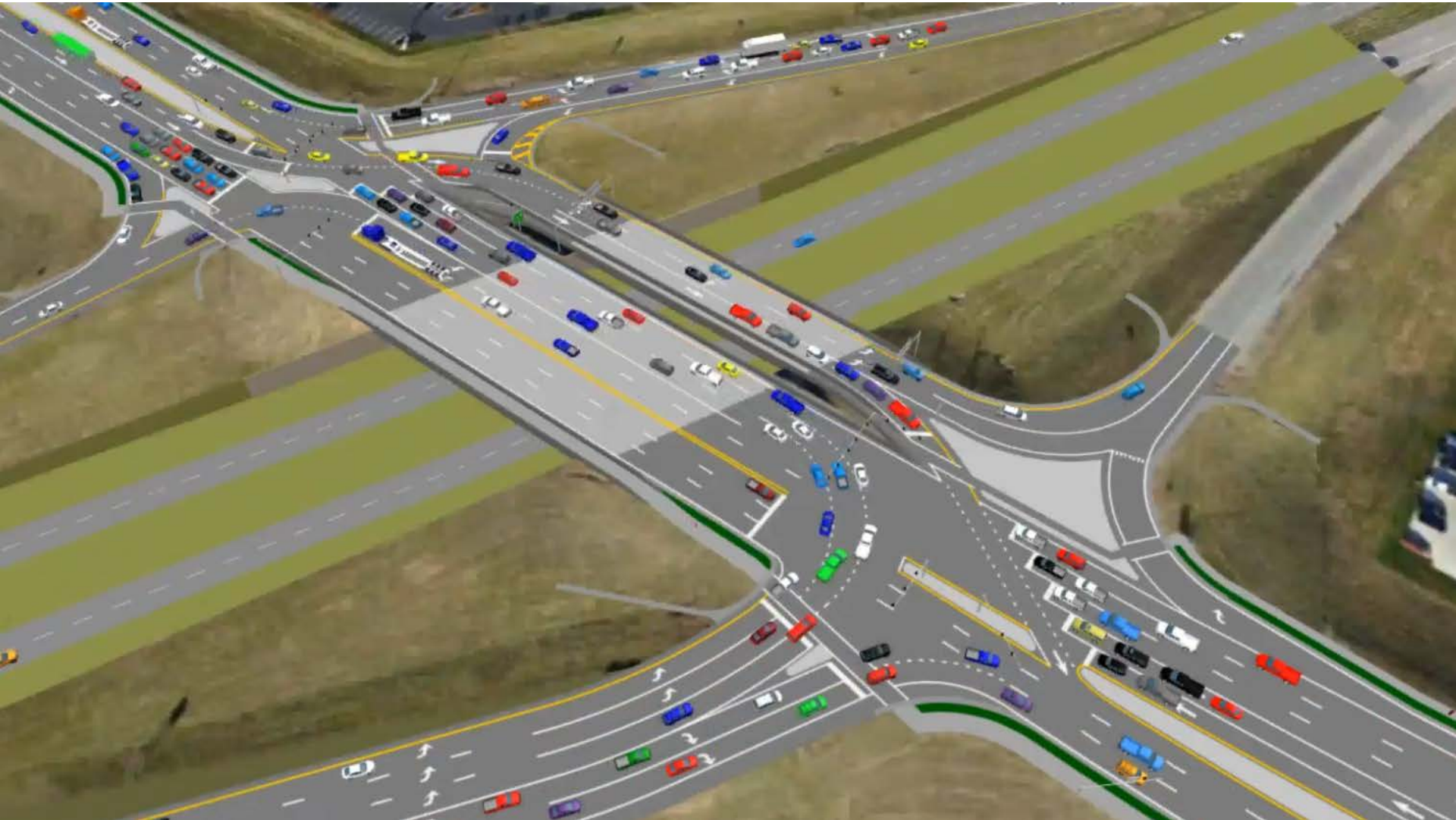
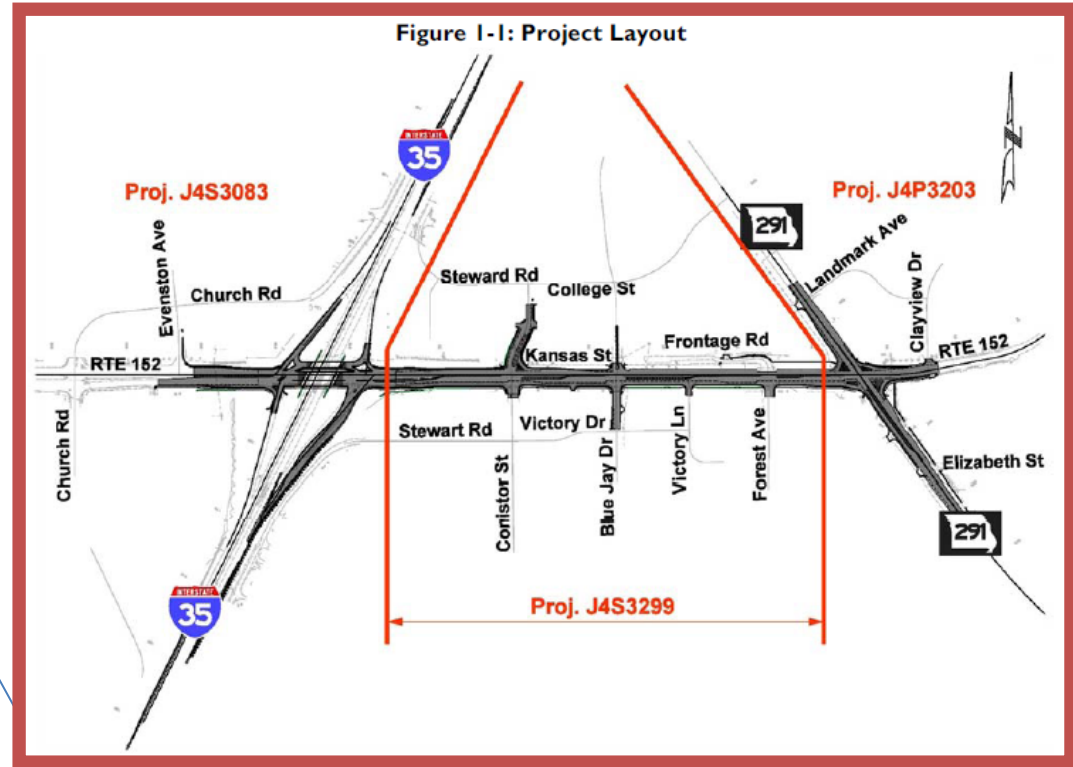
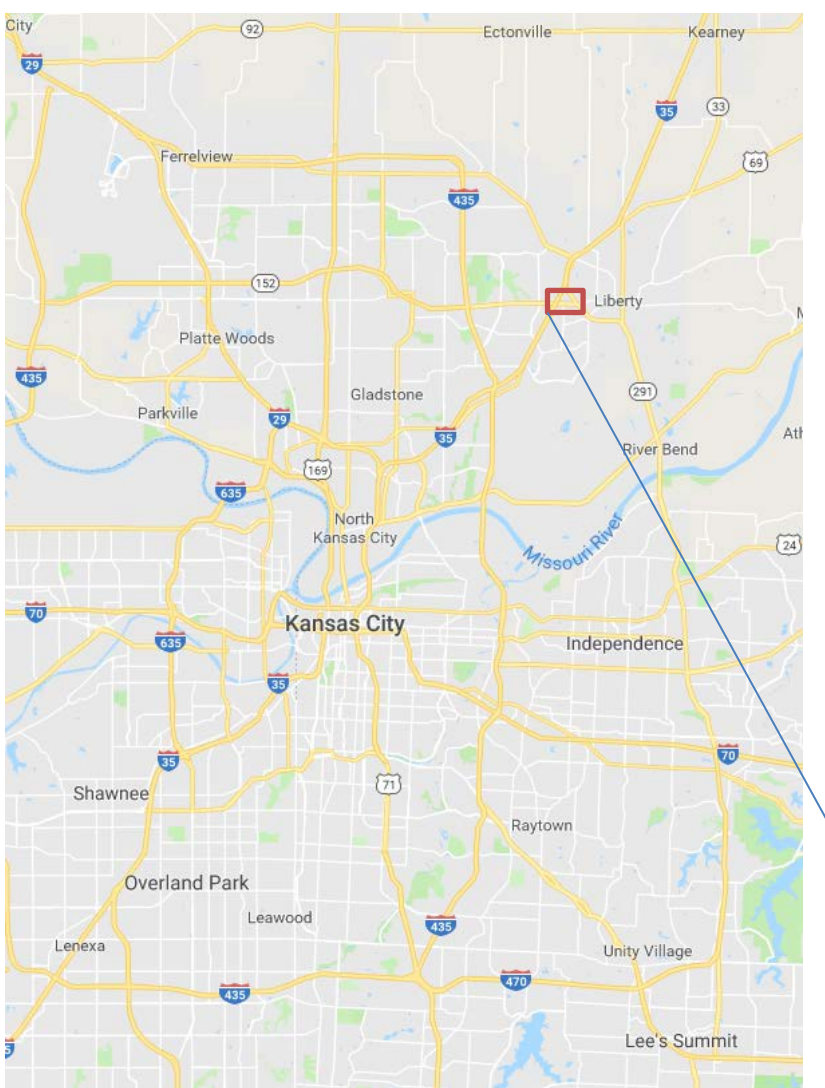


# I-35 @ MO-152



“Displaced Left” Interchange

# Project Location



Note that MO-152 becomes "Kansas Street" east of I-35

# Project Details

## **What is MoDOT doing on this project?**

- Interchange Improvements
  - Bridge replacement
  - Ramp extensions
- Corridor improvements along MO-152/Kansas Street
  - Intersection improvement
  - Roadway widening – additional lanes
  - Turn lane additions

## **How will this project benefit the public?**

- Improve safety
- Decrease travel times
- 10' Multiple-use path (bicycle and pedestrian) along the south side
- 5' Sidewalk along the north side

# Project Details

## MoDOT project website

### **What is the time line for this project?**

- The project will begin in the spring of 2019.
- The project is expected to be complete by the end of 2020.

### **What will this project cost? How is this project funded?**

- The project is estimated at \$30 million.
- This is a jointly funded project between MoDOT, the Cities of Liberty and Kansas City, MO.
- Missouri Dept. of Transportation: Approximately \$17 million
- City of Liberty: Approximately \$5.5 million
- Federal Surface Transportation Fund: \$6 million
- Shoal Creek TIF (KCMO): \$1.5 million

# Project Team



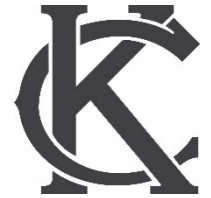
MoDOT



City of Liberty



City of Kansas City, Missouri



TranSystems – roadway, bridge, drainage & traffic

Hg Consult – bridge, drainage, lighting & erosions control



Trekk – surveys (topo/mobile lidar)



Westwood – surveys (ROW)

Terracon – Geotechnical Engineering



# Concept Study



## Concept Study

### Purpose and Need

Significant Development and Growth

Significant Traffic Congestion and Safety Concerns

### Project Goal

Evaluate Existing and Projected Traffic Volumes

Develop Traffic Model to Analyze Traffic Movements

Consider/Develop Alternatives that will address Current and Projected Needs

Standard Diamond Interchange

Single-Point Urban Interchange

Other Improvements considered:

Signal Phasing Changes

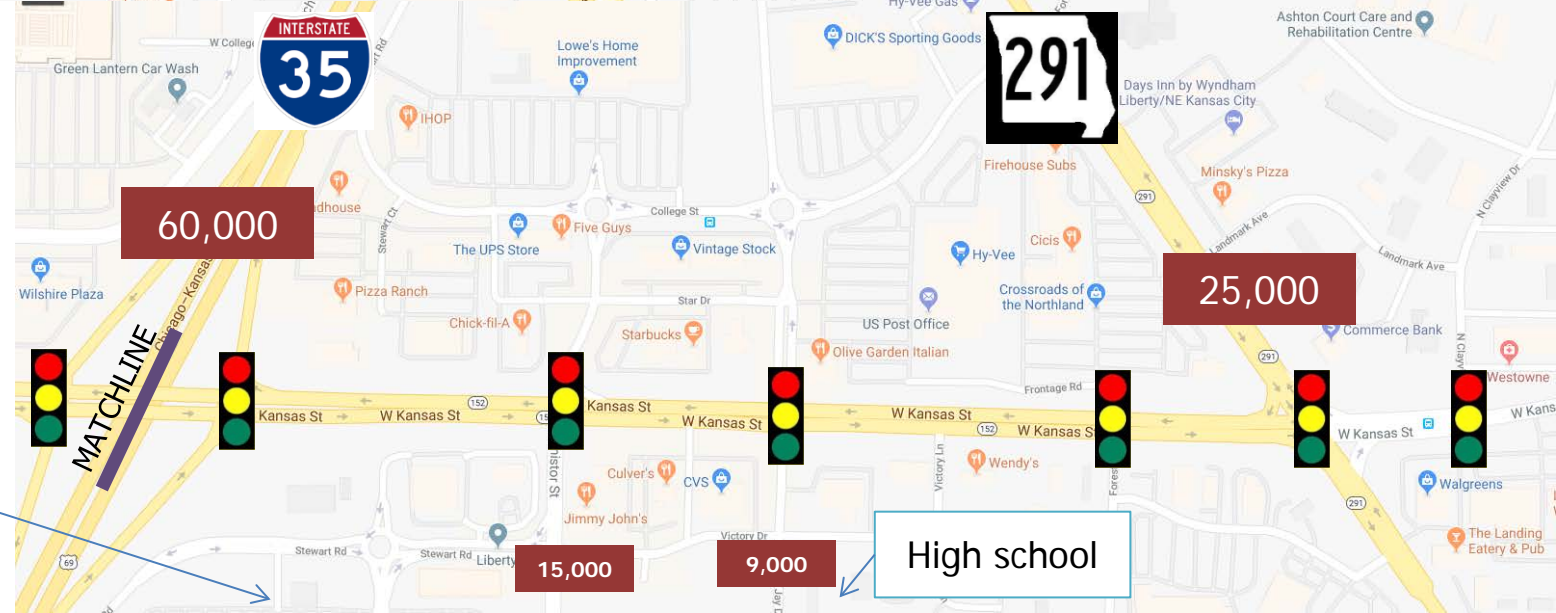
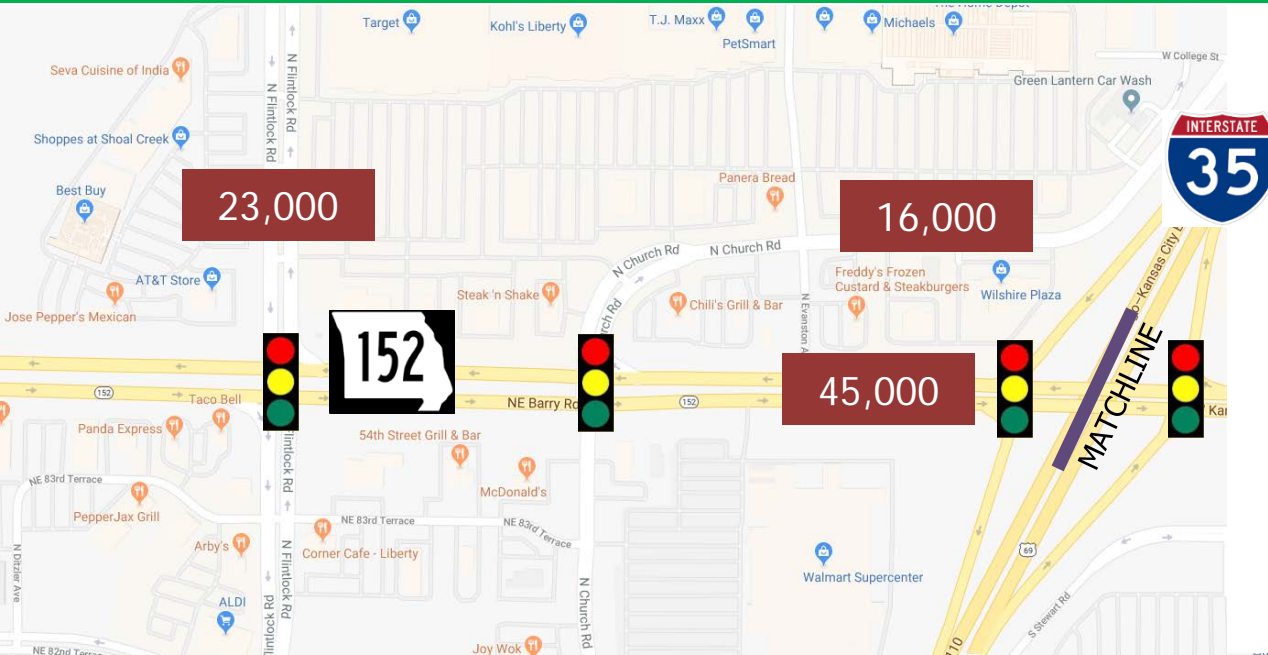
Additional Through Lanes

Additional Turn Lanes

Carry selected Alternative forward into Final Design.

# Existing Conditions

Approximate daily traffic volumes (existing)

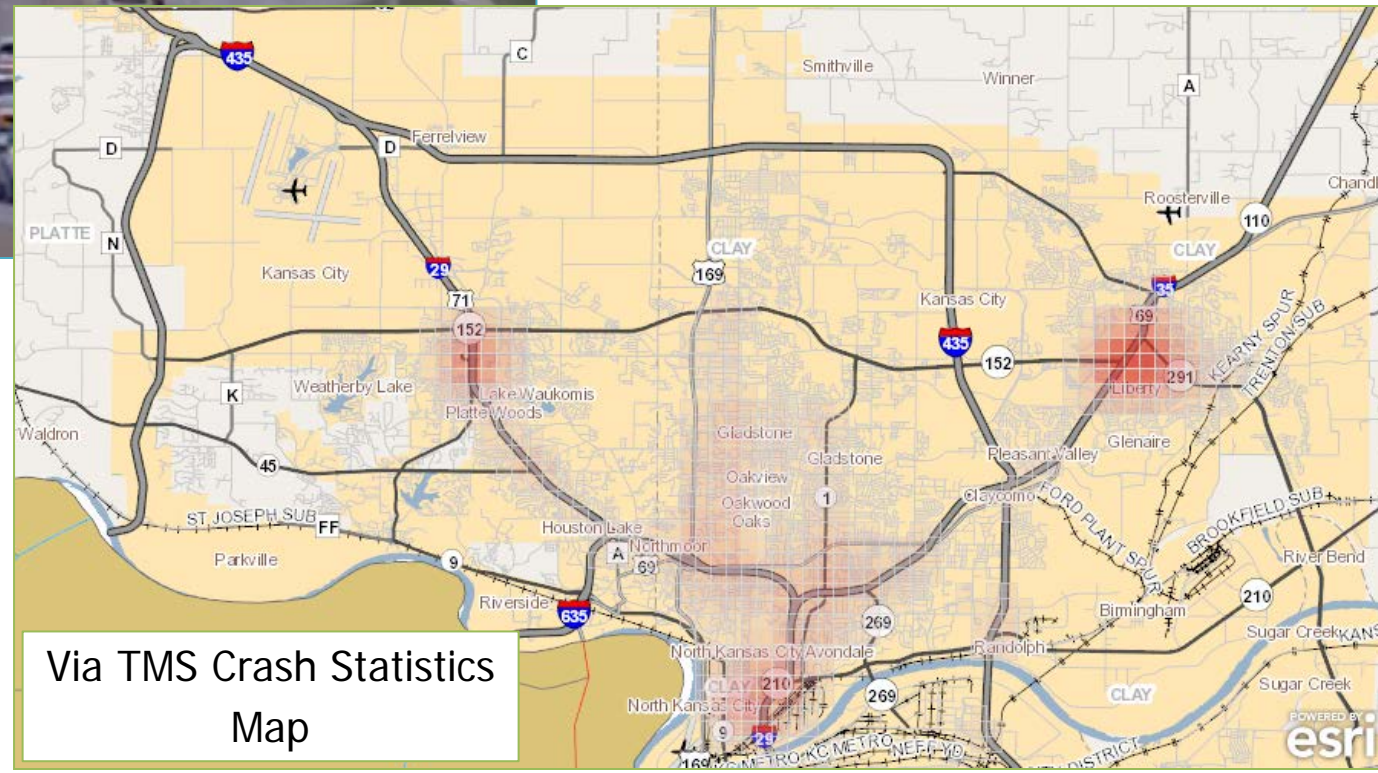


# Existing Conditions

M-152 & I-35 NB

Sample of WB MO-152  
during PM

FHWA report indicates 1,473  
crashes in study area over the  
last five years. 840 (57%)  
were rear-end crashes.







# Widening of Kansas Street

Number of through lanes currently in place

Number of through lanes proposed



3

3

3

2

3

2

3

2

2

2

3

3

2

3

2

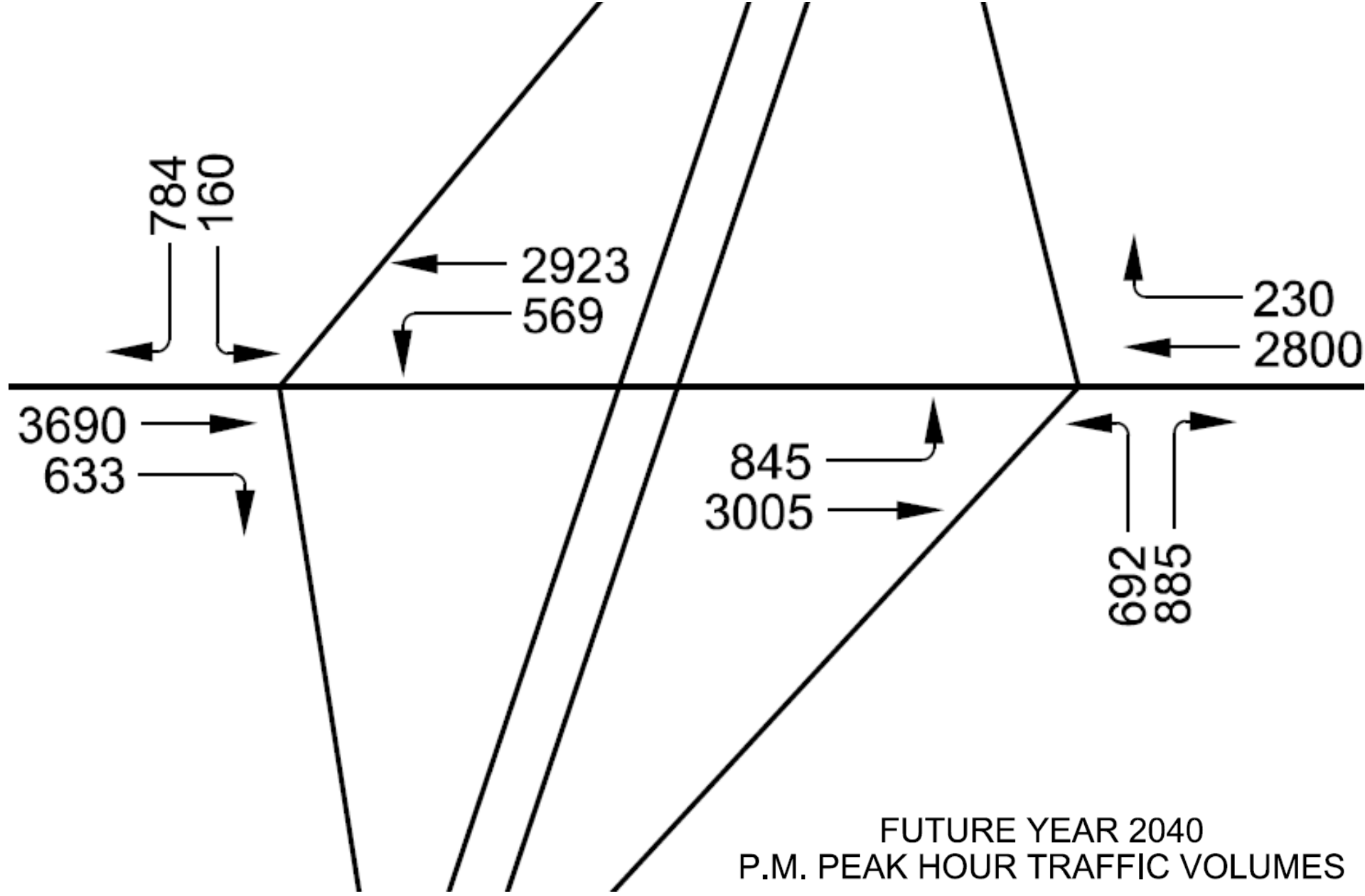
3

2

3

2

# Capacity Challenges



# Capacity Challenges



Traditional diamond interchange struggles:  
high through volumes (EBT, WBT) combined with high left-turn volumes lead to queues at signals

SPUI struggles:  
left-turn volumes aren't balanced so signal isn't efficient

DDI struggles:  
through volumes (EBT, WBT) are so high that the signals cannot provide enough green time for each direction

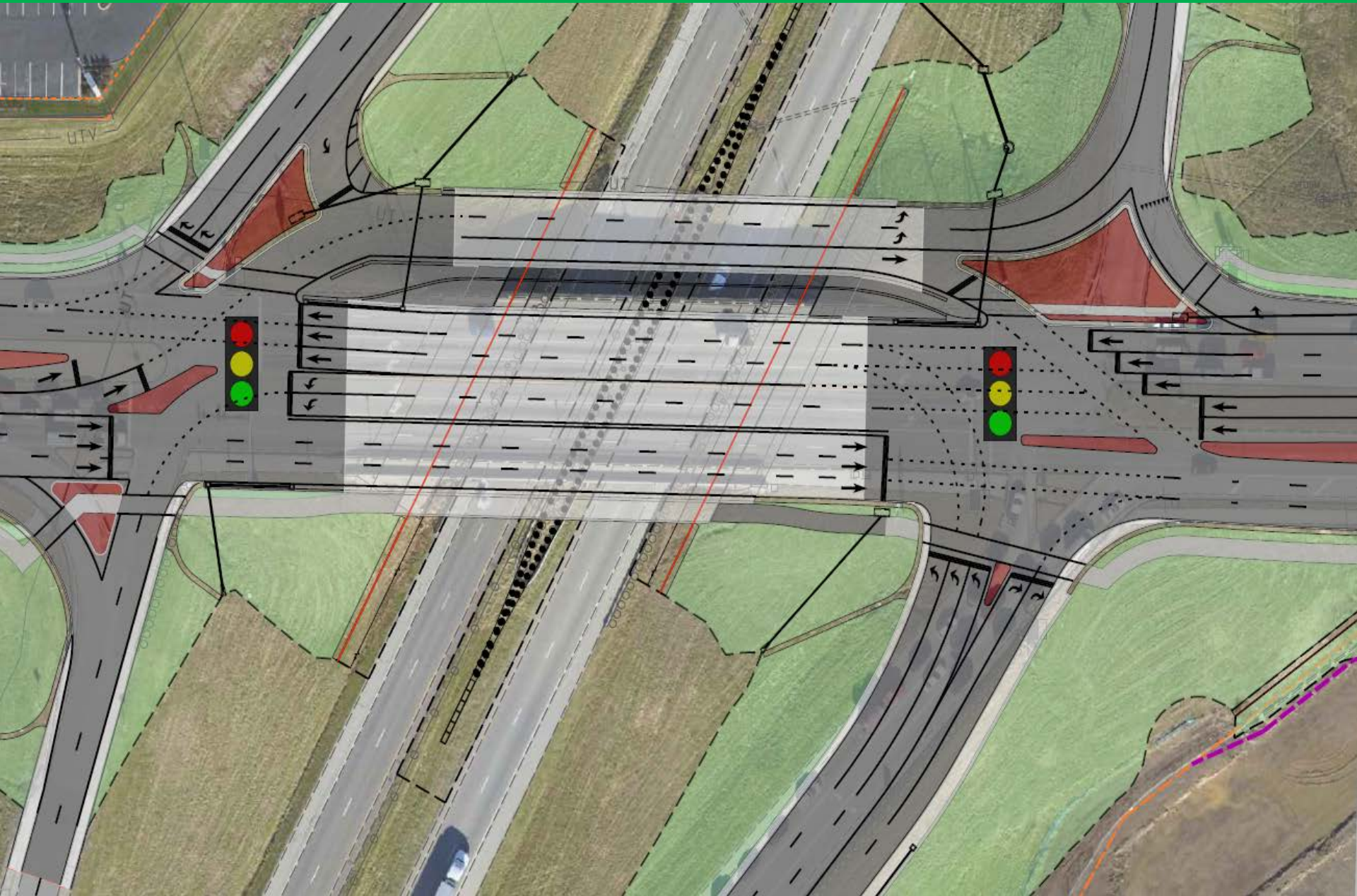
# “Displaced Left” alternative



Compared to the traditional diamond in the peak hour,  
this geometry results in about:

- 1,500 more vehicles served
- 30% less travel time
- 45% less delay

# "Displaced Left" alternative



# Comparison Video



# "Displaced Left" alternative

Click on relevant videos for YouTube links

YouTube

Search

- Home
- Trending
- History
- Get YouTube Red
- Get YouTube TV

### BEST OF YOUTUBE

- Music
- Sports
- Gaming
- Movies
- TV Shows
- News
- Live
- Spotlight
- 360° Video

Browse channels

Sign in now to see your channels and recommendations!

Sign in



MoDOTKC

Subscribe 135

Home Videos Playlists Channels Discussion About

Uploads

Date added (newest) Grid



**Buck O'Neil Bridge set to be rehabbed Summer/Fall 2018**  
27 views • 2 weeks ago



**Route 50 and Route 291 Simulation**  
7,933 views • 1 month ago



**I-49 and 155th Street Divergabout**  
378 views • 1 month ago



**Work Zone Awareness 2018**  
17 views • 1 month ago



**Work Zone Awareness 2018**  
7 views • 1 month ago



**Work Zone Awareness 2018**  
12 views • 1 month ago



**2018 Striping Presentation**  
29 views • 2 months ago



**National Engineer Week Tribute 2018**  
324 views • 3 months ago



**Bridge Rehab Project Set to Resume on I-470**  
54 views • 3 months ago



**Mean Tweets Snow 2018**  
164 views • 3 months ago



**Travel from southbound I-35 along eastbound on Route 152**  
2,336 views • 4 months ago



**Overview of the new Route 152 and Kansas Street Project in ...**  
10,129 views • 4 months ago



**Driving eastbound to Northbound on the Route 152 Project in ...**  
5,878 views • 4 months ago



**MoDOT Launches New Training Academy**  
116 views • 6 months ago



**MoDOT KC Honors Its Veterans in Special Ceremony**  
55 views • 6 months ago



**MoDOT KC Prepares for Winter with Snow Drill**  
89 views • 6 months ago



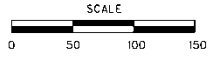
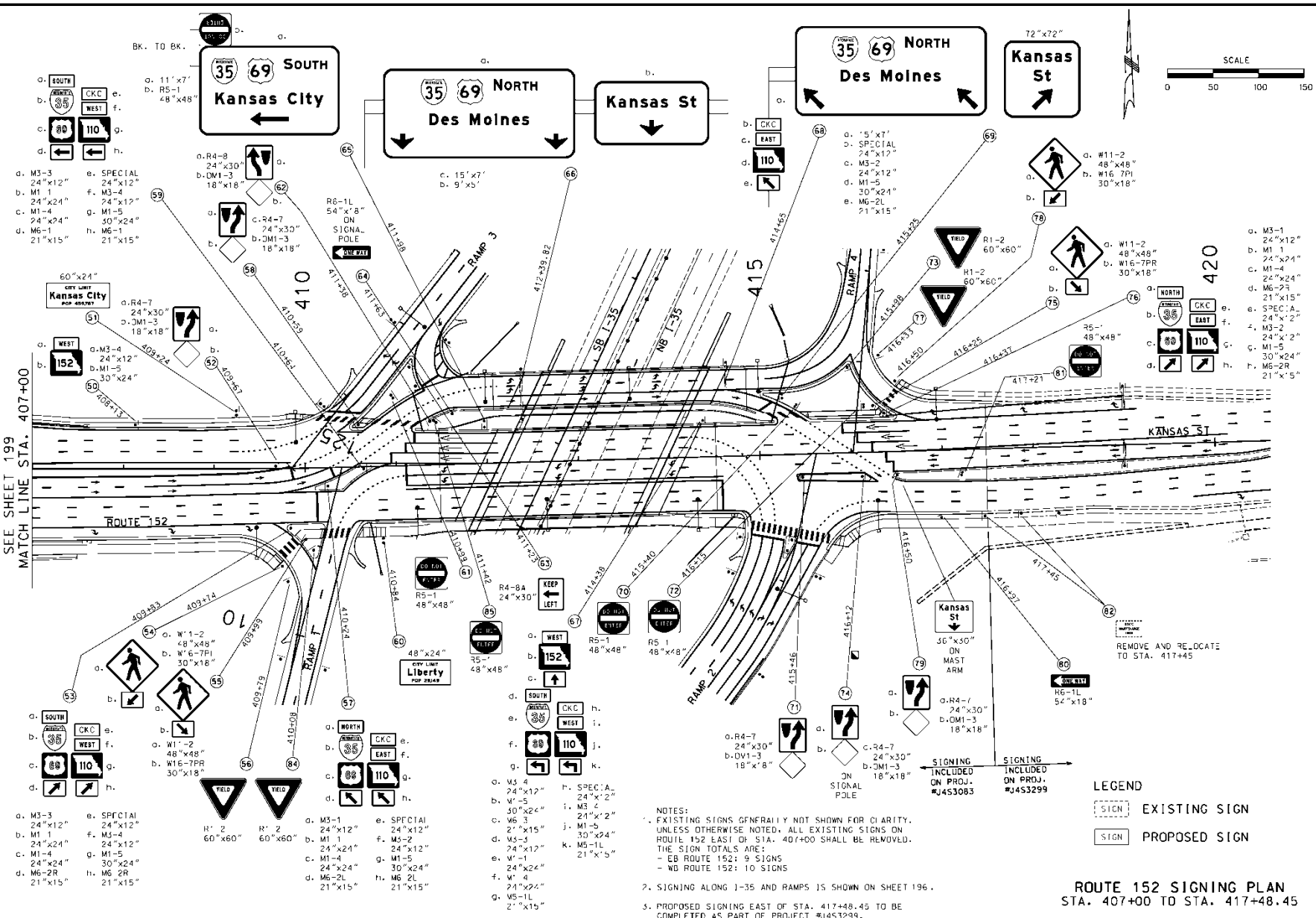
**Buckle Up Phone Down Challenge 2017**  
9 views • 6 months ago



**Buckle Up Phone Down Challenge**  
36 views • 7 months ago



# Signing Plan



- a. SOUTH  
 b. WEST  
 c. 88  
 d. 110  
 e. SPECIAL  
 f. M3-3  
 g. M1-1  
 h. M1-4  
 i. M1-5  
 j. M6-1  
 k. M6-2  
 l. M6-2R  
 m. M6-15

- a. R4-7  
 b. M3-4  
 c. M1-5  
 d. M6-15  
 e. W1-2  
 f. W16-7PR  
 g. W16-7PR  
 h. W16-7PR  
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**NOTES:**  
 1. EXISTING SIGNS GENERALLY NOT SHOWN FOR CLARITY, UNLESS OTHERWISE NOTED. ALL EXISTING SIGNS ON ROUTE 152 EAST OF STA. 407+00 SHALL BE REMOVED. THE SIGN TOTALS ARE:  
 - EB ROUTE 152: 9 SIGNS  
 - WB ROUTE 152: 10 SIGNS  
 2. SIGNING ALONG I-35 AND RAMP 15 SHOWN ON SHEET 196.  
 3. PROPOSED SIGNING EAST OF STA. 417+48.45 TO BE COMPLETED AS PART OF PROJECT #J453299.

**LEGEND**

	EXISTING SIGN
	PROPOSED SIGN

THIS WORK SHALL NOT BE CONSIDERED A CERTIFIED DOCUMENT.

DATE PREPARED: 11/5/2018  
 ROUTE: 152 STATE: MO  
 DISTRICT: KC SHEET NO: 200  
 LOCALITY: CLAY  
 JOB NO.: J453083  
 CONTRACT NO.:  
 PROJECT NO.:  
 BRIDGE NO.: A8712 / A8711

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION  
 TRANSPORTATION CORP.  
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 SUITE 400  
 KANSAS CITY, MO 64108  
 PHONE: (816) 228-8800  
 FAX: (816) 228-8800

105 WEST CAPITOL  
 JEFFERSON CITY, MO 65102  
 1-888-684-6800 (1-888-228-8800)

MO STATE CERTIFICATE OF AUTHORITY # 213  
 TranSystems

# 3D Animation – EB 152 to NB I-35



# 3D Animation – SB I-35 to EB 152



# Project Challenges



**Balancing needs between 2 Cities and MoDOT**

**Schedule – Incentivized area**

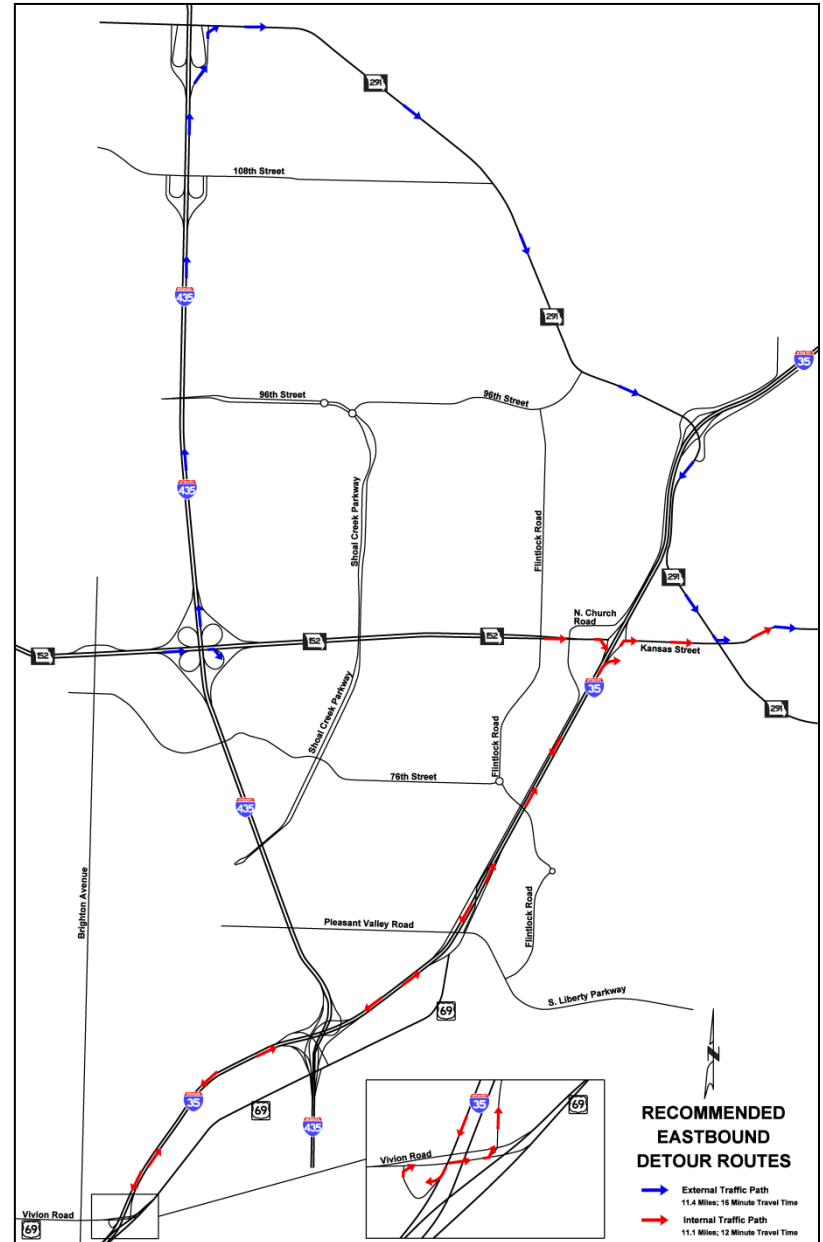
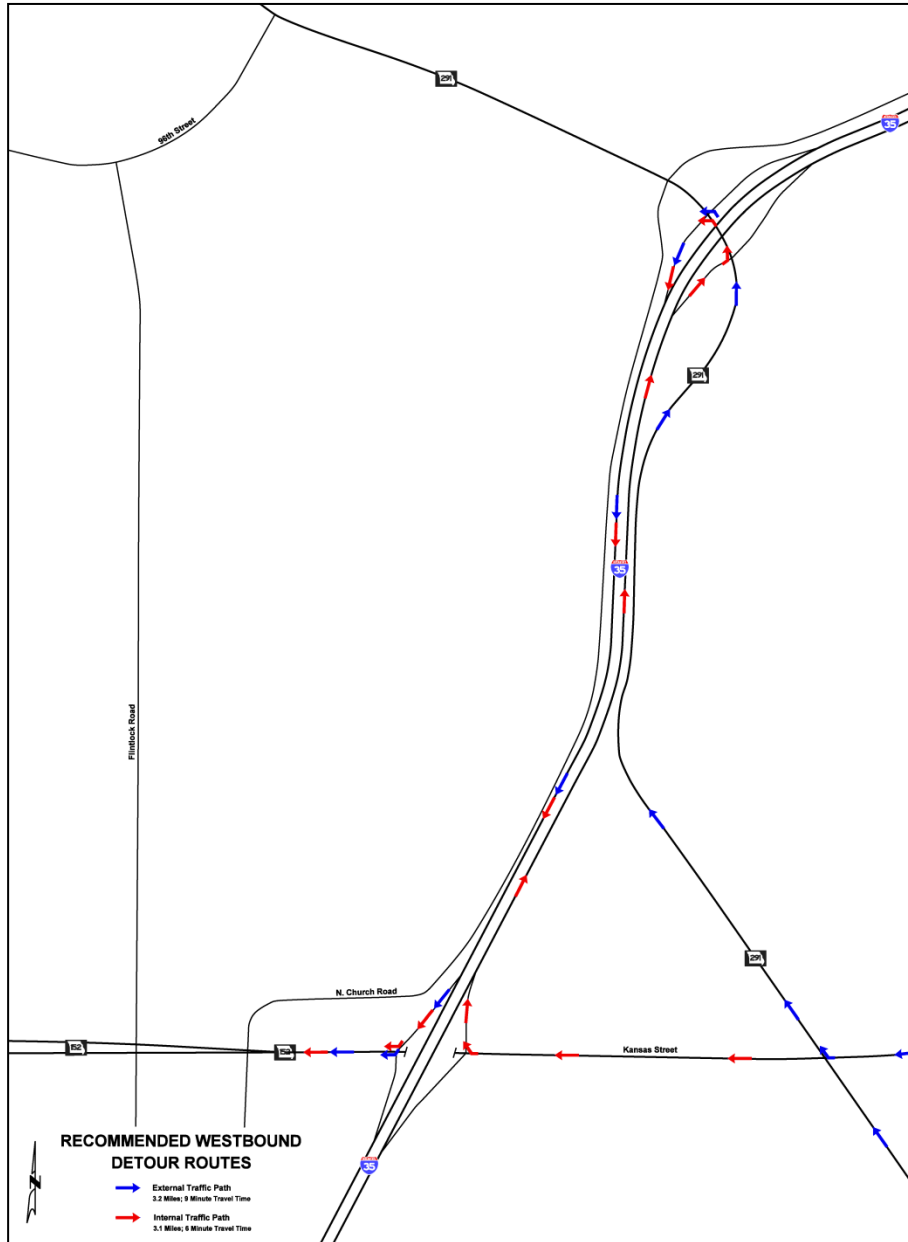
**Limited Space – fully developed (ROW Constraints)**

**Incorporating waterline improvements for the City of Liberty**

**Coordination with OGL (7 Signals) / Scout**

**Construction Phasing - Detours**

# Construction Phasing

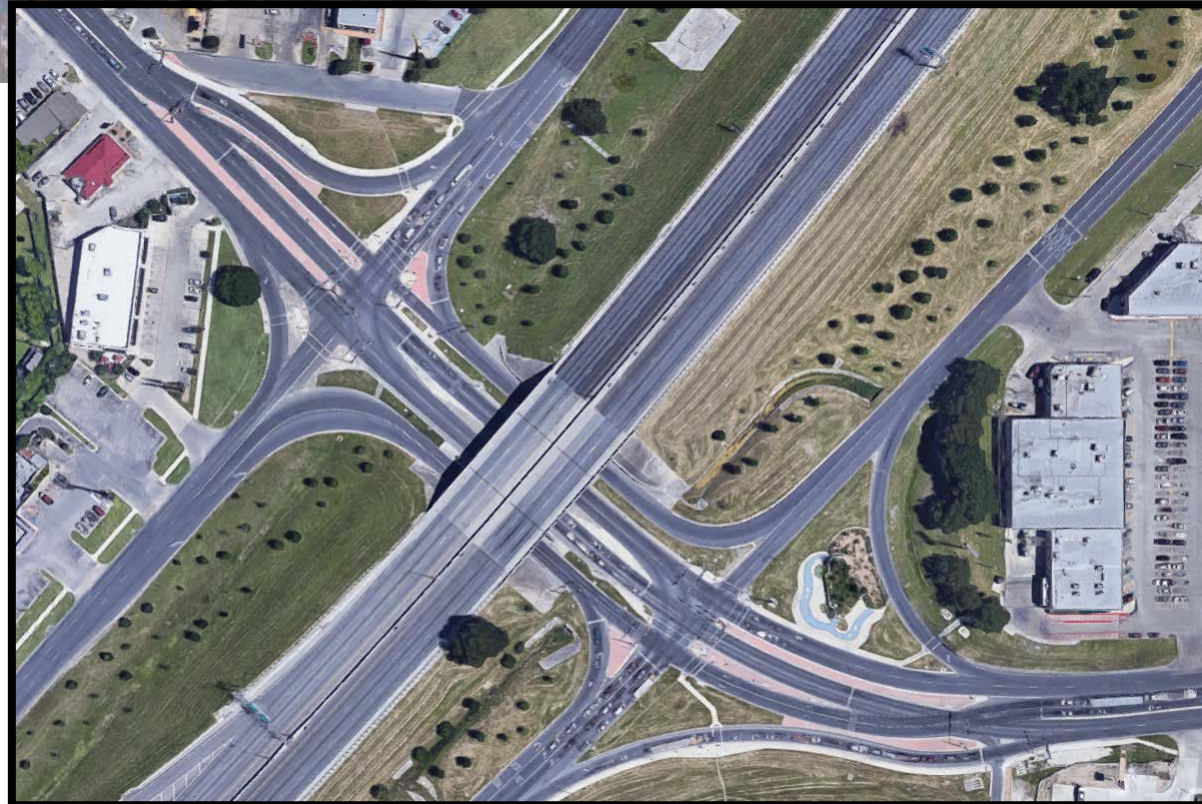
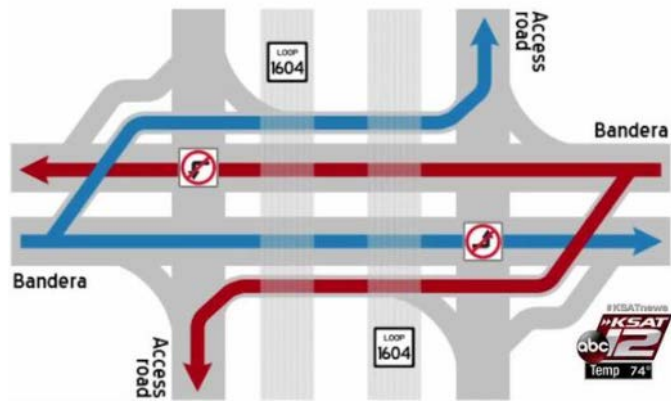


# What's in a name?

other interesting examples considered around the country



San Marco, Texas




# What's in a name?

other interesting examples considered around the country



"hybrid splintered DDI"

Two examples considered in Florida



Sarasota, Florida  
(under construction)

# What's in a name?

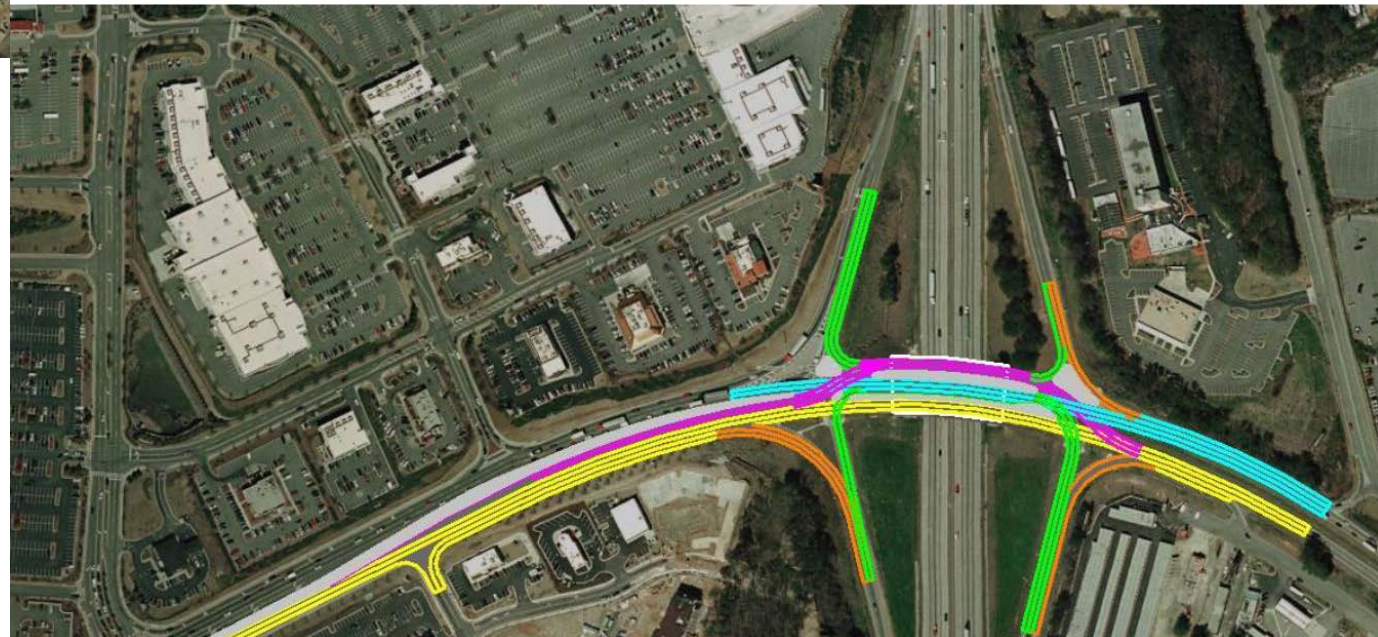
other interesting examples considered around the country

Figure 3-7: Modified Displaced Left-Turn Interchange Six Lanes



Two examples considered in Georgia

Figure 3-8: Partial Diverging Diamond Interchange Seven Lanes





# What's in a name?

other interesting examples considered around the country



## Unusual Utah freeway interchange opens Saturday

*Transportation • Modified 'continuous-flow intersection' expected to help ease congestion.*

**Woods Cross,  
Utah**

# I-35 @ MO-152

