Traffic Technical Memorandum

for the

Chuckwalla Valley Road Bridges

Over Aztec Ditch (Br. No. 56C0102; Federal Project No. BRLO-5956(239))

Over Tarantula Ditch (Br. No. 56C0103; Federal Project No. BRLO-5956(227))

Over Sutro Ditch (Br. No. 56C0104; Federal Project No. BRLO-5956(226))

and

Over Acari Ditch (Br. No. 56C0108; Federal Project No. BRLO-5956(225))

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April 2019

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TECHNICAL MEMORANDUM

Date: April 11, 2019

To: James Lu, Project Manager – CNS Engineers, Inc.

From: Frank Barrera, Senior Planner – KOA Corporation

Subject: Traffic Impacts of Bridge Replacement on Chuckwalla Valley Road
(Br. No. 56C0102, Br. No. 56C0103, Br. No. 56C0104, and Br. No. 56C0108)

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INTRODUCTION

KOA Corporation (KOA) is pleased to submit this technical memorandum to document the traffic impacts of re-constructing four bridges located on Chuckwalla Valley Road in unincorporated Riverside County east of the census-designated community of Desert Center, California.

Project Description

The County of Riverside (County), in cooperation with California Department of Transportation (Caltrans), proposes to replace the following four (4) existing structurally deficient timber bridges along Chuckwalla Valley Road near Desert Center in Riverside County, California. The locations of the four bridges are shown on Figure 1.

- Chuckwalla Valley Road Bridge over Aztec Ditch (State Br. No. 56C0102) (Federal Aid Project No. BRLO-5956(239))
- Chuckwalla Valley Road Bridge over Tarantula Ditch (State Br. No. 56C0103) (Federal Aid Project No. BRLO-5956(227))
- Chuckwalla Valley Road Bridge over Sutro Ditch (State Br. No. 56C0104) (Federal Aid Project No. BRLO-5956(226))
- Chuckwalla Valley Road Bridge over Acari Ditch (State Br. No. 56C0108) (Federal Aid Project No. BRLO-5956(225))

Chuckwalla Valley Road is an approximately 16-mile stretch of frontage road that runs parallel to Interstate 10 (I-10). It connects Corn Spring Road and I-10 at the west end and Paled Dunes Drive and I-10 at the east end. Classified as a Local Rural Road, it mostly serves vehicles accessing local utilities and off-road recreation. The average daily traffic (ADT) volume is approximately 40 vehicles. Periodically, the road carries detoured traffic from the heavily traveled I-10 when the freeway is temporarily closed for construction or emergency incidents. Therefore, it is important to maintain this frontage road in sound condition at all times.

The exiting timber bridges carry two lanes (one lane in each direction) of traffic over the Aztec, Tarantula, Sutro and Acari ditches. The timber bridges range from 41 feet to 60 feet in length and are approximately 24 feet and 8 inches wide from curb-to-curb. Currently, load restrictions posted on the four bridges limit the vehicular load-carrying capacity below normal standards.

The bridges are listed in the federal Eligible Bridge List (EBL) as "Structurally Deficient" (SD) with a low Sufficiency Rating (SR) between 39.3 and 49.2. A Sufficiency Rating (SR) is essentially an overall rating of a bridge's fitness for the duty that it performs. The rating is based on a bridge's structural evaluation, functional/geometric obsolescence, and its essentiality to the public. A low SR may be due to structural defects, narrow lanes, low vertical clearance, or any of many possible issues. A bridge is healthy when its SR is more than 80.0 Bridges with SR equal to or less than 80.0 and more than 50.0 require rehabilitation or widening. When the SR falls below 50.0, bridge replacement shall be considered for public safety.

The proposed project will replace the existing 2-lane timber bridges with new 2-lane modern bridges with a curb-to-curb roadway width of 32 feet at the same locations. The proposed road width would consist of two 12-foot-wide travel lanes, one lane in each direction, and a 4-foot-wide shoulder on each side. Modern traffic barriers/railings meeting current Caltrans safety design standards would be constructed. The proposed bridges would be approximately 60 to 80 feet long depending on the channel hydraulic capacity and water surface freeboard requirements. Raising the elevation of the bridges is not anticipated. However, if raising the bridge elevation is found to be necessary to meet freeboard requirements, the total vertical increase is not anticipated to exceed one foot. Additionally, approach roadway improvements would be provided and channel improvements would be administered to avoid future scour problems. It is envisioned that the channel bottom will remain earthen.

The existing bridges do not carry any utilities and the proposed bridge construction is not expected to include new utilities. A telephone line runs along the north side of the project area and may be near bridge wing walls. Further coordination with the utility provider will determine whether relocation will be required.

All construction activities would be conducted within the existing roadway right of way with construction staging and material laydown areas on the roadway itself. Chuckwalla Valley Road between the Corn Springs Road Intersection to 6.3 miles east of the intersection would be closed during construction. The construction duration will be further determined during the project development. It is envisioned that all four bridges will be either constructed at the same time or staged in sequence depending on the finding of available access to adjacent utilities and properties. A Traffic Management Plan (TMP) would be prepared to address closure of the road and access to local utilities and properties.

ANALYSIS METHODOLOGIES

This section documents the methodologies and assumptions used to conduct the analysis for the proposed bridge replacement project. To determine if any traffic impacts will result after the closure of Chuckwalla Valley Road due to bridge construction, two intersections, two roadway segments, and the I-10 Freeway were evaluated.

New traffic counts were conducted at the study intersections and roadway segment. Traffic counts were conducted on December 4, 2018. For the study intersections, AM and PM peak hour intersection traffic counts were collected. For the study roadway segment, Average Daily Traffic (ADT) counts were collected. Additionally, Annual Average Daily Traffic (AADT) volumes were evaluated along the I-10 freeway. AADT data was obtained from the Caltrans PEMS database. The traffic data was used to determine existing traffic conditions for the study intersections, roadway segment, and freeway segments.

The Highway Capacity Manual 2010 methodology was used to determine the existing Level of Service (LOS) of the study intersections. Existing Level of Service analysis of the study intersections was completed using Traffix, a traffic analysis software.

FIGURE 1 - REGIONAL MAP

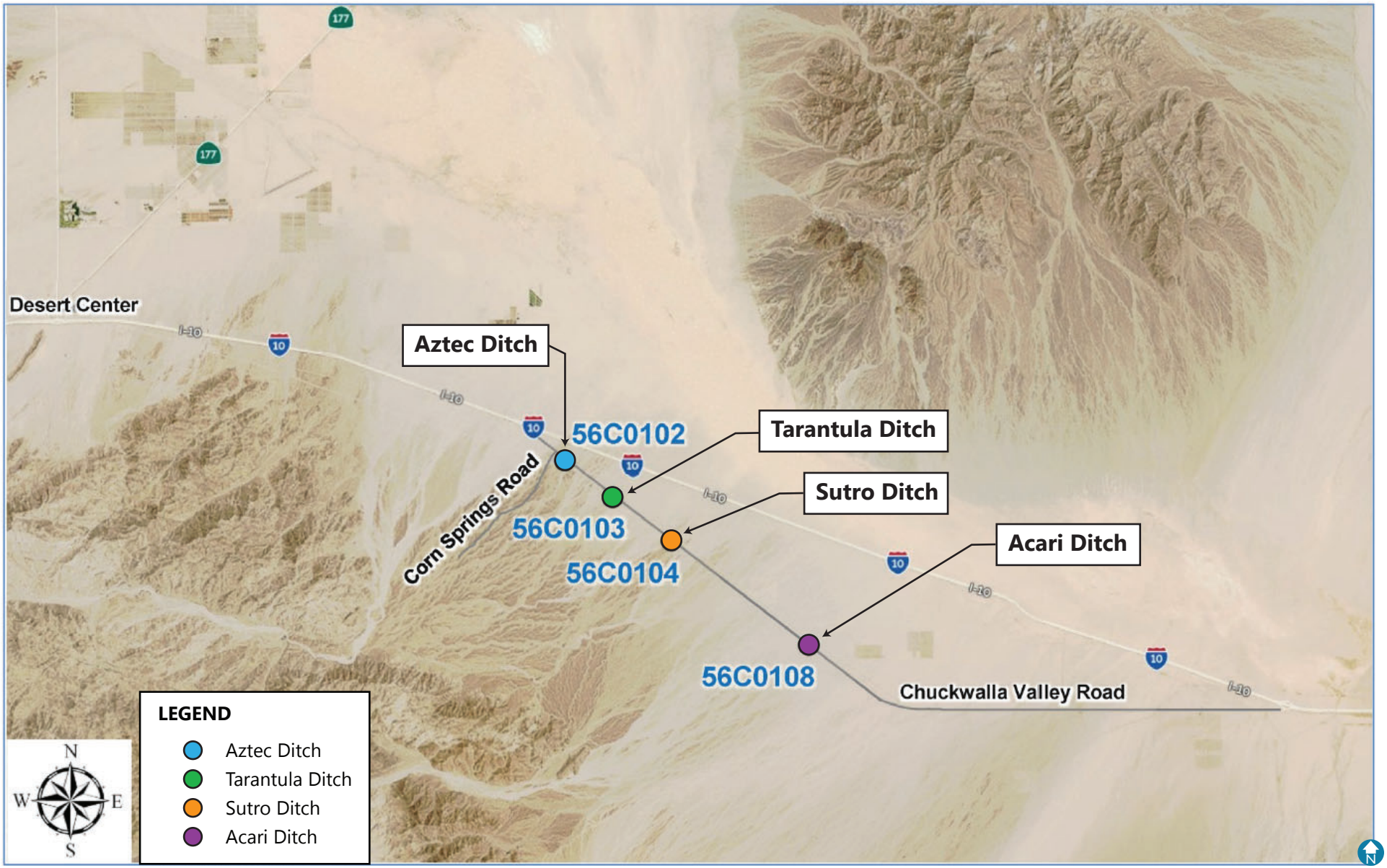


Table 1 shows the study intersections and roadway/freeway segments analyzed. Table 2 shows the roadway segment Level of Service definitions published in the Circulation Element (Chapter 4) of the Riverside County General Plan.

TABLE 1 – STUDY INTERSECTIONS

#	Intersection
1	Corn Springs Road (Exit 201) & I-10 Eastbound Ramps
2	Ford Dry Lake Road (Exit 217) & I-10 Eastbound Ramps
#	**Roadway Segment**
1	Chuckwalla Valley Road east of Corn Springs Road/I-10 Eastbound ramps
2	Chuckwalla Valley Road west of Ford Dry Lake Road/I-10 Eastbound ramps
#	**Freeway Segment**
1	I-10 Freeway west of Corn Springs Road
2	I-10 Freeway east of Corn Springs Road
3	I-10 Freeway west of Ford Dry Lake Road
4	I-10 Freeway east of Ford Dry Lake Road

TABLE 2 – LINK/VOLUME CAPACITY/LEVEL OF SERVICE FOR RIVERSIDE COUNTY ROADWAYS

Roadway Classification	Number of Lanes	Maximum Two-Way Traffic Volume (ADT) [2]		
		LOS C	LOS D	LOS E
Collector	2	10,400	11,700	13,000
Secondary	4	20,700	23,300	25,900
Major	4	27,300	30,700	34,100
Arterial[3]	2	14,400	16,200	18,000
Arterial	4	28,700	32,300	35,900
Mountain Arterial[3]	2	12,900	14,500	16,100
Mountain Arterial	3	16,700	18,800	20,900
Mountain Arterial	4	29,800	33,500	37,200
Urban Arterial	4	28,700	32,300	35,900
Urban Arterial	6	43,100	48,500	53,900
Urban Arterial	8	57,400	64,600	71,800
Expressway	4	32,700	36,800	40,900
Expressway	6	49,000	55,200	61,300
Expressway	8	65,400	73,500	81,700
Freeway	4	61,200	68,900	76,500
Freeway	6	94,000	105,800	117,500
Freeway	8	128,400	144,500	160,500
Freeway	10	160,500	180,500	200,600
Ramp[4]	1	16,000	18,000	20,000

Notes:

(1) All capacity figures are based on optimum conditions and are intended as guidelines for planning purposes only.

(2) Maximum two-way ADT values are based on the 1999 Modified Highway Capacity Manual Level of Service Tables as defined in the Riverside County Congestion Management Program.

(3) Two-lane roadways designed as future arterials that conform to arterial design standards for vertical and horizontal alignment are analyzed as arterials.

(4) Ramp capacity is given as one-way traffic volume.

EXISTING CONDITION

Based on the intersection lane geometries depicted on Figure 2 and the existing AM and PM peak hour intersection traffic volumes illustrated on Figure 3, levels of service (LOS) were determined for each of the study intersections during the weekday AM and PM peak hours. Peak hour factors (PHF) based on existing counts were utilized.

FIGURE 2 - EXISTING LANE GEOMETRY

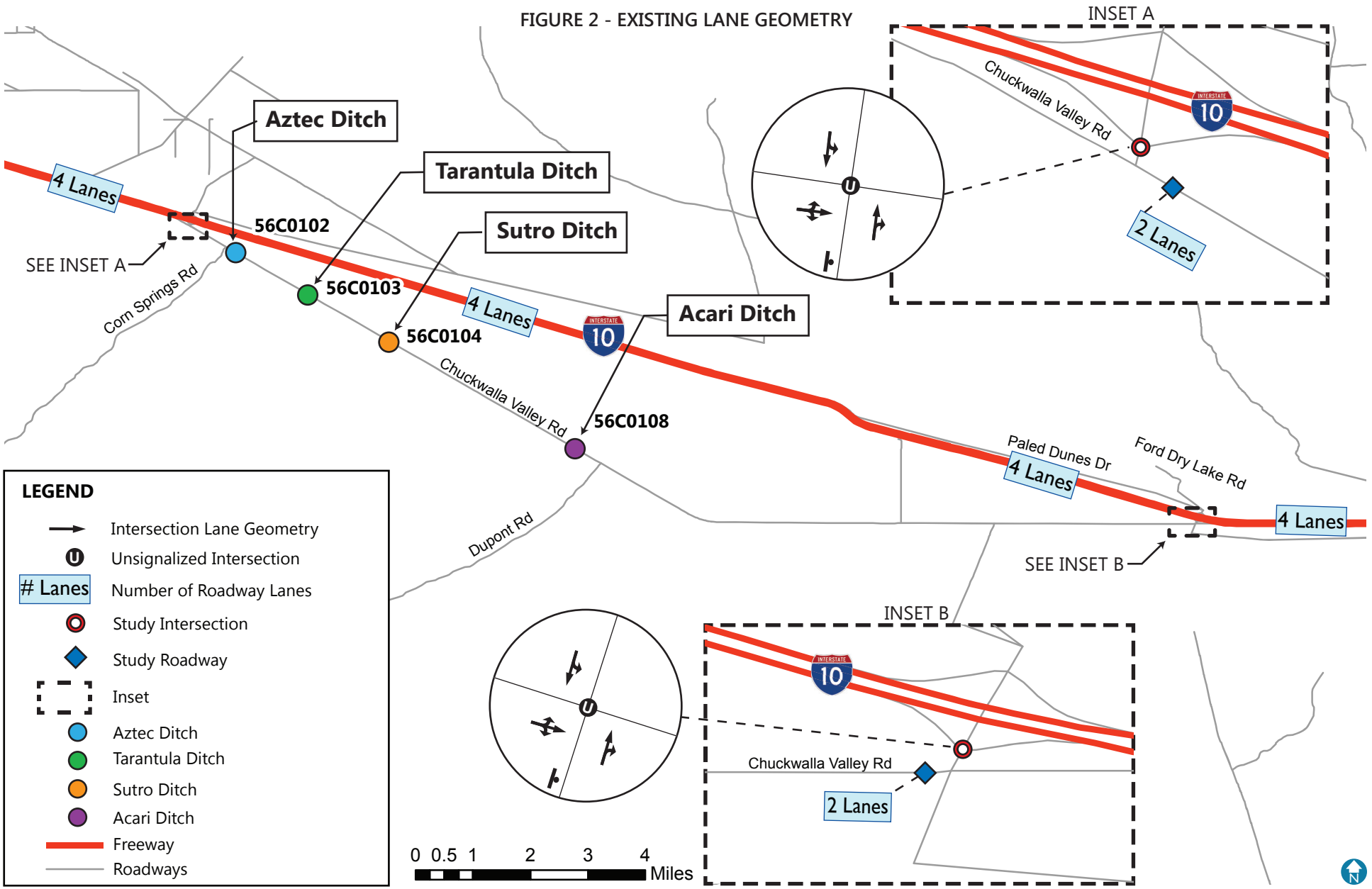


FIGURE 3- EXISTING TRAFFIC VOLUMES

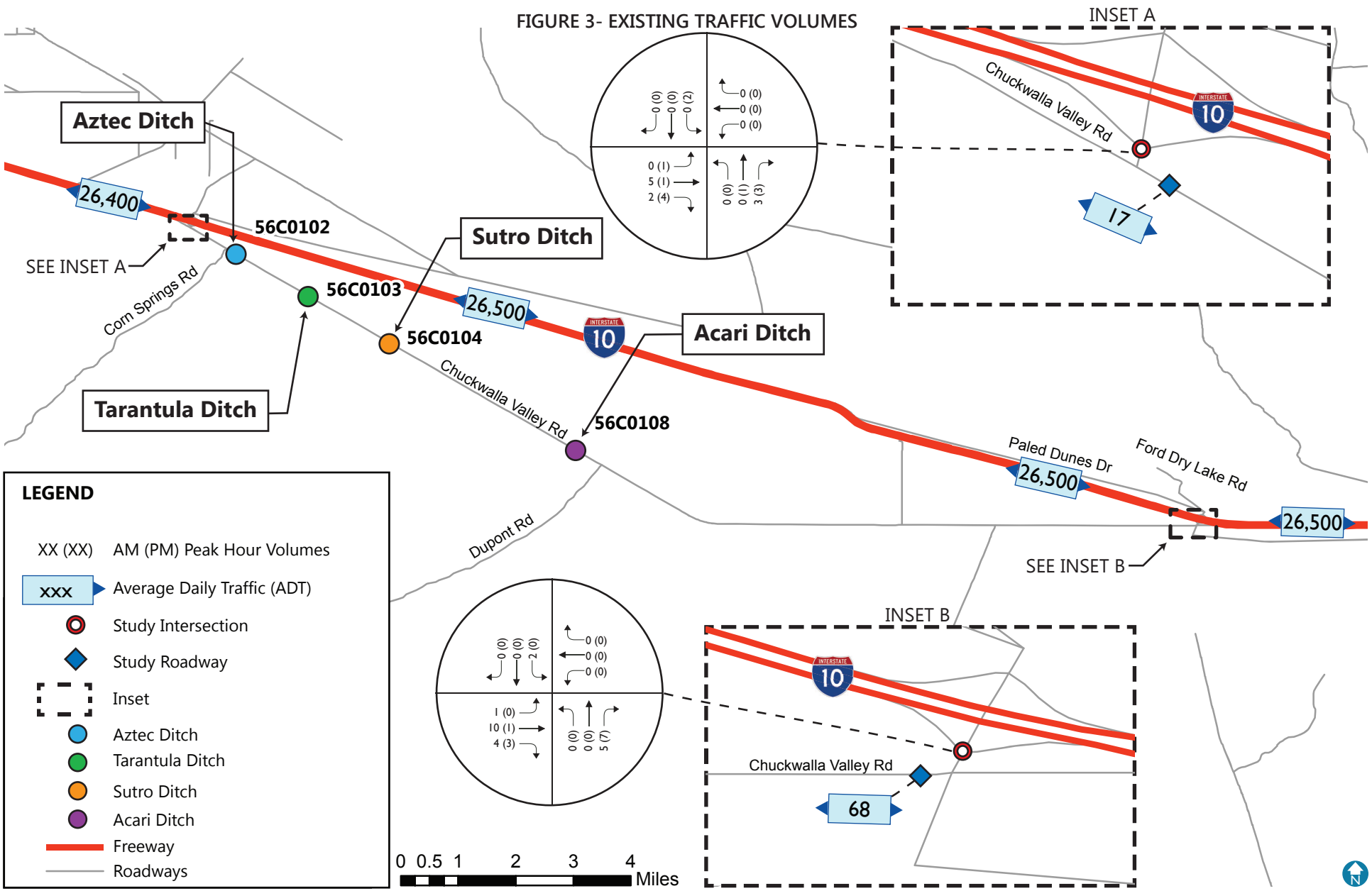


Table 3 summarizes the LOS values of the two study intersections for existing traffic conditions.

TABLE 3 – INTERSECTION PERFORMANCE: EXISTING CONDITIONS

Study Intersections		AM Peak Hour		PM Peak Hour	
		Delay (sec)	LOS	Delay (sec)	LOS
1	Corn Springs Road (Exit 201) & I-10 Eastbound Ramps	8.9	A	8.5	A
2	Ford Dry Lake Road (Exit 217) & I-10 Eastbound Ramps	9.0	A	8.5	A

LOS = Level-of-Service

As shown in Table 3, all study intersections are currently operating at LOS A during the weekday AM and PM peak hours. Table 4 summarizes the ADT and LOS values of the roadway and freeway segments for the existing traffic conditions.

TABLE 4– ROADWAY/FREEWAY SEGMENT PERFORMANCE: EXISTING CONDITIONS

Roadway/Freeway Segment		Roadway Section (Number of lanes)	Roadway Capacity (LOS E)	Existing 2018		
				ADT/AADT	V/C	LOS
1	Chuckwalla Valley Road east of Corn Springs Road & I-10 Eastbound ramps	2	13,000	17	0.001	<C
2	Chuckwalla Valley Road west of Ford Dry Lake Road & I-10 Eastbound ramps	2	13,000	68	0.005	<C
3	I-10 Freeway west of Corn Springs Road	4	76,500	26,400	0.345	<C
4	I-10 Freeway east of Corn Springs Road	4	76,500	26,500	0.346	<C
5	I-10 Freeway west of Ford Dry Lake Road	4	76,500	26,500	0.346	<C
6	I-10 Freeway east of Ford Dry Lake Road	4	76,500	26,500	0.346	<C

ADT = Average Daily Traffic; AADT = Annual Average Daily Traffic; LOS = Level-of-Service

As shown in Table 4, all roadway and freeway segments currently operate at a level of service better than LOS C. Existing traffic volumes (ADT/AADT) on Chuckwalla Valley Road and the I-10 Freeway are shown on Figure 3.

The Existing Year (2018) traffic analysis conditions worksheets for the two study intersections are provided in Appendix A of this report.

ANALYSIS OF CONSTRUCTION IMPACTS

When Chuckwalla Valley Road is closed for the construction of the four bridges, existing traffic travelling on Chuckwalla Valley Road will instead have to travel using the I-10 freeway.

Table 5 summarizes the total traffic during the AM and PM peak hour observed entering and exiting Chuckwalla Valley Road at each of the two off-ramps analyzed. The total volume of cars heading in and out of Chuckwalla Valley Road at any ramp during any peak hour is less than 10 vehicles at either location.

TABLE 5 – EXISTING VOLUMES ENTERING AND EXITING CHUCKWALLA VALLEY ROAD

Study Intersections		AM Peak Hour		PM Peak Hour	
		In	Out	In	Out
1	Corn Springs Road (Exit 201) & I-10 Eastbound Ramps	2	3	4	4
2	Ford Dry Lake Road (Exit 217) & I-10 Eastbound Ramps	4	5	3	7

Currently, the highest AADT count on the freeway segments within the vicinity of the construction area is 26,500 vehicles. A 4-lane freeway, as exemplified by this segment of the I-10, would be considered to be at LOS C, an acceptable level of traffic stress, for a maximum two-way ADT of 61,200, over 30,000 ADT higher than existing conditions. Since the ADT volumes along Chuckwalla Valley Road are only 68 vehicles, it can be expected that the closure of the Chuckwalla Valley Road will have negligible traffic impacts to the I-10 freeway adjacent to the project study area.

The peak hour volume is only 5 vehicles during the AM peak hour and 8 vehicles during the PM peak hour entering and exiting Chuckwalla Valley Road at Corn Springs Road & I-10 interchange, and 9 vehicles in the AM peak hour and 10 vehicles in the PM peak hour entering and exiting Chuckwalla Valley Road at Ford Dry Lake Road & I-10 interchange. These peak hour vehicle movements will be redistributed at the study intersections to use the I-10 freeway during the project construction. It can be expected that the closure of Chuckwalla Valley Road will have negligible traffic impacts at these study intersections as the study intersections currently operate at LOS A.

LOCAL ACCESS IMPACTS

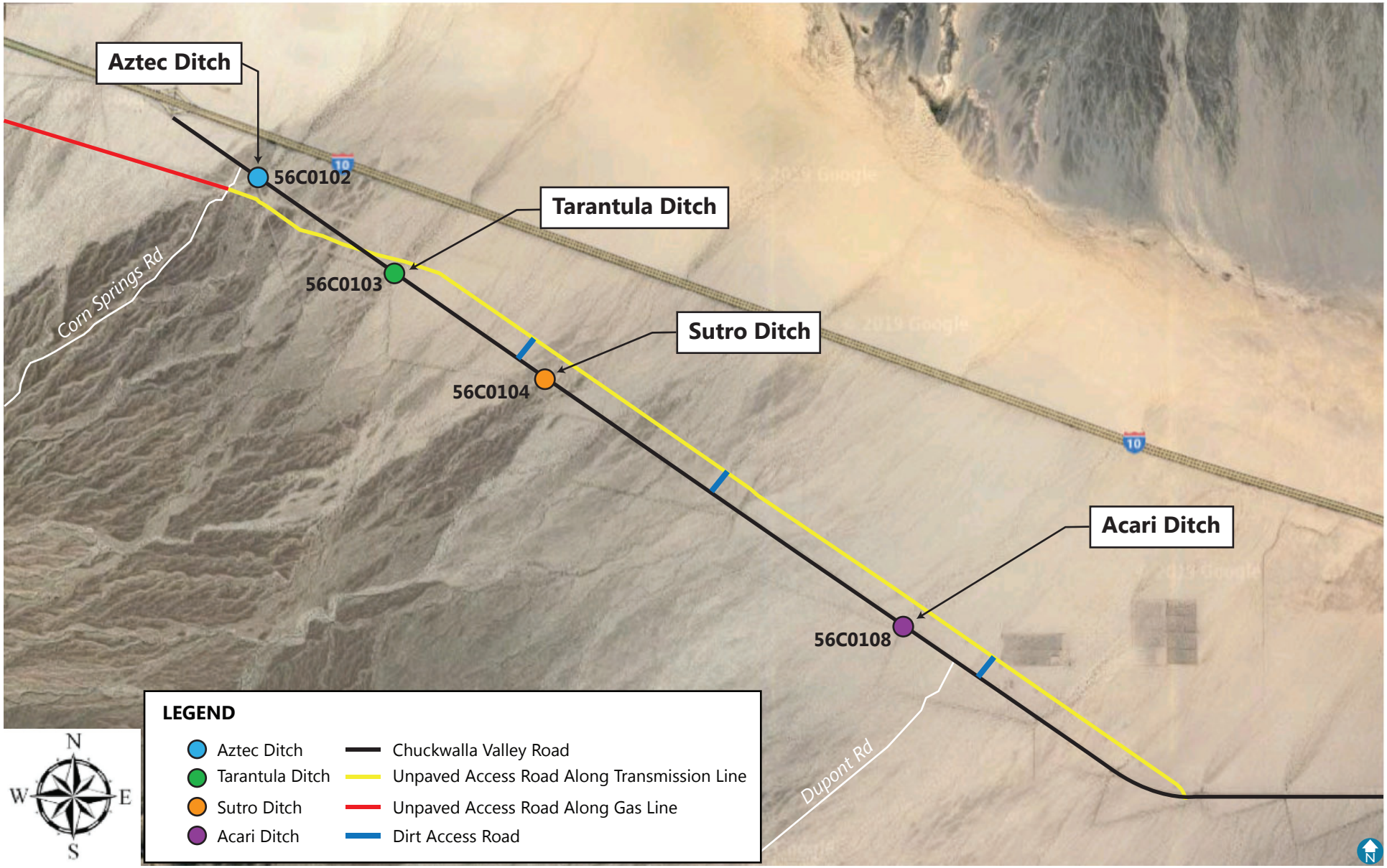
The intersection of Corn Springs Road (Exit 201) & I-10 Eastbound ramps provides access to Corn Springs Road via Chuckwalla Valley Road. Since Chuckwalla Valley Road access can be closed east of Corn Spring Road, freeway ramp closures are not recommended in order to maintain access to Corn Springs Road. The intersection of I-10 Eastbound ramps at Ford Dry Lake Road (exit 217) provides access to Chuckwalla Valley Road on the south and Ford Dry Lake Road (dirt road) to the north. Since Chuckwalla Valley Road access can be closed at the southbound leg of the intersection, freeway ramp closures are not recommended as the I-10 Eastbound ramps provide access to the Ford Dry Lake Road (dirt road) and the I-10 Westbound ramps.

Additionally, other than the I-10 freeway as a detour route, there are no other viable detour routes between the I-10 Freeway Corn Springs Road Interchange and the I-10 Freeway Ford Dry Lake Road Interchange with the closure of Chuckwalla Valley Road. Since, Chuckwalla Valley Road will not be accessible during the construction of the new bridges, the I-10 intersection ramps at Corn Springs Road and Ford Dry Lake Road should remain open for any traffic detours needed from eastbound to westbound directions and vice versa, due to traffic accidents or other situations that may occur along the I-10 Freeway segment between these two interchanges.

Portions of Chuckwalla Valley Road, west of the Aztec Ditch Bridge and east of the Acari Ditch Bridge, would remain accessible for utility maintenance vehicles which can utilize the unpaved access road along the transmission line as an alternative route to gain access for utility maintenance between the bridge locations as shown in Figure 4.

Emergency personnel will be allowed access through the construction site at all times.

FIGURE 4 - CHUCKWALLA VALLEY ROAD ALTERNATIVE ROUTES FOR UTILITY ACCESS



CONCLUSION

The four bridges to be replaced on Chuckwalla Valley Road include the Aztec Ditch Bridge (Br. No. 56C0102) (Federal Project No. BRLO-5956(239)), Tarantula Ditch Bridge (Br. No. 56C0103) (Federal Project No. BRLO-5956(227)), Sutro Ditch Bridge (Br. No. 56C0104) (Federal Project No. BRLO-5956(226)), and Acari Ditch Bridge (Br. No. 56C0108) (Federal Project No. BRLO-5956(225)) which will result in the closure of Chuckwalla Valley Road between Corn Springs Road and Ford Dry Lake Road. KOA has determined that the existing volumes entering and exiting this roadway are very low, and that any traffic taking this route will instead travel on the freeway. Traffix, a traffic analysis software, was used to evaluate existing LOS of intersections adjacent to freeway on- and off-ramps and ADT volumes were taken from the PEMS network. Because the freeway and intersections adjacent to the on- and off-ramps for the freeway are all currently performing at a LOS A, it can be expected that the shift of the low volume of traffic from Chuckwalla Valley Road to the freeway will not cause significant traffic impacts.

It is recommended that the I-10 intersection ramps at Corn Springs Road and Ford Dry Lake Road remain open for any traffic detours needed from eastbound to westbound directions and vice versa.

Public outreach will be conducted to inform the public of roadway closures for the construction of the new bridges on Chuckwalla Valley Road.

APPENDIX A:

STUDY INTERSECTION ANALYSIS WORKSHEETS

RCTD Bridge TCP
Existing Conditions
AM Peak Hour

Scenario Report

Scenario:	Existing AM
Command:	Existing AM
Volume:	AM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	None
Trip Distribution:	Existing
Paths:	Default Path
Routes:	Default Route
Configuration:	Existing

RCTD Bridge TCP
Existing Conditions
AM Peak Hour

Turning Movement Report
None

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
#4 Corn Springs Road (Exit 201) & I-10 Eastbound Ramps													
Base	0	0	3	0	0	0	0	5	2	0	0	0	10
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	3	0	0	0	0	5	2	0	0	0	10
#5 Ford Dry Lake Road (Exit 217) & I-10 Eastbound Ramps													
Base	0	0	5	2	0	0	1	10	4	0	0	0	22
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	5	2	0	0	1	10	4	0	0	0	22

RCTD Bridge TCP
Existing Conditions
AM Peak Hour

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 4 Corn Springs Road (Exit 201) &	A	8.9	0.009	A	8.9	0.009	+ 0.000 D/V
# 5 Ford Dry Lake Road (Exit 217)	A	9.0	0.021	A	9.0	0.021	+ 0.000 D/V

RCTD Bridge TCP
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Corn Springs Road (Exit 201) & I-10 Eastbound Ramps

Average Delay (sec/veh): 6.2 Worst Case Level Of Service: A[8.9]

Street Name:	Corn Springs Road (Exit 201)						I-10 Eastbound Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 1			0 1 0 0 0			0 0 0 1 0			0 0 0 0 0		
Volume Module:												
Base Vol:	0	0	3	0	0	0	0	5	2	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	3	0	0	0	0	5	2	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	3	0	0	0	0	5	2	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
PHF Volume:	0	0	5	0	0	0	0	8	3	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	5	0	0	0	0	8	3	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	4.0	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	5	0	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	895	1091	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	895	1091	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	0.00	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	943	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	0.0	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	7.2	xxxx	xxxxx	xxxxx	xxxx	8.9	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	A	*	*	*
ApproachDel:	xxxxxx			xxxxxx			8.9			xxxxxx		
ApproachLOS:	*			*			A			*		

Note: Queue reported is the number of cars per lane.

RCTD Bridge TCP
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Ford Dry Lake Road (Exit 217) & I-10 Eastbound Ramps

Average Delay (sec/veh): 6.8 Worst Case Level Of Service: A[9.0]

Street Name:	Ford Dry Lake Road (Exit 217)						I-10 Eastbound Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 1			1 0 0 0 0			0 0 1! 0 0			0 0 0 0 0		
Volume Module:												
Base Vol:	0	0	5	2	0	0	1	10	4	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	5	2	0	0	1	10	4	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	5	2	0	0	1	10	4	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
PHF Volume:	0	0	9	4	0	0	2	18	7	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	9	4	0	0	2	18	7	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	9	xxxx	xxxxx	7	16	0	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	1624	xxxx	xxxxx	1019	882	1091	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	1624	xxxx	xxxxx	1017	880	1091	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	0.00	0.02	0.01	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	7.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	937	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	9.0	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	A	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			9.0			xxxxxx		
ApproachLOS:	*			*			A			*		

Note: Queue reported is the number of cars per lane.

RCTD Bridge TCP
Existing Conditions
PM Peak Hour

Scenario Report

Scenario:	Existing PM
Command:	Existing PM
Volume:	PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	None
Trip Distribution:	Existing
Paths:	Default Path
Routes:	Default Route
Configuration:	Existing

RCTD Bridge TCP
Existing Conditions
PM Peak Hour

Turning Movement Report
None

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
#4 Corn Springs Road (Exit 201) & I-10 Eastbound Ramps													
Base	0	1	3	2	0	0	1	1	4	0	0	0	12
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	3	2	0	0	1	1	4	0	0	0	12
#5 Ford Dry Lake Road (Exit 217) & I-10 Eastbound Ramps													
Base	0	0	7	0	1	3	0	1	3	0	0	0	15
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	7	0	1	3	0	1	3	0	0	0	15

RCTD Bridge TCP
Existing Conditions
PM Peak Hour

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 4 Corn Springs Road (Exit 201) &	A	8.5	0.004	A	8.5	0.004	+ 0.000 D/V
# 5 Ford Dry Lake Road (Exit 217)	A	8.5	0.005	A	8.5	0.005	+ 0.000 D/V

RCTD Bridge TCP
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Corn Springs Road (Exit 201) & I-10 Eastbound Ramps

Average Delay (sec/veh): 5.4 Worst Case Level Of Service: A[8.5]

Street Name:	Corn Springs Road (Exit 201)						I-10 Eastbound Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			1 0 0 0 0			0 0 1! 0 0			0 0 0 0 0		
Volume Module:												
Base Vol:	0	1	3	2	0	0	1	1	4	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1	3	2	0	0	1	1	4	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1	3	2	0	0	1	1	4	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1	3	2	0	0	1	1	4	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	1	3	2	0	0	1	1	4	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	4	xxxx	xxxxx	7	8	0	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	1631	xxxx	xxxxx	1020	891	1091	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	1631	xxxx	xxxxx	1019	890	1091	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	0.00	0.00	0.00	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	7.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	1040	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.0	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	8.5	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	A	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			8.5			xxxxxx		
ApproachLOS:	*			*			A			*		

Note: Queue reported is the number of cars per lane.

RCTD Bridge TCP
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Ford Dry Lake Road (Exit 217) & I-10 Eastbound Ramps

Average Delay (sec/veh): 2.3 Worst Case Level Of Service: A[8.5]

Street Name:	Ford Dry Lake Road (Exit 217)						I-10 Eastbound Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	0 1		0 0 0	1 0		0 0 0	1 0		0 0 0	0 0	
Volume Module:												
Base Vol:	0	0	7	0	1	3	0	1	3	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	7	0	1	3	0	1	3	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	7	0	1	3	0	1	3	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
PHF Volume:	0	0	13	0	2	5	0	2	5	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	13	0	2	5	0	2	5	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	4.0	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	17	5	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	881	1085	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	881	1085	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	0.01	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	1025	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.0	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	8.5	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	A	*	*	*
ApproachDel:	xxxxxx			xxxxxx			8.5			xxxxxx		
ApproachLOS:	*			*			A			*		

Note: Queue reported is the number of cars per lane.