



March 4, 2019

Mr. Ralph O. Bossert, P.E., R.L.S.

**Verde Engineering**

1109 North McLane Road

Payson, Arizona 85541

Subject: Traffic Impact Statement  
**Star School Regional Food Hub**  
Coconino County, Arizona

**INTRODUCTION**

The proposed Star School Regional Food Hub development is planned to consist of agricultural crops, classrooms, retail & office facilities, and a camping area located on the south side of Leupp Road in Coconino County, Arizona. The proposed project is planned to be completed in one phase.

This Traffic Impact Statement (TIS) has been performed in general accordance with the ADOT's *Traffic Engineering Guidelines and Procedures*, locally accepted standards and industry practice. The purpose of this TIS is to forecast the trip generation of the proposed Star School Regional Food Hub development and evaluate the existing site access driveway of the development.

**SITE DESCRIPTION**

The proposed Star School Regional Food Hub development will be located on an existing site which the existing buildings will be converted into the schools classrooms, retail and office facilities. The site is located on the south side of Leupp Road in Coconino County.

A vicinity map, aerial view, and site plan are attached.

As depicted in the site plan, the project is planned to have one full access driveway located on Leupp Road.

**EXISTING ROADWAY CONDITIONS**

**Leupp Road** consists of one travel lane in both the eastbound and westbound directions with no median or two-way-left-turn lane. The posted speed limit along Leupp Road within the vicinity of the site is 50 miles per hour. Based on ADOT's Transportation Data Management System website, there are approximately 3000 vehicles that travel on Leupp Road for a 24 hour period. The peak hour traffic volume is estimated as 10% of the 24 hour volume, which is 300 vehicles per hour during the peak period.

**SITE TRAFFIC GENERATION**

Estimates of the traffic volumes should have been determined from transportation planning data taken from the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 10<sup>th</sup> Edition, 2017; however, there are no Land Use Codes for this type of facility. But, based on

information from the owner of the proposed development, the facility will have four employees and there will be approximately 3 to 4 visitors at a time throughout the day with a maximum of 20 visitors (only occasionally).

Due to the volumes at the subject site, site generated traffic by the proposed development is not anticipated to cause detrimental impacts to the surrounding roadway network.

## DECELERATION LANE WARRANTS

### Right-turn Deceleration Lane Warrants

ADOT right-turn lane warrants from Subsection 245 of the *Traffic Engineering Guidelines and Processes* are used to determine the need for right-turn lanes at site accesses. In general, the primary determining factors to warrant a turn lane are the combination of through traffic and turning traffic volumes, posted speed, and the number of through lanes on the roadway.

ADOT right-turn lane warrants:

Peak Hour Traffic Volume on the Highway in Advancing Direction	Minimum Peak Hour Right-turn Traffic Volume				
	# of thru lanes per direction				
	1		2		3
	< 45 MPH Posted Speed	≥ 45 MPH Posted Speed	≤ 45 MPH Posted Speed	≥ 45 MPH Posted Speed	All Speeds
≤ 200					
201 – 300	-	30	-	-	-
301 – 400	-	19	-	55	-
401 – 500	85	14	-	30	-
501 – 600	58	12	140	25	-
601 – 700	27	9	80	18	-
701 – 800	20	8	53	15	-
801 – 900	12	7	40	12	-
901 – 1000	9	6	30	11	-
1001 – 1100	8	5	23	9	18
1101 – 1200	7	5	18	8	16
1201 – 1300	6	4	14	8	15
1301 – 1400	6	4	11	6	12
1400+	5	3	8	6	10

Base on peak hour volume in the advancing direction (estimated 150 vehicles) and the number of maximum visitors/employees (24), traffic volumes do not meet the ADOT right-turn deceleration lane warrant thresholds.

### Left-turn Deceleration Lane Warrants

ADOT left-turn lane warrants from Subsection 245 of the *Traffic Engineering Guidelines and Processes* are used to determine the need for left-turn lanes at site accesses. In general, the primary determining factors to warrant a turn lane are the combination of through traffic and turning traffic volumes, posted speed, and the number of through lanes on the roadway.

ADOT left-turn lane warrants:

Peak Hour Traffic Volume on the Highway in Advancing Direction	Minimum Peak Hour Left-turn Traffic Volume			
	# of thru lanes per direction			
	1		2 (Undivided)*	
	< 45 MPH Posted Speed	≥ 45 MPH Posted Speed	≤ 45 MPH Posted Speed	≥ 45 MPH Posted Speed
≤ 200	30	15	-	-
201 – 300	12	12	40	30
301 – 400	12	12	30	25
401 – 500	12	12	25	18
501 – 600	12	12	15	12
601 – 1000	12	12	10	8
1000+	12	8	10	8

Based on these criteria, a left-turn lane is not warranted at the site access.

### SIGHT DISTANCE

Clear sight triangles shall be provided at the site access. The sight triangles are to be determined in compliance with the procedures identified in the latest edition of AASHTO's publication *A Policy on Geometric Design of Highways and Streets*.

### CONCLUSIONS

The Star School Regional Food Hub project is forecasted to generate a maximum of 24 peak hour trips upon full build out. Considering the full build-out and traffic conditions, left-turn and right-turn deceleration lanes are not warranted at the site access per ADOT's guidelines. Due to the low forecasted peak hour volumes, site generated traffic by the proposed development is not anticipated to cause detrimental impacts to the surrounding roadway network.

Proper intersection sight distance and sight triangles shall be provided and maintained at the site access of the proposed development to give drivers exiting the site a clear view of oncoming traffic on Leupp Road. The landscape and hardscape within the sight triangles must not obstruct the driver's view of the adjacent travel lanes. To ensure adequate sight distances and sight distance triangles, AASHTO's *A Policy on Geometric Design of Highways and Streets* should be followed when designing the access and landscaping.



This Traffic Statement letter is based on a variety of assumptions related to the site plan and land use of the proposed development. If a larger building or alternate land use is ultimately proposed, these trip generation calculations and criteria evaluation may not remain valid.

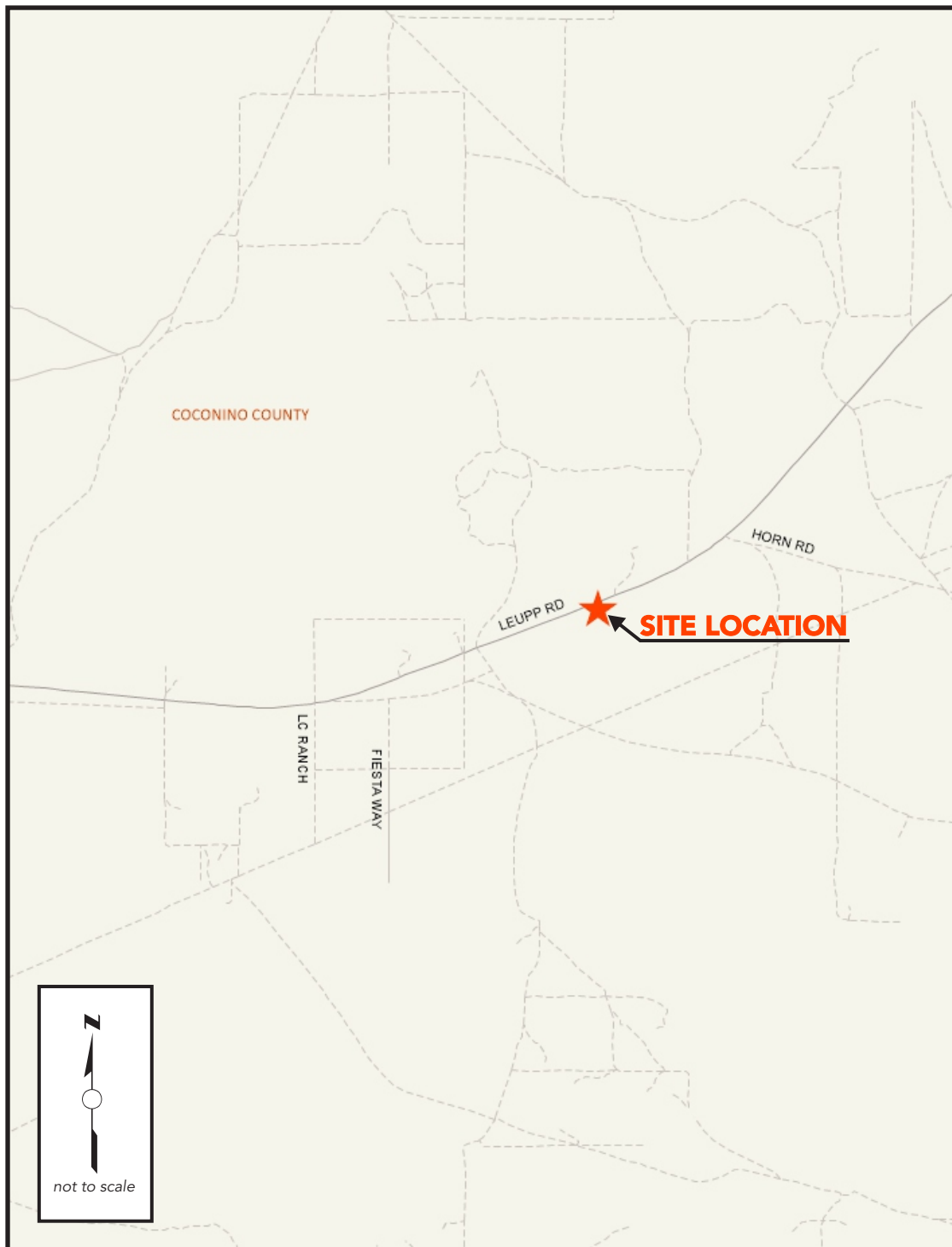
If you have any questions, please feel free to contact our office at (602) 265-6155.

Sincerely,  
*United Civil Group*



David Kinnear, PE  
Project Manager

Attachments:   Figure 1: Vicinity Map  
                      Figure 2: Aerial View  
                      Figure 3: Site Plan



**Figure 1:** Vicinity Map



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**Figure 2:** Aerial View

Conceptual Site Plan for:  
**STAR SCHOOL**  
**Regional Food Hub**  
 Coconino County, Arizona

Date: 10/18/2018

Note: This plan is conceptual and subject to change based on additional Engineer studies, site analysis and agency review.

Legend:

- Existing Building
- Proposed Building
- Shade Structure

prepared by:

**LVA**  
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 120 South Main Street  
 Tempe, Arizona 85281  
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**North**  
 Approximate Scale:  
 1"=20'

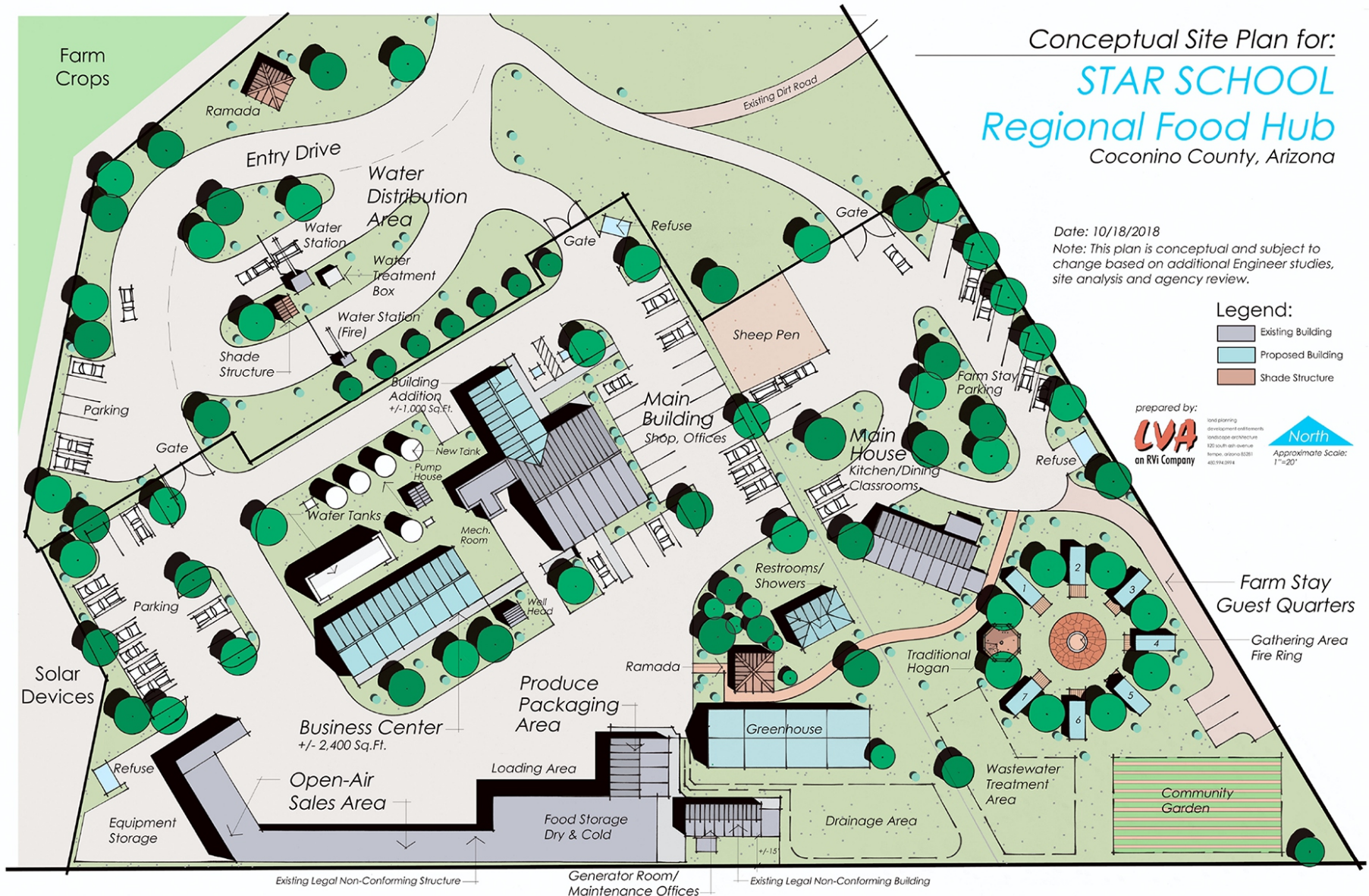


Figure 3: Site Plan