RTIP ID# *(required)* 20131504

TCWG Consideration Date March 22, 2016

Project Description *(clearly describe project)*

The proposed project is located in San Bernardino County within the City of Redlands. See Figures 1, 2 and 3, attached. The California Department of Transportation (Caltrans), in cooperation with the San Bernardino Associated Governments (SANBAG) and the City of Redlands, is proposing to improve the traffic operations on University Street at the Interstate 10 (I-10) interchange. The project would improve existing and future traffic operations within the project limits. The project limits are on University Street from Citrus Avenue to the I-10 westbound (WB) on-ramp/Central Avenue. The proposed project would reconfigure lanes on University Street, signalize University Street with the eastbound I-10 off-ramp and westbound I-10 on-ramp intersections, and modify the signals at the intersection of University Street and Citrus Avenue.

The Project would involve the following improvements:

University Street at I-10 WB On-Ramp/Central Avenue

- Signalize the intersection.
- Dual left-turn lanes northbound.
- Left-turn lane, shared through/right-turn lane, exclusive right-turn lane for southbound.
- Eliminate southbound through lane and northbound through lane.
- Protected left-turns for the northbound and southbound direction.

University Street at I-10 EB Off-Ramp

- Signalize the intersection.
- Left-turn lane and dual right-turn lanes for eastbound.

University Street at Citrus Avenue

- Signal modification – split phase the northbound and southbound movement.
- Left-turn lane, shared through/left-turn lane, and shared through/right-turn lane for southbound.
- Left-turn lane for northbound.
- Protected left-turns for all four approaches.

The proposed project is listed in the 2015 FTIP under Project ID 20131504 and in the 2012-2035 RTP/SCS under Project ID 4M07003 with the following description: "I-10 @ UNIVERSITY ST INTERCHANGE: INTERSECTION IMPROVEMENTS WITH ON/OFF RAMP WIDENING. (No capacity enhancements)." The project is exempt from regional emissions analysis under the 40 CFR 93.127, but is subject to local emissions analysis.

Type of Project *(use Table 1 on instruction sheet)*
Intersection signalization.

County	**Narrative Location/Route & Postmiles**
San Bernardino	The project site is located in the City of Redlands at the I-10/University Street interchange (PM31.02/31.32). **Caltrans Projects – EA#** 1E710

Lead Agency: SANBAG

Contact Person	**Phone#**	**Fax#**	**Email**
Keith Cooper	213-312-1752	213-312-1799	Keith.Cooper@icfi.com

Hot Spot Pollutant of Concern *(check one or both)* **PM2.5** X **PM10** X

Federal Action for which Project-Level PM Conformity is Needed *(check appropriate box)*

Categorical Exclusion (NEPA)	**EA or Draft EIS**	**FONSI or Final EIS**	**PS&E or Construction**	X **Other**

Scheduled Date of Federal Action: 2016

NEPA Assignment – Project Type *(check appropriate box)*

X Exempt	**Section 326 – Categorical Exemption**	**Section 327 – Non-Categorical Exemption**

Current Programming Dates *(as appropriate)*

	PE/Environmental	**ENG**	**ROW**	**CON**
Start	2015	2015	2016	2017
End	2017	2017	2017	2018

Project Purpose and Need (Summary): *(attach additional sheets as necessary)*
The purpose of the project is to improve roadway operations in the project vicinity. As indicated in Tables 1 and 2 below, traffic operations in 2018 and 2040 would be severely constrained if the existing configuration remains.

Surrounding Land Use/Traffic Generators *(especially effect on diesel traffic)*
Land uses surrounding the project footprint include a multi-family residential community, single-family residences, a school bus parking facility, and the athletics fields of a high school. Although there is diesel traffic associated with the school buses, the number of diesel vehicle trips from surrounding land uses is not expected to change as a result of project implementation. See Figure 3.

Opening Year: Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility

LOS for the 2018 build and no-build conditions is shown in Table 1. AADT was approximated by adding the AM and PM peak hour volumes of the intersection in the study area with the highest volume (University Street at Citrus Avenue) and multiplying the sum by 5, which would be **20,165 daily trips for the build and no-build alternative in opening year 2018**. Existing traffic counts conducted in the study area indicated that truck traffic made up less than 1% of traffic volumes, but it was conservatively assumed that a maximum of 2% of future volumes would be composed of trucks for the build and no-build alternatives in opening year 2018, for a total of **403 daily truck trips**. Please see Traffic Data attachment.

Table 1. Opening Year 2018 LOS

Intersection	2018 No Build		2018 Build	
	DELAY	LOS	DELAY	LOS
AM Peak Hour				
University Street at I-10 WB On-Ramp/ Central Avenue	2312	F	13.4	B
University Street at I-10 EB Off-Ramp	38.4	E	12.2	B
University Street at Citrus Avenue	20.4	C	30.2	C
PM Peak Hour				
University Street at I-10 WB On-Ramp/ Central Avenue	211.9	F	13.0	B
University Street at I-10 EB Off-Ramp	41.5	E	13.1	B
University Street at Citrus Avenue	21.1	C	34.1	C
Source: Advantec Consulting Engineers 2015.				

RTP Horizon Year / Design Year: Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility

LOS for the 2040 build and no-build conditions is shown in Table 1. AADT was approximated by adding the AM and PM peak hour volumes of the intersection in the study area with the highest volume (University Street at Citrus Avenue) and multiplying the sum by 5, which would be **25,390 daily trips for the build and no-build alternative in horizon year 2040**. Existing traffic counts conducted in the study area indicated that truck traffic made up less than 1% of traffic volumes, but it was conservatively assumed that a maximum of 2% of future volumes would be composed of trucks for the build and no-build alternatives in horizon year 2040, for a total of **508 daily truck trips**. Please see Traffic Data attachment.

Table 2. Horizon Year 2040 LOS

Intersection	2040 No Build		2040 Build	
	DELAY	LOS	DELAY	LOS
AM Peak Hour				
University Street at I-10 WB On-Ramp/ Central Avenue	6000	F	18.6	B
University Street at I-10 EB Off-Ramp	171.2	F	19.2	B
University Street at Citrus Avenue	29.6	C	34.1	C
PM Peak Hour				
University Street at I-10 WB On-Ramp/ Central Avenue	2225	F	11.2	B
University Street at I-10 EB Off-Ramp	140.4	F	16.9	B
University Street at Citrus Avenue	32.8	C	34.7	C
Source: Advantec Consulting Engineers 2015.				

Opening Year: If facility is an interchange(s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT

The proposed project involves modifications at three intersections, the effects of which in the opening year are shown in Table 1. AADT would be 19,410 (Truck ADT: 388) at the University Street at I-10 WB On-Ramp/ Central Avenue intersection and 17,460 (Truck ADT: 349) at the University Street at I-10 EB Off-Ramp for both the build and no-build conditions in opening year 2018. It was assumed that a maximum of 2% of future volumes would be composed of trucks in 2018.

RTP Horizon Year / Design Year: If facility is an interchange (s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT

The proposed project involves modifications at three intersections, the effects of which in the horizon year are shown in Table 2. AADT would be 24,995 (Truck ADT: 500) at the University Street at I-10 WB On-Ramp/ Central Avenue intersection and 21,820 (Truck ADT: 436) at the University Street at I-10 EB Off-Ramp for both the build and no-build conditions in horizon year 2040. It was assumed that a maximum of 2% of future volumes would be composed of trucks in 2040.

Describe potential traffic redistribution effects of congestion relief *(impact on other facilities)*
As shown in the **Traffic Data** attachment, total peak hour traffic volumes at each study area intersection would be identical between the build and no-build conditions for opening year 2018 and the horizon year 2040. As shown in Table 1 and Table 2 above, peak hour delay would be reduced at the University Street at I-10 WB On-Ramp/ Central Avenue intersection and the University Street at I-10 EB Off-Ramp intersection under the build condition, with LOS improving from E or F under the no-build to LOS B under the build condition. In both 2018 and 2040, delay would increase at the University Street at Citrus Avenue intersection under the build condition, but operations would remain at LOS C for each peak hour. The improvements are not expected to have redistribution effects, as the project would continue to serve trips originating and terminating at residences, the University of Redlands, and Redlands High School.

Comments/Explanation/Details *(attach additional sheets as necessary)*
The United States Environmental Protection Agency (EPA) specifies in 40 CFR 93.123(b)(1) that only ”projects of air quality concern” (POAQC) are required to undergo a PM2.5 and PM10 hot-spot analysis. EPA defines POAQCs as certain highway and transit projects that involve significant levels of diesel traffic or any other project that is identified by the PM2.5 SIP as a localized air quality concern. A discussion of the proposed project compared to POAQCs, as defined by 40 CFR 93.123(b)(1), is provided below:

New or expanded highway projects that have a significant number of or significant increase in diesel vehicles. The project involve signalization and other intersection approach improvements. . Although the project would connect vehicles to and from I-10, no changes to surrounding land uses would occur, and no increases in diesel vehicle volumes would result. Existing traffic counts indicate that 1% of peak-hour traffic at present and is conservatively assumed to represent no more than 2% of traffic in opening year 2018 and horizon year 2040.

Projects affecting intersections that are at level –of –service (LOS) D, E, or F with a significant number of diesel vehicles or those that will change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project. As discussed above, the project would not increase the percentage of diesel vehicles operating in the project vicinity relative to the No Build Alternative, as no change in surrounding land uses would occur as a result of project implementation. Furthermore, the project would reduce congestion and no intersections would operate at LOS D, E, or F in opening year 2018 or horizon year 2040 with project implementation.

New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location. The proposed project has no bus or rail terminal component, nor would it alter travel patterns to/from any existing bus or rail terminal.

Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location. The proposed project would not expand any bus terminal, rail terminal, or related transfer point that would increase the number of diesel vehicles congregating at any single location.

Projects in or affecting locations, areas, or categories of sites that are identified in the PM2.5- or PM10-applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation. The project site is not in or affecting locations, areas, or categories of sites that are identified in a PM10 or PM2.5 implementation plan. The immediate project area is not considered to be a site of violation or possible violation.

The discussion provided above indicates that the proposed project would not be considered a Project of Air Quality Concern, as defined by 40 CFR 93.123(b)(1). Therefore, PM2.5 and PM10 hot-spot evaluations are not required. It is unlikely that the proposed project would generate new air quality violations, worsen existing violations, or delay attainment of national AAQS for PM2.5 or PM10.

Figure 1
Project Vicinity Map
I-10/University Street Interchange Improvements Project

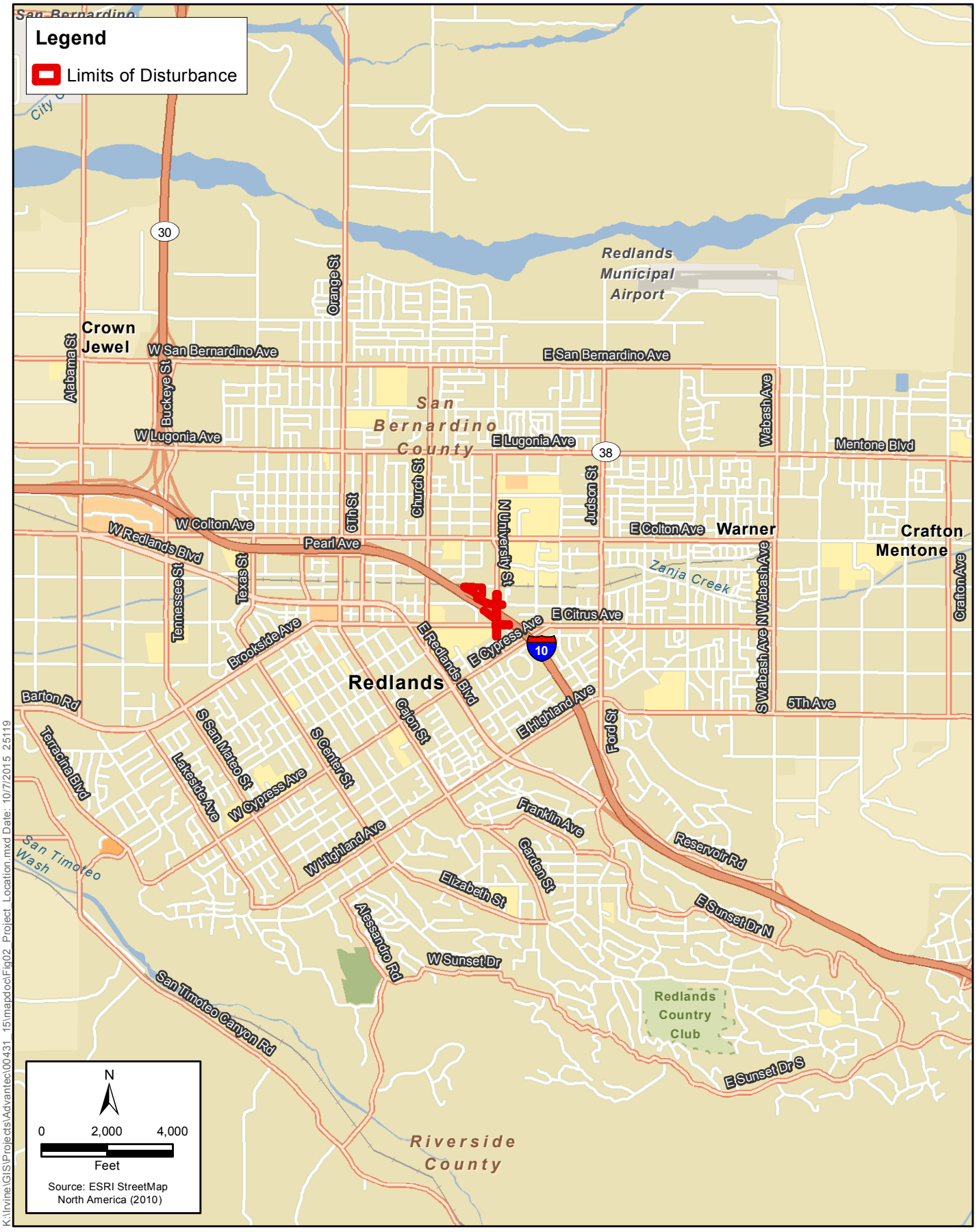

Figure 2
Project Location Map
I-10/University Street Interchange Improvements Project

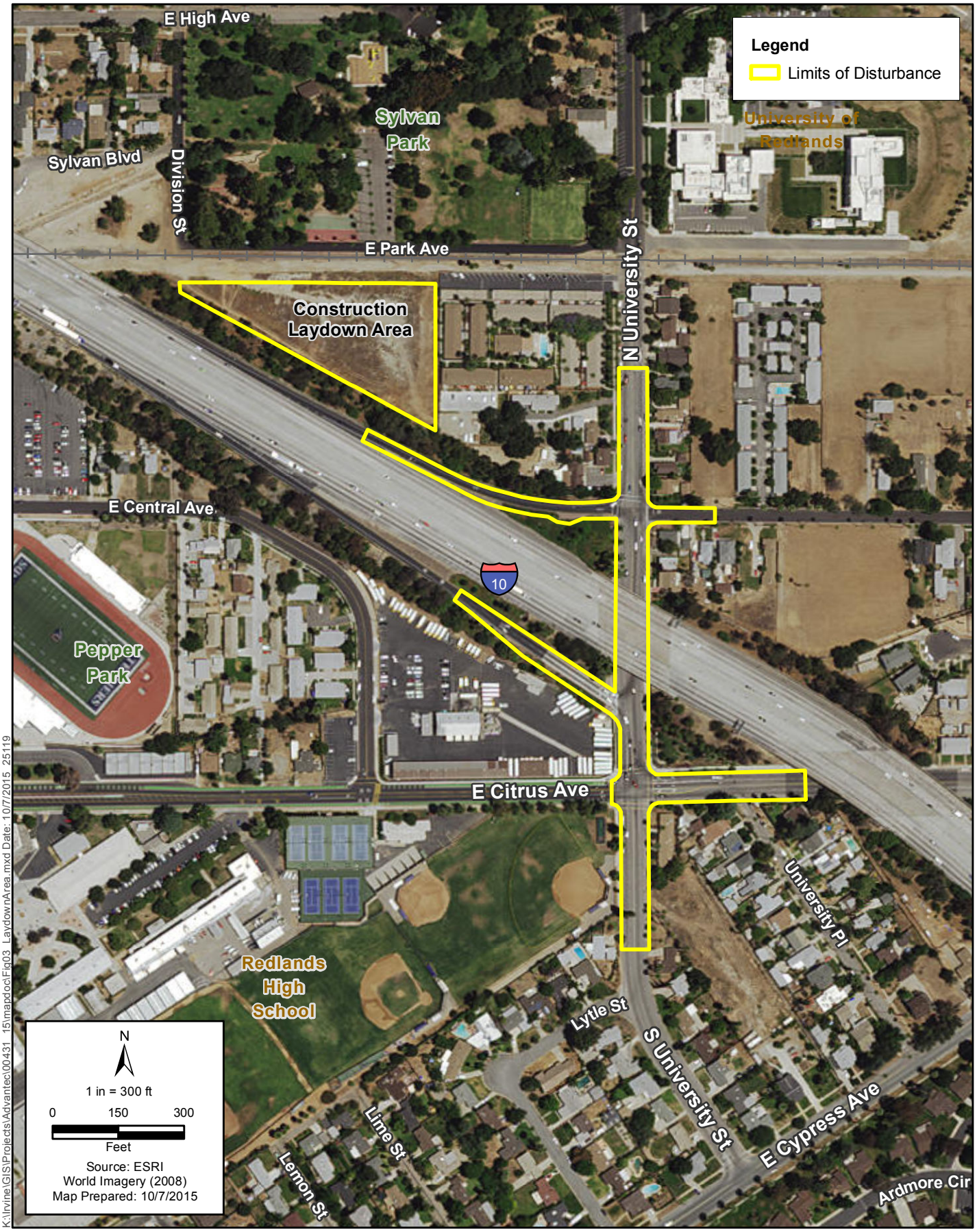

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Figure 3
Construction Laydown Area
I-10/University Street Interchange Improvements Project

TRAFFIC DATA

Opening Year 2018

No Build Alternative

														LOS				
Intersection	Peak Hour	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Delay	LOS	Volume	ADT*	Truck ADT**
University Street at I-10 WB On-Ramp/ Central Avenue	AM	0	0	0	0	6	28	498	553	19	10	133	884	2312	F	2,131		
	PM	0	0	0	0	11	16	419	633	53	13	179	427	211.9	F	1,751	19,410	388
University Street at I-10 EB Off-Ramp	AM	306	0	402	0	0	0	0	764	0	0	133	0	38.4	E	1,605		
	PM	449	0	603	0	0	0	0	656	0	0	179	0	41.5	E	1,887	17,460	349
University Street at Citrus Avenue	AM	100	131	65	5	317	365	36	300	0	199	180	157	20.4	C	1,855		
	PM	122	368	54	12	274	281	28	254	3	357	308	117	21.1	C	2,178	20,165	403

Build Alternative

														LOS				
Intersection	Peak Hour	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Delay	LOS	Volume	ADT*	Truck ADT**
University Street at I-10 WB On-Ramp/ Central Avenue	AM	0	0	0	0	6	28	498	553	19	10	133	884	13.4	B	2,131		
	PM	0	0	0	0	11	16	419	633	53	13	179	427	13	B	1,751	19,410	388
University Street at I-10 EB Off-Ramp	AM	306	0	402	0	0	0	0	764	0	0	133	0	12.2	B	1,605		
	PM	449	0	603	0	0	0	0	656	0	0	179	0	13.1	B	1,887	17,460	349
University Street at Citrus Avenue	AM	100	131	65	5	317	365	36	300	0	199	180	157	30.2	C	1,855		
	PM	122	368	54	12	274	281	28	254	3	357	308	117	34.1	C	2,178	20,165	403

Horizon Year 2040

No Build Alternative

														LOS				
Intersection	Peak Hour	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Delay	LOS	Volume	ADT*	Truck ADT**
University Street at I-10 WB On-Ramp/ Central Avenue	AM	0	0	0	0	7	37	642	713	26	13	177	1176	6000	F	2,791		
	PM	0	0	0	0	14	21	510	772	70	17	237	567	2225	F	2,208	24,995	500
University Street at I-10 EB Off-Ramp	AM	407	0	500	0	0	0	0	974	0	0	177	0	171.2	F	2,058		
	PM	596	0	717	0	0	0	0	756	0	0	237	0	140.4	F	2,306	21,820	436
University Street at Citrus Avenue	AM	115	175	87	6	421	485	48	399	0	265	239	208	29.6	C	2,448		
	PM	130	409	72	15	303	325	33	301	3	474	410	155	32.8	C	2,630	25,390	508

Build Alternative

														LOS				
Intersection	Peak Hour	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Delay	LOS	Volume	ADT*	Truck ADT**
University Street at I-10 WB On-Ramp/ Central Avenue	AM	0	0	0	0	7	37	642	713	26	13	177	1176	18.6	B	2,791		
	PM	0	0	0	0	14	21	510	772	70	17	237	567	11.2	B	2,208	24,995	500
University Street at I-10 EB Off-Ramp	AM	407	0	500	0	0	0	0	974	0	0	177	0	19.2	B	2,058		
	PM	596	0	717	0	0	0	0	756	0	0	237	0	16.9	B	2,306	21,820	436
University Street at Citrus Avenue	AM	115	175	87	6	421	485	48	399	0	265	239	208	34.1	C	2,448		
	PM	130	409	72	15	303	325	33	301	3	474	410	155	34.7	C	2,630	25,390	508

*ADT was calculated by adding the AM and PM peak hour volumes of the intersection with the highest volumes (University Street at Citrus Avenue) and multiplying the sum by 5 to approximate the ADT

**Existing traffic counts indicated that truck traffic made up less than 1% of traffic volumes; this analysis has conservatively assumed that a maximum of 2% of future volumes would be composed of trucks.