"Displaced Left" Interchange
Project Location

Note that MO-152 becomes “Kansas Street” east of I-35
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
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**

**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)

23,000
16,000
45,000
60,000
25,000
15,000
9,000

New shopping center
High school
FHWA report indicates 1,473 crashes in study area over the last five years. 840 (57%) were rear-end crashes.
Future Growth

Figure 2-3: Undeveloped Areas along Route 152 Corridor West of I-35
Widening of Kansas Street

Number of through lanes currently in place

Number of through lanes proposed
Capacity Challenges

FUTURE YEAR 2040
P.M. PEAK HOUR TRAFFIC VOLUMES
**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
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
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

Two examples considered in Georgia
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.*
I-35 @ MO-152