



SM ROCHA, LLC

TRAFFIC AND TRANSPORTATION CONSULTANTS

ACCEPTED for FILE
Engineering Review
09/19/2022 5:06:20 PM
EPC Planning & Community
Development Department

August 18, 2022

Jennifer Shagin
N.E.S. Inc.
619 N Cascade Avenue
Colorado Springs, CO 80903

**RE: Venetucci Farm AL 21-015 / Traffic Generation and Impact Analysis
El Paso County, Colorado**

Dear Jennifer,

SM ROCHA, LLC is pleased to provide traffic generation information for the development entitled Venetucci Farm. This development is located on the west side of US 85 (Canam Highway) approximately one half-mile north of Main Street in El Paso County, Colorado.

The intent of this analysis is to present traffic volumes likely generated by the proposed development and consider potential impacts to the adjacent roadway network. This analysis is also provided to determine potential auxiliary lane requirements at site accesses along US 85.

The following is a summary of analysis results.

Site Description and Access

Land for the development is currently occupied by existing agricultural land uses including a single-family residence, as well as a flower garden and retail center with surrounding agricultural fields and ancillary structures. An Xcel Energy solar panel installation is also present within the development area. The site is surrounded by a mix of institutional, residential, and open space land uses. The proposed development is understood to entail the use of the existing farm area as an event venue with a focus on weddings. No major new construction is anticipated with existing farm structures being utilized as part of the event venue and additional facilities including tents, pavilions, and other temporary structures being catered to the site on an as needed basis.

Existing access to the development area is provided at the following locations: one full-movement access onto US 85 shared with an adjacent church land use and located approximately 1,500 feet north of Main Street (referred to as Church Access), and one additional full-movement access located approximately 2,500 feet north of Main Street (referred to as Farm Access).

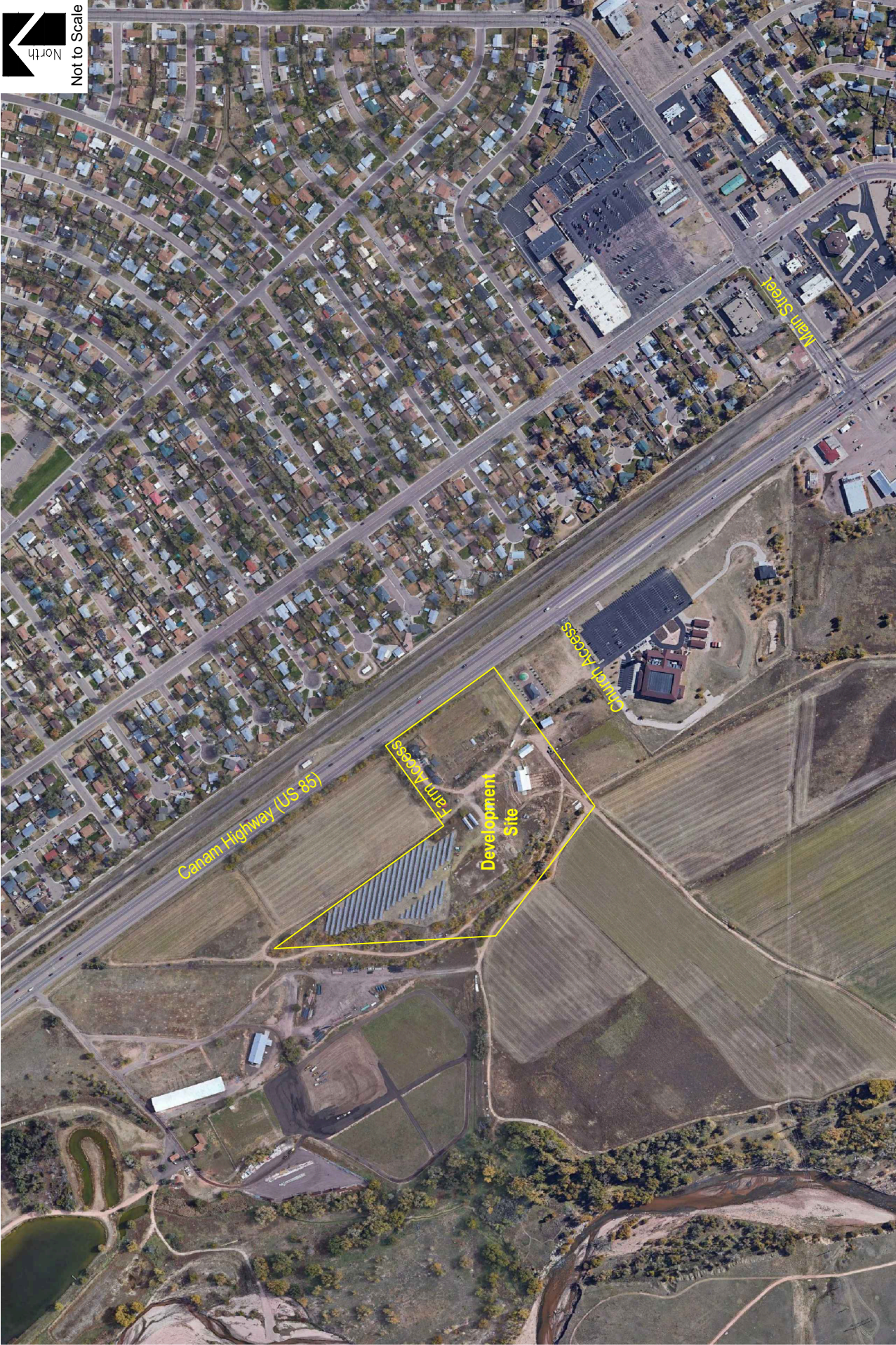
For analysis purposes it is understood that the Farm Access will be the primary access serving the development site. The Church Access is currently gated and is proposed to serve as an emergency access only. As such, this access is not included in this analysis.

General site and access locations are shown on Figure 1.

An existing and proposed land use concept plan, as prepared by N.E.S. Inc., is shown on Figure 2. This plan is provided for illustrative purposes.



Not to Scale



VENETUCCI FARM
Traffic Generation Analysis

SM ROCHA, LLC
Traffic and Transportation Consultants

Figure 1
SITE LOCATION

August 2022
Page 3



Vehicle Trip Generation

Standard traffic generation characteristics compiled by the Institute of Transportation Engineers (ITE) in their report entitled Trip Generation Manual, 11th Edition, are generally applied to proposed land uses in order to estimate the average daily traffic (ADT) and peak hour vehicle trips. A vehicle trip is defined as a one-way vehicle movement from point of origin to point of destination.

It is however noted that ITE does not provide trip generation data for an event venue land use. This is due to the intermittent use of event venues and the significant variability in the number of visitors depending on when an event is held and the type of event. Therefore, specific weekday and weekend trip generation rates for the proposed development were estimated based on anticipated venue operations.

The proposed event venue land use is understood to operate as a wedding destination with an anticipated event frequency of one wedding ceremony on a given day. Days of operation are anticipated to be limited to Friday, Saturday and Sunday. Wedding ceremonies may occur at various times throughout the day; however, it is expected that most will occur beginning at 5:00 PM and continue until late evening. The venue is proposed to host up to 150 people per event by Year 2023 including both guests and a limited number of on-site staff.

It is anticipated that the greatest period of site generated traffic entering or exiting the site will occur prior to the start of a wedding ceremony during the arrival of guests. Prior to the arrival of guests, it is expected that catering services and personnel involved in the setup and preparation of venue facilities will arrive and depart the site resulting in additional trips. However, these trips are anticipated to be fewer than those generated by event guests. On average, it is assumed that most guests attending the proposed venue will carpool. As such an assumed ratio of one vehicle for every two guests is applied for trip generation analysis purposes. Additionally, it is expected that the majority guests will all arrive within a 15-to-30-minute time frame and are expected to stay for the duration of the event. A 95 percent to 5 percent split in site generated trips is assumed for determining the number of entering versus exiting vehicles during the peak period of generation. The departure rate of guests is expected to be less than the arrival rate, as guests are considered likely to leave the venue at staggered times throughout the evening depending on their preference.

Pursuant to the indicated development operations, Table 1 summarizes the projected average daily traffic (ADT) and peak hour traffic volumes likely generated by the additional land use area proposed.

Table 1 – Trip Generation Summary

ITE CODE	LAND USE	SIZE	TOTAL TRIPS GENERATED			
			24 HOUR	PEAK HOUR OF GENERATION		
				ENTER	EXIT	TOTAL
-	Event Venue	150 ATTN	150	71	4	75
Total:			150	71	4	75

Key: ATTN = Number of Attendees.

Note: All data and calculations above are subject to being rounded to nearest value.

As Table 1 shows, the additional development area has the potential to generate approximately 150 daily trips with 75 of those occurring during the peak traffic period. The peak traffic period may vary throughout a given day but is generally considered to be off-peak compared to the peak hours of adjacent street traffic and adjacent businesses.

Adjustments to Trip Generation Rates

A development of this type is not likely to attract trips from within area land uses nor pass-by or diverted link trips from the adjacent roadway system, therefore no trip reduction was taken in this analysis.

Existing and Background Traffic Volumes

Existing weekday morning (AM) and afternoon (PM) peak hour traffic counts as well as weekend peak traffic counts were collected at the US 85 and existing Farm Access intersection. Average daily (24-hour) traffic volumes were also collected along US 85. Weekday counts were collected on Thursday, April 1, 2021, with AM peak hour counts being collected during the period of 7:00 a.m. to 9:00 a.m. and PM peak hour counts being collected during the period of 4:00 p.m. to 6:00 p.m. Weekend counts were collected on Sunday, April 4, 2021, with an observed peak hour occurring during the period of 11:00 a.m. to 1:00 p.m. Traffic count data is included for reference in Attachment A.

It should be noted that due to the effects of the COVID-19 pandemic, traffic volumes collected may not accurately represent peak hour and 24-hour traffic volumes under normal conditions. Therefore, in order to more accurately represent existing traffic volumes under normal conditions, average daily traffic volumes along US 85, provided from the CDOT Online Transportation Information System (OTIS), were referenced for Year 2021. Comparing the CDOT OTIS 24-hour volume to the collected count data concludes that the collected count data is comparable to normal traffic volumes. Therefore, collected count data is believed to adequately represent traffic volumes under normal conditions.

The proposed development is anticipated to achieve peak operation by Year 2023. To account for projected total traffic, including background traffic for Year 2023, a compounded annual growth rate was determined using traffic data provided by the Colorado Department of Transportation's (CDOT) Online Transportation Information System (OTIS), which anticipates a 20-year growth rate less than one percent. In order to provide for a conservative analysis, a conservative compounded annual growth rate of two percent was applied to existing traffic volumes. This annual growth rate is also consistent with regional growth projections and the level of in-fill development expected within the area. Background traffic is the traffic projected to be on area roadways without consideration of the proposed development addition. Background traffic includes traffic generated by development of vacant parcels in the area.

Trip Generation Distribution and Assignment

Overall directional distribution of site-generated traffic was determined based on existing area land uses, the site location within the County, and the available roadway network. General site-generated traffic is anticipated to be distributed along US 85 and assumed to be 50 percent to/from the north and 50 percent to/from the south.

Traffic assignment is how the site-generated and distributed trips are expected to be loaded on the roadway network. Applying assumed trip distribution patterns to site-generated traffic provides the peak hour trip volume assignments for the existing access.

Site-generated traffic was then added to background traffic projections for Year 2023 to develop total traffic projections. As previously noted, site peak hours of operation are anticipated to be off-peak compared to adjacent roadway peak traffic periods. However, in order to provide for potential overlap between event occurrences and adjacent businesses, afternoon peak hour traffic volumes collected from 4:00 to 5:00 PM during weekdays for adjacent street traffic were used to determine estimated total traffic volumes on a given weekday. For weekends, peak hour volumes from the adjacent Church land use collected on Sunday were used to establish estimated total traffic volumes for a given weekend. Some church activities are noted to occur on Saturday which may also overlap events, however these are expected to generate fewer trips compared to Sunday, and therefore Sunday analysis is presented as the greatest period of potential traffic generation between the two sites. It is noted that these assumptions present a worst-case scenario for peak weekday and weekend operations and actual volumes are likely to be less than those indicated.

Overall site-generated trip distribution patterns and assignments are shown on Figure 3. Projected Year 2023 total traffic volumes and intersection geometries are also shown on Figure 3.



Auxiliary Lane Analysis

Auxiliary lanes for site development accesses are to be based on the CDOT *State Highway Access Code* (SHAC).

The adjacent segment of Canam Highway (US 85) is categorized by CDOT as a Non-Rural Principal Highway (NR-A) and provides a posted speed limit of 50 MPH. Considering development build-out, an evaluation of auxiliary lane requirements, pursuant to Section 3.10(7), of the CDOT SHAC, reveals that a right turn deceleration lane at the Farm Access intersection with US 85 is required if the development's projected peak hour right turn ingress volume exceeds a threshold of 25 vehicles per hour (VPH). A left turn deceleration lane is required if the development's projected peak hour left turn ingress volume exceeds a threshold of 10 VPH. Additionally, a right turn acceleration lane is required if the development's projected peak hour right turn egress volume exceeds a threshold of 50 VPH.

As shown on Figure 3, projected development peak hour ingress volumes indicate that both right-turn and left-turn deceleration lanes are required at Farm Access based on assumed trip distribution. It is noted that a two-way-left-turn-lane (TWLTL) exists along US 85 which may be used by left-turning vehicles. However, pursuant to CDOT review, in order to provide improved vehicle guidance, it is anticipated that the TWLTL would be restriped to accommodate a dedicated one-way left-turn lane at the Farm Access. Projected peak hour egress volumes are shown to be less than CDOT's threshold for requiring a right-turn acceleration lane. However, due to the high traffic volumes and a high posted speed limit along Canam Highway, it is understood through conversation with CDOT Staff that a right-turn acceleration lane is to be required.

Pursuant to CDOT design criteria as defined in Section 4.8 of the CDOT SHAC, the anticipated right-turn and left-turn deceleration lanes are to provide 500 feet of deceleration length including a 180-foot taper assuming a lane width of 12 feet. An additional minimum 50 feet of storage at the end of the left-turn deceleration length is also recommended. The right-turn acceleration lane is to provide 760 feet of acceleration length including a 180-foot taper; however, it is noted that this will overlap the existing right-turn deceleration lane at Church Access. Therefore, it is anticipated that a continuous acceleration/deceleration lane is to be provided between the Farm Access and Church Access.

Development Impacts

Analysis results show that there is an increase in peak hour traffic volumes anticipated for the proposed development addition which are considered minor. These minor volumes are not likely to negatively impact operations of US 85 or other adjacent roadways or intersections.

Road Impact Fees

This site is subject to the El Paso County Road Impact Fee Program (Resolution 19-471), as amended and falls within the category of General Commercial. In coordination with site development and County Staff, it is anticipated that 4,173 square feet of on-site building area may be attributed to the proposed event venue land use. Based on this square footage, a resulting impact fee of \$20,375 is established. Obligation for payment will be selected at the final land use approval stage, which is understood to be concurrent with the site plan application.

Conclusion

This analysis assessed traffic generation for the Venetucci Farm development addition and potential impacts to the adjacent roadway network.

It is our professional opinion that the proposed site-generated traffic resulting from the additional building area is expected to create no negative impact to traffic operations for the surrounding roadway network and existing site accesses. Analysis of site-generated traffic concludes that proposed development traffic volumes are minor.

An evaluation of auxiliary lane requirements reveals that right-turn and left-turn deceleration lanes, as well as a right-turn acceleration lane, are required at the Farm Access.

We trust that our findings will assist in the planning and approval of the Venetucci Farm development addition. Please contact us should further assistance be needed.

Sincerely,

SM ROCHA, LLC

Traffic and Transportation Consultants



Stephen Simon, EIT
Traffic Engineer



Fred Lantz, PE
Traffic Engineer

Traffic Engineer's Statement

The attached traffic report and supporting information were prepared under my responsible charge and they comport with the standard of care. So far as is consistent with the standard of care, said report was prepared in general conformance with the criteria established by the County for traffic reports.



Fred Lantz, P.E. #23410

08/18/2022

Date

Developer's Statement

I, the Developer, have read and will comply with all commitments made on my behalf within this report.



Sam Clark
Pikes Peak Community Foundation
730 N Nevada Avenue
Colorado Springs, CO 80903

9/15/22

Date

ATTACHMENT A
Traffic Count Data



ALL TRAFFIC DATA SERVICES

(303) 216-2439

www.alltrafficdata.net

Location: 1 US 85 & FARM ACCESS AM

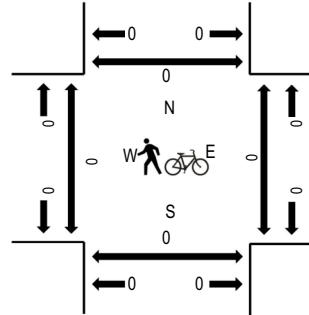
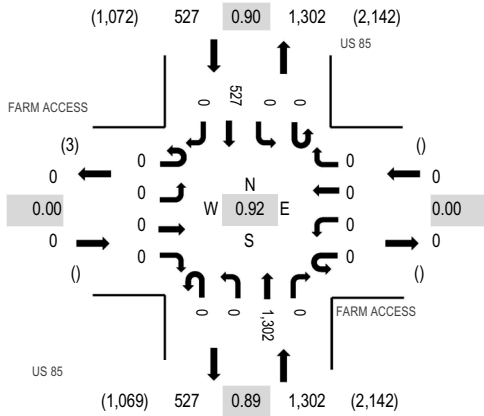
Date: Thursday, April 1, 2021

Peak Hour: 07:00 AM - 08:00 AM

Peak 15-Minutes: 07:30 AM - 07:45 AM

Peak Hour - All Vehicles

Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	FARM ACCESS Eastbound				FARM ACCESS Westbound				US 85 Northbound			US 85 Southbound				Total	Rolling Hour	Pedestrian Crossings					
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru			Right	West	East	South	North	
7:00 AM	0	0	0	0	0	0	0	0	0	0	293	0	0	0	0	110	0	403	1,829	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	332	0	0	0	0	123	0	455	1,764	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	367	0	0	0	0	132	0	499	1,677	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	310	0	0	0	0	162	0	472	1,522	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	195	0	0	0	0	141	2	338	1,385	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	221	0	0	0	0	147	0	368		0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	217	0	0	0	0	127	0	344		0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	207	0	0	0	0	127	1	335		0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	2,142	0	0	0	0	1,069	3	3,214		0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	1,302	0	0	0	0	527	0	1,829		0	0	0	0

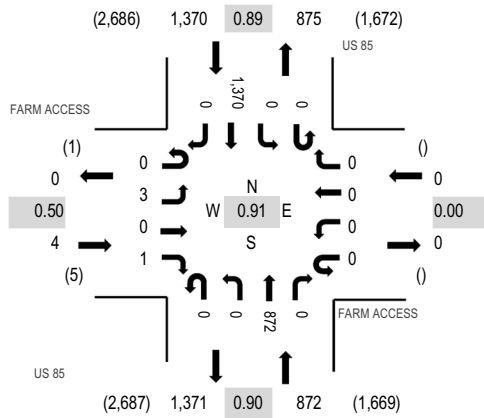
Location: 1 US 85 & FARM ACCESS PM

Date: Thursday, April 1, 2021

Peak Hour: 04:30 PM - 05:30 PM

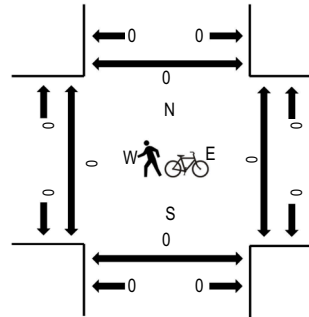
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	FARM ACCESS Eastbound				FARM ACCESS Westbound				US 85 Northbound			US 85 Southbound				Total	Rolling Hour	Pedestrian Crossings					
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru			Right	West	East	South	North	
4:00 PM	0	0	0	0	0	0	0	0	0	0	205	0	0	0	0	324	0	529	2,230	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	222	0	0	0	0	388	0	610	2,238	0	0	0	0
4:30 PM	0	1	0	1	0	0	0	0	0	0	224	0	0	0	0	324	0	550	2,246	0	0	0	0
4:45 PM	0	1	0	0	0	0	0	0	0	0	191	0	0	0	0	349	0	541	2,232	0	0	0	0
5:00 PM	0	1	0	0	0	0	0	0	0	0	214	0	0	0	0	322	0	537	2,130	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	243	0	0	0	0	375	0	618		0	0	0	0
5:30 PM	0	1	0	0	0	0	0	0	0	1	205	0	0	0	0	329	0	536		0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	164	0	0	0	0	275	0	439		0	0	0	0
Count Total	0	4	0	1	0	0	0	0	0	1	1,668	0	0	0	0	2,686	0	4,360		0	0	0	0
Peak Hour	0	3	0	1	0	0	0	0	0	0	872	0	0	0	0	1,370	0	2,246		0	0	0	0



ALL TRAFFIC DATA SERVICES

(303) 216-2439

www.alltrafficdata.net

Location: 1 US 85 & FARM ACCESS AM

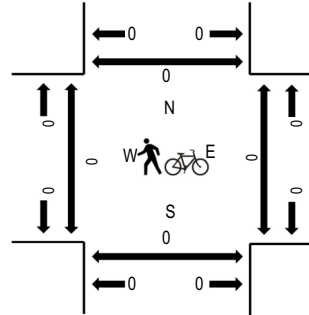
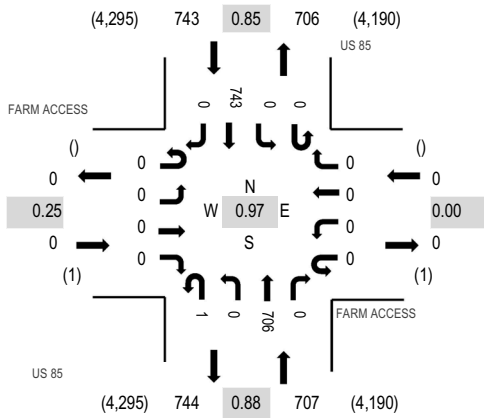
Date: Sunday, April 4, 2021

Peak Hour: 11:30 AM - 12:30 PM

Peak 15-Minutes: 11:30 AM - 11:45 AM

Peak Hour - All Vehicles

Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	FARM ACCESS Eastbound				FARM ACCESS Westbound				US 85 Northbound			US 85 Southbound				Total	Rolling Hour	Pedestrian Crossings				
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru			Right	West	East	South	North
7:00 AM	0	0	0	0	0	0	0	0	0	0	40	0	0	0	31	0	71	370	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	45	0	0	0	35	0	80	412	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	51	0	0	0	58	0	109	466	0	0	0	0
7:45 AM	0	1	0	0	0	0	0	0	0	0	61	0	0	0	48	0	110	506	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	65	0	0	0	48	0	113	553	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	81	0	0	0	53	0	134	609	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	87	0	0	0	62	0	149	680	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	81	0	0	0	76	0	157	780	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	89	0	0	0	80	0	169	908	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	103	0	0	0	102	0	205	987	1	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	134	0	0	0	115	0	249	1,045	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	159	0	0	0	126	0	285	1,094	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	134	0	0	0	114	0	248	1,115	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	145	0	0	0	118	0	263	1,143	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	137	0	0	0	161	0	298	1,239	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	164	0	0	0	142	0	306	1,313	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	143	0	0	0	133	0	276	1,376	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	176	0	0	0	183	0	359	1,449	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	1	0	200	0	0	0	171	0	372	1,450	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	186	0	0	0	183	0	369	1,427	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	140	0	0	0	209	0	349	1,412	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	180	0	0	0	180	0	360	1,417	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	173	0	0	0	176	0	349	1,382	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	154	0	0	0	200	0	354	1,356	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	181	0	0	1	172	0	354	1,395	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	156	0	0	0	169	0	325	1,404	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	155	0	0	0	168	0	323	1,403	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	165	0	0	0	228	0	393	1,392	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	155	0	0	0	208	0	363	1,357	1	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	159	0	0	0	165	0	324		0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	145	0	0	0	167	0	312		0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	145	0	0	0	213	0	358		0	0	0	0
Count Total	0	1	0	0	0	0	0	0	1	0	4,189	0	0	1	4,294	0	8,486		2	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	1	0	706	0	0	0	743	0	1,450		0	0	0	0

All Traffic Data Services
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Date Start: 01-Apr-21
Site Code: 5
Station ID: 5
HWY 85 N.O. CHURCH ACCESS

Start Time	01-Apr-21 Thu	NB	SB	Total						
12:00 AM		40	30	70						
01:00		31	19	50						
02:00		26	13	39						
03:00		45	21	66						
04:00		108	52	160						
05:00		377	239	616						
06:00		764	397	1161						
07:00		1283	520	1803						
08:00		843	537	1380						
09:00		748	589	1337						
10:00		774	682	1456						
11:00		763	552	1315						
12:00 PM		828	600	1428						
01:00		828	857	1685						
02:00		834	953	1787						
03:00		988	1227	2215						
04:00		839	1388	2227						
05:00		831	1303	2134						
06:00		652	1040	1692						
07:00		501	817	1318						
08:00		354	595	949						
09:00		263	416	679						
10:00		159	178	337						
11:00		98	96	194						
Total		12977	13121	26098						
Percent		49.7%	50.3%							
AM Peak	-	07:00	10:00	-	-	-	-	-	-	07:00
Vol.	-	1283	682	-	-	-	-	-	-	1803
PM Peak	-	15:00	16:00	-	-	-	-	-	-	16:00
Vol.	-	988	1388	-	-	-	-	-	-	2227
Grand Total		12977	13121							26098
Percent		49.7%	50.3%							
ADT		ADT 26,098		AADT 26,098						