CITY COUNCIL STAFF REPORT

DATE: June 17, 2009 CONSENT AGENDA

SUBJECT: APPROVE CVAG EMERGENCY RESPONSE I-10 CLOSURE PLAN

FROM: David H. Ready, City Manager

BY: Blake Goetz, Fire Chief

SUMMARY

In January 2009, the Coachella Valley Association of Governments (CVAG) Public Safety Committee adopted a new "Emergency Response I-10 Closure Plan" for Interstate 10. In order for the plan to be successful, every city in the Coachella Valley has been requested to adopt the plan as a part of their City Emergency Operations Plan (EOP). The Fire Chief, Police Chief and City Engineer have reviewed the plan and recommend approval and inclusion into the City EOP.

RECOMMENDATION:

Approve CVAG's "Emergency Response I-10 Closure Plan" as an integral component of the City of Palm Springs Emergency Operations Plan.

STAFF ANALYSIS:

Emergency incidents on Interstate 10 require that responders from every Coachella Valley jurisdiction having authority be able to refer to one single authoritative plan when I-10 is closed or needs to be closed for public safety purposes.

In 2008 CVAG was supported by the Southern California Association of Governments (SCAG) with funding from the United States Department of Transportation (Federal Transit Administration). The work was performed by Delcan with the assistance from CVAG staff and the many stakeholder agencies that contributed their knowledge and experience.

The final I-10 Closure Plan was adopted by the CVAG Public Safety Committee in January 2009 with the expectation that every jurisdiction which has emergency responsibilities related to I-10 adopt the plan as well. Every city in the Coachella Valley

has been requested to adopt the plan and include it as a component of their city Emergency Operations Plan.

The purpose of the Plan is to:

- Identify key actions in response to freeway closures by any emergency
- Identify routes for exiting the freeway
- Provide tools for estimating the regional traffic impact from complete closures
- Identifies needed roadside services and who provides them
- Identifies public information actions and resources
- Establishes a stakeholder body and their contact information

Staff provided input during the creation of the plan and recommends that this I-10 Closure Plan be adopted by the City of Palm Springs and incorporated into the City's Emergency Operations Plan.

FISCAL IMPACT:

None

Blake G. Goetz,
Fire Chief

David H. Ready,
City Manager

Dave Dominguez,
Police Chief

David Barakian,
Director of Public Works/ City Engineer

Attachments: CVAG EMERGENCY RESPONSE I-10 CLOSURE PLAN

EMERGENCY RESPONSE
I-10 CLOSURE PLAN - FINAL

DECEMBER 2008

Acknowledgements

The development of this plan for the Coachella Valley Association of Governments (CVAG) was supported by the Southern California Association of Governments (SCAG) with funding from the United States Department of Transportation (Federal Transit Administration). The work was performed by Delcan with assistance from CVAG staff and the many stakeholder agencies that contributed their knowledge and experience.

The opinions and conclusions expressed or implied in the report are solely those of the research agency, and do not necessarily reflect the views of the United States Department of Transportation, the State of California, Southern California Association of Governments, nor any sub-organizations within the above agencies.

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- Identifies key actions in response to freeway closures caused by any emergency
- Identifies routes for exiting the freeway
- Provides tools for estimating the regional traffic impact from complete closures
- Identifies needed roadside services and who provides them
- Identifies public information actions and resources
- Establishes the stakeholder body and their contact information

1.2 Who Should Read/Use This Plan

- Members of the Freeway Closure Task Force
- Riverside County Sheriff's Department
- Caltrans District 8 Operations and Maintenance
- CHP Inland Division
- CalFire
- California Office of Emergency services
- American Red Cross
- City and County staff responsible for traffic management
- City and County staff responsible for emergency services

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- Appendix D Coachella Valley I-10 Ramp Configurations

2 EXISTING CONDITIONS

2.1 Situation

Interstate 10 is completely closed in one or both the eastbound or westbound directions in the Study Area.

2.2 Study Area

The Study Area for this Emergency Response Plan is along Interstate 10 from the junction of State Route 60 east to Box Canyon Road (east of Indio) and includes those arterials and state route highways that would provide suitable traffic routing alternatives in the event of freeway closures. The area overlaps with the Riverside County Freeway Closure Task Force (FCTF) Plan which covers I-10. Their plan will provide a coordinated framework for Unified Command in the event of a long term freeway closure. The FCTF Plan covers the "Pass" area from the intersection of SR-60 and I-10 East to I-10 and SR-62.

2.3 Command and Control

2.3.1 CalFIRE

CalFIRE dispatches for Riverside County from its Communications Center in Perris, CA.

2.3.2 California Highway Patrol

CHP dispatches for the Banning, Indio, Blythe and Needles Areas from its Communications Center in Indio, CA. Remaining CHP Areas in the Inland Division are dispatched from the Inland Communications Center (ICC) in San Bernardino, CA. ICC will co-locate with the new Caltrans District 8 TMC in Fontana in 2010.

2.3.3 Caltrans District 8

Caltrans dispatches maintenance resources from its Transportation Management Center in San Bernardino. This center is scheduled to relocate to the joint Caltrans/CHP Inland Empire TMC and Communications Center in Fontana in 2010.

2.3.4 California Office of Emergency Services

California OES Southern Region is headquartered at the Joint Forces Operating Base in Los Alamitos, CA. The Regional Emergency Operations Center (REOC) is located here. CA OES will have the capability to connect a mobile Command Van to the new Joint Caltrans/CHP TMC in 2010.

2.3.5 Riverside Office of Emergency Services (Riverside County FD – CalFIRE)

Riverside County OES operates from its Primary EOC in Riverside, CA and when activated, from its Alternate EOC in Indio, CA.

2.3.6 Riverside County Sheriff's Department

Riverside County Sheriff's department dispatches throughout the county from its Communications Center in Riverside, CA. The following are direct telephone numbers that may be used to contact the Sheriff's dispatch centers. Note: these numbers are for appropriate/official use only. The allied agency line should be the first alternative. The seven digit 911 lines are included as an alternative for those calling from outside the immediate city 911 area code.

Riverside:	(951) 780-9894	Allied agency line
	(951) 776-1010	Supervisor line
	(951) 684-0911	7-digit 911 line
Palm Desert:	(951) 776-1234	Allied agency line
	(760) 836-1769	Supervisor line
	(760) 836-3220	7-digit 911 line
Colorado River	(951) 776-1073	Allied agency line
	(760) 921-5763	Supervisor line
	(760) 921-7910	7-digit 911 line

2.3.7 Command Center Relationships

Figure 1 outlines the command relationships among the constituent public safety centers in Riverside County that would be most impacted by an extended freeway closures in the Coachella Valley area. The Alternate EOC in Indio is not normally activated but could be under specified conditions. Mobile Command Posts (MCP's) are deployed and activated as needed as is the Joint Information Center (JIC). Higher level Emergency Operations Centers in Los Alamitos and Sacramento are activated as the incident escalates in scope. The National Guard Joint Operations Center in Sacramento would normally only come into play during major disasters.

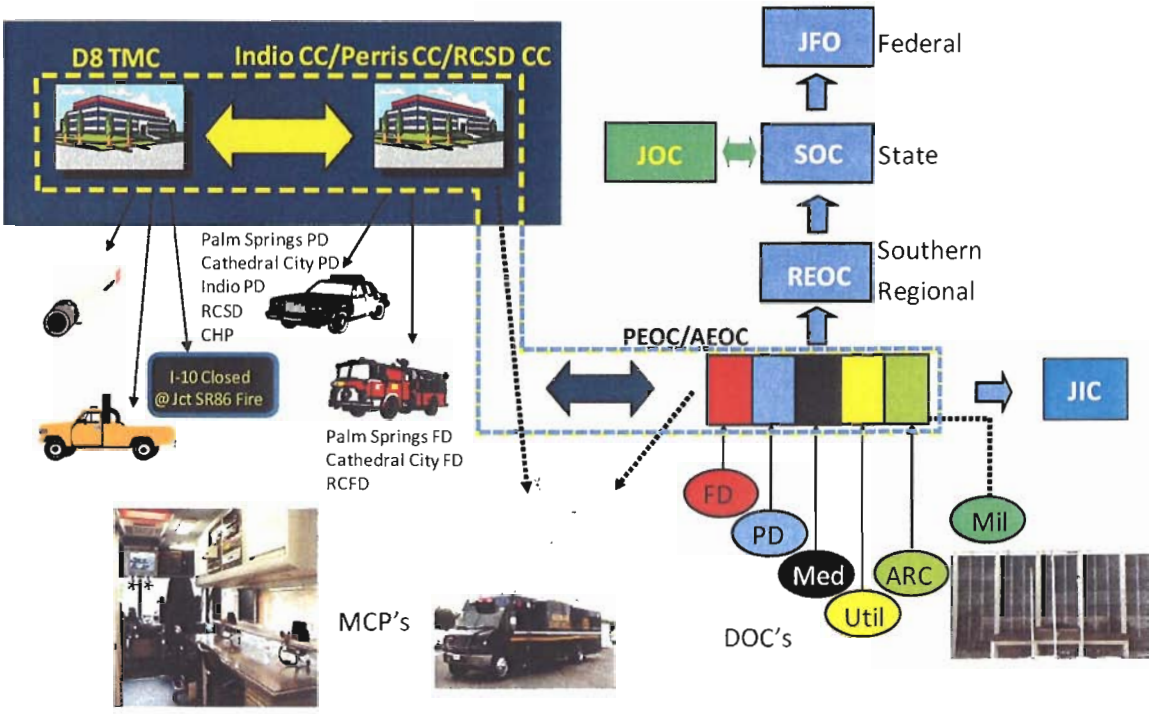

Figure 1: Command Center Relationships – Riverside County

2.3.8 Inter-agency Information Sharing

There are no real-time connections between the above-listed agencies except in the case of the Riverside County EOC and Alternate EOC (when activated). Riverside County uses WebEOC which provides virtual connectivity between key public safety Departmental Operations Centers (DOC's) and the EOC/AEOC. Perris Communications Center receives real-time freeway incident information via the CHP highway incident web service and will notify OES if a significant incident develops. Likewise the REOC monitors CHP highway incident data from the same source.

2.3.9 Airborne Resources

To support command center activities and estimates of impact; Riverside County Sheriff, CHP and CalFire all have airborne resources. These include both helicopters and fixed winged aircraft which can be used for daytime monitoring of incident location and queue buildup.

2.4 Transportation Network

2.4.1 Freeways

The freeways traversing the Coachella Valley include Interstate 10, a major commercial corridor between Phoenix, AZ and Los Angeles, CA and a short segment of State Route 86 from the Indio Junction with I-10 south to Coachella. At the west end of the study area, State Route 60 merges with I-10 in Beaumont.

2.4.1.1 Lane Configuration

I-10 is an 8-lane highway from the junction of SR-60 to Monterey St., a 6-lane highway from Monterey St. to Dillon Rd. and a 4-lane highway from Dillon Rd. to Box Canyon Rd.

2.4.1.2 Median Types

Median barriers on I-10 vary among permanent concrete barriers, temporary K-rail barriers, cable barriers and no barriers. In the event that emergency turnaround points are needed, construction equipment can be ordered by Caltrans to create a large enough opening in the median barrier to allow traffic to reverse direction. Because of the number of ramps in the Study Area, this measure would only be used in extreme cases.

2.4.1.3 Ramp Configurations

There are 29 ramps in the Study Area plus another 11 median turnarounds east of Dillon Road. Ramp configurations with turnaround capability are shown in Appendix D.

2.4.1.4 Frontage Roads

A limited number of frontage roads provide nearby access to I-10 at various points along the Study Area. These are shown in Figure 2 and listed from west to east in Table 1. "Location" refers to whether the frontage road is north or south of I-10.

Table 1: Frontage Roads along I-10 from SR-60 to Box Canyon Road

Frontage Road	Location	Western End	Eastern End
Railroad Ave.	S	Main Street, Cabazon@	Haugen Lehmann Way@
Tipton Rd.	S	Wendy Rd.@	Whitewater Cut Off@
Garnet Rd.	S	JWO Jct SR-62	JEO Indian Ave@
20th Ave.	N	Worsley Rd. (JEO SR-62)	JEO Indian Ave.@
Salvia Rd.	S	JWO N. Gene Autry Trail	N. Gene Autry Trail@
Varner Rd.	N	JEO Ramon Rd.@	Jefferson St.@
Vista del Norte	N	Cabazon Indian Reservation	JEO Dillon Rd.@
Vista del Sur	S	Dillon Rd.@	JEO Dillon Rd.
Pinkham Canyon Rd.	N	JWO Aqueduct Rd.	Aqueduct Rd.@

@=Access point

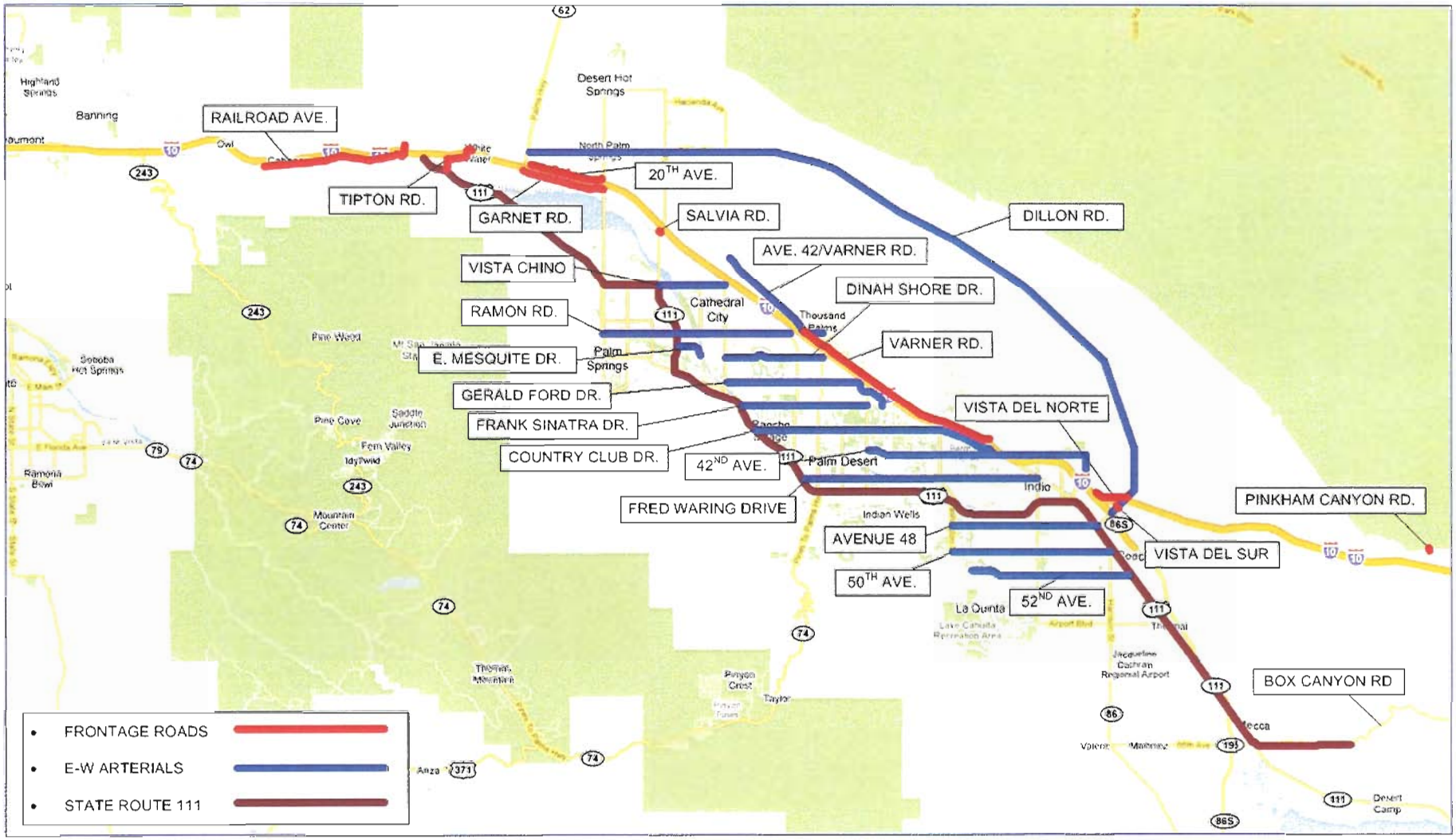

Figure 2: Coachella Valley E-W Arterials and Frontage Roads

2.4.1.5 Average Annual Daily Traffic (2007 Data)

Table 2 provides the most current Average Annual Daily Traffic for the I-10 segments in the Study Area.

Table 2: Caltrans 2007 AADT data for I-10, SR-60 to Box Canyon Road

Coachella Valley 2007 Traffic Counts for Interstate 10 (SR 60 to Cottonwood Springs)

						West of Count Station			East of Count Station		
District	Route	County	Prefix	PM	Interchange/Count Station	W Pk Hr	W Pk Mo	W AADT	E Pk Hr	E Pk Mo	E AADT
8	10	RIV		6.670	JCT. RTE. 60 WEST	6400	94000	91000	11700	140000	132000
8	10	RIV		7.574	BEAUMONT, JCT. RTE. 79 SOUTH	11700	140000	132000	11700	140000	132000
8	10	RIV		8.205	PENNSYLVANIA AVENUE	11700	140000	132000	12500	147000	139000
8	10	RIV		9.307	HIGHLAND SPRINGS AVENUE INTERCHANGE	12500	147000	139000	12200	142000	134000
8	10	RIV		11.333	BANNING, SUNSET AVENUE	12200	142000	134000	12300	140000	132000
8	10	RIV	R	11.962	22ND STREET	12300	140000	132000	12100	138000	129000
8	10	RIV		12.853	BANNING, JCT RTE 243, SOUTH EIGHTH STREET INTERCHANGE	12100	138000	129000	11700	132000	123000
8	10	RIV		13.859	BANNING, HARGRAVE STREET INTERCHANGE	11700	132000	123000	11100	126000	117000
8	10	RIV	R	14.760	EAST RAMSEY STREET	11100	126000	117000	11400	129000	120000
8	10	RIV	R	16.544	RESERVATION ROAD/FIELDS ROAD INTERCHANGE	11400	129000	120000	10700	122000	113000
8	10	RIV	R	17.657	APACHE TRAIL ROAD INTERCHANGE	10700	122000	113000	9000	108000	100000
8	10	RIV	R	19.398	CABAZON, EAST CABAZON INTERCHANGE; MAIN STREET	9000	108000	100000	9000	108000	100000
8	10	RIV	R	24.554	VERBENIA AVENUE INTERCHANGE	9000	108000	100000	9100	109000	101000
8	10	RIV	R	25.201	JCT. RTE. 111	9100	109000	101000	7900	95000	88000
8	10	RIV		27.229	WHITEWATER INTERCHANGE	7900	95000	88000	7900	95000	88000
8	10	RIV		29.691	JCT. RTE. 62 NORTH	7900	95000	88000	7600	93000	86000
8	10	RIV		33.129	INDIAN AVENUE	7700	93000	86000	7700	93000	87000
8	10	RIV		36.138	PALM DRIVE/GENE AUTRY TRAIL INTERCHANGE	7700	93000	87000	8300	99000	93000
8	10	RIV		39.493	DATE PALM DRIVE INTERCHANGE	8300	99000	93000	8800	105000	99000
8	10	RIV		43.358	RAMON ROAD	8800	105000	99000	9000	107000	101000
8	10	RIV		44.505	MONTEREY AVENUE	9000	107000	101000	9000	107000	101000
8	10	RIV		46.890	COOK STREET	9000	107000	101000	8500	100000	96000
8	10	RIV		50.447	WASHINGTON STREET INTERCHANGE	8500	100000	96000	7200	84000	81000
8	10	RIV	R	52.342	JEFFERSON STREE/INDIO BOULEVARD	7200	84000	81000	6000	70000	67000
8	10	RIV	R	54.738	INDIO, MONROE STREET INTERCHANGE	6000	70000	67000	5500	65000	62000
8	10	RIV	R	55.744	INDIO, JACKSON STREET INTERCHANGE	5500	65000	62000	5000	58000	56000
8	10	RIV	R	56.946	INDIO, NORTH JCT. RTE. 111, AUTO CENTER DRIVE	5000	58000	56000	4700	55000	53000
8	10	RIV	R	57.831	INDIO, JCT. RTE. 86 SOUTH	4700	55000	53000	2400	29500	26800
8	10	RIV	R	58.890	DILLON ROAD	3100	29500	26800	2800	26000	23800
8	10	RIV	R	81.548	COTTONWOOD SPRINGS ROAD INTERCHANGE	2800	26000	23800	2750	26000	23600

2.4.2 State Routes

State Route 111 is the primary east-west arterial running along the southern edge of the Coachella Valley between Indio and Palm Springs. State Routes 86 and 111 link Indio with communities in south Riverside County and Imperial County. State Route 86 is a commercial vehicle (CVO) connector to the Calexico Border Crossing, reconnecting to SR-111 in Brawley. SR-111 is the CVO route that runs south from I-8 to the Calexico-Mexicali Border crossing. SR-86 is suitable as a divert route out of the Coachella Valley and runs west of the Salton Sea. SR-111 runs east of the Salton Sea and is less suitable as a divert route. State Route 74 heads south, becoming the Pines-to-Palms Highway linking Coachella Valley with Anza, Idyllwild and Hemet. Between Palm Desert and Hemet there are two radical switchbacks which limit this highway's use for diverting traffic, especially for large commercial vehicles. State Route 62 meets I-10 at the west end of the Coachella Valley and proceeds north and east to Twenty-Nine Palms and the Joshua Tree National Park. State Route 79 heads south from Beaumont and links Beaumont with Hemet and Temecula Valley. State Route 243 heads south from Banning to Idyllwild and SR-74 but is not suitable for diverting traffic due to severe switchbacks and the narrow roadway.

2.4.3 Local Arterials

The Coachella Valley has a well-developed arterial system with several routes running more or less parallel to the I-10 Freeway. Chief among these is SR-111 which is maintained by local agencies in the Valley. Others with end points are listed in Table 3.

Table 3: East-West Arterials Paralleling I-10 in the Coachella Valley

E-W Arterial Name	Location	Eastern End	Western End
52nd Ave.	S	SR-86	Washington St.
50th Ave.	S	SR-86	Washington St.
Avenue 48	S	SR-111	Washington St.
Fred Waring Drive	S	Indio Blvd./Monroe St.	SR-111
42nd Ave.	S	Country Club Dr.	Cook St.
Country Club Dr.	S	42nd Ave.	SR-111
Frank Sinatra Dr.	S	Cook St.	SR-111
Gerald Ford Dr.	S	Frank Sinatra Dr.	Date Palm Dr.
Dinah Shore Dr.	S	Monterey St.	E. Mesquite Dr. Palm Springs
E. Mesquite Dr.	S	Dinah Shore Dr. Cathedral City	SR-111 (S. Gene Autry Trail)
Ramon Rd.	S	I-10	S. Palm Canyon Dr.
Vista Chino	S	Date Palm Dr.	SR-111
Dillon Rd.	N	SR-86	SR-62
Ave. 42/Varner Rd.	N	Golf Center Dr.	Date Palm Dr.

3 FREEWAY ACTIONS

3.1 Evacuation

The desired responses are to clear the freeway as completely and quickly as practicable and to prevent incoming traffic from either (or both) east and west from exacerbating the problem. To address the first objective, evacuation tools are included in this Plan. However, no amount of evacuation is likely to completely clear the freeway upstream of closures so there will be stranded motorists to deal with. Given the median construction in most of the Valley and west to SR-60, vehicles trapped between an incident location and the next upstream ramp will be the minimum number of stranded vehicles. In some cases these distances can be in excess of two miles at the west end of the Valley. Evacuation measures can include turning traffic around at ramps, or east of Dillon Road on median turnarounds and/or diverting traffic to southbound arterials into the valley where they can then join one or more east-west arterials as outlined in Figure 2. In extreme cases, CHP may request that median barriers be removed by any means feasible to facilitate turnarounds between ramps west of Dillon Road. This requires close coordination with Caltrans.

3.1.1 Hypothetical Incident Locations

To analyze the impact of various incident locations in the Valley and in Cabazon/Banning/Beaumont, mid-points between all ramps from SR-60 to Box Canyon Road are used as hypothetical incident locations. These locations are then used to index response guidelines for each situation and are shown in Figure 4 to Figure 10. The symbols used are explained as follows in Figure 3.

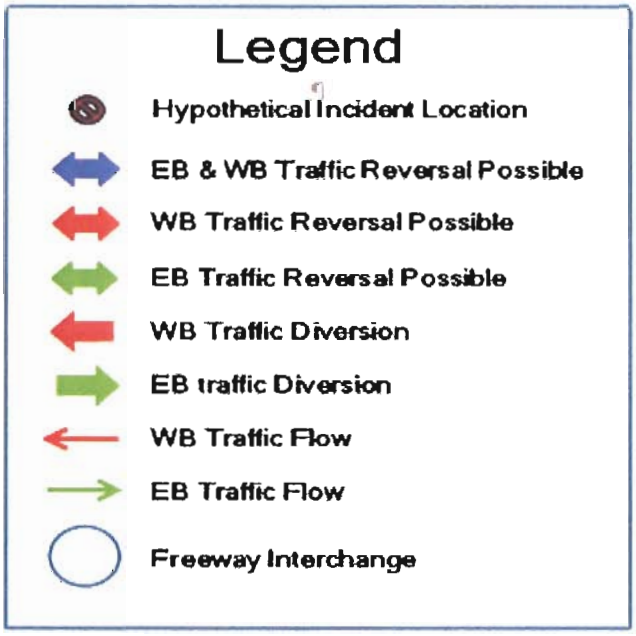

Figure 3: Incident Location Map Symbols

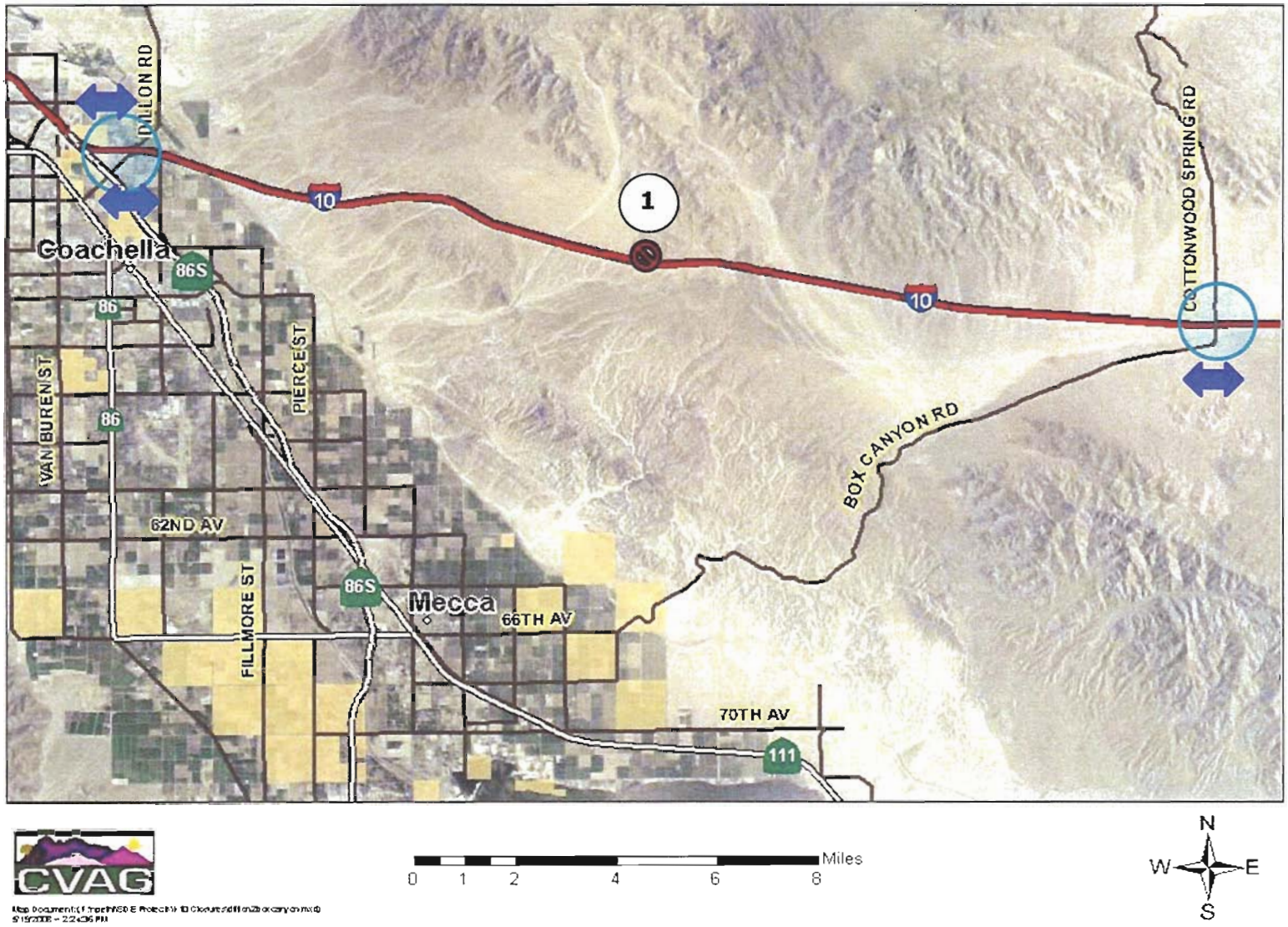

Figure 4: I-10 Incidents: Box Canyon Rd. to SR-86

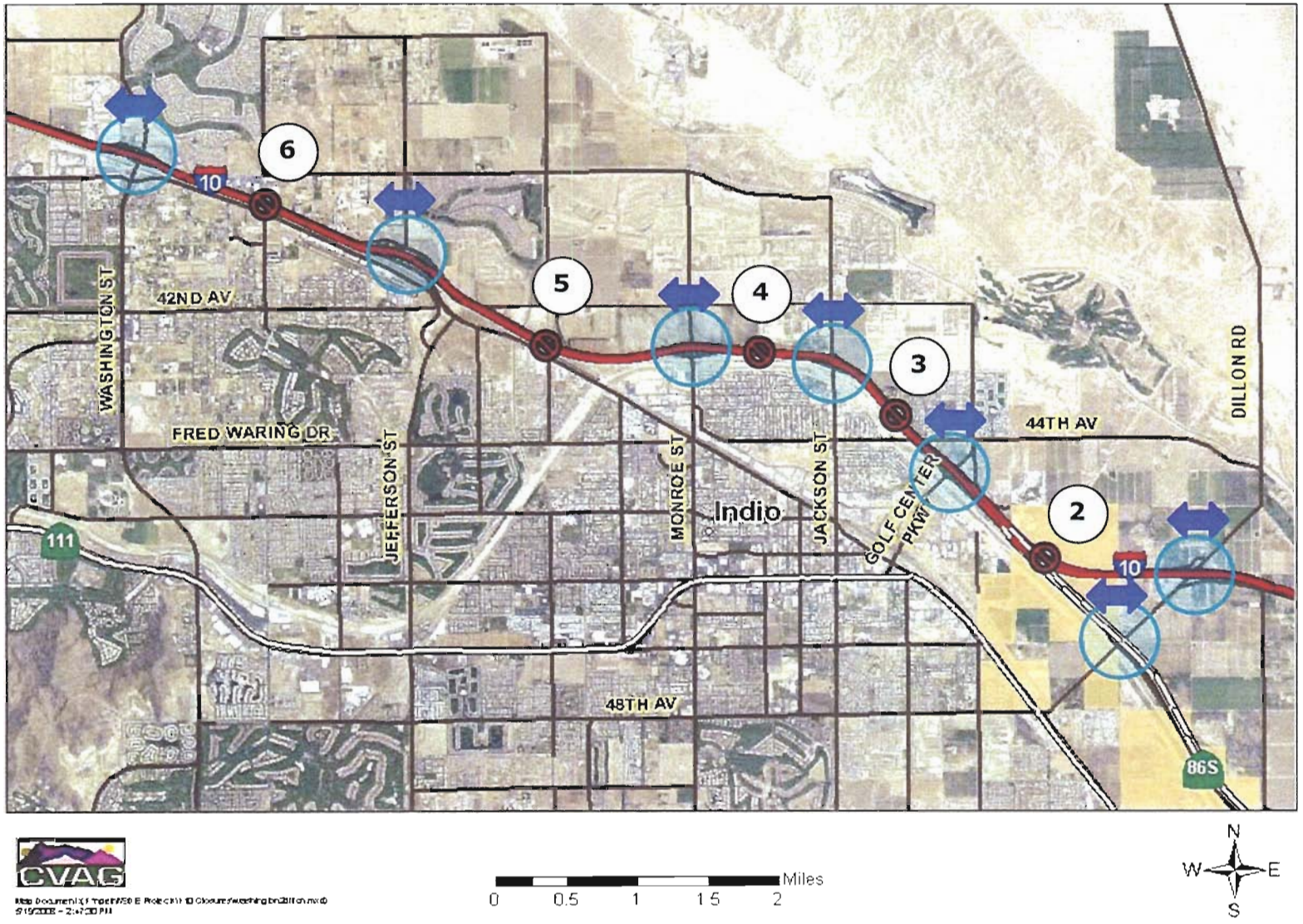

Figure 5: I-10 Incidents: SR-86 to Washington St.

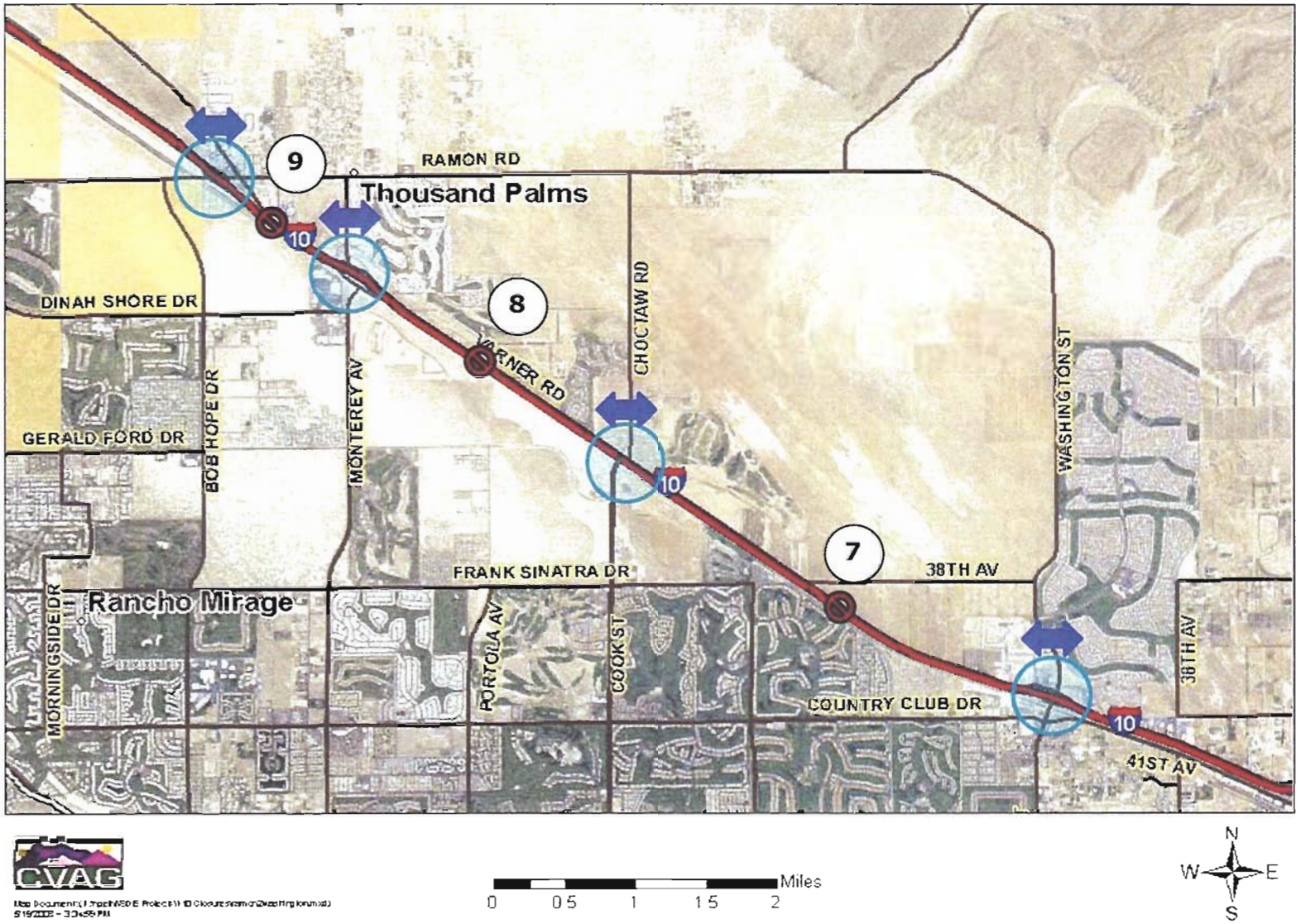

Figure 6: I-10 Incidents: Washington St. to Ramon Road

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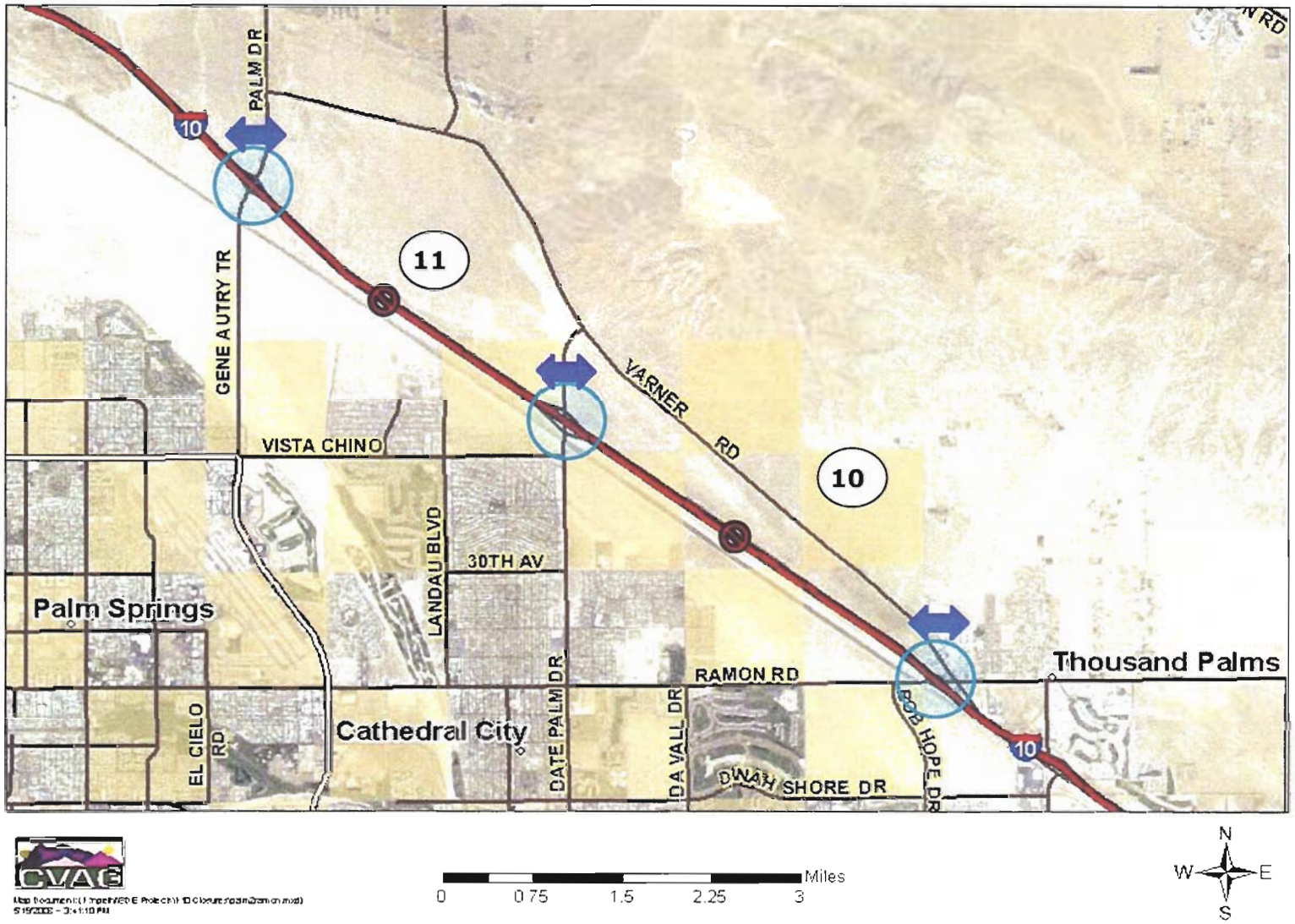

Figure 7: I-10 Incidents: Ramon Road to Gene Autry Trail/Palm Drive

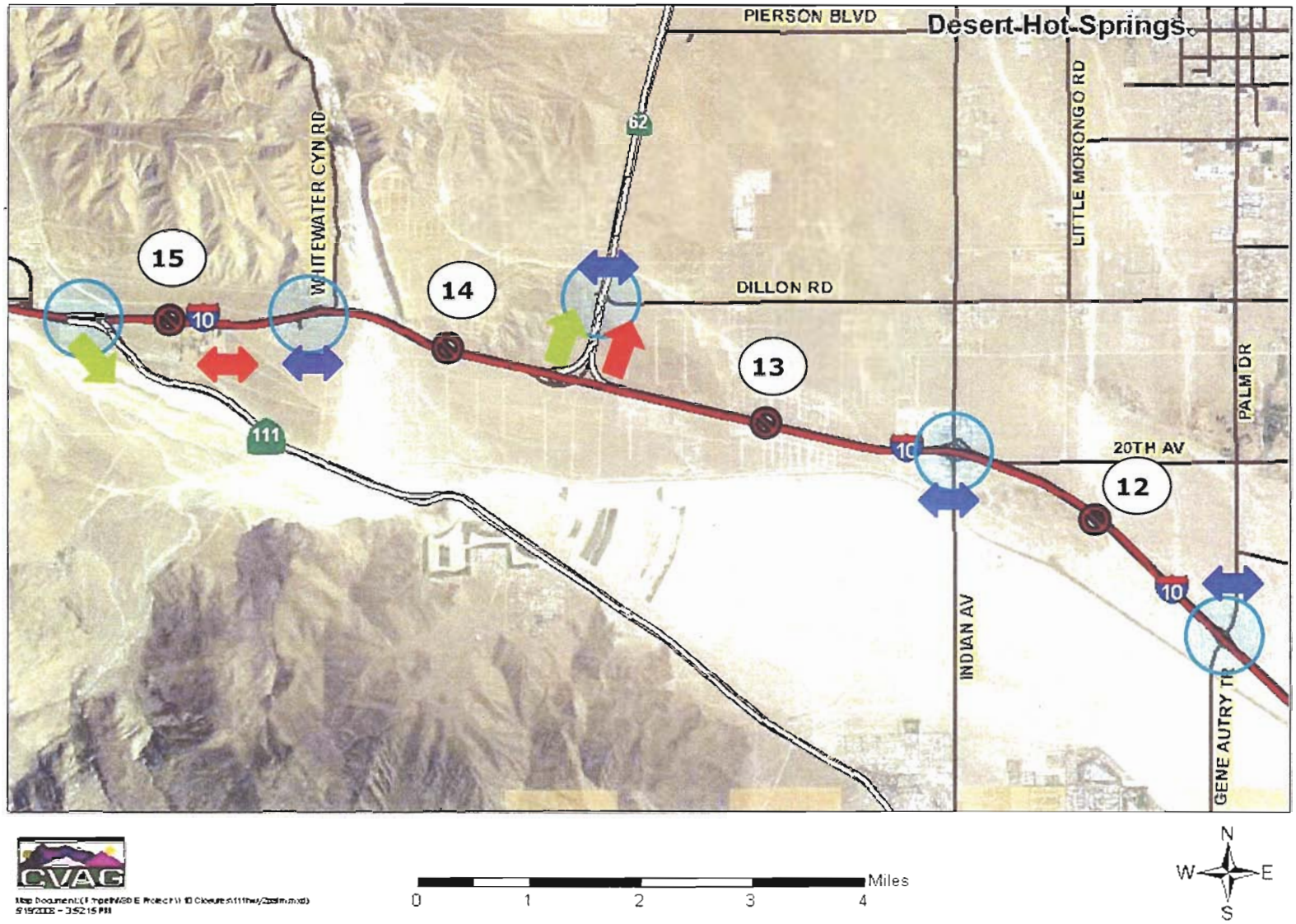

Figure 8: I-10 Incidents: Gene Autry Trail/Palm Drive to SR-111

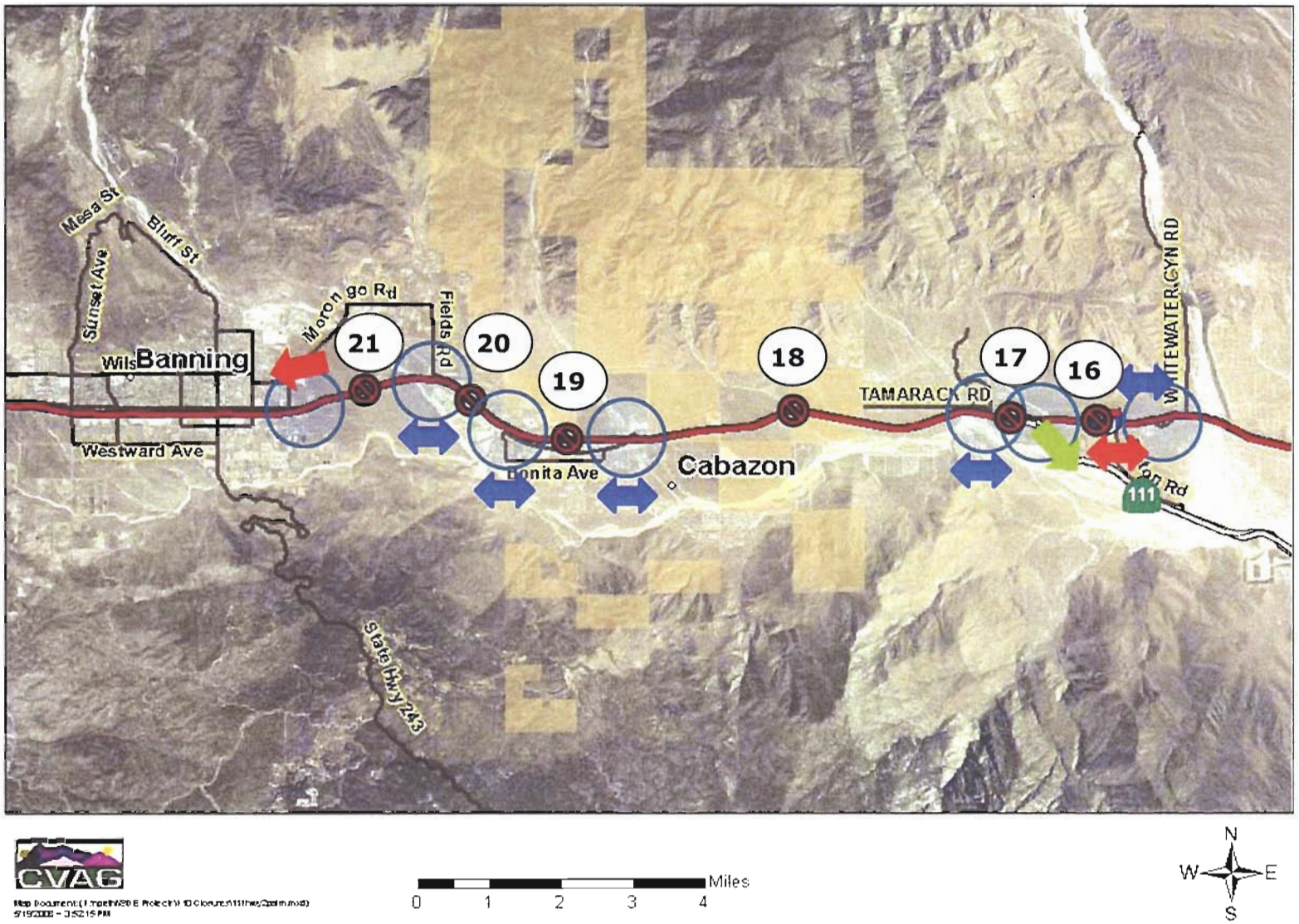

Figure 9: I-10 Incidents: SR-111 to Ramsey Road

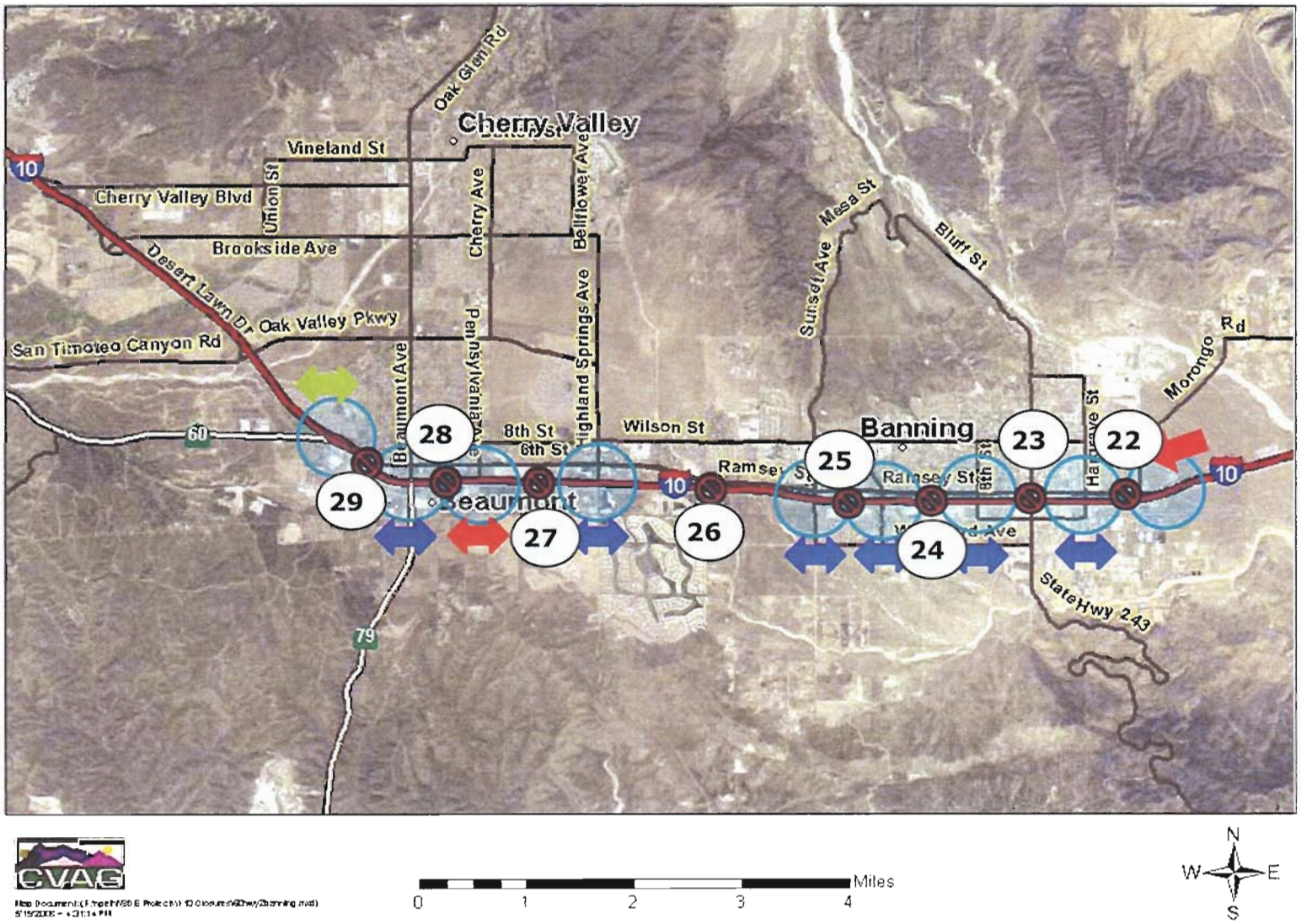

Figure 10: I-10 Incidents: Ramsey Road to SR-60

3.1.2 Queuing

To determine the rate of queue buildups resulting from a total blockage of one or both directions of the I-10 freeway, the analysis method outlined in Appendix C was used for 2-lane, 3-lane and 4-lane total blockage. The results approximately match field estimates from experienced CHP Traffic Officers. As a rule of thumb and averaging across the lane configurations in the Coachella Valley, total blockage results in a queue that grows from approximately one mile every 2.5 minutes (99% volume/capacity ratio) to one mile every 7.5 minutes (50% volume/occupancy ratio).

Figure 11 shows the growth of the queue for a given incident location at 1 mile time points each 7.5 minutes assuming a volume-to-capacity ratio of .5.

Figure 11: Illustration of queue build-up from a hypothetical I-10 total-closure incident between Whitewater and junction of SR-62

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3.1.3 Estimates of Stranded Motorists

Estimates of stranded motorists are useful for emergency response planning, particularly if a significant amount of supplies such as food, ice and water are needed along with substantial emergency medical resources. These estimates along with the mapping of frontage roads will provide agencies such as Riverside County OES and the American Red Cross with valuable planning and decision data. The data is summarized in Table 4. This data was developed using the assumptions outlined in Figure 12.

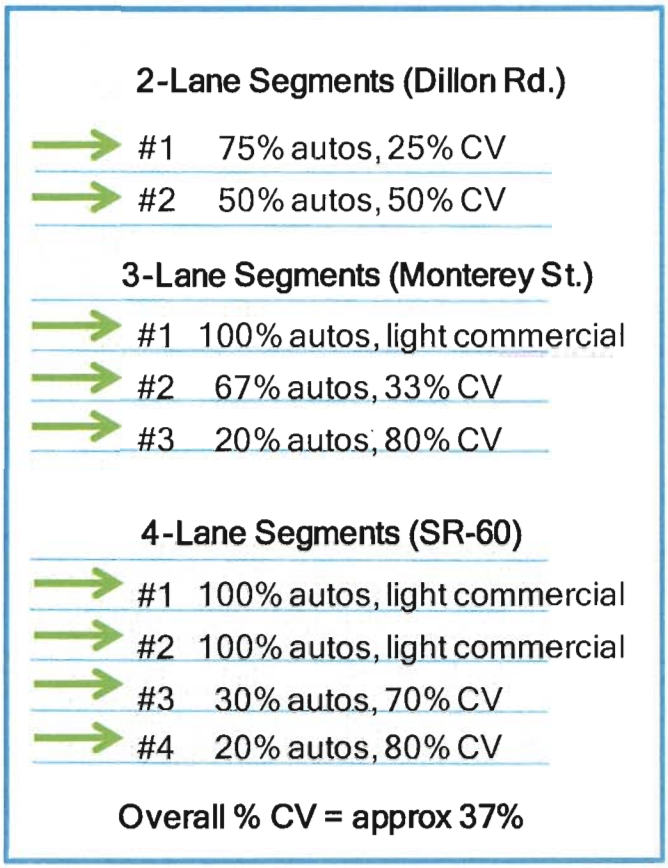


Figure 12: Assumptions used to estimate number of stranded motorists in freeway segments

Table 4: Hypothetical Incident Locations and Possible Diverts with Estimated Stranded Vehicles

Figure	Incident No.	West Interchange	East Interchange	Approx. Distance Between (feet)	#Lanes	Autos	CV's	Cumulative Autos	Cumulative CV's
9	29	JCT. RTE. 60 WEST	BEAUMONT JCT. RTE. 79 SOUTH	4,817	4	482	96	482	96
9	28	BEAUMONT JCT. RTE. 79 SOUTH	PENNSYLVANIA AVENUE	3,340	4	334	67	816	163
9	27	PENNSYLVANIA AVENUE	HIGHLAND SPRINGS AVENUE INTERCHANGE	5,812	4	581	116	1397	279
9	26	HIGHLAND SPRINGS AVENUE INTERCHANGE	BANNING SUNSET AVENUE	10,653	4	1065	213	2462	492
9	25	BANNING SUNSET AVENUE	22ND STREET	3,282	4	328	66	2790	558
9	24	22ND STREET	BANNING JCT RTE 243 SOUTH EIGHTH STREET INTERCH	4,671	4	467	93	3258	652
9	23	BANNING JCT RTE 243 SOUTH EIGHTH STREET INTERCH	BANNING HARGRAVE STREET INTERCHANGE	5,299	4	530	106	3787	757
9	22	BANNING HARGRAVE STREET INTERCHANGE	EAST RAMSEY STREET	5,031	4	503	101	4291	858
8	21	EAST RAMSEY STREET	RESERVATION ROAD/FIELDS ROAD INTERCHANGE	8,476	4	848	170	5138	1028
8	20	RESERVATION ROAD/FIELDS ROAD INTERCHANGE	APACHE TRAIL ROAD INTERCHANGE	6,721	4	672	134	5810	1162
8	19	APACHE TRAIL ROAD INTERCHANGE	CABAZON EAST CABAZON INTERCHANGE MAIN STREET	9,101	4	910	182	6720	1344
8	18	CABAZON EAST CABAZON INTERCHANGE MAIN STREET	VERBENIA AVENUE INTERCHANGE	27,266	4	2727	545	9447	1889
8	17	VERBENIA AVENUE INTERCHANGE	JCT. RTE. 111	3,489	4	349	70	9796	1959
8	16	JCT. RTE. 111	WHITEWATER INTERCHANGE	10,155	4	1016	203	10811	2162
7	15	WHITEWATER INTERCHANGE	JCT. RTE. 62 NORTH	12,983	4	1298	260	12110	2422
7	14	JCT. RTE. 62 NORTH	INDIAN AVENUE	18,182	4	1818	364	13928	2786
7	13	INDIAN AVENUE	PALM DRIVE/GENE AUTRY TRAIL INTERCHANGE	15,866	4	1587	317	15514	3103
7	12	PALM DRIVE/GENE AUTRY TRAIL INTERCHANGE	DATE PALM DRIVE INTERCHANGE	17,684	4	1768	354	17283	3457
6	11	DATE PALM DRIVE INTERCHANGE	RAMON ROAD	20,292	4	2029	406	19312	3862
6	10	RAMON ROAD	MONTEREY AVENUE	6,052	4	605	121	19917	3983
5	9	MONTEREY AVENUE	COOK STREET	12,536	3	938	189	20855	4172
5	8	COOK STREET	WASHINGTON STREET INTERCHANGE	18,801	3	1406	283	22261	4456
5	7	WASHINGTON STREET INTERCHANGE	JEFFERSON STREE/INDIO BOULEVARD	9,972	3	746	150	23007	4606
4	6	JEFFERSON STREE/INDIO BOULEVARD	INDIO MONROE STREET INTERCHANGE	12,667	3	947	191	23955	4797
4	5	INDIO MONROE STREET INTERCHANGE	INDIO JACKSON STREET INTERCHANGE	5,321	3	398	80	24353	4877
4	4	INDIO JACKSON STREET INTERCHANGE	INDIO NORTH JCT. RTE. 111 AUTO CENTER DRIVE	6,265	3	469	94	24821	4971
4	3	INDIO NORTH JCT. RTE. 111 AUTO CENTER DRIVE	INDIO JCT. RTE. 86 SOUTH	4,760	3	356	72	25177	5043
4	2	INDIO JCT. RTE. 86 SOUTH	DILLON ROAD	5,549	2	277	55	25455	5098
3	1	DILLON ROAD	BOX CANYON ROAD INTERCHANGE	115,757	2	5788	1158	31243	6256

3.1.4 Direct Exit to Arterials

CHP may opt to route traffic off the freeway in preference to reversing traffic. In this case assistance will be required from local law enforcement agencies due to the limited number of CHP Traffic Officers available in the Indio and Banning Areas.

3.1.5 Turnarounds

The ability to turn traffic around at freeway ramps is a function of the ramp configuration. Most ramps in the Valley and westward to SR-60 can accommodate bi-directional turnarounds. Appendix D shows the ramp configurations from Box Canyon Rd. to SR-60 and includes the traffic reversal feasibility for both westbound and eastbound traffic.

3.2 Services for Stranded Motorists

3.2.1 Use of Frontage Roads

Frontage roads have been outlined elsewhere in this Plan. The roads listed are sufficiently close to the adjacent freeway segment(s) that they could conceivably be used to stage supplies and aid stations as needed by the situation. In some cases there are Caltrans right-of-way fences that may have to be cut and/or temporarily removed to facilitate the movement of supplies to stranded motorists. In the rare case that the entire freeway is shut down in both directions, the opposite side freeway may be used to stage supplies under CHP direction. Conceivably the freeway could be shut down specifically to facilitate the routing of supplies and/or emergency service personnel.

3.2.2 Motorist Services Disaster Response

The Riverside County Chapter of the American Red cross will be tasked by the County Office of Emergency Services to provide basic subsistence services support to locations adjacent to the affected scene. The Riverside Chapter operates four Mobile Service canteens which can be deployed where needed during a freeway incident. Once on scene, Red Cross personnel can assess the need for additional supplies and working with the EOC, ensure that supplies are ordered, routed to the scene and delivered to motorists. If the incident requires, other county agencies such as Emergency Medical Services, Public Health and Social Services would be tasked by the EOC to coordinate with Red Cross resources to deliver necessary support.

3.2.3 Approximate Response Times for key Resources

Table 5 below shows expected response times for key resources in the event of a freeway closure. The times are estimated from the time a decision is made to request a resource to expected deployment.

Table 5: Approximate Response Times for Key Resources

Agency	Resource	Approx Response Time	Remarks
Caltrans D8	Sign Trucks/portable signs	1.5 -2 hours + travel time	From Indio, Banning and Inland Empire
Caltrans D8	Notification of D7/12/11 Notification of AZ DOT Notification of AHP	Immediate	
CHP	Air resources		1 Helo, 2 F/W @ Thermal
CHP	Additional Traffic Officers from outside Indio Area		
RCSD	Air resources	Immediate to 1 hour	1 Helo @ Thermal, 4 Helos @ Hemet-Ryan. Response dependent on whether Helo(s) already airborne
RCFD OES	EOC Activation		Can be partial activation
RCFD OES	Request for Services (ARC, EMS, etc.)	30 min – 1 hour	
RC ARC	Assessment Team(s)	Immediate to 1 hour	Depending on location
RC ARC	Mobile Canteens	1 hour + travel time	I in Coachella Valley, 2 in Riverside, 1 in Temecula
RC ARC	Portable shelter teams (supplemented as necessary by EMS, Public Health and Mental Health resources)	1-2 hours + travel time	27 shelter trailers around RC for shelter supplies (100 beds each - additional units can be requisitioned as needed)

4 ARTERIAL ACTIONS

4.1 Agency Notification

If any arterials in the Valley are needed for traffic diversion, local agencies must be notified as soon as practicable, using contact data shown in Table 6. This allows agencies to set up local traffic control, adjust signal timings and provide necessary signage to mark divert routes. Early notification of affected cities is essential.

Table 6: Local Agency Contact Data

City	Law Enforcement	City Engineer/PWD	Contact Telephone #
Palm Springs	Palm Springs PD	Dave Barakian	760-323-8253
Cathedral City	Cathedral City PD	Bill Bayne	760-770-0360
Palm Desert	RCSD	Mark Green wood	760-346-0611 x 460
Rancho Mirage	RCSD	Bruce Harry	760-770-3224
Indian Wells	RCSD	Tim Wassil	760-776-0237
Indio	Indio PD	Tom Brohard –Traffic Engineer	760-541-4270
La Quinta	RCSD	Tim Jonasson	760-777-7051
Coachella	RCSD	Paul Toors	760-398-3002

4.1.1 Signing

Arterial signing is controlled by the individual cities in the Valley. Should additional signing or traffic control devices be needed, the affected cities have access to contract firms that can provide needed equipment such as barriers, portable message signs, etc.

4.1.2 Traffic Signal Plans/Traffic Control

Very few signalized intersections outside the City of Palm Springs are centrally-controlled. Should traffic control be required, cities will have to provide personnel to manually control traffic and/or change signal timing plans. Because of the availability of suitable east-west arterials, traffic saturation in Valley cities is somewhat unlikely, so the primary need would be to adequately inform non-local motorists how to get from a freeway evacuation point to a point where they can re-join the freeway.

4.2 Arterial Divert Routes

Figure 2 illustrates the recommended arterial diverts through the Coachella Valley for various hypothetical incident locations as listed in Table 4. By District policy, Caltrans will only provide re-routing using State Routes, in this case SR-111. However, in an emergency, and if requested by CHP and/or the EOC, other arterials may be used for re-routing. In practice, once off the freeway, motorists are most likely going to find their own routes through the Valley but would need to know where to get back on I-10 downstream of the incident. This in turn requires accurate and timely public information coordinated between the Incident Commander and Riverside County OES.

5 PUBLIC INFORMATION ACTIONS

One of the major failures in the June 2005 extended closure of I-10 was the inability to alert drivers of the extended closure and its impacts. The root cause of this failure was the lack of timely notification of Riverside County OES. Because of this, there was no mechanism to coordinate media response or to keep clear and consistent information from multiple agencies flowing to the public. Figure 13 shows an idealized flow of information, not only from the incident scene but also from command centers that have a broader picture of transportation network impacts. The Coachella Valley has limited state-of-the-art Advanced Traveler Information Systems so comprehensive public notification must rely on traditional broadcast media. However, affected areas further removed from the incident area such as Phoenix, AZ, the greater Los Angeles area and San Diego have, or are developing 511 programs that can be quite effective in diverting traffic away from the incident area if notified in a timely manner. Changeable Message Signs exist near the SR-111 and I-10 interchange on the eastbound side of the I-10 and in the westbound direction on I-10 at the Arizona-California border. These signs are remotely controlled from the Caltrans District 8 TMC in San Bernardino. Additionally Caltrans operates sign trucks that have portable CMS capability and that can be deployed as needed in the approaches to the Valley. Appendix B details the current Draft Caltrans District 8 Traffic Diversion Plans for I-10 from the junction of SR-60 to the Arizona border.

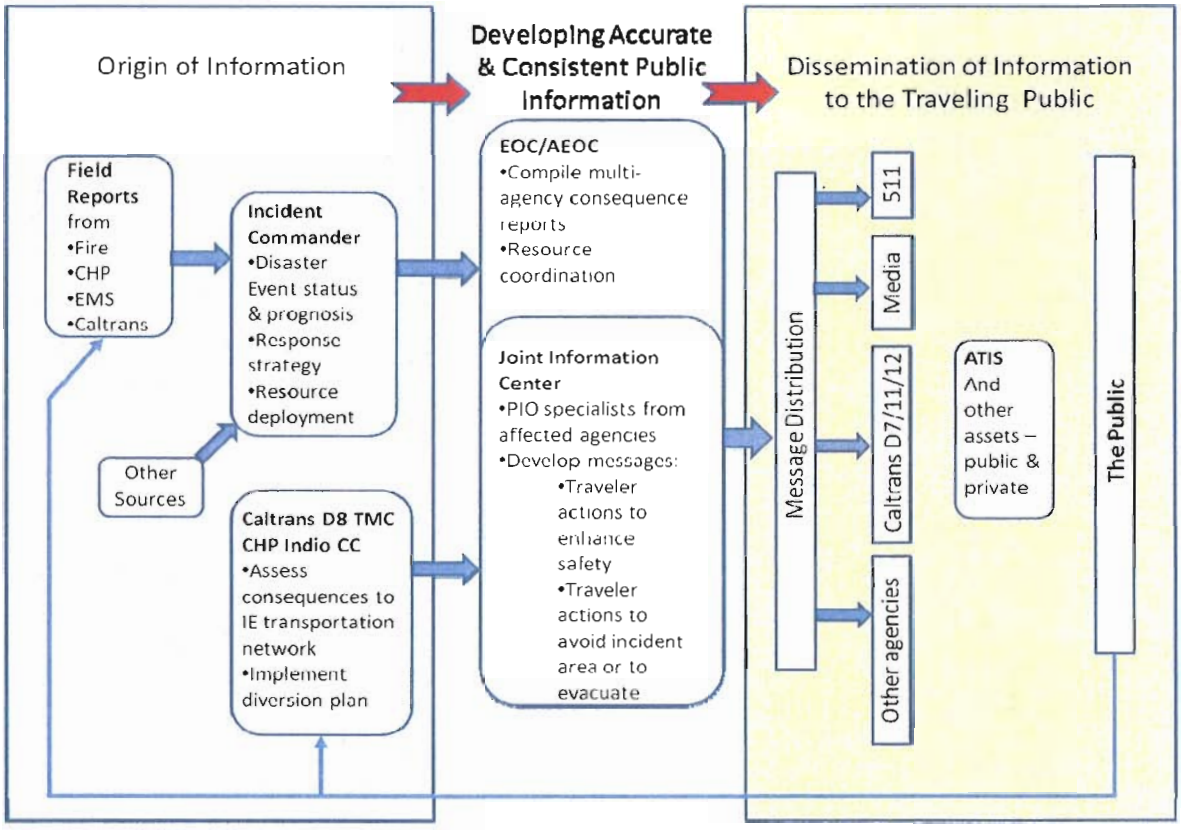


Figure 13: Getting Disaster Information to the Public

APPENDICES

Appendix A – I-10 Emergency Response Plan Contact List

Alan Thompson
Senior Planner, Aviation Transportation Planning & Programs
SCAG
818 W. Seventh Street, 12th Floor
Los Angeles, CA 90017
(213) 236-1940
thompson@scag.ca.gov

John Wohlmuth
Executive Director
Coachella Valley Association of Governments
73710 Fred Waring Blvd., Suite 200
Palm Desert, CA 92260
(760) 346-1127 x111
jwohlmuth@cvag.org

Jim Sullivan
Program Director GIS
Coachella Valley Association of Governments
73710 Fred Waring Blvd., Suite 200
Palm Desert, CA 92260
(760) 346-1127 x118
jsullivan@cvag.org

Nicholas Peihl
GIS Technician
Coachella Valley Association of Governments
73710 Fred Waring Blvd., Suite 200
Palm Desert, CA 92260
(760) 346-1127 x121
npeihl@cvag.org

Capt. Sherrell Sutherland
Indio Area Commander
CHP Border Division
79-650 Varner Road
Indio, CA 92203-9704
(760) 772-8911
Sherrell.sutherland@chp.ca.gov

Lt. Laura Quattlebaum
CHP Border Division
79-650 Varner Road
Indio, CA 92203-9704
(760) 772-8911

Sgt Bryan Baker
CHP San Gorgonio
195 Highland Springs
951 789-200

Capt. Ron Jones
San Gorgonio Pass Area Commander
CHP Inland Division
195 Highland Springs Ave.
Beaumont, CA 92223-3091
(951) 769-2000
lelzig@chp.ca.gov

Lt. Matt Guthrie (Freeway Closure Task Force)
San Gorgonio Pass Area
CHP Inland Division
195 Highland Springs Ave.
Beaumont, CA 92223-3091
(951) 769-2000
(951) 217-1551 (M)
MGuthrie@chp.ca.gov

Allan Kirst
TMC Operations Supervisor
Caltrans District 8
Office of Transportation Management, IETMC – MS B20
464 W. Fourth St.
San Bernardino, CA 92401-1400
(909) 383-6446
Allan.Kirst@dot.ca.gov

Bill Mosby
Deputy Director for Planning
Caltrans, District 8
464 W. Fourth St.
San Bernardino, CA 92401-1400
(909) 383-4147
William.A.Mosby@dot.ca.gov

Mark A. Bassett
Governor's Office of Emergency Services
Acting Southern Region Administrator
4671 Liberty Avenue Bldg. 283
Los Alamitos, CA 90720-5158
(562) 795-2933 (W)
(310) 877-3610 (M)
mark.bassett@oes.ca.gov

Warren Lee
Emergency Services Coordinator
Governor's Office of Emergency Services
Acting Southern Region Administrator
4671 Liberty Avenue Bldg. 283
Los Alamitos, CA 90720-5158
(562) 795-2903 (W)
Warren.lee@oes.ca.gov

Jim Acosta
Governor's Office of Emergency Services
4671 Liberty Avenue Bldg. 283
Los Alamitos, CA 90720-5158
562-795-2939
Jim.Acosta@oes.ca.gov

Peter Lent
Deputy Director RCFD, Office of Emergency Services
4048 Lemon Street, Basement #8,
P.O. Box 1412, Riverside, CA 92502-1412
(951)955-8483 (W)
(951)940-6949 (E)
Peter.lent@fire.ca.gov

Kathleen Henderson
Riverside County, Office of Emergency Services
Area Emergency Services Coordinator
82675 Highway 111, Room 6
Indio, CA 92201
(760) 863-8318
Kathleen.henderson@fire.ca.gov

Gina Moran-McGough (Freeway Closure Task Force)
Riverside County, Office of Emergency Services
(951) 955-4700
(951) 232-6680 (M)
gina.moran-mcgough@fire.ca.gov

Patrick J. Mullany
Council Member (former FBI)
City of Indian Wells
44950 Eldorado Drive
Indian Wells, CA 92210-7497
(760) 346-2489
pmullany@IndianWells.com

Sandy Jackson
Riverside County Department of Public Health
Public Safety Programs
(951)358-5898
swales@co.riverside.ca.us

Julie Pardini
Response Coordinator
American Red Cross
6177 River Crest Drive #B
Riverside, CA 92507
Mail: P.O. Box 55040, Riverside, CA 92517
951-656-4218 x1012 (W)
800-951-5600 24-Hour Duty #
909-204-8719 (M)
jpardini@riversidecounty.redcross.org

Ellen Hughes
Riverside County American Red Cross
760-218-4594
Ehughes001@dc.rr.com

John Williams
Day Captain American Red Cross
Coachella Valley
760-218-2548
jwilliams@collegeofthedesert.edu

Paul Bakeman – CDO
American Red Cross
951-204-9455
CDO.RIVCOARC@yahoo.com

Assemblyman John J. Benoit
CA Assembly 64th District
73710 Fred Waring Drive (Satellite Office)
Palm Desert, CA 92260
(760) 674-0164
Assemblymember.benoit@assembly.ca.gov

Debra L. Beck
Field Representative
Assemblyman John Benoit
CA Assembly 64th District
73710 Fred Waring Drive (Satellite Office)
Palm Desert, CA 92260
(760) 674-0164
Debra.Beck@asm.ca.gov

Lt. Henry Sawicki (Freeway Closure Task Force)
Riverside County Sheriff's Department
Emergency Response Team
4095 Lemon Street
Riverside CA 92501
(951) 955-8860
(951) 906-9736 (M)
hsawicki@riversidesheriff.org

Ignacio Otero
Deputy Fire Chief
Riverside County Fire Department
77-933 Las Mountains Rd, Suite 205
Palm Desert, CA 92211
iotero@fire.ca.gov

Allyn Waggle
Deputy Director and Director of Transportation
Coachella Valley Association of Governments
73710 Fred Waring Blvd., Suite 200
Palm Desert, CA 92260
(760) 346-1127 x116
awaggle@cvag.org

Mojahed Salama
Division Manager
Riverside County Department of Transportation
Engineering Division Manager
County of Riverside
38-686 El Cerrito Road
Palm Desert, CA 92211
Desert Office
760-863-8267 (Desert office #)
951-955-6790 (Riverside Office #)
951-323-1056 (Cell phone)
msalama@rctlma.org

Denys Arcuri
Communications Director
Riverside County 4th District, Supervisor Roy Wilson
(760) 863-8211
darcui@rcbos.org

Tom Davis
Chief of Planning & Development
Agua Caliente Band of Cahuilla Indians
(760) 699-6950
tdavis@aguacaliente.net

Paul Slama
Tribal Field Representative
Cabazon Band of Mission Indians
84-245 Indio Springs Parkway
Indio 92203
(760) 342-2593
pslama@cabazonindians-nsn.gov

Margaret Park
Director of Planning & Natural Resources
Agua Caliente Band of Cahuilla Indians
777 E. Tahquitz Canyon Way, Suite 301
Palm Springs, CA 92262
760-883-1339
mpark@aguacaliente.net

Eunice Lovi
Director of Planning
SunLine Transit Agency
32-505 Harry Oliver Trail
Thousand Palms, CA 92276
elovi@sunline.org

Tommy Green
Sunline Transit Agency
760-343-3456 x 463
32505 Harry Oliver Trail
Thousand Palms
CA 92276
tgreen@sunline.org

Rick Bishop, AICP
Executive Director
(951) 955-8303
bishop@wrcog.cog.ca.us

Kevin Viera, Project Manager
Western Riverside Council of Governments (WRCOG)
951-955-8305
viera@wrcog.cog.ca.us

Leisa Lukes, Planning Director
City of Cathedral City
(760) 770-0340 - 8:00 a.m. – 6:00 p.m.
llukes@cathedralcity.gov

Rudy Acosta
Assistant City Manager
Desert Hot Springs
760-329-3502
Racosta@cityofdhs.org

Fire Chief Bill Soqui
City of Cathedral City
(760) 770-8201 – M-Th 8:00 a.m. – 6:00 p.m.
bsoqui@cathedralcity.gov

Carl Woolford
Cathedral City PD
(760) 770-0306 - M–Th 6:00 a.m. – 4:00 p.m.
cwoolford@cathedralcity.gov

Cpt. Kevin Conner
Cathedral City P. D.
Cathedral City
760-770-0310
k.conner@cathedralcity.gov

Sgt. Earl Moss, Admin.
Cathedral City P. D.
760-770-0331
e.moss@cathedralcity.gov

Steve Kershner
Riverside County Fire
760-921-7823

Battalion Chief Steve Beach (Freeway Closure Task Force)
CalFIRE/Riverside County Fire
951-377-8948
Steve.beach@fire.ca.gov

Battalion Chief Jeff Johnson
CalFIRE/Riverside County Fire
210 W. San Jacinto
Perris, CA 92570
760-275-8279
Jeff.Johnson@fire.ca.gov

Jan Sullivan
CBMI/FSRC
760-238-5898
jsullivan@cabazonindians-nsn.gov

Steven Plancitory
FSRC
760-238-0665
splancitory@fantasysprings.net

Linda Moody Clark
CBMI/FSRC
760-342-5000
lmoodyclark@cabazonindians-nsn.gov

David Roosevelt
760-342-2593
droosevelt@cabazonindians-nsn.gov

Paul Slama
760-342-2593
pslama@cabazonindians-nsn.gov

Bill Clapper
City of Cathedral City
760-323-5344
bclapper@naiconsulting.com

Cyrin Kwong
Caltrans TMC Branch Chief
District 8
909-383-4256
Cyrin_kwong@dot.ca.gov

Scott Hongkham
Caltrans – TMT Operations Supervisor
District 8
909-383-6475
Scott_hongkham@dot.ca.gov

Mike Hatfield
City of Cathedral City FD
760-770-8200
mhatfield@cathedralcity.gov

Sgt. Gabe Gomez
San Gorgonio CHP
951-769-2000

Kevin Brown – Emergency services Coordinator
Riverside County Fire/OES
82-675 Hwy 111
Indio, CA 92207
760-863-7432
Kevin.brown@fire.ca.gov

Dave Barakian
Director of Public Works/City Engineer
City of Palm Springs
3200 E. Tahquitz Canyon Way
Palm Springs, CA 92263
760-323-8253
Dave.Barakian@palmsprings-ca.gov

Richard Jenkins – Traffic
City of Palm Springs
3200 E. Tahquitz Canyon
Palm Springs, CA 92262
760-323-8253
Richard.Jemkins@palmprings-ca.gov

Mark Greenwood
Public Works Director
City of Palm Desert
73-510 Fred Waring Drive
Palm Desert, CA 92260
760-346-0611 x460
m.greenwood@ci.palm-desert.ca.us

Paul Toors
Director of Public Works
City of Coachella
1515 Sixth Street
Coachella, CA 92236
760-398-3002
ptoor@coachella.org

Jonathan Hoy
City Engineer/ Director of Public Works
City of Desert Hot Springs
65-950 Pierson Blvd
Desert Hot Springs, CA 92240
760-329-6411

Tim Wassil
Public Works Director
City of Indian Wells
44-950 Eldorado Drive
Indian Wells, CA 92210
760-776-0237
twassil@indianwells.com

Bruce Harry
Public Works Director
City of Rancho Mirage
69-825 Highway 111
Rancho Mirage, CA 92270
760-770-3224
bruceh@ci.rancho-mirage.ca.us

Tim Jonasson
Public Works Director/ City Engineer
City of La Quinta
78-495 Calle Tampico
La Quinta, CA 92253
760-777-7051
tjonasson@la-quinta.org

Tom Rafferty
Principal Civil Engineer
City of Indio
100 Civic Center
Indio, CA 92201
760-541-4270
trafferty@indio.org

Tom Brohard
Traffic Engineer
City of Indio
100 Civic Center
Indio, CA 92201
760-541-4270
tbrohard@indio.org

Mark Wasserman
Asst. City Manager/Emergency Services Coordinator
City of Indio
100 Civic Center
Indio, CA 92201
mwasserman@indio.org

Bill Bayne (Donna – Secretary)
Public Works Director
City of Cathedral City
760-770-0360,
bbayne@cathedralcity.gov

Bob Mohler
City Traffic Engineer (Consultant)
[Wed/Thur 10:00 am - 5:00 pm]
City of Cathedral City
760-770-0350

Mel Windsor
Personnel/Public Safety Director
City of Indian Wells
44950 Eldorado Drive
Indian Wells, CA 92210-7497
(760) 346-2489
mwindsor@IndianWells.com

Chris G. Sundlee
Emergency Services Coordinator
City of La Quinta
78495 Calle Tampico
La Quinta, CA 92247-1504
(760) 777-7061 (W)
csundlee@la-quinta.org

George Torres
Emergency Preparedness Manager
City of Coachella
gtorres@coachella.org
760-398-4202

Jim Knabb
Emergency Preparedness Manager
City of Desert Hot Springs
jknabb@cityofdhs.org
760-329-6411 ext. 340

Gary Rosenblum
Emergency Preparedness Manager
City of Palm Desert
grosenblum@ci.palm-desert.ca.us
760-346-0611

Blake Goetz
Emergency Preparedness Manager
City of Rancho Mirage,
miker@ci.rancho-mirage.ca.us
760-324-4511 ext. 295

Scott Morgan
Director of Administrative Services
City of Rancho Mirage
scottm@ci.rancho-mirage.ca.us
760-324-4511 x 228

Steven Planchon
Director of Public Safety
Fantasy Springs Casino
84-245 Indio Springs Pkwy.
Indio
760-238-0665
Splanchon@fantasysprings.net

Cpt. Mat Thomas
Cabazon
84-245 Indio Springs
Indio
760-404-9327
MThomas@fantasysprings.net

Traffic Diversion Action Plan for major incident causing the closure of the I-10 freeway between SR-60 and SR-111 Indio.

During any major incidents affecting all lanes for Interstate 10 between SR-60 and SR-111 the following actions and procedures should be implemented. On the east side of the incident the initial meeting/ briefing location for CHP and Caltrans personnel should be just east of westbound I-10 at Dillon Rd on-ramp. On the west side of the incident the initial meeting/ briefing location for CHP and Caltrans personnel should be just west of eastbound I-10 at San Timoteo Canyon rd off-ramp.

1) CHP:
   The CHP should initially close the freeway at the site of the incident (hard closure). If the incident is a Hazmat or other similar incidents, the CHP should initially close the freeway outside of the hot zone.

   a) The CHP should then notify the appropriate local law enforcement agencies and advise them of any necessary surface street closures near the incident, and or crossings over the freeway. The CHP should also request assistance from the involved Law Enforcement agencies in detouring traffic, and coordinating the closures of the on and off-ramps

      i) Law Enforcement agencies that may be affected are:
         (1) Beaumont P. D.
         (2) Banning P. D.
         (3) Cathedral City P.D.
         (4) Palm Desert P.D.
         (5) Indio P.D.
         (6) Riverside Sheriff Department.

      II. All of the Law Enforcement agencies mention above will need to have as much advance notice as possible. Eastbound I-10 traffic will be diverted onto the I-215 to SR-74 to SR-111 and back onto eastbound I-10. Westbound I-10 traffic will be diverted onto SR-111 to SR-74 to I-215 then back onto westbound I-10.

   b) The CHP will notify the TMC of the incident, and request the necessary personnel and equipment.

   c) The CHP will establish a location for the command post, and notify the TMC of the location.

   d) The CHP should notify their Public Affairs Officer.

1) CHP: Continued

i) The designated CHP PAO will inform the TMC of a phone number that the TMC and the CALTRANS PAO can use to contact the designated CHP PAO.

ii) The designated CHP PAO will maintain contact with the Caltrans PAO, and the TMC, advising them of updated information.

2) TMC:
The TMC will take the following actions:

a) The TMC should notify the TMT of the incident and requested actions and equipment.

b) The TMC will activate the following overhead changeable message signs.

i) EB I-10 .5 miles E/of Rancho Av.
ii) EB SR-60 7 miles W/of Rubidoux Bl
iii) WB I-10 .5 miles e/of Dillon Rd

c) The TMC should activate any appropriate Highway Advisory Radios (HAR)

d) The TMC should make appropriate notifications to the necessary transportation centers to disseminate all information surrounding the incident. The appropriate representatives from each of the facilities should be notified via confidential phone list. The TMC will notify the San Diego TMC, and request CMS activation if possible.

i) The TMC will notify the Ontario Airport of the incident. The TMC should use a contact representative from the Airport to disseminate all information regarding the closure to the incoming travelers.

ii) The TMC will notify the Metrolink to disseminate all information regarding the closure to the passengers and or commuters riding the train.

iii) The TMC will notify the Union Pacific Rail Road of the incident and request that they restrict the movement of their trains. This will only be necessary if the incident affects the train tracks, or is a Hazmat or similar type incident.

iv) The TMC will notify the truck stops adjacent to the area(s) affected.

e) The TMC will notify the Caltrans Public Affairs Representative

i) The Caltrans PAO should respond to the TMC

2) TMC: Continues

ii) The Caltrans PAO will coordinate with the CHP TMC Liaison and both should coordinate with the CHP PAO at the Incident Command Center on the release of information to the media.

3) Maintenance:

a) Dispatch will notify the appropriate Caltrans Maintenance supervisor of the incident and the requested actions and equipment

i) The Banning Maintenance Yard will be responsible for closing the connector roads and main line at the I-10 and SR-60 interchange.

ii) The Indio Maintenance Yard will be responsible for closing the connector roads and main line at the I-10 and SR-111 Indio.

b) The Caltrans Maintenance crews will respond, and with the assistance of CHP if possible, will close the major connectors located on both sides of the incident. All closures should be conducted in accordance with appropriate safety and tapering procedures. The locations of the closure points are as follows:

(1) WB I-10 west of Dillon Rd
(2) NB SR-243 at I-10
(3) SR-111 Palm Springs at I-10
(4) SR-62 connector to I-10

c) The following on-ramps will need to be closed:

(1) Beaumont Ave. east and westbound on-ramps
(2) Pennsylvania Ave. east and westbound on-ramp
(3) Highland Springs Ave. east and westbound on-ramps
(4) Sunset Ave. east and westbound on-ramps
(5) 22nd Ave. east and westbound on-ramps
(6) 8th St. east and westbound on-ramps
(7) Hardgrave St. east and westbound on-ramps
(8) Ramsey St. east and westbound on-ramps
(9) Fields Rd. westbound on-ramps
(10) Johnson Lane eastbound on-ramps
(11) Apache Tr. east and westbound on-ramps
(12) Main St. east and westbound on-ramps
(13) Verbenia Av. east and westbound on-ramps
(14) Tipton Rd. east and westbound on-ramps
(15) Indian Av. east and westbound on-ramps
(16) Palm Dr. east and westbound on-ramps
(17) Date Palm Dr. east and westbound on-ramps
(18) Ramon Rd. east and westbound on-ramps
(19) Monterey Av. east and westbound on-ramps
(20) Cook St. east and westbound on-ramps

3) Maintenance: Continued

(21) Washington St. east and westbound on-ramps
(22) Jefferson St. east and westbound on-ramps
(23) Monroe St. east and westbound on-ramps
(24) Jackson St. east and westbound on-ramps
(25) Golf Center Dr. east and westbound on-ramps

4) TMT:
The TMT will respond and place portable changeable message signs (PCMS), and portable HAR at appropriate locations advising of the closure.

b) The following locations should be used, unless otherwise directed by Caltrans Management or CHP for the PCMS:

(1) EB SR-60 west of Sycamore Cyn.
(2) EB SR-60 east of Day St.
(3) EB I-10 east of San Timoteo Rd
(4) EB I-10 east of Tennessee St.
(5) WB I-10 east of SR-177
(6) WB I-10 west of Dillon Rd.

c) The following locations should be used, unless otherwise directed by Caltrans Management or CHP for the portable HAR:
(1) At I-10 just west of SR-111 Indio.

d) The TMT supervisor or his representative will respond to the CHP command post.

5) RESOURCES:
The following are a list of resources for Caltrans District 8:

b) Caltrans District 8:
i) Maintenance (Banning):
(1) 3 Arrow Board Trucks
(2) 1 Cone Trucks
(3) 1 Portable Arrow Board

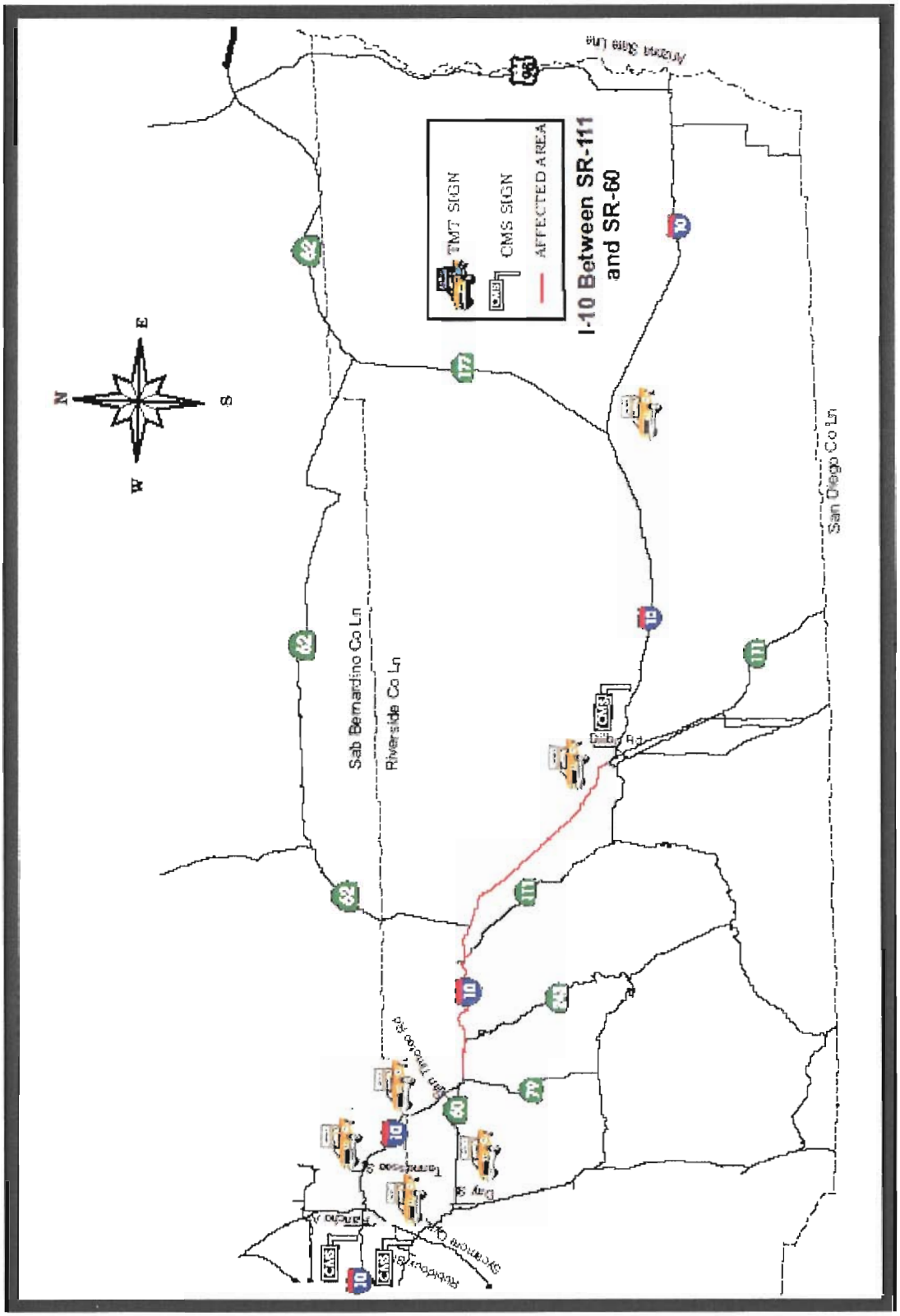
ii) Maintenance (Indio):
(1) 4 Arrow Board Trucks
(2) 1 Cone Trucks with Arrow Board
(3) 1 Portable Arrow Board

5) RESOURCE: Continued

iii) TMT:
(1) 12 Trucks
(2) 10 Portable signs
(3) 1 Portable HAR
(4) 1 Portable CMS from Dist. 11 that can be moved to the Ont. Mtce. Yard.

6) FOOTNOTES:
All confidential phone/ contact numbers should be maintained by the TMC and Inland Division Communication Center. These contact lists should be maintained on a separate confidential list and ***not published for general use.***

Appendix B – Caltrans Draft Traffic Diversion Plan



General Queue Analysis

Mainline Sf (mph)	# of Lanes	Capacity	Dj (vpmpl)
55	3	6300	153
55	4	8400	153
55	2	4200	153

assuming capacity drops by

50% with 1 lane blocked out of 3
40% with 1 lane blocked out of 4
68% with 1 lane blocked out of 2
75% with 2 lanes blocked out of 3
65% with 2 lanes blocked out of 4
100% with 2 lanes blocked out of 2 @
100% with 3 lanes blocked out of 3 @
85% with 3 lanes blocked out of 4
100% with 4 lanes blocked out of 4 @

Q1 - demand flow (vphpl)
Q2 - bottleneck flow (vphpl)
D1 - upstream flow density (vpmpl)
calculated from Greenshield's flow-density relationships
D4 - density of accumulating queue (vpmpl)
calculated from Greenshield's flow-density relationships References
equal to jam density during at-capacity conditions
SWS - upstream shockwave movement speed
(Q1-Q2)/(D4-D1)*5280/3600 (ft/sec)

Flow Density Equation further
Q = Sf*D - (Sf/Dj)*D^2 where c = (Sf/2)*(Dj/2) where
Q = Flow (vphpl) (Q1 or Q2) c = Capacity (vphpl)
Sf = Freeflow Speed (55 mph for mainline)
D = Density (D1 or D4) (vpmpl)
Dj = Jam Density (vpmpl)

Assumptions
2100 vphpl capacity constant
1/2 Mile Target Queue length

Highway Capacity Manual
Flow analysis based on Greenshields equations

"@" indicates all lanes blocked

Physical Number of Lanes	Lanes Blocked	V/C - General Congestion Level	Capacity (vphpl)	Q1	Q2	D1	D4	SWS	Target Queue Distance (feet)	Queue Time (seconds) Distance/SWS	Queue Time (in minutes)	Comment
2	1	0.99	2100	2079	672	69	153	25	2640	107	1.79	
3	1	0.99	2100	2079	1050	69	153	18	2640	147	2.45	
4	1	0.99	2100	2079	1260	69	153	14	2640	185	3.08	
2	2	0.99	2100	2079	0	69	153	36	2640	73	1.21	@2.42 min/mile
3	2	0.99	2100	2079	525	69	153	27	2640	97	1.62	
4	2	0.99	2100	2079	735	69	153	23	2640	113	1.88	
2	1	0.70	2100	1470	672	35	153	10	2640	267	4.44	
3	1	0.70	2100	1470	1050	35	153	5	2640	507	8.44	
4	1	0.70	2100	1470	1260	35	153	3	2640	1013	16.88	
2	2	0.70	2100	1470	0	35	153	18	2640	145	2.41	@4.82 min/mile
3	2	0.70	2100	1470	525	35	153	12	2640	225	3.75	
4	2	0.70	2100	1470	735	35	153	9	2640	289	4.82	
2	1	0.50	2100	1050	672	22	153	4	2640	621	10.35	
3	1	0.50	2100	1050	1050	22	153	0	2640	-	-	no queue forms
4	1	0.50	2100	1050	1260	22	153	0	2640	-	-	no queue forms
2	2	0.50	2100	1050	0	22	153	12	2640	223	3.72	@7.44 min/mile
3	2	0.50	2100	1050	525	22	153	6	2640	447	7.45	
4	2	0.50	2100	1050	735	22	153	4	2640	745	12.42	
3	3	0.99	2100	2079	0	69	153	36	2640	73	1.21	@2.42 min/mile
4	3	0.99	2100	2079	315	69	153	31	2640	86	1.43	
4	4	0.99	2100	2079	0	69	153	36	2640	73	1.21	@2.42 min/mile
3	3	0.70	2100	1470	0	35	153	18	2640	145	2.41	@4.82 min/mile
4	3	0.70	2100	1470	315	35	153	14	2640	184	3.07	
4	4	0.70	2100	1470	0	35	153	18	2640	145	2.41	@4.82 min/mile
3	3	0.50	2100	1050	0	22	153	12	2640	223	3.72	@7.44 min/mile
4	3	0.50	2100	1050	315	22	153	8	2640	319	5.32	
4	4	0.50	2100	1050	0	22	153	12	2640	223	3.72	@7.44 min/mile

Appendix D – Coachella Valley I-10 Ramp Configurations

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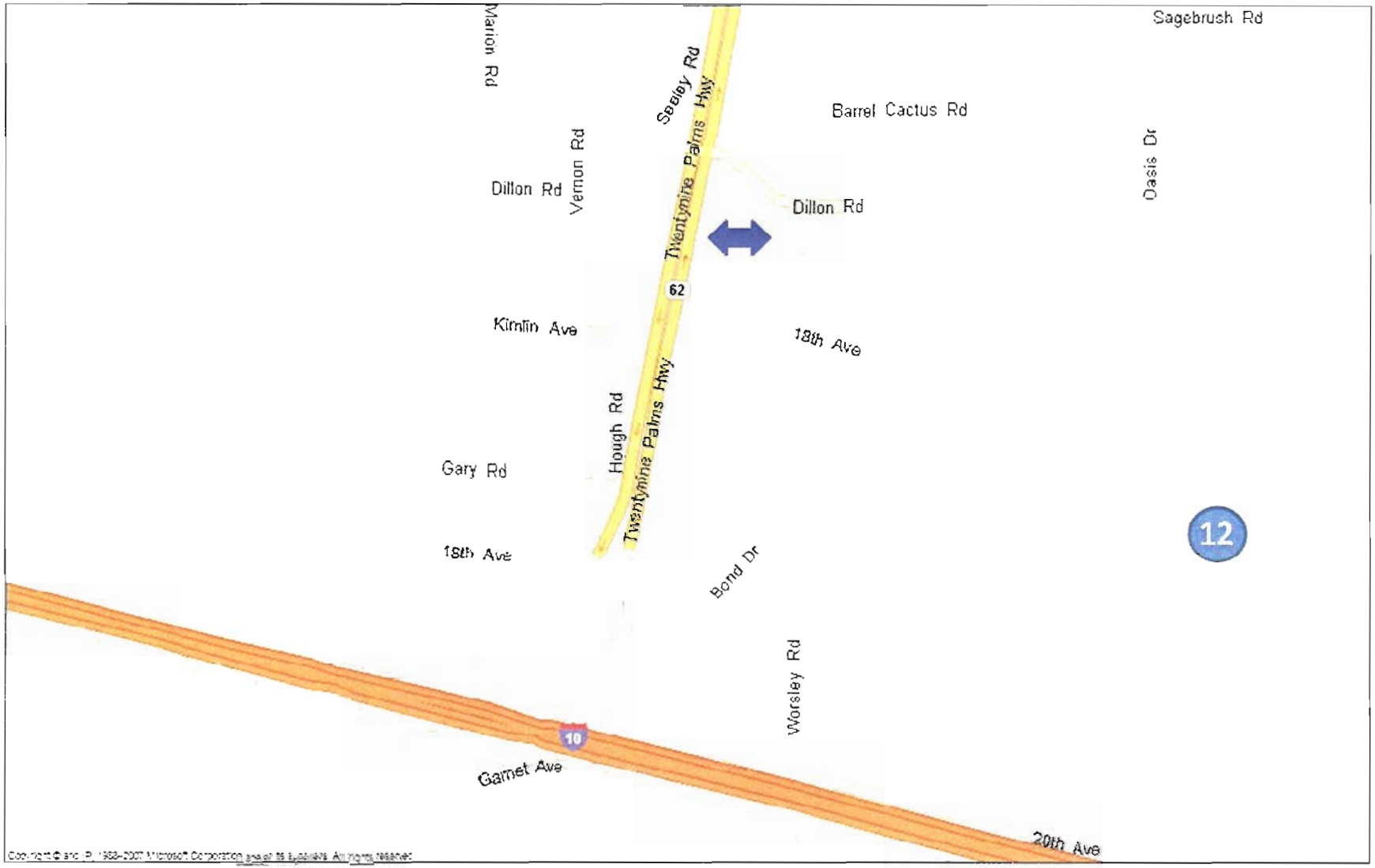

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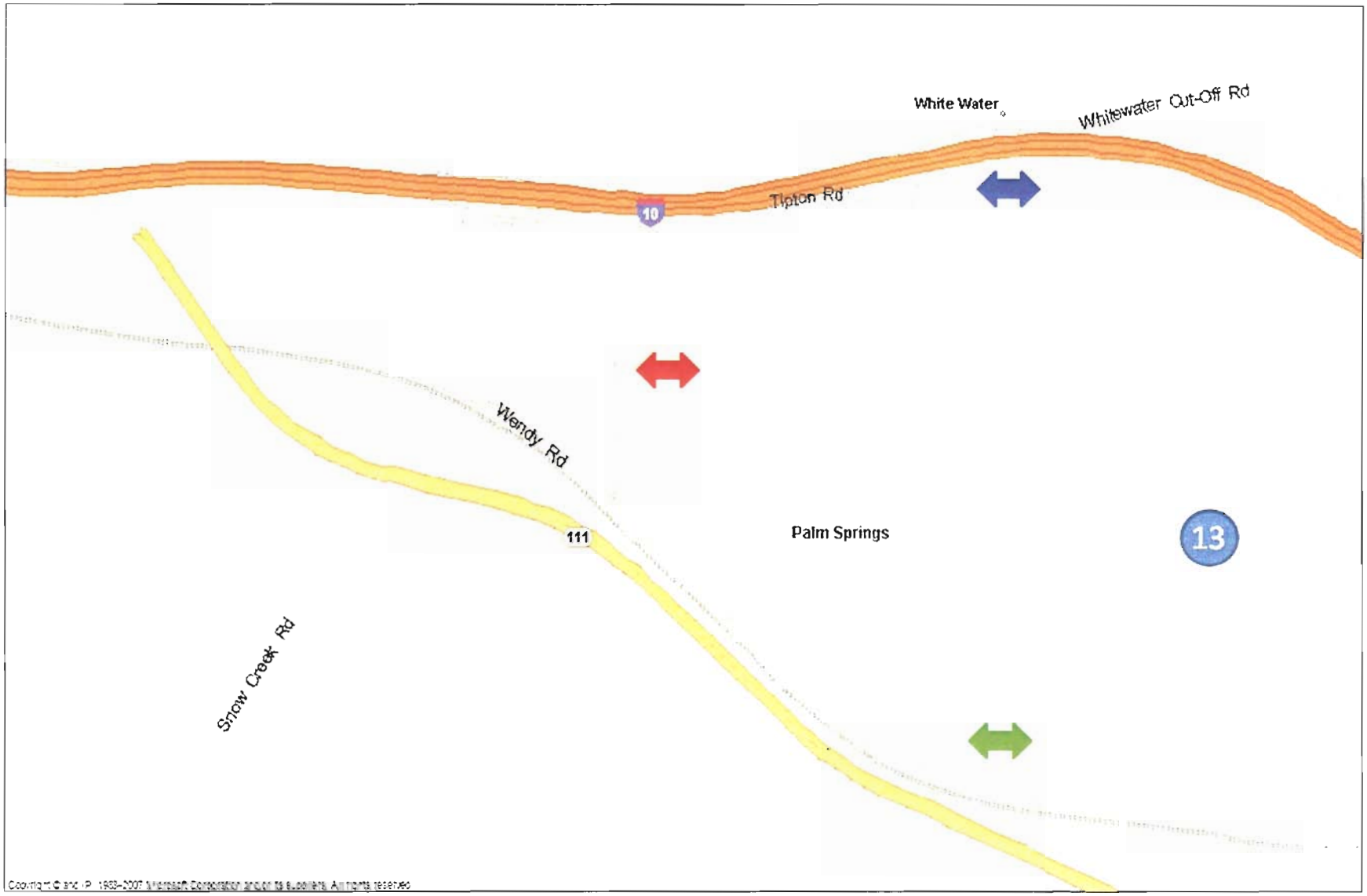

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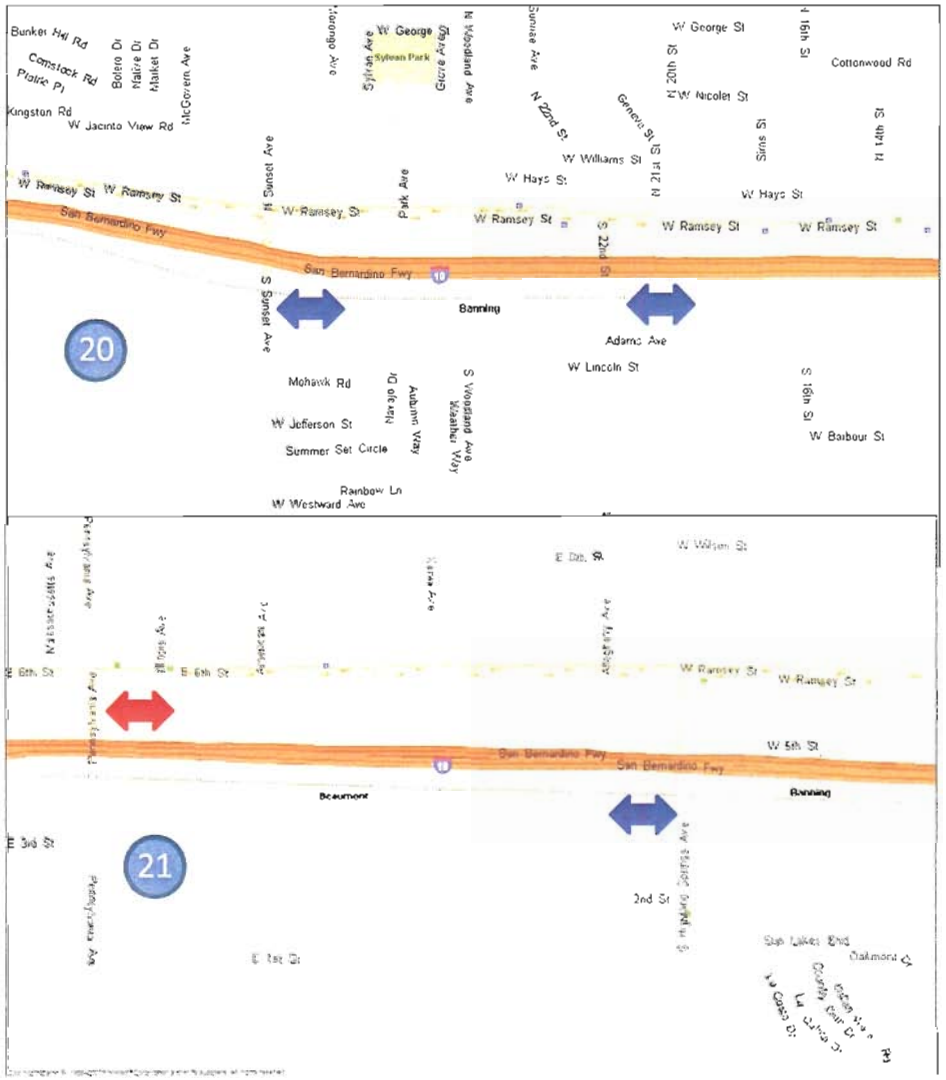


Ring Ranch Rd
Hardwick Ave
Claiborne Ave E
Hurstland Ave
Olive Way
Elm Ave
W 10th St
W 9th Pl
Edgar Ave
E 10th St
Magnolia Ave
Orange Ave
Maple Ave
Stewart Park
E 9th St
Wellwood Ave
60
W 8th St
W 7th St
E 8th St
Lil Russo's Italian Restaurant
E 7th St
W 5th Pl
San Bernardino Fwy
Vella Ave
Elm Ave
Wellwood Ave
Egan Ave
E 7th St
W 6th St
10
B St
E 6th St
Greyhound-Beaumont
Beaumont
W Railroad Ave
W 5th St
Grace Ave
N California Ave
Euclid Ave
Beaumont Ave
Cherry Ln
Maple Ave
22
E 5th St
Best Western Inn-el Rancho
Best Value Inn
Egan Ave
W 4th St
79
E 4th St
Minnesota Ave
Elm Ave
Olive Ave
Grace Ave
Walnut St
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