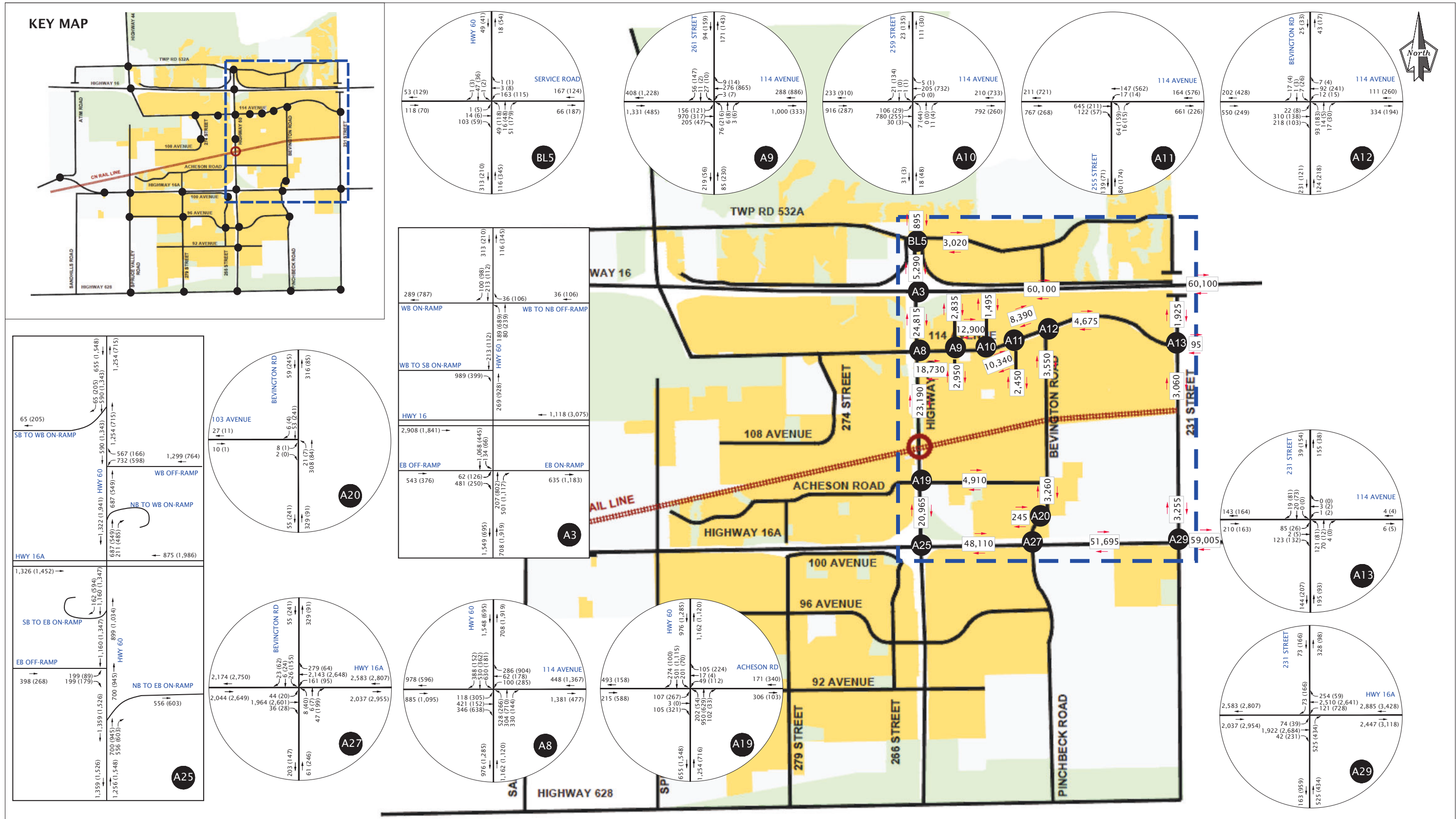


Exhibit 4.6b
Total Traffic Volumes - Near Term Horizon

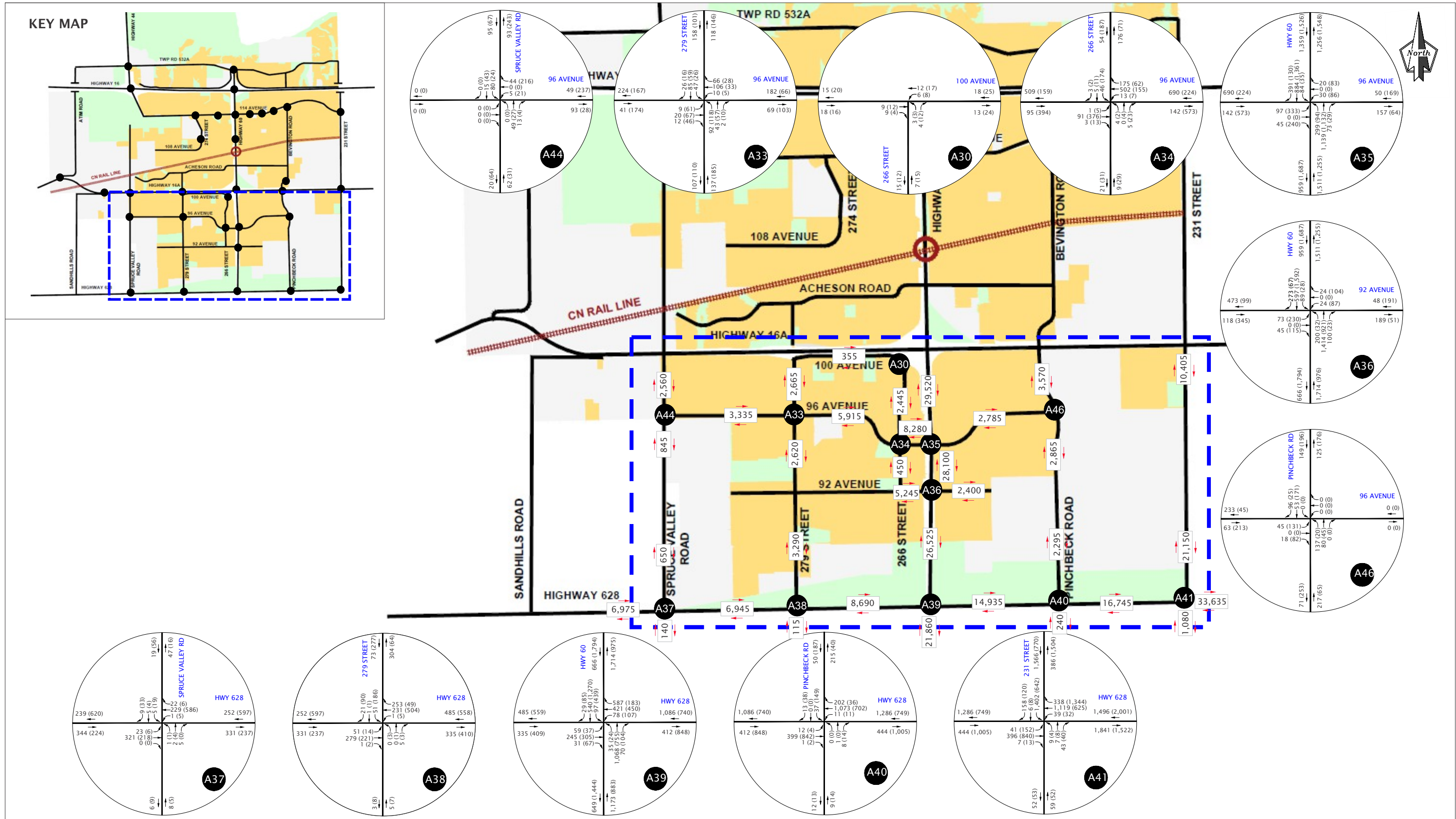


Exhibit 4.6c

Total Traffic Volumes - Near Term Horizon

Disclaimer:
 - Roadway alignments are conceptual and are subject to change.
 - Local roadways are not shown.

Legend:
 45 (99) AM (PM) Peak Hour Volume
 31,965 Daily Two-Way Volume
 Developed Area
 Not to be Serviced Area

5. TRANSPORTATION ASSESSMENT

5.1 Arterial and Collector Roadway Network

The ultimate carrying capacity of a roadway system is typically governed by the capacity provided at the intersections. However, a preliminary analysis was completed based on a review of projected daily volumes on the roadway network to provide a basis for the completion of the intersection assessments. **Tables 5.1 and 5.2** summarize the capacity ranges assumed to establish the potential arterial and collector roadway requirements within the plan area.

Table 5.1: Recommended Industrial Volume Thresholds

ROADWAY	FUNCTION	VOLUME THRESHOLD	NOTES
Industrial Local	Land Access	Up to 1,500 vpd	Assumes 2 travel lanes are provided, with design criteria supporting low speeds and provision of access
Industrial Collector	Traffic Flow, Land Access, and Transit Access	1,000 vpd to 10,000 vpd	Industrial collectors planned to accommodate greater than 5,000 vpd should include mitigation measures such as lane channelization at major intersections (left or right turn bays).
Industrial Arterial – 2-In Divided with left turn bays or 3-In Undivided	Traffic Flow and Regional Transit	8,000 vpd to 16,000 vpd	2-In and 4-In divided arterials can be staged, beginning with a 2-In undivided cross-section. Planning to upgrade a 2-In undivided roadway should begin when daily volumes reach 10,000 vpd.
Industrial Arterial – 4-In Divided	Traffic Flow and Regional Transit	≥12,000 vpd	Planning to upgrade a 2-In divided arterial with left turn bays should begin when daily volumes reach 14,000 vpd. Three-lane or five-lane undivided cross-sections (two/four through lanes plus a centre continuous two-way left turn lane) can be implemented in place of divided arterials where multiple all-directional accesses have previously been approved (retrofit situation).

Table 5.2: Recommended Rural and Residential Volume Thresholds

ROADWAY	FUNCTION	VOLUME THRESHOLD	NOTES
Residential Local	Land Access	≤1,500 vpd	Assumes 2 travel lanes are provided, with design criteria supporting low speeds and provision of access
Rural Local	Land Access	≤1,500 vpd	
Subdivision Through Road (Residential Collector)	Traffic Flow and Land Access	1,000 vpd to 5,000 vpd	Similar to a low volume Industrial Collector. If volume projections are greater than 5,000 vpd, the roadway function should be re-assessed in the context of the overall rural roadway network.
Rural Collector	Traffic Flow and Land Access	1,000 vpd to 5,000 vpd	Rural collectors typically operate at higher speeds and have greater access spacing than industrial collectors.
Rural Arterial - 2-In	Traffic Flow	5,000 vpd to 12,000 vpd	Rural arterials typically operate at higher speeds and have greater access spacing than industrial arterials.
Rural Arterial - 4-In	Traffic Flow	≥12,000 vpd	
Expressway	Traffic Flow	>20,000 vpd	High speed, multilane, access-controlled facility. Minimum intersection spacing of 800 m.

5.1.1 Ultimate

Table 5.3 summarizes the key roadway links within the study area, the projected daily volume in the ultimate horizon, and the cross-section assumed as the basis of the completion of the intersection assessments.

Table 5.3: Ultimate Roadway Cross-Sections

ROADWAY LINK	FROM	TO	MAXIMUM DAILY VOLUMES	PROPOSED ULTIMATE CROSS-SECTION
TWP RD 532A	Atim Road	Highway 44	5,965 vpd	2-lane industrial collector
TWP RD 532A	Highway 44	231 Street	5,250 vpd	2-lane residential subdivision through road
114 Avenue	Highway 16	261 Street	18,935 vpd	4-lane divided industrial arterial
114 Avenue	261 Street	Bevington Road	13,100 vpd	3-lane undivided industrial arterial
114 Avenue	Bevington Road	231 Street	4,765 vpd	3-lane undivided industrial arterial <i>See Note 1</i>
108 Avenue	West of Atim Road		2,705 vpd	2-lane industrial collector
108 Avenue/ 274 Street	Atim Road	114 Avenue	14,350 vpd	2-lane divided industrial arterial with left turn bays <i>See Note 2</i>
Acheson Road	Spruce Valley Road	Highway 60	7,015 vpd	2-lane industrial collector <i>See Note 3</i>
Acheson Road	Highway 60	Bevington Road	5,670 vpd	2-lane industrial collector
Acheson Road	Bevington Road	231 Street	3,990 vpd	2-lane industrial collector
96 Avenue	Sandhills Road	266 Street	8,215 vpd	2-lane industrial collector
96 Avenue	266 Street	Highway 60	10,485 vpd	2-lane industrial collector <i>See Note 4</i>
96 Avenue	Highway 60	231 Street	4,105 vpd	2-lane industrial collector
92 Avenue	Spruce Valley Road	231 Street	20,050 vpd	4-lane divided industrial arterial
Atim Road	North of Highway 16A		9,165 vpd	2-lane industrial collector
Sandhills Road	South of Highway 16A		2,910 vpd	2-lane rural arterial <i>See Note 5</i>
Spruce Valley Road	North of 108 Avenue	Highway 628	7,455 vpd	2-lane industrial collector
279 Street	North of Highway 16A	North of Highway 628	4,190 vpd	2-lane industrial collector
266 Street	100 Avenue	92 Avenue	2,465 vpd	2-lane industrial collector
Bevington Road	114 Avenue	Highway 16A	6,275 vpd	2-lane industrial collector
Pinchbeck Road	Highway 16A	North of Highway 628	8,430 vpd	2-lane industrial collector
231 Street	South of Highway 16	114 Avenue	1,925 vpd	2-lane industrial collector <i>See Note 6</i>
231 Street	114 Avenue	Highway 16A	5,130 vpd	3-lane undivided arterial <i>See Note 6</i>
231 Street	Highway 16A	92 Avenue	15,160 vpd	3 or 4-lane undivided arterial <i>See Note 7</i>
231 Street	92 Avenue	Highway 628	30,730 vpd	4-lane divided arterial <i>See Note 7</i>

The following site-specific requirements were noted:

1. Approximately 840 m of 114 Avenue east of Bevington Road is currently constructed with a three-lane cross-section (one lane in each direction with a two-way centre left turn lane). Although daily volumes along 114 Avenue are below 5,000 vpd, the three-lane cross-section was assumed to continue to 231 Street for consistency.
2. A three-lane arterial cross-section could be implemented along the existing portion of 108 Avenue and 274 Street as a retrofit situation.
3. The majority of Acheson Road west of Highway 60 is already constructed as a two-lane roadway within a mature area of Acheson. Approximately 160 m east of Spruce Valley Road is still to be constructed; however, it is assumed to be developed as a two-lane industrial collector for consistency.
4. 96 Avenue between 266 Street and Highway 60 is anticipated to be slightly over the 10,000 vpd threshold for industrial collectors. Laning requirements through this segment will be confirmed through the Acheson Road/Highway 60 intersection assessments.
5. Maintain arterial designation for potential future regional connection south of Highway 628.
6. 231 Street is owned by the City of Edmonton. Historical conversations with the City identified that a three-lane hybrid arterial (west side rural, east side urban) between Highway 16 and Highway 16A is being considered. With the closure at Highway 16, 231 Street north of 114 Avenue can be classified as an industrial collector. South of 114 Avenue, a three-lane arterial cross-section continues to be assumed in this study.
7. The typical City of Edmonton threshold for a three-lane or four-lane undivided arterial is 12,000-25,000 vpd and 16,000-45,000 vpd for a four-lane divided arterial. As 231 Street is owned by the City of Edmonton, these thresholds were used to establish the appropriate cross-sections between Highway 16A and Highway 628.

5.1.2 Long Term

It is assumed that the majority of roadways will be constructed to their ultimate cross-section noted in Table 5.3 within the long-term horizon. However, based on a review of daily link volumes and the location of development, it is anticipated that construction of roadways noted in **Table 5.4** can be staged.

Table 5.4: Long Term Roadway Cross-Section Staging

ROADWAY LINK	FROM	TO	MAXIMUM DAILY VOLUMES	PROPOSED LONG TERM CROSS-SECTION
114 Avenue	Highway 16	269 Street	10,795 vpd	Existing cross-section (2-lane undivided industrial arterial)
114 Avenue	269 Street	266 Street	13,380 vpd	Existing cross-section <i>See Note 1</i>
108 Avenue/ 274 Street	279 Street	114 Avenue	6,385 vpd	Existing cross-section (2-lane undivided industrial arterial)
92 Avenue	Spruce Valley Road	279 Street	1,510 vpd	3-lane industrial arterial <i>See Note 2</i>
92 Avenue	279 Street	Highway 60	5,150 vpd	Existing cross-section (3-lane industrial arterial)
92 Avenue	Highway 60	East of Highway 60	2,400 vpd	3-lane industrial arterial <i>See Note 2</i>
Atim Road	North of Highway 16A		170 vpd	Existing cross-section (2-lane rural collector)
Pinchbeck Road	South of 96 Avenue	Highway 628	2,550 vpd	Existing cross-section (2-lane rural collector)
231 Street	114 Avenue	Highway 16A	3,730 vpd	Existing cross-section (2-lane rural collector)

The following site-specific requirements were noted:

1. 114 Avenue currently transitions from a 4-lane divided arterial to a two-lane undivided arterial between 266 Street and 269 Street. Based on intersection capacity assessments at 266 Street and 269 Street, the existing cross-section between 266 Street and 269 Street is anticipated to accommodate the long term volume.
2. 92 Avenue between 266 Street and 279 Street is currently staged as a three-lane industrial arterial. To be consistent, it is assumed that the new 92 Avenue segments can also be staged as three-lane industrial arterials.

5.1.3 Near Term

Based on a review of daily link volumes and the location of development, it is anticipated that the ultimate roadway cross-sections can be staged in the near term horizon as outlined in **Table 5.5**. Roadway links planned to be constructed in the near term but not listed in Table 5.5 are assumed to be constructed to their ultimate cross-section as noted in Table 5.3.

Table 5.5: Near Term Roadway Cross-Section Staging

ROADWAY LINK	FROM	TO	MAXIMUM DAILY VOLUMES	PROPOSED NEAR TERM CROSS-SECTION
TWP RD 532A	Atim Road	Highway 44	1,175 vpd	Existing cross-section (2-lane rural collector)
114 Avenue	Highway 16	269 Street	9,365 vpd	Existing cross-section (2-lane undivided industrial arterial)
114 Avenue	269 Street	266 Street	13,645 vpd	Existing cross-section <i>See Note 1</i>
108 Avenue/ 274 Street	South of 114 Avenue		4,370 vpd	Existing cross-section (2-lane undivided industrial arterial)
92 Avenue	West of 279 Street		2,695 vpd	3-lane industrial arterial <i>See Note 2</i>
92 Avenue	279 Street	Highway 60	5,245 vpd	Existing cross-section (3-lane industrial arterial)
Atim Road	North of Highway 16A		170 vpd	Existing cross-section (2-lane rural collector)
Spruce Valley Road	North of Highway 16A		195 vpd	Existing cross-section (2-lane rural collector)
Spruce Valley Road	96 Avenue	Highway 628	845 vpd	Existing cross-section (2-lane rural collector)
Pinchbeck Road	South of 96 Avenue	Highway 628	2,295 vpd	Existing cross-section (2-lane rural collector)
231 Street	114 Avenue	Highway 16A	3,120 vpd	Existing cross-section (2-lane rural collector)

The following site-specific requirements were noted:

1. 114 Avenue currently transitions from a 4-lane divided arterial to a two-lane undivided arterial between 266 Street and 269 Street. Based on intersection capacity assessments at 266 Street and 269 Street, the existing cross-section between 266 Street and 269 Street is anticipated to accommodate the near term volume.
2. 92 Avenue between 266 Street and 279 Street is currently a three-lane industrial arterial. To be consistent, it is assumed that the new 92 Avenue segments will also be staged as a three-lane industrial arterial.

5.2 Highway Network

The following sections summarize the highway cross-sections assumed as the basis for the completion of the intersections assessments. Actual roadway cross-sections will be confirmed through the completion of capacity assessments in Section 5.4.

5.2.1 Highway 16

Ultimate, Long Term, & Near Term

Daily link volumes along Highway 16 are projected to be in the order of 50,000 to 72,000 vpd in the ultimate, long-term, and near term horizons. TEC is preparing plans to widen Highway 16 from four-lanes to eight-lanes between Anthony Henday Drive and Highway 60 and six-lanes between Highway 60 and Highway 779. It is assumed that the Highway 16 improvements will be constructed by the long term horizon. It is noted that this magnitude of traffic is not solely associated with growth in Acheson and Big Lake and includes a substantial amount of regional growth outside of the study area. Approximately 75% of traffic along Highway 16 is projected to be background traffic.

5.2.2 Highway 16A

Ultimate

Ultimate daily link volumes along Highway 16A are projected to be in the order of 32,000 to 55,000 vpd within the study area. For the purposes of this assessment, Highway 16A is assumed to function as an expressway. Expressways are intended to accommodate traffic flow and are high speed, multilane, access-controlled facilities with minimum intersection spacing of 800m. Based on the projected level of traffic activity, Highway 16A is anticipated to require a six-lane divided expressway cross-section by the ultimate horizon.

Long Term

Long term daily volumes along Highway 16A are projected to be in the order of 36,500 to 41,500 vpd west of Highway 60 and between 53,000 and 67,000 vpd east of Highway 60. Slightly higher traffic volumes are projected along Highway 16A in the long-term versus the ultimate horizon. This is anticipated to be a result of the 92 Avenue connection between Spruce Grove and the City of Edmonton and upgrading of Highway 628 in the ultimate horizon; both of which are anticipated to relieve some pressure from Highway 16A.

Based on the long term daily volumes, Highway 16A is anticipated to require a six-lane divided expressway cross-section in the long term horizon.

Near Term

Near term daily volumes along Highway 16A are projected to be in the order of 36,000 vpd west of Highway 60 and between 48,000 to 59,000 vpd east of Highway 60. A six-lane divided expressway east of Highway 60 is anticipated to be required to accommodate the traffic volumes along Highway 16A in the near term horizon. Intersection capacity assessments will confirm the need for upgrading to a six-lane cross-section west of Highway 60.

5.2.3 Highway 628

Ultimate

Highway 628 is ultimately planned to be upgraded to a six-lane freeway extending from Anthony Henday Drive to west of Highway 60 and a four-lane freeway from west of Highway 60 to Stony Plain. Interchanges are planned at 231 Street, Highway 60, Spruce Valley Road, and a potential future north-south highway generally near Sandhills Road. Based on discussions with Parkland County, Highway 628 is assumed to be a four-lane freeway with interchanges west of Highway 60 and a six-lane freeway with interchanges east of Highway 60 in the ultimate horizon. Based on daily traffic volumes in order of 31,000 to 42,000 vpd within the study area, the assumed cross-section is anticipated to be appropriate.

It is noted that approximately 80-85% of total traffic volumes along Highway 628 are associated with background traffic, with 15-20% associated with growth in Acheson and Big Lake.

Long Term

Based on direction from Parkland County, Highway 628 is assumed to be a two-lane expressway with at-grade intersections in the long-term horizon. However, based on daily traffic volumes in the order of 14,600 to 26,700 vpd within the study area, it is anticipated that Highway 628 will require widening to a four-lane divided expressway within the long term horizon. This will be confirmed through intersection capacity assessments along Highway 628.

Approximately 55-70% of the total traffic is associated with background traffic along the corridor, while 30-45% is associated with growth in Acheson and Big Lake.

Near Term

Based on direction from Parkland County, Highway 628 is assumed to be a two-lane expressway with at-grade intersections in the near term horizon. Based on daily traffic volumes along Highway 628 estimated to be in the order of 7,000 to 16,750 vpd within the study area, the two-lane expressway is anticipated to be appropriate for the near term horizon and will be confirmed through intersection assessments.

5.2.4 Highway 60

TEC is currently preparing to implement improvements to the Highway 60 corridor, including twinning Highway 60 between Highway 16A and Highway 16, modifying the interchange at Highway 16A, and the construction of a CN Rail overpass. It is anticipated that these improvements will be in place by the near term horizon.

Ultimate

Daily volumes along Highway 60 are projected to be in the order of 39,000 and 43,000 vpd between Highway 628 and Highway 16A and 28,000 and 33,000 vpd between Highway 16A and Highway 16 in the ultimate horizon. Previously, a four-lane divided expressway south of Highway 16 and a six-lane cross-section south of Highway 16A were identified along the corridor. It is anticipated these cross-sections will continue to be appropriate based on the ultimate daily volume projections.

Long Term & Near Term

In the long term horizon, daily volumes along Highway 60 are projected to be in the order of 30,500 to 33,500 vpd between Highway 628 and Highway 16A and 23,000 and 28,400 vpd between Highway 16A and Highway 16. It is anticipated that a four-lane cross-section can accommodate the projected daily volumes in the long term horizon; however, this will be confirmed through intersection analysis.

In the near term horizon, daily volumes along Highway 60 are projected to be in the order of 26,500 to 29,500 vpd between Highway 628 and Highway 16A and 21,000 to 24,800 vpd between Highway 16A and Highway 16. It is anticipated that a four-lane cross-section can accommodate the projected daily volumes in the near horizon; however, this will be confirmed through intersection analysis.

5.3 Intersection Capacity Analysis Assumptions

The intersection capacity assessments were completed using Synchro 11 (version 11.1.3.34) for unsignalized/signalized intersections and Sidra Intersection 10 (version 10.0.6.236) for roundabouts. Intersection operations are typically rated by two measures. The volume-to-capacity (v/c) ratio describes the extent to which the traffic volumes can be accommodated by the physical capacity of the road configuration and traffic control. A value (measured during the peak hour) less than 0.90 indicates that generally there is sufficient capacity and the projected traffic volumes can be accommodated at the intersection. A value between 0.90 and 1.0 suggests unstable operations may occur and volumes are nearing capacity conditions. A calculated value over 1.0 indicates that traffic volumes are theoretically exceeding capacity. The second measure of performance, Level of Service (LOS), is based on the estimated average delay per vehicle among all traffic passing through the intersection. A low average delay merits a LOS A rating. Average delays greater than 80 seconds per vehicle at a signalized intersection generally produce a LOS F rating, while at unsignalized intersections a LOS F is reached when vehicles experience an average delay greater than 50 seconds.

Consistent with the 2018 TIA, the following parameters for identifying intersection improvements were applied:

- An unsignalized intersection with long delays for major street left turns or minor street movements does not immediately warrant extensive geometry improvements or signalization. Where unsignalized operation continues to be recommended, high v/c ratios and long delays may be identified. Traffic signal warrant assessments using TAC's Traffic Signal and Pedestrian Signal Head Warrant Handbook should be completed when all three of the following conditions are met:
 - Minor street movements exceed LOS F;
 - Minor street volumes are greater than 100 vph; and
 - Minor street v/c ratios exceed 0.75.
- At signalized intersections, the overall requirements of $v/c \leq 0.85$ and LOS D or better were identified as the design objective in the near-term horizon, and $v/c \leq 0.90$ and LOS E or better in the long-term and ultimate horizons. Design criteria varies by movement and is consistent with the criteria established in the 2018 TIA.

It is noted that any signalized intersection in the plan area, existing or future, is required to have Opticom Emergency Vehicle Preemption to ensure priority is given to emergency service vehicles when required.

In locations where the assessments identify v/c ratios and level of service that do not meet the design criteria, the volume per lane, overall lane balance along the corridor, and the potential impacts to operations, such as the requirement for protected only phasing, were reviewed.

The methodology includes a number of assumptions that relate to the operating conditions present at the intersections. The following assumptions were used in the assessments.

- Saturation Flow Rate – 1,900 vphg
- Minimum Lane Width – 3.7 m
- Peak Hour Factor – 0.92 (near-term), 0.92 rural/residential & 1.0 industrial (long-term & ultimate)
- %HV – existing or 3% within residential areas and 26% within industrial areas
- Lane Utilization Factor – 1.0, except where physical geometry would influence drivers to choose one lane over another
- Right Turn Factor – Default except right turns with channelizing islands, 1.0
- Left Turn Factor (Protected) – 1.0

5.4 Intersection Analysis

Capacity assessments were completed based on the ultimate roadway network and traffic volumes to set the ultimate network first. The assessment of the ultimate horizon then informs decisions regarding staging of the long term and near term horizons. Summaries of the ultimate, long term, and near term capacity assessments completed are provided in **Appendix F**. The summaries identify the traffic volume, intersection geometry, and traffic control inputs used in the assessments and v/c ratio, delay, Level of Service (LOS), and 95th percentile queue length outputs from the assessments.

The geometry assumed for each intersection are represented by “L” for left turn movements, “T” for through movements, and “R” for right turn movements, and lanes are separated by a “/”. For example, an approach whose geometry is described as LT/R features two lanes: one lane accommodating shared left/through movements and a second lane accommodating right turning movements.

Traffic signal phasing is denoted by “Pm+Pt” for protected/permitted left turn phasing, “Prot” for protected only left turn phasing, “Pm+Ov” for overlapped right turn phasing and “free” for free-flow right turns.

The anticipated 95th percentile queue length may include a footnote that relates to the ability of the program to estimate the queue accurately. The ‘m’ footnote indicates that the volume entering the intersection is being metered by an upstream intersection. The Synchro help file also provides the following regarding the ‘#’ footnote:

“The # footnote indicates that the volume for the 95th percentile cycle exceeds capacity. This traffic was simulated for two complete cycles of 95th percentile traffic to account for the effects of spill over between cycles. If the reported $v/c < 1$ for this movement, the methods used represent a valid method for estimating the 95th percentile queue. In practice, 95th percentile queue shown will rarely be exceeded and the queues shown with the # footnote are acceptable for the design of storage bays.”¹

Exhibits 5.1 through 5.3 illustrate the locations of the key intersections analyzed in each horizon.

5.4.1 A2 – Highway 16 and Highway 44

The Highway 16/Highway 44 interchange is currently developed as a diamond interchange accommodating eastbound, westbound, northbound, and southbound right turn directional ramps. As part of TEC’s improvements to the Highway 16 corridor, the Highway 16/Highway 44 ramp intersections are proposed to be constructed as single-lane roundabouts with slip right turn lanes. The eastbound and westbound ramp roundabouts were assumed to be constructed by the long term horizon. It is noted that the right turn slip lanes were assessed assuming free flow operations.

Ultimate

Westbound Ramp

The westbound ramp intersection was assessed as a single lane roundabout with westbound and southbound right turn slip lanes. Based on the capacity analysis, the Highway 16/Highway 44 Westbound Ramp intersection is projected to operate within acceptable thresholds in the ultimate horizon.

Eastbound Ramp

The eastbound ramp intersection was also assessed as single lane roundabout with eastbound and northbound right turn slip lanes. Based on the roundabout analysis, the Highway 16/Highway 44 Eastbound Ramp is projected to operate at acceptable levels of service in the ultimate horizon.

Long Term

The westbound ramp and eastbound ramp intersections are both projected to operate at acceptable levels of service in the AM and PM peak hours in the long term horizon as single lane roundabouts with free flow right turn lanes.

¹ Trafficware LLC., Synchro Studio 11 User Guide, Chapter 11 – Timing/Signing Settings, Queue Lengths, pg. 11-17.

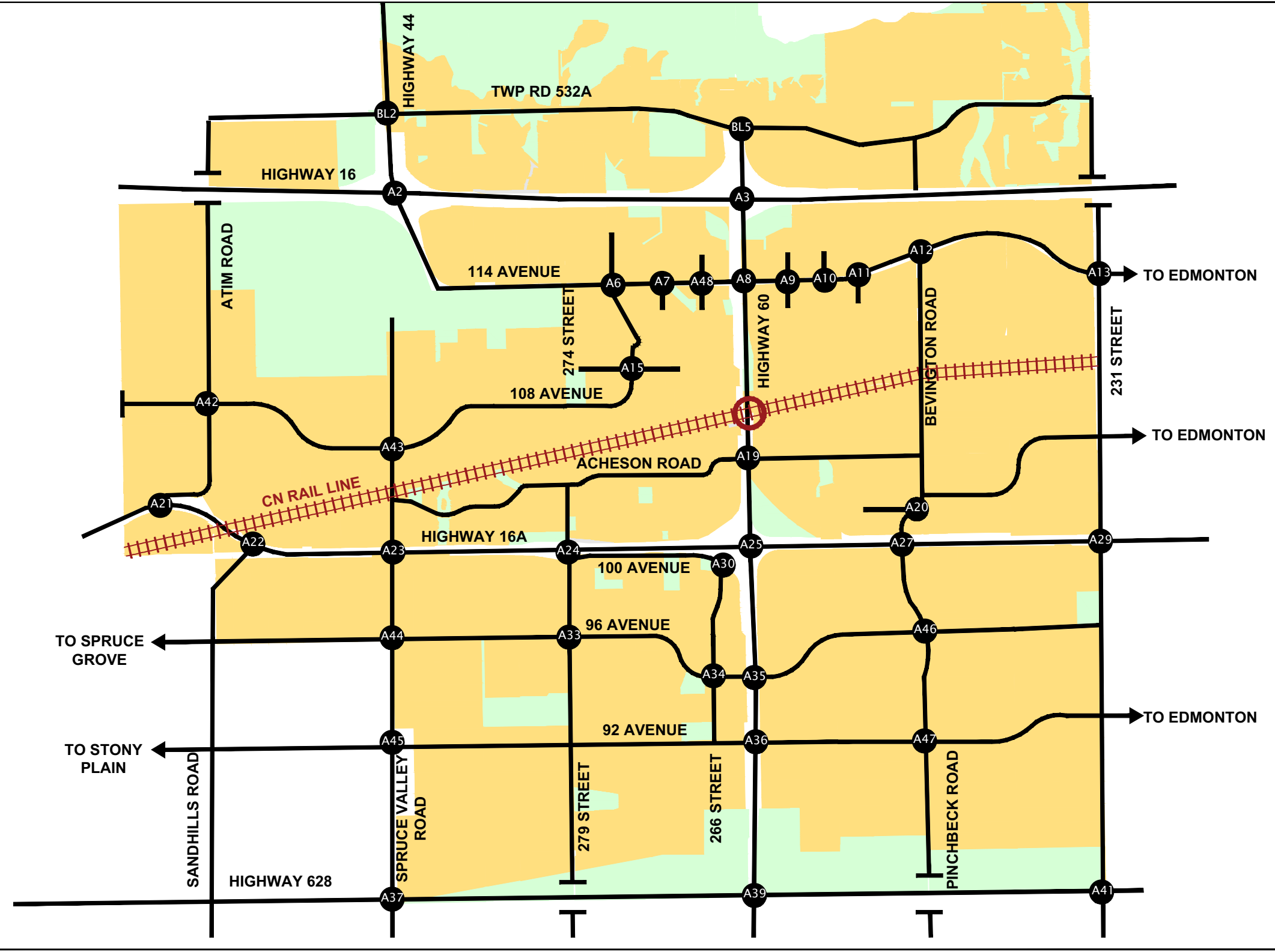


Exhibit 5.1

Key Intersections - Ultimate Horizon

Disclaimer:

- Roadway alignments are conceptual and are subject to change.
- Local roadways are not shown.

N.T.S.



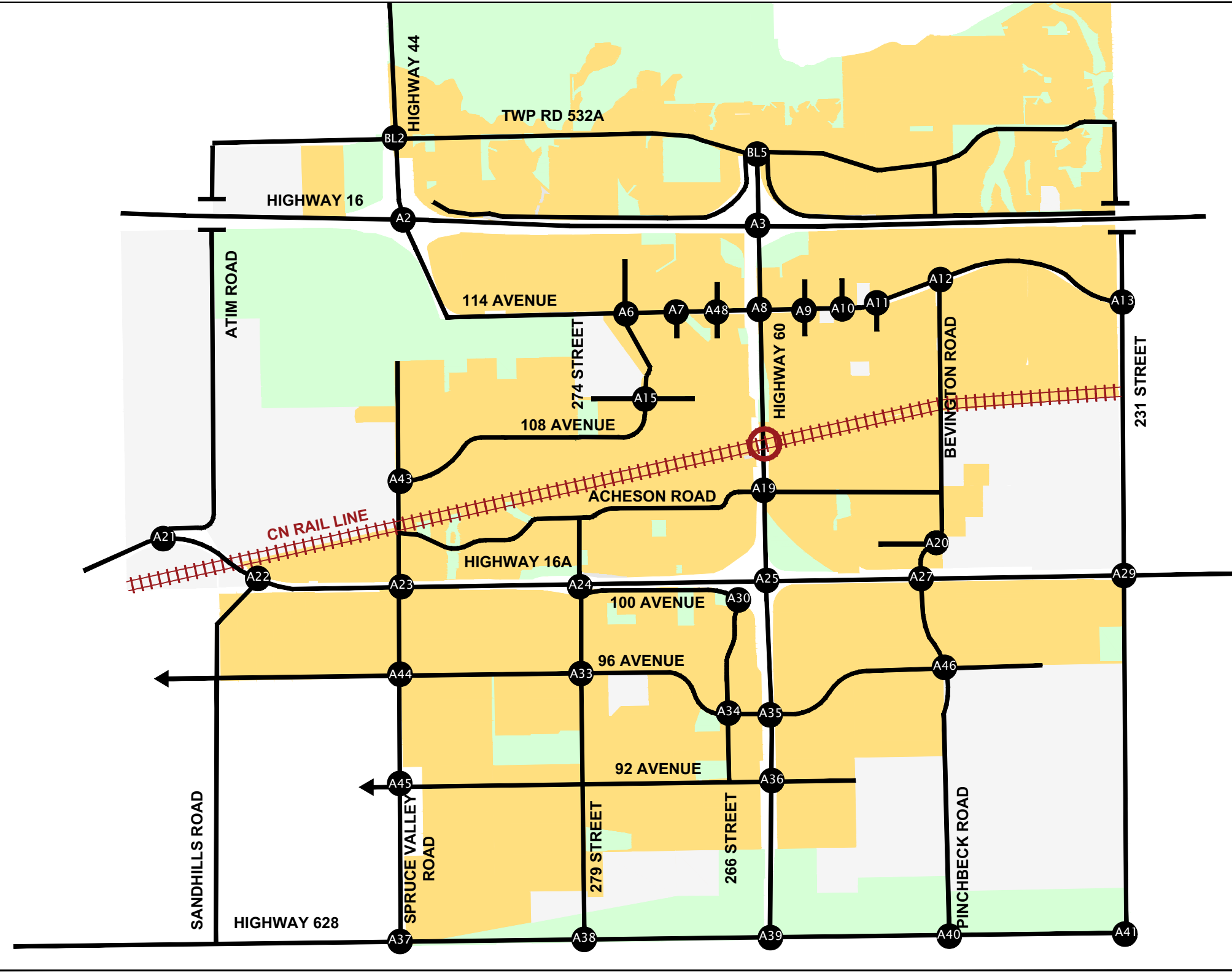


Exhibit 5.2

Key Intersections - Long Term Horizon

Disclaimer:
 - Roadway alignments are conceptual and are subject to change.
 - Local roadways are not shown.

N.T.S.



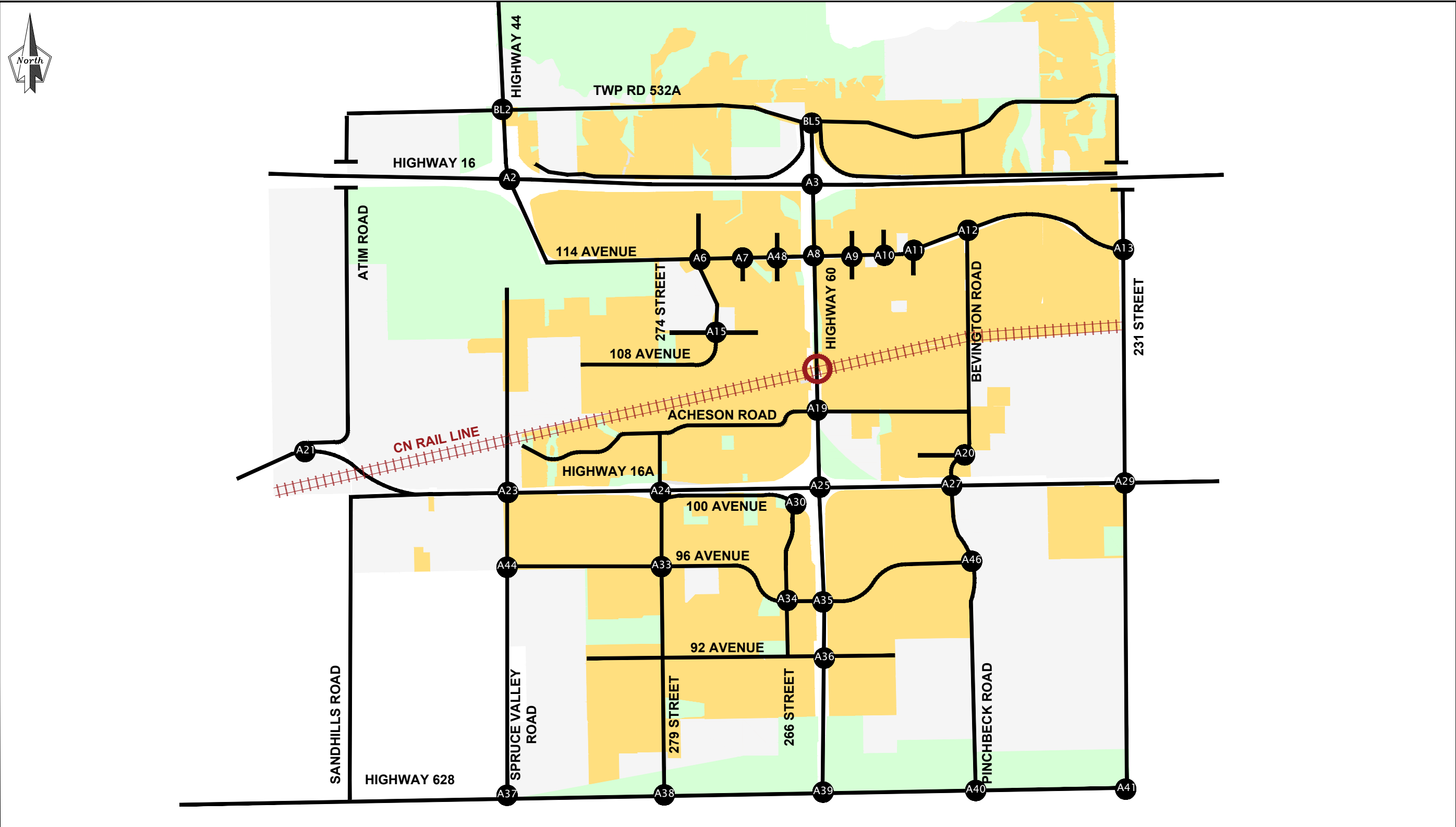


Exhibit 5.3

Key Intersections - Near Term Horizon

Disclaimer:

- Roadway alignments are conceptual and are subject to change.
- Local roadways are not shown.

N.T.S.



Near Term

The existing geometry and traffic control are assumed to continue to be in place at the Highway 16/Highway 44 interchange intersections in the near term horizon. Based on the capacity analysis, the westbound ramp intersection is anticipated to operate at acceptable levels of service in the AM and PM peak hours.

The eastbound left movement at the eastbound ramp intersection is projected to exceed acceptable capacity thresholds and experience LOS F under the existing geometry in the AM and PM peak hours. A TAC signal warrant was completed based on the projected near term total traffic volumes, and it is anticipated that a signal will be warranted by the near term horizon at the eastbound ramp intersection. While a signal could be installed as a temporary mitigation measure, the intersection is expected to be upgraded to a single lane roundabout in the long term horizon. It is recommended that the interchange be upgraded to roundabouts in the near term horizon or the eastbound ramp intersection be signalized temporarily.

5.4.2 A3 – Highway 16 and Highway 60

The Highway 16/Highway 60 intersection is constructed as a diamond interchange with a loop ramp developed in the northwest quadrant providing free flow westbound to southbound movements. As part of TEC's improvements to the Highway 16 corridor, the loop ramp is anticipated to be reconfigured to the northeast quadrant allowing free flow northbound to westbound movements. The eastbound right turn movements are expected to remain as free flow, while the westbound, northbound, and southbound right turns will continue to operate under yield or merge conditions. For the purposes of the assessment, the interchange reconfiguration was assumed to be in place by the long term horizon.

Ultimate

Westbound Off-Ramp

The westbound off-ramp intersection is expected to accommodate westbound off-ramp movements on the east approach and access to a vehicle inspection station on the west approach. The Highway 16/Highway 60 westbound off-ramp is expected to be signalized and include the following geometry once reconfigured:

- ***West Approach*** – one shared left/right lane;
- ***East Approach*** – one left turn bay, one shared left/through lane, one channelized right turn bay;
- ***South Approach*** – one left turn bay, two through lanes; and
- ***North Approach*** – two through lanes, one shared through/right turn bay.

Based on the intersection analysis, the Highway 16/Highway 60 Westbound Off-Ramp intersection is projected to operate at acceptable levels of service in the ultimate horizon.

Eastbound Ramp

The eastbound ramp intersection is expected to be signalized and constructed with the following geometry:

- ***West Approach*** – one left turn bay, one shared left/through lane, one free-flow right turn lane;
- ***South Approach*** – two through lanes, one channelized free-flow right turn lane; and
- ***North Approach*** – one left turn bay, two through lanes.

Based on a review of the total traffic volumes in the ultimate horizon, two eastbound on-ramp lanes are anticipated to be required to accommodate a high volume of northbound right turns in the PM peak hour. For the purposes of the assessment, the dual northbound right turn lanes were assumed to operate under yield condition. The Highway 16/Highway 60 Eastbound Ramp intersection is projected to operate at acceptable levels of service in the ultimate horizon with the development of dual northbound right turn lanes. Parkland County should collaborate with TEC to incorporate a second northbound right turn lane into the interchange design.

Long Term

The Highway 16/Highway 60 interchange intersections are projected to operate at acceptable levels of service in the AM and PM peak hours with the development of dual northbound right turn lanes at the eastbound ramp intersection.

Near Term

In the near term horizon, the Highway 16/Highway 60 interchange is anticipated to operate under its existing configuration and intersection geometry. Based on the capacity analysis, the westbound ramp intersection is anticipated to operate at acceptable levels of service in the AM and PM peak hours.

At the eastbound ramp intersection, the eastbound left movement is projected to be over capacity in the PM peak hour and experience at LOS F in both peak hours. A TAC signal warrant was completed based on the projected near term total traffic volumes, and it is anticipated that a signal will be warranted in the near term horizon at the eastbound ramp intersection.

5.4.3 A6 – 114 Avenue and 274 Street

Ultimate

The 114 Avenue/274 Street intersection is currently an unsignalized T-intersection with stop control on the south approach, a single lane on the south and east approaches, and one through lane and one right turn bay on the west approach.

In the ultimate horizon, the 114 Avenue/274 Street intersection is anticipated to be a four-legged arterial/arterial intersection with the north leg providing access to currently undeveloped land. Based on a review of the peak hour traffic volumes, the intersection is anticipated to be signalized in the ultimate horizon.

As 114 Avenue was identified as a four-lane divided arterial in the ultimate horizon, the intersection was assessed as a signalized intersection with the following geometry:

- **West Approach** – one left turn bay, two through lanes, one right turn bay;
- **East Approach** – one left turn bay, one through lane, one shared through/right lane;
- **South Approach** – one left turn bay, one shared through right lane; and
- **North Approach** – one shared left/through/right lane.

Based on the capacity analyses completed, the 114 Avenue/274 Street intersection is projected to operate at acceptable levels of service as a signalized intersection in the ultimate horizon. Planning for upgrades along 114 Avenue should consider the fire hall in the southwest corner of the 114 Avenue/274 Street intersection, including a signal along 114 Avenue for fire trucks exiting the fire hall during emergencies.

Long Term

It is anticipated that 114 Avenue and 274 Street will continue to operate under its existing cross-section as a two-lane undivided arterial in the long and near term horizons; therefore, the intersection was analyzed as an unsignalized intersection under the following intersection geometry:

- **West Approach** – one shared left/through lane, one right turn bay;
- **East Approach** – one shared left/through/right lane;
- **South Approach** – one shared left/through/right lane; and
- **North Approach** – one shared left/through/right lane.

Based on the intersection assessments, the northbound lane is expected to be over capacity in the PM peak hour. A TAC signal warrant was completed, and it is anticipated that the 114 Avenue/274 Street intersection will require signalization in the long term horizon under the existing geometry.

Near Term

In the near term horizon, the 114 Avenue/274 Street intersection is projected to operate under capacity based on the existing geometry; however, the northbound movements are projected to experience LOS F in both the AM and PM peak hours. Based on a TAC signal warrant, the intersection is just under the threshold for warranting signalization. As signalization is ultimately planned to be signalized, it is recommended that the intersection be monitored for signalization as development progresses in the area.

5.4.4 A7 – 114 Avenue and 269 Street

Ultimate

The 114 Avenue/269 Street intersection is currently an unsignalized T-intersection with stop control on the south approach. A single lane is provided on the south and east approaches, and the west approach includes one through lane and one right turn bay. However, to reflect a four-lane divided arterial cross-section, the geometry used in the capacity assessment was revised to include the following:

- **West Approach** – one through lane, one shared through/right lane;
- **East Approach** – one left turn bay, two through lanes and;
- **South Approach** – one shared left/right lane.

The intersection of 114 Avenue/269 Street is projected to operate at acceptable levels of service as an unsignalized intersection in the ultimate horizon.

Long Term and Near Term

The 114 Avenue corridor is expected to remain as the existing cross-section in the long and near term horizons; therefore, the existing geometry was assumed. Based on the capacity analysis, the 114 Avenue/269 Street intersection is anticipated to operate at acceptable levels of service under the existing geometry and traffic control in the long and near term horizons.

5.4.5 A48 – 114 Avenue and 266 Street

Ultimate

The 114 Avenue/266 Street intersection is currently a four-legged signalized intersection with the following geometry:

- **West Approach** – one left turn bay, one through lane, one shared through/right turn lane;
- **East Approach** – one left turn bay, one through lane, one right turn lane;
- **South Approach** – one shared left/through bay, one right turn lane; and
- **North Approach** – one shared left/through/right lane.

To reflect a future four-lane divided arterial cross-section along 114 Avenue in the ultimate horizon, the east approach was analyzed with one left turn bay, one through lane, and one shared through/right turn lane. Based on analysis, the 114 Avenue/266 Street intersection is anticipated to operate at acceptable levels of service during peak hours in the ultimate horizon.

Long Term and Near Term

The 114 Avenue/266 Street intersection was assumed to continue to operate under the existing intersection geometry in the long and near term horizons. Based on the analysis, the intersection is anticipated to operate at acceptable levels of service in the long and near term horizons.

5.4.6 A8 – 114 Avenue and Highway 60

Ultimate

The 114 Avenue/Highway 60 intersection is a signalized intersection that currently includes the following geometry:

- **West Approach** – two left turn bays, one through lane, one channelized right turn lane;
- **East Approach** – one left turn bay, one through lane, one channelized right turn lane;
- **South Approach** – two left turn bays, two through lanes, one channelized right turn bay; and
- **North Approach** – two left turn bays, two through lanes, one channelized right turn lane.

The closure of the Highway 16/231 Street intersection increases pressure on multiple movements at the 114 Avenue/Highway 60 intersection including the southbound left and westbound right turn. The 2018 TIA identified the 114 Avenue/Hwy 60 intersection as a congestion point on the network, even with the Highway 16/231 Street intersection remaining open. To mitigate further congestion on the southbound left and westbound right turn movements, traffic volumes were shifted, where appropriate, towards spare capacity at the Highway 16/Highway 44 interchange as well as eastbound and westbound movements at 114 Avenue/Highway 60. It is noted that the intersection has been designed to allow for two eastbound through lanes and dual westbound left turn bays, if required. With the increase in east-west demand, the intersection was analyzed with the additional eastbound through lane.

If dual westbound left turn bays were implemented, it is understood that the eastbound and westbound protected left turn phases could not run concurrently to prevent interlocking movements associated with dual left turning WB-21 vehicles. Split phasing/non-concurrent protected left turn phases reduces the efficiency of the intersection and is projected to degrade operations further. Therefore, dual westbound left turn bays are not recommended.

Consistent with the 2018 TIA, the intersection was also analyzed with two westbound right turn lanes assuming no right turns on red and permitted – overlap phasing. Under the revised geometry, the 114 Avenue/Highway 60 intersection is projected to operate at acceptable levels of service in the AM peak hour. During the PM peak hour, multiple movements are expected to be over capacity, including the eastbound left, westbound right, northbound through, and southbound left movements.

The 114 Avenue/Highway 60 intersection is anticipated to continue to represent a congestion point in the network. Overall, it is the combination of volumes on each of the approaches, the use of protected only phasing, and a high percentage of heavy vehicles that may potentially make it difficult to balance signal timings resulting in peak hour congestion. No additional geometric improvements beyond the second eastbound through lane and second westbound right turn bay are recommended at this time to address the anticipated congestion.

Parkland County could consider implementing a Transportation Demand Management (TDM) plan to establish targets, strategies, and performance measures aimed at reducing vehicle kilometers traveled and single-occupancy vehicle trips. With supporting policies in place, Parkland County could require certain developments, based on defined thresholds (e.g., site with 100+ employees), to submit TDM strategies at the development permit stage demonstrating how County targets will be achieved. Potential developer-led TDM measures could include universal or subsidized transit passes, financial incentives for alternative commuting modes, employer sponsored rideshare programs, guaranteed ride home programs, and flexible work arrangements. Implementation of TDM strategies, in combination with continued enhancements to the Parkland County's transit program, are anticipated to support improved network operations.

Future studies are recommended to evaluate broader, strategic design options for the ultimate network configuration to alleviate congestion at 114 Avenue and Highway 60 (e.g., flyovers at Northview Road, Highway 16, or rail crossings; jughandle configurations, etc.).

Long Term and Near Term

The 114 Avenue/Highway 60 intersection was initially analyzed under the existing geometry for the long term and near term horizons as outlined above. Based on the analysis, multiple movements are expected to approach or be over capacity in both horizons, particularly the westbound right turn movement in the PM peak hour. As per the ultimate intersection geometry, a second eastbound through lane and dual westbound right turn lanes assuming no right turn on red with permitted + overlap phasing are anticipated to be required to accommodate the long and near term total traffic volumes. With these improvements, the intersection is projected to operate at acceptable levels of service.

5.4.7 A9 - 114 Avenue and 261 Street

Ultimate

The 114 Avenue/261 Street intersection was analyzed as a signalized intersection with the following geometry:

- **West Approach** -one left turn bay, one through lane, one right turn lane;
- **East Approach** - one left turn bay, one through lane, one shared through/right bay;
- **South Approach** -one shared left/through/right lane; and
- **North Approach** - one shared left/through/right lane.

The intersection is anticipated to operate at acceptable levels of service during peak periods. However, the northbound movements are projected to experience LOS F during the AM peak hour, and long eastbound queues are projected.

It is anticipated that a new westbound through/right lane can be developed in advance of 261 Street and carried through to the 114 Avenue/Highway 60 intersection as a westbound right turn. This configuration will likely result in westbound right turning vehicles at Highway 60 using the outside through lane at 261 Street. Therefore, to account for the potential lane imbalance, a lane utilization factor of 0.75 was applied to the westbound through lanes at the 114 Avenue/261 Street intersection.

To minimize lane imbalances for the southbound left turn movements at the 114 Avenue/Highway 60 intersection, reduce eastbound queues at the 114 Avenue/261 Street intersection, and improve overall intersection operations, an additional eastbound through lane should be carried downstream of the 114 Avenue/261 Street intersection.

Long Term

The 114 Avenue/261 Street intersection was initially analyzed under the existing geometry; however, the westbound through, eastbound left, and northbound movements were projected to be over capacity in the PM peak hour. A second westbound through lane and second eastbound through lane were added as per the ultimate intersection geometry, which is anticipated to allow the intersection to operate under capacity in the long term horizon.

Similar to the ultimate horizon, the northbound movement is expected to experience LOS F in the peak hours; however, the movement is relatively low volume and is projected to operate under capacity. An alternate exit point from this area of Acheson is available at the 114 Avenue/255 Street intersection which can accommodate additional left turns in the peak hours.

Near Term

In the near term horizon, the westbound and northbound movements are projected to be over capacity in the PM peak hour under the existing geometry. As per the ultimate geometry, a second westbound lane was added, which allows the intersection to operate under capacity in both the AM and PM peak hours.

It is noted that the intersection is anticipated to operate above the near-term design thresholds; however, the near term analysis is consistent with the ultimate and long term scenarios. As further intersection improvements were not identified in the ultimate horizon, additional geometry is not recommended in the near term horizon. As previously noted, an alternate exit is available at the 114 Avenue/255 Street intersection, which can accommodate additional northbound left turn movements

5.4.8 A10 – 114 Avenue and 259 Street

Ultimate, Long Term, & Near Term

The 114 Avenue/259 Street intersection is currently a four-legged unsignalized intersection with stop control on the north and south approaches and a single lane on each approach accommodating all movements. However, with the three-lane cross-section proposed for 114 Avenue, the capacity assessment for the ultimate, long term, and near term horizons includes the following geometry:

- **West Approach** –one left turn bay, one shared through/right lane;
- **East Approach** – one left turn bay, one shared through/right lane;
- **South Approach** –one shared left/through/right lane; and
- **North Approach** – one shared left/through/right lane.

Based on the results of the capacity analyses for all three horizons, the 114 Avenue/259 Street intersection is projected to operate at acceptable levels of service in the AM peak hour as an unsignalized intersection. In the PM peak hour, the northbound movements are projected to experience LOS F; however, the movement is low volume and operates under capacity. No intersection improvements are recommended beyond the geometry described above.

5.4.9 A11 – 114 Avenue and 255 Street

Ultimate, Long Term, & Near Term

The 114 Avenue/255 Street intersection is currently an unsignalized T-intersection with stop control on the south approach and includes a single lane on each approach accommodating all movements. For the purposes of this assessment, a westbound left turn bay was assumed to be constructed to be consistent with the proposed three-lane industrial collector cross-section in the ultimate, long term, and near term horizons.

The 114 Avenue/255 Street intersection is projected to operate well as an unsignalized T-intersection in all three horizons based on the assumed geometry. It is noted that the northbound lane does have some spare capacity to accommodate additional northbound left turns should drivers choose to avoid the northbound left turn at 261 Street.

5.4.10 A12 – 114 Avenue and Bevington Road

Ultimate, Long Term, & Near Term

The 114 Avenue/Bevington Road intersection is currently an unsignalized intersection with stop control on the north and south approaches. The intersection includes the following geometry:

- **West Approach** –one left turn bay, one shared through/right lane;
- **East Approach** – one left turn bay, one shared through/right lane;
- **South Approach** –one shared left/through/right lane; and
- **North Approach** – one shared left/through/right lane.

The existing geometry was assumed in the analysis of the ultimate, long term, and near term horizons as it is anticipated to reflect the appropriate geometry for a three-lane industrial collector. Based on the capacity analysis, the 114 Avenue/Bevington Road intersection is projected to operate at acceptable levels of service in all three horizons. No changes to the existing geometry or traffic control are anticipated to be required.

5.4.11 A13 – 114 Avenue and 231 Street

Ultimate

The 114 Avenue/231 Street intersection is currently an unsignalized four-legged intersection with stop control located on the east and west approaches. A single lane is provided on each approach accommodating all movements. The east approach currently provides land access only and does not connect to 215 Street within the City of Edmonton.

Within the ultimate horizon, it is assumed that 114 Avenue will connect to 215 Street and that 231 Street and 114 Avenue within the study area will be developed with a three-lane cross-section. 114 Avenue within the City of Edmonton (east approach) is assumed to include a single lane accommodating all movements.

The closure of the Highway 16/231 Street intersection results in a change in traffic patterns and decrease in volume at the 114 Avenue/231 Street intersection. Signalization is not anticipated to be warranted in the ultimate horizon; therefore, the intersection was assessed under the existing traffic the following geometry:

- **West Approach** –one left turn bay, one shared through/right lane;
- **East Approach** – one shared left/through/right lane;
- **South Approach** –one left turn bay, one shared through/right lane; and
- **North Approach** – one shared left/through/right lane.

The 114 Avenue/231 Street intersection is projected to operate at acceptable levels of service in the ultimate horizon as an unsignalized intersection with the reduction in volume associated with the closure of the Highway 16/231 Street intersection.

Long Term & Near Term

Within the long term and near term horizons, it is anticipated that 114 Avenue will not connect to 215 Street within Edmonton; however, it will continue to operate as an unsignalized four-legged intersection with a single lane on the east, north, and south approaches, and a left turn lane and shared through/right lane on the west approach. Based on the intersection analysis, the 114 Avenue/231 Street intersection is anticipated to operate at acceptable levels of service in the AM and PM peak hours under long term and near term total traffic conditions.

5.4.12 A15 – Northview Road and 274 Street

Ultimate

The Northview Road/274 Street intersection is currently an unsignalized intersection with stop control located on the north and south approaches. A single lane is provided on each approach accommodating all movements.

Within the ultimate horizon, 274 Street has been identified as a two-lane divided arterial with left turn bays; therefore, based on the future cross-section and total traffic volumes, the intersection is assumed to be signalized and include the following geometry:

- **West Approach** –one left turn bay, one shared through/right lane
- **East Approach** – one shared left/through/right lane;
- **South Approach** –one left turn bay, one through lane, one right turn bay; and
- **North Approach** – one left turn bay, one through lane, one right turn bay.

Based on the results of the capacity assessment, the Northview Road/274 Street intersection is projected to operate at acceptable levels of service in the ultimate horizon based on the assumed geometry and traffic signal control.

Long Term and Near Term

The Northview Road/274 Street intersection is anticipated to remain an unsignalized intersection with a single lane on each approach in the long and near term horizons. Based on the capacity analysis, the Northview Road/274 Street intersection is projected to operate at acceptable levels of service in the long and near term horizons under the existing geometry and traffic control.

5.4.13 A19 – Acheson Road and Highway 60

Ultimate, Long Term, & Near Term

The Acheson Road/Highway 60 intersection is currently signalized and includes the following geometry:

- **West Approach** –one left turn bay, one shared through/right lane;
- **East Approach** – one left turn lane, one shared through/right lane;
- **South Approach** –one shared left/through lane, one shared through/right lane; and
- **North Approach** – one shared left/through lane, one shared through/right lane.

With the upgrading of the Highway 16A/Highway 60 interchange, upgrades are also proposed for the Acheson Road/Highway 60 intersection and are anticipated to be in place by the near term horizon. The capacity assessments assumed the following geometry based on the intersection concept plans provided by Parkland County:

- **West Approach** –two left turn bays, one through lane, one right turn bay;
- **East Approach** – one left turn bay, one through lane, one right turn bay;
- **South Approach** –two left turn bays, two through lanes, one right turn lane; and
- **North Approach** – two left turn bays, two through lanes, one right turn bay.

Based on the capacity assessments, the Acheson Road/Highway 60 intersection is projected to operate at acceptable levels of service based on the assumed geometry in all three ultimate horizons.

5.4.14 A20 – 103 Avenue and Bevington Road

Ultimate, Long Term, & Near Term

The 103 Avenue/Bevington Road intersection was recently reconstructed an unsignalized T-intersection with stop control on the west approach, a single lane on the west and south approaches, and a through lane and shared through/right lane on the north approach. The intersection is projected to operate at acceptable levels of service in all three horizons based on the existing geometry and traffic control; however, it is noted that operations may be impacted based on its close proximity to the Highway 16A/Bevington Road intersection. With a separation distance of about 55 m, southbound queues at the Highway 16A/Bevington Road intersection may extend beyond the 103 Avenue intersection during peak hours.

Consideration could be given to the closure of the 103 Avenue service road, with Acheson Road providing the primary collector access to the lands west of Bevington Road and south of Acheson Road.

5.4.15 A21 – Highway 16A and Atim Road

Ultimate

The Highway 16A/Atim Road intersection is currently an unsignalized T-intersection with stop control on the north approach. With the development of lands immediately south of Highway 16A, it is assumed that the intersection will become a four-legged intersection in the ultimate horizon.

Based on a review of future traffic volumes, the intersection is assumed to include the following geometry in the ultimate horizon:

- **West Approach** –one left turn bay, two through lanes, one shared through/right lane;
- **East Approach** – one left turn bay, three through lanes, one right turn bay;
- **South Approach** –one shared left/through/right lane; and
- **North Approach** – one left turn bay, one through lane, one right bay.

A TAC signal warrant was completed based on projected ultimate total traffic volumes, and it is anticipated that a signal will be warranted by the ultimate horizon. Based on the results of the capacity assessment, the Highway 16A/Atim Road intersection is anticipated to operate at acceptable levels of service based on ultimate total traffic volumes, assumed geometry, and traffic signal control.

Long Term

The Highway 16A/Atim Road intersection is anticipated to be a T-intersection in the long term with stop control on the north approach. The intersection is assumed to include the following geometry in the long term:

- **West Approach** –one left turn bay, three through lanes;
- **East Approach** –three through lanes, one right turn bay; and
- **North Approach** – one shared left/right turn lane.

Based on the results of the capacity analysis, the intersection is projected to operate under capacity with the southbound movements experiencing LOS F in the PM peak hour. As development along Atim Road within Acheson is not anticipated in the long term horizon, and traffic volumes along Atim Road are low, signalization is not anticipated to be required.

As the Highway 16/Atim Road intersection is anticipated to be closed in the long term horizon, alternate routes for southbound left turns at Highway 16A are not available. Consideration could be given to extending 108 Avenue from Spruce Valley Road to Atim Road in the long term to provide an alternative for southbound vehicles at the Highway 16A/Atim Road intersection. Alternatively, the intersection could be signalized if an alternate route to/from Atim Road is not feasible.

Near Term

The Highway 16A/Atim Road intersection is anticipated to remain a T-intersection in the near term horizon with the existing geometry and traffic control. Based on the results of the analysis, the southbound movements do not meet near term design criteria with a v/c ratio of 0.89 and LOS F in the PM peak hour. However, traffic volumes along Atim Road are low; therefore, signalization is not anticipated to be warranted in the near term horizon.

It is noted that alternate routes for southbound left turns are not available due to the closure of the Highway 16/Atim Road intersection anticipated in the near term horizon. Consideration could be given to constructing 108 Avenue between Atim Road and Spruce Valley Road in the near term horizon to provide an alternate route to Highway 16A. Alternatively, the intersection could be signalized if an alternate route to/from Atim Road is not feasible.

5.4.16 A22 – Highway 16A and Sandhills Road

Ultimate & Long Term

The future intersection of Highway 16A/Sandhills Road is anticipated to be constructed as a signalized four-legged intersection with the following geometry in place of the Highway 16A/100 Avenue intersection in the long term horizon:

- **West Approach** –one left turn bay, two through lanes, one shared through/right lane;
- **East Approach** – one left turn bay, three through lanes, one right turn bay;
- **South Approach** –one shared left/through/right lane; and
- **North Approach** – one shared left/through/right lane.

Based on the capacity analysis, the Highway 16A/Sandhills Road intersection is projected to operate at acceptable levels of service in the ultimate and long term horizons under the assumed geometry and traffic signal control.

Near Term

The Highway 16A/Sandhills Road intersection is anticipated to be constructed in the long term horizon and replace the existing Highway 16A/100 Avenue intersection. Site generated traffic is not anticipated to use the Highway 16A/100 Avenue intersection in the near term horizon; therefore, a capacity analysis was not completed.

5.4.17 A23 – Highway 16A and Spruce Valley Road

Ultimate & Long Term

The intersection of Highway 16A and Spruce Valley Road is currently a signalized intersection. Based on a review of the total traffic volumes in the long term and ultimate horizons, the following geometry is anticipated to be required at the Highway 16A/Spruce Valley Road intersection:

- **West Approach** –one left turn bay, three through lanes, one right turn bay;
- **East Approach** – one left turn bay, three through lanes, one right turn bay;
- **South Approach** –one left turn bay, one through lane, one right turn bay; and
- **North Approach** – one left turn bay, one shared through/right lane.

Based on the results of the capacity analysis, the Highway 16A/Spruce Valley Road intersection is anticipated to operate at acceptable levels of service in the ultimate and long term horizons based on the assumed geometry and traffic control.

Near Term

Initially, the Highway 16A/Spruce Valley Road intersection was analyzed assuming existing intersection geometry under near term total traffic conditions; however, the northbound left and westbound through movements were projected to be over capacity in the PM peak hour. As Highway 16A is projected to carry high volumes through the Highway 16A/Spruce Valley Road intersection, a six-lane cross-section is anticipated to be required. Based on a six-lane cross-section, the Highway 16A/Spruce Valley Road intersection is projected to operate at acceptable levels of service under near term total traffic conditions.

The introduction of northbound left turns at the Highway 16A/279 Street intersection was explored to test if reducing the northbound left demand at Spruce Valley Road would relieve the capacity constraints at the intersection. However, even with the complete removal of northbound left turns, the westbound through movement continues to be over capacity with only two westbound lanes. The introduction of another signalized intersection along Highway 16A is not expected to provide significant benefit to operations at Spruce Valley Road; however, it would provide redundancy in the network in the near term until alternate routes are available to Spruce Grove via 96 Avenue and 92 Avenue. Six lanes on Highway 16A in the near term continues to be recommended.

5.4.18 A24 – Highway 16A and 279 Street

Ultimate & Long Term

The Highway 16A/279 Street intersection currently accommodates free flow right in/right out movements through a series of lanes that operate like on and off-ramps at an interchange. For the purposes of this assessment, the Highway 16A/279 Street intersection was assessed as a consolidated intersection with the northbound and southbound right turns operating under yield control as opposed to free flow. This is anticipated to provide a conservative estimate of future operations. Based on the results of the capacity analysis, the Highway 16A/279 Street intersection is projected to operate under capacity in the ultimate horizon. Although the northbound right turn is reported to operate at LOS F in the ultimate horizon, the analysis is anticipated to be conservative, and the northbound right turn is projected to operate better in the field as a right turn merge.

Near Term

As six-lanes are anticipated to be required along Highway 16A at Spruce Valley Road, six-lanes were carried through the Highway 16A/279 Street intersection. It is anticipated that the intersection will operate at acceptable levels of service under near term total traffic conditions.

5.4.19 A25 – Highway 16A and Highway 60

Ultimate, Long Term, & Near Term

The Highway 16A/Highway 60 interchange is currently designed as a Parclo AB4 interchange with loop ramps provided for the westbound to southbound and southbound to eastbound movements. TEC has plans to upgrade the interchange to a Parclo A4 interchange, which involves the removal of the westbound to southbound loop ramp in the northwest quadrant, and the construction of a northbound to westbound loop in the northeast quadrant. The interchange upgrade is assumed to be complete by the near term horizon.

The majority of the movements at the interchange are free flow movements, with the exception of the eastbound and westbound off-ramp intersections with Highway 60; therefore, capacity assessments were completed for these two intersections. Intersection geometry assumed in the capacity assessments were based on interchange concept plans provided by Parkland County.

Westbound Off-Ramp

The westbound off-ramp intersection with Highway 60 is anticipated to be signalized and include the following geometry:

- **East Approach** – two left turn lanes, one channelized free flow right turn bay;
- **South Approach** –two through lanes; and
- **North Approach** –two through lanes.

Based on the results of the capacity analysis, the westbound off-ramp intersection with Highway 60 is projected to operate at acceptable levels of service in the AM and PM peak hours for the ultimate, long term, and near term horizons.

Eastbound Off-Ramp

The eastbound off-ramp intersection with Highway 60 is anticipated to be signalized and include the following geometry:

- ***West Approach*** – two left turn lanes, one channelized right turn free flow lane;
- ***South Approach*** –two through lanes; and
- ***North Approach*** –two through lanes.

Based on the results of the capacity analysis, the eastbound off-ramp intersection with Highway 60 is projected to operate at acceptable levels of service based on total traffic volumes in the ultimate and long term horizons.

In the near term horizon, the channelized right turn lane is anticipated to operate under a merge condition with two southbound lanes provided on Highway 60 south of Highway 16A. Based on this geometry, the eastbound off-ramp intersection is anticipated to operate at acceptable levels of service under near term total traffic conditions.

5.4.20 A27 – Highway 16A and Bevington Road/Pinchbeck Road***Ultimate***

The Highway 16A/Bevington Road/Pinchbeck Road intersection is currently signalized with the following geometry:

- ***West Approach*** –one left turn bay, three through lanes, one right turn bay;
- ***East Approach*** – one left turn bay, two through lanes, one shared through/right lane;
- ***South Approach*** –one left turn bay, one shared through/right lane; and
- ***North Approach*** – one left turn bay, one shared through/right lane.

In addition to the geometry above, the ultimate geometry is anticipated to also include separate northbound and westbound right turn bays. Based on the results of the capacity analysis, the Highway 16A/Bevington Road intersection is projected to operate at acceptable levels of service during the AM and PM peak hours in the ultimate horizon. The southbound left turn movement is expected to experience LOS F in the PM peak hour; however, no further geometry improvements are recommended.

Long Term & Near Term

In addition to the existing geometry noted above, the long and near term geometry is anticipated to include a separate northbound right turn bay. Based on the results of the capacity analysis the Highway 16A/Bevington Road intersection is projected to operate at acceptable levels of service in the long and near term horizons. Like the ultimate horizon, the southbound left turn movement is expected to experience LOS F during the PM peak hour under long and near term total traffic conditions; however, no further geometry improvements are recommended.

While not required strictly from a capacity perspective, consideration could be given to constructing the westbound right turn bay in the near term horizon as development advances along Bevington Road north of Highway 16A, as the westbound right turn movement is projected to be in the order of 300 vehicles during the AM peak hour.

5.4.21 A29 – Highway 16A and 231 Street

Ultimate & Long Term

The Highway 16A/231 Street intersection is currently configured as a right-in/right-out/left-in intersection with free-flow northbound right turns. Ultimately, the intersection is expected to be signalized with northbound and southbound right turns operating as free flow movements. The following geometry was assumed for the ultimate and long term horizons:

- **West Approach** –one left turn bay, three through lanes, one right turn bay;
- **East Approach** – two left turn bays, three through lanes, one right turn bay;
- **South Approach** –one free flow right turn lane; and
- **North Approach** – one free flow right turn lane.

Based on the capacity assessments, the Highway 16A/231 Street intersection is projected to operate at acceptable levels of service in the ultimate and long terms horizons. It is noted that the City of Edmonton’s current design for the Highway 16A/231 Street intersection does not include dual westbound left turn bays and will require road widening to accommodate the recommended geometry.

Near Term

The Highway 16A/231 Street intersection currently accommodates two westbound and eastbound through lanes; however, based on the capacity assessments, the westbound through movement is above the acceptable capacity threshold in the AM peak hour, and the eastbound through movement is over capacity in the PM peak hour. Additionally, the existing westbound left turn lane is over capacity in the PM peak hour. Based on this, six-lanes along Highway 16A are anticipated to be required along with signalization and dual westbound left turn bays in the near term horizon. Under the revised geometry, the Highway 16A/231 Street intersection is anticipated to operate at acceptable levels of service in the near term horizon.

5.4.22 A30 – 100 Avenue and 266 Street

Ultimate, Long Term, & Near Term

The 100 Avenue/266 Street intersection is currently an unsignalized T-intersection with stop control on the south approach and a single lane on each approach accommodating all movements. The intersection is projected to operate at excellent levels of service during the AM and PM peak hours in all three horizons based on the existing geometry and traffic control.

5.4.23 A33 – 96 Avenue and 279 Street

Ultimate, Long Term, & Near Term

The intersection of 96 Avenue and 279 Street is currently an unsignalized intersection with stop control on the north and south approaches and a single lane accommodating all movements on each approach. The intersection is projected to operate at acceptable levels of service during all three horizons based on the existing geometry and traffic control.

5.4.24 A34 – 96 Avenue and 266 Street

Ultimate, Long Term, & Near Term

The 96 Avenue/266 Street intersection is currently an unsignalized intersection with stop control on the north and south approaches and the following geometry:

- **West Approach** –one shared left/through/right lane;
- **East Approach** – one shared left/through lane, one right turn lane;
- **South Approach** –one shared left/through/right lane; and
- **North Approach** – one shared left/through/right lane.

It is noted that the intersection design for 96 Avenue/266 Street includes one shared left/through lane and one shared through/right lane on the east approach with the westbound curb lane dropping immediately west of the intersection. However, based on field observations, the westbound curb lane is used as a right turn lane only; therefore, the geometry outlined above was used in the assessment to be conservative.

Based on the results of the capacity analysis, the 96 Avenue/266 Street intersection is projected to operate well as an unsignalized intersection in the long and near term horizons. In the ultimate horizon, the southbound movements are projected to experience LOS F during the PM peak hour; however the movement is anticipated to be under capacity. No further intersection improvements are recommended.

It is recommended that the geometry on the east approach be formalized to include one shared left/through lane and one right turn lane.

5.4.25 A35 – 96 Avenue and Highway 60

Ultimate

The intersection of 96 Avenue and Highway 60 is currently signalized and includes the following geometry:

- **West Approach** –one left turn bay, one through lane, one right turn bay;
- **East Approach** – one left turn bay, one through/right lane;
- **South Approach** –one left turn bay, one through lane, one shared through/right lane; and
- **North Approach** – one left turn bay, two through lanes, one right turn bay.

Highway 60 is anticipated to be upgraded to a six-lane expressway south of Highway 16A in the ultimate horizon; therefore, the following geometry was assumed in the capacity assessments:

- **West Approach** –one left turn bay, one through lane, one right turn bay;
- **East Approach** – one left turn bay, one through/right lane;
- **South Approach** –one left turn bay, three through lanes, one right turn bay lane; and
- **North Approach** – one left turn bay, three through lanes, one right turn bay.

Based on the results of the capacity analysis, the eastbound left and southbound through movements are projected to be near capacity in the AM and PM peak hours. The addition of a second eastbound left turn lane and protected only phasing improves the operations of all movements to acceptable levels of service in the ultimate horizon. The addition of a second eastbound left turn lane requires widening of the roadway to accommodate the additional lane.

Long Term

The 96 Avenue/Highway 60 intersection was initially analyzed assuming the existing intersection geometry; however, the eastbound left and southbound through movements were over capacity in the PM peak hour. As per the ultimate geometry, dual eastbound left turn bays with protected only phasing and six-lanes on Highway 60 are anticipated to be required in the long term horizon. Based on the revised geometry, the 96 Avenue/Highway 60 intersection is projected to operate at acceptable levels of service in the long term horizon.

Near Term

Under near term total traffic conditions, the existing intersection geometry results in the eastbound left turn and northbound left turn movements operating over capacity in the PM peak hour. It is anticipated that dual eastbound left turn bays with protected only phasing will be required in the near term horizon. Under the revised intersection geometry, the 96 Avenue/Highway 60 intersection is anticipated to operate below capacity in the near term horizon.

5.4.26 A36 – 92 Avenue and Highway 60

Ultimate

The 92 Avenue/Highway 60 intersection is currently signalized and includes the following geometry:

- **West Approach** –two left turn bays, one through lane, one right turn lane;
- **East Approach** – one left turn lane, two through lanes, one right turn lane;
- **South Approach** –two left turn bays, two through lanes, one right turn bay; and
- **North Approach** – one left turn bay, two through lanes, one right turn bay.

Although only one eastbound through lane is currently constructed, it is assumed that two eastbound through lanes will be developed in the ultimate horizon to be consistent with a four-lane divided arterial cross-section. In addition, three through lanes on the north and south approaches were assumed to reflect the ultimate six-lane cross-section along Highway 60.

Based on the results of the analysis, the intersection is projected to operate at acceptable levels of service in the AM peak hour. In the PM peak hour, the eastbound and southbound through movements are projected to be nearing capacity with v/c ratios of 0.95.

The closure of the Highway 628/Pinchbeck Road and Highway 628/279 Street intersections are contributing to an increase of eastbound right and westbound left turns at the 92 Avenue/Highway 628 intersection. Roughly an additional 100 eastbound right turns and 300 westbound left turns are expected at the intersection in the PM peak hour as compared to the 2018 TIA. Traffic leaving Acheson from the southeast basin destined to Highway 628 or Highway 60 have two exit points: the 92 Avenue/Highway 60 and Highway 628/231 Street intersections.

Overall, it is the combination of volumes on each of the approaches and a high percentage of heavy vehicles that may potentially make it difficult to balance signal timings and result in peak hour congestion. No further improvements to the 92 Avenue/Highway 60 intersection are recommended to address the potential congestion.

While typical Acheson industrial development was assumed in Acheson Zone 8, the actual development type within this area may be different based on market trends and Parkland County planning studies. It is recommended that the area be reviewed and addressed as development activity occurs and future planning studies are completed to adapt network decisions accordingly.

Long Term

The 92 Avenue/Highway 60 intersection was initially analyzed assuming existing intersection geometry under the long term total traffic conditions; however, the eastbound left and southbound through movements were projected to be over capacity in the PM peak hour. To accommodate the long term total traffic volumes, six-lanes along Highway 60 through 92 Avenue are anticipated to be required. Under the revised geometry, the 92 Avenue/Highway 60 intersection is expected to operate at acceptable levels of service in the long term horizon.

Near Term

The 92 Avenue/Highway 60 intersection was analyzed under near term total traffic conditions assuming existing intersection geometry. The intersection is anticipated to operate at acceptable levels of service in the AM peak hour. In the PM peak hour, the southbound through, eastbound left, and westbound left turn movements are projected to be above acceptable capacity thresholds, although under capacity, with the eastbound and westbound left turn movements experiencing LOS F.

The intersection is currently constructed to its ultimate geometry except for the second eastbound through lane and a six-lane cross-section on Highway 60. However, the additional geometry is not anticipated to be required in the near term horizon. It is expected that as congestion increases at 92 Avenue and Highway 60, peak hour volume will begin to spread across the peak hour.

5.4.27 A37 – Highway 628 and Spruce Valley Road***Ultimate***

The Highway 628/Spruce Valley Road intersection is currently unsignalized with stop control located on the north and south approaches. The intersection includes a single lane accommodating all movements on each approach.

For the purposes of this assessment, Highway 628 is assumed to be upgraded to a freeway in the ultimate horizon; therefore, a diamond interchange was assumed at the Highway 628/Spruce Valley Road intersection.

Westbound Ramp

The westbound ramp intersection is assumed to be unsignalized with stop control on the east approach and include the following geometry:

- ***East Approach*** – one shared left/through lane, one channelized right turn bay;
- ***South Approach*** –one shared left/through lane; and
- ***North Approach*** – one through lane; one channelized right turn bay.

Based on the capacity assessments the Highway 628/Spruce Valley Road Westbound Ramp intersection is projected to operate very well in the ultimate horizon.

Eastbound Ramp

The eastbound ramp intersection is assumed to be unsignalized with stop control on the west approach and include the following geometry:

- ***West Approach*** – one shared left/through lane, one channelized right turn bay;
- ***South Approach*** –one through lane; one channelized right turn bay; and
- ***North Approach*** –one shared left/through lane.

Based on the capacity assessments the Highway 628/Spruce Valley Road Westbound Ramp intersection is projected to operate very well in the ultimate horizon.

Long Term

The Highway 628/ Spruce Valley Road intersection is expected to operate as an at-grade intersection with a four-lane divided cross-section along Highway 628 in the long term horizon. Based on a TAC signal warrant, the Highway 628/Spruce Valley Road intersection warrants signalization in the long term horizon. The intersection is anticipated to operate at acceptable levels of service in the AM and PM peak hours as a signalized intersection.

Near Term

The Highway 628/Spruce Valley Road intersection was analyzed as an unsignalized intersection with stop control on the north and south approaches and assuming the following geometry:

- **West Approach** –one left turn bay, one shared through/right lane;
- **East Approach** – one left turn bay, one through lane, one right turn bay;
- **South Approach** –one shared left/through/right lane; and
- **North Approach** –one shared left/through/right lane.

In the near term horizon, the Highway 628/Spruce Valley Road intersection is anticipated to operate at acceptable levels of service as an unsignalized intersection.

5.4.28 A38 – Highway 628 and 279 Street**Ultimate Term**

The Highway 628/279 Street intersection is anticipated to be closed in the ultimate term; therefore, an ultimate analysis was not completed.

Long Term

In the long term horizon, the Highway 628/279 Street intersection is anticipated to operate as an at-grade intersection with the following geometry:

- **West Approach** –one left turn bay, one through lane, one shared through/right lane;
- **East Approach** – one left turn bay, two through lanes, one right turn bay;
- **South Approach** –one shared left/through/right lane; and
- **North Approach** – one left turn bay, one shared through/right lane.

Based on a TAC signal warrant, the intersection warrants signalization under long term total traffic volumes and is anticipated to operate at acceptable levels of service in the AM and PM peak hours as a signalized intersection.

Near Term

The Highway 628/279 Street intersection is expected to be unsignalized in the near term horizon with the following geometry:

- **West Approach** –one left turn bay, one shared through/right lane;
- **East Approach** – one left turn bay, one through lane, one right turn bay;
- **South Approach** –one shared left/through/right lane; and
- **North Approach** – one left turn bay, one shared through/right lane.

Based on the capacity analysis, the southbound left turn movement is anticipated to operate at LOS F in the PM peak hour; however, the movement is projected to be under capacity. Based on a TAC warrant, signalization is not warranted in the near term horizon.

An alternate route for southbound left turns is available at the 92 Avenue/Highway 60 intersection, which does have spare capacity for additional eastbound right turn movements in the PM peak hour. Therefore, no additional mitigation measures are anticipated to be required in the near term horizon at the Highway 628/279 Street intersection.

5.4.29 A39 – Highway 628 and Highway 60

Ultimate

The Highway 628/Highway 60 intersection is currently an at-grade signalized intersection; however, it is assumed that the intersection will be upgraded to an interchange in the ultimate horizon. Based on a review of preliminary concepts, the interchange is expected to be constructed with eastbound to northbound and westbound to southbound loop ramps and two ramp intersections.

Westbound Ramp

The Highway 628/Highway 60 westbound ramp is anticipated to be signalized and include the following geometry:

- **East Approach** – one through lane, one channelized free flow right turn bay;
- **South Approach** –one left turn bay, three through lanes; and
- **North Approach** – three through lanes, one channelized right turn bay.

Based on the assumed geometry and traffic control, the Highway 628/Highway 60 Westbound Ramp intersection is projected to operate at acceptable levels of service during peak hours. Notwithstanding, a high westbound right turn movement is projected in the PM peak hour due to the closure of the Highway 628/Pinchbeck Road intersection. Consideration could be given to retaining some level of access to and from Pinchbeck Road (e.g., right-in/right-out, right-out with U-turn at Highway 60) to provide relief at adjacent intersections. Collector-distributor roadways could also be considered along Highway 628 to allow for access in and out of Acheson and support future development.

Eastbound Ramp

The Highway 628/Highway 60 Eastbound Ramp intersection is anticipated to be signalized and include the following geometry:

- ***West Approach*** – one through lane, one channelized free flow right turn bay;
- ***South Approach*** –three through lanes; one channelized right turn bay; and
- ***North Approach*** –one left turn bay, three through lanes.

The Highway 628/Highway 60 Eastbound Ramp intersection is projected to operate at acceptable levels of service in the AM and PM peak hours under the assumed geometry and traffic control. However, a large southbound left turn volume is projected in the PM peak hour, generating 95th percentile queues more than 200m, which could impact upstream intersection operations. Consideration should be given to developing dual southbound left turn bays or reviewing the interchange design to determine if a southbound to eastbound loop ramp is possible. Based on the projected volumes, eastbound to northbound and westbound to southbound loop ramps may not be required in the ultimate horizon.

Long Term

The Highway 628/Highway 60 intersection is anticipated to continue to be an at-grade intersection in the long term horizon. Based on the long term traffic volumes and the need for six lanes on the Highway 60 corridor, the following geometry was assumed in the long term horizon analysis:

- ***West Approach*** –one left turn bay, two through lanes, one channelized right turn bay;
- ***East Approach*** – one left turn bay, two through lanes, one channelized right turn bay;
- ***South Approach*** –one left turn bay, three through lanes, one right turn bay; and
- ***North Approach*** –two left turn bays, three through lanes, one right turn bay.

Based on the analysis, the Highway 628/Highway 60 intersection is anticipated to operate at acceptable levels of service in the AM and PM peak hours under long term total traffic conditions based on the assumed geometry and traffic control.

Near Term

The Highway 628/Highway 60 intersection is currently an at-grade signalized intersection with the following geometry:

- ***West Approach*** –one shared left/through lane, one channelized right turn bay;
- ***East Approach*** – one shared left/through lane, one channelized right turn bay;
- ***South Approach*** –one left turn bay, two through lanes, one right turn bay; and
- ***North Approach*** –one left turn bay, two through lanes, one right turn bay.

Based on the intersection assessment, the intersection is expected to operate under capacity in the AM and PM peak hours with the addition of separate eastbound and westbound left turn bays. It is noted in the PM peak hour, the northbound through and westbound through movements are projected to operate slightly above the acceptable capacity threshold for the near term horizon. It is recommended that Parkland County work with users to adjust start and end times as traffic volumes increase to spread out peak traffic demand. No additional intersection geometry over and above separate eastbound and westbound left turn bays is anticipated to be required in the near term horizon.

5.4.30 A40 – Highway 628 and Pinchbeck Road

Ultimate Term

The Highway 628/279 Street intersection is anticipated to be closed in the Ultimate Term; therefore, an ultimate analysis was not completed.

Long Term

The Highway 628/Pinchbeck Road intersection is anticipated to be an at-grade intersection in the long term horizon with stop control on the north and south approaches and the following geometry:

- **West Approach** – one left turn bay, one through lane, one shared through/right lane;
- **East Approach** – one left turn bay, two through lanes, one right turn bay;
- **South Approach** –one shared left/through/right lane; and
- **North Approach** –one shared left/through/right lane.

As an unsignalized intersection, the southbound lane is projected to be over capacity with considerable delay in the AM and PM peak hours under long term total traffic volumes. Based on a TAC signal warrant, the intersection is on the cusp of warranting signalization. Although alternate access to development along Pinchbeck Road is available via Highway 60 and Highway 16A, signalization at Highway 628 and Pinchbeck Road could help facilitate and unlock additional long term development opportunities along the corridor.

The Highway 628/Pinchbeck Road intersection is projected to operate well as a signalized intersection in the long term horizon.

Near Term

The Highway 628/Pinchbeck Road intersection was analyzed as an unsignalized intersection with stop control on the north and south approaches and the following geometry:

- **West Approach** – one left turn bay, one shared through/right lane;
- **East Approach** – one left turn bay, one through lane, one right turn bay;
- **South Approach** –one shared left/through/right lane; and
- **North Approach** –one shared left/through/right lane.

Based on the capacity analysis, the southbound movements are projected to be over capacity in the PM peak hour; however, signalization is not anticipated to be warranted based on the near term total traffic volumes. Drivers will likely seek alternate routes when leaving southeast Acheson during the PM peak hour or choose to travel outside of the peak hour. The alternate routes to and from development along Pinchbeck Road via Highway 16A and Highway 60 are projected to be nearing or at acceptable capacity thresholds for the near term horizon; therefore, it is expected that these movements may experience additional congestion, which may result in peak hour spread.

As signalization is anticipated to be warranted in the long term horizon, consideration could be given to signalizing the Highway 628/Pinchbeck Road intersection in the near term horizon. This would improve intersection operations and could facilitate additional near term development opportunities within southeast Acheson. It is recommended that the intersection be monitored for signalization in the near term and that monitoring consider the summer peak to capture the potential influences of the Ranch Golf and Country Club.

5.4.31 A41 – Highway 628 and 231 Street

Ultimate

The Highway 628/231 Street intersection is currently an at-grade unsignalized intersection; however, it is assumed to be upgraded to a diamond interchange in the ultimate horizon.

Westbound Ramp

The westbound ramp intersection is assumed to be signalized and include the following geometry:

- **East Approach** – one shared left/through lane, one channelized free flow right turn bay;
- **South Approach** –one left turn bay, one through lane; and
- **North Approach** – two through lanes; one channelized right turn bay.

The Highway 628/231 Street Westbound Ramp intersection is projected to operate at acceptable levels of service in the AM peak hour. In the PM peak hour, the westbound right turn movement is projected to be approaching capacity as a single free-flow lane. Significant westbound right volume, in the order of 1,740 vehicles, assumed based on the build-out of Secord and Rosenthal, are projected in the ultimate horizon. Revisions to the interchange design should be explored with TEC to accommodate the projected heavy westbound right turn volume.

Eastbound Ramp

The eastbound ramp intersection is anticipated to be signalized and include the following geometry:

- ***West Approach*** – one shared left/through lane, one channelized free flow right turn bay;
- ***South Approach*** – one through lane; one channelized right turn bay; and
- ***North Approach*** – two left turn bays, one through lane.

The Highway 628/231 Street Eastbound Ramp intersection is projected to operate at acceptable levels of service in the PM peak hour. In the AM peak hour, the southbound left turn movement, estimated to be in the order of 1840 vehicles, is projected to be over capacity as a dual left turn under protected only phasing. Significant southbound left volume, assumed based on the build-out of Secord and Rosenthal, are projected in the ultimate horizon. The 3.2 km spacing of interchanges compounds the intersection challenges at 231 Street and Highway 60. Revisions to the interchange design should be explored with TEC to accommodate the projected heavy southbound left turn volume, in combination with considering maintaining some level of access to Pinchbeck Road to help relieve congested movements.

Long Term

The Highway 628/231 Street intersection was analyzed as an at-grade signalized intersection with dual southbound left turn bays and a westbound free-flow right turn based on the projected long term traffic volumes.

- ***West Approach*** – one left turn bay, one through lane, one shared through/right lane
- ***East Approach*** – one left turn bay, two through lanes, one channelized free-flow right turn bay;
- ***South Approach*** –one shared left/through/right lane; and
- ***North Approach*** –two left turn bays, one shared through/right lane.

Multiple movements are projected to be over capacity in the AM peak hour, including the eastbound left turn, westbound through, and southbound left turn movements. Site generated traffic represents approximately 25% of the total long term traffic at the intersection with the majority of the volumes on the north approach attributable to the build out of the Secord and Rosenthal neighbourhoods within the City of Edmonton.

Further study of the Highway 628/231 Street intersection is recommended to address anticipated long term congestion, including evaluation of potential interchange development.

Near Term

The Highway 628/231 Street intersection was assessed based on the long term geometry noted above. The intersection is projected to be over capacity as a signalized intersection in the AM peak hour under near term total traffic conditions, specifically the westbound through and southbound left turn movements. It is anticipated that as traffic volumes increase with the buildout of the Rosenthal and Secord neighbourhoods within the City of Edmonton. Further study of the Highway 628/231 Street intersection is recommended to address anticipated near term congestion, including evaluation of potential interchange development.

5.4.32 A42 – 108 Avenue and Atim Road

Ultimate

Based on ultimate traffic volumes, the future intersection of 108 Avenue and Atim Road is anticipated to include the following geometry:

- **West Approach** –one shared left turn/through lane, one right turn bay;
- **East Approach** – one left turn bay, one through lane, one right turn bay;
- **South Approach** –one left turn bay, one shared through/right lane; and
- **North Approach** –one left turn bay, one shared through/right lane.

As the intersection of 108 Avenue and Atim Road does not exist today, a signal warrant analysis cannot be effectively completed. For the purposes of this assessment, the intersection is assumed to be signalized; however, the intersection should be monitored as development progresses to determine if and when a signal is required. Based on the results of the capacity analysis, the 108 Avenue/Atim Road intersection is projected to operate at acceptable levels of service in the ultimate horizon as a signalized intersection.

5.4.33 A43 – 108 Avenue and Spruce Valley Road

Ultimate

Based on a review of future traffic volumes and roadway cross-sections, the following geometry is anticipated to be provided at the 108 Avenue/Spruce Valley Road intersection:

- **West Approach** –one left turn bay, one through lane, one right turn bay;
- **East Approach** – one left turn bay, one shared through/right lane;
- **South Approach** –one left turn bay, one shared through/right lane; and
- **North Approach** –one shared left/through/right lane.

As the intersection of 108 Avenue/Spruce Valley Road does not exist today and was not counted, a nominal 5 vph was assumed for each zero volume movement at the intersection to account for residential traffic to/from Spruce Valley Road north of 108 Avenue.

Without a signal, the northbound left turn movement is projected to be at capacity in the AM peak hour; therefore, for the purposes of this assessment, the 108 Avenue/Spruce Valley Road intersection is assumed to be signalized. However, the intersection should be monitored in the future to determine if and when a signal is required. The intersection of 108 Avenue and Spruce Valley Road is projected to operate at acceptable levels of service in the ultimate horizon assuming a traffic signal is implemented at the intersection.

Long Term

In the long term horizon, the 108 Avenue/Spruce Valley Road intersection is anticipated to be constructed as an unsignalized T-intersection with a single lane on the north and south approaches and a left turn bay/right turn lane on the east approach. Based on long term total traffic volumes, the 108 Avenue/Spruce Valley Road intersection is anticipated to operate at acceptable levels of service in the AM and PM peak hours.

Near Term

The 108 Avenue/Spruce Valley Road intersection is not anticipated to be constructed in the near term; therefore, a near term analysis was not completed.

5.4.34 A44 – 96 Avenue and Spruce Valley Road**Ultimate, Long Term, Near Term**

As 96 Avenue and Spruce Valley Road are anticipated to be two-lane industrial collector roadways, the intersection of 96 Avenue and Spruce Valley Road is assumed to include a single lane on each approach accommodating all movements. The intersection is anticipated to be unsignalized with stop control on the east and west approaches. Based on the results of the capacity analysis, the 96 Avenue/Spruce Valley Road intersection is projected to operate well in all three horizons.

5.4.35 A45 – 92 Avenue and Spruce Valley Road**Ultimate**

The 92 Avenue/Spruce Valley Road intersection is anticipated to be a signalized arterial/collector intersection with the following geometry:

- **West Approach** – one left turn bay, one through lane, one shared through/right lane;
- **East Approach** – one left turn bay, two through lanes, one right turn bay;
- **South Approach** – one left turn bay, one shared through/right lane; and
- **North Approach** – one left turn bay, one shared through/right lane.

Based on the capacity analysis completed, the 92 Avenue/Spruce Valley Road intersection is projected to operate at acceptable levels of service in the AM and PM peak hours based on total traffic volumes in the ultimate horizon.

Long Term

In the long term horizon, the 92 Avenue/Spruce Valley Road intersection is anticipated to be an unsignalized T-intersection with stop control on the east approach and the following intersection geometry reflecting a staged three-lane cross-section along 92 Avenue:

- **East Approach** – one left turn bay, one right turn lane;
- **South Approach** – one shared through lane/right lane; and
- **North Approach** – one left turn bay, one through lane.

The 92 Avenue/Spruce Valley Road intersection is anticipated to operate at acceptable levels of service in the AM and PM peak hours under long term total traffic volumes.

Near Term

The 92 Avenue/Spruce Valley Road intersection is not anticipated to be constructed in the near term; therefore, a near term analysis was not completed.

5.4.36 A46 – 96 Avenue and Pinchbeck Road

Ultimate and Long Term

The intersection of 96 Avenue and Pinchbeck Road is anticipated to be an unsignalized intersection with stop control on the east and west approaches. Based on a review of future traffic volumes and roadway cross-sections, the following geometry is assumed to be constructed at the 96 Avenue/Pinchbeck Road intersection in the ultimate and long term horizon:

- **West Approach** –one left turn bay, one through/right lane;
- **East Approach** – one shared left/through/right lane;
- **South Approach** –one left turn bay, one shared through/right lane; and
- **North Approach** – one left turn bay, one shared through/right lane.

Based on the results of the capacity analysis, the 96 Avenue/Pinchbeck Road intersection is projected to operate at acceptable levels of service as an unsignalized intersection in the ultimate and long term horizons.

Near Term

In the near term horizon, the 96 Avenue/Pinchbeck Road intersection is expected to be constructed as an unsignalized T-intersection with stop control on the west approach and include the following geometry:

- **West Approach** –one left turn bay, one right turn lane;
- **South Approach** –one left turn bay, one through lane; and
- **North Approach** –one shared through/right lane.

Based on the analysis, the 96 Avenue/Pinchbeck Road intersection is projected to operate at acceptable levels of service in the AM and PM peak hours in the near term.

5.4.37 A47 – 92 Avenue and Pinchbeck Road

Ultimate

The 92 Avenue/Pinchbeck Road intersection is anticipated to be a signalized arterial/collector intersection with the following geometry in the ultimate horizon:

- **West Approach** –one left turn bay, one through lane, one shared through/right lane;
- **East Approach** – one left turn bay, one through lane, one shared through/right lane;
- **South Approach** –one left turn bay, one shared through/right lane; and
- **North Approach** –one left turn bay, one through lane, one right turn bay.

Based on the results of the capacity analysis, the 92 Avenue/Pinchbeck Road intersection is projected to operate at acceptable levels of service in the ultimate horizon.

5.4.38 BL2 – TWP RD 532A and Highway 44

Ultimate & Long Term

The intersection of TWP RD 532A and Highway 44 is currently an unsignalized intersection with stop control on the east and west approaches.

A signal warrant identified the need for signalization in the ultimate and long term horizons; however, as roundabouts are expected to be developed at the Highway 16/Highway 44 interchange to the south, a roundabout was tested for the ultimate and long term horizons.

A single lane roundabout with separate right turn slip lanes on the west, south, and north approaches was analyzed under the ultimate total traffic volumes. Based on the analysis, a single lane roundabout with additional right turn capacity is projected to operate at acceptable levels of service in the ultimate horizon.

In the long term horizon, a single lane roundabout is anticipated to accommodate the long term total traffic volumes at acceptable levels of service. The construction of the additional right turn slip lanes could be staged.

To support potential future twinning of Highway 44, consideration could be given to constructing a two-lane roundabout initially to minimize the impact of construction in the future.

Near Term

The TWP RD 532A/Highway 44 intersection is anticipated to operate at acceptable levels of service based on the existing intersection geometry and traffic control under near term total traffic volumes.

5.4.39 BL5 – TWP RD 532A and Highway 60

Ultimate, Long Term, & Near Term

The intersection of TWP RD 532A and Highway 60 is currently an unsignalized intersection with stop control on the east and west approaches and the following geometry:

- **West Approach** –one shared left/through/right lane;
- **East Approach** – one shared left/through/right lane;
- **South Approach** –one shared left/through lane, one right turn lane; and
- **North Approach** –one shared left/through/right lane.

The existing geometry and traffic control were used in the capacity assessments for all three horizons. Based on the results of the capacity analysis, the TWP RD 532A/Highway 60 intersection is projected to operate at acceptable levels of service in the AM and PM peak hours based on total traffic volumes in the ultimate, long term, and near term horizons.

5.5 Roadway Network Assessment Summary

Exhibits 5.4, 5.5, and 5.6 illustrate the recommended cross-sections as well as the intersection geometry and traffic control for the roadway network within the study area in the ultimate, long term, and near term horizons respectively. On Exhibits 5.5 and 5.6, where a roadway exists but the ultimate cross-section is not recommended within the respective horizon, it is shown as grey.

The recommended near term roadway network was reviewed to identify a near term improvement program prioritized based on project elements anticipated to be critical to the short-term success of Acheson. Roadway upgrades were identified as low, moderate, or high priority where the roadway is a regional roadway or serves multiple uses within Acheson. Where a roadway link is identified as being constructed or extended to accommodate adjacent development parcels, the roadway priority has been identified as development driven. If the development does not occur, then the roadway improvement would not be required. **Table 5.6** summarizes the near term improvement program and associated priority levels.

The long term and ultimate roadway networks represent 20 to 30-year development horizons that will be influenced by a number of factors both within Acheson and the surrounding region. Therefore, prioritization of roadway network improvements should be reviewed as development progresses and traffic patterns are established.

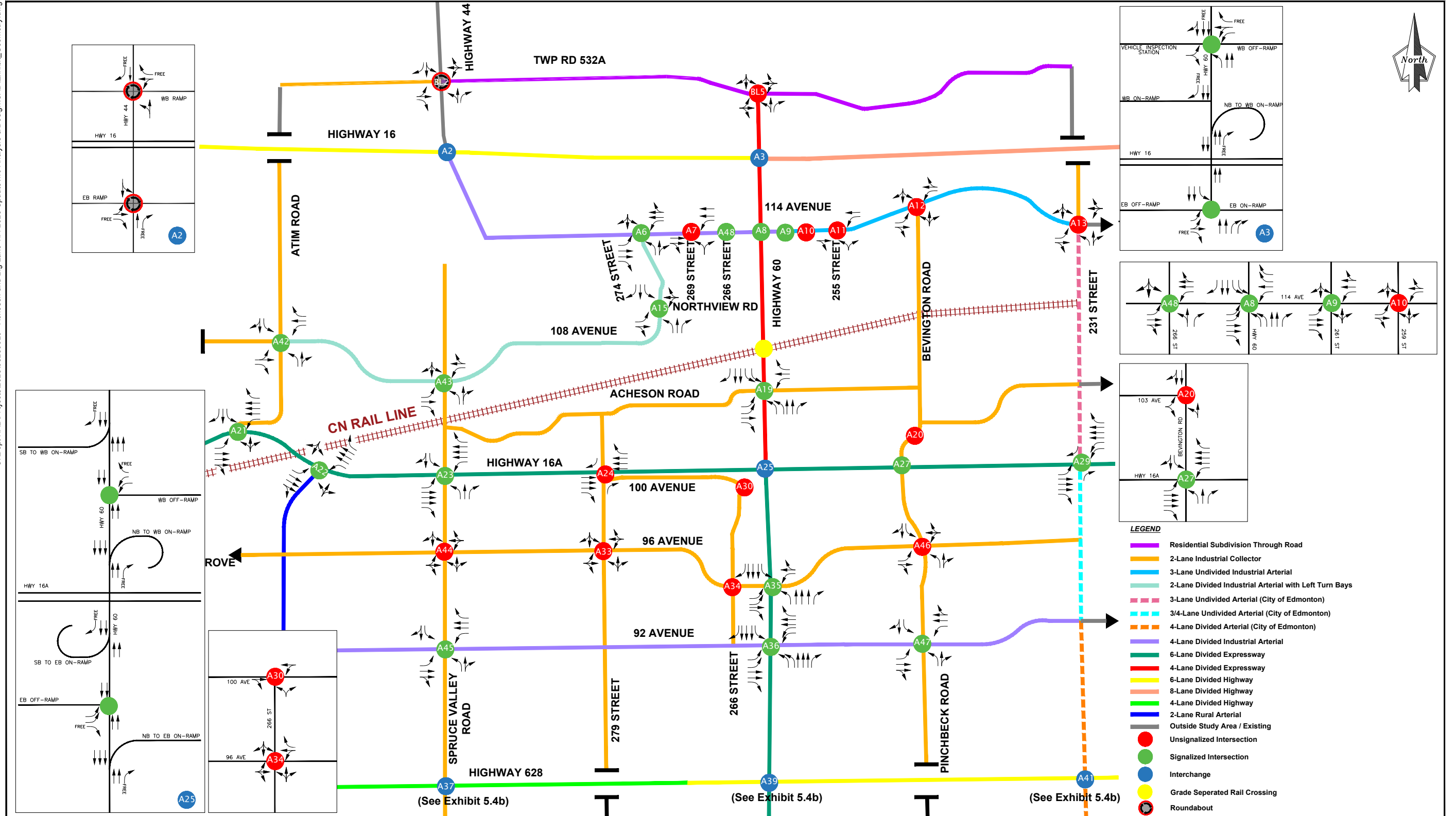


Exhibit 5.4a

Disclaimer:

- Roadway alignments are conceptual and are subject to change.
- Local roadways are not shown.

N.T.S.

Recommended Intersection Geometry & Traffic Control - Ultimate Horizon



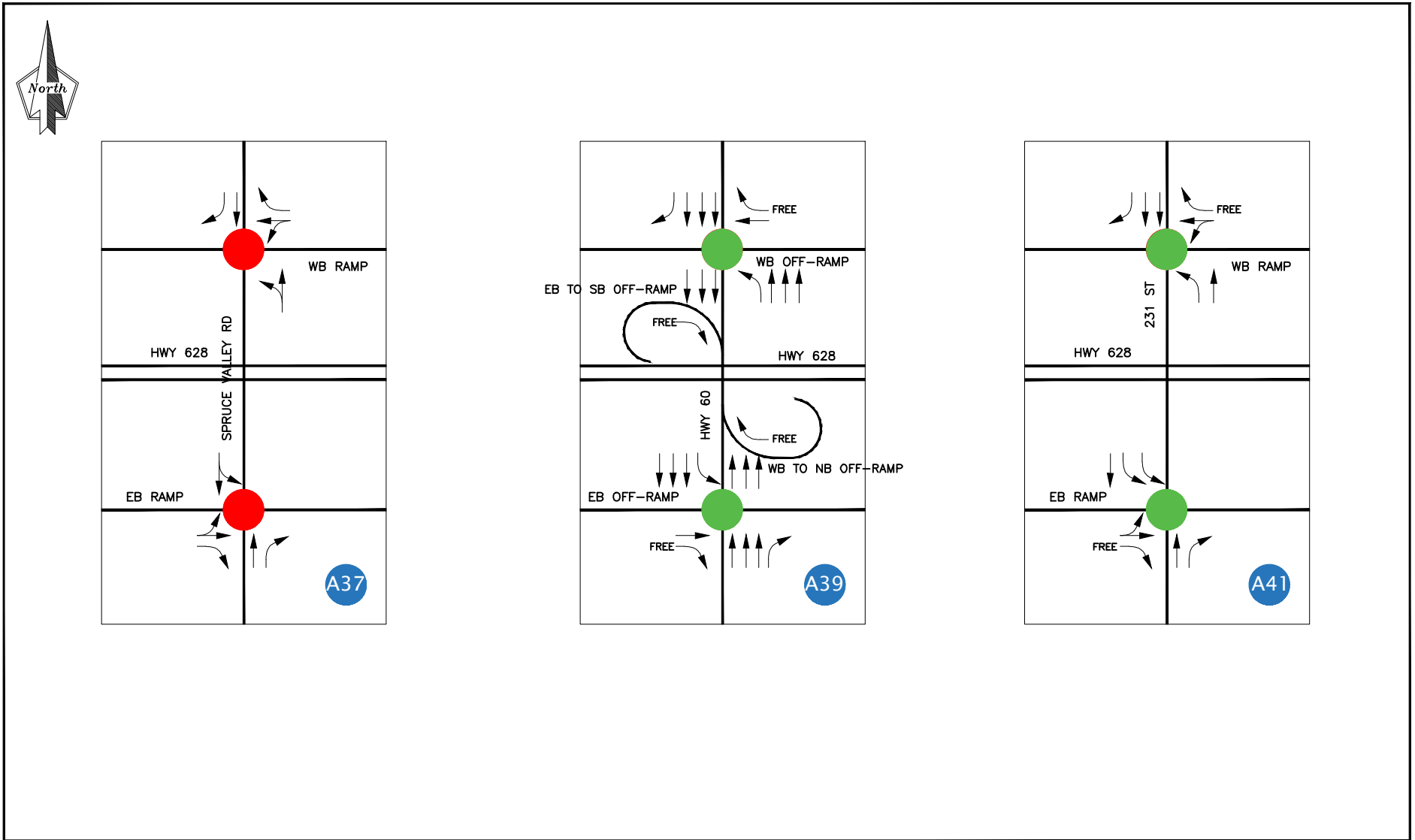


Exhibit 5.4b

Recommended Intersection Geometry & Traffic Control - Ultimate Horizon



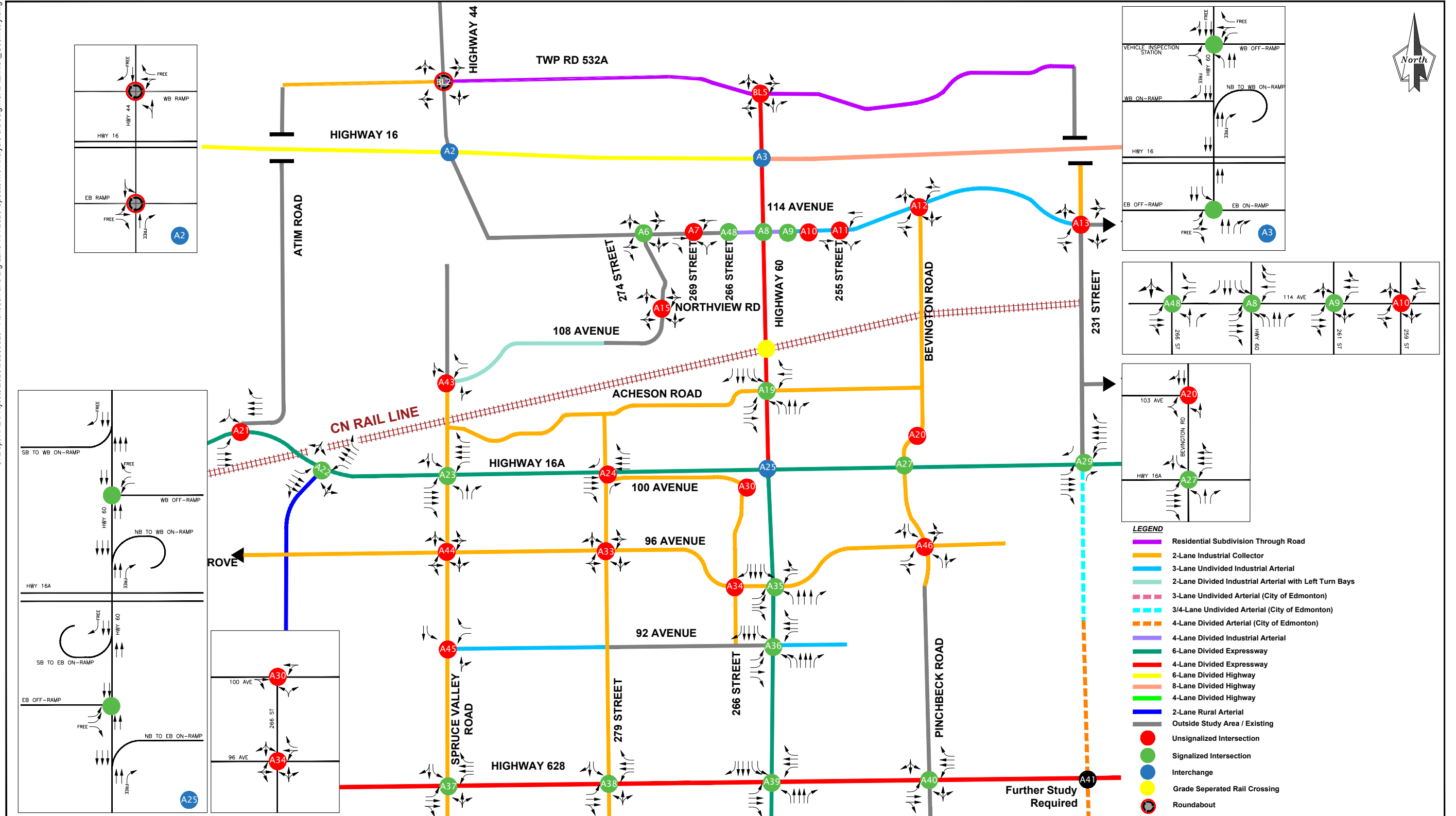


Exhibit 5.5

Disclaimer:

- Roadway alignments are conceptual and are subject to change.
- Local roadways are not shown.

N.T.S.

Recommended Intersection Geometry & Traffic Control - Long Term Horizon



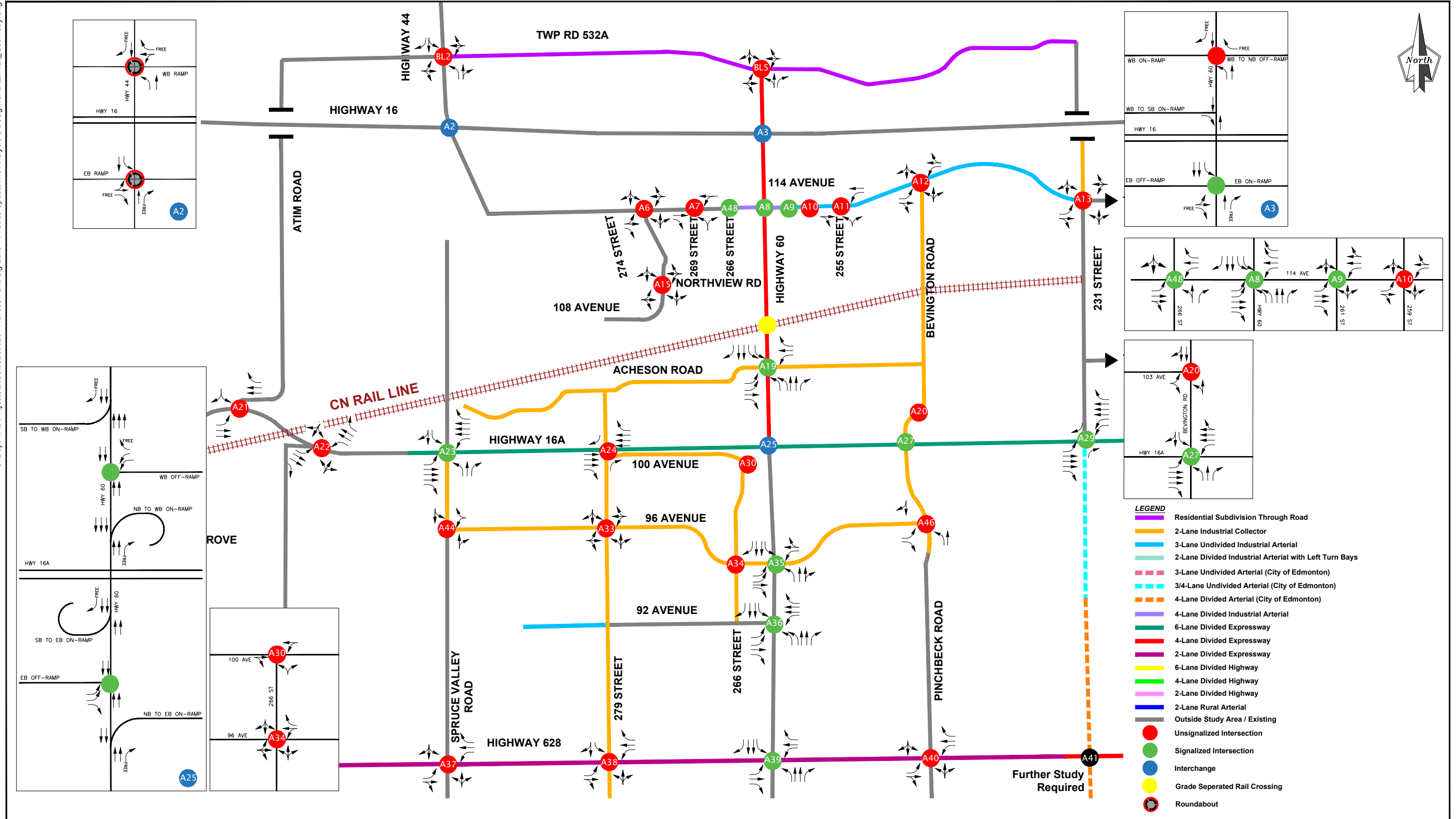


Exhibit 5.6

Recommended Intersection Geometry & Traffic Control - Near Term Horizon

Disclaimer:

- Roadway alignments are conceptual and are subject to change.
- Local roadways are not shown.

N.T.S.



Table 5.6: Near Term Improvement Program

	ROADWAY	STUDY AREA INTERSECTION OR LINK	IMPROVEMENTS	PRIORITY
1	TWP RD 532A	East of Highway 60 to Bevington Road	Construct 2-lane residential subdivision through road	Development Driven
2	Highway 16	Atim Road	Close	High
3		Highway 44	Upgrade interchange as per TEC plans	High
4		Highway 60	Signalize EB ramp	Moderate
5		231 Street	Close	High
6	114 Avenue	261 Street to 231 Street	Construct 3-lane industrial collector	Low
7	Acheson Road	East of Highway 60	Extend 2-lane industrial collector to Bevington Road	Development Driven
8	Highway 16A	West of Spruce Valley Road to 279 Street	Construct 6-lane divided expressway	High
9		Bevington Road to 231 Street	Construct 6-lane divided expressway	High
10		231 Street	Construct dual westbound left turn lanes	Low
11	96 Avenue	Spruce Valley Road to west of 279 Street	Construct 2-lane industrial collector	Development Driven
12		Highway 60 to Pinchbeck Road	Construct 2-lane industrial collector	Development Driven
13	92 Avenue	West of 279 Street	Construct 3-lane undivided industrial arterial	Development Driven
14	Highway 628	Spruce Valley Road to 231 Street	Construct 2-lane divided expressway	Moderate
15	Spruce Valley Road	Highway 16A to 96 Avenue	Construct 2-lane industrial collector	Development Driven
16	279 Street	96 Avenue to 92 Avenue	Construct 2-lane industrial collector	Development Driven
17		South of 92 Avenue to Highway 628	Construct 2-lane industrial collector	Development Driven
18	Pinchbeck Road	South of Highway 16A to south of 96 Avenue	Construct 2-lane industrial collector	Development Driven
19	231 Street	Highway 16A to Highway 628	Coordinate with City of Edmonton to construct 3 or 4 lane undivided arterial	Low
20	-	-	Review and address Acheson Zone 8 as development activity occurs and future planning studies are completed to adapt network decisions accordingly.	High

5.5.1 Traffic Monitoring

Given the pace of development within the Acheson Industrial Area and surrounding regional growth, it is recommended that Parkland County implement an ongoing traffic monitoring program to support planning and infrastructure investment decisions. While this study relies on a combination of historical traffic counts and updated counts collected in 2025, continued monitoring will help ensure that roadway and intersection improvements are implemented in a timely manner as traffic conditions evolve.

The traffic monitoring program should include periodic turning movement counts and 24-hour link volume counts at key intersections and roadway segments throughout the study area. Monitoring should focus on locations where traffic patterns may change as development progresses or where future improvements may be required. In particular, the program should consider the following:

- Mature intersections that would benefit from monitoring to understand changes in traffic patterns and growth over time (e.g., 114 Avenue/Highway 60).
- Roadway segments impacted by future road closures or new network connections to monitor traffic redistribution (e.g., 114 Avenue west of Bevington Road).
- Signalized intersections within developing areas where traffic growth may influence intersection operations (e.g., 92 Avenue corridor).

Table 5.7 identifies intersections recommended for inclusion in a near-term traffic monitoring program. These locations represent key network nodes where traffic patterns are anticipated to evolve as development proceeds within Acheson and Big Lake, or where future operational improvements may be required. Monitoring these locations will support refinement of the recommended improvement program and inform future updates to this TIA.

Additional locations may be incorporated into the monitoring program as development progresses and traffic patterns evolve within Acheson and Big Lake.

Traffic counts should ideally be updated on a three- to five-year cycle, or sooner where significant development occurs or where intersection improvements are being considered. Maintaining an updated traffic database will support future transportation studies, assist with development application reviews, and allow the County to track changes in travel patterns as the Acheson and Big Lake areas continue to develop.

Table 5.7: 5-Year Traffic Monitoring Program

ID	LOCATION	LAST COUNT YEAR	COUNT TYPE	NOTES
A6	114 Avenue & 274 Street	2018	TM	
A8	114 Avenue & Highway 60	2025	TM	
A9	114 Avenue & 261 Street	2025	-	Observe operations in combination with A8 (queues, lane utilization, delays)
A12	114 Avenue & Bevington Road	2016	24-hr Link	114 Avenue West of Bevington Road Bevington Road South of 114 Avenue
A19	Acheson Road & Highway 60	2025	TM	Post Highway 60 corridor improvements
A23	Highway 16A & Spruce Valley Road	2022	TM	
A27	Highway 16A & Pinchbeck Road	2025	TM	
A33	96 Avenue & 279 Street	2018	24-hr Link	96 Avenue West of 279 Street 279 Street South of 96 Avenue
A35	96 Avenue & Highway 60	2025	TM	
A36	92 Avenue & Highway 60	2025	TM	
A38	Highway 628 & 279 Street	2025	TM	
A39	Highway 628 & Highway 60	2025	TM	
A41	Highway 628 & 231 Street	2016	TM	
-	92 Avenue & 279 Street	-	TM	

6. CONCLUSIONS AND RECOMMENDATIONS

This TIA was prepared to identify the transportation infrastructure required within Acheson and Big Lake areas to accommodate full build-out of the study area within the 2050 horizon. Based on the assessments completed, significant improvements are anticipated to be required within and adjacent to the plan area to accommodate both background and future site generated traffic volumes.

Overall, the planned roadway network is anticipated to accommodate projected development within Acheson and Big Lake provided that the recommended roadway improvements, intersection upgrades, and highway improvements identified in the study are implemented over time. A number of key roadway connections and corridor upgrades are required to maintain acceptable traffic operations as development progresses.

Several locations within the network are anticipated to represent operational constraints in the long term and ultimate horizons. In particular, congestion is projected at the 114 Avenue/Highway 60 and 92 Avenue/Highway 60 intersections due to the combination of high traffic volumes, heavy vehicle activity, and protected only phasing. To extend the life of the roadway infrastructure and reduce the impact of congestion points, it is recommended that Parkland County continue to develop transit in Acheson and implement a TDM strategy to reduce vehicle miles traveled and single-occupancy vehicle trips.

In addition, Parkland County should consider undertaking a strategic network review to evaluate access and circulation within areas expected to experience significant traffic demand, particularly Zones 1 and 2 near the Highway 60/114 Avenue intersection and Zone 8 near the Highway 628/Pinchbeck Road and 92 Avenue/Highway 60 intersections. These areas are anticipated to experience operational challenges under the currently planned roadway network configuration and may benefit from additional access opportunities or alternative circulation strategies.

The assessment also identified locations where further coordination with TEC will be required. In particular, continued collaboration with TEC is recommended to evaluate operational improvements and potential interchange configurations at the Highway 16/Highway 60 eastbound ramp intersection, the Highway 16A/Highway 60 westbound ramp intersection, and the future Highway 628 interchanges at Highway 60 and 231 Street. These locations represent important regional connections that will influence the overall performance of the transportation network serving Acheson. Additional points of access to Highway 628 should also be considered along the corridor in the ultimate horizon (279 Street and Pinchbeck Road) to improve access and support development within Acheson.

It is recommended that Parkland County maintain an ongoing traffic monitoring program to track changes in traffic patterns as development progresses. Regular updates to traffic counts and periodic review of network performance will assist the County in refining the timing of roadway and intersection improvements and support future updates to the TIA.

APPENDIX A

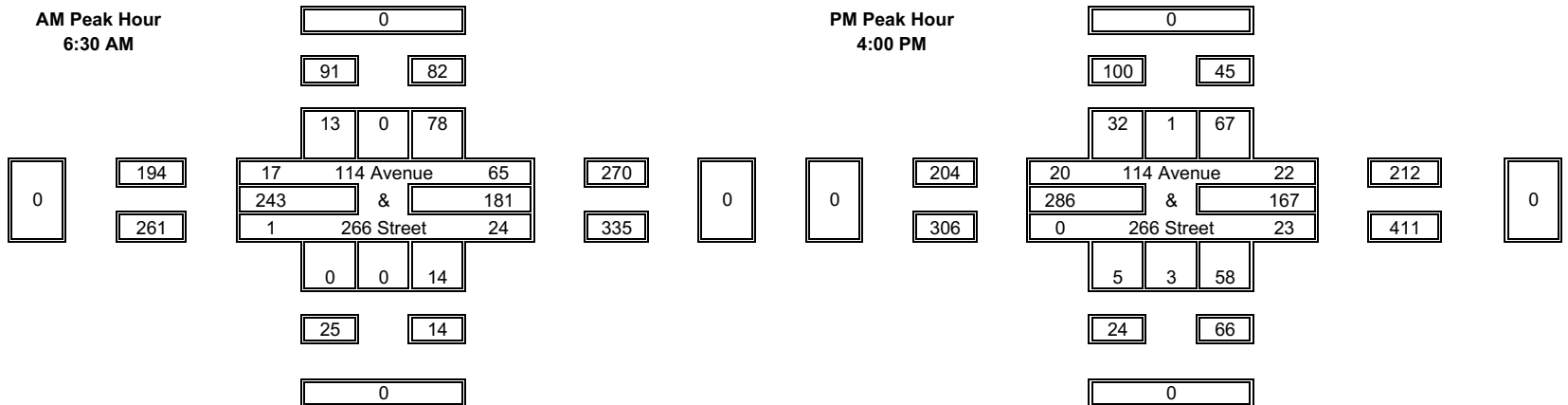
Traffic Count Summaries

Project No. 03-25-0020 Acheson and Big Lake TIA 2025 Update
 Location 114 Avenue & 266 Street
 Date 05/28/2025
 Weather Clear
 Surveyor Miovision

Street Direction	114 Avenue												266 Street												Total	Hourly Totals	
	Eastbound						Westbound						Northbound						Southbound								
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		Left		Thru		Right				
Movement	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV			
Start Time																											
6:30 AM	3	1	54	4	0	0	6	0	39	2	28	0	0	0	0	0	1	1	17	10	0	0	1	1	168		
6:45 AM	6	0	51	11	1	0	9	0	50	4	21	0	0	0	0	4	0	13	5	0	0	4	3	182			
7:00 AM	2	1	35	7	0	0	2	2	38	3	6	3	0	0	0	0	2	2	8	5	0	0	0	0	116		
7:15 AM	3	1	71	10	0	0	5	0	37	8	7	0	0	0	0	1	3	8	12	0	0	0	4	170	636		
7:30 AM	5	2	63	13	0	0	5	0	41	5	3	1	0	0	0	2	1	5	11	0	0	2	1	160	628		
7:45 AM	4	0	64	7	1	0	7	2	39	8	11	1	0	0	0	0	0	10	10	0	0	2	2	168	614		
8:00 AM	4	0	23	9	1	0	9	1	20	8	4	0	2	0	0	1	3	1	9	5	1	0	0	4	105	603	
8:15 AM	1	0	23	11	2	0	5	0	28	7	4	1	0	1	0	0	2	1	11	8	0	0	0	2	107	540	
3:30 PM	1	1	30	11	0	0	2	2	24	6	5	1	0	0	1	0	4	0	80	4	1	0	11	1	185		
3:45 PM	4	0	28	10	0	0	5	0	25	4	3	3	0	0	1	0	4	0	16	5	0	0	5	5	118		
4:00 PM	3	1	71	11	0	0	8	1	30	6	4	1	1	0	2	0	28	4	12	2	0	0	3	1	189		
4:15 PM	3	1	50	12	0	0	3	1	36	9	1	2	1	0	0	0	7	1	7	5	0	0	0	13	1	153	645
4:30 PM	5	2	80	10	0	0	4	0	39	3	4	3	1	0	0	0	13	0	24	3	0	0	2	0	193	653	
4:45 PM	3	2	45	7	0	0	4	2	37	7	4	3	1	1	1	0	4	1	11	3	0	1	11	1	149	684	
5:00 PM	4	0	45	0	0	0	9	1	48	8	3	3	3	0	0	0	19	0	14	4	0	1	3	1	166	661	
5:15 PM	2	3	32	8	0	0	8	1	26	6	6	1	0	0	1	0	3	2	12	3	0	0	1	1	116	624	

AM Peak Hour Total	17	243	1	24	181	65	0	0	14	78	0	13	636	TRUE
% HV	18%	13%	0%	8%	9%	5%	#DIV/0!	#DIV/0!	43%	41%	#DIV/0!	62%		
PHF	0.71	0.98	0.25	0.67	0.84	0.77	#DIV/0!	#DIV/0!	0.88	1.08	#DIV/0!	0.46	0.87	
Adjusted %HV	31%	23%	0%	15%	16%	8%	#DIV/0!	#DIV/0!	75%	72%	#DIV/0!	108%		

PM Peak Hour Total	20	286	0	23	167	22	5	3	58	67	1	32	684	TRUE
% HV	30%	14%	#DIV/0!	17%	15%	41%	20%	0%	10%	19%	100%	9%		
PHF	0.71	0.79	#DIV/0!	1.44	0.99	0.79	1.25	#DIV/0!	1.12	0.62	#DIV/0!	4.00	0.89	
Adjusted %HV	53%	24%	#DIV/0!	30%	26%	72%	35%	0%	18%	34%	175%	16%		

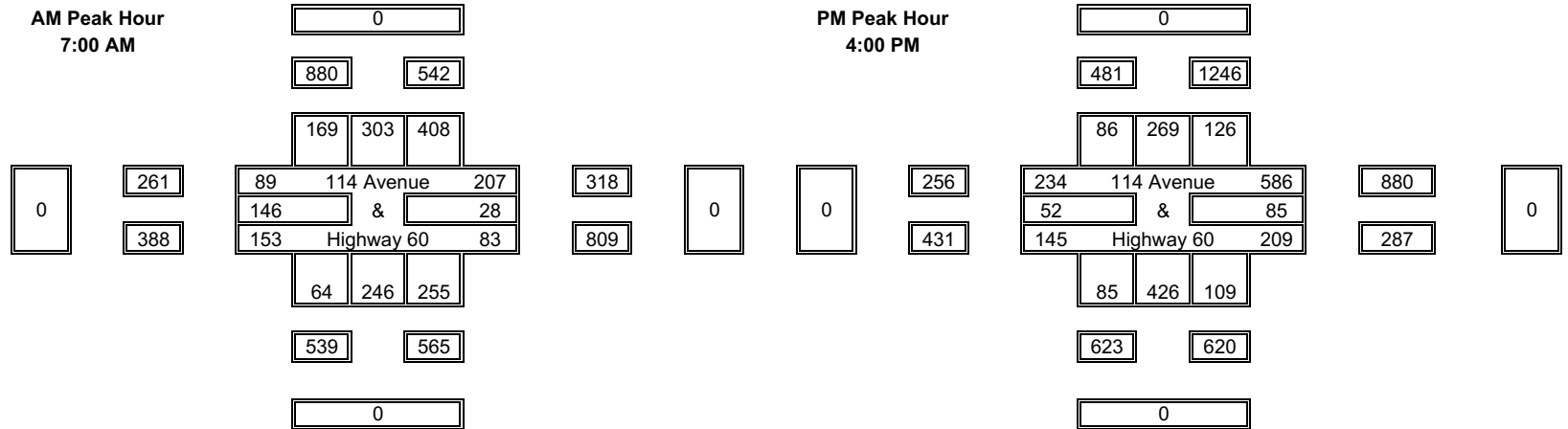


Project No. 03-25-0020 Acheson and Big Lake TIA 2025 Update
 Location 114 Avenue and Hwy 60
 Date 06/03/2025
 Weather Clear
 Surveyor Miovision

Street	114 Avenue												Highway 60												Total	Hourly Totals
	Eastbound						Westbound						Northbound						Southbound							
Direction	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		Left		Thru		Right			
Movement	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV		
Start Time																										
6:30 AM	6	9	26	2	34	7	7	4	4	1	11	20	14	0	29	6	37	4	97	5	86	2	75	0	486	
6:45 AM	3	3	29	1	21	7	5	7	1	0	11	24	20	1	22	5	44	5	124	17	97	4	79	2	532	
7:00 AM	16	3	15	5	23	5	9	12	4	1	20	24	5	1	33	17	55	6	77	11	69	6	43	5	465	
7:15 AM	18	9	25	8	22	4	6	11	3	4	26	27	16	1	37	21	38	7	100	8	74	8	37	5	515	1998
7:30 AM	11	16	34	3	42	12	15	8	7	2	27	35	25	1	56	18	72	4	79	8	70	4	33	6	588	2100
7:45 AM	8	8	53	3	31	14	9	13	4	3	22	26	9	6	48	16	61	12	117	8	67	5	38	2	583	2151
8:00 AM	10	7	9	2	9	8	7	5	3	2	23	27	11	4	43	16	38	10	60	17	29	10	34	5	389	2075
8:15 AM	12	12	11	4	13	6	10	7	0	8	23	25	11	2	25	9	26	11	60	9	35	11	35	2	367	1927
3:30 PM	74	5	5	7	47	12	48	5	9	2	125	20	13	6	95	11	15	14	33	12	43	15	7	7	630	
3:45 PM	32	6	4	7	22	7	29	7	7	5	71	19	10	6	76	16	22	13	18	18	56	7	15	8	481	
4:00 PM	77	5	7	8	37	8	47	6	13	7	131	11	17	5	97	11	22	11	19	16	69	11	17	4	656	
4:15 PM	41	3	11	10	29	4	39	1	7	1	102	9	13	1	80	18	18	18	14	20	61	11	21	6	538	2305
4:30 PM	61	4	5	3	35	9	64	8	31	3	192	6	11	6	100	9	13	5	6	14	58	5	13	4	665	2340
4:45 PM	37	6	6	2	20	3	40	4	21	2	113	22	24	8	104	7	12	10	20	17	47	7	17	4	553	2412
5:00 PM	42	3	5	3	30	5	46	4	16	2	145	17	16	4	112	15	13	13	17	12	66	10	13	9	618	2374
5:15 PM	27	2	5	4	21	8	36	4	9	1	69	9	18	7	87	13	9	12	20	10	62	6	14	8	461	2297

AM Peak Hour Total	89	146	153	83	28	207	64	246	255	408	303	169	2151	TRUE
% HV	40%	13%	23%	53%	36%	54%	14%	29%	11%	9%	8%	11%		
PHF	0.82	0.99	0.71	0.90	0.78	0.83	0.62	0.83	0.84	1.17	1.02	1.08	0.91	
Adjusted %HV	71%	23%	40%	93%	63%	95%	25%	51%	20%	15%	13%	19%		

PM Peak Hour Total	234	52	145	209	85	586	85	426	109	126	269	86	2412	TRUE
% HV	8%	44%	17%	9%	15%	8%	24%	11%	40%	53%	13%	21%		
PHF	0.90	1.63	0.82	0.73	0.63	0.74	1.25	0.98	1.51	1.58	1.07	1.26	0.91	
Adjusted %HV	13%	77%	29%	16%	27%	14%	41%	18%	71%	93%	22%	37%		

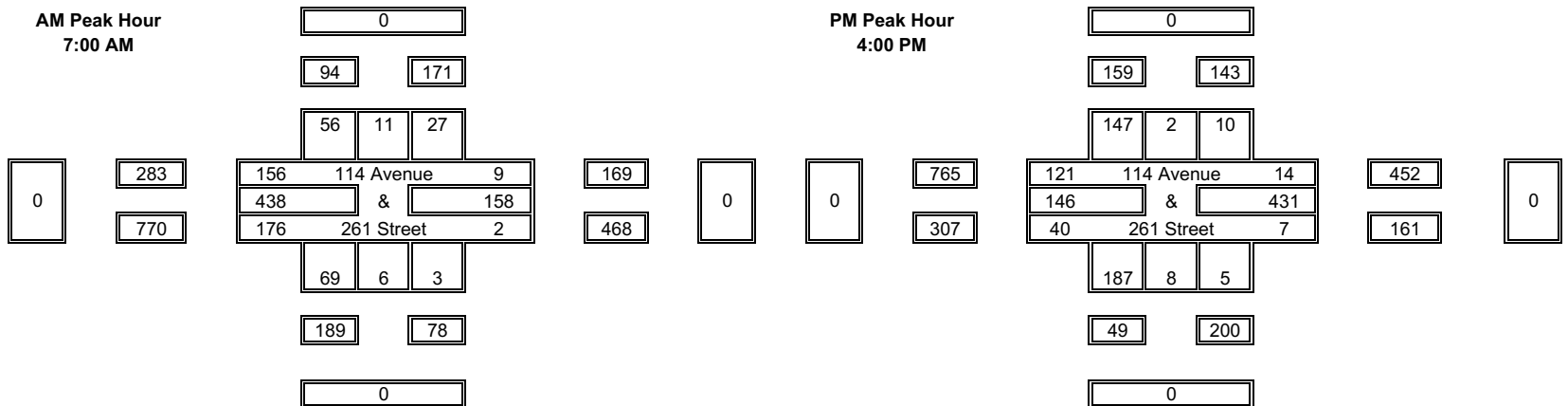


Project No. 03-25-0020 Acheson and Big Lake TIA 2025 Update
 Location 114 Avenue & 261 Street
 Date 05/28/2025
 Weather Clear
 Surveyor Miovision

Street	114 Avenue												261 Street												Total	Hourly Totals
	Eastbound						Westbound						Northbound						Southbound							
Direction	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		Left		Thru		Right			
Movement	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV		
Start Time																										
6:30 AM	30	11	93	6	38	4	0	0	11	11	2	0	1	5	0	1	0	0	3	1	1	0	0	9	227	
6:45 AM	44	11	132	3	42	5	0	0	9	14	1	3	2	3	1	0	0	0	2	2	2	0	3	5	284	
7:00 AM	28	3	81	8	28	4	1	0	11	23	0	4	5	7	1	1	0	0	7	1	1	0	5	11	230	
7:15 AM	39	5	106	8	36	8	0	0	15	27	1	1	6	22	0	0	0	0	7	1	2	1	5	10	300	
7:30 AM	33	5	102	6	39	5	0	0	18	25	1	0	9	9	1	1	2	1	3	2	5	0	4	7	278	
7:45 AM	37	6	119	8	49	7	0	1	22	17	1	1	3	8	1	1	0	0	6	0	0	2	7	7	303	
8:00 AM	23	5	60	6	20	8	0	0	19	19	1	3	4	5	2	1	0	0	5	1	0	1	13	8	204	
8:15 AM	24	12	48	5	17	5	0	1	25	12	0	1	9	10	0	1	0	0	0	0	0	0	7	7	184	
3:30 PM	18	11	21	22	2	7	0	0	114	9	2	1	24	3	3	0	1	0	4	2	4	0	28	9	285	
3:45 PM	21	10	30	15	3	7	2	0	68	10	0	1	12	8	1	0	2	2	1	1	0	0	15	9	218	
4:00 PM	26	11	27	16	4	4	2	0	112	14	2	2	37	3	1	1	1	1	2	1	0	0	18	8	293	
4:15 PM	18	10	19	8	6	4	2	1	71	5	3	1	38	4	1	1	1	1	1	1	0	2	24	7	229	
4:30 PM	18	11	21	12	4	6	0	0	145	12	3	3	75	4	4	0	0	1	0	1	0	0	42	7	369	
4:45 PM	16	11	31	12	2	10	1	1	67	5	0	0	26	0	0	0	0	0	1	3	0	0	27	14	227	
5:00 PM	17	12	19	16	3	2	0	0	143	3	0	0	27	0	0	1	0	0	3	1	0	1	25	13	286	
5:15 PM	22	12	10	23	4	6	0	0	53	4	2	0	14	2	1	0	0	0	3	1	0	1	23	4	185	

AM Peak Hour Total	156	438	176	2	158	9	69	6	3	27	11	56	1111	TRUE
% HV	12%	7%	14%	50%	58%	67%	67%	50%	33%	15%	27%	63%		
PHF	0.91	0.86	0.79	0.50	1.01	1.13	1.57	0.75	#DIV/0!	1.13	1.38	1.00	0.92	
Adjusted %HV	21%	12%	24%	88%	102%	117%	117%	88%	58%	26%	48%	109%		

PM Peak Hour Total	121	146	40	7	431	14	187	8	5	10	2	147	1118	TRUE
% HV	36%	33%	60%	29%	8%	43%	6%	25%	60%	60%	100%	24%		
PHF	1.04	1.11	1.00	#DIV/0!	0.69	0.58	0.59	0.50	1.25	2.50	#DIV/0!	0.75	0.76	
Adjusted %HV	62%	58%	105%	50%	15%	75%	10%	44%	105%	105%	175%	43%		

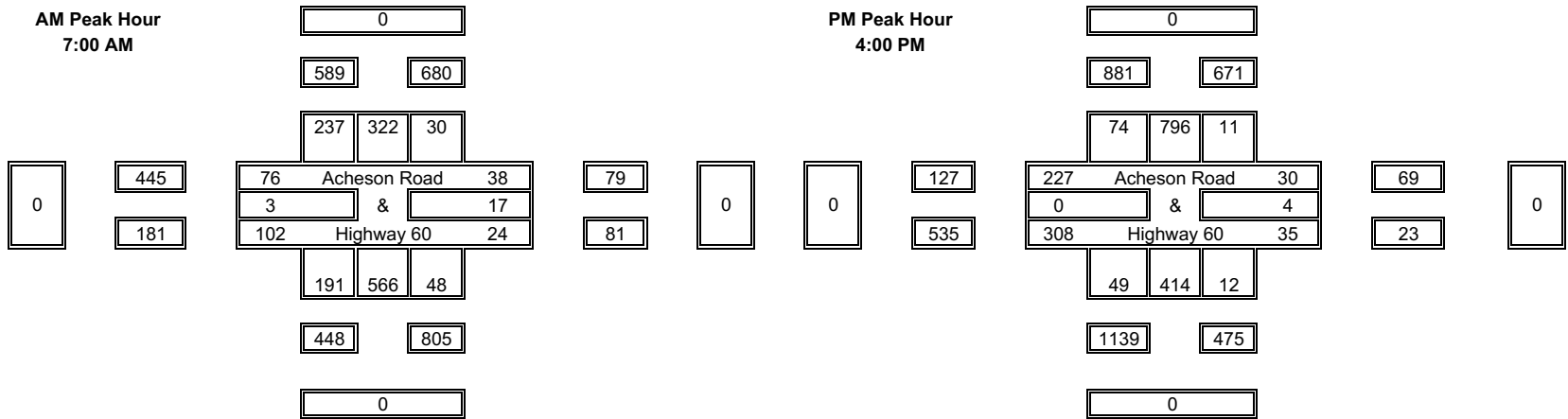


Project No. 03-25-0020 Acheson and Big Lake TIA 2025 Update
 Location Acheson Road and Highway 60
 Date 05/29/2025
 Weather Clear
 Surveyor Miovision

Street Direction Movement	Acheson Road												Highway 60												Total	Hourly Totals
	Eastbound						Westbound						Northbound						Southbound							
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		Left		Thru		Right			
Start Time	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV		
6:30 AM	3	11	1	1	6	14	1	2	2	2	6	0	33	6	118	5	9	0	8	0	50	7	64	3	352	
6:45 AM	5	7	0	0	12	6	2	1	4	1	2	1	47	7	125	14	19	1	10	1	46	10	49	2	372	
7:00 AM	7	9	0	2	3	7	2	1	0	1	2	4	43	7	115	17	11	3	11	3	68	20	75	7	418	
7:15 AM	9	12	0	0	12	12	1	6	4	1	6	8	46	9	108	9	14	2	0	0	49	21	43	5	377	1519
7:30 AM	10	12	1	0	17	18	1	4	2	2	4	2	31	8	108	16	9	2	4	0	56	14	28	12	361	1528
7:45 AM	11	6	0	0	14	19	2	7	6	1	3	9	41	6	174	19	5	2	6	6	73	21	56	11	498	1654
8:00 AM	15	19	2	0	17	13	3	4	1	0	4	7	28	3	91	19	2	4	0	1	47	14	32	9	335	1571
8:15 AM	12	15	0	0	13	14	4	6	3	0	3	10	23	10	101	23	3	1	2	4	38	21	18	8	332	1526
3:30 PM	36	9	0	1	84	10	11	0	0	0	13	2	7	6	61	28	0	2	2	0	122	15	8	4	421	
3:45 PM	33	6	1	0	39	6	10	2	1	0	6	0	14	13	72	21	4	1	0	1	163	23	13	7	436	
4:00 PM	67	4	0	0	76	5	8	3	1	0	6	2	7	6	86	16	0	2	0	1	177	7	8	3	485	
4:15 PM	28	3	0	0	54	4	8	1	0	0	6	1	8	3	81	30	4	2	1	1	167	12	11	5	430	1772
4:30 PM	76	5	0	0	111	1	9	1	1	0	7	2	6	7	78	14	2	1	3	0	206	18	14	6	568	1919
4:45 PM	40	4	0	0	55	2	5	0	2	0	6	0	6	6	94	15	1	0	2	3	192	17	17	10	477	1960
5:00 PM	38	3	1	1	51	4	0	1	4	2	6	2	8	3	94	13	4	3	0	0	183	12	3	1	437	1912
5:15 PM	24	5	2	0	45	4	5	0	0	0	4	3	3	4	77	18	1	1	0	0	123	8	4	1	332	1814

AM Peak Hour Total	76	3	102	24	17	38	191	566	48	30	322	237	1654	TRUE
% HV	51%	67%	55%	75%	29%	61%	16%	11%	19%	30%	24%	15%		
PHF	1.12	#DIV/0!	0.77	0.67	0.61	0.79	1.02	0.73	1.71	0.63	0.86	0.88	0.83	
Adjusted %HV	90%	117%	96%	131%	51%	106%	27%	19%	33%	53%	41%	26%		

PM Peak Hour Total	227	0	308	35	4	30	49	414	12	11	796	74	1960	TRUE
% HV	7%	#DIV/0!	4%	14%	0%	17%	45%	18%	42%	45%	7%	32%		
PHF	0.70	#DIV/0!	0.69	0.88	1.00	0.83	0.94	1.13	1.00	0.92	0.89	0.93	0.86	
Adjusted %HV	12%	#DIV/0!	7%	25%	0%	29%	79%	32%	73%	80%	12%	57%		

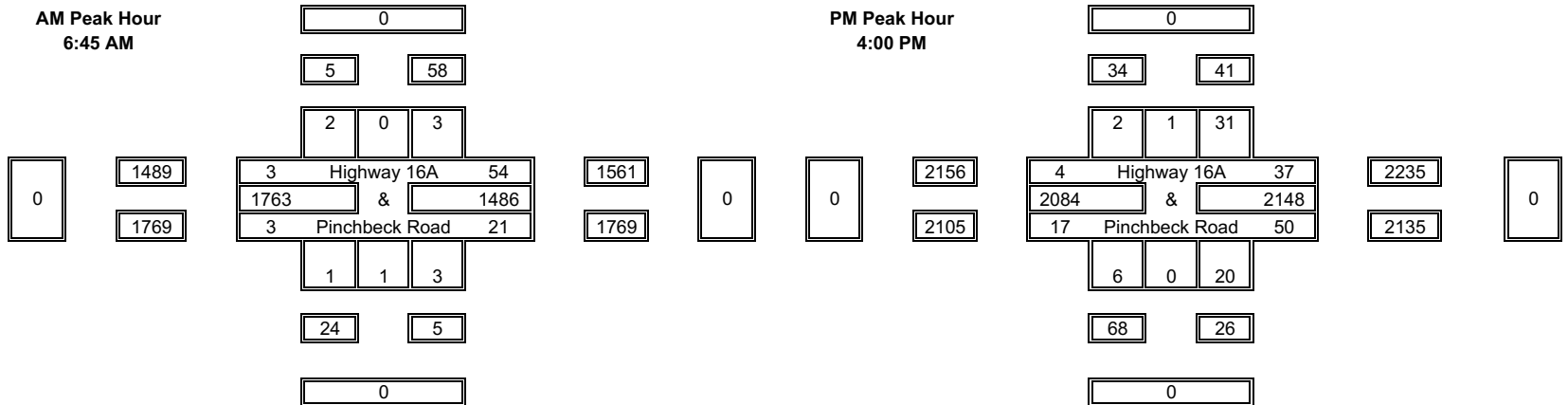


Project No. 03-25-0020 Acheson and Big Lake TIA 2025 Update
 Location Highway 16A and Pinchbeck Road AM
 Date 05/27/2025
 Weather Clear
 Surveyor Miovision

Street Direction Movement Start Time	Highway 16A												Pinchbeck Road												Total	Hourly Totals
	Eastbound						Westbound						Northbound						Southbound							
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		Left		Thru		Right			
Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV			
6:30 AM	0	0	298	25	0	0	2	0	352	14	15	3	0	0	0	0	1	0	1	0	0	0	0	0	711	
6:45 AM	0	0	347	30	2	0	5	0	387	30	23	3	0	1	0	0	0	0	0	0	0	0	1	0	829	
7:00 AM	1	1	351	35	0	0	8	0	264	31	10	2	0	0	0	0	1	0	0	1	0	0	0	0	705	
7:15 AM	1	0	480	38	1	0	4	0	335	42	4	2	0	0	1	0	0	0	1	0	0	0	0	0	909	3154
7:30 AM	0	0	442	40	0	0	4	0	359	38	9	1	0	0	0	0	2	0	1	0	0	0	1	0	897	3340
7:45 AM	1	0	362	43	0	0	5	0	314	56	3	0	0	0	0	0	0	0	3	0	0	0	0	0	787	3298
8:00 AM	1	0	286	50	0	1	4	0	281	42	6	0	0	0	0	0	0	0	1	0	0	0	0	0	672	3265
8:15 AM	0	0	303	48	1	0	5	0	236	44	6	1	0	0	0	0	2	0	1	1	0	0	0	0	648	3004
3:30 PM	2	0	392	41	1	0	13	2	379	47	5	1	0	0	0	0	4	0	6	2	0	0	3	0	898	
3:45 PM	1	0	379	29	2	0	10	0	436	37	5	2	1	0	0	0	7	0	8	1	0	0	2	0	920	
4:00 PM	1	0	438	35	1	0	5	0	438	42	8	5	1	0	0	0	4	0	7	1	0	0	1	0	987	
4:15 PM	2	0	410	28	8	0	8	0	557	45	3	4	2	0	0	0	2	0	4	2	0	0	1	0	1076	3881
4:30 PM	0	0	619	34	3	0	16	0	496	35	10	1	1	0	0	0	9	0	12	1	1	0	0	0	1238	4221
4:45 PM	0	1	500	20	5	0	21	0	499	36	5	1	2	0	0	0	5	0	4	0	0	0	0	0	1099	4400
5:00 PM	1	0	452	19	4	1	11	0	411	33	6	0	1	0	0	0	3	0	7	0	0	0	0	0	949	4362
5:15 PM	0	0	441	23	2	0	25	0	406	34	4	1	2	0	1	0	13	0	8	0	0	0	0	0	960	4246

AM Peak Hour Total	3	1763	3	21	1486	54	1	1	3	3	0	2	3340	TRUE
% HV	33%	8%	0%	0%	9%	15%	100%	0%	0%	33%	#DIV/0!	0%		
PHF	0.75	0.85	0.75	1.31	0.99	2.25	#DIV/0!	0.25	#DIV/0!	0.75	#DIV/0!	#DIV/0!	0.92	

PM Peak Hour Total	4	2084	17	50	2148	37	6	0	20	31	1	2	4400	TRUE
% HV	25%	6%	0%	0%	7%	30%	0%	#DIV/0!	0%	13%	0%	0%		
PHF	#DIV/0!	0.80	1.42	0.78	1.01	0.84	1.50	#DIV/0!	0.56	0.60	0.25	#DIV/0!	0.89	

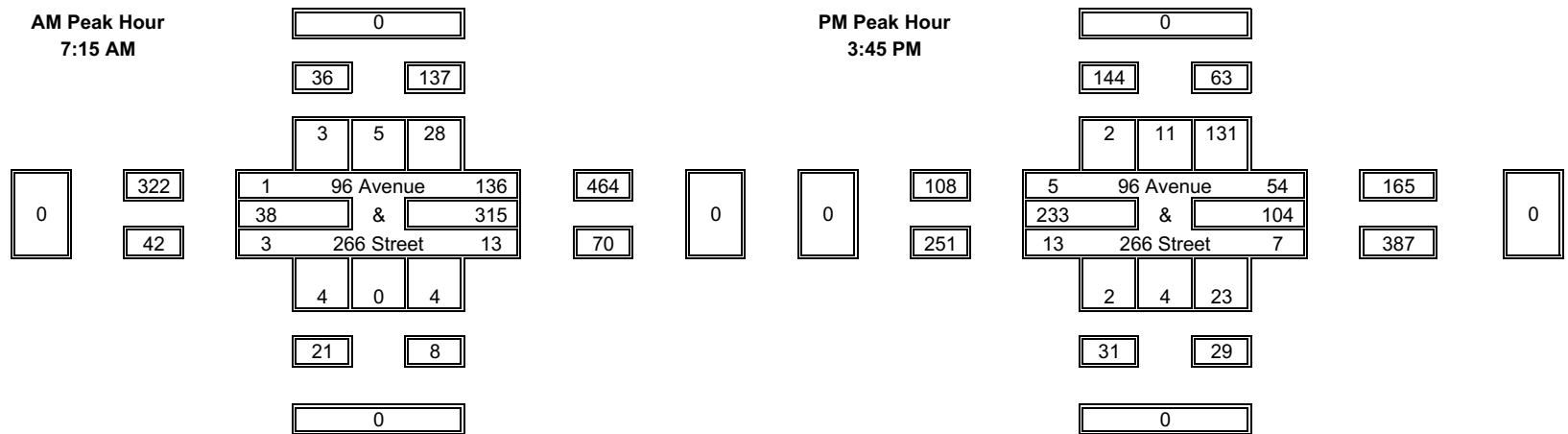


Project No. 03-25-0020 Acheson and Big Lake TIA 2025 Update
 Location 96 Avenue and 266 Street TMC
 Date 06/05/2025
 Weather Clear
 Surveyor Miovision

Street Direction Movement Start Time	96 Avenue												266 Street												Total	Hourly Totals		
	Eastbound						Westbound						Northbound						Southbound									
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		Left		Thru		Right					
Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV					
6:30 AM	0	0	22	4	0	0	0	0	0	42	7	12	2	1	0	0	0	0	0	0	1	1	0	0	0	0	92	
6:45 AM	0	0	8	3	1	0	11	1	57	7	22	0	4	0	0	0	0	0	0	4	3	0	0	0	0	121		
7:00 AM	0	0	8	7	0	1	8	0	31	3	16	0	1	0	0	0	0	0	0	4	0	0	0	0	0	79		
7:15 AM	0	0	2	8	0	1	6	0	49	7	33	3	1	0	0	0	0	0	7	4	0	0	0	0	121	413		
7:30 AM	0	0	5	3	0	1	1	1	68	12	17	4	1	0	0	0	0	1	2	3	2	0	0	0	121	442		
7:45 AM	1	0	9	6	0	0	2	1	112	13	33	3	2	0	0	0	1	1	5	1	1	2	1	1	195	516		
8:00 AM	0	0	4	1	1	0	0	2	43	11	43	0	0	0	0	0	1	3	3	0	0	0	0	1	113	550		
8:15 AM	0	0	7	2	0	0	0	0	44	7	21	2	0	0	1	0	1	1	7	2	0	0	0	0	95	524		
3:30 PM	0	0	24	9	0	0	0	0	18	12	11	5	0	0	1	1	1	0	20	4	2	1	0	0	109			
3:45 PM	3	2	32	7	1	0	0	2	17	7	10	3	0	0	1	0	3	0	14	5	1	1	0	1	110			
4:00 PM	0	0	48	5	1	0	1	1	26	9	13	6	0	0	0	1	9	1	33	7	1	0	0	0	162			
4:15 PM	0	0	24	4	0	0	1	1	17	16	11	5	0	1	1	1	2	1	25	1	1	0	0	0	112	493		
4:30 PM	0	0	102	11	11	0	1	0	2	10	5	1	1	0	0	0	6	1	43	3	6	1	1	0	205	589		
4:45 PM	2	0	30	9	1	1	1	0	7	12	7	2	0	0	2	0	3	0	17	0	0	0	0	0	94	573		
5:00 PM	0	0	54	5	1	1	0	1	5	6	9	2	1	0	0	0	1	0	16	0	0	0	0	0	102	513		
5:15 PM	0	2	39	6	0	0	1	0	11	13	13	7	0	0	0	0	0	0	8	2	0	0	0	0	102	503		

AM Peak Hour Total	1	38	3	13	315	136	4	0	4	28	5	3	550	TRUE
% HV	0%	47%	67%	31%	14%	7%	0%	#DIV/0!	75%	39%	40%	67%		
PHF	0.25	0.63	#DIV/0!	1.08	0.63	0.94	0.50	#DIV/0!	0.50	1.17	0.42	0.38	0.71	

PM Peak Hour Total	5	233	13	7	104	54	2	4	23	131	11	2	589	TRUE
% HV	40%	12%	0%	57%	40%	28%	50%	50%	13%	12%	18%	50%		
PHF	#DIV/0!	0.52	0.30	1.75	2.17	2.25	0.50	#DIV/0!	0.82	0.71	0.39	0.50	0.72	

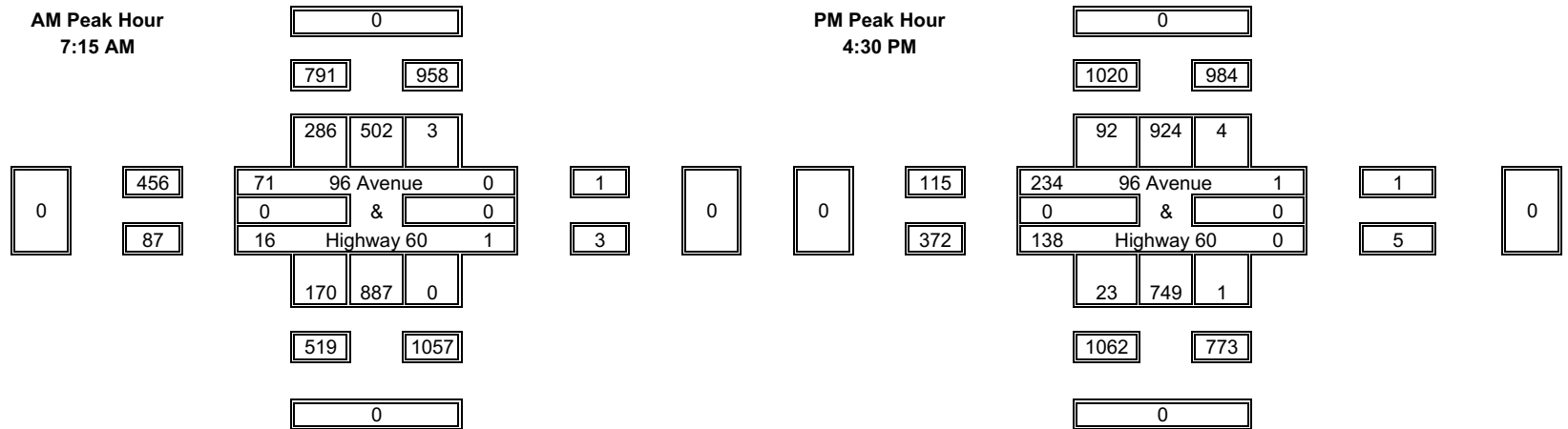


Project No. 03-25-0020 Acheson and Big Lake TIA 2025 Update
 Location 96 Avenue and Hwy 60
 Date 06/04/2025
 Weather Clear
 Surveyor Miovision

Street Direction Movement Start Time	96 Avenue												Highway 60												Total	Hourly Totals
	Eastbound						Westbound						Northbound						Southbound							
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		Left		Thru		Right			
Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV			
6:30 AM	17	6	0	0	7	3	1	0	0	0	1	1	25	0	157	7	0	0	1	0	109	9	39	6	389	
6:45 AM	9	6	0	0	5	3	0	0	0	0	0	0	22	0	149	7	0	0	0	0	102	12	67	10	392	
7:00 AM	6	9	0	0	3	1	0	0	0	0	0	0	13	1	157	7	0	0	0	0	89	15	44	7	352	
7:15 AM	9	11	0	0	3	0	0	0	0	0	0	0	24	0	193	9	0	0	2	0	118	27	53	10	459	1592
7:30 AM	12	10	0	0	0	1	0	0	0	0	0	0	34	3	220	14	0	0	0	0	107	21	45	13	480	1683
7:45 AM	10	9	0	0	5	2	0	0	0	0	0	0	67	0	236	15	0	0	0	1	100	25	93	9	572	1863
8:00 AM	5	5	0	0	2	3	1	0	0	0	0	0	42	0	177	23	0	0	0	0	90	14	54	9	425	1936
8:15 AM	8	14	0	0	2	1	0	0	0	0	0	0	28	1	155	18	0	0	0	0	58	12	36	10	343	1820
3:30 PM	36	7	0	0	19	0	0	0	0	0	0	0	2	4	121	23	0	0	2	0	126	15	4	7	366	
3:45 PM	23	5	0	0	14	1	0	0	0	0	0	0	7	3	130	18	0	0	0	0	169	15	8	15	408	
4:00 PM	48	9	0	0	20	2	0	0	0	0	0	0	4	2	104	12	0	0	0	0	186	19	12	5	423	
4:15 PM	36	8	0	0	26	0	0	0	0	0	0	0	7	0	147	33	0	0	1	0	148	13	13	8	440	1637
4:30 PM	87	12	0	0	53	0	0	0	0	0	1	0	3	2	164	17	1	0	0	0	230	18	3	17	608	1879
4:45 PM	37	9	0	0	26	1	0	0	0	0	0	0	5	3	176	30	0	0	3	0	164	7	8	13	482	1953
5:00 PM	50	5	0	0	34	0	0	0	0	0	0	0	5	0	148	22	0	0	0	0	232	20	9	17	542	2072
5:15 PM	23	11	0	0	24	0	0	0	0	0	0	0	5	0	170	22	0	0	1	0	237	16	11	14	534	2166

AM Peak Hour Total	71	0	16	1	0	0	170	887	0	3	502	286	1936	TRUE
% HV	49%	#DIV/0!	38%	0%	#DIV/0!	#DIV/0!	2%	7%	#DIV/0!	33%	17%	14%		
PHF	0.93	#DIV/0!	0.57	#DIV/0!	#DIV/0!	#DIV/0!	0.63	0.88	#DIV/0!	0.75	1.00	0.70	0.85	

PM Peak Hour Total	234	0	138	0	0	1	23	749	1	4	924	92	2166	TRUE
% HV	16%	#DIV/0!	1%	#DIV/0!	#DIV/0!	0%	22%	12%	0%	0%	7%	66%		
PHF	0.59	#DIV/0!	0.65	#DIV/0!	#DIV/0!	0.25	1.15	1.03	0.25	#DIV/0!	0.93	1.15	0.89	

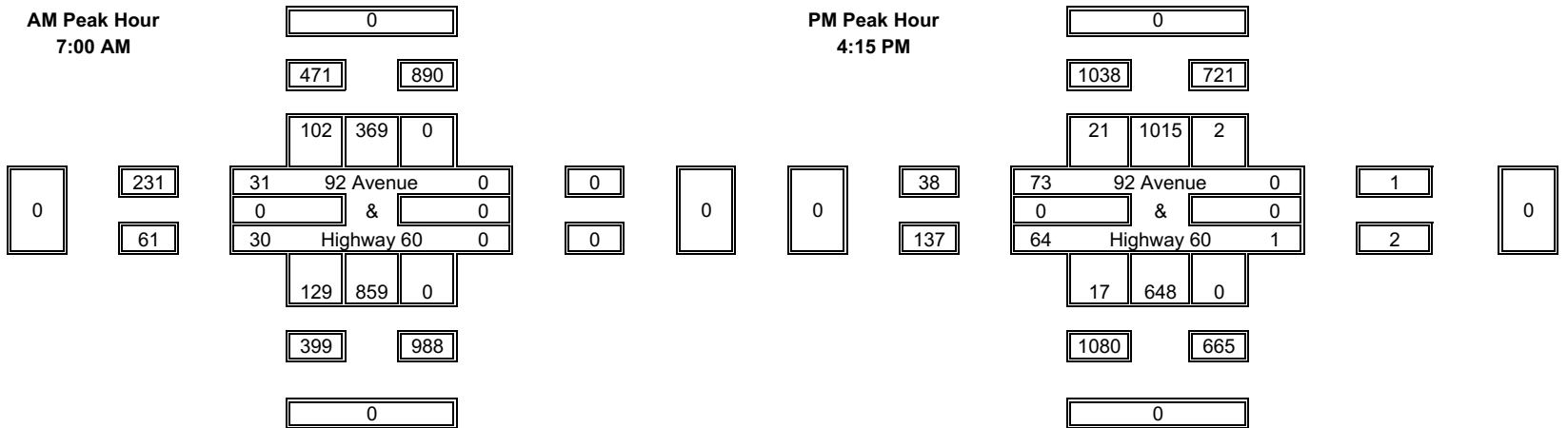


Project No. 03-25-0020 Acheson and Big Lake TIA 2025 Update
 Location 92 Avenue & Hwy 60
 Date 06/05/2025
 Weather Clear
 Surveyor Miovision

Street Direction Movement Start Time	92 Avenue												Highway 60												Total	Hourly Totals	
	Eastbound						Westbound						Northbound						Southbound								
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		Left		Thru		Right				
Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV				
6:30 AM	4	0	0	0	5	0	0	0	0	0	0	0	0	26	0	162	2	0	0	0	0	55	8	28	3	293	
6:45 AM	10	2	0	0	7	1	0	0	0	0	0	0	0	69	0	171	4	0	0	0	0	63	12	49	4	392	
7:00 AM	16	1	0	0	8	1	0	0	0	0	0	0	0	44	1	150	5	0	0	0	0	54	16	26	3	325	
7:15 AM	4	3	0	0	7	0	0	0	0	0	0	0	0	48	1	207	11	0	0	0	0	76	20	33	4	414	1424
7:30 AM	0	3	0	0	8	0	0	0	0	0	0	0	0	23	0	214	13	0	0	0	0	86	12	16	2	377	1508
7:45 AM	2	2	0	0	5	1	0	0	0	0	0	0	0	11	1	244	15	0	0	0	0	90	15	13	5	404	1520
8:00 AM	4	3	1	0	7	0	0	0	0	0	0	0	0	5	0	179	8	0	0	0	0	74	17	5	3	306	1501
8:15 AM	1	1	0	0	2	1	0	0	0	0	0	0	0	9	0	175	11	0	0	0	0	75	15	7	0	297	1384
3:30 PM	7	2	0	0	9	0	0	0	0	0	0	0	0	0	0	119	11	0	0	0	0	193	16	5	8	370	
3:45 PM	7	6	0	0	6	2	0	0	0	0	0	0	0	1	0	115	18	0	0	0	0	154	11	4	4	328	
4:00 PM	14	9	0	0	11	1	0	0	0	0	0	0	0	1	0	153	12	0	0	0	0	225	9	0	4	439	
4:15 PM	3	2	0	0	4	2	1	0	0	0	0	0	0	2	0	151	16	0	0	1	0	226	16	3	5	432	1569
4:30 PM	25	3	0	0	31	0	0	0	0	0	0	0	0	4	3	120	13	0	0	1	0	250	16	0	2	468	1667
4:45 PM	15	4	0	0	13	0	0	0	0	0	0	0	0	3	1	178	19	0	0	0	0	237	15	2	3	490	1829
5:00 PM	14	7	0	0	12	2	0	0	0	0	0	0	0	4	0	134	17	0	0	0	0	244	11	4	2	451	1841
5:15 PM	6	4	0	0	3	1	0	0	0	0	0	0	0	4	1	148	24	0	0	0	0	203	9	7	5	415	1824

AM Peak Hour Total	31	0	30	0	0	0	129	859	0	0	369	102	1520	TRUE
% HV	29%	#DIV/0!	7%	#DIV/0!	#DIV/0!	#DIV/0!	2%	5%	#DIV/0!	#DIV/0!	17%	14%		
PHF	1.11	#DIV/0!	1.07	#DIV/0!	#DIV/0!	#DIV/0!	0.66	0.99	#DIV/0!	#DIV/0!	0.96	0.69	0.92	

PM Peak Hour Total	73	0	64	1	0	0	17	648	0	2	1015	21	1841	TRUE
% HV	22%	#DIV/0!	6%	0%	#DIV/0!	#DIV/0!	24%	10%	#DIV/0!	0%	6%	57%		
PHF	0.96	#DIV/0!	1.23	#DIV/0!	#DIV/0!	#DIV/0!	1.06	0.82	#DIV/0!	#DIV/0!	1.01	1.05	0.94	

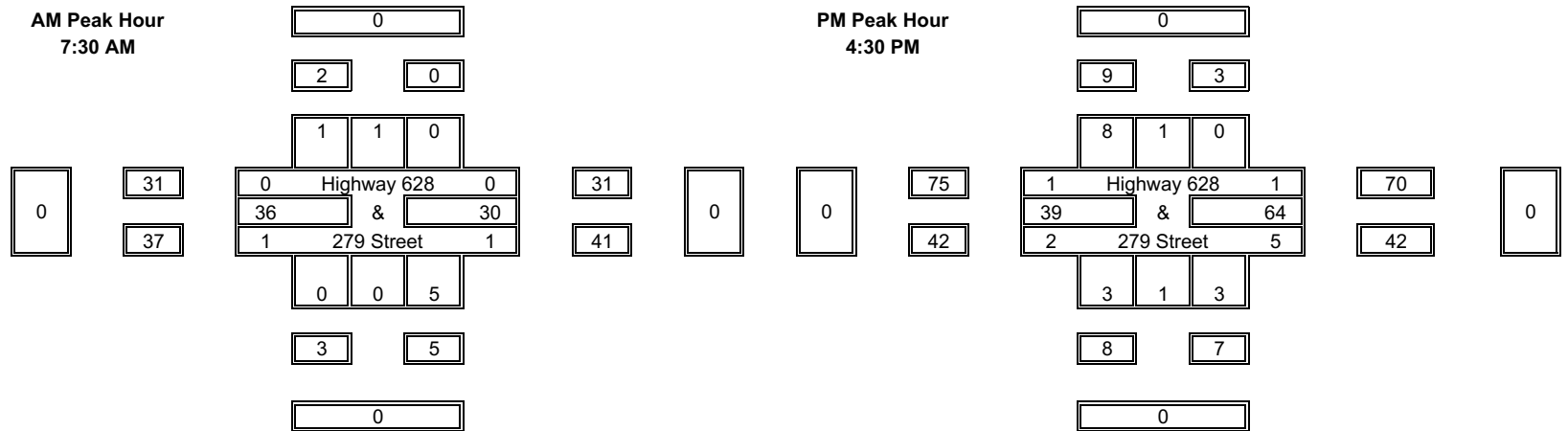


Project No. 03-25-0020 Acheson and Big Lake TIA 2025 Update
 Location Highway 628 and 279 Street
 Date 06/03/2025
 Weather Clear
 Surveyor Miovision

Street Direction Movement Start Time	Highway 628												279 Street												Total	Hourly Totals
	Eastbound						Westbound						Northbound						Southbound							
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		Left		Thru		Right			
Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV			
6:30 AM	0	0	5	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	8		
6:45 AM	1	0	7	0	0	1	0	0	4	1	0	0	0	0	0	1	0	0	0	0	0	0	0	15		
7:00 AM	0	0	15	0	0	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20		
7:15 AM	0	0	18	0	0	0	0	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	24	67	
7:30 AM	0	0	10	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	11	70	
7:45 AM	0	0	8	1	0	0	0	0	8	0	0	0	0	0	0	0	0	0	1	0	0	0	0	18	73	
8:00 AM	0	0	8	0	0	0	0	0	10	0	0	0	0	0	0	2	0	0	0	0	0	0	0	20	73	
8:15 AM	0	0	9	0	1	0	1	0	10	1	0	0	0	0	0	3	0	0	0	0	0	1	0	26	75	
3:30 PM	0	0	15	0	1	0	3	0	8	0	1	0	0	0	0	0	0	0	0	0	0	0	0	28		
3:45 PM	0	0	7	1	2	1	1	0	10	0	0	0	0	0	1	0	0	0	0	0	0	0	0	23		
4:00 PM	0	0	8	0	1	0	3	0	11	0	0	0	1	0	2	0	0	0	0	1	0	1	0	28		
4:15 PM	0	0	8	0	0	0	0	0	13	1	0	0	0	0	2	0	0	0	0	0	0	0	0	24	103	
4:30 PM	0	0	12	0	0	0	1	0	22	0	0	0	1	0	0	1	0	0	0	0	0	3	0	40	115	
4:45 PM	1	0	10	0	0	0	2	0	13	0	0	0	0	1	0	1	0	0	1	0	4	0	0	33	125	
5:00 PM	0	0	7	0	2	0	0	0	16	0	0	0	2	0	0	0	0	0	0	0	1	0	0	28	125	
5:15 PM	0	0	10	0	0	0	2	0	13	0	1	0	0	0	0	1	0	0	0	0	0	0	0	27	128	

AM Peak Hour Total	0	36	1	1	30	0	0	0	5	0	1	1	75	TRUE
% HV	#DIV/0!	3%	0%	0%	7%	#DIV/0!	#DIV/0!	#DIV/0!	0%	#DIV/0!	0%	0%		
PHF	#DIV/0!	1.00	0.25	0.25	0.68	#DIV/0!	#DIV/0!	#DIV/0!	0.42	#DIV/0!	#DIV/0!	0.25	0.72	

PM Peak Hour Total	1	39	2	5	64	1	3	1	3	0	1	8	128	TRUE
% HV	0%	0%	0%	0%	0%	0%	0%	0%	0%	#DIV/0!	0%	0%		
PHF	#DIV/0!	0.81	#DIV/0!	1.25	0.73	#DIV/0!	0.75	#DIV/0!	0.75	#DIV/0!	#DIV/0!	0.67	0.80	

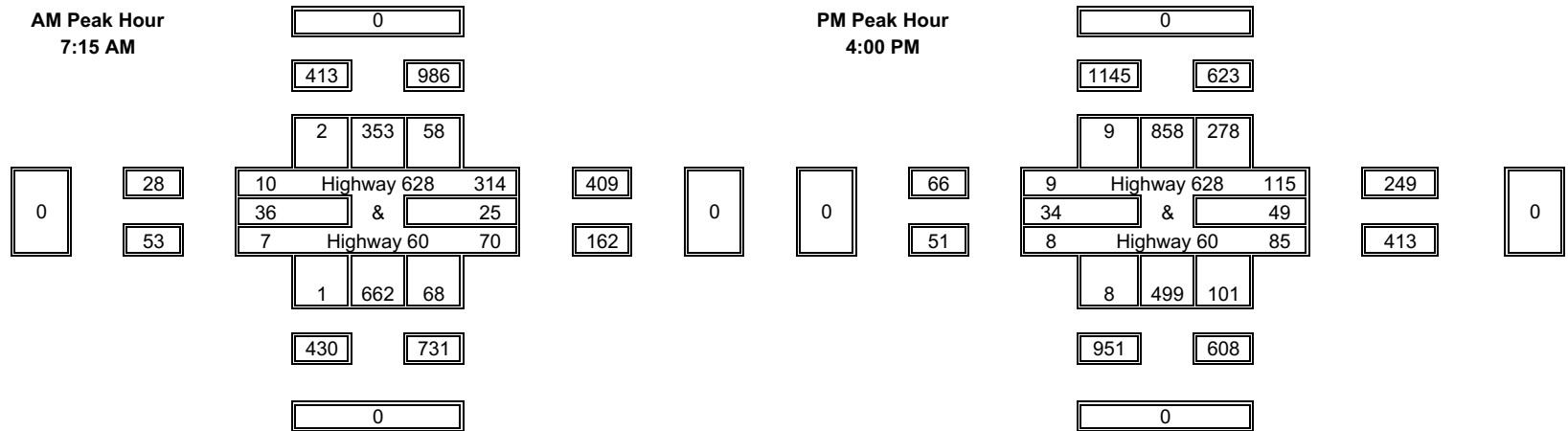


Project No. 03-25-0020 Acheson and Big Lake TIA 2025 Update
 Location Highway 628 and Highway 60 AM
 Date 05/29/2025
 Weather Clear
 Surveyor Miovision

Street	Highway 628												Highway 60												Total	Hourly Totals
	Eastbound						Westbound						Northbound						Southbound							
Direction	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		Left		Thru		Right			
Movement	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV		
Start Time																										
6:30 AM	2	0	4	0	0	0	9	1	2	0	49	1	0	0	175	7	11	0	18	0	37	8	0	0	324	
6:45 AM	1	0	4	1	0	0	7	0	1	0	77	0	0	0	149	11	11	0	19	1	35	12	0	0	329	
7:00 AM	1	0	3	0	0	0	9	0	3	0	62	1	0	1	151	7	10	0	11	1	65	14	0	0	339	
7:15 AM	4	0	9	0	0	0	13	1	3	0	61	1	0	0	184	6	15	0	14	1	74	26	0	0	412	1404
7:30 AM	2	0	10	0	0	1	20	0	6	0	91	0	0	0	151	13	28	1	8	1	67	14	1	0	414	1494
7:45 AM	1	0	8	0	4	0	21	0	7	0	106	1	0	0	151	16	4	0	13	1	72	24	0	0	429	1594
8:00 AM	3	0	9	0	1	1	13	2	8	1	54	0	1	0	129	12	20	0	18	2	58	18	0	1	351	1606
8:15 AM	3	1	10	0	6	0	8	2	3	0	55	1	0	0	123	7	15	0	4	0	49	16	0	0	303	1497
3:30 PM	3	0	7	0	3	0	16	2	8	0	27	0	0	0	76	22	25	0	37	1	117	15	2	0	361	
3:45 PM	2	0	7	1	1	0	37	1	9	0	39	0	1	0	90	16	30	0	44	6	163	16	1	0	464	
4:00 PM	2	0	13	0	0	0	18	0	9	0	34	1	2	0	109	19	25	0	65	2	208	17	1	0	525	
4:15 PM	4	0	10	0	4	0	22	1	13	0	36	0	3	0	108	15	24	0	47	1	135	12	0	0	435	1785
4:30 PM	1	0	5	1	0	0	24	0	17	0	28	1	2	0	89	19	20	1	94	1	215	14	6	0	538	1962
4:45 PM	2	0	5	0	4	0	20	0	10	0	14	1	1	0	125	15	30	1	66	2	245	12	2	0	555	2053
5:00 PM	2	0	14	1	2	0	19	0	11	1	26	0	2	0	129	15	23	0	57	0	189	11	2	0	504	2032
5:15 PM	3	0	10	0	1	0	16	1	10	0	20	0	2	0	148	10	23	0	36	1	156	13	6	0	456	2053

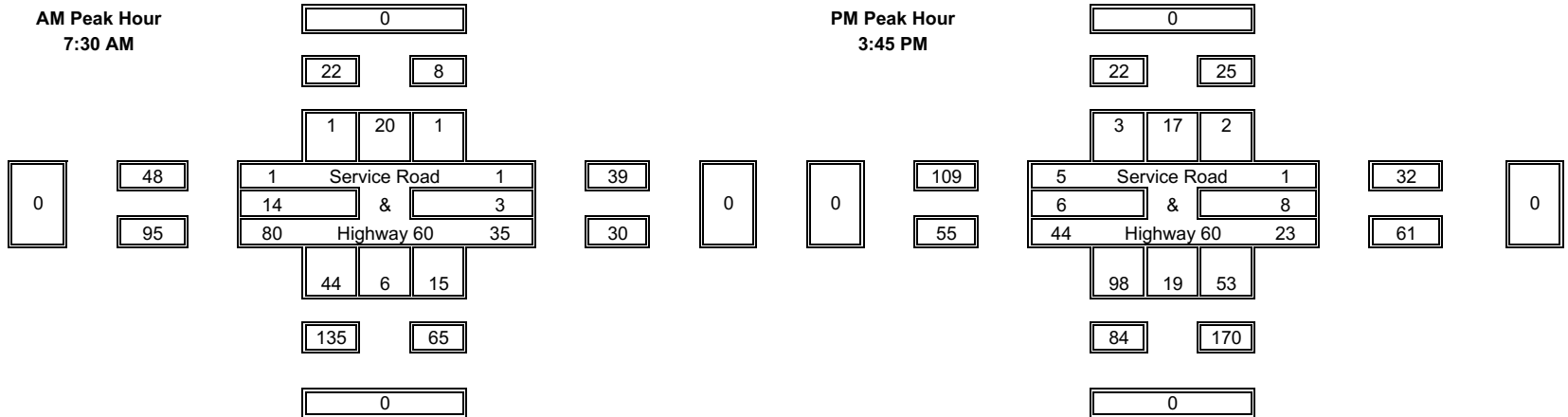
AM Peak Hour Total	10	36	7	70	25	314	1	662	68	58	353	2	1606	TRUE
% HV	0%	0%	29%	4%	4%	1%	0%	7%	1%	9%	23%	50%		
PHF	2.50	1.13	0.44	0.83	0.89	0.73	n/a	0.99	4.25	1.04	0.92	n/a	0.94	

PM Peak Hour Total	9	34	8	85	49	115	8	499	101	278	858	9	2053	TRUE
% HV	0%	3%	0%	1%	0%	3%	0%	14%	2%	2%	6%	0%		
PHF	1.13	1.70	0.50	1.06	1.23	1.92	2.00	0.89	0.81	1.02	0.83	1.13	0.92	



Project No. 03-25-0020 Acheson and Big Lake TIA 2025 Update
 Location Service Road and Highway 60
 Date 5/28/2025
 Weather Clear
 Surveyor Miovision

Street Direction Movement	Service Road												Highway 60												Total	Hourly Totals
	Eastbound						Westbound						Northbound						Southbound							
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		Left		Thru		Right			
Start Time	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV	Car	HV		
6:30 AM	0	0	1	0	5	0	3	0	2	0	0	0	6	0	3	1	2	0	0	0	6	1	0	0	30	
6:45 AM	0	0	1	0	20	0	2	1	1	0	1	0	4	1	2	1	4	1	1	0	4	0	0	0	44	
7:00 AM	0	0	2	0	21	3	3	0	0	0	0	0	2	2	0	0	0	2	0	0	5	0	0	0	40	
7:15 AM	0	0	4	0	23	2	3	0	0	0	0	0	7	1	0	1	1	1	0	0	6	1	0	0	50	164
7:30 AM	0	1	6	0	23	1	4	2	1	0	1	0	6	0	0	0	4	0	0	0	4	1	1	0	55	189
7:45 AM	0	0	4	0	21	0	9	1	1	0	0	0	7	2	0	0	4	0	0	0	5	0	0	0	54	199
8:00 AM	0	0	1	2	15	3	8	0	0	1	0	0	11	4	2	1	2	0	0	0	4	0	0	0	54	213
8:15 AM	0	0	1	0	14	3	11	0	0	0	0	0	11	3	3	0	5	0	1	0	6	0	0	0	58	221
3:30 PM	0	0	2	0	12	7	2	0	2	0	0	0	25	1	3	0	9	0	0	0	1	0	0	0	64	
3:45 PM	1	0	2	0	13	0	2	1	1	0	0	0	26	1	4	0	14	4	1	0	3	1	2	0	76	
4:00 PM	1	1	1	0	11	2	4	2	3	1	1	0	21	1	3	0	12	0	0	0	4	0	1	0	69	
4:15 PM	1	0	1	0	8	0	7	1	3	0	0	0	25	0	7	0	10	0	0	0	3	2	0	0	68	277
4:30 PM	1	0	2	0	10	0	6	0	0	0	0	0	24	0	4	1	13	0	1	0	4	0	0	0	66	279
4:45 PM	1	1	0	0	10	2	1	0	5	0	0	0	26	2	6	0	7	0	1	1	5	1	0	0	69	272
5:00 PM	0	0	1	0	5	2	5	0	4	0	0	0	26	1	6	0	13	0	0	0	5	0	0	0	68	271
5:15 PM	0	0	1	0	7	0	7	0	0	0	1	0	27	1	4	0	16	0	1	0	6	0	0	0	71	274
AM Peak Hour Total	1		14		80		35		3		1		44		6		15		1		20		1		221	TRUE
% HV	100%		14%		9%		9%		33%		0%		20%		17%		0%		0%		5%		0%			
PHF	#DIV/0!		3.50		1.18		0.80		#DIV/0!		#DIV/0!		0.79		0.50		0.75		0.25		0.83		#DIV/0!		0.95	
PM Peak Hour Total	5		6		44		23		8		1		98		19		53		2		17		3		279	TRUE
% HV	20%		0%		5%		17%		13%		0%		2%		5%		8%		0%		18%		0%			
PHF	1.25		0.75		0.85		1.92		2.00		#DIV/0!		0.91		1.19		0.74		0.50		1.06		0.38		0.92	



APPENDIX B

Trip Generation Summary

Note: The original authenticated version of this document is included as a separate file within this digital submission.



March 6, 2026
03-25-0020

Jody Hancock
Director, Engineering Services
Parkland County
53109A Hwy 779
Parkland County, AB
T7Z 1R1

VIA E-MAIL: Jody.Hancock@parklandcounty.com

Dear J. Hancock:

**Re: Acheson and Big Lake Transportation Impact Assessment Update
Draft Trip Generation Rates, Final v1**

Parkland County retained Bunt & Associates (Bunt) to prepare an update to the Acheson & Big Lake Traffic Impact Assessment (TIA). The original TIA included the development of a trip generation rate specific to Acheson, which reflected the variety of industrial land uses that are developed in the area. As part of the TIA update, the County requested a review of the rates to confirm that they continue to represent the character of the Acheson Industrial area.

STUDY METHODOLOGY

The review of the trip generation rates for Acheson included the collection of updated traffic data and confirmation of contributing development areas for two of the three zones previously measured: Zone 3 and Zone 5. The 2025 measured trip generation rates were compared to the 2018 rates to determine if the 2018 recommended rates continue to be appropriate for use in estimating future traffic activity in the Acheson Industrial area.

Trip Generation Areas

Zones 3 and 5 were selected for the completion of updated trip generation surveys as they are relatively easy to isolate for the completion of trip generation counts. The collection of new data for Zone 3 continued to use the boundary as previously established and as shown in **Exhibit 1**, while the trip generation area for Zone 5 was expanded to include the new Amazon development. The trip generation boundary for Zone 5 is shown in **Exhibit 2**.



Exhibit 1

Trip Generation Area - Zone 3





Exhibit 2

Trip Generation Area - Zone 5



In order to calculate current trip generation rates for these areas, the occupied/operating lands within each basin were reviewed and updated. The most recent Google Earth aerial from May 2, 2025 was reviewed in combination with field investigations and Parkland County’s online Discover Parkland map¹ to estimate the number of acres occupied in each trip generation basin. Due to the industrial nature of the area, lands used for storage and laydown were considered occupied lands as this is considered a normal and acceptable use of land within industrial zones. **Table 1** summarizes the trip generating areas estimated within each zone. **Appendix A** provides a detailed summary of the lands estimated to be occupied and operating.

Table 1: Trip Generation Areas

ZONE	BUSINESS INDUSTRIAL (BI)	MEDIUM INDUSTRIAL (MI)	TOTAL	% BI / % MI
Zone 3	159.82 acres	317.66 acres	477.48 acres	33% / 67%
Zone 5	414.03 acres	256.78 acres	670.81 acres	62% / 38%

Traffic Counts

Based on the trip generation areas, Bunt identified six locations for the collection of 24-hour link volumes. **Table 2** summarizes the locations included in the updated study. It is noted that the Highway 60 North American Construction Access was a low traffic location in 2018 and current activity is anticipated to be similar; therefore, data from 2018 was used in the analysis.

Table 2: Trip Generation Traffic Count Program

TYPE	ID	INTERSECTION	APPROACH	DATES
Zone 3	A19	Acheson Road & Highway 60	West	May 29, 2025
	B1	Highway 16A & 279 Street	North	
	B2	Highway 60 North American Construction Access	West	March 20, 2018
Zone 5	A34	96 Avenue & 266 Street	East	June 5, 2025
	B5	100 Avenue & 279 Street	North & West	
	A36	92 Avenue & Highway 60	West	
	B6	279 Street South of Amazon Facility	North	

Updated Trip Generation Rates

Zone 3 Rates

Table 3 summarizes the AM peak hour, PM peak hour, and daily (24-hour) link volumes captured on Thursday, May 29, 2025, for locations A19 and B1. The volumes for B2 are based on data collected on March 20, 2018. **Table 4** summarizes the trip generation rate estimates based on an occupied area of 477.48 acres.

¹Discover Parkland. Retrieved from <http://maps.parklandcounty.com/discoverparkland/>

Table 3: Zone 3 Link Volumes

INTERSECTION	A19		B1		B2		TOTAL	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT
AM Peak Hour	469	184	243	14	1	1	713	199
PM Peak Hour	124	545	86	152	3	1	213	698
Daily	3,035	3,702	1,418	718	48	54	4,501	4,474

Table 4: Zone 3 Trip Generation Rate Estimates

TIME FRAME	TOTAL TRIPS	GENERATING AREA (ACRES)	RATE (TRIPS/ACRE)	IN	OUT
AM Peak Hour	912	477.48	1.91	78%	22%
PM Peak Hour	911	477.48	1.91	23%	77%
Daily	8,975	477.48	18.80	50%	50%

Zone 5 Rates

Table 5 summarizes the AM peak hour, PM peak hour, and daily (24-hour) link volumes captured on Thursday, June 5, 2025. Table 6 summarizes the trip generation rate estimates based on an occupied area of 670.81 acres.

Table 5: Zone 5 Link Volumes

INTERSECTION	B5		A34		B6		A36		TOTAL	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
AM Peak Hour	85	58	353	73	3	1	323	70	764	202
PM Peak Hour	23	294	154	380	1	7	38	129	216	810
Daily	555	1,348	3,217	2,466	36	44	1,534	1,641	5,342	5,499

Table 6: Zone 5 Trip Generation Rate Estimates

TIME FRAME	TOTAL TRIPS	GENERATING AREA (ACRES)	RATE (TRIPS/ACRE)	IN	OUT
AM Peak Hour	966	670.81	1.44	79%	21%
PM Peak Hour	1,026	670.81	1.53	21%	79%
Daily	10,841	670.81	16.16	49%	51%

Comparison to 2018 Measured and Recommended Rates

Table 7 summarizes the range of rates and average rates from the 2018 trip generation study as well as the 2025 measured data for Zones 3 and 5. As shown, the 2025 measured rates continue to fall within the range of rates measured in 2018 and continue to be below the recommended rates of 2.0 trips/acre for the AM and PM peak hours and the 20.0 trips/acre for a typical weekday. Overall, the continued use of the previously recommended trip generation rates is anticipated to be appropriate to estimate future traffic activity generated by development within the Acheson Industrial area.

Table 7: Comparison to 2018 Measured and Recommended Rates

TIME FRAME	RANGE OF RATES	2018 AVERAGE TRIP RATE	ZONE 3	ZONE 5
AM Peak Hour	1.05 trips/acres to 2.59 trip/acre	1.62 trips/acre (80% in/20% out)	1.91 (78% in/22% out)	1.44 (79% in/21% out)
PM Peak Hour	1.17 trips/acre to 2.57 trips/acre	1.69 trips/acre (20% in/80% out)	1.91 (23% in/77% out)	1.53 (21% in/79% out)
Daily	10.86 trips/acre to 25.53 trips/acre	16.14 trips/acre (50% in/50% out)	18.80 (50% in/50% out)	16.16 (49% in/51% out)

Recommended Trip Generation Rates

Based on the trip generation rate review, the previously recommended trip rates, as noted below, continue to be recommended for industrial land uses in Acheson. Where higher intensity land uses are being contemplated such as office/business campuses and commercial nodes, separate trip generation rates should be applied to those parcels using applicable ITE or local trip generation rates.

- AM Peak Hour = 2.00 trips per acre or 4.94 trips per hectare (80% in/20% out);
- PM Peak Hour = 2.00 trips per acre or 4.94 trips per hectare (20% in/80% out); and
- Daily = 20.00 trips per acre or 49.42 trips per hectare (50% in/50% out).

Yours truly,
Bunt & Associates

Catherine Oberg, P. Eng.
 Principal

Written with respect and gratitude for the Traditional Territories upon which we work and live.

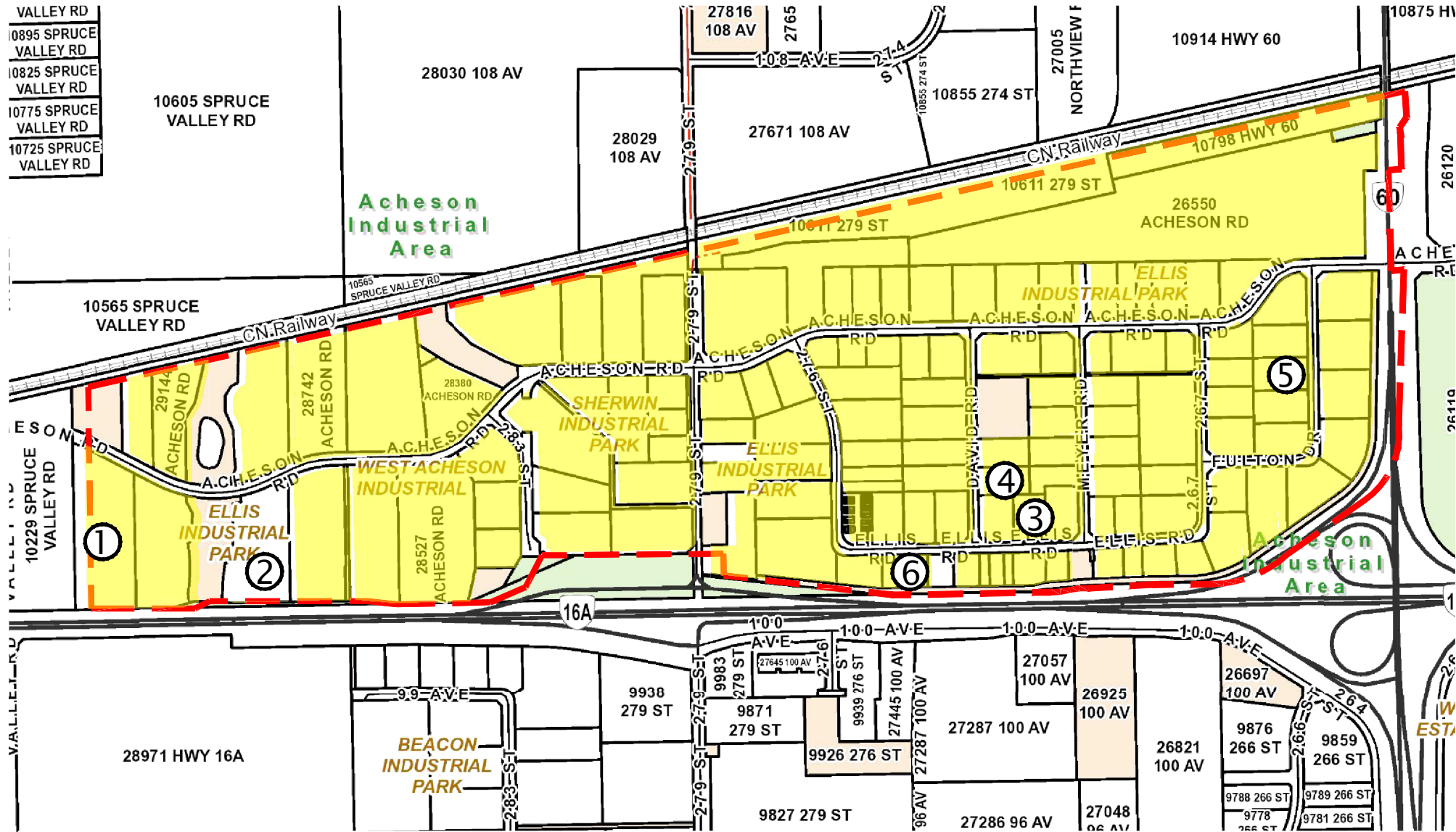
This electronic document includes a certified digital signature and represents the original document retained on file. Any printed versions of this report are considered copies and can be confirmed by referring to the original electronic document.

This document entitled "Acheson & Big Lake Traffic Impact Assessment 2025 Update, Draft Trip Generation " was prepared by Bunt & Associates for the benefit of Parkland County in support of the preparation of an updated TIA for Acheson and Big Lake. The analysis and conclusions/recommendations in the report reflect Bunt & Associates' best professional judgment based on the knowledge and information available to Bunt & Associates at the time of preparation.

Parkland County, including employees, members of Council, and Regulatory Board members shall be entitled to rely on this report for the specific purpose for which it was prepared. Parkland County may also provide copies of the report to external governmental bodies having jurisdiction related to the project for which it was prepared.

Any use made of this report by a third party beyond those specifically noted here, or any reliance on or decisions based on it by any such third party, are the responsibility of such third parties. Bunt & Associates accepts no responsibility for damages, if any, suffered by such third parties as a result of decisions made or actions based on this report.

- VALLEY RD
- 10895 SPRUCE VALLEY RD
- 10825 SPRUCE VALLEY RD
- 10775 SPRUCE VALLEY RD
- 10725 SPRUCE VALLEY RD

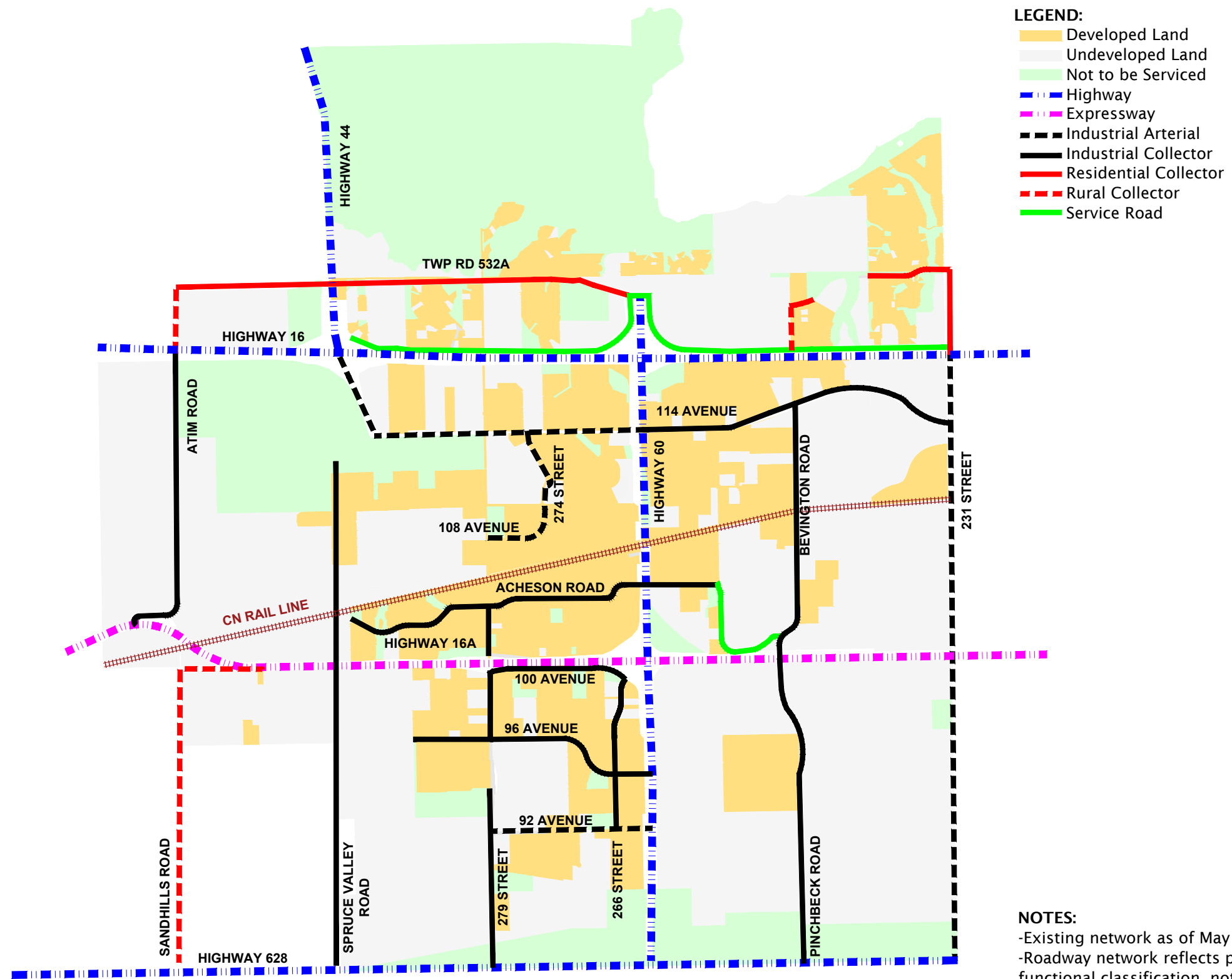


1. Under Construction June 2025.
2. Vacant parcel.
3. Assume 95% for trip gen (4.19 ac x 95%= 3.98 ac).
4. Assume 1.39 ac is occupied.
5. Assume 95% for trip gen (2.41 ac x 95%= 2.29 ac).
6. Looks developed, fairly empty on site.

Acheson Zone 3

APPENDIX C

Roadway Network Development



- LEGEND:**
- Developed Land
 - Undeveloped Land
 - Not to be Serviced
 - Highway
 - Expressway
 - Industrial Arterial
 - Industrial Collector
 - Residential Collector
 - Rural Collector
 - Service Road

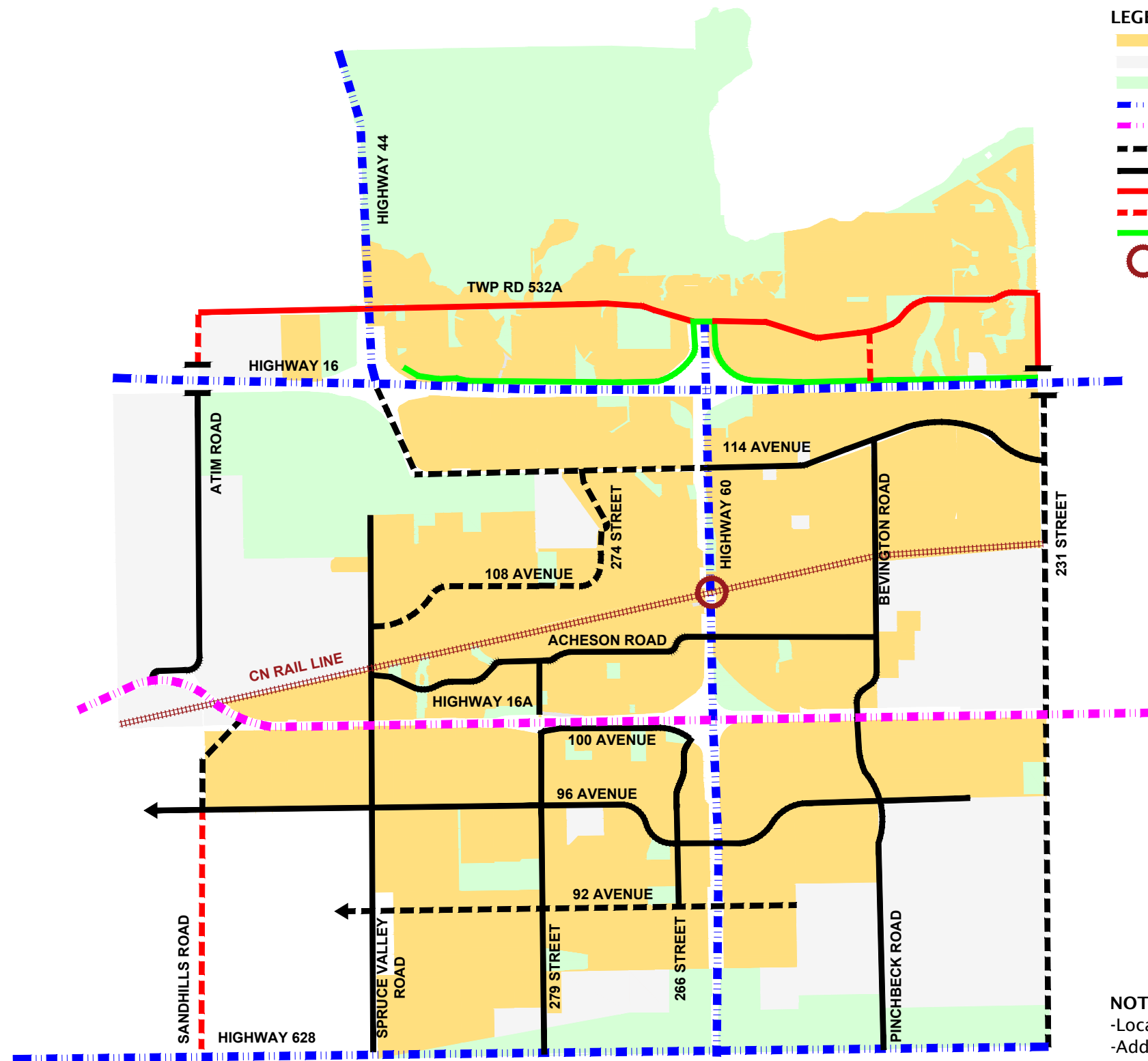
- NOTES:**
- Existing network as of May 2025.
 - Roadway network reflects proposed functional classification, not necessarily built form.
 - Local roadways have not been identified.

Exhibit 2

N.T.S.

Existing Roadway Network





- LEGEND:**
- Developed Land
 - Undeveloped Land
 - Not to be Serviced
 - Highway
 - Expressway
 - Industrial Arterial
 - Industrial Collector
 - Residential Collector
 - Rural Collector
 - Service Road
 - Grade Separated Intersection

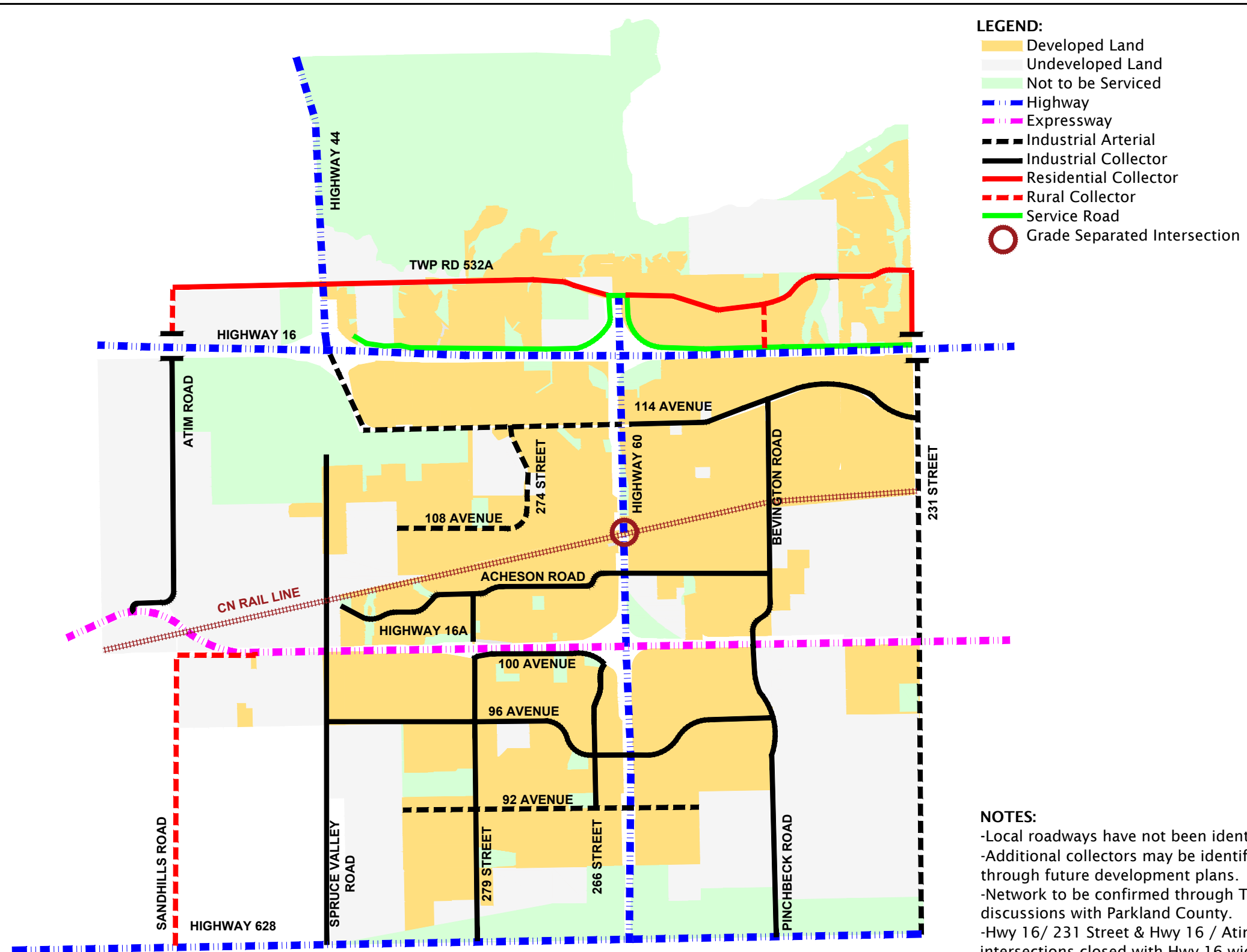
- NOTES:**
- Local roadways have not been identified.
 - Additional collectors may be identified through future development plans.
 - Network to be confirmed through TIA and discussions with Parkland County.

Exhibit 4

N.T.S.

Long Term Roadway Network





NOTES:

- Local roadways have not been identified.
- Additional collectors may be identified through future development plans.
- Network to be confirmed through TIA and discussions with Parkland County.
- Hwy 16/ 231 Street & Hwy 16 / Atim Road intersections closed with Hwy 16 widening.
- Northview Road/Hwy 60 closed with Hwy 60 widening.

Exhibit 3

N.T.S.

Near Term Roadway Network



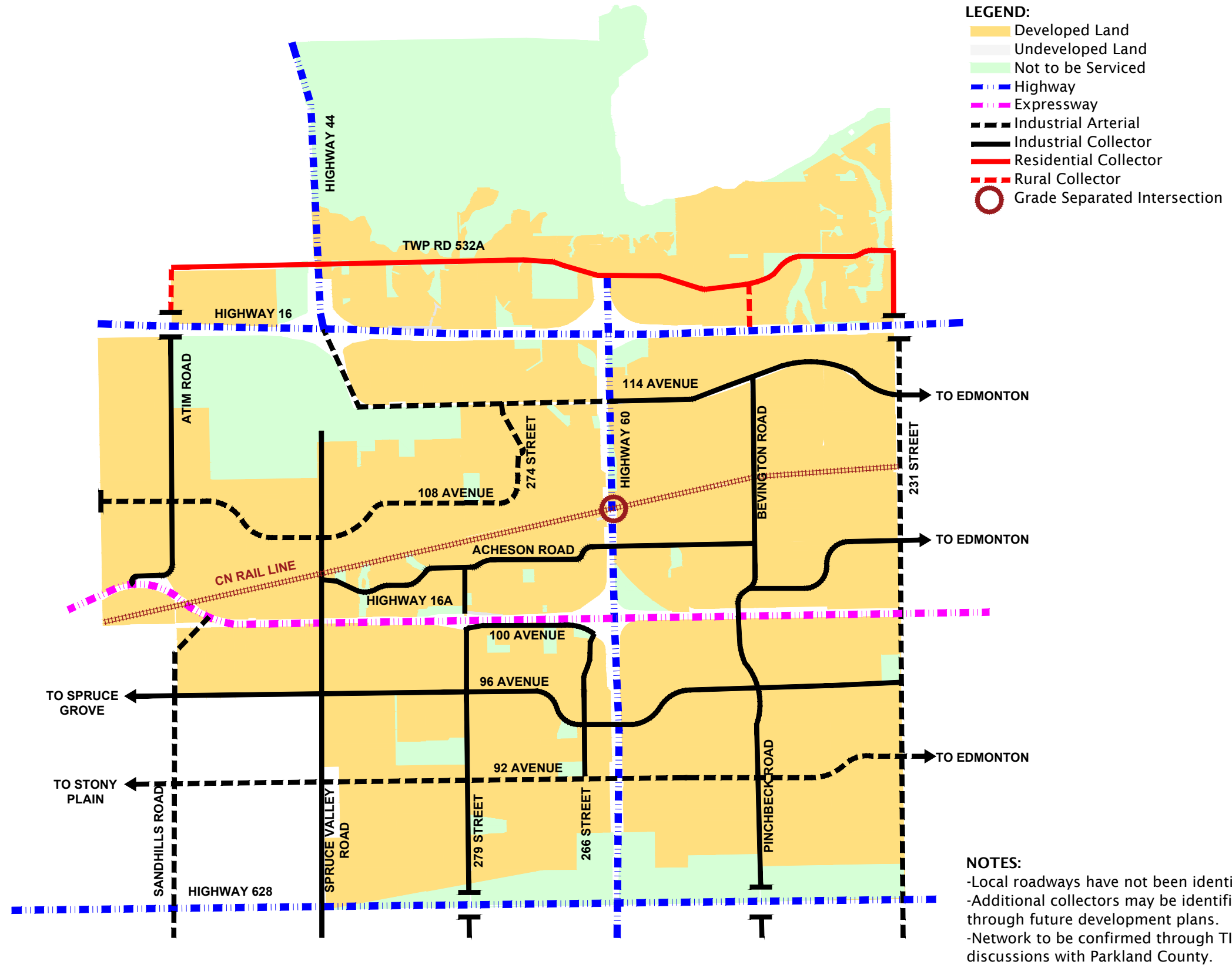


Exhibit 5

N.T.S.

Ultimate Roadway Network



APPENDIX D

Historical Growth Summary

Note: The original authenticated version of this document is included as a separate file within this digital submission.

March 6, 2026
03-25-0020

Jody Hancock
Director, Engineering Services
Parkland County
53109A Hwy 779
Parkland County, AB T7Z 1R1

Dear J. Hancock:

**Re: Acheson and Big Lake Traffic Impact Assessment Update
Historical Growth Rates Review, Final v1**

Parkland County retained Bunt & Associates (Bunt) to prepare an update to the 2018 Acheson and Big Lake Traffic Impact Assessment (2018 TIA). As part of the update, historical growth rates in and around the study area were reviewed and revised for use in the updated TIA.

HORIZON YEARS

The updated TIA will continue to include three horizons; however, years associated with each horizon scenario have been revised as follows:

- Near-Term - 2030;
- Long-Term - 2040; and
- Ultimate - 2050.

GROWTH RATES

231 Street

The growth rates developed for 231 Street in the 2018 TIA reflected the anticipated growth characteristics within the Lewis Farms Residential, Winterburn Industrial, and Big Lake Residential development areas in West Edmonton. Based on a review of available aerial photographs and development plans, it is anticipated that the residential areas have potentially surpassed previous development assumptions for the near- and long-term horizons, while the Winterburn industrial area has not progressed as quickly as previously assumed. The following outlines the updated growth assumptions for 231 Street based on revised development assumptions for the different areas.

231 Street from Highway 628 to Highway 16A

This portion of 231 Street forms the western edge of the Lewis Farms residential area. Two neighbourhoods abut 231 Street: Rosenthal and Secord. Development in the area has substantially progressed over the past seven years with the majority of the lands currently zoned for development. Secord is fully subdivided and only a few development sites remain, while Rosenthal includes one final area to be zoned, and approximately 25% to 30% of the lands remaining to be subdivided.

The previous background traffic estimates for 231 Street between Highway 628 and Highway 16A under the ultimate horizon are anticipated to reflect an appropriate order of magnitude of background traffic based on the development potential in West Edmonton; however, it is anticipated that those volumes may be reached sooner than originally estimated. Therefore, the ultimate background volumes along 231 Street from the 2018 TIA continue to be used; however, it is assumed that 80% of the ultimate background volume will be realized in the near-term horizon, and 100% of the ultimate background volumes will be realized in the long-term horizon.

231 Street from Highway 16A to Highway 16

The portion of 231 Street from Highway 16A to Highway 16 abuts the Winterburn Industrial Area. While residential lands in Edmonton's west end are developing at a faster pace than originally assumed, growth within the Winterburn Industrial Area appears to have stalled, resulting in slower growth along this segment of 231 Street.

Based on the above, the ultimate volumes from the 2018 TIA will continue to be used; however, it is assumed that a slower pace of development will occur in the interim. Based on the assumed ultimate daily volumes on 231 Street north of Highway 16A from the 2018 TIA and the current daily volumes based on Alberta Transportation and Economic Corridors (TEC), a linear growth rate of 8.3%/year is assumed for 231 Street between Highway 16A and Highway 16. This is approximately half of the near-term growth rate used in the 2018 TIA and approximately two thirds of the long-term growth rate used in the 2018 TIA.

Highway 60

Historic Growth Rates

TEC's *Traffic Volume History 1962-2024* spreadsheet was reviewed to calculate historic growth rates for Highway 60 south of Highway 16. Growth rates were calculated for each of the near-term, long-term, and ultimate horizons based on 2019, 2010, and 2000 historic volumes respectively. Traffic volumes were significantly lower in 2020 as a result of the global pandemic; therefore, the near-term growth rates reflect 2019 volumes as opposed to 2020. As shown in **Table 1**, growth along Highway 60 has been in the order of 1% to 2% over the past 25 years; although, the volumes have fluctuated year to year, as indicated by the Near-Term and Long-Term rates.

Table 1: Highway 60 Growth Rates

HIGHWAY 60	LINEAR GROWTH RATE AS % OF 2024 AADT		
	Near Term (6-years)	Long-Term (15-years)	Ultimate (25-years)
South of Highway 16	0.8%	0.6%	2.1%
North of Highway 16A	-1.1%	-0.9%	1.3%
South of Highway 16A	3.2%	0.8%	1.7%
North of Highway 628	1.5%	-1.1%	1.0%
South of Highway 628	1.7%	-0.1%	0.6%
North of Highway 627	1.7%	0.3%	1.2%
South of Highway 627	0.8%	0.4%	0.9%
AVERAGE	1.2%	0.0%	1.3%

In general, it is anticipated that although 2019 was referenced as the basis for the near-term rate, current traffic activity could still be influenced by the pace of recovery and traffic pattern changes from the global pandemic (e.g. work from home). As well, the long-term rates are calculated based on 2010 traffic activity, which represented a peak period of activity in Alberta within the past 25 years. Overall, the 25-year growth rates incorporate periods of growth and retraction and are anticipated to provide the best foundation for the estimation of future background traffic across the three horizons. While there will continue to be periods of growth and retraction, the potential timing for various events cannot be predicted, so a uniform approach is proposed. Therefore, the average ultimate growth rate of 1.3% is proposed as the base rate for the three horizons. However, as traffic volumes along Highway 60 are influenced by activity within Acheson, further review of traffic activity along the corridor was completed.

Acheson Influence

North of Highway 16

Growth along Highway 60 north of Highway 16 is anticipated to be limited to growth within Big Lake; therefore, for the purposes of this study, no background growth is assumed north of Highway 16.

Highway 16 to Highway 16A

The majority of growth along Highway 60 between Highway 16A and Highway 16 is anticipated to correspond to growth within Acheson. TEC’s daily traffic volume estimates from 2002 (base data), 2017 (2018 TIA), and 2024 were reviewed to estimate the change in external traffic that traveled Highway 60 between Highway 16A and Highway 16.

External traffic was estimated based on a review of inbound traffic volumes at the following intersections:

- Highway 16 and Highway 60;
- 114 Avenue and Highway 60;
- Northview Road and Highway 60;
- Acheson Road and Highway 60; and
- Highway 16A and Highway 60.

For example, at the Highway 16 and Highway 60 intersection, traffic traveling southbound on the south approach is considered inbound traffic that is anticipated to include both inbound traffic to Acheson as well as traffic destined to areas external to Acheson. Traffic travelling east on the east approach and west on the west approach of the 114 Avenue/Highway 60 intersection is assumed to represent inbound traffic associated only with Acheson. External traffic volumes are estimated by subtracting the inbound Acheson volumes at 114 Avenue and Acheson Road from the inbound volumes.

As shown in **Table 2**, external traffic volume estimates along Highway 60 continued to decrease between 2017 and 2024, in the order of -8%, indicating that while growth is occurring along the corridor, as previously noted in Table 1, the majority of the growth is anticipated to be associated with development within Acheson.

Table 2: Highway 60 Between Highway 16A and Highway 16 External Traffic Growth

YEAR	HIGHWAY 60 @					EXTERNAL TRAFFIC	% CHANGE
	Highway 16	Highway 16A	114 Avenue	Northview Road	Acheson Road		
2002	4,420	4,600	2,910	160	2,780	3,170	
2017	7,720	6,620	8,670	540	3,430	1,700	-6%
2024	7,170	5,850	8,050	710	3,210	1,050	-8%

Highway 16A to Highway 628

Significant growth has occurred within Acheson between Highway 16A and Highway 628 since 2017; therefore, the above methodology was also applied to this roadway segment to determine the potential change in through volumes as compared to growth in Acheson traffic. TEC AADT volumes were used to determine the inbound traffic at Highway 16A and Highway 628 while, 24-hour link volumes from Bunt’s trip generation counts were used to determine the magnitude of traffic accessing Acheson. As shown in **Table 3**, through volumes remained consistent between 2017 and 2024/25, illustrating that while traffic volumes are increasing along the corridor, the majority of the growth could be attributed to Acheson.

Table 3: Highway 60 Between Highway 628 and Highway 16 External Traffic Growth

YEAR	HIGHWAY 60 @				EXTERNAL TRAFFIC	% CHANGE
	Highway 628	Highway 16A	96 Avenue	92 Avenue		
2017	6,290	5,980	1,767	-	10,503	
2024/25	6,310	8,470	3,217	1,187	10,376	0%

Recommended Highway 60 Growth Rates

Based on the above, the average ultimate historic growth rate of 1.3% was adjusted to account for activity in Acheson that is contributing to traffic growth along Highway 60. While the majority of the traffic along Highway 60 is currently anticipated to be associated with Acheson, a 0.5% growth rate will be assumed south of Highway 16 for all three development horizons. As noted above, no growth is assumed on Highway 60 north of Highway 16.

Highway 16

Table 4 summarizes growth rates along Highway 16 based on a review of TEC’s *Traffic Volume History 1962-2024* spreadsheet.

Table 4: Highway 16 Growth Rates

HIGHWAY 16	LINEAR GROWTH RATE AS % OF 2024 AADT		
	Near Term (6-years)	Long-Term (15-years)	Ultimate (25-years)
West of Highway 44	0.9%	2.0%	2.2%
East of Highway 44	0.4%	1.8%	2.1%
West of Highway 60	0.1%	1.7%	2.0%
East of Highway 60	0.1%	2.0%	2.2%
Average	0.4%	1.9%	2.1%

To be consistent with the 2018 TIA, further review of the east and west through volumes along Highway 16 at Highway 60 was completed; however, based on the review, the growth rates for eastbound and westbound traffic only are in line with the average growth rates summarized in Table 4. Although the near-term growth rate is lower than the long-term and ultimate rates, a uniform 2.0% per year will be assumed for all three horizons.

While there is the potential that changes in traffic patterns resulting from the global pandemic may continue in the future, the planned upgrades to Highway 16 and continued growth within communities west of Edmonton are anticipated to continue to drive growth along the corridor.

Highway 16A

Table 5 summarizes the growth rates along Highway 16A based on a review of TEC’s *Traffic Volume History 1962-2024* spreadsheet.

Table 5: Highway 16A Growth Rates

HIGHWAY 16A	LINEAR GROWTH RATE AS % OF 2024 AADT		
	Near Term (6-years)	Long-Term (15-years)	Ultimate (25-years)
4.1 km West of Highway 60	-1.0%	0.0%	0.4%
West of Highway 60	-0.4%	0.3%	0.6%
East of Highway 60	0.2%	1.0%	0.9%
Average	-0.4%	0.4%	0.6%

The identification of growth rates for Highway 16A in the 2018 TIA also considered that up to 0.3% of the historic growth could have been associated with traffic within Acheson; however, a growth rate of 1% was identified as the minimum threshold for the corridor. As the growth rates calculated based on the 2024 volumes are less than 1%, the minimum growth rate of 1% has been applied for all horizons.

Highway 44

Table 6 summarizes the Highway 44 growth rates calculated based on a review of TEC’s *Traffic Volume History 1962-2024* spreadsheet. As negative growth has been identified based on the 6-year and 15-year volumes, the ultimate rate of 1.4% has been applied to all three horizons.

Table 6: Highway 44 Growth Rates

HIGHWAY 44	LINEAR GROWTH RATE AS % OF 2024 AADT		
	Near Term (6-years)	Long-Term (15-years)	Ultimate (25-years)
North of Highway 16	-2.6%	-0.8%	1.4%

Highway 628

Table 7 summarizes the Highway 628 growth rates calculated based on a review of TEC’s *Traffic Volume History 1962-2024* spreadsheet.

Table 7: Highway 628 Growth Rates

HIGHWAY 628	LINEAR GROWTH RATE AS % OF 2024 AADT		
	Near Term (6-years)	Long-Term (15-years)	Ultimate (25-years)
West of Rge Rd 270	0.6%	1.2%	-
East of Rge Rd 270	0.0%	0.8%	-
West of Highway 60	4.7%	1.5%	1.3%
East of Highway 60	0.3%	-1.9%	2.0%
West of 231 Street	-2.9%	0.6%	1.3%
Average	0.50%	0.40%	1.5%

As shown in Table 7, the growth rates are not consistent along the corridor. It is noted that daily volumes along Highway 628 west of Highway 60 are less than 1,000 vpd; therefore, a small change in volume can represent a significant percent growth. Based on the above, a linear growth rate of 1.5% per year is proposed to be applied along Highway 628 for all three horizons.

HISTORICAL GROWTH RATE SUMMARY

Table 8 summarizes the growth rates proposed for the key roadways in the study area under the near-term, long-term, and ultimate horizons.

Table 8: Growth Rate Summary

HIGHWAY 16A	LINEAR GROWTH RATE AS % OF 2024 AADT		
	Near Term (6-years)	Long-Term (15-years)	Ultimate (25-years)
231 Street North of Highway 16A	8.3%	8.3%	8.3%
Highway 60 North of Highway 16	0%	0%	0%
Highway 60 South of Highway 16	0.5%	0.5%	0.5%
Highway 16	2.0%	2.0%	2.0%
Highway 16A	1.0%	1.0%	1.0%
Highway 44	1.4%	1.4%	1.4%
Highway 628	1.5%	1.5%	1.5%

Growth rates have not been identified for 231 Street between Highway 16A and Highway 628; rather, the previous ultimate horizon background traffic volumes will continue to be used for the ultimate and long-term horizons and the near-term background volumes are anticipated to represent 80% of the ultimate.

Please contact the undersigned with any questions regarding the above growth rates.

Yours truly,
Bunt & Associates

Catherine Oberg, P.Eng.
Principal

Written with respect and gratitude for the Traditional Territories upon which we work and live.

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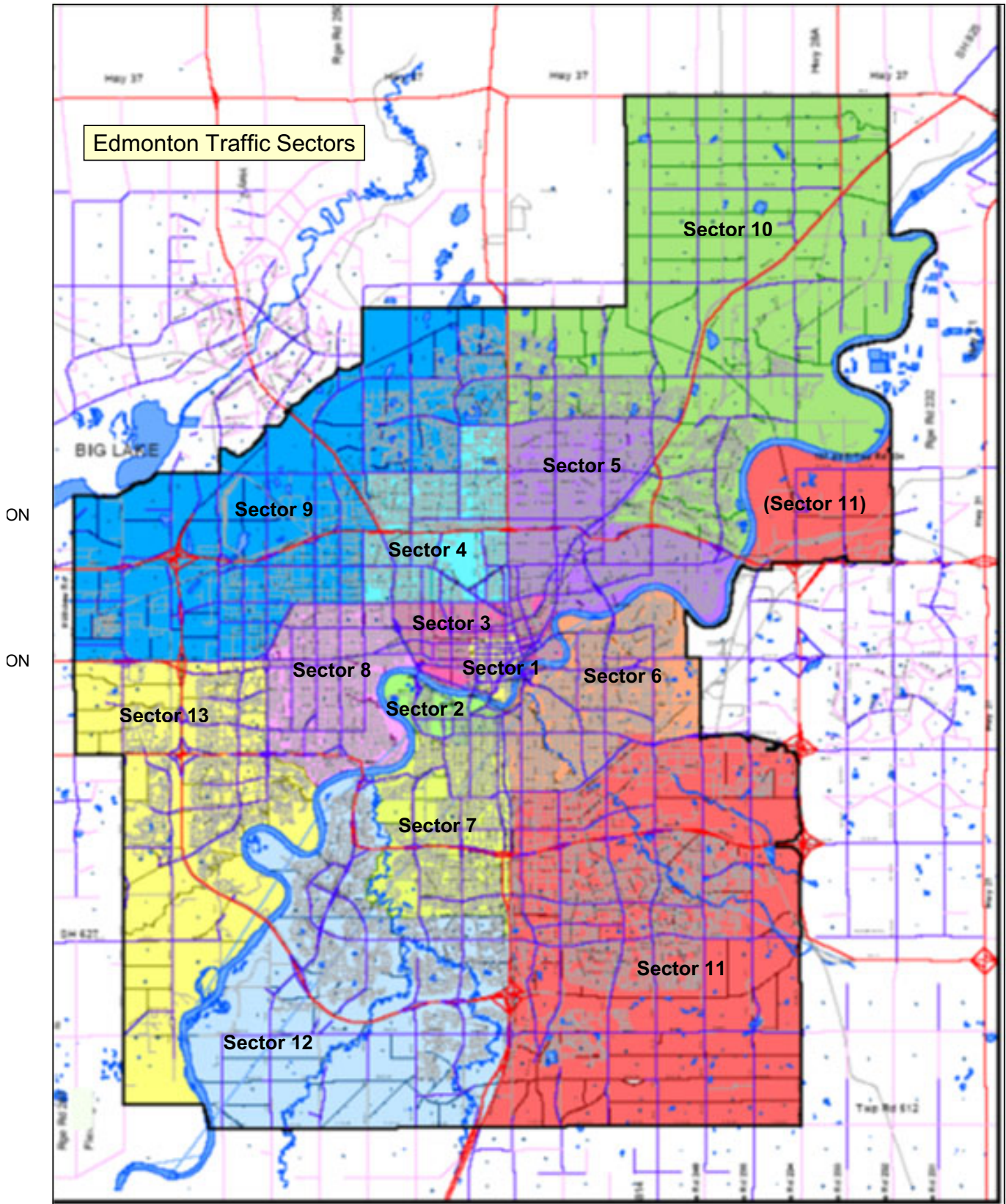
This document entitled "Acheson and Big Lake Traffic Impact Assessment Update, Historical Growth Rates Review, Final v1" was prepared by Bunt & Associates for the benefit of Parkland County in support of the preparation of an updated TIA for Acheson and Big Lake. The analysis and conclusions/recommendations in the report reflect Bunt & Associates' best professional judgment based on the knowledge and information available to Bunt & Associates at the time of preparation.

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APPENDIX E

City of Edmonton Origin-Destination Tables



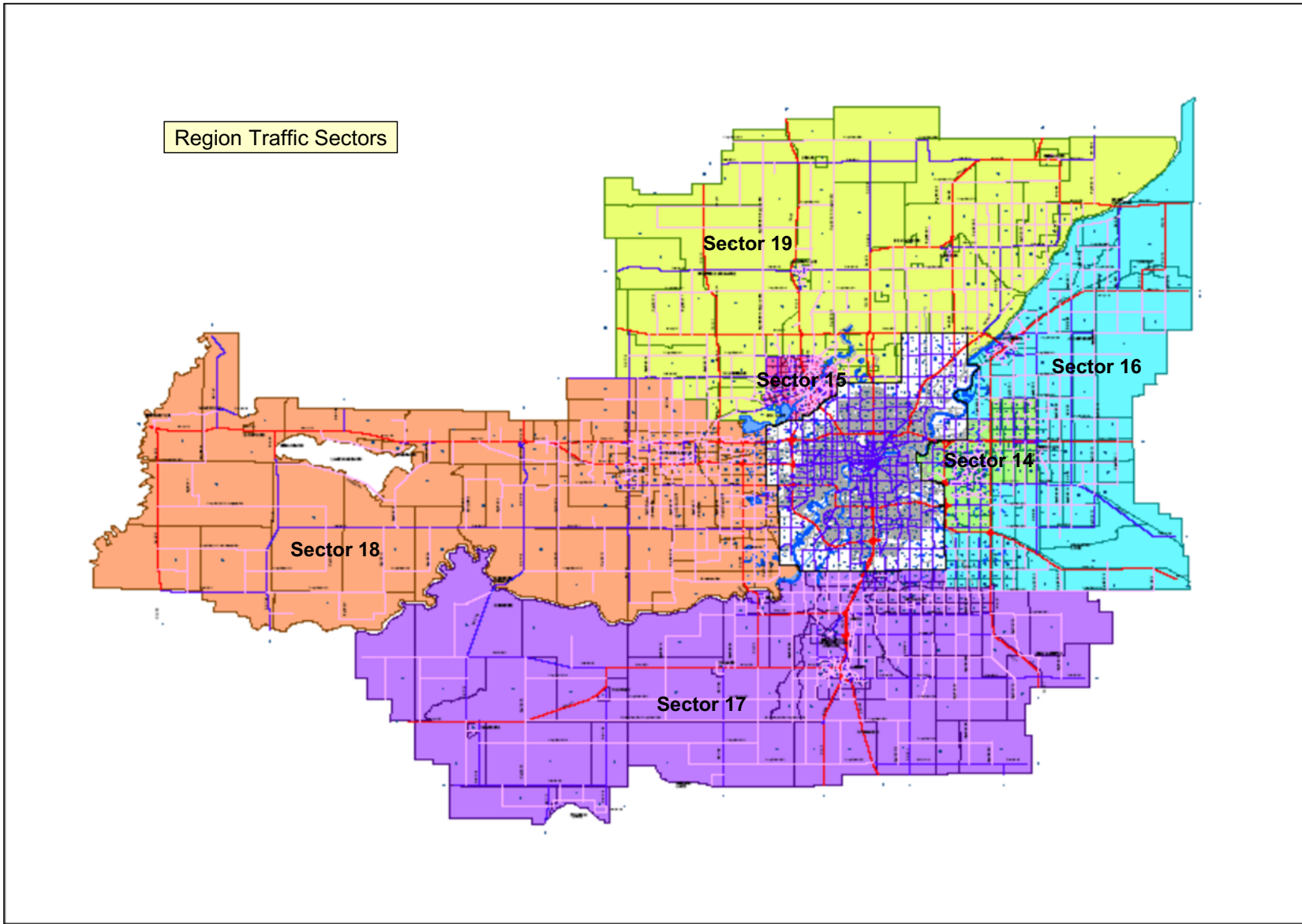


Table S5: 2050 Daily (Percentage for Origin Trips)

ORIGIN SECTOR		DESTINATION SECTOR																			
		Sector 1 CBD	Sector 2 University	Sector 3 CBD Fringe	Sector 4 NW Inner	Sector 5 NE Inner	Sector 6 SE Inner	Sector 7 SW Inner	Sector 8 West Inner	Sector 9 NW Suburb	Sector 10 NE Suburb	Sector 11 SE Suburb	Sector 12 SW Suburb	Sector 13 West Suburb	Sector 14 Sherwood Park	Sector 15 St. Albert	Sector 16 Strathcona County	Sector 17 Leduc County	Sector 18 Parkland County	Sector 19 Sturgeon County	Sum
Sector 1	CBD	12.0%	2.6%	13.0%	8.3%	6.1%	6.8%	6.1%	4.2%	6.3%	4.4%	8.2%	6.3%	5.1%	3.8%	2.6%	0.7%	1.7%	1.1%	0.6%	100.0%
Sector 2	University	4.3%	9.2%	4.7%	4.5%	3.2%	7.1%	13.3%	3.9%	6.2%	2.6%	12.0%	12.9%	6.1%	2.1%	1.7%	0.6%	3.1%	1.9%	0.6%	100.0%
Sector 3	CBD Fringe	7.6%	2.2%	20.2%	11.3%	7.8%	5.1%	4.1%	4.5%	8.2%	5.5%	6.1%	4.0%	4.3%	2.4%	2.4%	0.6%	1.6%	2.0%	0.8%	100.0%
Sector 4	NW Inner	4.2%	1.6%	6.8%	22.2%	9.9%	3.1%	2.0%	3.6%	17.1%	8.6%	4.6%	2.3%	3.4%	2.7%	3.3%	0.8%	0.9%	1.5%	1.4%	100.0%
Sector 5	NE Inner	3.2%	1.1%	4.2%	9.3%	24.5%	4.0%	1.5%	1.4%	9.8%	22.5%	5.6%	1.3%	1.7%	3.5%	2.0%	1.0%	0.9%	0.7%	1.8%	100.0%
Sector 6	SE Inner	4.7%	3.0%	4.3%	4.0%	6.0%	22.2%	4.7%	1.7%	3.7%	5.2%	22.8%	3.7%	2.3%	5.4%	1.0%	0.8%	3.5%	0.6%	0.4%	100.0%
Sector 7	SW Inner	3.3%	4.2%	3.1%	2.2%	1.7%	4.2%	26.1%	2.0%	3.2%	1.5%	17.4%	18.7%	3.7%	2.3%	0.8%	0.5%	4.0%	1.0%	0.2%	100.0%
Sector 8	West Inner	4.0%	1.9%	4.6%	5.5%	2.1%	1.8%	2.9%	21.8%	12.5%	2.2%	5.0%	4.9%	21.9%	1.1%	2.9%	0.3%	1.8%	2.1%	0.6%	100.0%
Sector 9	NW Suburb	1.7%	0.9%	2.6%	8.5%	5.1%	1.6%	1.4%	3.9%	33.3%	7.4%	3.6%	3.2%	9.1%	2.0%	0.6%	1.0%	4.3%	2.5%	100.0%	
Sector 10	NE Suburb	1.4%	0.5%	1.7%	4.3%	12.0%	1.9%	0.7%	0.7%	7.6%	47.9%	4.7%	1.1%	1.3%	4.0%	2.3%	2.8%	0.8%	0.7%	3.6%	100.0%
Sector 11	SE Suburb	1.2%	1.1%	1.1%	1.3%	1.7%	5.1%	4.5%	0.9%	1.8%	2.6%	50.7%	7.7%	2.1%	4.0%	0.5%	0.9%	11.9%	0.6%	0.3%	100.0%
Sector 12	SW Suburb	1.9%	2.0%	1.4%	1.1%	0.6%	1.3%	7.9%	1.4%	3.1%	0.9%	12.4%	48.4%	3.6%	1.2%	0.7%	0.3%	10.8%	0.9%	0.2%	100.0%
Sector 13	West Suburb	2.0%	1.2%	1.9%	2.3%	1.1%	1.0%	2.3%	8.8%	11.7%	1.6%	5.0%	6.1%	45.0%	0.8%	2.5%	3.5%	3.5%	0.5%	100.0%	
Sector 14	Sherwood Park	1.2%	0.4%	1.1%	1.4%	2.2%	2.4%	1.1%	0.4%	2.1%	4.7%	7.6%	1.4%	0.7%	63.0%	0.6%	7.7%	1.3%	0.3%	0.4%	100.0%
Sector 15	St. Albert	1.3%	0.4%	1.4%	2.6%	1.5%	0.6%	0.6%	1.4%	11.8%	3.2%	1.5%	1.3%	3.2%	0.7%	61.4%	0.4%	0.7%	1.5%	4.7%	100.0%
Sector 16	Strathcona County	0.6%	0.2%	0.5%	0.8%	0.9%	0.6%	0.4%	0.2%	1.2%	5.3%	3.0%	0.5%	0.3%	11.9%	0.5%	71.2%	0.8%	0.1%	0.9%	100.0%
Sector 17	Leduc County	0.7%	0.4%	0.5%	0.4%	0.3%	0.7%	1.3%	0.4%	0.8%	0.5%	12.3%	7.9%	1.2%	0.7%	0.3%	0.3%	70.8%	0.5%	0.1%	100.0%
Sector 18	Parkland County	0.8%	0.5%	0.7%	1.0%	0.5%	0.3%	0.6%	0.8%	5.4%	0.9%	1.6%	1.4%	0.3%	1.3%	0.1%	1.0%	78.9%	0.4%	100.0%	
Sector 19	Sturgeon County	1.0%	0.3%	1.2%	2.1%	2.7%	0.5%	0.4%	0.7%	7.5%	11.1%	1.6%	0.7%	1.5%	2.1%	12.1%	3.0%	0.4%	1.1%	50.0%	100.0%

Table S6: 2050 Daily (Percentage for Destination Trips)

ORIGIN SECTOR		DESTINATION SECTOR																			
		Sector 1 CBD	Sector 2 University	Sector 3 CBD Fringe	Sector 4 NW Inner	Sector 5 NE Inner	Sector 6 SE Inner	Sector 7 SW Inner	Sector 8 West Inner	Sector 9 NW Suburb	Sector 10 NE Suburb	Sector 11 SE Suburb	Sector 12 SW Suburb	Sector 13 West Suburb	Sector 14 Sherwood Park	Sector 15 St. Albert	Sector 16 Strathcona County	Sector 17 Leduc County	Sector 18 Parkland County	Sector 19 Sturgeon County	
Sector 1	CBD	12.8%	4.7%	11.5%	5.1%	3.6%	5.4%	3.9%	4.0%	1.9%	1.4%	1.4%	1.6%	2.0%	1.1%	0.4%	1.1%	0.4%	0.6%	0.6%	
Sector 2	University	2.9%	10.5%	2.6%	1.7%	1.2%	3.6%	5.4%	2.3%	1.2%	0.5%	1.3%	2.1%	1.5%	0.5%	0.2%	0.4%	0.4%	0.4%	0.4%	
Sector 3	CBD Fringe	8.7%	4.1%	19.0%	7.4%	4.9%	4.3%	2.8%	4.5%	2.6%	1.8%	1.1%	1.8%	0.9%	1.1%	0.4%	0.3%	0.5%	0.9%	0.9%	
Sector 4	NW Inner	6.9%	4.5%	9.2%	21.0%	9.0%	3.8%	2.0%	5.2%	7.9%	4.1%	1.2%	0.9%	2.1%	1.5%	2.3%	0.7%	0.2%	0.8%	2.2%	
Sector 5	NE Inner	5.6%	3.4%	6.2%	9.5%	23.9%	5.3%	1.6%	2.2%	4.9%	11.8%	1.6%	0.6%	1.1%	2.1%	1.5%	0.9%	0.3%	0.4%	3.0%	
Sector 6	SE Inner	6.0%	6.5%	4.5%	2.9%	4.2%	21.2%	3.6%	2.0%	1.4%	2.0%	4.6%	1.1%	2.3%	0.6%	0.5%	0.7%	0.6%	0.5%	0.5%	
Sector 7	SW Inner	5.1%	10.9%	4.0%	1.9%	1.5%	4.8%	24.3%	2.8%	1.4%	0.7%	4.3%	7.0%	2.1%	1.2%	0.5%	0.4%	1.0%	0.5%	0.3%	
Sector 8	West Inner	4.6%	3.7%	4.3%	3.6%	1.3%	1.5%	2.0%	21.9%	4.0%	0.7%	0.9%	1.4%	0.4%	1.4%	0.2%	0.3%	0.8%	0.7%	0.7%	
Sector 9	NW Suburb	5.9%	5.6%	7.4%	16.9%	9.7%	4.1%	2.8%	12.1%	32.6%	7.6%	2.0%	2.7%	11.5%	2.3%	10.7%	1.0%	0.6%	5.0%	8.4%	
Sector 10	NE Suburb	4.6%	3.1%	4.7%	8.3%	22.1%	4.8%	1.4%	2.2%	7.2%	47.4%	2.5%	0.9%	1.6%	4.6%	3.2%	4.8%	0.5%	0.8%	11.6%	
Sector 11	SE Suburb	7.7%	11.7%	5.7%	4.5%	5.9%	23.4%	16.6%	5.0%	3.1%	4.8%	50.2%	11.6%	4.8%	8.3%	1.4%	2.7%	12.3%	1.2%	1.5%	
Sector 12	SW Suburb	8.1%	14.4%	4.9%	2.6%	1.4%	4.1%	20.4%	5.2%	3.8%	1.2%	8.5%	50.2%	5.7%	1.8%	0.6%	7.8%	1.3%	0.7%	0.7%	
Sector 13	West Suburb	5.5%	5.7%	4.2%	3.5%	1.6%	2.0%	3.8%	21.2%	9.0%	1.3%	2.2%	4.0%	44.8%	0.7%	2.9%	0.3%	1.1%	3.1%	1.4%	
Sector 14	Sherwood Park	3.3%	1.9%	2.7%	2.3%	3.4%	5.0%	1.8%	1.1%	1.7%	4.0%	3.5%	1.0%	0.8%	60.7%	11.1%	0.6%	0.3%	1.1%	1.1%	
Sector 15	St. Albert	3.2%	1.6%	2.7%	3.6%	2.0%	1.1%	0.8%	3.0%	8.1%	2.3%	0.6%	0.8%	2.8%	62.4%	0.4%	0.3%	1.2%	10.8%	10.8%	
Sector 16	Strathcona County	1.3%	0.7%	0.8%	0.9%	1.0%	0.9%	0.5%	0.3%	0.7%	3.1%	1.0%	0.3%	0.3%	8.1%	72.9%	0.3%	0.1%	1.7%	1.7%	
Sector 17	Leduc County	4.0%	3.9%	2.6%	1.2%	1.0%	3.3%	4.9%	2.0%	1.4%	1.0%	12.0%	11.7%	2.6%	1.5%	0.7%	0.8%	72.4%	1.0%	0.4%	0.4%
Sector 18	Parkland County	2.6%	2.5%	1.9%	1.7%	0.8%	0.8%	1.2%	2.2%	4.7%	0.8%	0.8%	1.1%	3.8%	0.3%	1.7%	0.1%	0.5%	81.6%	1.2%	
Sector 19	Sturgeon County	1.2%	0.6%	1.1%	1.3%	1.6%	0.4%	0.3%	0.7%	2.3%	3.6%	0.3%	0.2%	0.6%	0.8%	5.6%	1.7%	0.1%	0.4%	52.7%	

Table P9: 2050 AM Peak Period (Percentage for Origin Trips) (i.e. Outbound Trips)

ORIGIN SECTOR	DESTINATION SECTOR																			Sum
	Sector 1 CBD	Sector 2 University	Sector 3 CBD Fringe	Sector 4 NW Inner	Sector 5 NE Inner	Sector 6 SE Inner	Sector 7 SW Inner	Sector 8 West Inner	Sector 9 NW Suburb	Sector 10 NE Suburb	Sector 11 SE Suburb	Sector 12 SW Suburb	Sector 13 West Suburb	Sector 14 Sherwood Park	Sector 15 St. Albert	Sector 16 Strathcona County	Sector 17 Leduc County	Sector 18 Parkland County	Sector 19 Sturgeon County	
Sector 1 CBD	16.2%	3.6%	13.8%	6.7%	5.0%	6.0%	5.0%	3.6%	9.0%	4.5%	10.9%	3.5%	2.8%	3.3%	1.7%	0.6%	2.4%	0.9%	0.4%	100.0%
Sector 2 University	8.0%	13.1%	6.9%	4.4%	2.6%	6.4%	10.5%	3.5%	8.8%	2.7%	14.6%	6.5%	3.5%	2.3%	1.5%	0.4%	3.1%	0.9%	0.3%	100.0%
Sector 3 CBD Fringe	11.0%	2.8%	15.4%	8.8%	5.1%	4.6%	3.5%	3.8%	14.2%	5.6%	10.1%	2.9%	2.7%	2.5%	2.0%	0.7%	2.7%	1.2%	0.6%	100.0%
Sector 4 NW Inner	7.8%	3.2%	8.7%	14.8%	5.9%	3.6%	2.2%	3.6%	18.3%	8.1%	9.5%	1.9%	2.3%	2.3%	2.8%	0.8%	1.7%	1.3%	0.8%	100.0%
Sector 5 NE Inner	5.7%	1.6%	5.2%	7.7%	14.7%	4.4%	1.8%	1.7%	12.7%	18.5%	11.1%	1.5%	1.5%	3.6%	1.9%	1.1%	2.0%	1.0%	2.1%	100.0%
Sector 6 SE Inner	9.5%	4.5%	4.9%	3.4%	3.9%	15.6%	3.6%	1.7%	5.8%	4.9%	25.8%	2.6%	1.4%	3.8%	1.0%	0.6%	6.1%	0.7%	0.3%	100.0%
Sector 7 SW Inner	8.5%	7.8%	4.5%	2.6%	1.7%	3.5%	16.8%	2.1%	7.3%	2.4%	17.4%	11.5%	3.0%	2.5%	1.0%	0.5%	5.4%	1.2%	0.3%	100.0%
Sector 8 West Inner	8.1%	3.7%	5.7%	5.1%	2.0%	2.1%	2.9%	17.0%	17.4%	3.3%	8.6%	4.1%	10.1%	1.5%	2.4%	0.5%	3.1%	1.9%	0.5%	100.0%
Sector 9 NW Suburb	4.5%	2.3%	4.4%	7.7%	4.4%	2.3%	1.5%	3.2%	30.9%	9.3%	7.5%	2.1%	4.8%	2.1%	5.5%	0.9%	1.9%	3.0%	1.6%	100.0%
Sector 10 NE Suburb	3.1%	0.9%	2.7%	4.7%	8.8%	2.7%	1.1%	1.1%	11.0%	36.4%	10.0%	1.3%	1.3%	4.1%	2.2%	2.2%	2.1%	0.9%	3.3%	100.0%
Sector 11 SE Suburb	3.4%	2.0%	1.7%	1.3%	1.3%	4.6%	2.8%	1.0%	3.3%	2.9%	46.9%	5.4%	1.4%	3.6%	0.6%	0.7%	16.3%	0.7%	0.3%	100.0%
Sector 12 SW Suburb	5.4%	3.9%	2.7%	1.7%	1.0%	1.8%	5.8%	1.7%	7.2%	2.3%	14.2%	32.0%	3.0%	1.9%	1.2%	0.5%	12.1%	1.4%	0.3%	100.0%
Sector 13 West Suburb	4.9%	2.6%	3.2%	2.9%	1.3%	1.6%	2.5%	7.8%	16.3%	3.2%	9.5%	6.5%	25.0%	1.3%	2.4%	0.5%	4.7%	3.3%	0.6%	100.0%
Sector 14 Sherwood Park	4.4%	1.1%	2.6%	2.3%	2.3%	2.9%	1.5%	0.8%	5.2%	7.6%	13.1%	1.9%	0.9%	41.0%	1.0%	6.9%	3.0%	0.7%	0.6%	100.0%
Sector 15 St. Albert	5.5%	1.1%	3.0%	3.3%	1.7%	1.2%	1.0%	1.9%	20.0%	5.6%	4.6%	1.8%	2.8%	1.3%	38.2%	0.8%	2.0%	1.9%	2.2%	100.0%
Sector 16 Strathcona County	1.9%	0.6%	1.2%	1.6%	1.2%	1.2%	0.6%	0.3%	2.5%	10.8%	6.3%	0.8%	0.4%	13.9%	0.6%	53.5%	1.5%	0.2%	0.8%	100.0%
Sector 17 Leduc County	1.4%	0.8%	1.0%	0.5%	0.4%	1.0%	1.4%	0.5%	1.8%	0.9%	12.9%	7.9%	0.9%	1.0%	0.3%	66.6%	0.5%	0.1%	100.0%	
Sector 18 Parkland County	2.6%	1.5%	2.0%	2.2%	0.9%	0.8%	1.2%	1.2%	13.6%	2.5%	4.3%	2.5%	3.5%	0.7%	2.4%	0.2%	2.4%	55.0%	0.4%	100.0%
Sector 19 Sturgeon County	2.4%	0.8%	2.3%	3.3%	2.2%	0.8%	0.6%	1.0%	12.9%	14.4%	3.3%	0.9%	1.5%	2.1%	9.0%	3.0%	0.9%	1.4%	37.2%	100.0%

Table P11: 2050 PM Peak Period (Percentage for Origin Trips) (i.e. Outbound Trips)

ORIGIN SECTOR	DESTINATION SECTOR																			Sum
	Sector 1 CBD	Sector 2 University	Sector 3 CBD Fringe	Sector 4 NW Inner	Sector 5 NE Inner	Sector 6 SE Inner	Sector 7 SW Inner	Sector 8 West Inner	Sector 9 NW Suburb	Sector 10 NE Suburb	Sector 11 SE Suburb	Sector 12 SW Suburb	Sector 13 West Suburb	Sector 14 Sherwood Park	Sector 15 St. Albert	Sector 16 Strathcona County	Sector 17 Leduc County	Sector 18 Parkland County	Sector 19 Sturgeon County	
Sector 1 CBD	10.2%	2.1%	10.0%	7.2%	5.7%	6.5%	5.8%	4.9%	5.2%	4.5%	7.8%	9.7%	6.3%	4.5%	4.0%	1.2%	1.9%	1.7%	0.9%	100.0%
Sector 2 University	3.9%	8.7%	4.1%	4.7%	3.1%	6.6%	12.6%	4.3%	5.5%	2.6%	10.3%	15.9%	6.7%	2.3%	1.8%	0.7%	3.0%	2.6%	0.7%	100.0%
Sector 3 CBD Fringe	6.9%	2.0%	17.7%	10.5%	8.1%	4.9%	3.7%	4.7%	6.6%	6.0%	5.6%	5.3%	5.0%	3.2%	3.2%	1.1%	1.9%	2.4%	1.5%	100.0%
Sector 4 NW Inner	3.4%	1.2%	6.2%	21.0%	10.6%	3.1%	1.8%	3.7%	14.2%	9.3%	4.1%	3.2%	4.1%	3.2%	3.8%	1.2%	1.0%	2.6%	2.3%	100.0%
Sector 5 NE Inner	2.4%	1.0%	3.7%	8.8%	25.6%	3.8%	1.3%	1.4%	8.3%	22.8%	4.5%	1.9%	2.1%	3.9%	2.4%	1.5%	0.9%	1.3%	2.4%	100.0%
Sector 6 SE Inner	3.4%	2.5%	3.8%	4.2%	6.6%	21.3%	4.3%	1.8%	3.5%	6.1%	20.5%	4.9%	2.7%	6.3%	1.4%	1.4%	3.5%	1.1%	0.7%	100.0%
Sector 7 SW Inner	2.4%	3.5%	2.8%	2.1%	2.0%	4.2%	24.3%	2.3%	2.4%	1.9%	16.3%	19.7%	4.3%	2.9%	1.1%	0.8%	5.0%	1.7%	0.4%	100.0%
Sector 8 West Inner	2.8%	1.2%	4.0%	5.2%	2.5%	1.5%	2.7%	22.6%	9.2%	2.6%	3.8%	5.9%	23.5%	1.4%	3.6%	0.5%	2.0%	4.0%	1.1%	100.0%
Sector 9 NW Suburb	1.3%	0.7%	2.4%	7.5%	5.2%	1.7%	1.5%	4.3%	25.2%	7.6%	4.0%	5.0%	9.8%	2.4%	8.5%	0.9%	1.3%	6.9%	3.9%	100.0%
Sector 10 NE Suburb	0.8%	0.4%	1.4%	3.8%	11.7%	1.7%	0.7%	0.8%	6.1%	45.2%	3.9%	1.8%	1.8%	4.8%	2.8%	4.8%	0.8%	1.3%	5.2%	100.0%
Sector 11 SE Suburb	0.8%	0.9%	1.1%	1.7%	2.3%	5.2%	4.2%	1.1%	1.9%	3.5%	45.3%	9.0%	2.8%	4.6%	0.9%	1.5%	11.6%	1.1%	0.5%	100.0%
Sector 12 SW Suburb	0.8%	1.2%	0.9%	0.8%	0.6%	1.1%	7.3%	1.4%	1.7%	0.9%	11.5%	51.2%	4.0%	1.4%	0.8%	0.4%	12.4%	1.3%	0.2%	100.0%
Sector 13 West Suburb	1.2%	0.7%	1.5%	2.0%	1.3%	0.8%	2.3%	8.8%	8.8%	1.7%	3.6%	6.9%	47.6%	0.9%	2.9%	0.3%	2.2%	5.6%	0.9%	100.0%
Sector 14 Sherwood Park	0.6%	0.3%	0.9%	1.4%	2.6%	2.4%	1.1%	0.5%	1.7%	5.2%	7.5%	2.3%	1.0%	58.1%	0.8%	10.8%	1.5%	0.5%	0.7%	100.0%
Sector 15 St. Albert	0.5%	0.3%	1.1%	2.6%	1.8%	0.6%	0.6%	1.5%	9.6%	3.7%	1.3%	2.0%	3.9%	0.9%	58.8%	0.5%	0.6%	2.7%	7.3%	100.0%
Sector 16 Strathcona County	0.3%	0.1%	0.4%	0.6%	1.0%	0.5%	0.3%	0.2%	1.1%	4.2%	2.2%	0.8%	0.5%	10.7%	0.6%	74.2%	0.7%	0.2%	1.4%	100.0%
Sector 17 Leduc County	0.6%	0.3%	0.5%	0.4%	0.4%	0.8%	1.4%	0.5%	0.7%	0.8%	11.9%	9.0%	1.7%	1.0%	0.4%	0.4%	68.2%	0.9%	0.1%	100.0%
Sector 18 Parkland County	0.5%	0.2%	0.5%	0.8%	0.6%	0.3%	0.5%	0.8%	3.2%	0.9%	1.2%	1.7%	3.7%	0.4%	1.3%	0.1%	0.9%	81.6%	0.6%	100.0%
Sector 19 Sturgeon County	0.5%	0.2%	0.7%	1.5%	3.6%	0.4%	0.3%	0.6%	4.5%	11.3%	1.3%	1.0%	1.6%	2.3%	10.4%	3.0%	0.3%	1.3%	55.2%	100.0%

APPENDIX F

Capacity Analysis Summaries

Ultimate Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall	
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS
A2	Highway 16 & Highway 44 Westbound Ramp	AM Peak Hour - Ultimate Total – Single Lane Roundabout (Free Flow WB R, SB R)														
		Geometry				LT/R			LT			T/R			10.7	B
		Volume (vph)				429	0	495	67	339			817	231		
		v/c				0.40		0.30	0.26				0.86	0.14		
		Delay (s)				11.7		3.7	5.0				19.2	3.6		
		LOS				B		A	A				B	A		
		95th Queue (m)				21		0	0				135	0		
		PM Peak Hour - Ultimate Total – Single Lane Roundabout (Free Flow WB R, SB R)														
		Geometry				LT/R			LT			T/R			6.7	A
		Volume (vph)				117	0	636	354	621			603	322		
	v/c				0.17		0.37	0.60				0.63	0.18			
	Delay (s)				17.2		3.7	5.8				10.7	3.6			
	LOS				B		A	A				B	A			
	95th Queue (m)				9		0	0				7	0			
	Highway 16 & Highway 44 Eastbound Ramp	AM Peak Hour - Ultimate Total – Single Lane Roundabout (Free Flow EB R, NB R)														
		Geometry	LT/R					T/R			LT		9.6	A		
		Volume (vph)	269	0	648			137	160	506	740					
		v/c	0.59		0.37			0.20	0.09	0.77						
		Delay (s)	43.1		3.7			10.0	3.6	6.1						
		LOS	D		A			B	A	A						
95th Queue (m)		56		0			11	0	0							
PM Peak Hour - Ultimate Total – Single Lane Roundabout (Free Flow EB R, NB R)																
Geometry		LT/R					T/R			LT		13.4	B			
Volume (vph)		356	0	218			619	698	486	234						
v/c	0.38		0.12			0.87	0.41	0.45								
Delay (s)	13.7		3.7			34.8	3.7	7.3								
LOS	B		A			C	A	A								
95th Queue (m)	19		0			19	0	0								

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Ultimate Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall		
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS	
A3	Highway 16 & Highway 60 Westbound Off-Ramp/Vehicle Inspection Station	AM Peak Hour - Ultimate Total – Actuated-Coordinated (120s cycle)															
		Geometry	LR			L/LT/R			L/T/T					T/T/TR		24.5	C
		Volume (vph)	5*	-	5*	1092	5*	49	5*	123			488	5*			
		v/c	0.01			0.69	0.70	0.05	0.02	0.10			0.27				
		Delay (s)	6.2			22.2	22.3	1.6	33.0	26.7			31.7				
		LOS	A			C	C	A	C	C			C				
		95th Queue (m)	1			94	95	4	5	22			57				
		PM Peak Hour - Ultimate Total – Actuated-Coordinated (120s cycle)															
		Geometry	LR			L/LT/R			L/T/T					T/T/TR		22.1	C
	Volume (vph)	5*	-	5*	390	5*	163	5*	370			311	5*				
	v/c	0.03			0.71	0.69	0.36	0.01	0.15			0.09					
	Delay (s)	33.2			57.8	56.6	7.3	6.4	5.3			5.9					
	LOS	C			E	E	A	A	A			A					
	95th Queue (m)	4			74	73	21	m1	21			16					
	AM Peak Hour - Ultimate Total – Actuated-Coordinated (120s cycle, Free EB R)																
	Highway 16 & Highway 60 Eastbound Ramp	Geometry	L/LT/R								T/T/R/R		L/T/T		3.2	A	
		Volume (vph)	90	0	782						421	521	216	1205			
		v/c	0.37		0.6						0.14	0.25	0.26	0.39			
Delay (s)		61.2		2.1						1.6	0.5	1.9	1.5				
LOS		E		A						A	A	A	A				
95th Queue (m)		25		0						12	4	11	26				
PM Peak Hour - Ultimate Total – Actuated-Coordinated (120s cycle, Free EB R)																	
Highway 16 & Highway 60 Eastbound Ramp	Geometry	LT/R								T/T/R/R		L/T/T		5.7	A		
	Volume (vph)	210	0	471						1155	1402	87	461				
	v/c	0.59		0.36						0.40	0.66	0.25	0.16				
	Delay (s)	64.3		0.8						3.7	1.9	3.5	1.1				
	LOS	E		A						A	A	A	A				
	95th Queue (m)	48		0						57	10	4	7				

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Ultimate Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall	
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS
A6	114 Avenue & 274 Street	AM Peak Hour - Ultimate Total – Actuated-Coordinate (120s cycle, Pm+Pt WB L)														
		Geometry	L/T/T/R			L/T/TR			L/TR			LTR			16.1	B
		Volume (vph)	10	668	802	237	204	32	226	3	53	6	0	6		
		v/c	0.02	0.38	0.74	0.52	0.13		0.84	0.17		0.03				
		Delay (s)	14.8	14.5	6.3	11.1	2.9		75.7	15.9		0.2				
		LOS	B	B	A	B	A		E	B		A				
		95th Queue (m)	m2	54	65	41	12		#94	m13		0				
		PM Peak Hour - Ultimate Total – Actuated-Coordinate (120s cycle, Pm+Pt NB L)														
		Geometry	L/T/T/R			L/T/TR			L/TR			LTR			24.6	C
		Volume (vph)	3	251	253	57	276	8	883	1	215	21	0	25		
		v/c	0.02	0.39	0.51	0.30	0.40		0.86	0.23		0.39				
		Delay (s)	34.3	37.7	6.9	57.5	55.4		20.1	1.3		15.7				
		LOS	C	D	A	E	E		C	A		B				
		95th Queue (m)	m3	33	15	27	50		#296	m3		9				
A7	114 Avenue & 269 Street	AM Peak Hour - Ultimate Total – Unsignalized (NB Stop)														
		Geometry		T/TR		L/T/T			LR				2.7	A		
		Volume (vph)		684	37	210	480		7	-	70					
		v/c				0.28	0.23									
		Delay (s)				11.8	19									
		LOS				B	C									
		95th Queue (m)				9	7									
		PM Peak Hour - Ultimate Total – Unsignalized (NB Stop)														
		Geometry		T/TR		L/T/T			LR				4.2	A		
		Volume (vph)		507	5	56	304		21	-	279					
		v/c				0.07	0.44									
		Delay (s)				9.5	14.6									
		LOS				A	B									
		95th Queue (m)				2	18									
A8	114 Avenue & Highway 60	AM Peak Hour - Ultimate Total – Actuated-Coordinated (120s cycle, Prot EB, NB & SB L, Pm+Pt WB L, Prot+Ov WB R)														
		Geometry	L/L/T/T/R			L/T/R/R			L/L/T/T/R			L/L/T/T/R			42.5	D
		Volume (vph)	140	472	352	111	59	258	474	544	335	600	971	416		
		v/c	0.58	0.86	0.63	0.70	0.28	0.29	0.87	0.62	0.51	0.87	0.87	0.50		
		Delay (s)	51.2	62.7	13.9	57.6	46.1	25.9	51.1	49.6	26.0	65.0	44.5	4.3		
		LOS	D	E	B	E	D	C	D	D	C	E	D	A		
		95th Queue (m)	m27	#101	45	m#46	m23	39	m#78	m87	m75	#117	#174	24		
		PM Peak Hour - Ultimate Total – Actuated-Coordinated (120s cycle, Prot EB, NB & SB L, Pm+Pt WB L, Prot+Ov WB R, Pm+Ov EB R, NB R)														
		Geometry	L/L/T/T/R			L/T/R/R			L/L/T/T/R			L/L/T/T/R			82.8	F
		Volume (vph)	393	166	609	308	131	879	245	1285	143	174	602	158		
		v/c	1.03	0.30	0.88	0.89	0.69	1.04	0.64	1.00	0.20	1.01	0.53	0.24		
		Delay (s)	163.7	35.4	38.3	64.9	56.9	149.8	56.2	80.1	4.3	195.1	30.9	2.5		
		LOS	F	D	D	E	E	F	E	F	A	F	C	A		
		95th Queue (m)	#93	m28	#220	m#135	m#80	m#181	m41	#236	m8	#51	73	12		

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Ultimate Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall	
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS
A9	114 Avenue & 261 Street	AM Peak Hour - Ultimate Total – Actuated-Coordinated (120s cycle)														
		Geometry	L/T/R			L/T/TR			LTR			LTR			14.5	B
		Volume (vph)	159	995	205	2	256	9	76	6	3	27	11	56		
		v/c	0.25	0.45	0.2	0.01	0.22		0.71			0.45				
		Delay (s)	10.7	12.7	3.9	7.5	6.7		79.7			25.3				
		LOS	B	B	A	A	A		E			C				
		95th Queue (m)	m16	m50	m3	m1	m29		49			26				
		PM Peak Hour - Ultimate Total – Actuated-Coordinated (120s cycle)														
		Geometry	L/T/R			L/T/TR			LTR			LTR			30.0	C
		Volume (vph)	121	322	47	7	865	14	217	8	5	10	2	147		
		v/c	0.8	0.19	0.08	0.02	0.58		0.90			0.39				
		Delay (s)	79.7	20.8	12.5	10.3	15.3		91.3			8.9				
		LOS	E	C	B	B	B		F			A				
		95th Queue (m)	m#54	m45	m12	m3	135		#107			24				
AM Peak Hour - Ultimate Total – Unsignalized (N/S Stop)																
Geometry	L/TR			L/TR			LTR			LTR			1.5	A		
Volume (vph)	106	805	30	5*	184	5	7	5*	11	1	1	21				
v/c	0.08			0.01			0.12			0.04						
Delay (s)	7.9			10.2			27.1			12.1						
LOS	A			B			D			B						
95th Queue (m)	1			0			3			1						
PM Peak Hour - Ultimate Total – Unsignalized (N/S Stop)																
Geometry	L/TR			L/TR			LTR			LTR			4.8	A		
Volume (vph)	29	259	3	5*	732	1	44	5*	4	1	5*	134				
v/c	0.05			0.00			0.42			0.36						
Delay (s)	11.0			8.1			53.3			19.3						
LOS	B			A			F			C						
95th Queue (m)	1			0			15			13						
A10	114 Avenue & 259 Street	AM Peak Hour - Ultimate Total – Unsignalized (N/S Stop)														
		Geometry	L/TR			L/TR			LTR			LTR			1.5	A
		Volume (vph)	106	805	30	5*	184	5	7	5*	11	1	1	21		
		v/c	0.08			0.01			0.12			0.04				
		Delay (s)	7.9			10.2			27.1			12.1				
		LOS	A			B			D			B				
		95th Queue (m)	1			0			3			1				
		PM Peak Hour - Ultimate Total – Unsignalized (N/S Stop)														
		Geometry	L/TR			L/TR			LTR			LTR			4.8	A
		Volume (vph)	29	259	3	5*	732	1	44	5*	4	1	5*	134		
		v/c	0.05			0.00			0.42			0.36				
		Delay (s)	11.0			8.1			53.3			19.3				
		LOS	B			A			F			C				
		95th Queue (m)	1			0			15			13				
A11	114 Avenue & 255 Street	AM Peak Hour - Ultimate Total – Unsignalized (NB Stop)														
		Geometry	TR		L/T		LR			2.1	A					
		Volume (vph)	660	132	18	128	62	-	16							
		v/c			0.03			0.30								
		Delay (s)			10.8			25.1								
		LOS			B			D								
		95th Queue (m)			1			10								
		PM Peak Hour - Ultimate Total – Unsignalized (NB Stop)														
		Geometry	TR		L/T		LR			5.5	A					
		Volume (vph)	218	54	14	554	167	-	16							
		v/c			0.02			0.56								
		Delay (s)			9.1			30.1								
		LOS			A			D								
		95th Queue (m)			0			28								

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Ultimate Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall			
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS		
A12	114 Avenue & Bevington Road	AM Peak Hour - Ultimate Total – Unsignalized (N/S Stop)																
		Geometry	L/TR			L/TR			LTR			LTR			5.8	A		
		Volume (vph)	22	326	214	80	72	7	96	14	18	7	1	17				
		v/c	0.02				0.09				0.47			0.06				
		Delay (s)	8.0				9.4				29.5			13.6				
		LOS	A				A				D			B				
		95th Queue (m)	1				2				19			2				
		95th Queue (m)	1				2				19			2				
		PM Peak Hour - Ultimate Total – Unsignalized (N/S Stop)																
		Geometry	L/TR			L/TR			LTR			LTR			9.9	A		
		Volume (vph)	8	141	106	33	160	4	248	5	29	26	3	4				
		v/c	0.01				0.03				0.60			0.07				
		Delay (s)	8.7				8.1				24.2			13.3				
		LOS	A				A				C			B				
95th Queue (m)	0				1				32			2						
95th Queue (m)	0				1				32			2						
A13	114 Avenue & 231 Street	AM Peak Hour - Ultimate Total – Unsignalized (E/W Stop)																
		Geometry	L/TR			LTR			L/TR			LTR			11.2	B		
		Volume (vph)	46	26	207	42	116	42	120	67	30	19	14	6				
		v/c	0.14	0.28		0.44			0.08			0.02						
		Delay (s)	18.0	10.9		18.9			7.7			7.8						
		LOS	C	B		C			A			A						
		95th Queue (m)	4	8		17			2			0						
		95th Queue (m)	4	8		17			2			0						
		PM Peak Hour - Ultimate Total – Unsignalized (E/W Stop)																
		Geometry	L/TR			LTR			L/TR			LTR			8.2	A		
		Volume (vph)	16	89	103	12	34	10	77	11	163	79	42	33				
		v/c	0.04	0.37		0.15			0.06			0.07						
		Delay (s)	14.9	16.1		16.1			7.9			8.2						
		LOS	B	C		C			A			A						
95th Queue (m)	1	14		4			2			2								
95th Queue (m)	1	14		4			2			2								

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Ultimate Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall	
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS
A15	Northview Road & 274 Street	AM Peak Hour - Ultimate Total – Actuated-Coordinated (120s cycle)														
		Geometry	L/TR			LTR			L/T/R			L/T/R			11.4	B
		Volume (vph)	36	13	5*	62	11	27	5*	221	2	20	786	111		
		v/c	0.29	0.10		0.60			0.01	0.19	0.00	0.03	0.65	0.11		
		Delay (s)	53.7	37.5		59.4			3.6	3.6	0.0	2.4	6.8	0.2		
		LOS	D	D		E			A	A	A	A	A	A		
		95th Queue (m)	20	11		41			m1	24	m0	m1	220	m0		
		PM Peak Hour - Ultimate Total – Actuated-Coordinated (120s cycle, Pm+Pt EB L)														
		Geometry	L/TR			LTR			L/T/R			L/T/R			20.5	C
		Volume (vph)	119	80	1	1	29	7	5*	863	50	43	232	36		
v/c	0.53	0.26		0.29			0.01	0.77	0.04	0.14	0.21	0.04				
Delay (s)	53.0	44.8		51.3			6.0	17.5	1.5	12.5	10.4	4.1				
LOS	D	D		D			A	B	A	B	B	A				
95th Queue (m)	#56	36		20			m1	252	m4	m14	60	m6				
A19	Acheson Road & Highway 60	AM Peak Hour - Ultimate Total – Actuated-Coordinated (120s cycle, Prot EB, NB, SB L, Pm+Pt WB L, Free EB & WB R)														
		Geometry	L/L/T/R			L/T/R			L/L/T/T/R			L/L/T/T/R			26.2	C
		Volume (vph)	97	3	102	56	17	87	200	1169	112	348	832	254		
		v/c	0.61	0.04	0.12	0.47	0.16	0.09	0.64	0.80	0.14	0.82	0.45	0.28		
		Delay (s)	72.2	51.3	0.3	50.1	46.5	0.2	76.1	20.9	0.8	69.0	11.9	5.2		
		LOS	E	D	A	D	D	A	E	C	A	E	B	A		
		95th Queue (m)	#30	4	0	m24	m9	m0	40	#250	0	m#55	m105	m38		
		PM Peak Hour - Ultimate Total – Actuated-Coordinated (120s cycle, Prot EB, NB, SB L, Pm+Pt WB L, Free EB & WB R)														
		Geometry	L/L/T/R			L/T/R			L/L/T/T/R			L/L/T/T/R			22.0	C
		Volume (vph)	245	5*	310	131	4	339	53	1089	43	63	1364	92		
v/c	0.64	0.04	0.20	0.64	0.03	0.26	0.38	0.72	0.05	0.38	0.62	0.12				
Delay (s)	58.6	51.2	0.3	63.2	56.2	0.5	53.7	29.8	2.0	57.6	14.2	3.7				
LOS	E	D	A	E	E	A	D	C	A	E	B	A				
95th Queue (m)	#54	6	0	51	m5	0	m14	#233	m3	m11	m163	m2				
A20	103 Avenue & Bevington Road	AM Peak Hour - Ultimate Total – Unsignalized (EB Stop)														
		Geometry	LR						LT				T/TR		0.5	A
		Volume (vph)	8	-	2				21	495			134	6		
		v/c	0.03						0.2							
		Delay (s)	16.8						7.7							
		LOS	C						A							
		95th Queue (m)	1						0							
		PM Peak Hour - Ultimate Total – Unsignalized (EB Stop)														
		Geometry	LR						LT				T/TR		0.2	A
		Volume (vph)	1	-	5*				7	122			491	4		
v/c	0.01			0.01												
Delay (s)	11.5			8.9												
LOS	B			A												
95th Queue (m)	0			0												

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Ultimate Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall	
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS
A21	Highway 16A & Atim Road	AM Peak Hour - Ultimate Total – Actuated-Coordinated (120s cycle)														
		Geometry	L/T/T/TR			L/T/T/T/R			LTR			L/T/R			8.0	A
		Volume (vph)	271	1845	14	44	475	480	3	5*	11	100	5*	93		
		v/c	0.47	0.47		0.32	0.12	0.43	0.10			0.66	0.02	0.37		
		Delay (s)	9.4	6.0		16.4	2.3	4.5	27.6			70.5	43.6	14.5		
		LOS	A	A		B	A	A	C			E	D	B		
		95th Queue (m)	59	81		24	26	87	9			40	5	17		
		PM Peak Hour - Ultimate Total – Actuated-Coordinated (120s cycle, Pm+Pt EB L & SB L, Pm+Ov SB R)														
		Geometry	L/T/T/TR			L/T/T/T/R			LTR			L/T/R			27.3	C
		Volume (vph)	86	673	4	9	2309	102	16	5*	42	328	5*	439		
		v/c	0.56	0.20		0.03	0.83	0.14	0.47			0.89	0.01	0.84		
		Delay (s)	33.1	10.7		8.1	22.6	2.7	35.8			71.7	32.4	48.3		
		LOS	C	B		A	C	A	D			E	C	D		
		95th Queue (m)	#35	33		m1	#239	m5	#23			#120	m3	#169		
A22	Highway 16A & Sandhills Road	AM Peak Hour - Ultimate Total – Actuated-Coordinated (120s cycle)														
		Geometry	L/T/T/TR			L/T/T/T/R			LTR			LTR			7.8	A
		Volume (vph)	20	1905	31	65	990	62	4	5*	19	16	5*	5		
		v/c	0.06	0.61		0.66	0.31	0.06	0.12			0.12				
		Delay (s)	2.9	8.2		46.0	3.8	0.7	23.9			38.5				
		LOS	A	A		D	A	A	C			D				
		95th Queue (m)	m2	43		#43	21	2	m12			14				
		PM Peak Hour - Ultimate Total – Actuated-Coordinated (120s cycle)														
		Geometry	L/T/T/TR			L/T/T/T/R			LTR			LTR			25.0	C
		Volume (vph)	7	1026	10	14	2379	15	17	5*	81	58	5*	24		
		v/c	0.13	0.33		0.05	0.77	0.02	0.35			0.43				
		Delay (s)	13.9	7.7		9.9	32.4	5.9	16.9			44.2				
		LOS	B	A		A	C	A	B			D				
		95th Queue (m)	m3	m63		m4	250	m3	25			36				
A23	Highway 16A & Spruce Valley Road	AM Peak Hour - Ultimate Total – Actuated-Coordinated (120s cycle, Pm+Pt WB L)														
		Geometry	L/T/T/T/R			L/T/T/T/R			L/T/R			L/TR			11.4	B
		Volume (vph)	86	1778	76	205	1025	523	31	8	70	113	38	61		
		v/c	0.33	0.57	0.10	0.68	0.26	0.47	0.20	0.04	0.29	0.70	0.40			
		Delay (s)	12.2	9.7	2.9	29.5	5.0	2.0	45.4	39.6	12.4	80.5	34.4			
		LOS	B	A	A	C	A	A	D	D	B	F	C			
		95th Queue (m)	36	159	5	56	37	16	m15	m5	11	43	25			
		PM Peak Hour - Ultimate Total – Actuated-Coordinated (120s cycle, Pm+Pt NB, SB L, WB L)														
		Geometry	L/T/T/T/R			L/T/T/T/R			L/T/R			L/TR			27.4	C
		Volume (vph)	31	1103	31	72	2231	125	67	46	250	397	37	110		
		v/c	0.60	0.43	0.05	0.31	0.76	0.17	0.29	0.24	0.85	0.87	0.34			
		Delay (s)	77.7	18.7	0.2	16.9	24.0	4.9	30.4	50.9	53.8	60.2	23.4			
		LOS	E	B	A	B	C	A	C	D	D	E	C			
		95th Queue (m)	#24	98	0	18	192	15	22	24	#83	#169	46			

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Ultimate Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall				
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS			
A24	Highway 16A & 279 Street	AM Peak Hour - Ultimate Total – Unsignalized (N/S Yield)																	
		Geometry		T/T/T/R			T/T/T/R				R			R					
		Volume (vph)		1795	166		1741	191			74			12			0.4	A	
		v/c		0.35	0.10		0.34	0.11			0.21			0.03					
		Delay (s)		0.0	0.0		0.0	0.0			18.1			13.7					
		LOS		A	A		A	A			C			B					
		95th Queue (m)		0	0		0	0			6			1					
		PM Peak Hour - Ultimate Total – Unsignalized (N/S Yield)																	
		Geometry		T/T/T/R			T/T/T/R				R			R					
		Volume (vph)		1718	32		2281	44			378			146			5.7	A	
		v/c		0.34	0.02		0.45	0.03			0.87			0.42					
		Delay (s)		0.0	0.0		0.0	0.0			60.2			22.6					
		LOS		A	A		A	A			F			C					
		95th Queue (m)		0	0		0	0			104			16					
A25	Highway 16A & Highway 60 Westbound Off-Ramp	AM Peak Hour - Ultimate Total – Acutated-Coordinated (120s cycle, Free WB R)																	
		Geometry		L/L/R				T/T			T/T								
		Volume (vph)		734		694		787			794						21.4	C	
		v/c		0.81		0.43		0.41			0.44								
		Delay (s)		47.2		0.9		14.2			22.5								
		LOS		D		A		B			C								
		95th Queue (m)		108		0		73			94								
		PM Peak Hour - Ultimate Total – Acutated-Coordinated (120s cycle, Free WB R)																	
		Geometry		L/L/R				T/T			T/T								
		Volume (vph)		701		347		837			1579						22.0	C	
		v/c		0.87		0.22		0.45			0.80								
		Delay (s)		56.3		0.3		7.9			19.0								
		LOS		E		A		A			B								
		95th Queue (m)		#121		0		38			#251								
A25	Highway 16A & Highway 60 Eastbound Off-Ramp	AM Peak Hour - Ultimate Total – Acutated-Coordinated (120s cycle, Free EB R)																	
		Geometry		L/L/R			T/T			T/T									
		Volume (vph)	192		281		1096			1292							10.9	B	
		v/c	0.56		0.21		0.44			0.54									
		Delay (s)	57.7		0.3		7.9			8.9									
		LOS	E		A		A			A									
		95th Queue (m)	36		0		62			98									
		PM Peak Hour - Ultimate Total – Acutated-Coordinated (120s cycle, Free EB R)																	
		Geometry		L/L/R			T/T			T/T									
		Volume (vph)	213		501		1170			1620							7.9	A	
		v/c	0.62		0.37		0.50			0.66									
		Delay (s)	58.6		0.8		4.5			5.9									
		LOS	E		A		A			A									
		95th Queue (m)	39		0		m38			121									

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Ultimate Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall			
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS		
A27	Highway 16A & Bevington Road/Pinchbeck Road	AM Peak Hour - Ultimate Total – Actuated-Coordinated (120s cycle, Pm+Pt EB & WB L)																
		Geometry	L/T/T/T/R			L/T/T/T/R			L/T/R			L/TR			11.9	B		
		Volume (vph)	102	2070	148	290	2560	409	24	5	97	58	5*	78				
		v/c	0.62	0.70	0.18	0.82	0.75	0.40	0.25	0.03	0.46	0.54	0.43					
		Delay (s)	50.6	14.2	1.2	51.7	4.3	0.9	52.8	45.4	14.8	71.1	19.4					
		LOS	D	B	A	D	A	A	D	D	B	E	B					
		95th Queue (m)	m#34	124	m4	m50	m110	m4	m16	m5	20	#32	20					
		PM Peak Hour - Ultimate Total – Actuated-Coordinated (120s cycle, Pm+Pt WB L & EB L, Pm+Ov NB R)																
		Geometry	L/T/T/T/R			L/T/T/T/R			L/T/R			L/TR			30.8	C		
		Volume (vph)	44	2534	77	135	2299	80	77	5	450	265	1	225				
		v/c	0.34	0.89	0.10	0.80	0.79	0.11	0.41	0.01	0.89	0.90	0.55					
		Delay (s)	17.3	28.5	3.5	65.4	22.6	4.9	43.7	35.2	52.7	88.0	25.1					
		LOS	B	C	A	E	C	A	D	D	D	F	C					
		95th Queue (m)	m11	m#265	m8	#69	#228	11	m31	m4	#179	#122	58					
A29	Highway 16A & 231 Street	AM Peak Hour - Ultimate Total – Actuated-Coordinated (120s cycle, Prot WB & EB L, Free NB & SB R)																
		Geometry	L/T/T/T/R			L/L/T/T/T/R						R				13.9	B	
		Volume (vph)	227	1918	80	264	3205	412				695						
		v/c	0.83	0.49	0.07	0.68	0.88	0.40				0.43						
		Delay (s)	62.8	3.5	1.2	60.5	17.6	3.8				1.2						
		LOS	E	A	A	E	B	A				A						
		95th Queue (m)	m#85	54	m3	49	#320	34				10						
		PM Peak Hour - Ultimate Total – Actuated-Coordinated (120s cycle, Prot EB & WB L, Free NB & SB R)																
		Geometry	L/T/T/T/R			L/L/T/T/T/R						R				19.1	B	
		Volume (vph)	98	2868	280	938	2172	93				727						
		v/c	0.65	0.66	0.32	0.84	0.35	0.09				0.53						
		Delay (s)	56.0	26.3	17.5	44.2	3.9	0.8				1.3						
		LOS	E	C	B	D	A	A				A						
		95th Queue (m)	m24	m134	m41	134	40	4				m5						
A30	100 Avenue & 266 Street	AM Peak Hour - Ultimate Total – Unsignalized (NB Stop)																
		Geometry			TR		LT				LR					2.4	A	
		Volume (vph)			9	6	6	12			2	-	4					
		v/c					0.00				0.01							
		Delay (s)					7.2				8.6							
		LOS					A				A							
		95th Queue (m)					0				0							
		PM Peak Hour - Ultimate Total – Unsignalized (NB Stop)																
		Geometry			TR		LT				LR					3.4	A	
		Volume (vph)			12	3	8	17			3	-	12					
		v/c					0.01				0.01							
		Delay (s)					7.2				8.5							
		LOS					A				A							
		95th Queue (m)					0				0							

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Ultimate Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall		
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS	
A33	96 Avenue & 279 Street	AM Peak Hour - Ultimate Total – Unsignalized (N/S Stop)															
		Geometry	LTR			LTR			LTR			LTR			4.8	A	
		Volume (vph)	18	97	7	10	175	80	40	36	25	30	34	27			
		v/c	0.02			0.01			0.19			0.16					
		Delay (s)	8.4			7.6			13.6			12.7					
		LOS	A			A			B			B					
		95th Queue (m)	1			0			5			5					
		PM Peak Hour - Ultimate Total – Unsignalized (N/S Stop)															
		Geometry	LTR			LTR			LTR			LTR			8.0	A	
		Volume (vph)	61	120	29	4	106	28	49	93	109	21	31	17			
		v/c	0.05			0.00			0.42			0.15					
		Delay (s)	7.8			8.5			15.4			14.1					
LOS	A			A			C			B							
95th Queue (m)	1			0			17			4							
A34	96 Avenue & 266 Street	AM Peak Hour - Ultimate Total – Unsignalized (N/S Stop)															
		Geometry	LTR			LT/R			LTR			LTR			1.7	A	
		Volume (vph)	1	189	7	13	618	169	4	6	5	45	6	3			
		v/c	0.00			0.01			0.05			0.24					
		Delay (s)	9.9			8.3			18.8			25.7					
		LOS	A			A			C			D					
		95th Queue (m)	0			0			2			7					
		PM Peak Hour - Ultimate Total – Unsignalized (N/S Stop)															
		Geometry	LTR			LT/R			LTR			LTR			9.7	A	
		Volume (vph)	5	559	14	7	237	61	2	6	23	168	15	4			
		v/c	0.01			0.01			0.08			0.73					
		Delay (s)	8.4			9.7			15.1			53.9					
LOS	A			A			C			F							
95th Queue (m)	0			0			2			50							
A35	96 Avenue & Highway 60	AM Peak Hour - Ultimate Total – Actuated-Coordinated (120s cycle, Prot EB L, Pm+Pt NB L)															
		Geometry	L/L/T/R			L/TR			L/T/T/T/R			L/T/T/T/R			24.4	C	
		Volume (vph)	120	51	68	76	10	17	425	1648	218	43	1166	365			
		v/c	0.57	0.16	0.22	0.66	0.17			0.89	0.51	0.23	0.43	0.62			0.48
		Delay (s)	63.8	38.4	7.4	74.3	23.3			56.4	16.1	5.4	44.1	25.5			8.0
		LOS	E	D	A	E	C			E	B	A	D	C			A
		95th Queue (m)	m#31	m23	m12	m#40	m10			m104	m68	m13	m16	91			44
		PM Peak Hour - Ultimate Total – Actuated-Coordinated (120s cycle, Prot EB L, Pm+Pt WB & NB L)															
		Geometry	L/L/T/R			L/TR			L/T/T/T/R			L/T/T/T/R			40.1	D	
		Volume (vph)	427	12	311	249	63	34	110	1322	51	28	1961	132			
		v/c	0.86	0.04	0.78	0.81	0.57			0.69	0.49	0.06	0.17	0.87			0.27
		Delay (s)	70.2	39.8	36.8	59.6	57.0			57.3	32.8	5.9	26.2	38.1			6.1
LOS	E	D	D	E	E			E	C	A	C	D	A				
95th Queue (m)	#90	8	#93	m#73	m39			m#47	m114	m6	m8	#214	m14				

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Ultimate Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall	
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS
A36	92 Avenue & Highway 60	AM Peak Hour - Ultimate Total – Actuated-Coordinated (120s cycle, Prot EB L, WB L, NB L, Pm+Pt SB L)														
		Geometry	L/L/T/T/R			L/L/T/T/R			L/L/T/T/T/R			L/T/T/T/R			35.1	D
		Volume (vph)	86	651	106	106	669	47	481	2158	277	63	953	294		
		v/c	0.61	0.88	0.26	0.63	0.88	0.12	0.80	0.86	0.35	0.49	0.6	0.52		
		Delay (s)	63.6	46.1	7.5	95.0	47.5	0.7	69.1	14.9	0.6	44.7	51.7	37.0		
		LOS	E	D	A	F	D	A	E	B	A	D	D	D		
		95th Queue (m)	#24	#122	20	m#30	#121	m1	m70	m63	m0	m22	88	76		
		PM Peak Hour - Ultimate Total – Actuated-Coordinated (120s cycle, Prot EB L, WB L, NB L, Pm+Ov EB R)														
		Geometry	L/L/T/T/R			L/L/T/T/R			L/L/T/T/T/R			L/T/T/T/R			45.1	D
		Volume (vph)	151	450	287	383	521	64	84	1268	96	65	2341	114		
		v/c	0.89	0.95	0.73	1.00	0.78	0.17	0.85	0.45	0.12	0.36	0.95	0.17		
		Delay (s)	117.6	88.3	29.6	146.3	50.7	4.2	91.7	5.4	0.1	32.6	41.4	5.5		
		LOS	F	F	C	F	D	A	F	A	A	C	D	A		
		95th Queue (m)	#43	#100	#95	#94	#98	m7	m12	m10	m0	m13	m#236	m5		
A37	Highway 628 & Spruce Valley Road Westbound Ramp	AM Peak Hour - Ultimate Total – Unsignalized (WB Stop)														
		Geometry				LT/R			LT			T/R			5.3	A
		Volume (vph)				1	0	209	1	83	-	-	69	37		
		v/c				0.00		0.23	0.00							
		Delay (s)				9.3		10.1	7.3							
		LOS				A		B	A							
		95th Queue (m)				0		7	0							
		PM Peak Hour - Ultimate Total – Unsignalized (WB Stop)														
		Geometry				LT/R			LT			T/R			0.9	A
		Volume (vph)				5	0	40	4	41	-	-	190	214		
	v/c				0.01		0.04	0.00								
	Delay (s)				9.8		8.7	7.6								
	LOS				A		A	A								
	95th Queue (m)				0		1	0								
	Highway 628 & Spruce Valley Road Eastbound Ramp	AM Peak Hour - Ultimate Total – Unsignalized (EB Stop)														
		Geometry	LT/R						T/R			LT			8.2	A
		Volume (vph)	81	0	1				-	3	5	64	6	-		
		v/c	0.11	0.00								0.04				
Delay (s)		10.2	8.3								7.6					
LOS		B	A								A					
95th Queue (m)		3	0								1					
PM Peak Hour - Ultimate Total – Unsignalized (EB Stop)																
Geometry		LT/R						T/R			LT			8.0	A	
Volume (vph)		37	0	2				-	8	0	186	9	-			
v/c	0.07	0.00								0.13						
Delay (s)	12.8	8.3								7.8						
LOS	B	A								A						
95th Queue (m)	2	0								3						

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Ultimate Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall	
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS
A39	Highway 628 & Highway 60 Westbound Ramp	AM Peak Hour - Ultimate Total - Actuated-Coordinated (120s cycle, Free SB R)														
		Geometry				LT/R			L/T/T/T			T/T/T/R			425.1	F
		Volume (vph)	0	5*	1160	69	1756	-	-	1103	61					
		v/c	0.00		1.41	1.08	1.23			0.84	0.05					
		Delay (s)	9.8		768.9	342.6	456.0			45.0	0.1					
		LOS	A		F	F	F			D	A					
		95th Queue (m)	2		#521	m#48	#257			#134	0					
		PM Peak Hour - Ultimate Total - Actuated-Coordinated (120s cycle, Pm+Pt NB L, Free SB R)														
		Geometry				LT/R			L/T/T/T			T/T/T/R			17.9	B
		Volume (vph)	0	5*	302	40	1146	-	-	2736	275					
	v/c	0.02		0.93	0.34	0.35			0.89	0.21						
	Delay (s)	42.6		75.9	35.8	0.7			20.2	0.4						
	LOS	D		E	D	A			C	A						
	95th Queue (m)	5		#109	m10	4			#312	0						
	Highway 628 & Highway 60 Westbound Ramp Reassessment	AM Peak Hour - Ultimate Total - Actuated-Coordinated (120s cycle, Free WB & SB R)														
		Geometry				LT/R			L/T/T/T			T/T/T/R			2.7	A
		Volume (vph)	0	5*	1160	69	1756	-	-	1103	61					
		v/c	0.06		0.85	0.21	0.46			0.32	0.05					
		Delay (s)	55.4		7.3	1.3	0.4			1.6	0.1					
		LOS	E		A	A	A			A	A					
95th Queue (m)		6		#47	m0	3			17	0						
PM Peak Hour - Ultimate Total - Actuated-Coordinated (120s cycle, Pm+Pt NB L, Free WB & SB R)																
Geometry					LT/R			L/T/T/T			T/T/T/R			6.8	A	
Volume (vph)		0	5*	302	40	1146	-	-	2736	275						
v/c	0.07		0.22	0.31	0.31			0.81	0.21							
Delay (s)	55.6		0.4	36.4	0.5			10.3	0.4							
LOS	E		A	D	A			B	A							
95th Queue (m)	6		0	m8	13			213	0							
Highway 628 & Highway 60 Eastbound Ramp	AM Peak Hour - Ultimate Total - Actuated-Coordinated (120s cycle, Pm+Pt SB L, Free NB R)															
	Geometry	LT/R						T/T/T/R			L/T/T/T			7.7	A	
	Volume (vph)	0	5*	45			-	1716	101	185	1000	-				
	v/c	0.06		0.38				0.55	0.07	0.64	0.29					
	Delay (s)	54.4		19.8				9.2	0.1	26.7	1.6					
	LOS	D		B				A	A	C	A					
	95th Queue (m)	6		12				118	0	46	18					
	PM Peak Hour - Ultimate Total - Actuated-Coordinated (120s cycle, Pm+Pt SB L, Free NB R)															
	Geometry	LT/R						T/T/T/R			L/T/T/T			21.2	C	
	Volume (vph)	0	5*	99			-	1098	126	680	2175	-				
v/c	0.04		0.62				0.73	0.09	0.90	0.60						
Delay (s)	47.8		43.3				38.3	0.1	40.3	6.7						
LOS	D		D				D	A	D	A						
95th Queue (m)	5		32				#140	0	#214	159						

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Ultimate Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall			
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS		
A41	Highway 628 & 231 Street Westbound Ramp	AM Peak Hour - Ultimate Total - Actuated-Coordinated (120s cycle, Free WB & SB R)																
		Geometry				LT/R			L/T			T/T/R			4.3	A		
		Volume (vph)				50	0	971	9	153	-	-	1844	217				
		v/c				0.39		0.73	0.05	0.05		0.6	0.21					
		Delay (s)				61.0		3.5	1.2	0.1		3.9	0.7					
		LOS				E		A	A	A		A	A					
		95th Queue (m)				26		0	m0	4		99	0					
		PM Peak Hour - Ultimate Total - Actuated-Coordinated (120s cycle, Free WB & SB R)																
		Geometry				LT/R			L/T			T/T/R					7.8	A
	Volume (vph)				43	0	1740	4	210	-	-	1091	211					
	v/c				0.35		0.92	0.01	0.13		0.36	0.17						
	Delay (s)				60.3		11.8	0.0	0.2		2.3	0.5						
	LOS				E		B	A	A		A	A						
	95th Queue (m)				24		#114	m0	1		36	0						
	Highway 628 & 231 Street Eastbound Ramp	AM Peak Hour - Ultimate Total - Actuated-Coordinated (120s cycle, Prot SB L, Free WB & NB R)																
		Geometry	LT/R						T/R			L/L/T			103.3	F		
		Volume (vph)	80	0	7				-	16	51	1838	56	-				
		v/c	0.57		0.00					0.09	0.03	1.04	0.04					
Delay (s)		66.6		0.0					54.7	0.0	111.6	2.3						
LOS		E		A					D	A	F	A						
95th Queue (m)		37		0					12	0	#354	m1						
PM Peak Hour - Ultimate Total - Actuated-Coordinated (120s cycle, Prot SB L, Free WB & NB R)																		
Geometry		LT/R						T/R			L/L/T			38.7	D			
Volume (vph)		80	0	13				-	12	54	1083	51	-					
v/c		0.72		0.01					0.02	0.03	0.82	0.04						
Delay (s)		63.6		0.0					34.2	0.0	38.1	4.1						
LOS	E		A					C	A	D	A							
95th Queue (m)	76		0					8.3	0	123	7							
A42	108 Avenue & Atim Road	AM Peak Hour - Ultimate Total - Actuated-Coordinate (60s cycle)																
		Geometry	LT/R			L/T/R			L/TR			L/TR			8.3	A		
		Volume (vph)	0	18	36	31	67	189	149	356	36	70	75	5*				
		v/c	0.08		0.17	0.19	0.31	0.54	0.20	0.37		0.12	0.07					
		Delay (s)	21.2		9.8	25.9	27.0	12.6	3.6	4.4		4.3	3.5					
		LOS	C		A	C	C	B	A	A		A	A					
	95th Queue (m)	7		7	m5	m11	m14	12	57		8	8						
	PM Peak Hour - Ultimate Total - Actuated-Coordinate (60s cycle)																	
	Geometry	LT/R			L/T/R			L/TR			L/TR			11.3	B			
	Volume (vph)	0	80	136	145	17	53	38	88	16	272	282	5*					
	v/c	0.24		0.35	0.61	0.05	0.16	0.07	0.11		0.41	0.30						
	Delay (s)	19		6.2	27.8	12.1	4.2	10.0	8.9		9.4	7.3						
LOS	B		A	C	B	A	A	A		A	A							
95th Queue (m)	16		12	22	3	2	m12	m28		42	36							

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Ultimate Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall	
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS
A43	108 Avenue & Spruce Valley Road	AM Peak Hour - Ultimate Total – Actuated-Coordinated (60s cycle)														
		Geometry	L/T/R			L/TR			L/TR			L/TR			16.0	B
		Volume (vph)	5*	111	72	134	475	0	246	7	276	0	17	0		
		v/c	0.02	0.14	0.10	0.25	0.61		0.76		0.50		0.04			
		Delay (s)	8.2	8.4	2.0	11.4	18.9		33.7		4.7		13.4			
		LOS	A	A	A	B	B		C		A		B			
		95th Queue (m)	m1	14	1	m24	134		50		23		5			
		PM Peak Hour - Ultimate Total – Actuated-Coordinated (60s cycle)														
		Geometry	L/T/R			L/TR			L/TR			L/TR			9.5	A
		Volume (vph)	5*	470	243	244	126	0	59	8	182	0	7	0		
		v/c	0.01	0.47	0.26	0.51	0.13		0.35		0.55		0.03			
		Delay (s)	4.2	6.3	1.2	15.8	6.6		31.8		14.3		20.1			
		LOS	A	A	A	B	A		C		B		C			
		95th Queue (m)	m1	30	0	66	22		m18		28		4			
A44	96 Avenue & Spruce Valley Road	AM Peak Hour - Ultimate Total – Unsignalized (E/W Stop)														
		Geometry	L/R			L/R			L/R			L/R			7.2	A
		Volume (vph)	9	101	28	5	21	20	98	76	10	45	158	23		
		v/c	0.34			0.10			0.08			0.03				
		Delay (s)	18.1			13.6			8.1			7.7				
		LOS	C			B			A			A				
		95th Queue (m)	11			2			2			1				
		PM Peak Hour - Ultimate Total – Unsignalized (E/W Stop)														
		Geometry	L/R			L/R			L/R			L/R			8.3	A
		Volume (vph)	29	23	66	30	125	72	33	192	5	22	143	9		
		v/c	0.23			0.45			0.03			0.02				
		Delay (s)	14.3			18.0			7.9			7.9				
		LOS	B			C			A			A				
		95th Queue (m)	7			18			1			1				
A45	92 Avenue & Spruce Valley Road	AM Peak Hour - Ultimate Total - Actuated-Coordinated (60s cycle)														
		Geometry	L/T/TR			L/T/T/R			L/TR			L/TR			8.7	A
		Volume (vph)	27	773	30	55	412	108	7	160	53	46	99	6		
		v/c	0.05	0.37		0.16	0.19	0.13	0.03	0.63		0.26	0.32			
		Delay (s)	3.2	3.6		7.5	5.7	2.5	20.1	30.7		18.7	17.8			
		LOS	A	A		A	A	A	C	C		B	B			
		95th Queue (m)	m2	34		m67	m22	m4	5	64		m7	m14			
		PM Peak Hour - Ultimate Total - Actuated-Coordinated (60s cycle)														
		Geometry	L/T/TR			L/T/T/R			L/TR			L/TR			15.1	B
		Volume (vph)	6	203	7	128	629	55	30	100	51	102	205	27		
		v/c	0.02	0.11		0.24	0.32	0.07	0.14	0.39		0.42	0.63			
		Delay (s)	7.5	5.9		14.5	14.0	7.2	17.1	14.1		23.1	26.0			
		LOS	A	A		B	B	A	B	B		C	C			
		95th Queue (m)	m3	22		39	73	m14	m6	m18		17	33			

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Ultimate Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall	
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS
A46	96 Avenue & Pinchbeck Road	AM Peak Hour - Ultimate Total – Unsignalized (E/W Stop)														
		Geometry	L/TR			LTR			L/TR			L/TR			6.1	A
		Volume (vph)	39	33	8	3	66	188	1	125	11	27	265	81		
		v/c	0.16	0.09		0.39			0.00			0.02				
		Delay (s)	22.2	13.5		13.8			8.3			7.8				
		LOS	C	B		B			A			A				
		95th Queue (m)	5	2		14			0			1				
		PM Peak Hour - Ultimate Total – Unsignalized (E/W Stop)														
		Geometry	L/TR			LTR			LTR			LTR			8.3	A
		Volume (vph)	99	64	2	11	59	41	8	313	6	64	277	83		
		v/c	0.51	0.23		0.33			0.01			0.06				
		Delay (s)	41.7	21.4		21.3			8.4			8.4				
LOS	E	C		C			A			A						
95th Queue (m)	22	7		11			0			2						
A47	92 Avenue & Pinchbeck Road	AM Peak Hour - Ultimate Total - Actuated-Coordinated (120s cycle)														
		Geometry	L/T/TR			L/T/TR			L/TR			L/TR			12.0	B
		Volume (vph)	119	557	137	209	740	80	46	36	34	49	122	83		
		v/c	0.31	0.32		0.48	0.37		0.43	0.26		0.27	0.77			
		Delay (s)	11.4	6.8		8.5	3.1		54.8	25.3		34.6	49.5			
		LOS	B	A		A	A		D	C		C	D			
		95th Queue (m)	m33	m81		m23	m55		23	22		m19	m70			
		PM Peak Hour - Ultimate Total - Actuated-Coordinated (120s cycle, Pm+Pt NB & SB L)														
		Geometry	L/T/TR			L/T/TR			L/TR			L/TR			33.7	C
		Volume (vph)	113	522	46	33	468	23	186	155	129	114	100	159		
		v/c	0.30	0.35		0.09	0.30		0.61	0.81		0.43	0.80			
		Delay (s)	30.3	25.8		20.8	19.0		34.2	58.2		31.5	55.9			
LOS	C	C		C	B		C	E		C	E					
95th Queue (m)	m32	m71		15	67		46	92		m23	m64					
A48	114 Avenue & 266 Street	AM Peak Hour - Ultimate Total - Actuated-Coordinated (120s cycle)														
		Geometry	L/T/TR			L/T/TR			LT/R			LTR			10.1	B
		Volume (vph)	17	698	87	199	690	65	55	0	188	78	0	13		
		v/c	0.04	0.45		0.62	0.33		0.37	0.57		0.75				
		Delay (s)	1.6	4.4		17.6	2.5		52.7	13.6		75.2				
		LOS	A	A		B	A		D	B		E				
		95th Queue (m)	m1	23		m67	m18		27	29		#44				
		PM Peak Hour - Ultimate Total - Actuated-Coordinated (120s cycle, Pm+Pt WB L)														
		Geometry	L/T/TR			L/T/TR			LT/R			LTR			16.5	B
		Volume (vph)	20	874	62	143	365	22	39	3	227	67	1	32		
		v/c	0.05	0.64		0.48	0.18		0.32	0.62		0.65				
		Delay (s)	10.3	17.0		13.2	3.2		51.7	13.8		60.6				
LOS	B	B		B	A		D	B		E						
95th Queue (m)	m6	161		m18	m27		21	32		40						

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Ultimate Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall	
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS
BL2	TWP RD 532A & Highway 44	AM Peak Hour - Ultimate Total - Single Lane Roundabout (Free WB R)														
		Geometry	LT/R			LTR			LT/R			LT/R			8.5	A
		Volume (vph)	24	23	182	89	10	7	307	476	51	3	820	23		
		v/c	0.08		0.09	0.18		0.53		0.03	0.76		0.02			
		Delay (s)	12.6		3.6	14.8		6.4		3.9	10.9		4.8			
		LOS	B		A	B		A		A	B		A			
		95th Queue (m)	5		0	8		44		1	85		1			
		PM Peak Hour - Ultimate Total - Single Lane Roundabout (Free WB R)														
		Geometry	LT/R			LTR			LT/R			LT/R			6.0	A
		Volume (vph)	14	4	321	72	18	17	180	983	94	5	571	23		
		v/c	0.02		0.17	0.29		0.72		0.01	0.49		0.02			
		Delay (s)	10.8		3.6	24.2		5.2		3.8	6.1		4.7			
		LOS	B		A	C		A		A	A		A			
95th Queue (m)	1		0	15		83		2	30		1					
BL5	TWP RD 532A & Highway 60	AM Peak Hour - Ultimate Total - Unsignalized (E/W Stop)														
		Geometry	LTR			LTR			LT/R			LTR			13.1	B
		Volume (vph)	1	14	147	288	4	1	61	19	92	1	53	1		
		v/c	0.19		0.62		0.05				0.00					
		Delay (s)	9.8		23.5		7.7				7.5					
		LOS	A		C		A				A					
		95th Queue (m)	5		35		1				0					
		PM Peak Hour - Ultimate Total - Unsignalized (E/W Stop)														
		Geometry	LTR			LTR			LT/R			LTR			9.2	A
		Volume (vph)	5	7	74	195	9	1	159	56	318	2	42	3		
		v/c	0.14		0.60		0.12				0.00					
		Delay (s)	11.2		28.5		7.8				8.1					
		LOS	B		D		A				A					
95th Queue (m)	4		32		3				0							

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Long Term Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall		
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS	
A2	Highway 16 & Highway 44 Westbound Ramp	AM Peak Hour - Long Term Total – Single Lane Roundabout (Free Flow WB R, SB R)															
		Geometry				LT/R			LT			T/R			5.0	A	
		Volume (vph)				98	0	344	62	275				656			230
		v/c				0.09		0.21	0.22			0.49		0.13			
		Delay (s)				10.6		3.7	5.1			5.4		3.6			
		LOS				B		A	A			A		A			
		95th Queue (m)				4		0	0			31		0			
		PM Peak Hour - Long Term Total – Single Lane Roundabout (Free Flow WB R, SB R)															
		Geometry				LT/R			LT			T/R			5.5	A	
		Volume (vph)				33	0	471	334	516				426			291
	v/c				0.04		0.27	0.52			0.41		0.17				
	Delay (s)				14.6		3.7	6.0			7.0		3.6				
	LOS				B		A	A			A		A				
	95th Queue (m)				2		0	0			23		0				
	Highway 16 & Highway 44 Eastbound Ramp	AM Peak Hour - Long Term Total – Single Lane Roundabout (Free Flow EB R, NB R)															
		Geometry	LT/R								T/R		LT		7.0	A	
		Volume (vph)	227	0	489				110	48	438	316					
		v/c	0.27		0.28				0.14	0.03	0.47						
		Delay (s)	14.5		3.7				8.6	3.6	6.9						
		LOS	B		A				A	A	A						
95th Queue (m)		14		0				7	0	0							
PM Peak Hour - Long Term Total – Single Lane Roundabout (Free Flow EB R, NB R)																	
Geometry		LT/R								T/R		LT		9.0	A		
Volume (vph)		321	0	162				529	234	348	111						
v/c	0.29		0.09				0.62	0.14	0.29								
Delay (s)	11.2		3.7				12.9	3.6	7.7								
LOS	B		A				B	A	A								
95th Queue (m)	13		0				7	0	0								

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Long Term Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall		
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS	
A3	Highway 16 & Highway 60 Westbound Off-Ramp/Vehicle Inspection Station	AM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle)															
		Geometry	LR			L/LT/R			L/T/T					T/T/TR		24.8	C
		Volume (vph)	5*	-	5*	1058	5*	48	5*	119			480	5*			
		v/c	0.02			0.70	0.70	0.05	0.02	0.09			0.25				
		Delay (s)	7.0			23.9	24.1	1.8	28.0	23.5			29.6				
		LOS	A			C	C	A	C	C			C				
		95th Queue (m)	2			98	100	4	5	22			54				
		PM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle)															
		Geometry	LR			L/LT/R			L/T/T					T/T/TR		23.0	C
		Volume (vph)	5*	-	5*	416	5*	162	5*	365			309	5*			
	v/c	0.03			0.71	0.70	0.35	0.01	0.15			0.09					
	Delay (s)	32.0			56.9	55.9	6.9	7.6	6.1			6.4					
	LOS	C			E	E	A	A	A			A					
	95th Queue (m)	4			78	77	20	m1	26			16					
	AM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle, Free EB R)																
	Highway 16 & Highway 60 Eastbound Ramp	Geometry	L/LT/R								T/T/R/R		L/T/T		3.0	A	
		Volume (vph)	88	0	579						289	533	213	1172			
		v/c	0.37		0.45						0.09	0.26	0.23	0.38			
		Delay (s)	61.0		1.1						1.5	0.5	1.6	1.5			
		LOS	E		A						A	A	A	A			
95th Queue (m)		25		0						8	4	10	24				
PM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle, Free EB R)																	
Highway 16 & Highway 60 Eastbound Ramp	Geometry	LT/R								T/T/R/R		L/T/T		5.8	A		
	Volume (vph)	206	0	326						894	1253	86	487				
	v/c	0.58		0.25						0.31	0.60	0.18	0.17				
	Delay (s)	64.2		0.5						3.2	1.5	2.0	1.1				
	LOS	E		A						A	A	A	A				
	95th Queue (m)	47		0						40	9	4	7				

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Long Term Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall	
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS
A6	114 Avenue & 274 Street	AM Peak Hour - Long Term Total – Actuated-Coordinate (120s cycle)														
		Geometry	LT/R			LTR			LTR			LTR			21.2	C
		Volume (vph)	10	591	296	159	202	32	89	3	43	6	0	6		
		v/c	0.59			0.32			0.89			0.35				
		Delay (s)	16.4			1.9			38.3			35.5				
		LOS	B			A			D			D				
		95th Queue (m)	95			13			#70			52				
		95th Queue (m)	95			13			#70			52				
		PM Peak Hour - Long Term Total – Actuated-Coordinate (120s cycle)														
		Geometry	LT/R			LTR			LTR			LTR			33.8	C
		Volume (vph)	3	227	98	40	269	8	336	1	178	21	0	25		
		v/c	0.59			0.23			0.84			0.67				
		Delay (s)	48			9.8			58.2			19.5				
		LOS	D			A			E			B				
95th Queue (m)	82			16			117			#186						
95th Queue (m)	82			16			117			#186						
A7	114 Avenue & 269 Street	AM Peak Hour - Long Term Total – Unsignalized (NB Stop)														
		Geometry		T/R		LT			LR					2.7	A	
		Volume (vph)		589	45	199	400		7	-	65					
		v/c				0.24			0.23							
		Delay (s)				10.5			19.7							
		LOS				B			C							
		95th Queue (m)				7			7							
		95th Queue (m)				7			7							
		PM Peak Hour - Long Term Total – Unsignalized (NB Stop)														
		Geometry		T/R		LT			LR					5.3	A	
		Volume (vph)		444	7	50	280		21	-	275					
		v/c				0.05			0.52							
		Delay (s)				9.0			17.9							
		LOS				A			C							
95th Queue (m)				2		23										
95th Queue (m)				2		23										
A8	114 Avenue & Highway 60	AM Peak Hour - Long Term Total – Actuated-Coordinate (120s cycle, Prot EB, NB & SB L, Pm+Pt WB L, Prot+Ov WB R)														
		Geometry	L/L/T/T/R			L/T/R/R			L/L/T/T/R			L/L/T/T/R			38.2	D
		Volume (vph)	141	413	329	100	62	286	430	395	334	654	712	385		
		v/c	0.58	0.76	0.61	0.52	0.27	0.29	0.79	0.53	0.54	0.82	0.67	0.49		
		Delay (s)	49.3	55.8	18.0	34.4	41.6	22.6	48.3	46.7	26.6	59.8	36.4	4.5		
		LOS	D	E	B	C	D	C	D	D	C	E	D	A		
		95th Queue (m)	28	#81	58	m28	m23	25	#78	72	89	#115	104	26		
		95th Queue (m)	28	#81	58	m28	m23	25	#78	72	89	#115	104	26		
		PM Peak Hour - Long Term Total – Actuated-Coor. (120s cycle, Prot EB, NB & SB L, Pm+Pt WB L, Prot+Ov WB R, Pm+Ov EB R, NB R)														
		Geometry	L/L/T/T/R			L/T/R/R			L/L/T/T/R			L/L/T/T/R			41.8	D
		Volume (vph)	396	151	569	285	178	904	239	847	145	185	477	152		
		v/c	0.84	0.27	0.75	0.56	0.54	0.87	0.54	0.87	0.21	0.81	0.57	0.28		
		Delay (s)	59.2	36.0	24.8	23.5	43.6	47.1	55.6	44.4	4.5	84.2	44.1	6.4		
		LOS	E	D	C	C	D	D	E	D	A	F	D	A		
95th Queue (m)	#84	m30	#159	m68	m68	m#169	37	#146	15	#48	76	16				
95th Queue (m)	#84	m30	#159	m68	m68	m#169	37	#146	15	#48	76	16				

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Long Term Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall	
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS
A13	114 Avenue & 231 Street	AM Peak Hour - Long Term Total – Unsignalized (E/W Stop)														
		Geometry	L/TR			LTR			LTR			LTR			7.6	A
		Volume (vph)	85	2	142	1	3	0	121	70	4	5*	20	19		
		v/c	0.17	0.15		0.01			0.08			0.00				
		Delay (s)	13.8	9.6		12.4			7.7			7.4				
		LOS	B	A		B			A			A				
		95th Queue (m)	5	4		0			2			0				
		95th Queue (m)	5	4		0			2			0				
		PM Peak Hour - Long Term Total – Unsignalized (E/W Stop)														
		Geometry	LTR			LTR			LTR			LTR			5.9	A
		Volume (vph)	26	5	136	2	2	0	81	12	0	5*	73	81		
		v/c	0.05	0.17		0.01			0.07			0.00				
		Delay (s)	11.5	10.2		12.2			8.1			7.2				
		LOS	B	B		B			A			A				
95th Queue (m)	1	5		0			2			0						
95th Queue (m)	1	5		0			2			0						
A15	Northview Road & 274 Street	AM Peak Hour - Long Term Total – Unsignalized (E/W Stop)														
		Geometry	LTR			LTR			LTR			LTR			3.3	A
		Volume (vph)	12	13	0	62	11	27	5*	98	2	20	302	11		
		v/c	0.06			0.18			0.00			0.02				
		Delay (s)	13.4			12.9			8.2			7.7				
		LOS	B			B			A			A				
		95th Queue (m)	2			5			0			0				
		95th Queue (m)	2			5			0			0				
		PM Peak Hour - Long Term Total – Unsignalized (E/W Stop)														
		Geometry	LTR			LTR			LTR			LTR			4.0	A
		Volume (vph)	23	80	1	1	29	7	5*	375	50	43	84	12		
		v/c	0.27			0.09			0.00			0.04				
		Delay (s)	17.9			14.7			7.7			8.5				
		LOS	C			B			A			A				
95th Queue (m)	8			2			0			1						
95th Queue (m)	8			2			0			1						
A19	Acheson Road & Highway 60	AM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle, Prot EB, NB, SB L, Pm+Pt WB L, Free EB & WB R)														
		Geometry	L/L/T/R			L/T/R			L/L/T/T/R			L/L/T/T/R			22.2	C
		Volume (vph)	97	3	102	55	17	106	200	955	108	217	671	253		
		v/c	0.53	0.04	0.12	0.42	0.16	0.10	0.60	0.64	0.13	0.64	0.37	0.28		
		Delay (s)	64.3	50.0	0.3	50.1	50.1	0.2	72.1	14.6	0.6	60.6	12.6	7.2		
		LOS	E	D	A	D	D	A	E	B	A	E	B	A		
		95th Queue (m)	#26	4	0	m15	m6	m0	40	189	0	m32	94	m53		
		95th Queue (m)	#26	4	0	m15	m6	m0	40	189	0	m32	94	m53		
		PM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle, Prot EB, NB, SB L, Pm+Pt WB L, Free EB & WB R)														
		Geometry	L/L/T/R			L/T/R			L/L/T/T/R			L/L/T/T/R			19.8	B
		Volume (vph)	245	5*	310	129	4	248	53	738	36	70	1170	91		
		v/c	0.61	0.04	0.20	0.62	0.03	0.19	0.37	0.49	0.04	0.39	0.53	0.12		
		Delay (s)	56.5	49.8	0.3	59.1	52.8	0.3	54.9	20.0	1.2	55.6	14.8	4.9		
		LOS	E	D	A	E	D	A	D	B	A	E	B	A		
95th Queue (m)	46	5	0	m46	m4	m0	13	143	2	m14	165	m6				
95th Queue (m)	46	5	0	m46	m4	m0	13	143	2	m14	165	m6				

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Long Term Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall		
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS	
A20	103 Avenue & Bevington Road	AM Peak Hour - Long Term Total – Unsignalized (EB Stop)															
		Geometry	LR						LT			T/TR			0.6	A	
		Volume (vph)	8	-	2				21	378				61			6
		v/c	0.02						0.02								
		Delay (s)	13.7						7.5								
		LOS	B						A								
		95th Queue (m)	1						0								
		PM Peak Hour - Long Term Total – Unsignalized (EB Stop)															
		Geometry	LR						LT			T/TR			0.2	A	
		Volume (vph)	1	-	0				7	101				274			4
		v/c	0						0.01								
		Delay (s)	13.6						8.2								
		LOS	B						A								
		95th Queue (m)	0						0								
A21	Highway 16A & Atim Road	AM Peak Hour - Long Term Total – Unsignalized (SB Stop)															
		Geometry	L/T/T/T			T/T/T/R						LR			0.1	A	
		Volume (vph)	3	2066				993	2				5	5			
		v/c	0.01										0.07				
		Delay (s)	16.0										32.1				
		LOS	C										D				
		95th Queue (m)	0										2				
		PM Peak Hour - Long Term Total – Unsignalized (SB Stop)															
		Geometry	L/T/T/T			T/T/T/R						LR			0.3	A	
		Volume (vph)	1	1348				2826	5				1	12			
		v/c	0.03										0.24				
		Delay (s)	125.0										90.4				
		LOS	F										F				
		95th Queue (m)	1										7				
A22	Highway 16A & Sandhills Road	AM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle, Pm+Pt WB L)															
		Geometry	L/T/T/TR			L/T/T/T/R			LTR			LTR			15.4	A	
		Volume (vph)	20	2015	36	59	984	62	6	5*	28	16	5*	5			
		v/c	0.07	0.78		0.43	0.33	0.07	0.12			0.09					
		Delay (s)	9.0	18.8		19.5	8.0	2.7	20.7			36.4					
		LOS	A	B		B	A	A	C			D					
		95th Queue (m)	6	175		16	51	9	14			14					
		PM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle)															
		Geometry	L/T/T/TR			L/T/T/T/R			LTR			LTR			19.5	B	
		Volume (vph)	7	1327	15	29	2780	15	27	5*	75	58	5*	24			
		v/c	0.14	0.42		0.14	0.88	0.02	0.40			0.51					
		Delay (s)	10.4	5.5		9.3	25.4	4.0	21.4			53.8					
		LOS	B	A		A	C	A	C			D					
		95th Queue (m)	3	49		m6	#246	m2	29			39					

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Long Term Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall	
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS
A23	Highway 16A & Spruce Valley Road	AM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle, Pm+Pt WB L)														
		Geometry	L/T/T/T/R			L/T/T/T/R			L/T/R			L/TR			13.9	B
		Volume (vph)	66	1837	156	242	1008	277	56	8	89	48	39	41		
		v/c	0.24	0.58	0.18	0.72	0.24	0.25	0.50	0.05	0.42	0.42	0.46			
		Delay (s)	14.8	15.0	2.9	33.9	3.3	0.9	76.2	55.6	24.6	61.8	38.8			
		LOS	B	B	A	C	A	A	E	E	C	E	D			
		95th Queue (m)	10	51	9	66	25	8	24	m5	10	25	29			
		PM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle, Pm+Pt NB, SB L, WB L)														
		Geometry	L/T/T/T/R			L/T/T/T/R			L/T/R			L/TR			22.0	C
		Volume (vph)	23	1373	64	83	2499	66	247	34	298	169	20	78		
		v/c	0.44	0.46	0.08	0.37	0.74	0.08	0.74	0.13	0.87	0.66	0.50			
		Delay (s)	49.4	14.4	0.2	13.9	18.2	0.9	48.0	39.0	53.6	49.9	38.1			
		LOS	D	B	A	B	B	A	D	D	D	D	D			
		95th Queue (m)	#21	56	0	16	197	4	#90	17	#101	56	34			
A24	Highway 16A & 279 Street	AM Peak Hour - Long Term Total – Unsignalized (N/S Yield)														
		Geometry		T/T/T/R			T/T/T/R			R		R	0.3	A		
		Volume (vph)		1787	187		1515	191		63		12				
		v/c		0.35	0.11		0.30	0.11		0.18		0.03				
		Delay (s)		0.0	0.0		0.0	0.0		17.5		12.7				
		LOS		A	A		A	A		C		B				
		95th Queue (m)		0	0		0	0		5		1				
		PM Peak Hour - Long Term Total – Unsignalized (N/S Yield)														
		Geometry		T/T/T/R			T/T/T/R			R		R	3.7	A		
		Volume (vph)		1800	40		2501	44		327		146				
		v/c		0.35	0.02		0.49	0.03		0.79		0.47				
		Delay (s)		0.0	0.0		0.0	0.0		43.4		26.4				
		LOS		A	A		A	A		E		D				
		95th Queue (m)		0	0		0	0		70		19				

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Long Term Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall			
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS		
A25	Highway 16A & Highway 60 Westbound Off-Ramp	AM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle, Free WB R)																
		Geometry				L/L/R				T/T			T/T			23.6	C	
		Volume (vph)				807		557		706			716					
		v/c				0.81		0.35		0.39			0.42					
		Delay (s)				44.5		0.6		17.7			23.6					
		LOS				D		A		B			C					
		95th Queue (m)				115		0		78			97					
		PM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle, Free WB R)																
		Geometry				L/L/R				T/T			T/T			21.7	C	
		Volume (vph)				632		196		630			1403					
		v/c				0.83		0.12		0.33			0.70					
		Delay (s)				53.2		0.2		11.2			15.2					
	LOS				D		A		B			B						
	95th Queue (m)				98		0		48			202						
	Highway 16A & Highway 60 Eastbound Off-Ramp	AM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle, Free EB R)																
		Geometry	L/L/R						T/T			T/T			10.9	B		
		Volume (vph)	174		221					827			1308					
		v/c	0.54		0.16					0.33			0.55					
		Delay (s)	57.7		0.3					5			10.3					
		LOS	E		A					A			B					
		95th Queue (m)	34		0					39			150					
		PM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle, Free EB R)																
		Geometry	L/L/R						T/T			T/T			5.2	A		
		Volume (vph)	104		261					1051			1443					
v/c		0.40		0.19					0.44			0.57						
Delay (s)		56.2		0.3					3.3			3.7						
LOS	E		A					A			A							
95th Queue (m)	23		0					m7			78							
A27	Highway 16A & Bevington Road/Pinchbeck Road	AM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle, Pm+Pt EB & WB L)																
		Geometry	L/T/T/T/R			L/T/T/TR			L/T/R			L/TR			12.5	B		
		Volume (vph)	85	2116	68	228	2623	307	15	7	66	30	7	26				
		v/c	0.54	0.63	0.08	0.75	0.79		0.17	0.05	0.34	0.32	0.24					
		Delay (s)	41.6	9.1	0.3	41.5	11.2		43.2	39.9	9.4	62.9	29.4					
		LOS	D	A	A	D	B		D	D	A	E	C					
	95th Queue (m)	m27	45	m0	m44	#291		11	m6	10	m17	m12						
	PM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle, Pm+Pt WB L, Pm+Ov NB R)																	
	Geometry	L/T/T/T/R			L/T/T/TR			L/T/R			L/TR			22.9	C			
	Volume (vph)	32	2957	40	110	2493	68	72	8	277	171	26	77					
	v/c	0.60	0.89	0.05	0.68	0.69		0.41	0.03	0.72	0.90	0.44						
	Delay (s)	73.4	25.0	0.7	53.3	8.6		52.9	44.1	46.1	111.7	46.6						
LOS	E	C	A	D	A		D	D	D	F	D							
95th Queue (m)	m21	#298	m1	#47	142		33	7	#107	#92	43							

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Long Term Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall	
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS
A29	Highway 16A & 231 Street	AM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle, Prot WB & EB L)														
		Geometry	L/T/T/T/R			L/L/T/T/T/R					R			R		
		Volume (vph)	93	2078	42	151	3074	250			656			84		
		v/c	0.62	0.50	0.04	0.59	0.76	0.22			0.40			0.06		
		Delay (s)	55.1	2.5	1.0	63.4	8.0	0.9			0.7			0.1		
		LOS	E	A	A	E	A	A			A			A		
		95th Queue (m)	m34	47	m1	31	176	7			m0			0		
		PM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle, Prot EB & WB L)														
		Geometry	L/T/T/T/R			L/L/T/T/T/R					R			R		
		Volume (vph)	47	3126	231	908	2480	60			543			191		
		v/c	0.46	0.70	0.25	0.85	0.37	0.06			0.39			0.13		
		Delay (s)	76.6	24.3	10.3	46.3	2.6	0.6			0.4			0.2		
		LOS	E	C	B	D	A	A			A			A		
		95th Queue (m)	m13	m184	m30	133	37	3			m0			0		
A30	100 Avenue & 266 Street	AM Peak Hour - Long Term Total – Unsignalized (NB Stop)														
		Geometry		TR		LT			LR							
		Volume (vph)		9	9	6	12		3	-	4					
		v/c				0.00			0.01							
		Delay (s)				7.2			8.7							
		LOS				A			A							
		95th Queue (m)				0			0							
		PM Peak Hour - Long Term Total – Unsignalized (NB Stop)														
		Geometry		TR		LT			LR							
		Volume (vph)		12	4	8	17		3	-	12					
		v/c				0.01			0.01							
		Delay (s)				7.2			8.5							
		LOS				A			A							
		95th Queue (m)				0			0							
A33	96 Avenue & 279 Street	AM Peak Hour - Long Term Total – Unsignalized (N/S Stop)														
		Geometry	LTR			LTR			LTR			LTR				
		Volume (vph)	15	70	12	10	112	67	81	39	36	40	40	27		
		v/c	0.01			0.01			0.27			0.17				
		Delay (s)	8.1			7.6			13.3			12.0				
		LOS	A			A			B			B				
		95th Queue (m)	0			0			8			5				
		PM Peak Hour - Long Term Total – Unsignalized (N/S Stop)														
		Geometry	LTR			LTR			LTR			LTR				
		Volume (vph)	62	78	46	5	80	28	75	51	143	25	43	17		
		v/c	0.05			0.01			0.40			0.17				
		Delay (s)	7.8			8.4			14.0			13.7				
		LOS	A			A			B			B				
		95th Queue (m)	1			0			15			5				

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Long Term Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall	
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS
A34	96 Avenue & 266 Street	AM Peak Hour - Long Term Total – Unsignalized (N/S Stop)														
		Geometry	LTR			LT/R			LTR			LTR			1.5	A
		Volume (vph)	1	169	7	13	512	174	4	0	5	45	5	3		
		v/c	0.00			0.01			0.02			0.19				
		Delay (s)	9.5			8.2			14.2			20.5				
		LOS	A			A			B			C				
		95th Queue (m)	0			0			1			5				
		PM Peak Hour - Long Term Total – Unsignalized (N/S Stop)														
		Geometry	LTR			LT/R			LTR			LTR			7.7	A
		Volume (vph)	5	520	14	7	205	62	2	4	23	172	11	4		
		v/c	0.01			0.01			0.07			0.65				
		Delay (s)	8.3			9.5			13.8			39.5				
		LOS	A			A			B			E				
		95th Queue (m)	0			0			2			38				
A35	96 Avenue & Highway 60	AM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle, Prot EB L, Pm+Pt WB & NB L)														
		Geometry	L/L/T/R			L/TR			L/T/T/T/R			L/T/T/T/R			16.5	B
		Volume (vph)	137	38	45	66	6	23	296	1265	90	73	1059	397		
		v/c	0.44	0.20	0.18	0.34	0.19		0.74	0.39	0.10	0.42	0.47	0.47		
		Delay (s)	54.4	50.3	1.5	34.8	21.3		34.8	6.3	1.3	32.0	21.2	5.3		
		LOS	D	D	A	C	C		C	A	A	C	C	A		
		95th Queue (m)	30	m20	m0	m29	m11		#87	64	7	m27	73	30		
		PM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle, Prot EB L, Pm+Pt WB L)														
		Geometry	L/L/T/R			L/TR			L/T/T/T/R			L/T/T/T/R			25.5	C
		Volume (vph)	468	8	239	206	45	71	94	1187	38	38	1531	135		
		v/c	0.88	0.03	0.78	0.68	0.59		0.76	0.44	0.05	0.19	0.55	0.24		
		Delay (s)	71.9	40.4	53.0	45.7	41.9		59.2	7.0	0.2	16.0	18.1	3.7		
		LOS	E	D	D	D	D		E	A	A	B	B	A		
		95th Queue (m)	#101	7	#92	m#75	m#39		m#61	32	m0	m10	98	m11		
A36	92 Avenue & Highway 60	AM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle, Prot EB & NB L)														
		Geometry	L/L/T/T/R			L/T/T/R			L/L/T/T/T/R			L/T/T/T/R			13.7	B
		Volume (vph)	51	5*	45	24	5*	24	198	1573	96	94	740	336		
		v/c	0.28	0.02	0.17	0.21	0.01	0.11	0.64	0.42	0.09	0.56	0.26	0.35		
		Delay (s)	58.1	39.8	5.7	54.5	48.8	0.9	54.2	10.5	4.4	34.3	9.4	2.4		
		LOS	E	D	A	D	D	A	D	B	A	C	A	A		
		95th Queue (m)	m14	m5	m7	16	3	0	m#47	67	m8	#39	16	5		
		PM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle, Prot EB & NB L, Pm+Pt WB L)														
		Geometry	L/L/T/T/R			L/T/T/R			L/L/T/T/T/R			L/T/T/T/R			19.5	B
		Volume (vph)	158	5*	115	83	5*	108	32	1053	22	28	1866	82		
		v/c	0.60	0.02	0.36	0.37	0.01	0.45	0.20	0.34	0.03	0.11	0.65	0.11		
		Delay (s)	62.4	43.8	10.4	41.4	48.8	13.0	39.8	26.3	8.1	11.5	12.5	0.8		
		LOS	E	D	B	D	D	B	D	C	A	B	B	A		
		95th Queue (m)	32	5	20	32	3	18	m7	97	m3	m4	82	m2		

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Long Term Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall	
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS
A37	Highway 628 & Spruce Valley Road	AM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle)														
		Geometry	L/T/TR			L/T/T/R			LTR			L/TR			32.6	C
		Volume (vph)	70	572	0	1	447	288	1	2	5	72	5	28		
		v/c	0.56	0.71		0.01	0.51	0.55	0.01			0.09	0.04			
		Delay (s)	58.1	47.2		13.0	22.5	22.7	5.6			9.8	5.8			
		LOS	E	D		B	C	C	A			A	A			
		95th Queue (m)	33	84		m1	78	95	2			m18	m7			
		PM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle)														
		Geometry	L/T/TR			L/T/T/R			LTR			L/TR			13.8	B
		Volume (vph)	21	568	0	5	1145	60	1	4	0	244	4	100		
		v/c	0.29	0.36		0.02	0.77	0.10	0.01			0.42	0.15			
		Delay (s)	32.4	24.1		1.8	8.0	0.5	18.0			21.4	8.9			
		LOS	C	C		A	A	A	B			C	A			
95th Queue (m)	11	58		m0	48	m0	3			77	21					
A38	Highway 628 & 279 Street	AM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle)														
		Geometry	L/T/TR			L/T/T/R			LTR			L/TR			15.1	B
		Volume (vph)	31	617	1	1	722	323	0	0	5	68	1	14		
		v/c	0.34	0.61		0.01	0.69	0.53	0.00			0.09	0.02			
		Delay (s)	14.7	7.9		11.0	22.1	14.8	0.0			10.7	6.0			
		LOS	B	A		B	C	B	A			B	A			
		95th Queue (m)	3	9		m0	109	89	0			m15	m3			
		PM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle)														
		Geometry	L/T/TR			L/T/T/R			LTR			L/TR			20.0	C
		Volume (vph)	9	801	2	5	1152	65	3	1	3	243	1	55		
		v/c	0.10	0.52		0.02	0.78	0.10	0.01			0.44	0.09			
		Delay (s)	16.2	21.4		3.0	19.7	1.5	16.4			25.8	6.1			
		LOS	B	C		A	B	A	B			C	A			
95th Queue (m)	m2	108		m0	m163	m2	4			79	10					
A39	Highway 628 & Highway 60	AM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle, Prot NB & SB L, Pt+Ov WB R)														
		Geometry	L/T/T/R			L/T/T/R			L/T/T/T/R			L/L/T/T/T/R			35.3	D
		Volume (vph)	57	553	81	70	901	608	110	1203	73	126	648	34		
		v/c	0.63	0.47	0.14	0.33	0.80	0.77	0.62	0.55	0.09	0.47	0.34	0.06		
		Delay (s)	77.5	39.8	19.4	40.4	46.3	31.7	66.4	28.3	2.0	48.1	27.9	6.4		
		LOS	E	D	B	D	D	C	E	C	A	D	C	A		
		95th Queue (m)	#36	95	27	m0	148	149	47	113	7	19	71	8		
		PM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle, Prot SB L, Pm+Pt EB & NB L, Pm+Ov WB R)														
		Geometry	L/T/T/R			L/T/T/R			L/T/T/T/R			L/L/T/T/T/R			34.0	C
		Volume (vph)	54	808	185	88	1084	203	59	850	109	540	1444	80		
		v/c	0.46	0.56	0.27	0.51	0.89	0.21	0.38	0.67	0.18	0.87	0.67	0.11		
		Delay (s)	37.7	17.0	2.2	42.2	51.6	19.7	26.8	43.4	1.8	44.9	30.5	6.6		
		LOS	D	B	A	D	D	B	C	D	A	D	C	A		
95th Queue (m)	#20	44	6	m29	#190	42	16	87	7	#101	147	m7				

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Long Term Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall	
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS
A40	Highway 628 & Pinchbeck Road	AM Peak Hour - Long Term Total – Actuated-Coordinated (60s cycle)														
		Geometry	L/T/TR			L/T/T/R			LTR			LTR			8.9	A
		Volume (vph)	24	727	1	11	1568	280	0	1	8	30	0	11		
		v/c	0.15	0.28		0.02	0.65	0.27	0.05			0.27				
		Delay (s)	14.6	12.70		1.9	15.1	0.4	23.70			16.4				
		LOS	B	B		A	B	A	C			B				
		95th Queue (m)	m9	94		m0	m12	m0	6			m6				
		PM Peak Hour - Long Term Total – Actuated-Coordinated (60s cycle)														
		Geometry	L/T/TR			L/T/T/R			LTR			LTR			11.0	B
		Volume (vph)	8	1446	2	11	1338	49	0	0	14	119	0	37		
		v/c	0.05	0.63		0.06	0.58	0.06	0.04			0.62				
		Delay (s)	2.2	6.10		22.6	35.4	11.5	0.10			26.3				
		LOS	A	A		C	D	C	A			C				
		95th Queue (m)	m0	m50		m3	206	m8	0			m34				
A41	Highway 628 & 231 Street	AM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle, Prot SB L)														
		Geometry	L/T/TR			L/T/T/R			LTR			L/L/TR			>80	F
		Volume (vph)	51	707	7	39	1652	423	9	7	43	1752	6	198		
		v/c	1.02	0.55		0.27	1.36	0.26	0.39			1.55	0.34			
		Delay (s)	>80	30.6		34.2	>80	0.4	32.4			Error	16.3			
		LOS	F	C		C	F	A	C			F	B			
		95th Queue (m)	#46	115		19	#356	0	21			#379	43			
		PM Peak Hour - Long Term Total – Actuated-Coordinated (120s cycle, Prot SB L, Pm+Pt EB L)														
		Geometry	L/T/TR			L/T/T/R			LTR			L/L/TR			27.9	C
		Volume (vph)	188	1378	13	32	1247	1678	4	8	40	801	8	147		
		v/c	0.76	0.74		0.24	0.79	0.88	0.32			0.89	0.25			
		Delay (s)	46.1	35.7		30.1	34.7	7.3	36.4			46.8	1.8			
		LOS	D	D		C	C	A	D			D	A			
		95th Queue (m)	m#70	214		16	#207	#71	21			#138	m1			
A43	108 Avenue & Spruce Valley Road	AM Peak Hour - Long Term Total – Unsignalized (WB Stop)														
		Geometry				L/R			TR			LT			3.2	A
		Volume (vph)				122		0		7	256	5*	17			
		v/c				0.16						0				
		Delay (s)				10.5						8.1				
		LOS				B						A				
		95th Queue (m)				4.5						0				
		PM Peak Hour - Long Term Total – Unsignalized (WB Stop)														
		Geometry				L/R			TR			LT			5.9	A
		Volume (vph)				210		0		8	162	5*	7			
		v/c				0.25						0				
		Delay (s)				10.8						7.8				
		LOS				B						A				
		95th Queue (m)				8						0				

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Long Term Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall	
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS
A44	96 Avenue & Spruce Valley Road	AM Peak Hour - Long Term Total – Unsignalized (E/W Stop)														
		Geometry	LTR			LTR			LTR			LTR			5.5	A
		Volume (vph)	13	66	59	5	11	31	46	153	12	74	259	34		
		v/c	0.35			0.10			0.04			0.06				
		Delay (s)	18.8			13.3			8.3			8				
		LOS	C			B			A			A				
		95th Queue (m)	12			2			1			2				
		PM Peak Hour - Long Term Total – Unsignalized (E/W Stop)														
		Geometry	LTR			LTR			LTR			LTR			9.0	A
		Volume (vph)	45	14	39	17	86	139	57	322	4	22	169	11		
		v/c	0.35			0.53			0.05			0.02				
		Delay (s)	24.8			21.8			8.0			8.3				
LOS	C			C			A			A						
95th Queue (m)	12			25			1			1						
A45	92 Avenue & Spruce Valley Road	AM Peak Hour - Long Term Total – Unsignalized (WB Stop)														
		Geometry				L/R			TR			L/T			2.0	A
		Volume (vph)				17		19		250	23	80	152			
		v/c				0.04		0.03				0.07				
		Delay (s)				14.1		10.1				8.3				
		LOS				B		B				A				
		95th Queue (m)				1		1				2				
		PM Peak Hour - Long Term Total – Unsignalized (WB Stop)														
		Geometry				LR			TR			LT			2.9	A
		Volume (vph)				36		100		163	7	26	241			
		v/c				0.07		0.12				0.02				
		Delay (s)				12.6		10.0				7.9				
LOS	B					B				A						
95th Queue (m)	2					3				1						
A46	96 Avenue & Pinchbeck Road	AM Peak Hour - Long Term Total – Unsignalized (E/W Stop)														
		Geometry	L/TR			LTR			L/TR			L/TR			4.8	A
		Volume (vph)	85	5*	0	0	5*	0	134	173	0	5*	62	122		
		v/c	0.24	0.01		0.02			0.11			0.00				
		Delay (s)	18.2	15.3		16.2			8.2			7.8				
		LOS	C	C		C			A			A				
		95th Queue (m)	7	0		0			3			0				
		PM Peak Hour - Long Term Total – Unsignalized (E/W Stop)														
		Geometry	L/TR			LTR			LTR			LTR			4.4	A
		Volume (vph)	145	5*	0	0	5*	0	20	62	0	5*	222	94		
		v/c	0.28	0.01		0.01			0.02			0.00				
		Delay (s)	14.6	12.2		12.7			8.3			7.6				
LOS	B	B		B			A			A						
95th Queue (m)	9	0		0			1			0						

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Long Term Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall	
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS
A48	114 Avenue & 266 Street	AM Peak Hour - Long Term Total - Actuated-Coordinated (120s cycle)														
		Geometry	L/T/TR			L/T/R			LT/R			LTR			13.9	B
		Volume (vph)	17	606	71	215	602	65	44	0	199	78	0	13		
		v/c	0.04	0.39			0.57	0.50	0.06	0.29	0.59			0.73		
		Delay (s)	6.6	9.8			16.3	8.4	0.6	49.2	13.4			71.0		
		LOS	A	A			B	A	A	D	B			E		
		95th Queue (m)	m4	84			m77	m166	m0	22	30			#40		
		PM Peak Hour - Long Term Total - Actuated-Coordinated (120s cycle, Pm+Pt WB L, Pm+Ov NB R)														
		Geometry	L/T/TR			L/T/R			LT/R			LTR			15.7	B
		Volume (vph)	20	817	51	154	339	22	34	3	232	67	1	32		
		v/c	0.04	0.59			0.48	0.29	0.03	0.29	0.53			0.66		
		Delay (s)	8.0	11.6			14.4	8.9	3.4	51.5	17.2			63.2		
		LOS	A	B			B	A	A	D	B			E		
		95th Queue (m)	m5	160			25	106	m3	20	46			41		
BL2	TWP RD 532A & Highway 44	AM Peak Hour - Ultimate Total - Single Lane Roundabout (Free WB R)														
		Geometry	LTR			LTR			LTR			LTR			8.8	A
		Volume (vph)	23	23	143	88	10	7	151	416	51	3	655	16		
		v/c	0.40			0.16			0.52			0.74				
		Delay (s)	12.3			12.8			5.9			9.8				
		LOS	B			B			A			A				
		95th Queue (m)	22			7			45			78				
		PM Peak Hour - Ultimate Total - Single Lane Roundabout (Free WB R)														
		Geometry	LTR			LTR			LTR			LTR			6.7	A
		Volume (vph)	9	4	166	72	18	17	140	754	93	5	479	22		
		v/c	0.27			0.23			0.71			0.56				
		Delay (s)	8.7			17.2			5.1			6.8				
		LOS	A			B			A			A				
		95th Queue (m)	13			11			83			37				
BL5	TWP RD 532A & Highway 60	AM Peak Hour - Long Term Total - Unsignalized (E/W Stop)														
		Geometry	LTR			LTR			LT/R			LTR			12.6	B
		Volume (vph)	1	14	147	280	4	1	59	19	89	1	53	1		
		v/c	0.19			0.60			0.05			0.00				
		Delay (s)	9.8			22.5			7.7			7.5				
		LOS	A			C			A			A				
		95th Queue (m)	5			33			1			0				
		PM Peak Hour - Long Term Total - Unsignalized (E/W Stop)														
		Geometry	LTR			LTR			LT/R			LTR			9.2	A
		Volume (vph)	5	7	74	194	9	1	159	57	311	2	41	3		
		v/c	0.14			0.59			0.12			0.00				
		Delay (s)	11.2			28.2			7.8			8.1				
		LOS	B			D			A			A				
		95th Queue (m)	4			31			3			0				

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Near Term Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall		
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS	
A2	Highway 16 & Highway 44 Westbound Ramp	AM Peak Hour - Near Term Total – Unsignalized (WB Stop)															
		Geometry				LT/R			L/T			T/R			1.4	A	
		Volume (vph)				31	0	224	49	188				480			142
		v/c				0.11			0.07								
		Delay (s)				18.0			9.8								
		LOS				C			A								
		95th Queue (m)				3			2								
		PM Peak Hour - Near Term Total – Unsignalized (WB Stop)															
		Geometry				LT/R			L/T			T/R			3.2	A	
		Volume (vph)				16	0	371	266	354				284			192
	v/c				0.13			0.23									
	Delay (s)				35.0			8.8									
	LOS				E			A									
	95th Queue (m)				3			8									
	Highway 16 & Highway 44 Eastbound Ramp	AM Peak Hour - Near Term Total – Unsignalized (EB Stop)															
		Geometry	LT/R									T/R		L/T		22.4	C
		Volume (vph)	154	0	424				83	38	323	188					
		v/c	0.90								0.25						
		Delay (s)	91.2								8.4						
		LOS	F								A						
95th Queue (m)		51								8							
PM Peak Hour - Near Term Total – Unsignalized (EB Stop)																	
Geometry		LT/R									T/R		L/T		37.1	D	
Volume (vph)		211	0	139				409	199	227	73						
v/c	1.13								0.23								
Delay (s)	151.6								9.4								
LOS	F								A								
95th Queue (m)	83								7								

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Near Term Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall		
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS	
A3	Highway 16 & Highway 60 Westbound Off-Ramp/Vehicle Inspection Station	AM Peak Hour - Near Term Total – Unsignalized (WB Stop)															
		Geometry				R			L/T						T/R		
		Volume (vph)							36	189	80				213	100	
		v/c								0.2							
		Delay (s)								9.5							
		LOS								A							
		95th Queue (m)								6							
		PM Peak Hour - Near Term Total – Unsignalized (WB Stop)															
		Geometry				R			L/T						T/R		
		Volume (vph)							106	689	239				112	98	
	v/c								0.57								
	Delay (s)								11.2								
	LOS								B								
	95th Queue (m)								28								
	Highway 16 & Highway 60 Eastbound Ramp	AM Peak Hour - Near Term Total – Unsignalized (EB Stop)															
		Geometry	LT/R									T/R		L/T/T			
		Volume (vph)	62	0	481							207	501	134	1068		
		v/c	0.81											0.11			
		Delay (s)	138.9											8.1			
		LOS	F											A			
95th Queue (m)		31											3				
PM Peak Hour - Near Term Total – Unsignalized (EB Stop)																	
Geometry		LT/R									T/R		L/T/T				
Volume (vph)		126	0	250							802	1117	66	445			
v/c	1.3											0.11					
Delay (s)	244.0											10.9					
LOS	F											B					
95th Queue (m)	68											3					

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Near Term Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall	
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS
A6	114 Avenue & 274 Street	AM Peak Hour - Near Term Total – Unsignalized (N/S Stop)														
		Geometry	LT/R			LTR			LTR			LTR			7.9	A
		Volume (vph)	10	581	113	232	216	35	38	0	45	6	0	6		
		v/c	0.01			0.33			0.7			0.13				
		Delay (s)	8.1			12.0			80.8			45.9				
		LOS	A			B			F			E				
		95th Queue (m)	0			11			29			3				
		PM Peak Hour - Near Term Total – Unsignalized (N/S Stop)														
		Geometry	LT/R			LTR			LTR			LTR			18.2	C
		Volume (vph)	3	224	40	61	273	9	177	0	157	21	0	25		
		v/c	0.00			0.06			0.87			0.15				
		Delay (s)	8.2			8.4			50.0			17.8				
		LOS	A			A			F			C				
		95th Queue (m)	0			2			66			4				
A7	114 Avenue & 269 Street	AM Peak Hour - Near Term Total – Unsignalized (NB Stop)														
		Geometry		T/R		LT			LR				2.8	A		
		Volume (vph)		589	37	203	490		7	-	60					
		v/c				0.27			0.29							
		Delay (s)				11.1			25.4							
		LOS				B			D							
		95th Queue (m)				8			9							
		PM Peak Hour - Near Term Total – Unsignalized (NB Stop)														
		Geometry		T/R		LT			LR				5.8	A		
		Volume (vph)		422	5	47	306		21	-	272					
		v/c				0.05			0.57							
		Delay (s)				9.0			19.7							
		LOS				A			C							
		95th Queue (m)				2			27							
A8	114 Avenue & Highway 60	AM Peak Hour - Near Term Total – Actuated-Coordinated (120s cycle, Prot EB, NB & SB L, Pm+Pt WB L, Prot+Ov WB R)														
		Geometry	L/L/T/T/R			L/T/R/R			L/L/T/T/R			L/L/T/T/R			37.6	D
		Volume (vph)	118	421	346	100	62	286	528	304	330	630	530	388		
		v/c	0.58	0.80	0.64	0.59	0.26	0.30	0.86	0.47	0.61	0.85	0.64	0.56		
		Delay (s)	58.9	56.3	12.8	41.9	46.4	19.1	40.9	47.1	30.1	53.5	42.3	6.5		
		LOS	E	E	B	D	D	B	D	D	C	D	D	A		
		95th Queue (m)	25	#77	36	37	29	35	#79	m52	m78	97	80	25		
		PM Peak Hour - Near Term Total – Actuated-Coor. (120s cycle, Prot EB, NB & SB L, Pm+Pt WB L, Prot+Ov WB R, Pm+Ov EB R, NB R)														
		Geometry	L/L/T/T/R			L/T/R/R			L/L/T/T/R			L/L/T/T/R			39.0	D
		Volume (vph)	305	152	638	285	178	904	266	710	144	181	362	152		
		v/c	0.85	0.32	0.88	0.64	0.55	0.89	0.49	0.78	0.22	0.80	0.55	0.31		
		Delay (s)	67.4	37.7	31.3	20.7	36.1	39.0	50.0	40.7	4.1	75.4	45.2	1.8		
		LOS	E	D	C	C	D	D	D	D	A	E	D	A		
		95th Queue (m)	#65	26	#188	m53	m51	m#140	34	110	9	#41	58	1		

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Near Term Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall	
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS
A13	114 Avenue & 231 Street	AM Peak Hour - Near Term Total – Unsignalized (E/W Stop)														
		Geometry	L/TR			LTR			LTR			LTR			7.6	A
		Volume (vph)	85	2	123	1	3	0	121	70	4	5*	20	19		
		v/c	0.20	0.15		0.01			0.09			0.00				
		Delay (s)	14.7	9.5		12.8			7.7			7.4				
		LOS	B	A		B			A			A				
		95th Queue (m)	5	4		0			2			0				
		95th Queue (m)	5	4		0			2			0				
		PM Peak Hour - Near Term Total – Unsignalized (E/W Stop)														
		Geometry	L/TR			LTR			LTR			LTR			5.9	A
		Volume (vph)	26	5	132	2	2	0	81	12	0	5*	73	81		
		v/c	0.05	0.18		0.01			0.07			0.00				
		Delay (s)	11.9	10.3		12.7			8.2			7.2				
		LOS	B	B		B			A			A				
95th Queue (m)	2	5		0			2			0						
95th Queue (m)	2	5		0			2			0						
A15	Northview Road & 274 Street	AM Peak Hour - Near Term Total – Unsignalized (E/W Stop)														
		Geometry	LTR			LTR			LTR			LTR			4.0	A
		Volume (vph)	17	13	0	62	11	27	5*	46	2	20	220	15		
		v/c	0.06			0.17			0.01			0.02				
		Delay (s)	12.3			11.8			8.0			7.6				
		LOS	B			B			A			A				
		95th Queue (m)	2			5			0			0				
		95th Queue (m)	2			5			0			0				
		PM Peak Hour - Near Term Total – Unsignalized (E/W Stop)														
		Geometry	LTR			LTR			LTR			LTR			4.7	A
		Volume (vph)	26	80	1	1	29	7	5*	222	50	43	45	17		
		v/c	0.25			0.08			0			0.04				
		Delay (s)	15.1			12.8			7.6			8.1				
		LOS	C			B			A			A				
95th Queue (m)	8			2			0			1						
95th Queue (m)	8			2			0			1						
A19	Acheson Road & Highway 60	AM Peak Hour - Near Term Total – Actuated-Coordinated (120s cycle, Prot EB, NB, SB L, Pm+Pt WB L, Free EB & WB R)														
		Geometry	L/L/T/R			L/T/R			L/L/T/T/R			L/L/T/T/R			22.2	C
		Volume (vph)	107	3	105	49	17	105	202	950	102	201	501	274		
		v/c	0.6	0.03	0.14	0.4	0.17	0.11	0.65	0.69	0.14	0.67	0.31	0.33		
		Delay (s)	66.3	49.0	0.3	53.6	58.9	0.2	71.3	13.6	0.6	62.0	11.2	6.4		
		LOS	E	D	A	D	E	A	E	B	A	E	B	A		
		95th Queue (m)	#25	4	0	m20	m8	m0	39	137	0	32	64	49		
		95th Queue (m)	#25	4	0	m20	m8	m0	39	137	0	32	64	49		
		PM Peak Hour - Near Term Total – Actuated-Coordinated (120s cycle, Prot EB, NB, SB L, Pm+Pt WB L, Free EB & WB R)														
		Geometry	L/L/T/R			L/T/R			L/L/T/T/R			L/L/T/T/R			20.2	C
		Volume (vph)	267	5*	321	112	4	224	54	629	33	70	1115	100		
		v/c	0.68	0.03	0.23	0.59	0.03	0.19	0.40	0.46	0.04	0.41	0.56	0.14		
		Delay (s)	58.3	48.0	0.3	56.3	52.5	0.3	55.7	20.2	0.2	57.7	15.0	3.2		
		LOS	E	D	A	E	D	A	E	C	A	E	B	A		
95th Queue (m)	47	5	0	m38	m4	m0	13	122	0	m13	148	m4				
95th Queue (m)	47	5	0	m38	m4	m0	13	122	0	m13	148	m4				

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Near Term Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall			
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS		
A20	103 Avenue & Bevington Road	AM Peak Hour - Near Term Total – Unsignalized (EB Stop)																
		Geometry	LR						LT						T/TR			
		Volume (vph)	8	-	2				21	308				53	6	0.7	A	
		v/c	0.02						0.02									
		Delay (s)	13.2						7.5									
		LOS	B						A									
		95th Queue (m)	1						0									
		PM Peak Hour - Near Term Total – Unsignalized (EB Stop)																
		Geometry	LR						LT						T/TR			
		Volume (vph)	1	-	0				21	308				53	6	0.2	A	
		v/c	0.00						0.01									
		Delay (s)	13.3						8.1									
		LOS	B						A									
95th Queue (m)	0						0											
A21	Highway 16A & Atim Road	AM Peak Hour - Near Term Total – Unsignalized (SB Stop)																
		Geometry	L/T/T						T/T/R			LR						
		Volume (vph)	3	1905					938	2				5		5	0.2	A
		v/c	0.01									0.17						
		Delay (s)	11.6									71.2						
		LOS	B									F						
		95th Queue (m)	0									5						
		PM Peak Hour - Near Term Total – Unsignalized (SB Stop)																
		Geometry	L/T/T/T						T/T/T/R			LR						
		Volume (vph)	1	1368					2910	5				1		12	2.5	A
		v/c	0.02									1.29						
		Delay (s)	65.1									>80						
		LOS	F									F						
95th Queue (m)	1									18								

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Near Term Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall	
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS
A23	Highway 16A & Spruce Valley Road	AM Peak Hour - Near Term Total – Actuated-Coordinated (120s cycle, Pm+Pt WB L)														
		Geometry	L/T/T/T/R			L/T/T/T/R			L/T/R			LTR			4.3	A
		Volume (vph)	2	1862	46	66	889	3	37	2	37	3	0	14		
		v/c	0.00	0.45	0.05	0.52	0.22	0.00	0.40	0.01	0.27	0.14				
		Delay (s)	2.0	3.2	0.7	20.1	2.3	0.0	65.8	53.5	21.8	14.1				
		LOS	A	A	A	C	A	A	E	D	C	B				
		95th Queue (m)	m0	42	m1	#26	16	0	m19	m3	m10	5				
		PM Peak Hour - Near Term Total – Actuated-Coordinated (120s cycle, Pm+Pt NB L)														
		Geometry	L/T/T/T/R			L/T/T/T/R			L/T/R			LTR			11.5	B
		Volume (vph)	1	1350	18	34	2739	7	172	5*	90	3	0	4		
		v/c	0.02	0.36	0.02	0.18	0.73	0.01	0.81	0.02	0.43	0.04				
		Delay (s)	7.0	4.5	0.1	8.5	10.6	0.0	73.5	39.2	28.2	0.3				
LOS	A	A	A	A	B	A	E	D	C	A						
95th Queue (m)	m0	28	m0	9	193	0	59	4	23	0						
A24	Highway 16A & 279 Street	AM Peak Hour - Near Term Total – Unsignalized (N/S Yield)														
		Geometry		T/T/T/R			T/T/T/R			R		R	0.4	A		
		Volume (vph)		1658	244		945	206		66		13				
		v/c		0.35	0.16		0.20	0.13		0.21		0.02				
		Delay (s)		0.0	0.0		0.0	0.0		18.0		11.0				
		LOS		A	A		A	A		C		B				
		95th Queue (m)		0	0		0	0		6		1				
		PM Peak Hour - Near Term Total – Unsignalized (N/S Yield)														
		Geometry		T/T/T/R			T/T/T/R			R		R	3.5	A		
		Volume (vph)		1388	55		2629	47		332		146				
		v/c		0.30	0.04		0.56	0.03		0.75		0.61				
		Delay (s)		0.0	0.0		0.0	0.0		31.3		38.0				
LOS	A	A		A	A		D	E								
95th Queue (m)	0	0		0	0		48	28								

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Near Term Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall			
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS		
A25	Highway 16A & Highway 60 Westbound Off-Ramp	AM Peak Hour - Near Term Total – Actuated-Coordinated (120s cycle, Free WB R)																
		Geometry				L/L/R				T/T			T/T			21.7	C	
		Volume (vph)				732		567		687			590					
		v/c				0.81		0.38		0.41			0.37					
		Delay (s)				44.3		0.7		14.1			22.7					
		LOS				D		A		B			C					
		95th Queue (m)				97		0		54			74					
		PM Peak Hour - Near Term Total – Actuated-Coordinated (120s cycle, Free WB R)																
		Geometry				L/L/R				T/T			T/T					21.9
	Volume (vph)				598		166		549			1343						
	v/c				0.85		0.11		0.31			0.73						
	Delay (s)				53.4		0.1		10.6			15.3						
	LOS				D		A		A			B						
	95th Queue (m)				89		0		27			188						
	A25	Highway 16A & Highway 60 Eastbound Off-Ramp	AM Peak Hour - Near Term Total – Actuated-Coordinated (120s cycle)															
			Geometry	L/L/R						T/T			T/T			20.1	C	
			Volume (vph)	199		199					700			1160				
			v/c	0.42		0.79					0.32			0.57				
Delay (s)			47.2		49.2					8.1			17.7					
LOS			D		D					A			B					
95th Queue (m)		31		53					45			139						
A25		Highway 16A & Highway 60 Eastbound Off-Ramp	PM Peak Hour - Near Term Total – Actuated-Coordinated (120s cycle)															
			Geometry	L/L/R						T/T			T/T			10.3	B	
			Volume (vph)	89		179					984			1347				
			v/c	0.22		0.77					0.46			0.63				
			Delay (s)	43.9		53.0					5.6			5.7				
	LOS		D		D					A			A					
95th Queue (m)	16		53					43			97							
A27	Highway 16A & Bevington Road/Pinchbeck Road	AM Peak Hour - Near Term Total – Actuated-Coordinated (120s cycle, Pm+Pt WB L)																
		Geometry	L/T/T/T/R			L/T/T/TR			L/T/R			L/TR			9.0	A		
		Volume (vph)	44	1964	36	161	2143	279	8	6	47	26	6	23				
		v/c	0.73	0.59	0.04	0.78	0.64		0.10	0.05	0.31	0.30	0.24					
		Delay (s)	72.2	8.3	0.5	36.2	5.8		44	42.2	12.1	57.6	27.9					
		LOS	E	A	A	D	A		D	D	B	E	C					
	95th Queue (m)	#27	91	1	#53	123		m5	m4	m6	m15	m11						
	A27	Highway 16A & Bevington Road/Pinchbeck Road	PM Peak Hour - Near Term Total – Actuated-Coordinated (120s cycle, Pm+Pt WB L, Pm+Ov NB R)															
			Geometry	L/T/T/T/R			L/T/T/TR			L/T/R			L/TR			20.3	C	
			Volume (vph)	20	2601	28	98	2648	64	40	7	199	155	24	62			
			v/c	0.44	0.85	0.03	0.61	0.79		0.53	0.07	0.78	0.90	0.41				
			Delay (s)	43.1	19.6	0.1	33.2	11.9		76.0	52.9	51.1	99.0	55.2				
LOS			D	B	A	C	B		E	D	D	F	E					
95th Queue (m)	#17	210	0	#31	165		#26	m7	#65	#80	37							

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Near Term Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall	
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS
A29	Highway 16A & 231 Street	AM Peak Hour - Near Term Total – Actuated-Coordinated (120s cycle, Prot WB & EB L)														
		Geometry	L/T/T/T/R			L/L/T/T/T/R					R			R		
		Volume (vph)	74	1922	42	121	2510	254			525			73		
		v/c	0.54	0.50	0.04	0.49	0.64	0.24			0.35			0.05		
		Delay (s)	53.9	5.3	2.1	58.8	5.3	0.9			0.6			0.1		
		LOS	D	A	A	E	A	A			A			A		
		95th Queue (m)	m31	54	m2	25	99	5			m0			0		
		PM Peak Hour - Near Term Total – Actuated-Coordinated (120s cycle, Prot EB & WB L)														
		Geometry	L/T/T/T/R			L/L/T/T/T/R					R			R		
		Volume (vph)	39	2684	231	728	2641	59			434			166		
		v/c	0.42	0.61	0.26	0.83	0.43	0.06			0.34			0.12		
		Delay (s)	60.2	6.1	2.0	47.1	2.9	0.6			0.4			0.2		
		LOS	E	A	A	D	A	A			A			A		
		95th Queue (m)	m12	75	m8	100	39	2			0			0		
A30	100 Avenue & 266 Street	AM Peak Hour - Near Term Total – Unsignalized (NB Stop)														
		Geometry		TR		LT			LR							
		Volume (vph)		9	9	6	12		3	-	4					
		v/c				0.00			0.01							
		Delay (s)				7.2			8.7							
		LOS				A			A							
		95th Queue (m)				0			0							
		PM Peak Hour - Near Term Total – Unsignalized (NB Stop)														
		Geometry		TR		LT			LR							
		Volume (vph)		12	4	8	17		3	-	12					
		v/c				0.01			0.01							
		Delay (s)				7.2			8.5							
		LOS				A			A							
		95th Queue (m)				0			0							
A33	96 Avenue & 279 Street	AM Peak Hour - Near Term Total – Unsignalized (N/S Stop)														
		Geometry		LTR		LTR			LTR			LTR				
		Volume (vph)	9	20	12	10	106	66	92	43	2	47	85	26		
		v/c		0.01		0.01			0.27			0.26				
		Delay (s)		8.1		7.5			13.9			12.4				
		LOS		A		A			B			B				
		95th Queue (m)		0		0			8			8				
		PM Peak Hour - Near Term Total – Unsignalized (N/S Stop)														
		Geometry		LTR		LTR			LTR			LTR				
		Volume (vph)	61	67	46	5	33	28	118	57	10	26	59	16		
		v/c		0.05		0.01			0.39			0.2				
		Delay (s)		7.7		8.4			16.2			13				
		LOS		A		A			C			B				
		95th Queue (m)		1		0			14			5				

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Near Term Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall	
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS
A34	96 Avenue & 266 Street	AM Peak Hour - Near Term Total – Unsignalized (N/S Stop)														
		Geometry	LTR			LT/R			LTR			LTR			1.6	A
		Volume (vph)	1	91	3	13	502	175	4	0	5	46	5	3		
		v/c	0.00			0.01			0.02			0.19				
		Delay (s)	9.7			8			13.7			19.8				
		LOS	A			A			B			C				
		95th Queue (m)	0			0			1			5				
		PM Peak Hour - Near Term Total – Unsignalized (N/S Stop)														
		Geometry	LTR			LT/R			LTR			LTR			6.6	A
		Volume (vph)	5	376	13	7	155	62	2	4	23	174	11	2		
		v/c	0.01			0.01			0.06			0.56				
		Delay (s)	8.2			9.1			12.4			27.1				
LOS	A			A			B			D						
95th Queue (m)	0			0			2			25						
A35	96 Avenue & Highway 60	AM Peak Hour - Near Term Total – Actuated-Coordinated (120s cycle, Prot EB L, Pm+Pt WB & NB L)														
		Geometry	L/L/T/R			L/TR			L/T/TR			L/T/T/R			19.8	B
		Volume (vph)	97	5*	45	30	0	20	299	1139	73	84	884	391		
		v/c	0.36	0.03	0.20	0.22	0.09		0.79	0.59		0.5	0.59	0.47		
		Delay (s)	52.4	47.4	1.8	39.2	0.6		37.2	14.5		35.1	22.7	5.9		
		LOS	D	D	A	D	A		D	B		D	C	A		
		95th Queue (m)	#23	m5	m0	m10	m0		#85	97		#37	114	31		
		PM Peak Hour - Near Term Total – Actuated-Coordinated (120s cycle, Prot EB L, Pm+Pt WB L)														
		Geometry	L/L/T/R			L/TR			L/T/TR			L/T/T/R			28.0	C
		Volume (vph)	333	5*	240	86	0	83	94	1132	29	35	1361	130		
		v/c	0.87	0.02	0.78	0.44	0.39		0.89	0.66		0.23	0.74	0.24		
		Delay (s)	71.6	38.6	49.5	43.9	12.1		78.9	15.0		18.3	23.5	5.1		
LOS	E	D	D	D	B		E	B		B	C	A				
95th Queue (m)	#67	4	#79	m31	m12		m#54	79		m11	196	21				
A36	92 Avenue & Highway 60	AM Peak Hour - Near Term Total – Actuated-Coordinated (120s cycle, Prot EB & NB L, Pm+Pt WB & SB L)														
		Geometry	L/L/T/T/R			L/T/T/R			L/L/T/T/R			L/T/T/R			21.6	C
		Volume (vph)	73	5*	45	24	5*	24	200	1414	100	89	597	273		
		v/c	0.39	0.03	0.18	0.16	0.01	0.10	0.66	0.71	0.12	0.44	0.35	0.32		
		Delay (s)	58.8	48.2	1.4	41.4	48.8	0.8	52.3	24.1	7.3	22.7	12.6	3.1		
		LOS	E	D	A	D	D	A	D	C	A	C	B	A		
		95th Queue (m)	17	5	0	13	3	0	m32	195	m9	m26	33	13		
		PM Peak Hour - Near Term Total – Actuated-Coordinated (120s cycle, Prot EB & NB L)														
		Geometry	L/L/T/T/R			L/T/T/R			L/L/T/T/R			L/T/T/R			26.3	C
		Volume (vph)	230	5*	115	87	5*	104	32	921	23	28	1592	67		
		v/c	0.86	0.01	0.33	0.90	0.02	0.47	0.47	0.48	0.03	0.11	0.87	0.10		
		Delay (s)	80.1	34.8	17.2	119.6	49.8	11.8	56.6	22.0	4.0	11.8	18.3	0.9		
LOS	F	C	B	F	D	B	E	C	A	B	B	A				
95th Queue (m)	#51	4	24	#55	3	12	m6	95	m1	m4	#119	m1				

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Near Term Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall			
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS		
A37	Highway 628 & Spruce Valley Road	AM Peak Hour - Near Term Total – Unsignalized (N/S Stop)																
		Geometry	L/TR			L/T/R			LTR			LTR			0.8	A		
		Volume (vph)	23	321	0	1	229	22	1	2	5	5	5	9				
		v/c	0.02				0.00				0.02			0.04				
		Delay (s)	8.2				8.0				12.4			13.0				
		LOS	A				A				B			B				
		95th Queue (m)	1				0				1			1				
		PM Peak Hour - Near Term Total – Unsignalized (N/S Stop)																
		Geometry	L/TR			L/T/R			LTR			LTR			1.4	A		
		Volume (vph)	6	218	0	5	586	6	1	4	0	19	4	33				
		v/c	0.01				0.00				0.02			0.19				
		Delay (s)	9.3				7.7				18.9			18.6				
		LOS	A				A				C			C				
		95th Queue (m)	0				0				1			5				
AM Peak Hour - Near Term Total – Unsignalized (N/S Stop)																		
Geometry	L/TR			L/T/R			LTR			L/TR			1.9	A				
Volume (vph)	51	279	1	1	231	253	0	0	5	51	1	21						
v/c	0.06				0.00				0.01			0.17			0.03			
Delay (s)	9.1				7.8				9.9			18.3			10.3			
LOS	A				A				A			C			B			
95th Queue (m)	2				0				0			5			1			
PM Peak Hour - Near Term Total – Unsignalized (N/S Stop)																		
Geometry	L/TR			L/T/R			LTR			L/TR			11.2	B				
Volume (vph)	14	221	2	5	504	49	3	1	3	186	1	90						
v/c	0.02				0.00				0.03			0.79			0.20			
Delay (s)	9.2				7.7				16.9			56.2			14.2			
LOS	A				A				C			F			B			
95th Queue (m)	1				0				1			44			5			
A38	Highway 628 & 279 Street	AM Peak Hour - Near Term Total – Actuated-Coordinated (120s cycle, Pm+Pt SB L, Pt+Ov WB R)																
		Geometry	L/T/R			L/T/R			L/T/T/R			L/T/T/R			26.1	C		
		Volume (vph)	59	245	31	78	421	587	35	1068	70	97	540	29				
		v/c	0.45	0.44	0.06	0.30	0.80	0.85	0.13	0.79	0.10	0.53	0.34	0.05				
		Delay (s)	41.2	32.1	1.2	9.7	19.6	18.7	22.7	34.1	4.9	33.1	25.7	10.4				
		LOS	D	C	A	A	B	B	C	C	A	C	C	B				
		95th Queue (m)	26	70	2	m7	m80	m139	13	144	9	32	86	7				
		PM Peak Hour - Near Term Total – Actuated-Coordinated (120s cycle, Pm+Pt SB L, Pm+Ov WB R)																
		Geometry	L/T/R			L/T/R			L/T/T/R			L/T/T/R			34.4	C		
		Volume (vph)	37	305	67	107	450	183	24	755	104	439	1270	85				
		v/c	0.58	0.60	0.14	0.63	0.88	0.19	0.27	0.87	0.18	0.90	0.70	0.11				
		Delay (s)	67.4	39.9	8	67.9	70.6	3.4	44.5	51.7	6.9	30.8	17.3	2.3				
		LOS	E	D	A	E	E	A	D	D	A	C	B	A				
		95th Queue (m)	#23	91	11	48	156	10	14	#134	14	m#121	m188	m4				

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Near Term Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall			
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS		
A40	Highway 628 & Pinchbeck Road	AM Peak Hour - Near Term Total – Unsignalized (N/S Stop)																
		Geometry	L/TR			L/T/R			LTR			LTR			3.7	A		
		Volume (vph)	12	399	1	11	1073	202	0	1	8	37	0	13				
		v/c	0.03				0.01				0.03			0.70				
		Delay (s)	13.7				8.2				16.2			121.2				
		LOS	B				A				C			F				
		95th Queue (m)	1				0				1			25				
		PM Peak Hour - Near Term Total – Unsignalized (N/S Stop)																
		Geometry	L/TR			L/T/R			LTR			LTR			102.7	F		
		Volume (vph)	4	842	2	11	702	36	0	0	14	149	0	38				
		v/c	0.01				0.02				0.05			2.90				
		Delay (s)	10.0				9.9				17.0			>80s				
		LOS	A				A				C			F				
		95th Queue (m)	0				0				2			150				
AM Peak Hour - Near Term Total – Actuated-Coordinated (120s cycle, Prot SB L)																		
Geometry	L/T/TR			L/T/T/R			LTR			L/L/TR			78.9	E				
Volume (vph)	41	396	7	39	1119	338	9	7	43	1402	6	158						
v/c	0.85	0.37		0.2	1.12	0.21	0.37			1.13	0.24							
Delay (s)	128.9	26.90		33.4	106.8	0.3	28.70			100.2	12.30							
LOS	F	C		C	F	A	C			F	B							
95th Queue (m)	m#28	55		16	#191	0	17			#233	28							
PM Peak Hour - Near Term Total – Actuated-Coordinated (120s cycle, Prot SB I, Pm+Pt EB L)																		
Geometry	L/T/TR			L/T/T/R			LTR			L/L/TR			18.3	B				
Volume (vph)	152	840	13	32	625	1344	4	8	40	642	8	120						
v/c	0.38	0.51		0.13	0.46	0.77	0.31			0.81	0.22							
Delay (s)	14.9	17.7		26.3	27.3	3.0	25.7			45.7	0.9							
LOS	B	B		C	C	A	C			D	A							
95th Queue (m)	m26	m108		14	82	0	16			42	m0							

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Near Term Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall	
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS
A44	96 Avenue & Spruce Valley Road	AM Peak Hour - Near Term Total – Unsignalized (E/W Stop)														
		Geometry	LTR			LTR			LTR			LTR			5.2	A
		Volume (vph)	0	0	0	5	0	44	0	49	13	80	15	0		
		v/c				0.06						0.06				
		Delay (s)				9.3						7.8				
		LOS				A						A				
		95th Queue (m)				2						2				
		PM Peak Hour - Near Term Total – Unsignalized (E/W Stop)														
		Geometry	LTR			LTR			LTR			LTR			7.7	A
		Volume (vph)	0	0	0	21	0	216	0	27	4	24	43	0		
		v/c				0.27						0.02				
		Delay (s)				10.1						7.6				
		LOS				B						A				
		95th Queue (m)				8						1				
A46	96 Avenue & Pinchbeck Road	AM Peak Hour - Near Term Total – Unsignalized (E/W Stop)														
		Geometry	L/TR			LTR			L/TR			L/TR			4.9	A
		Volume (vph)	45	5*	18	0	5*	0	137	80	0	5	53	96		
		v/c	0.12	0.04		0.01			0.12				0.00			
		Delay (s)	15.4	10.3		14.4			8.2				7.4			
		LOS	C	B		B			A				A			
		95th Queue (m)	3	1		0			3				0			
		PM Peak Hour - Near Term Total – Unsignalized (E/W Stop)														
		Geometry	L/TR			LTR			L/TR			L/TR			5.9	A
		Volume (vph)	131	5*	82	0	5*	0	20	45	0	5*	171	25		
		v/c	0.24	0.12		0.01			0.02				0.00			
		Delay (s)	13.1	10.3		11.2			8.0				7.4			
		LOS	B	B		B			A				A			
		95th Queue (m)	7	3		0			1				0			

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.

Near Term Horizon Capacity Analysis

Intersection Number	Intersection	Approach Movement	Eastbound			Westbound			Northbound			Southbound			Overall	
			L	T	R	L	T	R	L	T	R	L	T	R	Delay	LOS
A48	114 Avenue & 266 Street	AM Peak Hour - Near Term Total - Actuated-Coordinated (120s cycle)														
		Geometry	L/T/TR			L/T/R			LT/R			LTR			14.7	B
		Volume (vph)	17	606	65	222	696	65	43	0	201	78	0	13		
		v/c	0.05	0.42		0.70	0.64	0.06	0.30		0.60	0.76				
		Delay (s)	5.2	6.4		24.1	12.6	0.4	48.5		12.9	69.9				
		LOS	A	A		C	B	A	D		B	E				
		95th Queue (m)	3	56		m79	212	m0	21		22	#36				
		PM Peak Hour - Near Term Total - Actuated-Coordinated (120s cycle, Pm+Pt WB L, Pm+Ov NB R)														
		Geometry	L/T/TR			L/T/R			LT/R			LTR			19.4	B
		Volume (vph)	20	796	46	158	362	22	33	3	232	67	1	32		
		v/c	0.05	0.63		0.55	0.33	0.03	0.29		0.57	0.69				
		Delay (s)	10.3	16.2		16.4	12.9	4.4	50.5		21.4	62.5				
		LOS	B	B		B	B	A	D		C	E				
		95th Queue (m)	6	138		23	111	m3	18		44	39				
BL2	TWP RD 532A & Highway 44	AM Peak Hour - Near Term Total - Unsignalized (E/W Stop)														
		Geometry	LTR			LTR			L/TR			LT/R			3.8	A
		Volume (vph)	22	23	36	47	10	6	8	370	33	3	539	12		
		v/c	0.31			0.37			0.01				0.00			
		Delay (s)	23.6			35.7			8.7				8.2			
		LOS	C			E			A				A			
		95th Queue (m)	10			12			0				0			
		PM Peak Hour - Near Term Total - Unsignalized (E/W Stop)														
		Geometry	L/T/R			L/TR			L/TR			LT/R			3.4	A
		Volume (vph)	6	4	28	33	18	16	48	638	39	4	415	20		
		v/c	0.14			0.47			0.05				0.01			
		Delay (s)	19.0			46.8			8.5				9.2			
		LOS	C			E			A				A			
		95th Queue (m)	4			17			2				0			
BL5	TWP RD 532A & Highway 60	AM Peak Hour - Near Term Total - Unsignalized (E/W Stop)														
		Geometry	LTR			LTR			LT/R			LTR			8.4	A
		Volume (vph)	1	14	103	163	3	1	49	16	51	1	47	1		
		v/c	0.14			0.30			0.04			0.00				
		Delay (s)	9.5			13.6			7.6			7.4				
		LOS	A			B			A			A				
		95th Queue (m)	4			10			1			0				
		PM Peak Hour - Near Term Total - Unsignalized (E/W Stop)														
		Geometry	LTR			LTR			LT/R			LTR			6.1	A
		Volume (vph)	5	6	59	115	8	1	118	48	179	2	36	3		
		v/c	0.10			0.28			0.09			0.00				
		Delay (s)	10.3			15.3			7.7			7.7				
		LOS	B			C			A			A				
		95th Queue (m)	2			8			2			0				

*Movement was projected to accommodate 0 vph; a nominal 5 vph was assumed in the assessment.