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I-710 Corridor Project EIR/EIS

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# Simulating Metered Roundabout at Freeway Termini, Los Angeles, California

Presented in the 2015 Western ITE Annual Meeting

Las Vegas, California

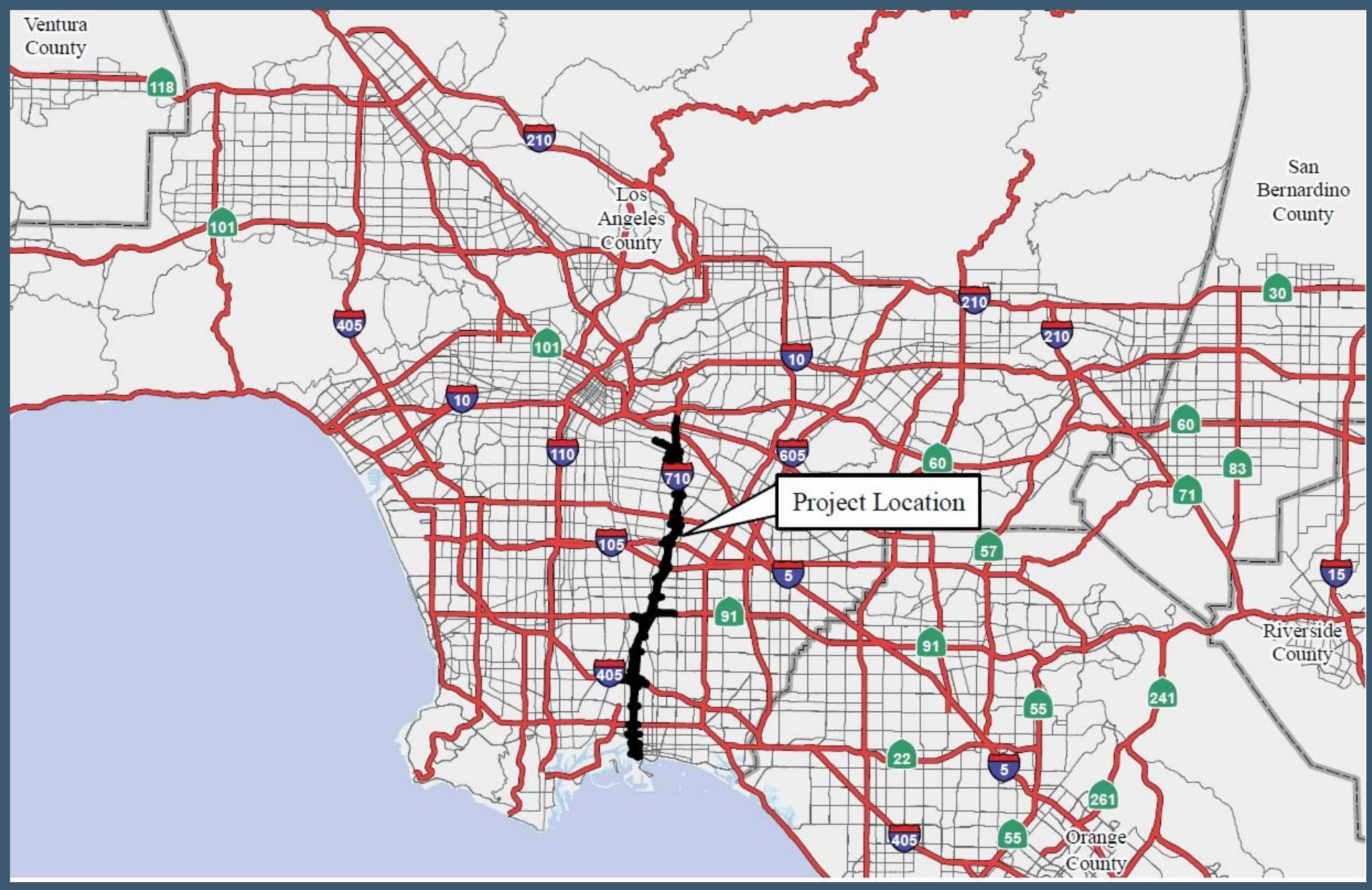
July 21, 2015

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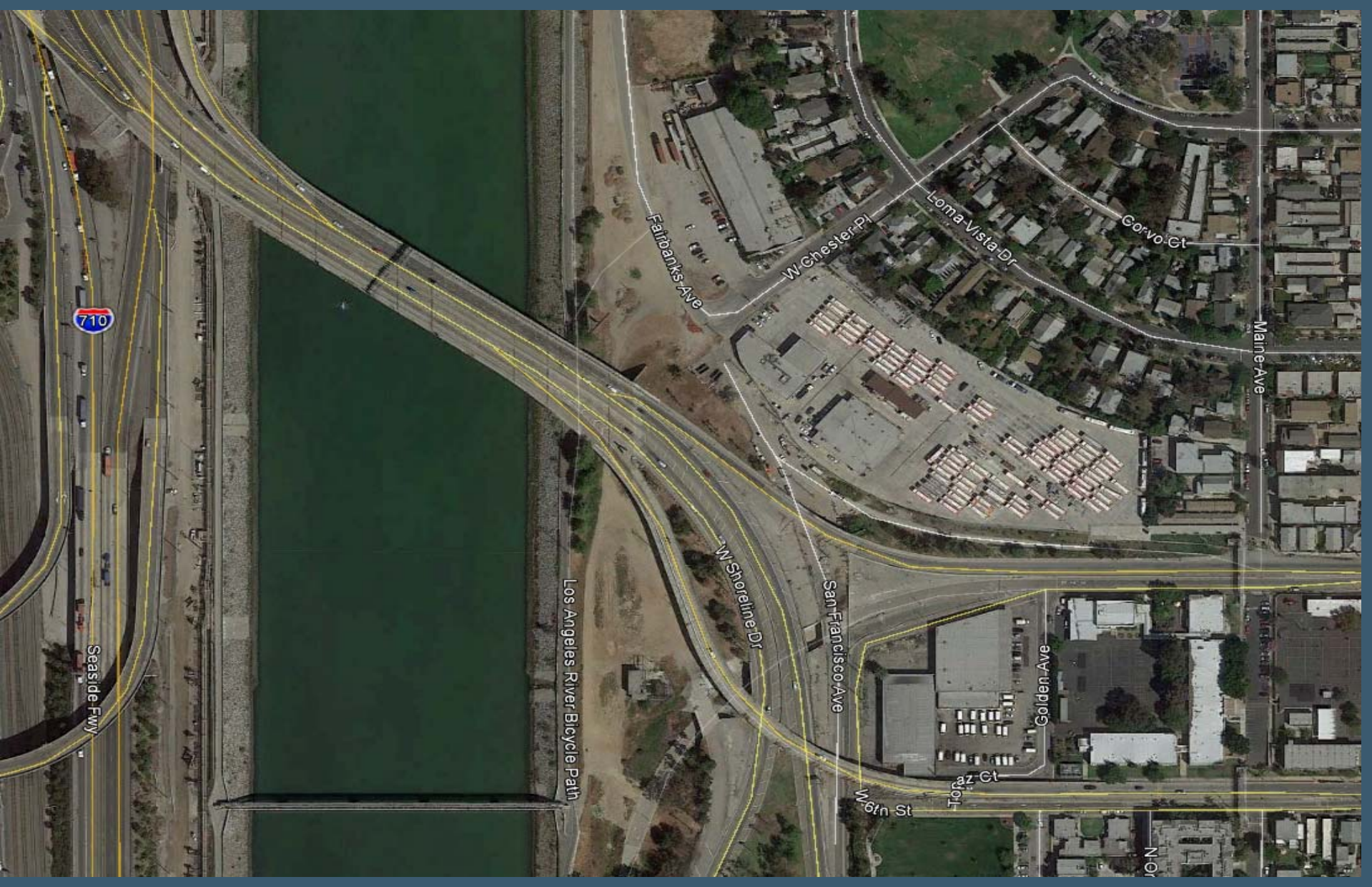
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# Project Location



# Existing Condition (I-710/Shoreline Dr /7<sup>th</sup> St)



# Need

- High accident rate
- High Speed (vehicle exiting from SB I-710)
- Unsafe driving condition

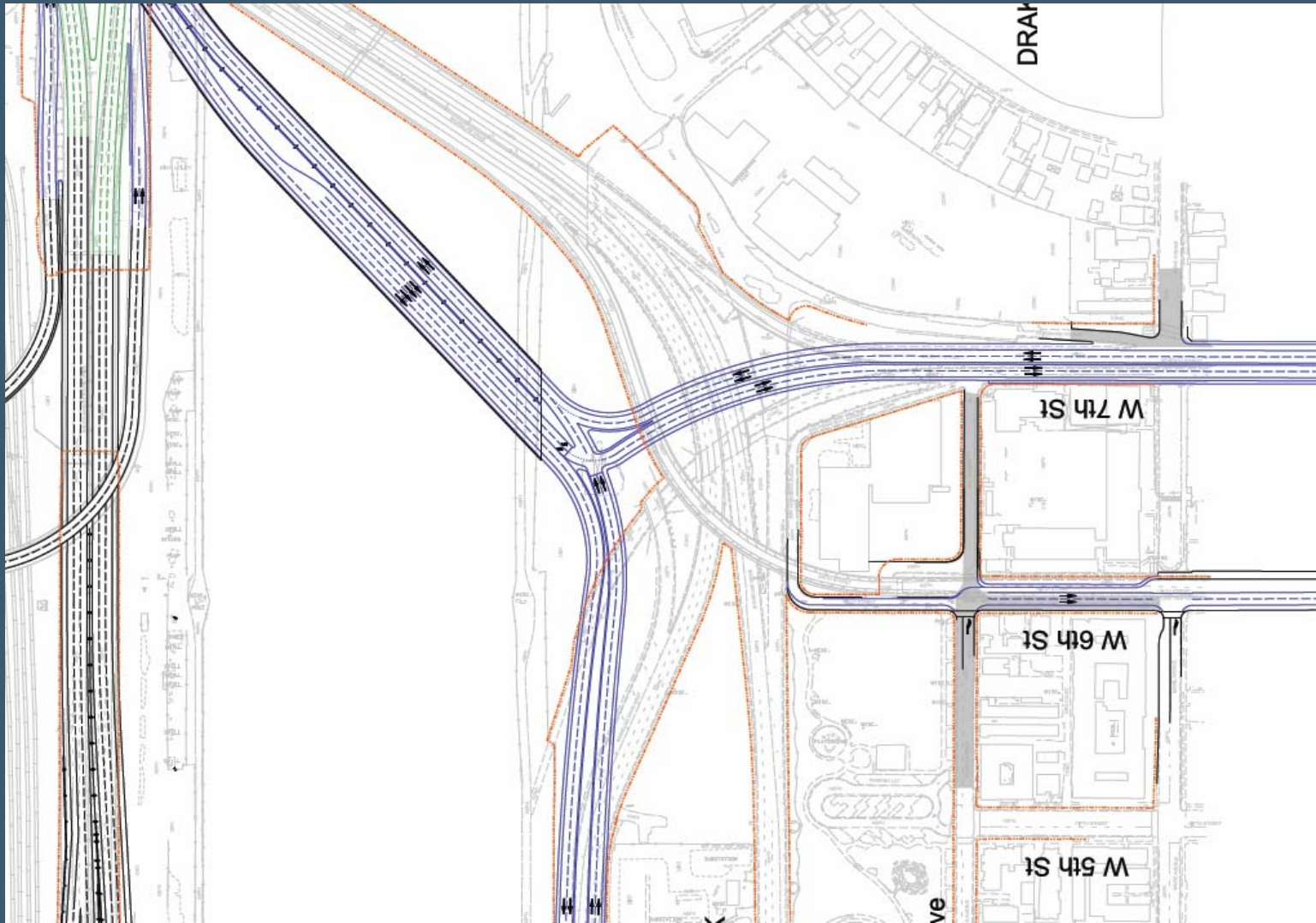
# Methodology

- Analysis was performed using VISSIM simulation model
- 2035 Alternative 5C Build condition
- AM and PM Peak hours

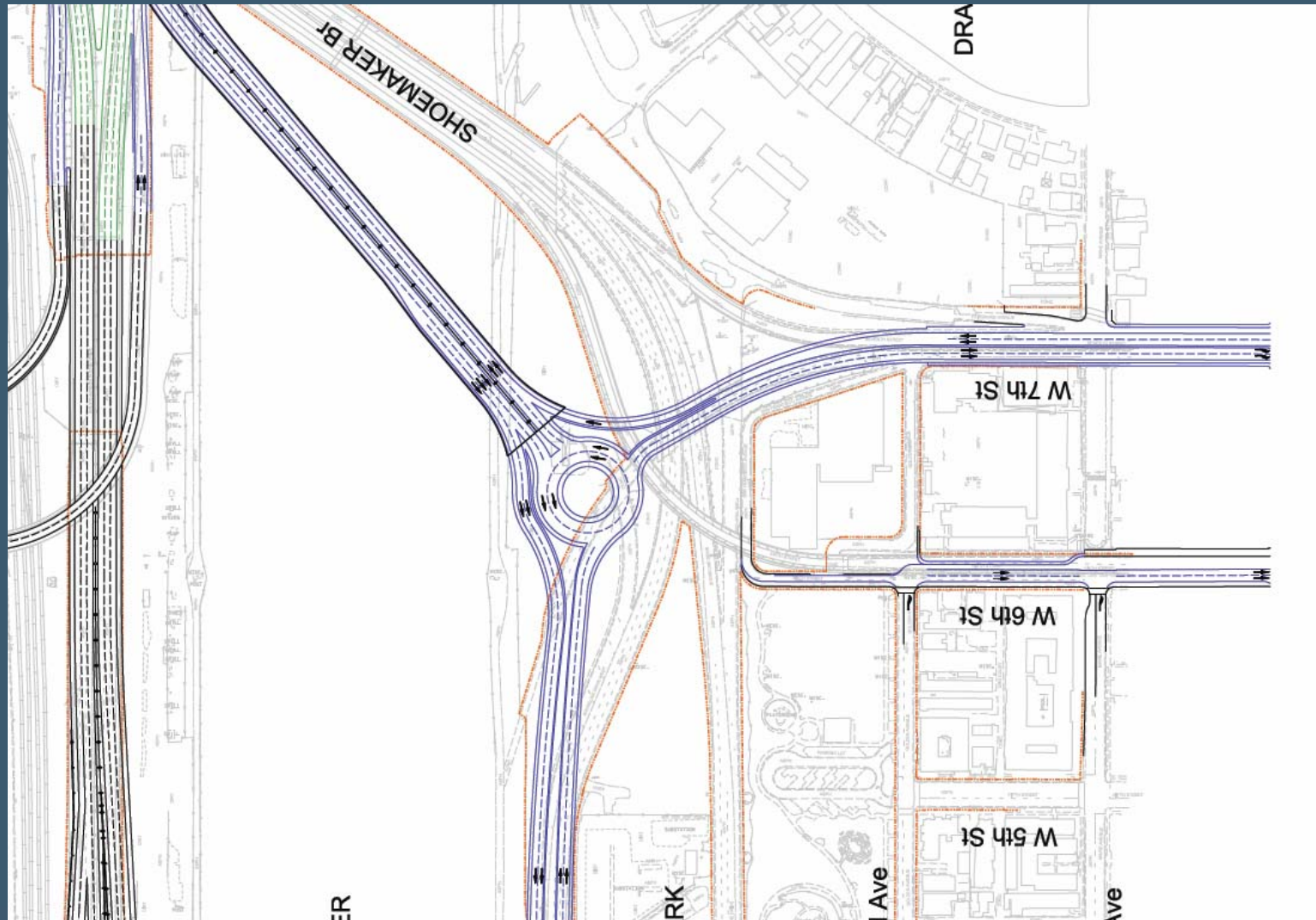
# Design Options Considered

- Signalized intersection
- Standard roundabout
- Metered roundabout

# Design Option 1: (Signalized Intersection)



# Design Option 2: (Standard Roundabout)





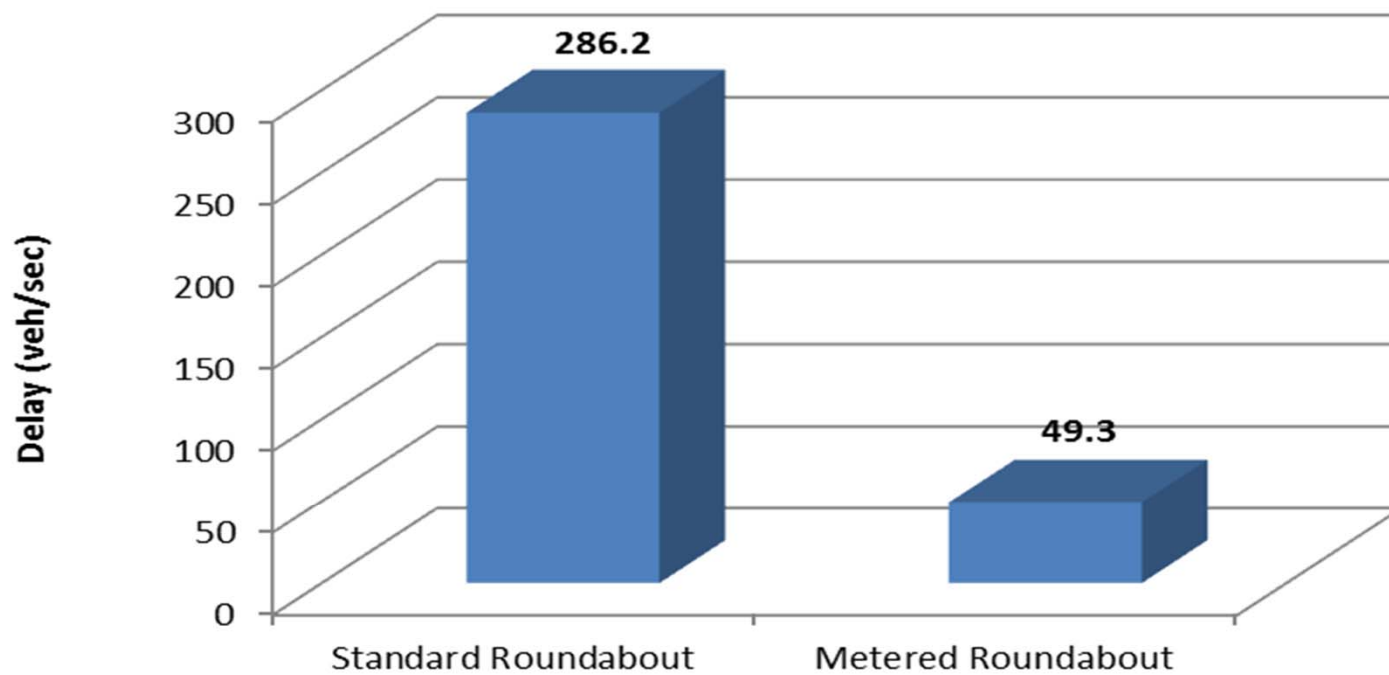
# Design Option 3: (Metered Roundabout)



# Delay: Standard vs Metered Roundabout (PM Peak)

Intersection Location	Control	Approach (Movement)	Standard Roundabout		Metered Roundabout	
			Del(v/s)	LOS	Del(v/s)	LOS
7th Street/Shoreline Drive	Roundabout (standard)	Northbound	> 900	F	47.5	D
		Southbound	<10.0	A	50.9	D
		Westbound	84.4	F	82.3	F
		<b>Entire Roundabout</b>	286.2	F	49.3	D

# Entire Roundabout Delay Comparison (PM Peak)



# Max. Que.: Standard vs Metered Roundabout

			Max. Queue (ft.)			
Intersection Location	Control	Approach (Movement)	Standard Roundabout		Metered Roundabout	
			AM	PM	AM	PM <sup>1</sup>
7th Street/Shoreline Drive	Roundabout (standard)	Northbound	243	1,780	336	695
		Southbound	25	25	199	898
		Westbound	25	25	199	898

1. Max. Queue during PM peak hour in the northbound approach is expected to back up to the next intersection.

# Why Standard Roundabout will not work?

- Two conflicting movements with high volume
- Inadequate gaps for one movement
- Will create long queue for NB approach

# Advantage (Metered Roundabout)

- Green & Aesthetic
- Reduced speed
- Increased safety
- Can operate as Standard roundabout during off peak hours

# Challenges (Metered Roundabout)

- Drivers unfamiliarity
- Designing new/creative traffic control and signing Pattern
- Educating people

# Conclusion

- Metered roundabout is the best option
- Expected to provide better traffic operations
- Will provide adequate capacity to serve both AM and PM peak hour traffic demand



Thank You  
Questions / Discussion