Meeting Agenda

- Review of Past CPG Meetings
- Managed Lane Alternative Evaluation
- Noise Impacts Evaluation
- Next Steps
Review of past CPG Meetings
I-55 Study Corridor

Communities: 16
System Interchanges: 3
Service Interchanges: 14

Existing Traffic Volumes: over 150,000 vehicles per day

Study Limits: I-355 to I-90/94
25 miles
I-55 On-Line Survey
Key Findings

- 75% drive alone
- 78% were work trips/commute
- 97% identified roadway congestion as one of the biggest disruptions to travel
- 25% rated I-55 traffic congestion as unbearable
- During congested periods, approx. 78% stated that backups were one or more miles long

If I-55 were rehabilitated, the following were noted as extremely important:

- **Travel Time Reliability**
- **Increased Safety/Fewer Accidents**
- **Improved Quality of Life**
**Existing Traffic Characteristics**

**Peak Hour Traffic Volume in vehicles per hour (vph)**

- Desirable: 6,000 – 8,400
- Current: 7,300 – 10,400
- No-Build Year 2040: 13,000 – 16,600

**Occupancy**

- 1 passenger: 83.5%
- 2 passenger: 13.7%
- 3 or more passenger: 2.8%

**Trucks**

- 13 – 15%
  (1 of every 7-8 vehicles)
Purpose and Need
Mobility and Operational Efficiency

2040 No-Build: Morning

2040 No-Build: Evening
Problem Statement

• **Existing Roadway Conditions**
  – Limited roadway capacity
  – Roadway design constraints
  – High truck volumes
  – Limited public transit options

• **Impacts to Users**
  – Long and unreliable travel times
  – Decreased safety
  – Increased costs for delivery of goods and services
Project Purpose and Need

- **Mobility** and operational efficiency to adapt to changing travel demands
- **Congestion management strategies** to improve system performance & travel time reliability
- **New travel choices** supporting transit opportunities
- **Sustainable transportation solutions** that meets future environmental & economic needs
- **Maximize use of existing facility** to recognize funding constraints
Balancing Project Goals & Objectives

Consumer Benefits
- Improve Travel Reliability
- Reduce Travel Times
- Transit Opportunities

Sustainability
- Active Traffic Management
- Fund Operations & Maintenance

Travel Performance
- Increase Capacity
- Reduce congestion
Evaluation Process

1. Evaluation of Preliminary Conceptual Alternatives
2. Sketch Level Alternatives Analysis
3. Refinement of Alternatives
4. Preferred Alternative

Greater Detail
Alternative Fails to Address Purpose and Need

- **Fails to** provide sustainable/reliable transportation
- **Eliminates** Median Bus-on-Shoulder Benefit
- **Does not** provide alternative to stop and go traffic concerns

**Alternative not carried forward**
Alternative Fails to Address Purpose and Need

– **Does not** address congestion management
– **Does not** maximize use of existing facility, requires complete reconstruction of facility bridges, interchanges and I-55
– **Does not** provide sustainable transportation solutions
– **Not financially feasible**: requires additional right-of-way to accommodate increased foot print

Alternative not carried forward
Managed Lane Alternative Evaluation
Managed Lane Alternatives

**HOV-2+**
Only carpools with 2+ passengers are allowed

**HOV-3+**
Only carpools with 3+ passengers are allowed

**HOT-2+**
SOVs can use if they pay a toll; carpools with 2+ passengers travel free.

**HOT-3+**
Carpools with 3+ passengers travel free. SOVs and HOV-2s toll

**ETL**
All Vehicles Pay
Sketch Level Evaluation

- Region Transportation Demand (TDM)
- Peak hour performance indicators
  - Travel Performance
    - Increase Capacity
    - Increased Service
  - Consumer Benefits
    - General Purpose Lane Speed
    - Vehicle Miles Traveled (VMT)
    - Vehicle Hours Traveled (VHT)
  - Sustainability
    - Active Traffic Management
    - Fund Operations & Maintenance
Managed Lane Travel Performance Evaluation & Relative Comparison

- Managed lanes operate best when the appropriate amount of traffic is shifted from the general purpose lanes into the managed lanes. This is approximately 70-80% of the lane capacity.

- The ability to control the volume of traffic that shifts to/from the managed lane is critical to actively manage performance.

<table>
<thead>
<tr>
<th>Performance</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>HOV 2+</td>
<td>High capacity increase and passenger throughput</td>
</tr>
<tr>
<td>HOV 3+</td>
<td>Low capacity increase and passenger throughput</td>
</tr>
<tr>
<td>HOT 2+</td>
<td>High capacity increase and moderate passenger throughput</td>
</tr>
<tr>
<td>HOT 3+</td>
<td>High capacity increase and moderate passenger throughput</td>
</tr>
<tr>
<td>ETL</td>
<td>High capacity increase and moderate passenger throughput</td>
</tr>
</tbody>
</table>
The addition of capacity to I-55 will result in additional traffic use along I-55 and reduce travel on the local roadway system compared to the No-Build condition.

**Total Travel Volume Served**

- No-Build (0%)
- HOV 3+ (4%)
- HOT 2+ (13%)
- HOT 3+ (13%)
- ETL (13%)
- HOV 2+ (14%)

**Person Throughput Increase**

- No-Build (0%)
- HOV 3+ (6%)
- HOT 3+ (11%)
- ETL (11%)
- HOT 2+ (14%)
- HOV 2+ (17%)
Managed Lane Consumer Benefits Evaluation & Relative Comparison

- Managed lanes operate best when they *provide optimal use of available lane capacity*.
- Managed lanes can *encourage ridesharing and support transit use*.
- All users of I-55 will experience *improved travel speeds* and *reduced travel times* as a result of added capacity on I-55.

<table>
<thead>
<tr>
<th>Performance</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low</strong></td>
<td></td>
</tr>
<tr>
<td>HOV 2+</td>
<td>Moderate performance increase</td>
</tr>
<tr>
<td>HOV 3+</td>
<td>Lower performance increase</td>
</tr>
<tr>
<td>HOT 2+</td>
<td>High performance increase</td>
</tr>
<tr>
<td>HOT 3+</td>
<td>Moderate performance increase</td>
</tr>
<tr>
<td>ETL</td>
<td>Highest performance increase</td>
</tr>
</tbody>
</table>
**Sketch Level Summary**

**Consumer Benefits**

### Roadway Vehicle Hours Traveled (VHT) Savings

- **No-Build** (0%)
- **HOV 3+** (-1%)
- **HOV 2+** (3%)
- **HOT 2+** (3%)
- **HOT 3+** (3%)
- **ETL** (4%)

### Roadway Vehicle Miles Traveled (VMT) Increase

- **No-Build** (0%)
- **HOV 3+** (3%)
- **HOV 2+** (11%)
- **HOT 2+** (11%)
- **HOT 3+** (11%)
- **ETL** (11%)
Motorists will benefit from increased travel speeds, and increased overall Vehicle Miles Traveled (VMT) and reduced overall Vehicle Hours Traveled (VHT) on I-55 within the study area.

General Purpose Lane Travel Speed Increase

- No-Build (0%)
- HOV 3+ (1%)
- HOV 2+ (9%)
- HOT 3+ (9%)
- HOT 2+ (12%)
- ETL (12%)
Managed lanes operate best when *principles of supply and demand* are applied through *congestion pricing*.

Active traffic *management* solutions require a *financially sustainable operation* which allows for long term operational strategies that adapt to changing regional travel demands.

<table>
<thead>
<tr>
<th>Performance</th>
<th>Explanation (Based on offsetting operations and maintenance)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>HOV 2+</td>
<td>HOV 2+ lanes require ongoing operational and enforcement costs with no revenue generated.</td>
</tr>
<tr>
<td>HOV 3+</td>
<td>HOV 3+ lanes require ongoing operational and enforcement costs with no revenue generated.</td>
</tr>
<tr>
<td>HOT 2+</td>
<td>HOT 2+ lanes require ongoing operational, tolling, and enforcement costs with limited revenue generated.</td>
</tr>
<tr>
<td>HOT 3+</td>
<td>HOT 3+ lanes require ongoing operational, tolling, and enforcement costs with moderate revenue generation.</td>
</tr>
<tr>
<td>ETL</td>
<td>ETL lanes require ongoing operational, tolling, and reduced enforcement to actively manage travel while maximizing revenue.</td>
</tr>
</tbody>
</table>
## SKETCH LEVEL Managed Lane Alternatives

<table>
<thead>
<tr>
<th>PROJECT GOALS &amp; OBJECTIVES</th>
<th>HOV LANES</th>
<th>HOT LANES</th>
<th>EXPRESS TOLL LANES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HOV 2+</td>
<td>HOV 3+</td>
<td>HOT 2+</td>
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<tr>
<td>Travel Performance</td>
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<tr>
<td>Consumer Benefits</td>
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<tr>
<td>Sustainability</td>
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</tbody>
</table>
**Managed Lane Facilities Nationwide**

<table>
<thead>
<tr>
<th>HOV to HOT Conversions</th>
<th>ETL</th>
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<tbody>
<tr>
<td>I-95 Express Managed Toll Lanes - Miami</td>
<td>I-95 Express Toll Lanes - Baltimore</td>
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<tr>
<td>I-15 Express Lanes - San Diego</td>
<td>I-95 Express Lanes - Fort Lauderdale</td>
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<tr>
<td>I-394 MnPass Express Lanes - Minneapolis</td>
<td>I-635 LBJ TEXpress Lanes - Dallas</td>
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<tr>
<td>I-35W MnPass Express Lanes - Minneapolis</td>
<td>I-25 HOV Express Lanes - Denver*</td>
</tr>
<tr>
<td>I-85 Express Lanes - Atlanta</td>
<td>I-10 Katy Freeway Managed Lanes - Houston*</td>
</tr>
<tr>
<td>I-680 Express Lanes - Alameda County, CA</td>
<td>SR-91 Express Lanes - Orange County, CA*</td>
</tr>
<tr>
<td>SR 91 Express Lanes - Orange County, CA</td>
<td>MoPac Improvement Project (Under Construction) - Austin</td>
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<tr>
<td>SR 237 Express Lanes - Santa Clara County, CA</td>
<td>I-75 South Metro Express Lanes (Under Construction) - Georgia</td>
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<tr>
<td>I-45S Express Lanes - Houston</td>
<td>*Denotes ETL Hybrid</td>
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<td>US59 Express lanes - Houston</td>
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<tr>
<td>I-15 Express Lanes - Salt Lake City</td>
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<tr>
<td>SR 167 HOT Lanes - Seattle</td>
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<tr>
<td>I-10 Metro Express Lanes - Los Angeles</td>
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<tr>
<td>I-110 Metro Express Lanes - Los Angeles</td>
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</tr>
</tbody>
</table>
5-Minute Break

I-55 PHASE I from I-355 to I-90/94

DUPAGE • COOK COUNTIES
Managed Lane Access Alternatives
Managed Lane Controlled Access

- Vehicles can enter/exit managed lanes only in designated areas
- Buffer areas are approximately ¼ mile long and require an additional 12 feet of width for lane changing maneuvers
- Access location serve multiple interchanges
- Specific new managed lane interchange signing required
Managed Lane Access Alternatives
Managed Lane Continuous Access

- Vehicles can freely enter/exit managed lanes directly from general purpose lanes
- Interchange signing same general purpose lane
- No or relatively few access restrictions along the 25 mile corridor
- Driver allowed to operate at their comfort level
- Managed lane separated from general purpose lanes pavement marking
- Allows larger median shoulder
- Current facilities with Continuous Access
  - SR167 - Seattle
  - I-35W - Minneapolis
  - I-580 - California
  - I-394 - Minnesota
Operational/Enforcement Considerations
Managed Lane Enforcement & Operational Concerns

- Enforcement
- High Occupancy Vehicle Identification
- Toll transponders
- HOT Lane Implementation
Active Traffic Management Strategies (ATMS)

**Goal**
- Provide real time information to drivers
- Moderate traffic flow
- Reduce “Stop n Go” conditions
- Provide opportunity to close lanes as needed for incidents/maintenance

**How is this accomplished**
- Speed Harmonization by adjusting speeds for travel conditions
- Redirecting traffic with arrows and x’s over lanes
- Improve travel time reliability
- Reduce congestion
- Provide flexibility and adaptability
Active Traffic Management on I-90

https://www.youtube.com/watch?v=9CLa0GpwAA
Environmental Assessment
What is the NEPA Process?

- National Environmental Policy Act (NEPA)
  - Federal act to ensure consideration of impacts to natural/social/built environment
  - Facilitates open and transparent study process
Environmental Assessments (EA)

The EA documents the:

- Purpose and Need for the project
- Alternatives Considered
- Preferred Alternative
- Potential Environmental Impacts
- Proposed Mitigation Measures
Representative Land Use
Representative Land Use - Suburban

- **Woodward Avenue to Lemont Road**
  - Residential Suburb
  - Recreational Areas
Representative Land Use - Industrial

- Central Avenue to Cicero Avenue
  - Industrial Business
  - Railroads
• **Lock Street to I-90/94**
  – Metropolitan Region
  – Residential and Commercial Areas
Typical Roadway Section

40 feet
Approx. 14 miles

60 feet
Approx. 9 miles
Environmental Resources
Illinois Natural History Survey investigated the project corridor in spring/summer 2014

- No natural population of any endangered or threatened plant species located in the project area
- No endangered or threatened aquatic species were found in the project area
- No structures on the National Register located within the I-55 right-of-way
Environmental Resources - Stream Crossings

- 8 stream/river crossing along corridor
  - Existing median enclosed at all locations
  - No widening at all locations
  - Outfall improvements dependent on LDS
Total of 110 local drainage outfalls

- Reconstruction of outfalls dependent on Location Drainage Study
- Total of 5 outlets to existing Detentions Facilities
- Total of 40 outlets to Defined Channels
- Total of 15 outlets to an Intercepting Sewer (MWRD or City of Chicago)
- Total of 50 outlets are to either roadway ditches or non-defined drainage outlets
Environmental Resources – Air Quality

- Project initiated to alleviate current and future congestion along the I-55 corridor
- Additional capacity will reduce congestion on I-55 and adjacent roadway network
- Improved traffic operations will reduce incident delays
- Adjacent mature community development will minimize induced truck traffic increase
<table>
<thead>
<tr>
<th>Impact</th>
<th>General Purpose Lane</th>
<th>Managed Lanes</th>
<th>General Purpose &amp; Managed Lanes</th>
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<tbody>
<tr>
<td>Aesthetics</td>
<td>Similar Impact</td>
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<tr>
<td>Air Quality</td>
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<td>Socio-Economics - Land Use &amp; Zoning</td>
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<td>Endangered &amp; Threatened Species</td>
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<td>Noise</td>
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<td>Open Space</td>
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<td>Right-of-Way</td>
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<td>Surface Water</td>
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<td>Upland Plant Communities</td>
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<td>Wetlands</td>
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<td>Section 4(f) &amp; 6(f)</td>
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</table>
Environmental Resources – Potential Noise Impact Locations
Noise Impacts Evaluation
When Are Noise Walls Considered?

**TYPE I PROJECT**
- New Roadway
- New travel lanes
- Substantial alteration

**TYPE II PROGRAM**
Illinois has **NO** Type II (retrofit) Program therefore noise walls cannot be considered.
Traffic Noise Analysis Process

1. Identify Noise Receptors
2. Traffic Noise Level Determination
   ✓ Modeling
   ✓ Validated by field monitoring
3. Traffic Noise Impact Identification
4. Traffic Noise Abatement Analysis
A receptor is an **outdoor** area of **frequent** human use along I-55 that is analyzed for noise impacts due to the project.
**Interior vs Exterior Noise**

- **IDOT** and **FHWA** stipulate that outdoor areas of frequent human use be given primary consideration.

- Interior noise for private residences not studied, as that analysis focuses on noise levels interfering with outdoor conversations.

“Only consider the interior levels at these land uses after FULLY COMPLETING an analysis of any outdoor activity areas or determining that exterior abatement measures are not feasible or reasonable.”

-- FHWA’s *Highway Traffic Noise: Analysis and Abatement Guidance*
Traffic Noise Level Determination

Noise calculated at worst-case receptor locations

Predicted traffic noise levels using the FHWA Traffic Noise Model (TNM)

- Existing, Future No-Build, Future Build
- Existing noise levels validated with field monitoring
Traffic Noise Impact Identification

Impacts Identified for worst-case receptors

2 methods for impact identification:

- Future Build noise levels approach, meet, or exceed the FHWA Noise Abatement Criteria (NAC)
- Substantial increase in noise
FHWA Noise Abatement Criteria (NAC)

**CATEGORY A**
Serene lands - rarely applies. (e.g.: Tomb of the Unknown Soldier)

**CATEGORY B:**
Residential

**CATEGORY C:**
Hospitals, schools, places of worship, parks

**CATEGORY D**:
Hospitals, libraries, places of worship, institutions, schools

**CATEGORY E:**
Hotels, offices, restaurants

---

No Established NAC

**CATEGORY F**
Agricultural, industrial, retail, utilities

**CATEGORY G**
Undeveloped lands

*Interior noise, to be studied only after exterior is studied, or if noise abatement is not feasible and reasonable*
Common Noise Levels

**SOUND LEVEL**

- 90 dB(A): food blender at 3 feet
- 80 dB(A): freight train at 100 feet
- 70 dB(A): 67 dB(A) NAC: Category B & C
- 60 dB(A): library, quiet urban nighttime
- 50 dB(A): 72 dB(A) NAC: Category E
- 40 dB(A): large business office
- 30 dB(A): 30 dB(A)
- 20 dB(A): 10 dB(A)
- 10 dB(A): threshold of human hearing
Viewpoints Solicitation

✓ **Benefited Receptors Rental properties:**
  One vote for tenant, one vote for owner (per unit)

✓ Receptors that share property line with I-55 receive **TWO (2) VOTES**

✓ Benefited Receptors will be contacted up to **Two (2) times to maximize response rate**

**RESPONSE GOAL OF 33%** of benefited receptors per proposed barrier

*If more than half of the votes are in favor of a barrier, the proposed abatement measure will be likely to be implemented*
Dear Property Owner or Resident:

The Illinois Department of Transportation (DOT) in cooperation with Will County Department of Highways (County) are currently engaged in preliminary engineering and environmental studies (Phase I) for Weber Road from 135th Street/Romeo Road to 119th Street/Rodeo Drive including the Weber Road interchange at I-55. The proposed improvements include reconstruction of the existing diamond interchange of I-55 at Weber Road to a diverging diamond interchange and widening of Weber Road from four lanes to six lanes. The I-55 at Weber Road improvements are included in the Department’s FY 2014-2019 Proposed Multi-Modal Transportation Improvement Program contingent upon the sale of approximately 200 acres of unused property currently owned by the Illinois Department of Corrections as stipulated in Public Act 95-0019, and contingent upon local financial participation for improvements to adjacent highway facilities under local jurisdiction.

As part of the Phase I Study, traffic noise levels were evaluated for the proposed roadway improvements. The traffic noise analysis indicated that noise levels in your area warrant the consideration of noise abatement. Based on the noise abatement analysis, a noise wall approximately 10 feet high is warranted along the west side of Weber Road from approximately 300 feet north of Rodeo Drive to just north of Countryside Drive. See the enclosed figure for the location of the proposed noise wall. The proposed wall in your area is labeled as “B1B.”

The Department is requesting your viewpoint regarding your desire for the noise wall proposed near your location. This letter has been provided to all property owners and tenants who would “benefit” from a noise barrier.

Please provide your response by December 9, 2013.

Am in favor of a noise barrier:

☐ Yes
☐ No

Name:________________________________________

Signature:________________________________________

Owner: ___________ OR Tenant: ___________

Address:________________________________________

Date: ____________

Comments:________________________________________

________________________________________

________________________________________
What Will the Noise Walls Look Like?

IDOT CURRENT TYPICAL WALL
Next Steps
NEXT STEPS:

• *Continue Evaluation of Alternatives*
• *Determine Preferred Alternative*
Upcoming Meetings

Public Meeting #2
December 9, 2015
Questions?
Thank you for participating