EXHIBIT "A7"

-INSERT-
AEROSKY PARK TRAFFIC IMPACT STUDY

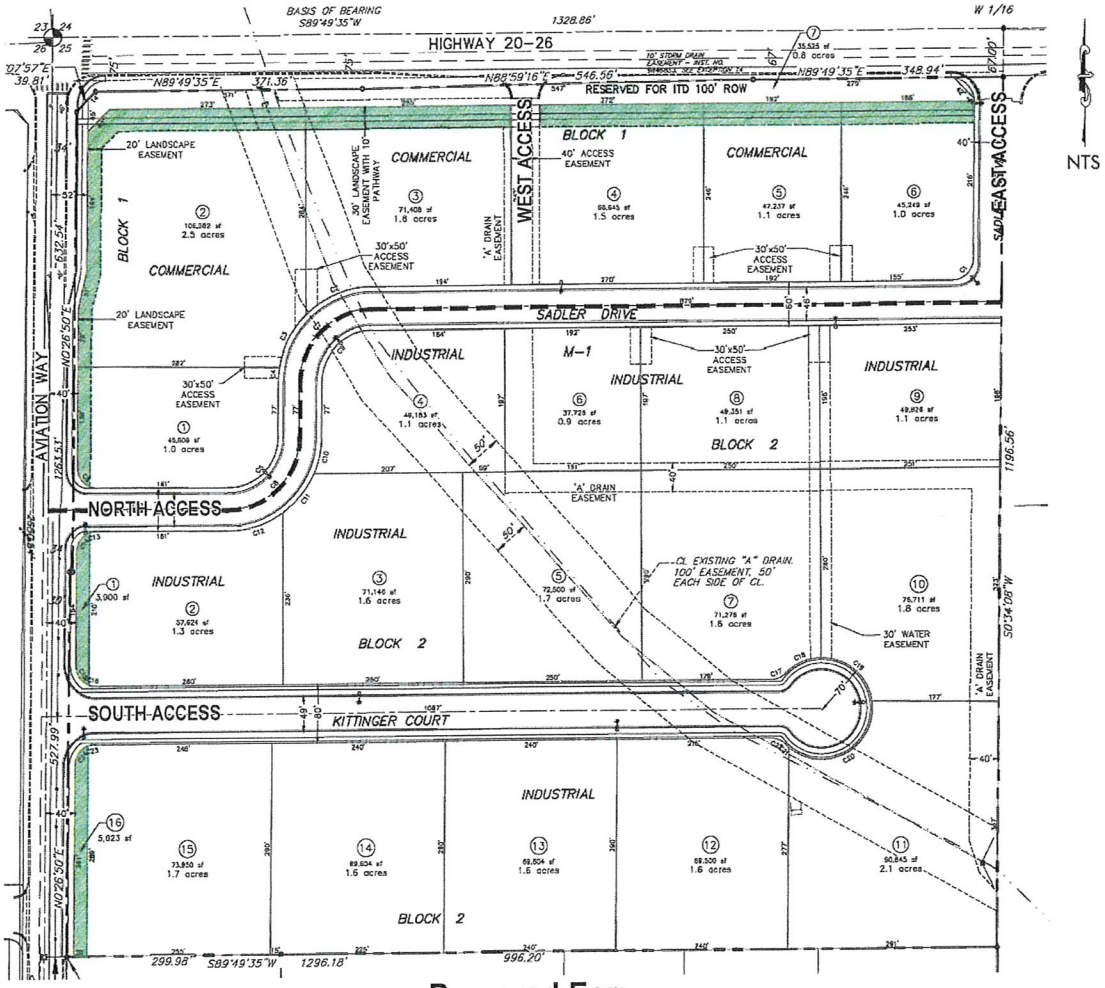
INCLUDED IN GENERAL ATTACHMENTS

TRAFFIC IMPACT STUDY - DRAFT

AeroSky Park Subdivision

Caldwell, Idaho

May 28, 2020



Prepared For:

CALDWELL IDAHO

Prepared By:

GR ENGINEERING, INC.

181 East 50th Street
Garden City, ID 83714
(208) 841-4996

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EXECUTIVE SUMMARY

Trilogy Development, Inc. is planning to develop the AeroSky Park Subdivision located in the southeast quadrant of the Aviation Way and US 20/26 intersection in Caldwell, Idaho, as shown in **Figure 1.1**. The City of Caldwell (City) retained CR Engineering, Inc. to prepare a traffic impact study (TIS) for the proposed development. The scope of this TIS was determined through coordination with the City and was prepared in accordance with their requirements.

The TIS evaluates the potential traffic impacts resulting from background traffic growth, in-process developments in the area, and the proposed development, and makes recommendations to mitigate the impacts if needed. Traffic impacts were evaluated for the following analysis years and traffic conditions:

- 2020 Existing traffic
- 2025 Build-out year background traffic
- 2025 Build-out year total traffic

1.0 Proposed Development

1.1 AeroSky Park Subdivision is a proposed multi-use commercial development with approximately 184,000 square of industrial space and 77,000 feet of commercial space. The expected build-out year is 2025 but may change depending on the market conditions.

1.2 Based on the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition, the proposed development is estimated to generate approximately 5,788 trips per weekday, 260 trips in the AM peak hour, and 504 trips in the PM peak hour.

- All trips generated by the site were assumed to be made by personal and commercial vehicles for the traffic impact analysis
- Based on the ITE Trip Generation Handbook, the commercial portion of the development is expected to attract approximately 152 pass-by trips in the PM peak hour. No daily or AM peak hour pass-by rates are available in the trip generation manual and none were assumed in the traffic impact analysis.
- The estimated site traffic distribution patterns for the proposed development are:
  - 50% west of the site along US 20/26
  - 10% north of the site along Aviation Way
  - 10% south of the site along Aviation Way
  - 30% east of the site along US 20/26

1.3 The development is planning to have the following accesses to the transportation system:

- North Access on Aviation Way:
  - Located approximately 660 feet south of US 20/26 aligning with existing Flying J access to the west
    - Meets the City minimum driveway spacing on Aviation Way, a 35-mph minor arterial
  - Meets NCHRP Report 457 turn-lane guidelines for a southbound left-turn lane
    - Southbound left-turn lane needed when the development is fully built and generates approximately 500 peak hour trips
  - Expected to meet minimum operational thresholds under 2025 total traffic conditions

- South Access on Aviation Way:
  - Located approximately 280 feet south of the North Access and 270 feet north of the existing Truck and RV Wash access on the west side
    - Does not meet the City minimum driveway spacing on Aviation Way, a 35-mph minor arterial
  - A variance to the minimum spacing requirement should be considered to allow the proposed access location. The followings support the variance:
    - The proposed North Access aligns with an existing access to the west and cannot be adjusted

- The existing Truck and RV Wash access to the south functions as entering only, low-volume access, and is located on the west side of Aviation Way
- The proposed South Access is needed to serve the majority of the industrial use and is expected to carry low traffic volume

- Not expected to meet NCHRP Report 457 turn-lane guidelines
- Expected to meet minimum operational thresholds under 2025 total traffic conditions

- West Access on US 20/26:
  - Existing approach located approximately 1/8-mile (660 feet) east of Aviation Way
    - Meets ITD IDAPA spacing requirements onto US 20/26, a Statewide Route
  - Access will be restricted to right-in and right-out (RIRO) movements only with the US 20/26 widening to six lanes and divided median highway
  - Meets ITD's right-turn lane guidelines under 2025 total traffic conditions
    - The eastbound right-turn lane is needed when the development generates approximately 200 peak hour trips
      - 200 peak hour trips is equivalent to full build of industrial and 16,000 square feet of commercial space
  - Expected to meet minimum operational thresholds under 2025 total traffic conditions

- East Access on US 20/26:
  - Existing approach located approximately 1/4-mile east of Aviation Way and 660 feet east of the West Access
    - Meets ITD IDAPA spacing requirements onto US 20/26, a Statewide Route
  - Access will be restricted to RIRO movements only with the US 20/26 widening to six lanes and divided median highway
  - Meets ITD's right-turn lane guidelines under 2025 total traffic conditions
    - The eastbound right-turn lane is needed when the development generates approximately 400 peak hour trips
      - 400 peak hour trips is equivalent to full build of industrial and 77,000 square feet of commercial space
  - Expected to meet minimum operational thresholds under 2025 total traffic conditions

- The following existing approach will be removed:
  - One existing approach on Aviation Way located approximately 200 feet south of US 20/26

2.0 2020 Existing Traffic Conditions

2.1 With existing traffic conditions, the study area intersection of Aviation Way and US 20/26 currently meets minimum operational thresholds analyzed with the existing intersection control and lane configuration. As a result, no intersection improvements are needed to mitigate existing traffic conditions.

3.0 2025 Build-Out Year Background Traffic Conditions

3.1 2025 background traffic was estimated using the following annual growth rates based on the Community Planning Association of Southwest Idaho (COMPASS) forecasts:

- 8% on US 20/26
- 5% on Aviation Way

3.2 In addition to the traffic growth, four proposed in-process developments located in the vicinity of the project were also included in the background traffic:

- Voyage Crossing North Subdivision (160 single-family dwelling units, under construction)
- Marblefront Subdivision (187 single-family dwelling units)
- Vallivue Schools (1,400-student middle school and 850-student elementary school, under construction)
- Marblefront West Subdivision (132 single-family dwelling units)

3.3 The following roadway and intersection improvements are expected to be constructed by 2025 as programmed in the ITD Idaho Transportation Investment Program (ITIP), *Chinden, I-84 to Middleton, Canyon Co, Key No. #22165*, and were included in the 2025 background traffic impact analysis.

- Widen US 20/26 to a six-lane divided highway from I-84 to Middleton Road
- Widen and upgrade signal at US 20/26 and Aviation Way intersection with the following lanes:
  - Southbound approach – One left turn, one through, and one right-turn lane
  - Northbound approach – One left-turn lane and one shared through/right-turn lane
  - Eastbound approach – one left-turn lane, two through lanes, and one shared through/right-turn lane
    - The existing second eastbound left-turn lane will be striped out and there will be only one receiving lane on Aviation Way to the north
  - Westbound approach – one left-turn lane, three through lanes, and one right-turn lane

3.4 With 2025 background traffic and ITIP programmed improvements, the study area intersection of Aviation Way and US 20/26 is expected to exceed ITD's minimum operational thresholds. No additional improvements beyond the ITIP programmed improvements are recommended to mitigate 2025 background traffic operations.

- The overall intersection and all lane groups are expected to meet minimum operational thresholds, with the exception of one lane group:
  - The eastbound left-turn lane group is expected to operate with a v/c ratio of 0.94 during the PM peak hour, exceeding ITD's 0.90 threshold
  - This deficiency is expected to occur for a short period during the PM peak hour, and is expected to operate below 0.90 threshold for the rest of the day
  - The estimated 95th percentile queue length in the eastbound left-turn lane is approximately 425 feet during the PM peak hour, which is within the available storage length
- According to the ITIP proposed improvements at the Aviation Way and US 20/26 intersection, the eastbound approach is designed to accommodate dual eastbound left-turn lanes. One additional eastbound left-turn lane could be readily added when needed and once Aviation Way is widened to have two northbound receiving lanes.

4.0 2025 Build-Out Year Total Traffic Conditions

4.1 The AeroSky Park Subdivision is planning to construct a northbound right-turn lane at the Aviation Way and US 20/26 intersection as required by the City.

4.2 With 2025 total traffic, ITIP programmed improvements, and the City required improvements, the study area intersection of Aviation Way and US 20/26 is expected to continue to meet ITD's minimum operational thresholds, with the exception of the eastbound left-turn lane group during the PM peak hour. The eastbound left-turn lane group is expected to continue to operate with a v/c ratio of 0.94 and with an estimated 95th percentile queue length of 425 feet during the PM peak hour. As discussed above, no additional improvements beyond the ITIP programmed improvements and the City required northbound right-turn lane are recommended to mitigate 2025 total traffic operations.

- No site traffic is expected in the eastbound left-turn lane

1.0 INTRODUCTION

CR Engineering, Inc. has been retained to prepare a traffic impact study (TIS) for the proposed AeroSky Park Subdivision located in the southeast quadrant of the Aviation Way and US 20/26 intersection in Caldwell, Idaho. **Figure 1.1** shows the site location and its vicinity. The TIS evaluates the potential traffic impacts resulting from background traffic growth, in-process developments within the area, and the proposed development, and identifies improvements to mitigate the impacts if needed. The scope of this report was determined through coordination with the City of Caldwell (City) and was prepared in accordance with the City's requirements.

Figure 1.1 – Site Location and Vicinity

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1.1. Proposed Development

Figure 1.2 shows the preliminary site plan with the proposed land uses and site access locations. AeroSky Park Subdivision is a proposed commercial development estimated to contain approximately 184,000 square feet of industrial uses and approximately 77,000 square feet of commercial uses. No specific tenants were under contracts at the time of this study. The estimated build-out year of the development is 2025 but may change depending on the market conditions.

The existing site has two approaches on US 20/26 and one approach on Aviation Way. The proposed development is planning to maintain both existing approaches on US 20/26 located approximately 1/8-mile (660 feet) and 1/4-mile (1,320 feet) east of Aviation Way. The existing approach on Aviation Way will be removed. In its place, two new approaches are proposed on Aviation Way with one approach aligning with the existing Flying J access to the west. The northern approach provides access for the commercial land uses and some industrial land uses. The southern approach on Aviation Way provides access for the majority of the industrial land uses.

1.2. Study Approach

The study area, specific parameters, and requirements for the study were coordinated with the City of Caldwell staff. This study follows the City's requirements for transportation impact studies.

1.3. Study Area

The following study area intersections were identified for traffic impact analysis:

- Aviation Way and US 20/26 intersection
- All proposed site access intersections

1.4. Study Period

The analysis peak periods are AM and PM peak hours of operation of the transportation system. The analysis years and scenarios are:

- 2020 Existing traffic
- 2025 Build-out year background traffic
- 2025 Build-out year total traffic

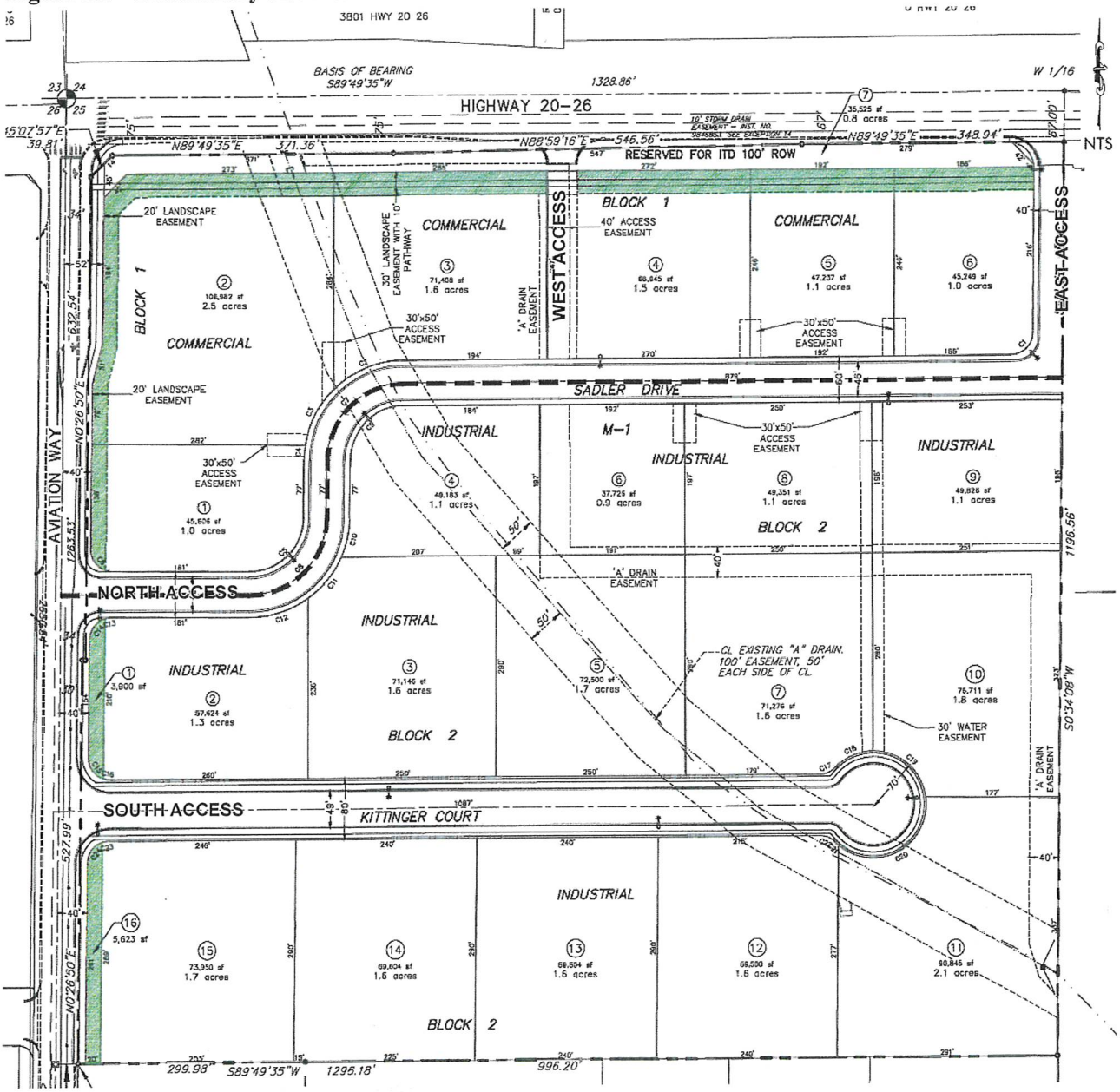
1.5. Analysis Methods and Performance Measure Thresholds

Intersection capacity analysis was performed using the Synchro 10 (Version 10.3.122.0), which utilizes the HCM 6th Edition (HCM6) methodologies. All parameters used in the analysis were based on existing data when available or Synchro default values, when not available. Signal timing data for the signalized intersection was obtained from ITD. Level of service (LOS) for intersections is based on the average delay of vehicles traveling through the intersection on a scale of A (best) to F (worst).

The study area roadways and intersections fall under the jurisdiction of the City and ITD. For this study, the minimum operational thresholds for the City roadways and intersections are LOS D with a maximum volume to capacity (v/c) ratio 1.00 for a lane group. For ITD intersections on US 20/26, the minimum operational thresholds are LOS D with a v/c ratio threshold of 0.90 for both the overall intersection and lane groups.

The HCM6 methodology in Synchro does not compute an overall intersection v/c ratio as a measure of effectiveness (MOE) for signalized intersections. For this study, the overall intersection v/c ratio was estimated using Synchro based on HCM 2000 methodology.

Figure 1.2 – Preliminary Site Plan



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2.0 EXISTING CONDITIONS

2.1 Roadway Network, Intersection Control, and Lane Configuration

A brief description of the existing roadways within the study area is summarized in **Table 2.1** below. The roadway functional classification is based on the 2019 City of Caldwell Functional Classification Map. **Figure 2.1** summarizes the study area intersection existing control and lane configuration.

Table 2.1 – Existing Roadway Characteristics

Roadway	Functional Classification	Number of Lanes	Posted Speed Limit (mph)	Pedestrian Facilities
Aviation Way	Minor Arterial	2	30 north / 35 south of US 20/26	• Sidewalks along developed frontages
US 20/26	Expressway (Statewide Route)	6 + median	35 west / 45 east of Smeed Pkwy	• Sidewalk on both sides east of Smeed Parkway

2.2 Existing Traffic Volumes

Weekday AM and PM peak hour traffic counts were obtained on March 4, 2020. The peak hour intersection turning movement counts were collected on a weekday for a 2-hour period at 15-minute intervals between 7:00 and 9:00 during the AM peak hour and between 4:00 and 6:00 PM during the PM peak hour. Existing turning movement counts are included in the appendix. Existing AM and PM peak hour traffic volumes are summarized in **Figure 2.2**.

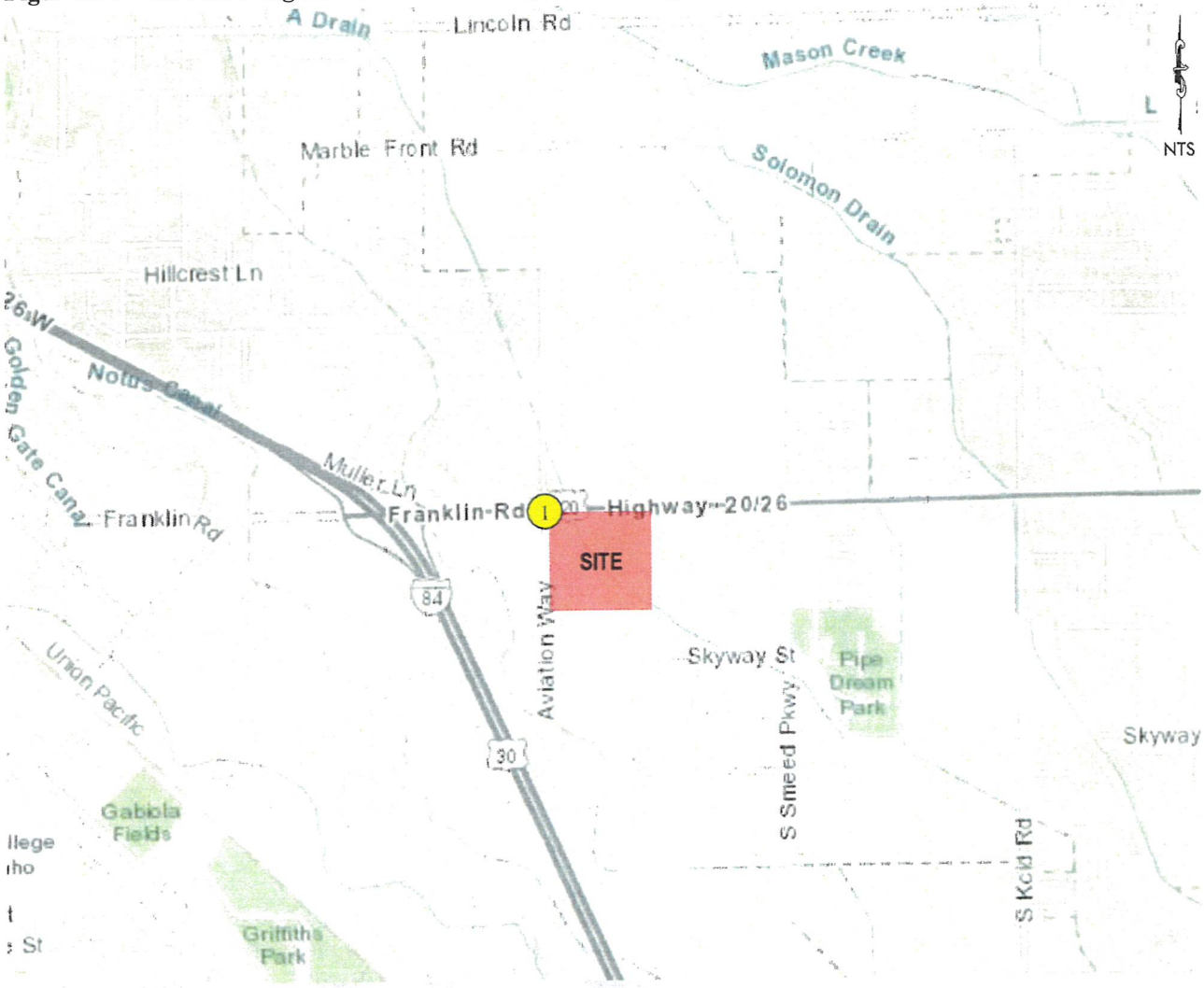
2.3 Intersection Crash Data

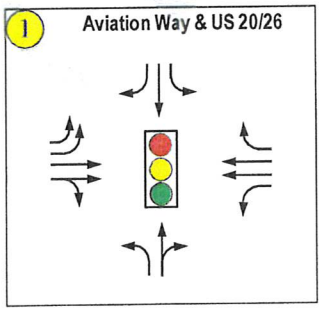
The most current five-year crash data (2014-2018) was obtained from the Local Highway Technical Assistance Council (LHTAC) website (http://gis.lhtac.org/safety/). **Table 2.2** summarizes the crash data for the study area intersection of Aviation Way and US 20/26. Based on the crash history, the study area intersection of Aviation Way and US 20/26 does not seem to have apparent safety issues to require improvements.

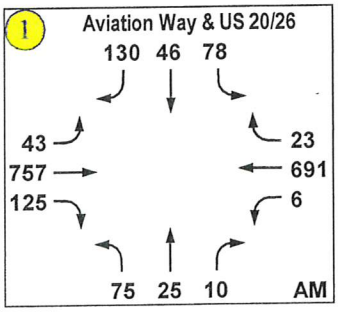
Table 2.2 – Intersection Crash Data (2014-2018)

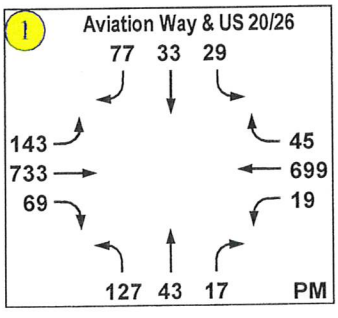
Intersection		Total Crashes	Crash Severity			Notes
			PDO	*Injury*	*Fatal*	
①	Aviation Way and US 20/26	8	*5*	*3*	*0*	• 2 (25%) Backed into vehicle • 3 (38%) Angle-turning crashes • 5 (63%) of crashes occurred in 2017

Figure 2.1 – 2020 Existing Intersection Control, Lane Configuration, and Peak Hour Traffic





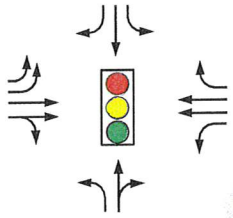




2.4 Intersection Operations

To determine the existing traffic operations, the study area intersection of Aviation Way and US 20/26 was analyzed with the existing intersection control and lane configuration with the existing peak hour traffic. Copies of the analysis reports are included in the appendix. **Table 2.3** summarizes the intersection capacity analysis results. The Aviation Way and US 20/26 intersection meets minimum operational thresholds with the existing lane configuration and 2020 existing traffic volumes.

Table 2.3 – Intersection Operations – 2020 Existing Traffic

Intersection		Control / Lane	Intersection or Lane Group	AM Peak Hour			PM Peak Hour		
				LOS	Delay [s/veh]	v/c Ratio	LOS	Delay [s/veh]	v/c Ratio
①	Aviation Way and US 20/26		Intersection	B	17	0.55	B	19	0.58
			EBL	C	29	0.44	C	30	0.69
			EBT	B	15	0.70	B	15	0.61
			EBTR	B	15	0.70	B	15	0.61
			WBL	D	51	0.48	D	38	0.51
			WBT	B	15	0.60	B	18	0.67
			WBR	B	12	0.04	B	14	0.10
			NBL	C	20	0.27	C	21	0.40
			NBTR	C	22	0.16	C	22	0.23
			SBL	B	20	0.22	C	23	0.11
			SBT	C	22	0.20	C	26	0.22
			SBR	C	27	0.68	C	30	0.59

2.5 Intersection Mitigation

The Aviation Way and US 20/26 intersection currently operates at LOS B with an overall intersection v/c ratio of 0.58 or less during the peak hours with the existing lane configuration and intersection control, meeting minimum operational thresholds. As a result, no improvements are needed to mitigate 2020 existing traffic operations.

3.0 2025 BUILD-OUT YEAR BACKGROUND TRAFFIC CONDITIONS

3.1 Roadway Network

ITD is planning to reconstruct and widen US 20/26 from Smeed Parkway to Middleton Road, *Project #22165 Chinden: I 84 to Middleton, Canyon Co.* The project is scheduled for construction in the year 2022 and includes the following improvements:

- Widen US 20/26 to a six-lane divided highway with a center median
  - There will be median breaks to allow U-turns between Aviation Way and Smeed Parkway
- Upgrade traffic signals and lane configurations at existing signalized intersections
- Provide new traffic signals and lane configurations at unsignalized intersections
  - KCID Road and US 20/26 intersection
  - Ward Road and US 20/26 intersection
- Incorporate a 10-ft separated multi-use path along both sides of US 20/26

Smeed Parkway is planned to be extended from its existing terminus to Marble Front Road with the construction of the proposed Vallivue Schools and Marblefront West Subdivision. The proposed middle school is currently under construction at the time of this study. Aviation Way is planned to be extended from its existing terminus to Marble Front Road with build-out of Voyage Crossing Subdivision.

These improvements are expected to be completed by the 2025 build-out year and were assumed in the 2025 background traffic impacts analysis.

3.2 Background Traffic

Background traffic growth from 2020 to 2025 was estimated by extrapolating the existing traffic counts with the following annual growth rates:

- 8% on US 20/26
- 5% on Aviation Way

These annual traffic growth rates are based on COMPASS forecasts between 2019 and 2025. COMPASS forecasts are included in the appendix. In addition to the annual traffic growth, off-site traffic generated by four in-process developments in the area was included in 2025 background traffic. **Figure 3.1** shows the location of the off-site developments in the area, which are:

- Voyage Crossing North Subdivision (under construction)
  - A residential development located in the southeast quadrant of the Aviation Way and Marble Front Road intersection with 160 single-family dwelling units.
- Marblefront Subdivision
  - A residential development located in the southwest quadrant of the KCID Road and Marble Front Road intersection with 187 single-family dwelling units.
- Vallivue Schools (under construction)
  - A 1,400-student middle school and 850-student elementary school located east of Smeed Parkway
- Marblefront West Subdivision
  - A residential development located in the southwest quadrant of the Smeed Parkway and Marble Front Road intersection with 132 single-family dwelling units

Traffic data for these in-process developments were obtained from their traffic impact study reports. The off-site traffic is added to the forecasted annual traffic growth to acquire the 2025 background traffic volumes. **Figure 3.2** summarizes the 2025 background traffic for the AM and PM peak hours.

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Figure 3.1 – 2025 Build-Out Year Background Roadway Network and In-Process Developments

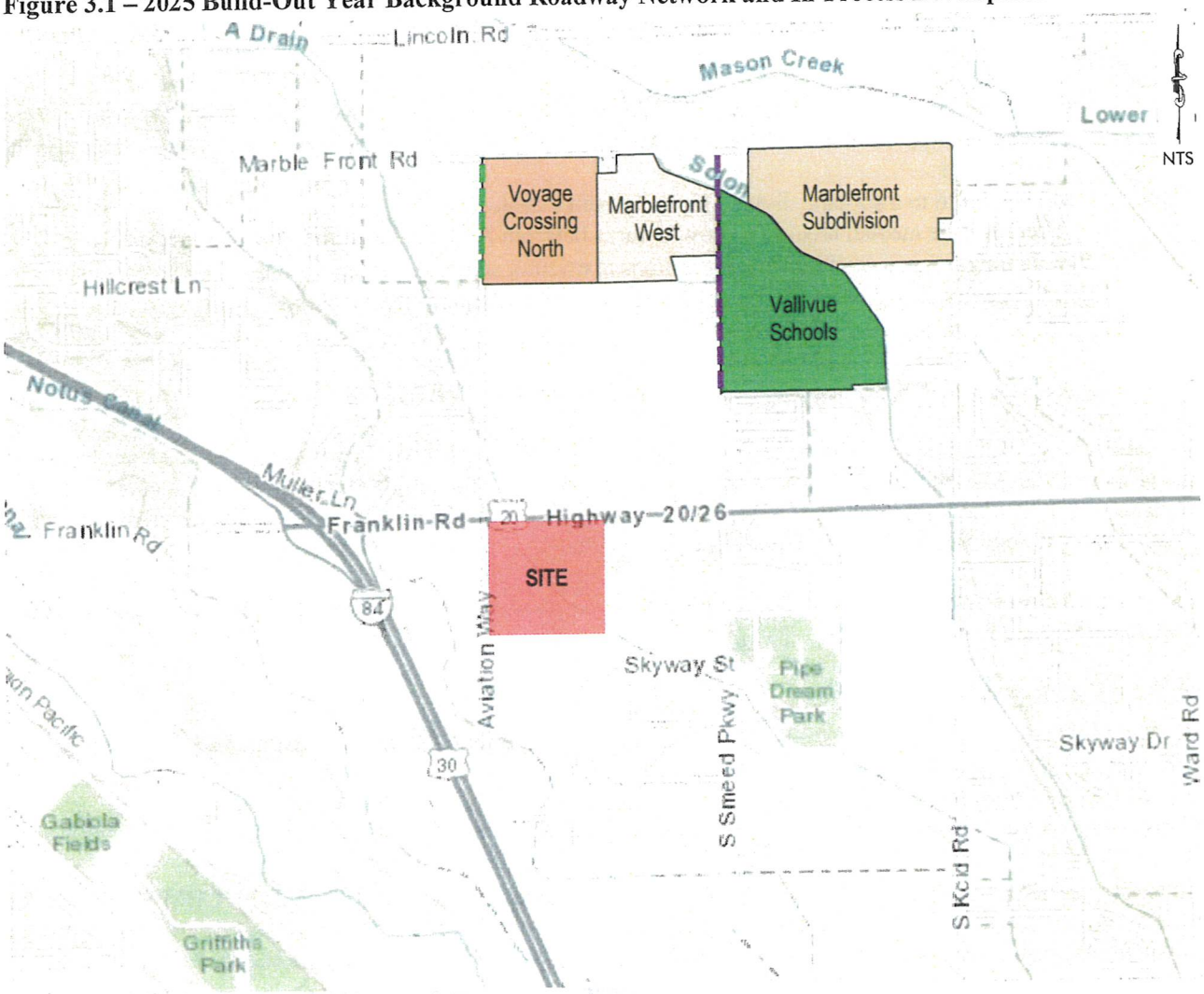
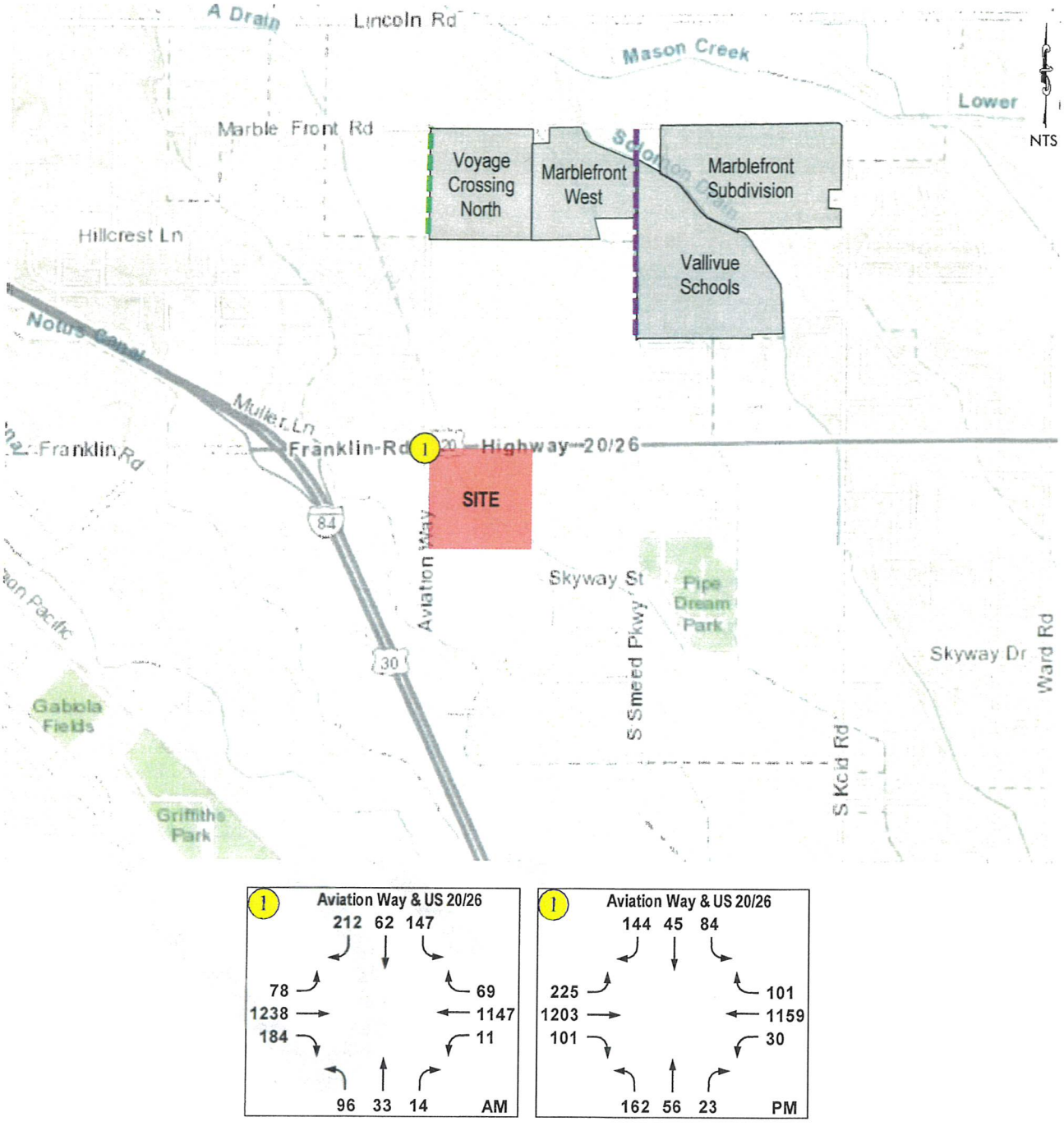


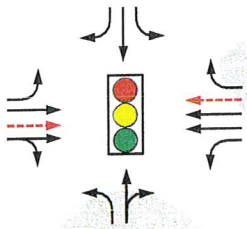
Figure 3.2 – 2025 Build-Out Year Peak Hour Background Traffic



3.3 Intersection Operations

To determine the 2025 background traffic impacts, the study area intersection was analyzed with the ITIP lane configuration as summarized in Section 3.1. Copies of the analysis reports are included in the appendix. **Table 3.1** summarizes the intersection capacity analysis results. Based on traffic analysis results, the study area intersection of Aviation Way and US 20/26 is expected to exceed ITD's minimum operational thresholds with the ITIP improvements. The overall intersection is expected to meet minimum operational thresholds. However, the eastbound left-turn lane group is expected to operate with a v/c ratio of 0.94 during the PM peak hour, which exceeds ITD's 0.90 threshold.

Table 3.1 – Intersection Operations – 2025 Build-Out Year Background Traffic

Intersection		Control / Lane	Intersection or Lane Group	AM Peak Hour			PM Peak Hour		
				LOS	Delay [s/veh]	v/c Ratio	LOS	Delay [s/veh]	v/c Ratio
①	Aviation Way and US 20/26	ITIP 	Intersection	B	13	0.54	B	18	0.66
			EBL	E	76	0.82	E	74	**0.94**
			EBT	A	1	0.52	A	1	0.41
			EBTR	A	1	0.52	A	1	0.41
			WBL	F	96	0.58	F	98	0.78
			WBT	A	1	0.45	A	1	0.46
			WBR	A	1	0.09	A	1	0.12
			NBL	D	50	0.46	E	80	0.81
			NBTR	D	54	0.18	E	61	0.38
			SBL	D	50	0.46	E	57	0.28
			SBT	D	54	0.22	E	62	0.25
			SBR	E	72	0.89	E	77	0.84

3.4 Intersection Mitigation

The study area intersection of Aviation Way and US 20/26 is expected to meet ITD's minimum operational thresholds with the exception of one lane group. The eastbound left-turn movements are expected to operate with a v/c ratio of 0.94 during the PM peak hour, which exceeds ITD's 0.90 threshold. This operational deficiency is expected to occur for short period during the PM peak hour, and is expected to operate below ITD's 0.90 v/c threshold for rest of the day. Additionally, the estimated 95th percentile queue length for the eastbound left-turn lane is approximately 425 during the PM peak hour, which is within the 500 feet of storage length that will be available with the ITIP improvements. As a result, no additional improvements beyond the ITIP improvements are proposed to mitigate 2025 background traffic operations.

According to the ITIP proposed improvements at the Aviation Way and US 20/26 intersection, the eastbound approach is designed to accommodate dual eastbound left-turn lanes. One of the eastbound left-turn lanes is not planned to be used upon opening as there is only one northbound receiving lane. Once Aviation Way is widened to have two northbound receiving lanes, the additional eastbound left-turn lane could be readily added.

4.0 2025 BUILD-OUT YEAR TOTAL TRAFFIC CONDITIONS

4.1 Site Traffic

4.1.1 Trip Generation

Site trip generation is estimated using the procedures recommended in the latest edition of the Trip Generation Manual (10th Edition), published by the Institute of Transportation Engineers (ITE), in the absence of site-specific data. **Table 4.1** summarizes the site trip generation. The proposed development is estimated to generate approximately 5,788 trips per weekday, 260 trips during the AM peak hour, and 504 trips during the PM peak hour.

Table 4.1 – Site Trip Generation Summary

Land Use	ITE Code	Size	Unit	Total Trips	Pass-by Rate	Pass-by Trips	Primary Trips Total	Entering		Exiting	
Weekday Daily (vpd)											
Industrial	110	184	TSF	755	--	--	755	50%	378	50%	377
Commercial	820	77	TSF	5,033	--	--	5,033	50%	2,516	50%	2,517
Weekday Daily Total Trips				**5,788**		--	**5,788**		**2,894**		**2,894**
Weekday AM Peak Hour (vph)											
Industrial	110	184	TSF	70	--	--	70	88%	62	12%	8
Commercial	820	77	TSF	190	--	--	190	62%	118	38%	72
Weekday AM Peak Hour Total Trips				**260**		--	**260**		**180**		**80**
Weekday PM Peak Hour (vph)											
Industrial	110	184	TSF	56	--	--	56	13%	7	87%	49
Commercial	820	77	TSF	448	34%	152	296	48%	142	52%	154
Weekday PM Peak Hour Total Trips				**504**		**152**	**352**		**149**		**203**

4.1.2 Trip Capture

The development is not expected to retain a significant number of trips within the site. No reduction for internally captured trips was assumed in the traffic analysis.

4.1.3 Pass-By Trips

Pass-by trips are estimated by using the pass-by rates for the Shopping Center land use (ITE Code 820) in the PM peak hour from the ITE Trip Generation Handbook 3rd Edition. The proposed commercial portion of the development is expected to attract approximately 152 pass-by trips during the PM peak hour. ITE does not have pass-by rates for the daily or AM peak hour for these land uses. No pass-by trips were assumed in the AM peak hour analysis.

4.1.4 Modal Split

For traffic analysis purposes, all trips generated by the development were assumed to be made by personal and commercial vehicles.

4.1.5 Trip Distribution and Assignment

Site traffic was distributed and assigned to the external roadway system based on current travel patterns, site layout, future developments within the area, and general location of the site within the area. **Figure 4.1** shows the expected site traffic distribution patterns for the proposed development. **Figure 4.2** summarizes the estimated AM and PM peak hour site traffic with the proposed accesses as shown in the site plan.

With the construction of the ITIP improvements, US 20/26 will have a divided median between signalized intersections. Therefore, the proposed accesses on US 20/26 will be restricted to right-in and right-out (RIRO) movements only.

4.2 Total Traffic

The 2025 site traffic is then added to the 2025 background traffic to obtain the 2025 total traffic. **Figure 4.3** summarizes the estimated 2025 peak hour total traffic at the study area intersections during the AM and PM peak hours.

Figure 4.1 – Site Traffic Distribution Patterns

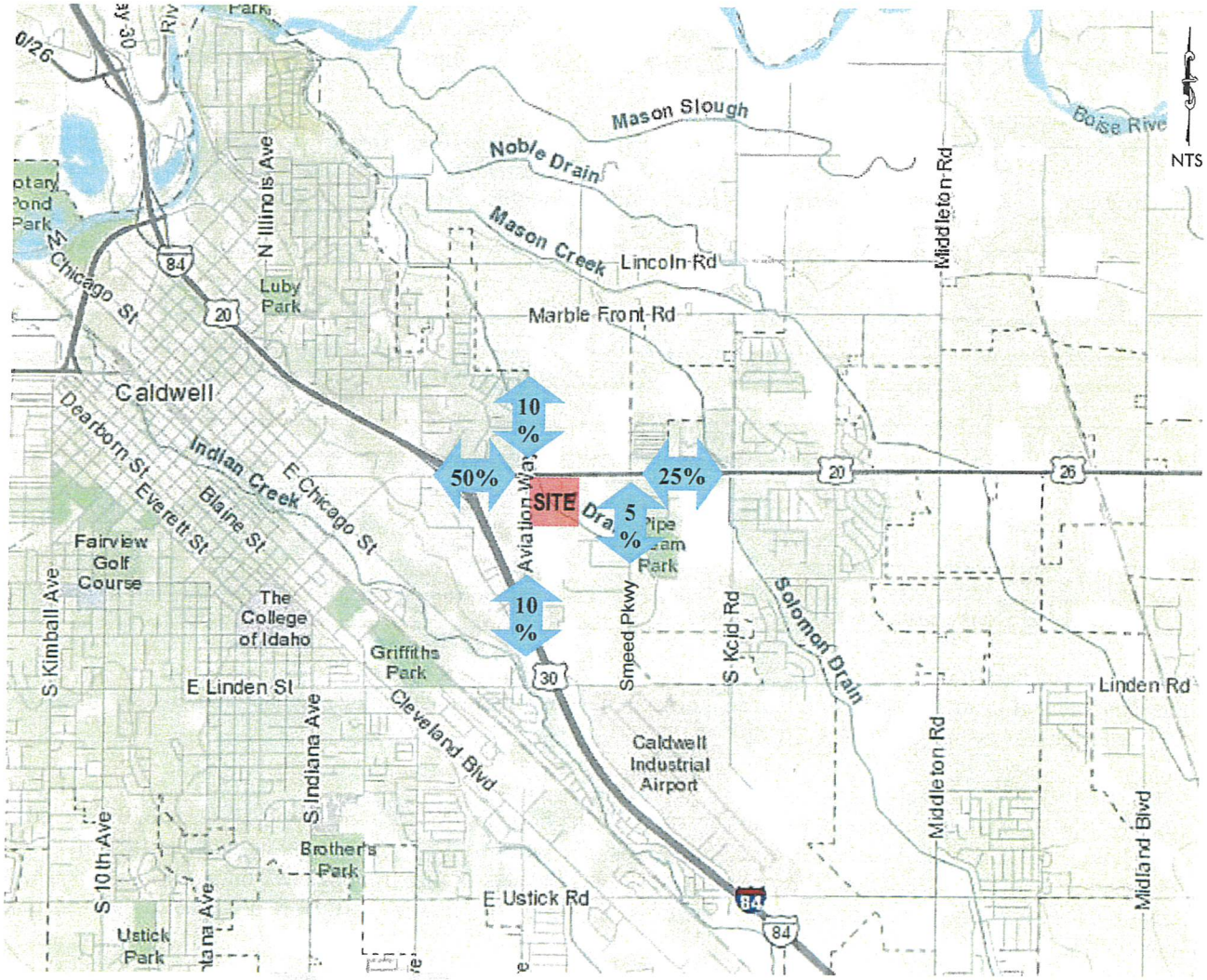
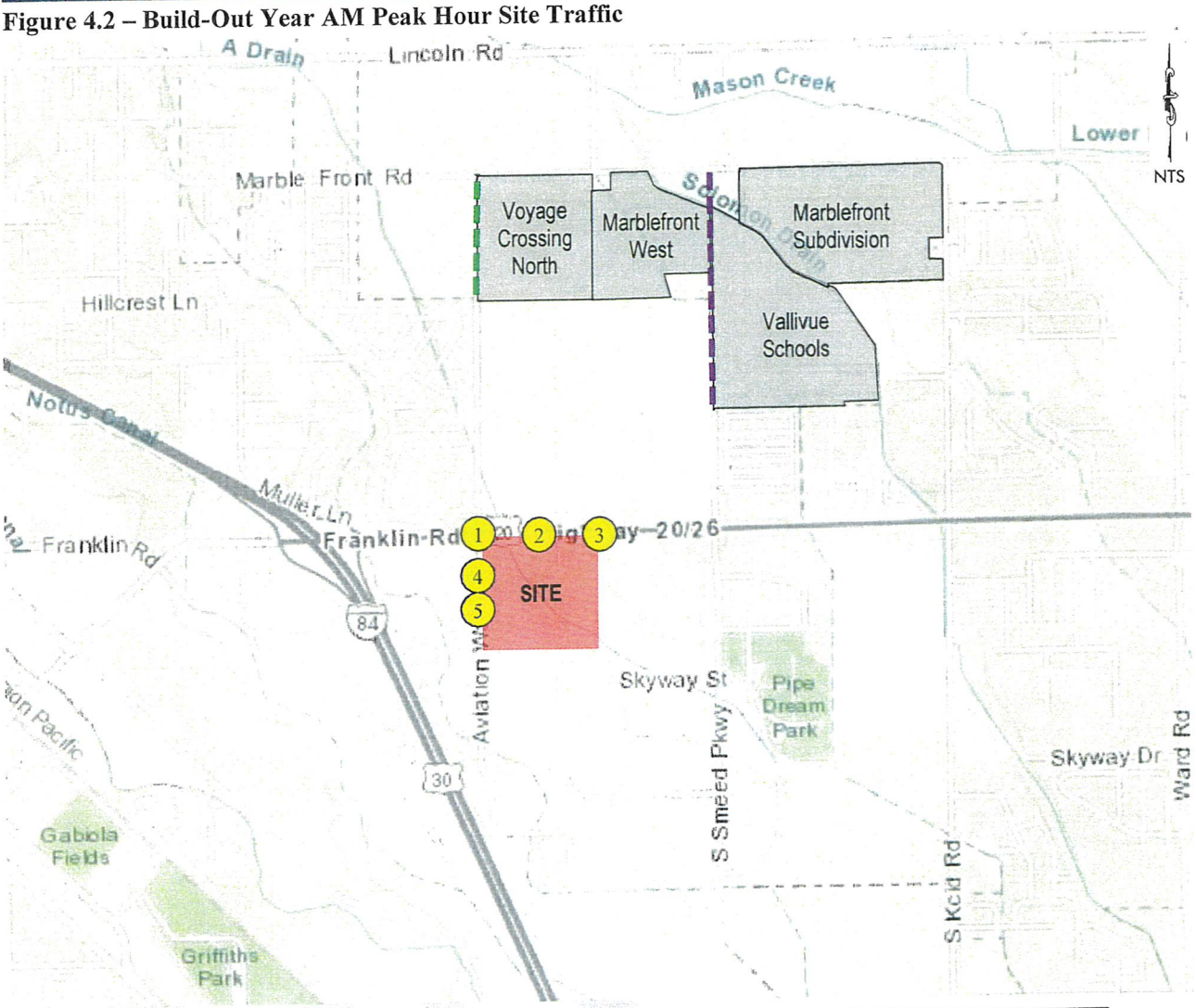


Figure 4.2 – Build-Out Year AM Peak Hour Site Traffic



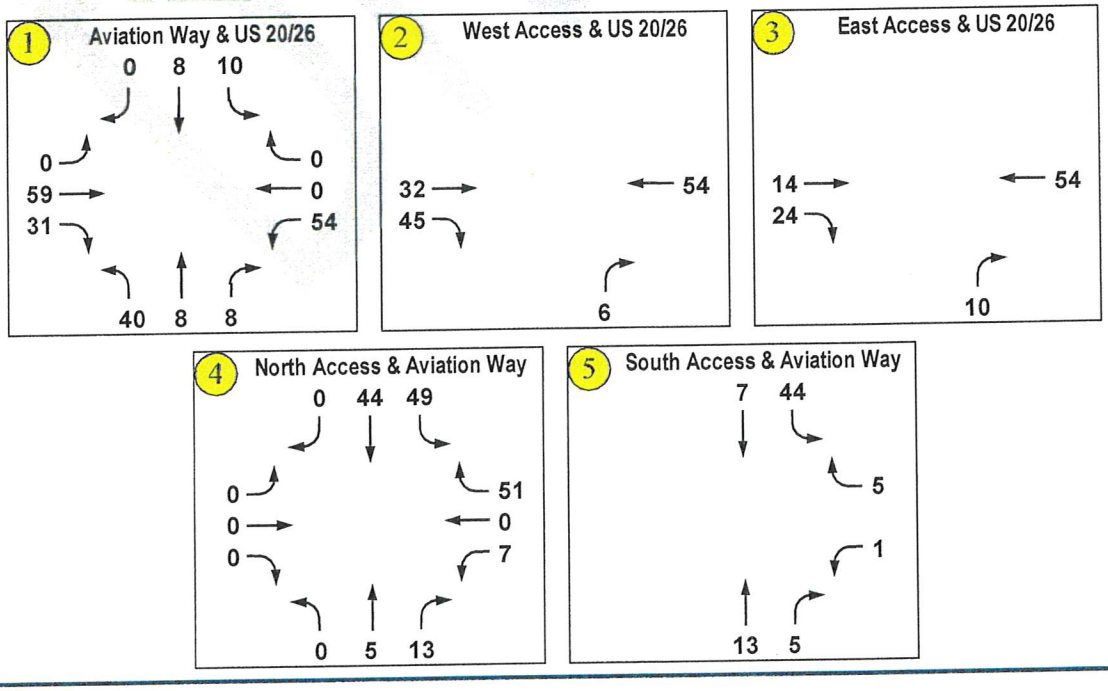


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Figure 4.3 – Build-Out Year PM Peak Hour Site Traffic

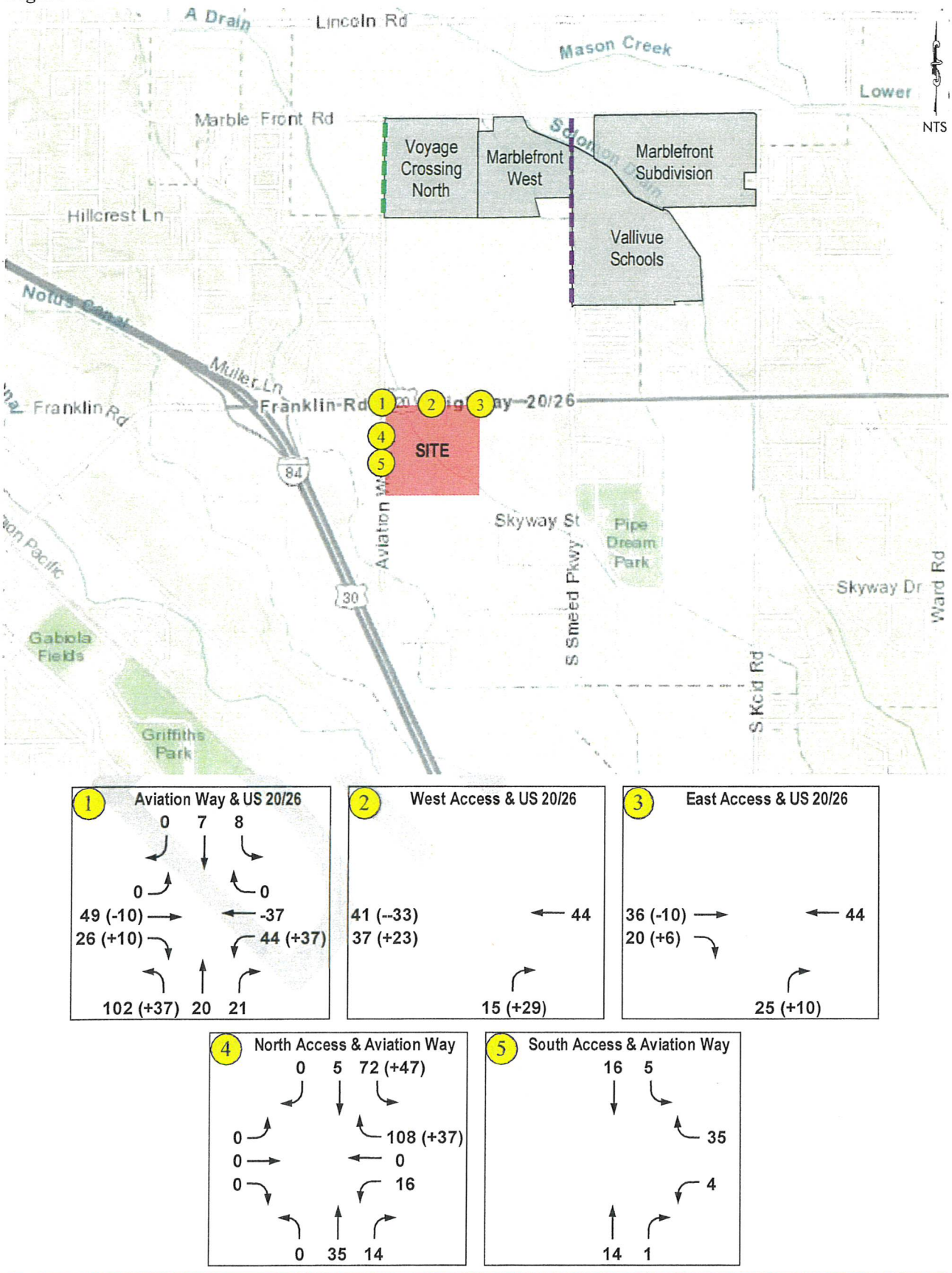
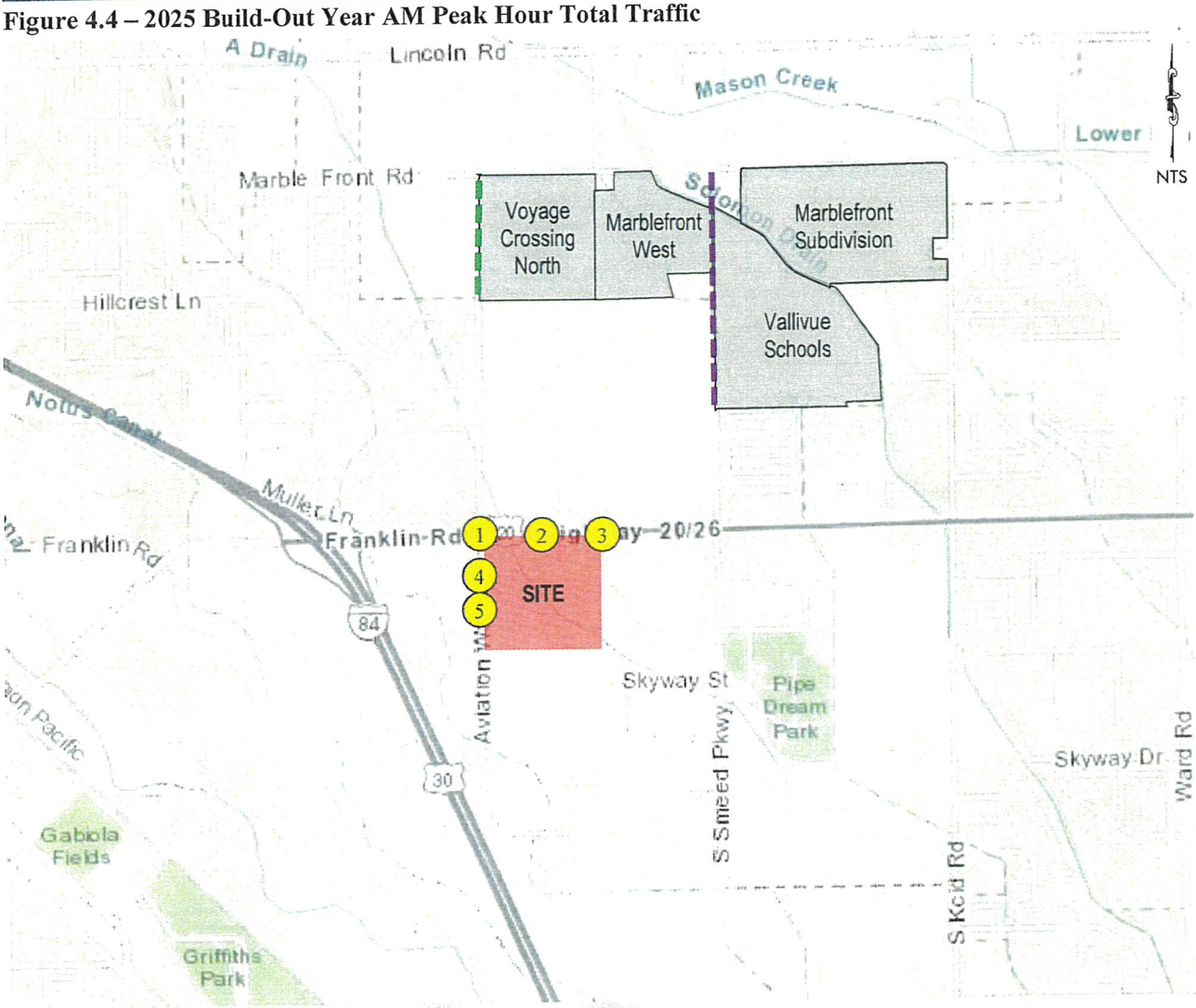


Figure 4.4 – 2025 Build-Out Year AM Peak Hour Total Traffic



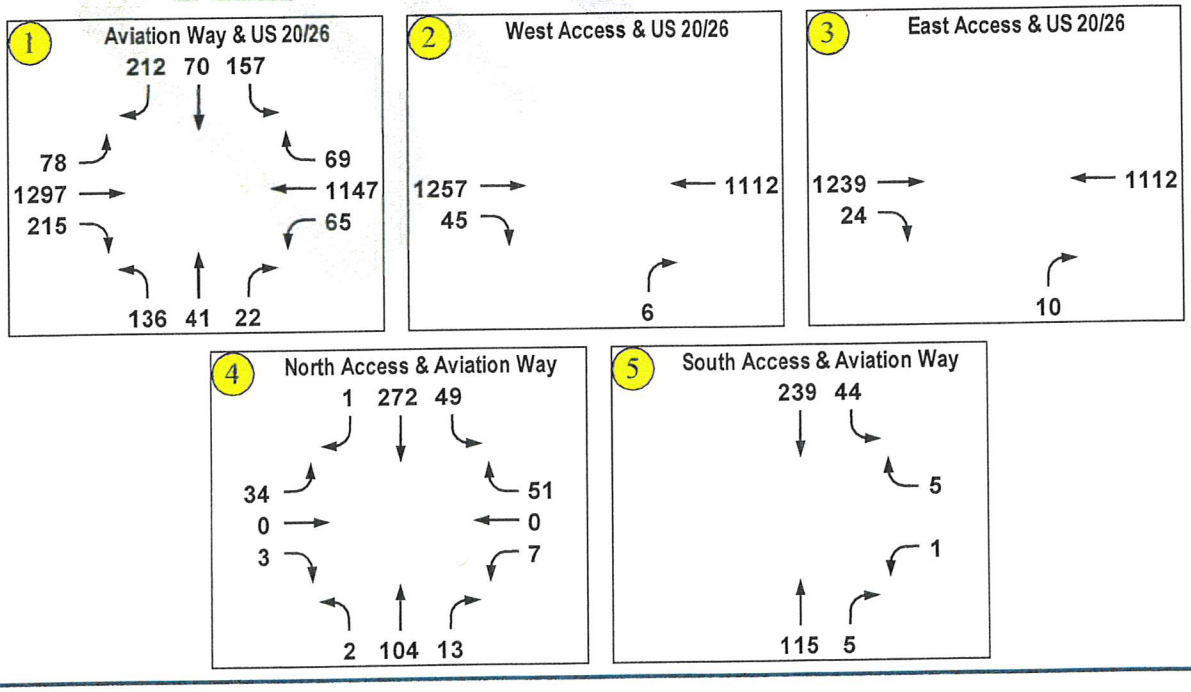


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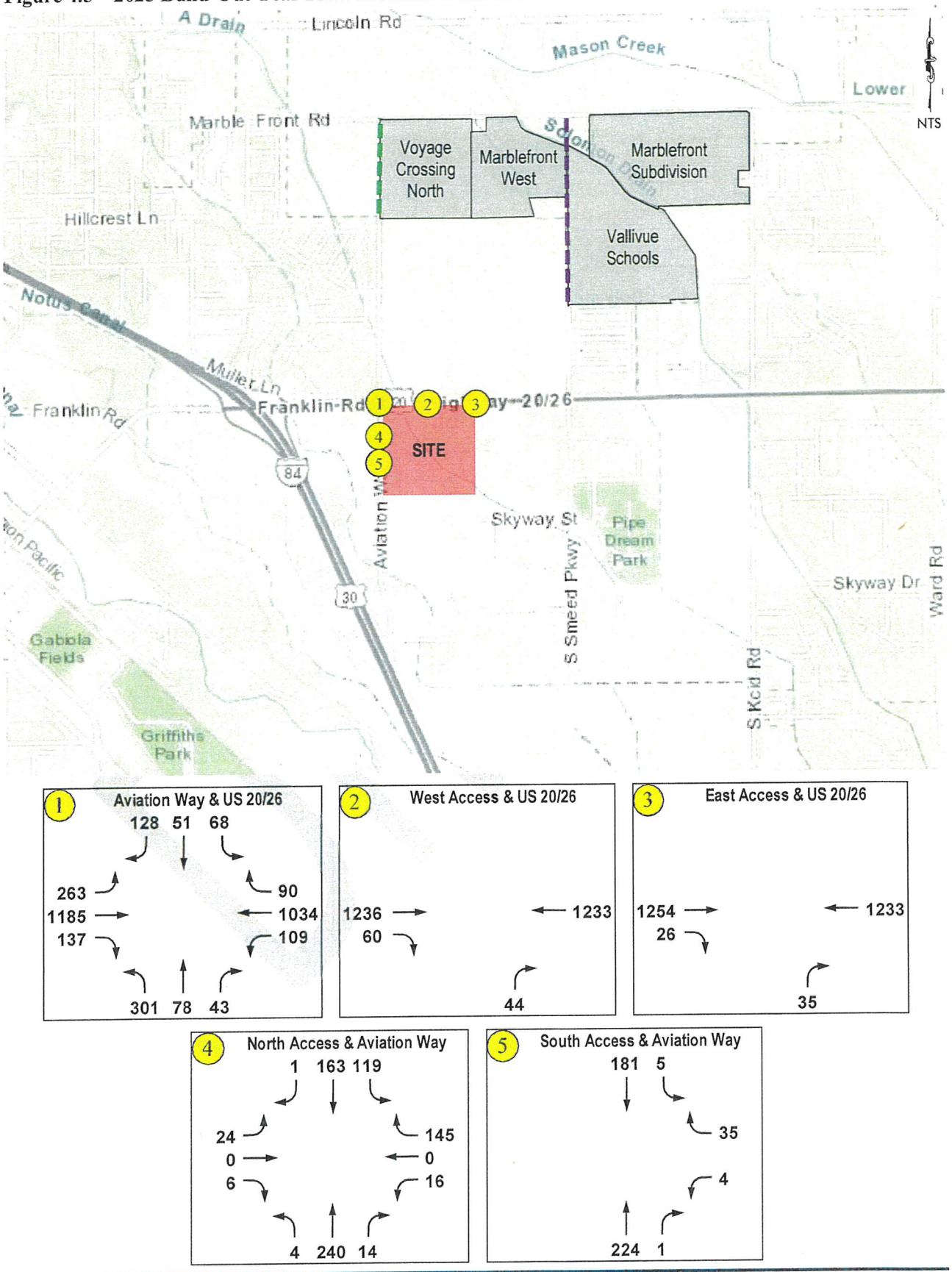
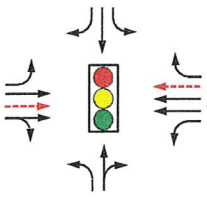
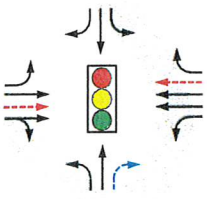
Figure 4.5 – 2025 Build-Out Year PM Peak Hour Total Traffic



4.3 Intersection Operations

To determine the 2025 total traffic impacts, the study area intersection of Aviation Way and US 20/26 was analyzed with the ITIP programmed improvements and with the northbound right-turn lane as conditioned to be constructed by the City of Caldwell. Copies of the calculations are included in the appendix. **Table 4.2** summarizes the intersection capacity analysis results. Based on the analysis results, the study area intersection of Aviation Way and US 20/26 is expected to meet minimum operational thresholds with and without the northbound right-turn lane, with the exception of the eastbound left-turn lane group. The eastbound left-turn movements are expected to operate with a v/c ratio of 0.94 during the PM peak hour.

Table 4.2 – Intersection Operations – 2025 Build-Out Year Total Traffic

Intersection		Control / Lane	Intersection Or Lane Group	AM Peak Hour			PM Peak Hour		
				LOS	Delay [s/veh]	v/c Ratio	LOS	Delay [s/veh]	v/c Ratio
1	Aviation Way and US 20/26	ITIP 	Intersection	B	15	0.58	C	31	0.79
			EBL	E	76	0.82	E	74	**0.94**
			EBT	A	1	0.57	A	5	0.63
			EBTR	A	2	0.58	A	6	0.63
			WBL	F	82	0.80	F	82	0.85
			WBT	A	1	0.45	C	31	0.61
			WBR	A	1	0.09	C	26	0.17
			NBL	D	51	0.53	D	53	0.77
			NBTR	D	55	0.24	D	46	0.31
			SBL	D	51	0.51	E	57	0.29
			SBT	D	55	0.25	E	63	0.29
			SBR	E	71	0.89	F	81	0.86
		ITIP + NBR 	Intersection	B	15	0.59	C	31	0.79
			EBL	E	76	0.82	E	74	**0.94**
			EBT	A	1	0.57	A	5	0.63
			EBTR	A	2	0.58	A	6	0.63
			WBL	F	82	0.80	F	82	0.85
			WBT	A	1	0.45	C	31	0.60
			WBR	A	1	0.09	C	26	0.17
			NBL	D	51	0.53	D	53	0.77
			NBT	D	54	0.15	D	44	0.18
			NBR	D	53	0.09	D	43	0.13
			SBL	D	51	0.48	E	57	0.29
			SBT	D	55	0.25	E	63	0.29
			SBR	E	71	0.89	F	81	0.86

4.4 Intersection Mitigation

The Aviation Way and US 20/26 is expected to continue to meet ITD's minimum operational thresholds under 2025 total traffic conditions, with the exception of the eastbound left-turn lane group operating with a v/c ratio of 0.94 during the PM peak hour. The estimated 95th percentile queue length for the eastbound left-turn lane is approximately 425 feet during the PM peak hour, which is within the 500 feet of available storage length that will be provided with the ITIP improvements. As discussed in the previous section, no additional improvements beyond the ITIP improvements are proposed to mitigate 2025 total traffic operations.

4.5 Site Access and Circulation

Site access spacing for the City of Caldwell is determined by Article 5's City Access Policy Standards which states, "The city access control standards for state administered highways referenced in this subsection (2) and other surface streets shall not exceed those adopted by Ada County highway district (ACHD)". ACHD access spacing for a local road onto a minor arterial roadway away from a signalized intersection is 660 feet. Driveways spacing on a minor arterial roadway is 330 feet.

Figure 4.6 shows the proposed site access locations and internal circulation. The north access is located approximately 660 feet south of US 20/26 and proposed to align with the Flying J access to the west. The proposed north access location meets minimum spacing requirements near a signal with one left-turn lane. The south access is located approximately 280 feet south of the north access and 270 feet north of the existing driveway for the Truck and RV Wash, which does not meet the 330 feet minimum spacing requirements. A variance to the minimum spacing requirement should be considered to allow the proposed access location. The followings support the variance:

- The proposed North Access is planned to align with an existing access to the west and cannot be adjusted
- The existing Truck and RV Wash access to the south functions as an entering only, low volume access, and is located on the west side of Aviation Way
- The proposed South Access is needed to serve the majority of the industrial land use and is expected to carry low traffic volume

The West Access is located 1/8-mile (660 feet) east of Aviation Way and the East Access is located at the quarter-mile location east of Aviation Way. Access spacing requirements along US 20/26 are governed by IDAPA 39.03.42 "*Rules Governing Highway Right-of-Way Encroaches on State Rights-of-Way*". According to the 2012 IDAPA Access Spacing Map, US 20/26 is classified as a Statewide Route with a posted speed limit of 35 mph along the site frontage and 45 mph east of the East Access. Spacing requirements for a statewide route in an urban with speeds less than or equal to 35 mph are as follows:

- 2,640 feet signalized road spacing
- 660 feet spacing between public roadways
- 660 feet driveway distance upstream from a public road intersection
- 250 feet driveway distance downstream from unsignalized public road intersection
- 250 feet spacing between unsignalized accesses other than public roads

Therefore, the proposed accesses on US 20/26 meet minimum spacing requirements.

The proposed site access intersections on Aviation Way were assessed for turn lanes based on NCHRP Report 457 *Evaluating Intersection Improvements: An Engineering Study Guide*. For the accesses on US 20/26, the need for turn lanes was assessed using ITD's right-turn lane guidelines. Turn lane warrant worksheets are included in the appendix. The following turn lanes are needed under 2025 total traffic operations:

- West Access and US 20/26 intersection
  - Eastbound right-turn lane
    - Turn lane needed when development generates 200 peak hour trips
      - Equivalent to full construction of industrial plus 55,000 square feet of commercial space
- East Access and US 20/26 intersection
  - Eastbound right-turn lane
    - Turn lane needed when development generates 400 peak hour trips
      - Equivalent to full construction of industrial plus 55,000 square feet of commercial space
- North Access and Aviation Way intersection
  - Southbound left-turn lane
    - Turn lane needed when development is built out and generates 500 peak hour trips

Table 4.3 summarizes the intersection capacity analysis results at the site access intersections under 2025 total traffic conditions with the warranted turn lanes. Based on the analysis results, all site access intersections are expected to meet minimum operational thresholds with the turn lanes needed under build-out conditions. All site access intersections are expected to meet the City's and ITD's minimum operational thresholds under build-out total traffic operations.

Table 4.3 – Site Access Intersection Operations

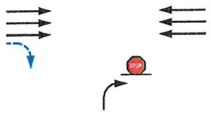
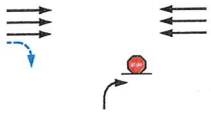
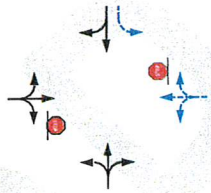
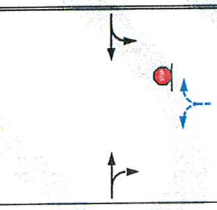
Intersection		Control / Lane	Intersection or Lane Group	AM Peak Hour			PM Peak Hour		
				LOS	Delay [s/veh]	v/c Ratio	LOS	Delay [s/veh]	v/c Ratio
2	West Access and US 20/26		EBT	-	-	-	-	-	-
			EBR	-	-	-	-	-	-
			WBT	-	-	-	-	-	-
			NBR	B	11	0.01	B	12	0.11
3	East Access and US 20/26		EBT	-	-	-	-	-	-
			EBR	-	-	-	-	-	-
			WBT	-	-	-	-	-	-
			NBR	B	11	0.02	B	11	0.08
4	North Access and Aviation Way		EB	C	19	0.13	C	16	0.10
			WB	A	10	0.08	B	11	0.08
			NB	A	9	< 0.01	A	8	< 0.01
			SBL	A	8	0.04	A	8	0.03
			SBTR	-	-	-	-	-	-
5	South Access and Aviation Way		WB	A	10	0.01	B	10	0.06
			NB	-	-	-	-	-	-
			SB	A	8	0.04	A	8	0.01

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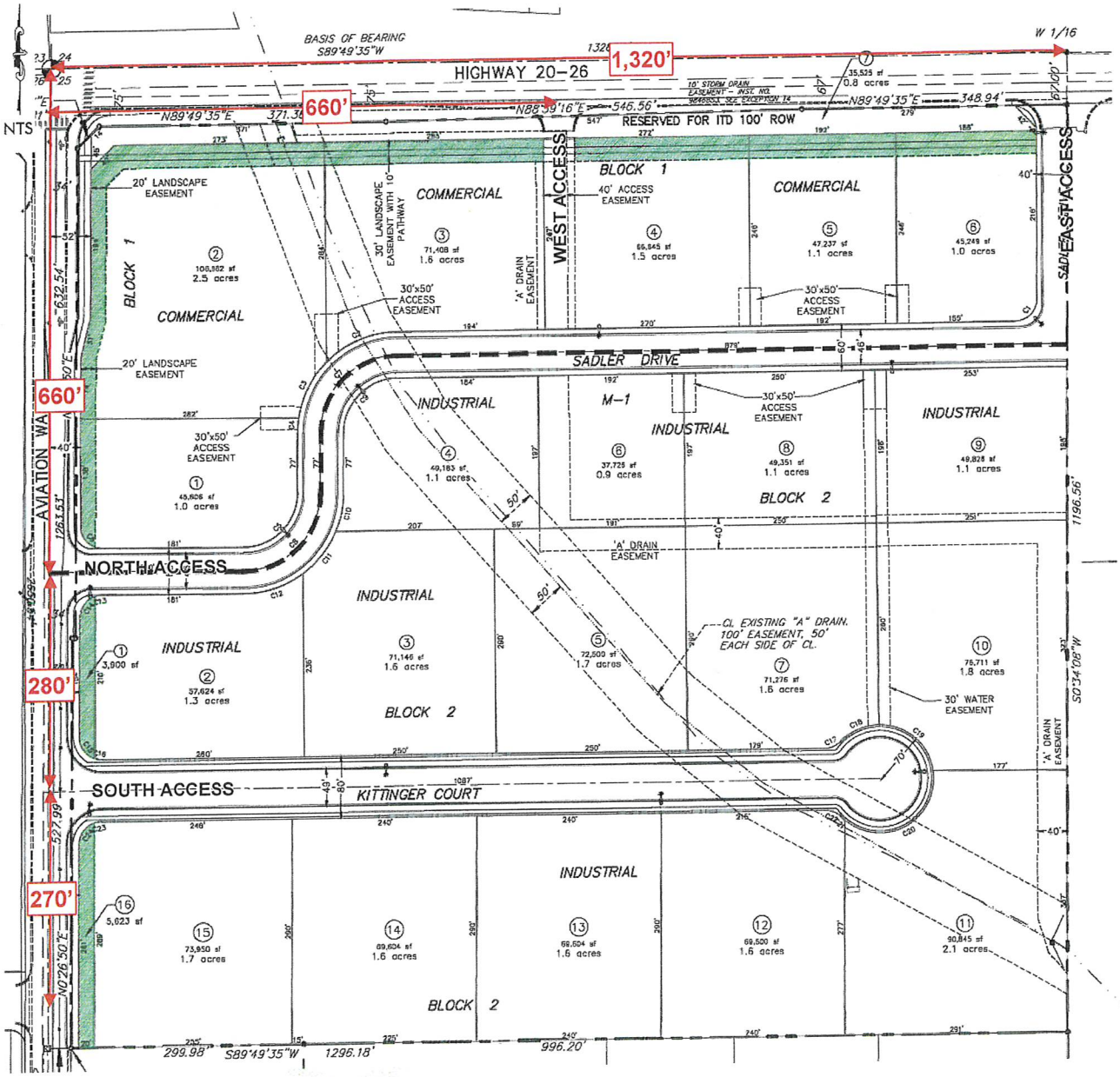
Figure 4.6 – Site Access and Circulation



APPENDIX A: Traffic Counts

APPENDIX B: 2020 Synchro Reports

APPENDIX C: COMPASS Reports

APPENDIX D: 2025 Synchro Reports

APPENDIX E: Turn Lane Guidelines Worksheets