

## FINE TUNING THE 91 CORRIDOR

Commission Meeting February 14, 2018

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## **Today's Presentation**

- Brief review of Commission activity on the 91 Corridor
- Results of recently completed traffic analysis on 91 Corridor
- Examination of options to address congestion "hot spots"
- Discussion of policy considerations as we move forward



# Fine Tuning the Corridor

- 91 Project has provided added capacity and improvements to the overall corridor
- In spite of added capacity, key congestion areas exist during certain times/locations along corridor
- Congestion "Hot Spots" include:
  - Express Lanes entrance @ Westbound 91 at McKinley
  - Express Lanes entrance @ I-15 North
  - Overall 91 corridor in AM hours at Orange County Line
  - Eastbound Express Lanes exit on Friday afternoon



# **IMPROVEMENTS COMPLETED**

### EASTBOUND

	Improvement	Completion Date
1	Added a new overhead sign– 2 miles in advance of 15/91 split	August 2017
2	Added new pavement markings– freeway route shields in advance of 15/91 split	August 2017
3	Added new channelizers - past 15/91 split between express and general purpose lanes	August 2017
4	Changed an overhead sign- at 15/91 split	October 2017



# **IMPROVEMENTS COMPLETED**



	Improvement	Completion Date
5	Changed striping transition of the 15/91 lane merge area	August 2017
6	Added channelizers - better separate 15/91 merge area	August 2017
7	Changed striping - extended the express lane auxiliary lane entrance to ease the transition	August 2017
8	Changed striping— extended the express lane entrance to the east to ease the transition	October 2017
9	Increased enforcement– CHP added presence at entrance area to discourage traffic violations	November 2017

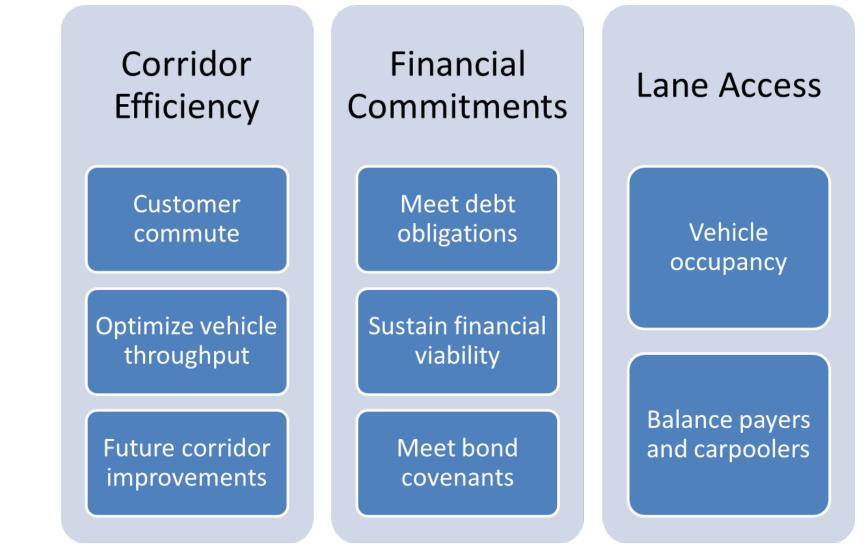


# **IMPROVEMENTS COMPLETED**

### **COUNTY LINE**

	Improvement	Completion Date
10	Refreshed striping - made all temporary striping and pavement markings permanent	September 2017
11	Added new channelizers	September 2017
12	Modified signs	September 2017







## **ACTIVE MANAGEMENT**

### MANAGING DEMAND FOR EXPRESS LANES

Monitoring express lane traffic and toll rates: March 20, 2017 – Feb. 5, 2018

- Installed additional traffic counters
- 672 toll rates monitored 7 days/week, 24 hours/day, all movements
  - 599 rates reviewed quarterly per permanent toll policy
  - 73 rates reviewed weekly to more readily manage demand

Period	Toll R	Toll Rates Monitored			
	Weekly	Quarterly			
3/17 to 7/17	672	0			
7/17 to 12/17	124	548			
12/17 to present	73	599			

Demand for the lanes is stabilizing and getting more predictable!



## **ACTIVE MANAGEMENT**

### MANAGING DEMAND FOR EXPRESS LANES

### **Toll rate changes**

- 23 rate schedule adjustments have been made since opening lanes in March
- The 23 adjustments resulted in:
  - 479 toll rate increases due to traffic volume
  - 44 toll rate decreases due to traffic volume

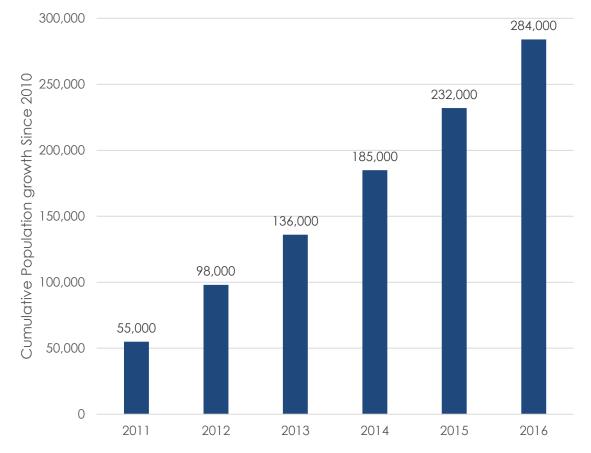


## TRAFFIC DEMAND DATA



# **POPULATION GROWTH**

Population Growth since 2010: Riverside-San Bernardino-Ontario, CA Metro Area



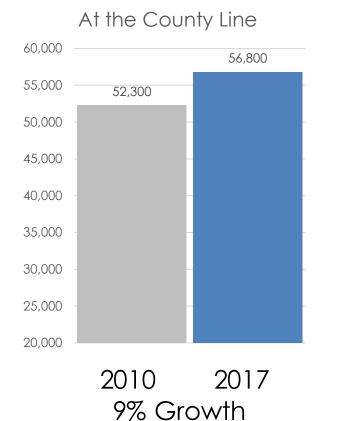


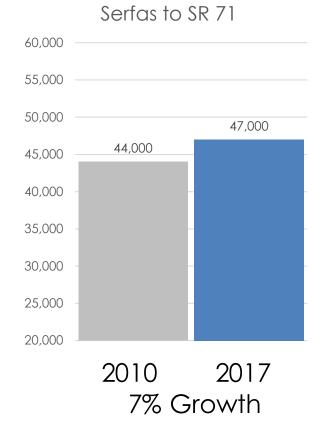
# EASTBOUND TRAFFIC GROWTH

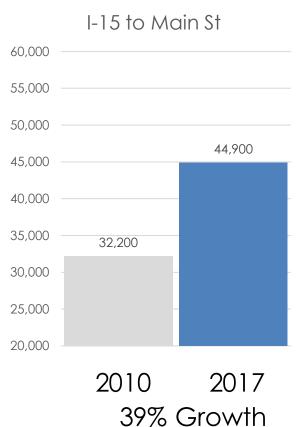


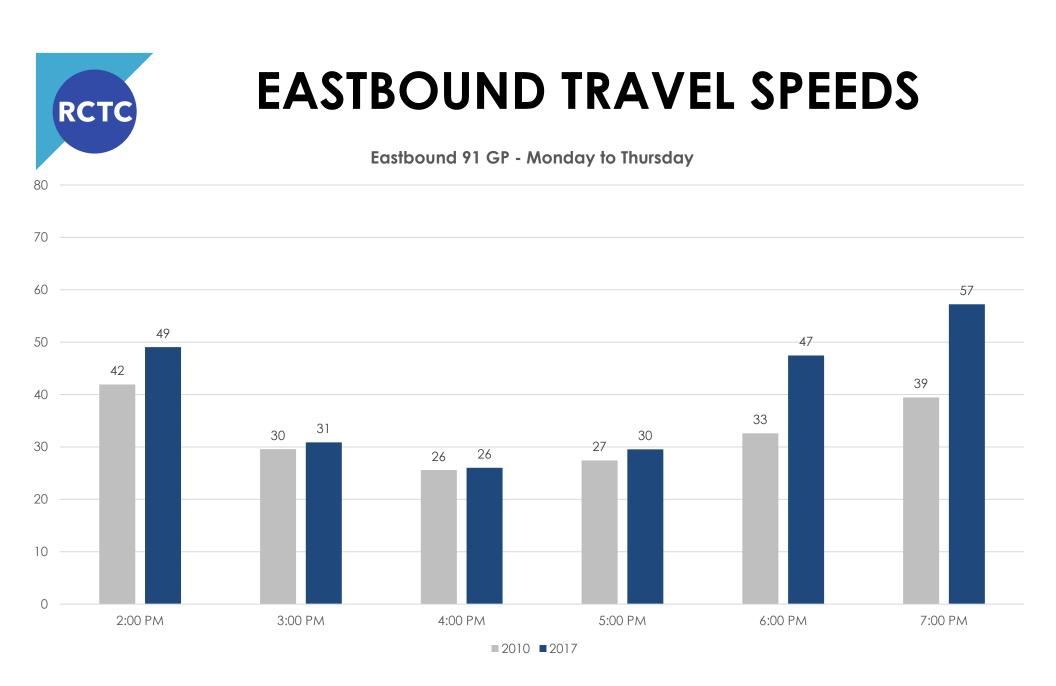


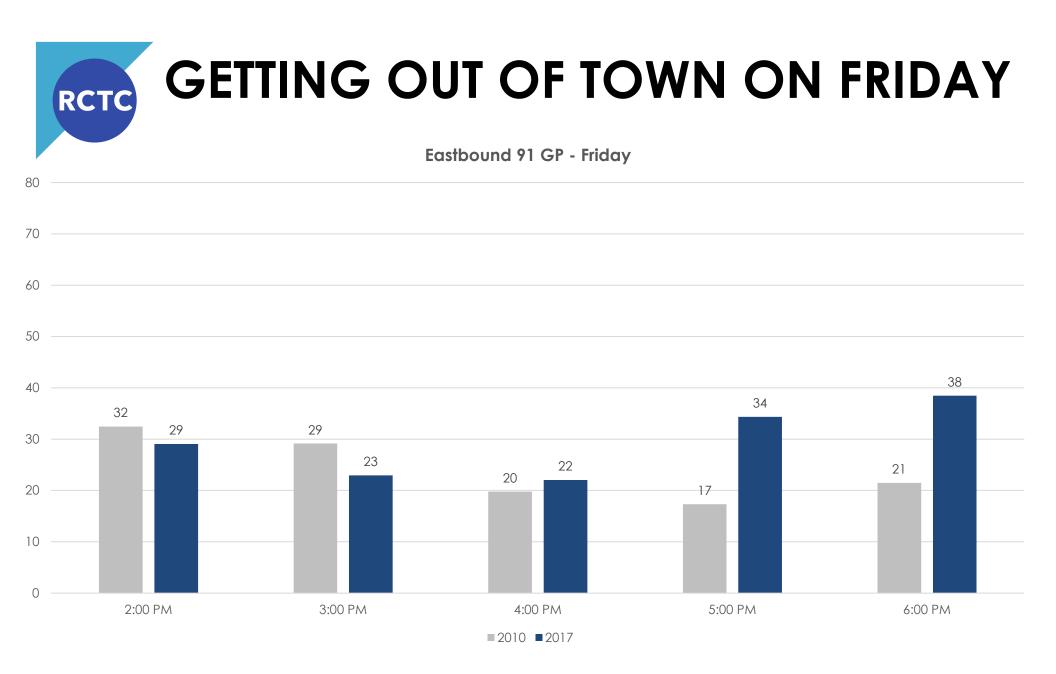
# WESTBOUND TRAFFIC GROWTH







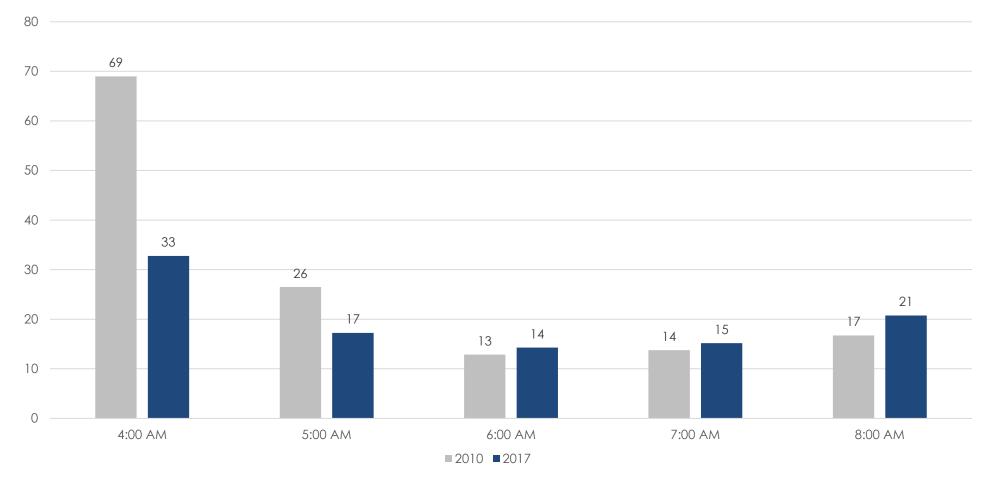


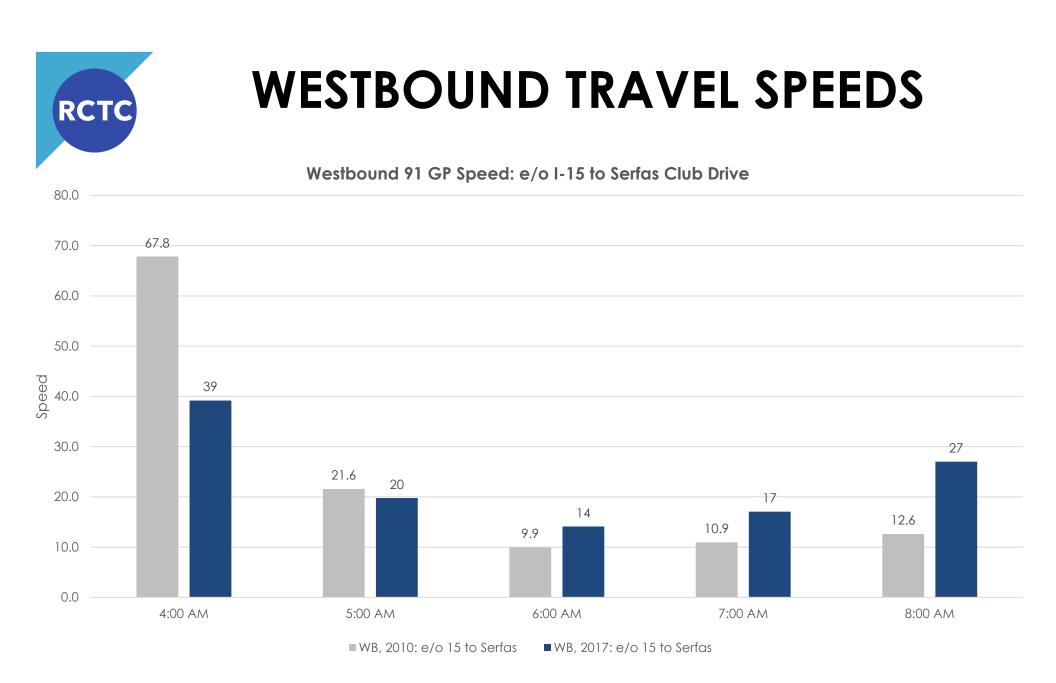




## **DRILLING DOWN ON THE DETAILS**

Westbound 91 GP - Typical Weekdays (excluding Friday)

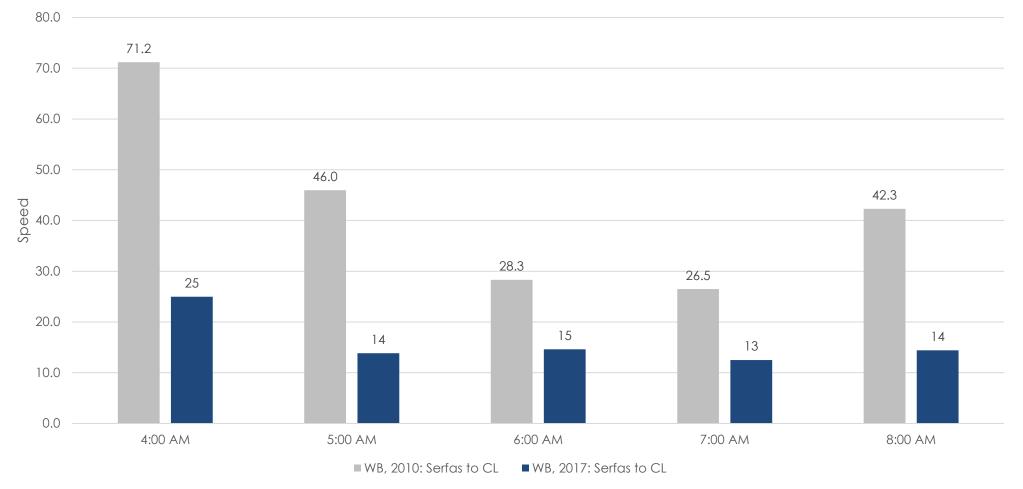






## WESTBOUND TRAVEL SPEEDS

Westbound 91 GP Speed: Serfas Club to County Line



## **WHEN & WHERE ARE THE HOT SPOTS?**

### SR 91 GP Lanes, Average Speeds - Pre-EL 2/1/17 to 3/16/17

	SR-241	County lifes	Serfac Club	Main St	514	Neckiney Steet
	2.56	3.86	2,76	1.08	1.73	4,89
04:00 AM-05:00 AM	69	55	42	- 33	39	57
MA 00:50 AM 00:50 AM	57	31	17.	13	12	42
06:00 AM-07:00 AM	52	24		1.	11	51
07:00 AM-06:00 AM	60	24	10	8	種	53
08:00 AM-09:00 AM	59	25	11	10	20	47
09:00 AM-10:00 AM	60	28	73	12	20	45
10:00 AM-11:00 AM	59	35	20	1Z	29	58
11:00 AM-12:00 PM	6]	50	35	32	49	14 M
12:00 PM-01:00 PM	62	40	54	- 52	42	57
01:00 PM-02:00 PM	63	42	60	56	61	50
02:00 PM-03:00 PM	63	15	61	56	40	46
03:00 PM-04:00 PM	83		61	56	61	42
04:00 PM-05:00 PM	53	15	8	54	6	4)
05:00 PM-06:00 PM	- 66		60	-52	- 61	40
06:00 PM-07:00 PM	- 46	15	61	55	60	41
07:00 PM-08:00 PM	54	45	22	- 56	112	82.1
08:00 PM-09:00 PM	64	- 15	52	50	52	34
	-					2
04:00 AM-05:00 AM	54	53	55	50	- 54	E.
06:00 AM-06:00 AM	<u>88</u>		42	58	- 24	44
06:00 AM-07:00 AM	45	52	~	65	- 48	14
07:00 AM-08:00 AM		60	64	- 65	- 24	51
MA 00:00-MA 00:80	67	- 41	43	- 64	- 65	51
09:00 AM-10:00 AM			59	64	75	
10:00 AM-11:00 AM	67	44		16	15	<u> </u>
11:00 AM-12:00 PM		45	- 64	65	- 65	62
12:00 PM-01:00 PM	67-	1 34		- 63	- 20	
01:00 PM-02:00 PM	68	58	49	53	- 64	62
02:00 PM-03:00 PM	51	22	35	-51		60
03:00 PM-04:00 PM	28	21	32	41	46	49
04:00 PM-05:00 PM	28	22	32	33	39	47
05:00 PM-04:00 PM	32	22	31	- 29	31	39
06:00 PM-07:00 PM	33 46	25	43	38	43	47.
07:00 PM-08:00 PM 08:00 PM-09:00 PM	46	34 41	54	49		54
Distance	2.56	3.86	2.76	1.08	1.73	489
Deldrice	6-29	1	6-19	1,00	1.7.9	4,07
	58-241	County line	Serfes Club	Main St	10	Mollinley Steet

### SR 91 GP Lanes, Average Speeds - Post-EL 3/21/17 to 5/14/17

	5R-241	County tina	Serfas Club	Main St	12	McKinlay Steet
	2.56	3,86	2.76	1,08	1.73	4,89
04:00 AM-05:00 AM	15	16	58	49	57	- 63
05:00 AM/06:00 AM	59	-39	29	37	53	47
06:00 AM-07:00 AM	42	33	17	25	40	56
07:00 AM-08:00 AM	- 06	29	18	26	35	55
08:00 AM-09:00 AM	12-	31	21	27	37	44
09:00 AM-10:00 AM	40	34	23	30	- 44	46
10:00 AM-11:00 AM	58	- 42	33	40	-54	52
11:00 AM-12:00 PM		56	47	45	57	51
1200 PM-01:00 PM	143	6	55	46	56	45
01:00 PM-02:00 PM	.03	57	54	47	57	46
0200 PM-03:00 PM	- Xa		56	48	57	-45
03:00 PM-04:00 PM	:04	(69	54	-47	56	.41
0400 PM-05:00 PM		14	.47	43	57	-42
05:00 PM-06:00 PM		100	47	-40	55	45
06:00 PM-07:00 PM	- 64	104	-47	-41	56	52
07:00 PM-08:00 PM	144	42	49	43	57	-65
08:00 PM-09:00 PM	14.	64	58	49	56	. 65.
	-				_	-
04:00 AM-05:00 AM			(63)	24	(65)	-65
05:00 AM-06:00 AM	18.	- 64	1 2.8	4	116	
06:00 AM-07:00 AM	.68	64		64	65	.65
07:00 AM-08:00 AM	47	- 64	. 63	64	65	58
MA 00:90-MA 00:80	145	63	- 88	64	64	56
09:00 AM-10:00 AM		63	- 65	-	.65	
10:00 AM-11:00 AM	17	- 54	68	- 24	- 64	
11:00 AM-12:00 PM		64	49	-64	(63)	- 62
1200 PM-01:00 PM	66:		A5.	61	-63-	41
01:00 PM-02:00 PM	- 45-		.83	64	:01.	60
0200 PM-03:00 PM	54	- 66	1631	60	58	56
03:00 PM-04:00 PM	40	52	54	30	37	47
0400 PM-05:00 PM	-43	- 51	44	25	36	43
05:00 PM-06:00 PM	39	-46	47	25	32	37
06:00 PM-07:00 PM	40	-45	53	35	40	45
07:00 PM-08:00 PM	42	51	59	0	62	65
08:00 P.M-09:00 P.M.	52	60	- 62		. 61.	. 64
Distance	256	3.85	2.76	1,08	1.73	4,89
	58-241	County line	Serfor Club	Main St	919	McKinley Steet

#### SR 91 GP Lanes, Average Speeds - Post EL 8/25/17 to 10/15/17

	SR-241	County Line	Serfos Club	Main SI	+15	McKinley Street
	2.56	3.86	2,76	1.08	1,73	4.89
04:00 AM-05:00 AM	66	-23	57	50	60	86
MA 00:60-MA 00:70	56	32	27	38	46	36
06:00 AM-07:00 AM	56	24	14	23	28	42
07:00 AM-08:00 AM	54	22	12	23	40	51
MA 00:90-MA 00:80	54	23	12	27	40	44
MA 00:01-MA 00:90	55	25	-16/	30	44	47
MA-00:01-MA-00:01	49	30	28	39	57	57
11:00 AM-12:00 PM	54	43	44	47	40.	60
12:00 PM-01:00 PM	58	52	55	51	60	57
01:00 PM-02:00 PM	59	- 41	55	51	59	51
02:00 PM-C3:00 PM	60	////	59	51	50	45
03:00 PM-C4:00 PM	60		58	51	50	38
04:00 PM-05:00 PM	59	60	57	51	50	40
05:00 PM-C6:00 PM		60	54	49	59	43
06:00 PM-07:00 PM	46		55	51	57	45
07:00 PM-08:00 PM	15	45	59	52	40.	81
08:00 PM-09:00 PM	100	1	59	51	- 40	16
	<u> </u>	ļ				<b>→</b>
14:00 AM-05:00 AM	67	1004	- 35	64	- 15	185
05:00 AM-06:00 AM		1 2	145	24	16	115
06:00 AM-07:00 AM	57		从	64	15	65
7:00 AM-08:00 AM	56			60	40	52
18:00 AM-09:00 AM	53	60	54	64	100	53
9:00 AM-10:00 AM	57		24	- 84	- 16	64
0:00 AM-11:00 AM	59		- 44	24	44	142
11:00 AM-12:00 PM	59	(41)	- A	64	15	63
12:00 PM-01:00 PM	inii.	12			- 54	.64
01:00 PM-02:00 PM	59	- 201	전 34	64 63	-54	64
02:00 PM-03:00 PM	46	56	63	6011	- at	55
03:00 PM-04:00 PM	35	46	57	34	38	42
04:00 PM-05:00 PM	32	41	48	25	37	41
05:00 PM-06:00 PM	31	38	50	24	28	36
06:00 PM-07:00 PM	31	38	61	34	30	41
07:00 PM-08:00 PM	32	-43	54	53	45	57
08:00 PM-09:00 PM	37	46	100	14	- 61	- 64
Distance	2.56	3.86	2.76	1.08	1.73	4,89
				1		*
	SR-241	County Une	Serfos Club	Main 51	12	McKinley Street



## **CONSIDERATION OF OPTIONS**



### 91 Westbound Traffic Flow Options

**Option 6** 

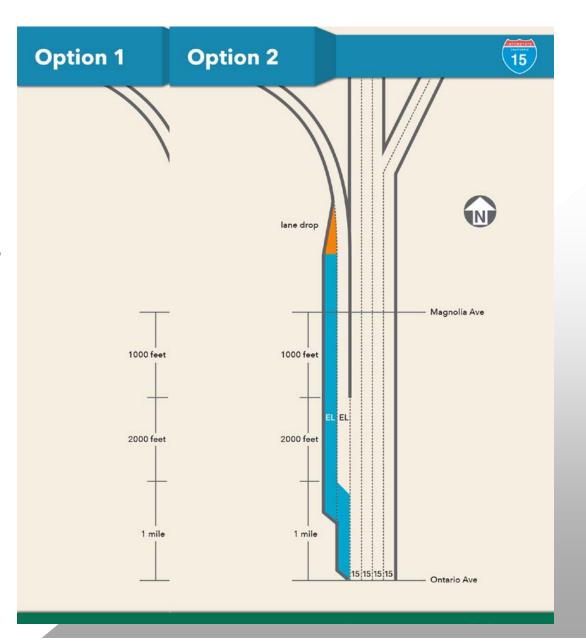
5+1 General Purpose Express Lanes to Green River On Ramp Combined with Continuous Weave Lane

91





### 15 Northbound Traffic Flow Options





## WHERE DO WE GO FROM HERE?



## **Decision Criteria**

- Do No Harm
- Coordination required with Caltrans, OCTA, and CHP
- Budget and speed of implementation
- Vehicle and person throughput remain priorities
- Need for Consistency with RCTC's Toll Policy



# Next Steps in Evaluating Options

### **Examine & Analyze**

- Operational Impact to Corridors
  - General Purpose Lanes
  - Express Lanes
  - Overall Corridor
- Revenue Impacts
- Other Considerations
  - Environmental Clearance
  - Cost
  - How quickly can it be delivered?
- Return to Western Programs and Projects Committee