INTELLIGENT TRANSPORTATION SYSTEMS (ITS) PLAN FOR THE KERN REGION

FINAL DELIVERABLE NO. 12
REGIONAL ITS PLAN
APPENDIX C: RELATIONSHIPS BETWEEN ITS USER NEEDS AND RECOMMENDED ITS STRATEGIES

JUNE 2018

Kern Council of Governments

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Appendix C. RELATIONSHIPS BETWEEN ITS USER NEEDS AND RECOMMENDED ITS STRATEGIES

			ITS User Needs																														
			Provide information and routing (detour) information to travelers during incident, construction, weather events, special events, etc.	Provide/enhance road weather conditions information to travelers	Improve signal timing/coordination	Improve information exchange between Caltrans, local transportation agencies and transit agencies	Provide roadway closure/restriction information	Coordinate construction and maintenance project schedules within and between agencies	Reduce recurring traffic congestion	Provide incident and real-time traffic information to emergency responders and emergency management agencies	Warn work crews of errant vehicles	Share congestion information with other agencies	Improve a multi-agency, system-coordinated response to major incidents	Reduce incident clearance time	Receive real-time roadway congestion information	Provide/enhance congestion information to travelers	Use archived data for planning, modeling, analysis and traffic management strategy development	Provide more timely incident information to travelers and improve quality, consistency and thoroughness of traveler information	Improve communications in rural areas	Improve response to HAZMAT incidents	Improve incident notification to agencies and improve interagency communications	Provide information on roadway construction and maintenance activities	Monitor queue lengths in/near work zones and provide advisory to warn traffic of a stopped queue in/near work zones	Improve data collection capabilities and archiving on freeways/expressways	Monitor transportation infrastructure	Improve incident response	Provide/enhance enforcement in work zones	Provide/enhance speed enforcement at high risk locations	Use social media for traveler information dissemination	Improve 511 system/web site, enhance freeway/expressway traffic map, and enhance arterial traffic map	Share public safety/computer aided dispatch (CAD) data with transportation agencies	Provide travel times/delays through work zones
		User Priority Points	**129**	**122**	**118**	**116**	**116**	**113**	**107**	**103**	**102**	**99**	**99**	**97**	**96**	**96**	**95**	**95**	**95**	**93**	**93**	**93**	**93**	**92**	**91**	**91**	**91**	**90**	**89**	**89**	**89**	**89**
ITS Strategies	1	Intelligent Access Program – Weight Monitoring																															
	2	Freight-Specific Dynamic Travel Planning																		x													
	3	Road Weather Information for Freight Carriers																															
	4	HAZMAT Management																		x													
	5	Carrier Operations and Fleet Management																		x													
	6	CV Administrative Processes																															
	7	Roadside CVO Safety																															
	8	Roadside HAZMAT Security Detection and Mitigation																		x													
	9	Smart Roadside and Virtual WIM																															
	10	ITS Data Warehouse				x											x							x									
	11	Performance Monitoring															x							x	x								
	12	Transit Vehicle Tracking													x																		
	13	Multi-modal Coordination																															
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	15	Transit Traveler Information																															
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	17	Transit Security																															
	18	Route ID for the Visually Impaired																															
	19	Dynamic Transit Operations																															
	20	Transit Signal Priority																															
	21	Transit Passenger Counting																															
	22	Transit Fixed-Route Operations													x																		
	23	Dynamic Ridesharing and Shared Use Transportation																															
	24	Broadcast Traveler Information					x									x		x											x	x			

			ITS User Needs																												
			Coordinate timed transfers between routes, providers and modes	Expand coverage of environmental/weather/road conditions detection/monitoring systems	Develop mobile apps to provide static and real-time transit information	Implement regional smart card for transit fare payment	Expand /enhance/upgrade computer aided dispatch (CAD) system	Provide roadway flood warnings	Provide transit information using social media	Reduce traffic congestion during incidents	Send email alerts of major incidents to major employers	Implement a central information/data clearinghouse	Enhance 511 to provide static and real-time transit information	Upgrade signal hardware	Expand emergency vehicle preemption	Implement/enhance web-based trip planner	Share incident information with other agencies	Coordinate arterial and freeway management strategies	Provide real-time transit arrival/departure information on web site and at bus stops	Improve/implement ability to remotely modify signal timing	Provide/enhance mobile data terminals for emergency vehicles	Expand/enhance/upgrade automatic vehicle location (AVL) system	Provide better vehicle restrictions and roadway closure information to commercial vehicles	Expand security cameras on transit vehicles, at transit stations/stops and park-and-ride facilities	Provide freeway/expressway travel times and Provide arterial travel times (on major arterials)	Implement transit signal priority technology	Implement intersection collision warning/avoidance systems	Provide tracking of HAZMAT vehicles	Improve ridesharing program/website	Share surveillance video and data with PSAPs/emergency responders	Provide target enforcement at locations with history of violations	Expand CCTV camera coverage on arterials and freeways/expressways
		User Priority Points	88	88	87	86	86	86	85	85	85	84	84	82	82	81	81	80	79	79	78	76	75	75	75	74	73	72	71	71	69	69
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	13	Multi-modal Coordination	x																													
	14	Transit Connection Protection	x																													
	15	Transit Traveler Information			x				x				x			x			x													
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			Implement/improve incident detection capabilities	Implement Smart Work Zone technology	Implement/enhance remote monitoring of transit vehicle mechanical condition	Develop/implement system-wide arterial management strategies	Monitor/collect air quality data	Provide on-line reservation system for demand-responsive transit services	Provide curve speed warning	Provide on-board automated enunciators	Reduce vehicle delays at rail grade crossings, Provide health monitoring of traffic signal equipment at intersections and rail crossings	Provide vehicle-over-height detection/warnings	Reduce commercial vehicle weight, width and height violations	Expand/upgrade automated passenger counters	Provide information on commercial vehicle operations (CVO) permit restrictions	Install/upgrade automatic vehicle location (AVL) on freeway service patrol vehicles and emergency vehicles	Provide interstate/inter-regional traveler information for commercial vehicles	Implement/expand dynamic message sign (DMS) installations on arterials and freeways	Implement/improve inter-jurisdictional signal coordination	Implement/upgrade computer aided dispatch (CAD) system for freeway service patrol	Provide information on available truck parking facilities	Deploy weigh-in-motion/mobile weigh enforcement technology	Improve/expand vehicle detection coverage on freeways/expressways	Warn travelers about trucks entering/existing work zones	Implement variable speed limits	Monitor queue lengths at ramp locations	Expand highway advisory radio (HAR) coverage on freeways/expressways	Improve ramp metering operations	Track locations of maintenance fleet	Implement automated/remote control gate systems
		User Priority Points	**69**	**69**	**68**	**68**	**68**	**66**	**66**	**64**	**63**	**61**	**59**	**59**	**58**	**56**	**54**	**54**	**53**	**53**	**53**	**52**	**51**	**51**	**50**	**49**	**45**	**44**	**43**	**18**
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ITS Strategies	25	Traffic Information Dissemination										x						x													x	
	26	Personalized Traveler Information														x		x														
	27	Dynamic Route Guidance	x				x									x																
	28	Traffic Incident Management System																													x	
	29	Regional Traffic Management			x				x			x																				
	30	Traffic Signal Control			x				x																							
	31	Connected Vehicle Traffic Signal System			x																											
	32	Infrastructure-Based Traffic Surveillance																														
	33	Speed Warning and Enforcement																										x				
	34	Traffic Metering							x																							
	35	Speed Harmonization							x																							
	36	Dynamic Lane Management and Shoulder Use							x																							
	37	Railroad Operations Coordination																														
	38	Advanced Railroad Grade Crossing																														
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	40	Vehicle-Based Traffic Surveillance																														
	41	Roadway Closure Management																														
	42	Variable Speed Limits																														
	43	Routing Support for Emergency Responders								x				x												x						
	44	Vehicle Emergency Response								x				x												x						
	45	Emergency Call-Taking and Dispatch											x	x												x						
	46	Roadway Service Patrols												x																		

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	49	Mayday Notification																								x						
	50	Transportation Infrastructure Protection																							x							
	51	Wide-Area Alert																		x		x										
	52	Early Warning System											x									x										
	53	Evacuation and Reentry Management											x																			
	54	Disaster Response and Recovery											x									x										
	55	Maintenance and Construction Activity Coordination						x															x									
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	58	Maintenance and Construction Vehicle and Equipment Tracking																														
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