





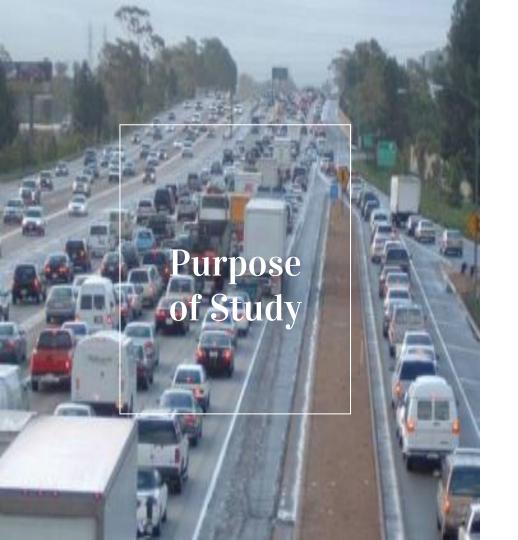
Why Integrated Corridor Management (ICM)?

- Improve incident management
- Improve travel time
- Increase corridor person throughput
- Highway system is mostly built out



Los Angeles Regional ICM Assessment

- ITS and technology investments in the county, but not fully integrated
- No boundaries in the transportation network
- Near-term solutions to improving system operations
- Current efforts in system operations for non-recurring conditions



Study Scope

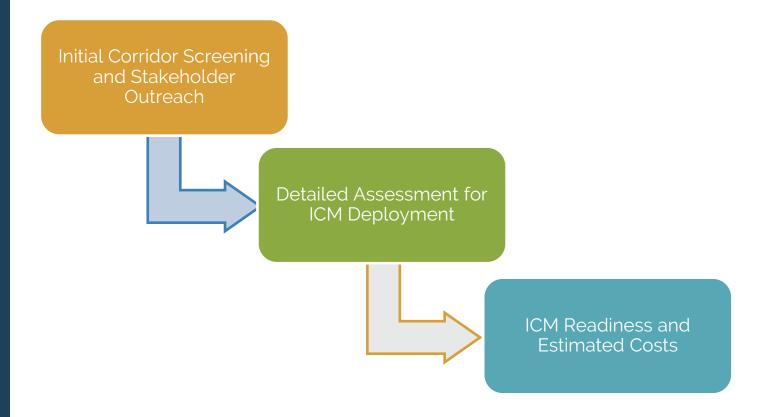
- Evaluated the state of operations of major corridors in LA County
- Assessed the current corridor operations and management practices
- Identified opportunities for integrated operations
- Assessed areas of deficiencies
 and identified gaps in region



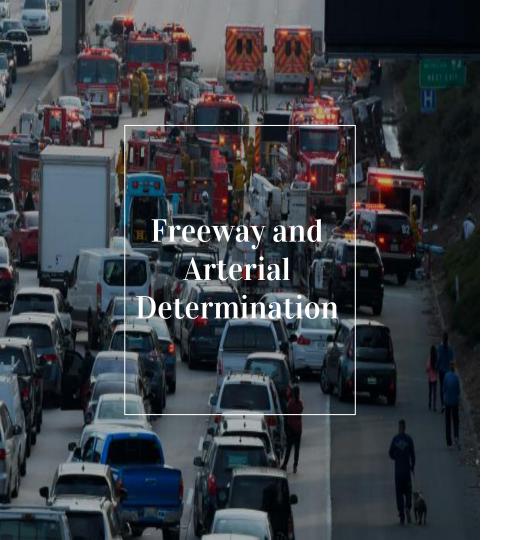
Integrate different systems across multiple jurisdictions to better manage corridors



ICM Corridor Assessment Steps







Initial Corridor Screening

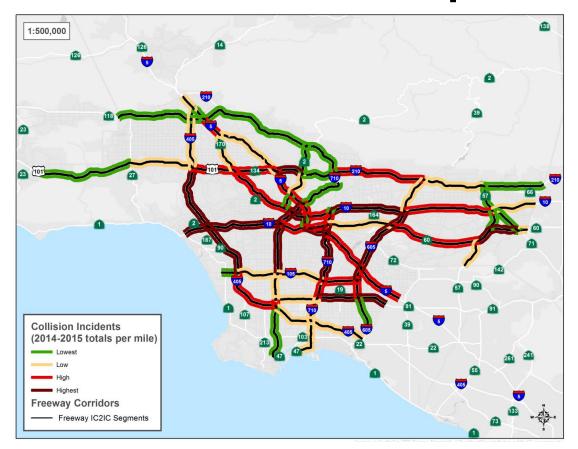
- Mobility freeway to freeway interchange delay per vehicle and AADT
 - INRIX data
 - Caltrans PeMS
- Incidents total collisions and collisions per mile
- Other Attributes Conducive to ICM
 - Suitable parallel arterials in close proximity to freeway
 - Suitable TSM&O capabilities of local jurisdictions
 - Suitable multimodal elements available along corridor
 - Origin-destination linkages

Freeway Congestion & ADT



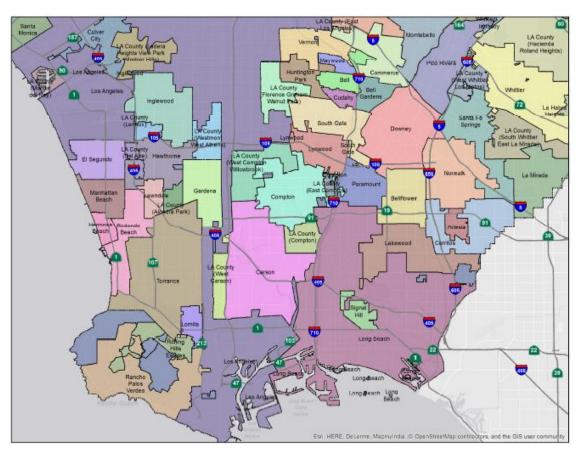


Total Collision Incidents per Mile





Local Jurisdictional Boundaries





Arterial ITS Infrastructure

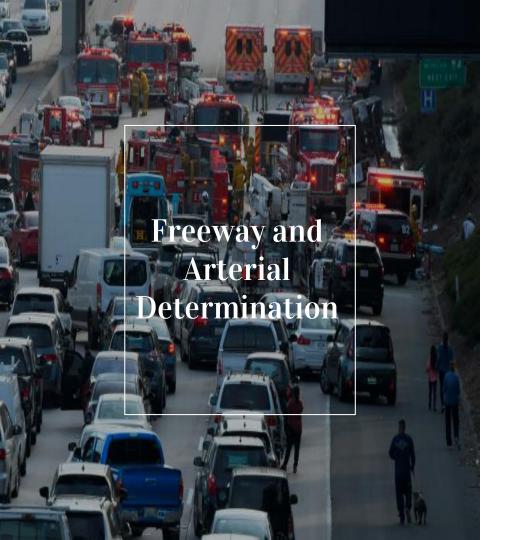




Multimodal Infrastructure







Stakeholder Outreach

- Identified cities within the corridors,
 County of Los Angeles Department of
 Public Works, Council of Governments
 (COGs), Caltrans
- Workshop at COGs with stakeholders
- ICM goals and objectives
- Received input on corridor attributes and also solicited further information

Initial Corridor Screening

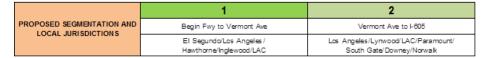
	1-100				
	1	2	3	4	
	Begin Fwy to I-405	I-405 to I-110	I-110 to I-710	I-710 to I-605	
Local Jurisdiction	Las Angeles/ El Segundo/LAC	Hawthorne/Inglewood Los Angeles/LAC	Los Angeles/ Lynwood/LAC	Downey/Lynwood/ Norwalk/South Gate/ Paramount	
Length (miles)	2.0	5.2	6.1	4.7	
	7.	7.2 10.8).8	

NEEDS

Congestion & Volume	Low (5	High	High	High
Collision Incidents	75/yr (37/mi)	318/yr (61/mi)	380/yr (62/mi)	317/yr (67/mi)

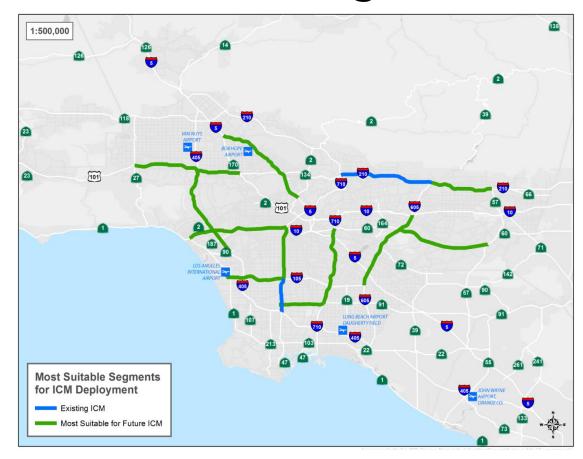
ATTRIBUTES

B # 104 : 1	Imperial Hwy	Imperial Hwy/120th St	Imperial Hwy/120th St	Imperial Hwy	
Parallel Arterial	•	•	•	•	
	High	Moderate	Moderate	Moderate	
TSM&O Capabilities	•	• •		(
	High	High	High	High	
Multimodal Infrastructure	•	•	•	•	
	GC/WC (16%)	GC/SBC (21%)	GC/SBC (23%)	GC/SBC (16%)	
Origin-Destination Linkages	SBC/WC (15%)	GC/WC (20%)	GC/WC (18%)	Internal GC (13%)	
	WC/ORA (13%)	CLA/SBC (14%)	CLA/GC (15%)	CLA/GC (13%)	





Initial Screening Results

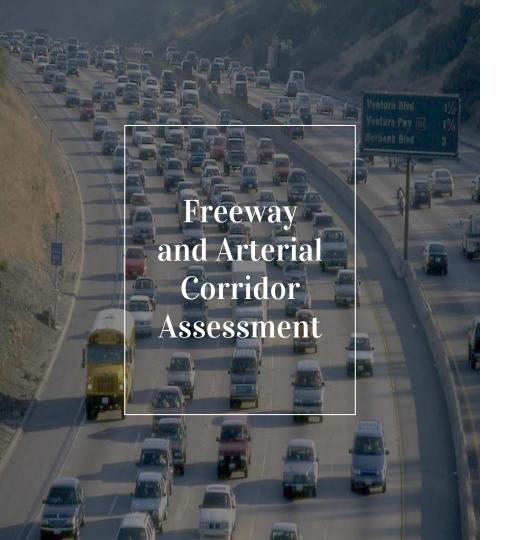




Most Suitable Corridors

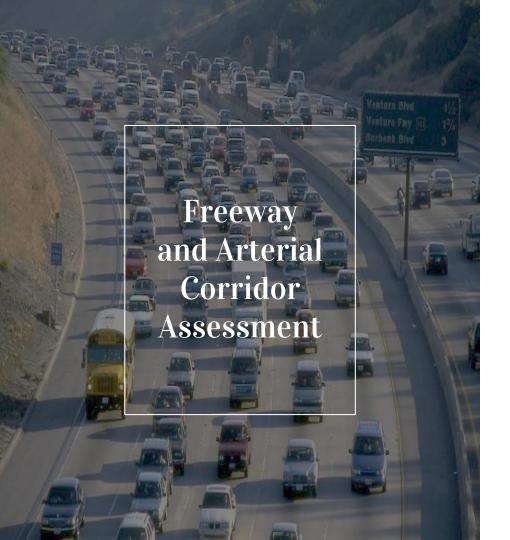
Corridor	Segment	Length (mi)	Arterials
I-5 (SR-2 to SR-170)	Fletcher Dr to Osborne St	14	Crystal Springs Dr, Riverside Dr, Fernando Rd, Glenoaks Bl
I-10 (Begin Fwy to I-110)	PCH to Hoover St	13	Olympic BI, Pico BI, Adams BI, Jefferson BI, National BI, Washington BI
SR-60 (I-605 to SR-57)	w/o I-605 to Golden Springs Dr	13	Colima Rd, Gale Av, Golden Springs Dr, Valley Bl
SR-91 (Begin Fwy to I-710)	Vermont Ave to I-710	6	Albertoni St, Artesia Bl
US-101 (SR-170 to SR-27)	Vineland Ave to Topanga Canyon	14	Riverside Dr, Moorpark, Ventura Bl, Burbank Bl, Ventura Bl
I-105 (Begin Fwy to I-110)	Begin Fwy to Vermont Av	7	Imperial Hwy, 120th St
I-110 (I-105 to I-10)	Imperial Hwy to I-10	8	Broadway, Figueroa St, Flower St, Grand Av
I-210 (I-605 to SR-57)	I-605 to e/o SR-57	8	Huntington Dr, Foothill Bl, Baseline Rd, Gladstone, Allen Av
I-405 (SR-90 to US-101)	n/o La Tijera to n/o Burbank	14	Sepulveda BI, Sawtelle BI
I-605 (I-105 to I-10)	Firestone BI to Valley BI	13	Studebaker Rd, Norwalk Bl, Pioneer Bl, Workman Mill Rd, Durfee Ave
I-710 (SR-91 to SR-60)	Alondra BI to Av Caesar Chavez	12	Atlantic BI, Garfield Av, Eastern Av





Readiness and Strength, Weaknesses, Opportunities, and Threats (SWOT)

- Corridor Characteristics
 - Carpool/Managed Lanes
 - General Purpose Lanes
 - Truck Percentage
 - Freeway to Freeway and Local Interchanges
 - Parallel Arterials
- Freeway ICM Readiness
 - Existing ITS Infrastructure
 - Detection
- Arterial ICM Readiness
 - Existing ITS Infrastructure
 - Central Traffic Control Systems (TCS)
 - Existing Corridor Performance



Readiness and Strength, Weaknesses, Opportunities, and Threats (SWOT)

- Multimodal ICM Readiness
 - Available existing and proposed transit
 - Transit Stations/Hubs
 - Parking and Access
- Institutional ICM Readiness
 - Agency owner/operator participation
 - Existing established partnerships and collaboration
 - Available funding
 - Agencies receptiveness to change
- Gap Analysis/Improvements Needed
- High-Level Cost Estimates

Corridor Assessment Findings

Segment	Freeway Miles	Arterial Miles	Number of Freeway Signals	Number of Arterial Signals	Local Jurisdictions	Institutional Readiness	Multimodal Options	HOV or Managed Lanes	ICM Candidate Corridor Conclusion
I-5 (SR-2 to SR-170)	14	31	23	115	(3) LA, Burbank, Glendale	Advanced	Metrolink, Express Bus, Local Bus, Parking (4 stations)	No	Good
I-10 (Begin Freeway to I-110)	13	35	38	179	(3) LA, Santa Monica, Culver City	Advanced	Metro Expo Line, Express Bus, Local Bus, Parking (5 station, 1 P&R)	No	Good
SR-60 (I-605 to SR-57)	13	30	12	92	(6) Industry, Diamond Bar, La Puente, Walnut, West Covina, LA County	Limited (La Puente, Walnut - no TCS)	Metrolink, Express Bus, Parking (1 station, 2 P&R)	Yes	Fair
SR-91 (Begin Freeway to I-710)	6	8	7	14	(4) LA, Carson, Compton, Long Beach	Limited (Compton - no TCS)	Local Bus only, Metro Blue and Silver Lines crossing, Parking (3 stations)	Yes	Fair
US-101 (SR-170 to SR-27)	14	30	37	110	(1) LA	Advanced	Metro Orange Line, Express Bus, Local Bus, Parking (7 P&R)	No	Good
I-105 (Begin Freeway to I-110)	7	10	5	41	(5) LA, El Segundo, Hawthorne, Inglewood, LA County	Advanced	Metro Green Line, Express Bus, Local Bus, Parking (4 stations)	Yes	Excellent
I-110 (I-105 to I-10)	8	17	16	98	(1) LA	Advanced	Metro Silver Line, Express Bus, Metro Rapid, Local Bus, Parking (3 stations)	Yes/Yes	Good
I-210 (I-605 to SR-57)	8	17	11	52	(5) Azusa, Duarte, Glendora, Irwindale, LA County	Limited (Azusa - no TCS)	Metro Gold Line, Express Bus, Local Bus, Parking (3 stations)	Yes	Good
I-405 (SR-90 to US-101)	14	22	29	70	(3) LA, Culver City, LA County	Advanced	Metro Rapid, Express Bus, Parking (2 P&R)	Yes	Good
I-605 (I-105 to I-10)	13	25	24	66	(9) Baldwin Park, El Monte, Industry, La Puente, Norwalk, Sante Fe Springs, South El Monte, Whittier, LA County	Limited (La Puente, South El Monte, Whittier - no TCS)	Express Bus, Metrolink Train crossing, Metro Green Line crossing, Parking (1 station)	Yes	Fair
1-710 (SR-91 to SR-60)	12	28	21	111	(13) Bell, Bell Gardens, Compton, Cudahy, Maywood, Commerce, Long Beach, Lynwood, Paramount, South Gate, Downey, Vernon, LA County	Limited (Bell, Bell Gardens, Compton, Cudahy, Maywood - no TCS)	Metro Rapid, Local Bus, Parking (Metro Blue Line stations)	No	Fair





What's the Future for ICM in Los Angeles County?

- Lessons learned from current pilots
 (i.e. 210 Connected Corridor and I-110 DCCM)
- Further analyze ICM strategies on the most suitable corridors
- Pursue partnerships and coordinate with Caltrans, local agencies and stakeholders
- Identify Potential Funding
 - Measure R/Measure M
 - SB-1 Solutions for Congested Corridors

THANKS! on to

Q&A and Panel Discussion



Panelist

- Ed Alegre, Metro (Moderator)
- Ellison Alegre, SANDAG
 - San Diego I-15 ICM
- Mort Fahrtash, Caltrans District 7
 - I-210 Connected Corridor
- Farid Nowshiravan, Caltrans District 12
 - Orange County Triangle ICM

