Presentation to
2017 Purdue Road School

Innovation & Consensus Building
With Traffic Simulation
DOES THIS SOUND LIKE FUN TO YOU?

• Serious Safety Problems & Growing Congestion
• Competing Demands for Access & Mobility
• Frustrated & Skeptical Public
• Multiple Agency Jurisdictions
• MANY Stakeholders with Direct or Indirect Influence (NIMBY)

“We need a solution that fixes this mess...but doesn’t impact businesses or economic development.”
A WICKED WEB...

- IDOT Highway
- City Arterial
- Institutions – Southern IL University, Carbondale HS
- Many Existing Businesses
- Multiple Developers of Adjacent Properties
- Skeptical Public & Frustrated Residents
- Southern IL MPO (Client)

How can consensus be achieved amongst conflicting interests and priorities?
Safety Analysis

Crashes 2011 - 2013

Lochmueller Group
in association with
SIMPO • IDOT • City of Carbondale
Future Development Assumptions

- Area = 73.53
  - GFA Coverage = 15%
  - Land Use = Commercial

- Area = 10.16
  - GFA Coverage = 20%
  - Land Use = Commercial

- Area = 10.02
  - GFA Coverage = 20%
  - Land Use = Commercial

- Area = 11.17
  - GFA Coverage = 20%
  - Land Use = Commercial

- Area = 16.67
  - GFA Coverage = 20%
  - Land Use = Commercial

- Area = 6.91
  - GFA Coverage = 15%
  - Land Use = Commercial

- Area = 2.0
  - GFA Coverage = 20%
  - Land Use = Commercial

- Area = 2.71
  - GFA Coverage = 20%
  - Land Use = Commercial
2040 No-Build VISSIM Model
Option 1 Schematic
Option 2 Schematic

- Relocate Frontage Road
- Potential improvements to add capacity
- Right turn only onto Route 13 (one-way)
- Roundabout
- Right in/Right out
- Right in/Right out
- Left in
- Median on Giant City Road
- New road
Option 3 Schematic
Intersection of IL 13 & Giant City Road

**Improvement Needs**

- Add Southbound Right-Turn Lane
- Add Second Northbound Left-Turn Lane
- Modify Signal Phasing, Sequencing & Timing
Improvement Needs North of IL 13

- Simple “turnaround” roundabout (Option 1) will NOT work as long-term solution
- Need to relocate the North Frontage Road several hundred feet to the north (Option 2 or 3)
  - Install a four-leg roundabout
  - Retain existing frontage road as right-in/right-out only
Additional Improvement Options North of IL 13

- Break In Access for Westbound IL 13
  - Roundabout on the North Frontage Road
  - Accommodate traffic off of and onto IL 13 directly
2040 VISSIM Model – Optional Improvements
Improvement Needs South of IL 13

• TWO feasible alternatives for the South Frontage Road
  ✓ Add a relocated Frontage Road on both sides of Giant City Road along back side of businesses
  ✓ OR provide alternate access to the west side at the existing South Frontage Road plus a relocated east South Frontage Road

• Bicycle and pedestrian facilities should be provided along Giant City Road and tie in with IDOT’s planned improvements along IL 13
2040 VISSIM Model – South of IL 13
Additional Improvement Options South of IL 13

• Break In Access on IL 13 to the east of Giant City Road to provide right-in/right-out/left-in access
  ✓ Recommend installation of a partial signal
  ✓ Westbound IL 13 never stops and eastbound stops are coordinated with existing stops at Giant City Road to minimize disruptions
Summary of Study Findings

• The recommended improvements will significantly reduce congestion, reduce crashes by 60-80% & accommodate future growth.

• A phased implementation is feasible for both the immediate and long-term needs of the corridor.

• Each project would be a candidate for Highway Safety funding as well as STP-U funding.

• The preservation of right-of-way is important as development continues within the project area.
Building a Consensus Through Innovation

• Giant City Road has constraints common to many small & medium size communities with edge development.

• Local planning agencies & MPOs can take the lead to help foster collaboration.

• The use of technology & visualization tools are powerful for building consensus among stakeholders – people are much more likely to agree when the “see” the results from a personal perspective.
Thank You!

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