WHAT: Illinois State Freight Advisory Council

WHERE: Illinois Department of Transportation
      Hanley Auditorium – Lower Level
      2300 S. Dirksen Parkway
      Springfield, IL 62764

WHEN: June 19, 2017
      1:00pm – 3:00pm
I. Introductions All/5 Mins

II. State/Federal Freight Planning Update IDOT/10 Mins
IDOT and USDOT will provide updates on a number of ongoing freight planning initiatives.

III. Other Freight Planning Initiatives/Project Updates All/15 Mins
ISFAC members and attendees can provide updates on freight related planning and capital projects.

IV. IDOT Long Range Transportation Plan IDOT/10 Mins
The 2017 Long Range Transportation Plan is presently underway. An update on the plan status and next steps will be given.

V. Critical Urban/Rural Freight Corridor Update IDOT/10 Mins
The council will receive a status update on the identification of critical urban and critical rural freight corridors.

VI. IDOT Freight Plan Update IDOT/30 Mins
Staff will provide an overview on current work being completed for the freight plan. That includes freight commodity flows, trends, and bottleneck analyses.

VII. IDOT Freight Plan – Project Prioritization Discussion IDOT/30 Mins
Staff will provide information on the recently developed Performance Based Project Selection tool and discuss the role of ISFAC in providing input into the prioritization of freight capital projects for inclusion in the Illinois State Freight Plan.

VIII. Upcoming ISFAC Meetings All/5 Mins
September 18, 2017
January 25, 2018

IX. Other Business All/5 Mins
Overview

- Why does Illinois need a Statewide Plan?
- 2012 State Plan: Transforming Transportation For Tomorrow 2017 Plan Update
- Performance Measures
- Modal Strategies
- Outreach
- Next Steps

Why does the state need a Long Range Transportation Plan (LRTP)?

“We want our Long Range Transportation Plan to drive how we operate as an agency and how we are making investment decisions. By working together with members of the public and our industry partners, we are confident we can develop a solid vision for how we are going to invest in transportation in Illinois over the next 10 to 20 years.”

-Illinois Transportation Secretary Randy Blankenbush

Federal Requirements
- 23 USC 130(f) and 49 USC 5304(f)
- 23 CFR 450.210

State Requirements
- Public Act 097-0032
2012 Transforming Transportation for Tomorrow

- IDOT considered eight policy factors in development of the 2012 Plan
- 184 action items were established, examples include:
  - Establish a statewide advisory committee for freight
  - Develop a Climate Change Adaptation Plan
- 135 are complete or in process as of today
- The 2017 Plan Update will continue to build on these action items with updated objectives & strategies

2017 LRTP Goals

- Economic Growth: Improve Illinois’ economy by providing transportation infrastructure that allow for the efficient movement of people and goods.
- Livability: Enhance quality of life across the state by ensuring that transportation investments advance local goals, provide multimodal options and preserve the environment.
- Access: Support all modes of transportation to improve accessibility and safety by improving connections between all modes of transportation.
- Resilience: Proactively plan and invest in the state’s transportation system to ensure that our infrastructure is prepared for extreme weather events.
- Stewardship: Safeguard existing funding and increase revenues to support system maintenance, modernization, and strategic growth of Illinois’ transportation system.
- Safety: Ensure the highest standards in safety across the state’s transportation system.

Making Progress…

- Measuring LRTP Implementation
- Project Selection
- Federally Required Performance Management
Measuring LRTP Implementation

<table>
<thead>
<tr>
<th>Goal</th>
<th>Mode</th>
<th>Objective</th>
<th>Strategy</th>
<th>Implementer(s)</th>
<th>Proposed Measures</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Livability</td>
<td>Highways</td>
<td>Ensure highway projects achieve local goals</td>
<td>When developing the purpose and need of a project, consult the goals of the State, surrounding community, and fiscal realities</td>
<td>IDOT - project development</td>
<td>Increase in project accomplishment, decrease in environmental impacts, reduced congestion, decrease in incidents and incident severity</td>
<td># of projects accomplished, environmental impacts, traffic flow, incident data</td>
</tr>
</tbody>
</table>

Project Prioritization

IDOT utilized a Performance Based Project Selection Process to evaluate and help prioritize major expansion projects under the FY2018-2023 Proposed Highway Improvement Program.

The measures developed based on the LRTP goals:

- Traffic Operations/Congestion
- Safety, Economic Development
- Accessibility/Multimodalism
- Livability/Environmental Impacts
- Regional Ranking

Federal Performance Measures

National Goals

- **Safety** - To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
- **Infrastructure Condition** - To maintain the highway infrastructure asset system in a state of good repair
- **Congestion Reduction** - To achieve a significant reduction in congestion on the National Highway System
- **System Reliability** - To improve the efficiency of the surface transportation system
- **Freight Movement and Economic Vitality** - To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development
- **Environmental Sustainability** - To enhance the performance of the transportation system while protecting and enhancing the natural environment
- **Reduced Project Delivery Delays** - To reduce project costs, promote jobs and the economy and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies’ work processes. [23USC §150(b)]
Freight Plan

- The FAST Act provides freight formula funds to states with an FHWA approved freight plan.
- The Freight Plan will:
  - Identify trends, needs, bottlenecks, goals, and performance measures, and develop strategies for improving freight movement in Illinois.
  - Projects slated to use these funds, and how we are identifying & measuring projects.
  - This plan will contribute to the national freight goals established under the FAST Act and align with the goals of the 2017 LRTP.
  - Designate Illinois critical urban & rural freight corridors with input from the MPOs.


Rail Plan

- The Illinois State Rail Plan will present a vision for the role of passenger rail and freight services in Illinois and illustrate what these services will look like in the future.
- The Rail Plan will:
  - Present existing and future passenger and freight rail services, conditions, and needs in Illinois.
  - Provide a framework to implement rail initiatives in Illinois and guide future rail investments.
- The Rail Plan will be included in the December LRTP.
Asset Management Plan

- Federal transportation requires all states to develop an Asset Management Plan.
- The Plan will include:
  - Description and condition of pavements and bridges on the National Highway System
  - Asset Management objectives and measures
  - Summary of gaps between targeted and actual performance
  - Life-cycle cost and risk management analysis
  - Financial plan that addresses performance gaps
  - Investment strategies and anticipated performance

Interim Transportation Asset Management Plan is due on April 30th, 2018, with the final plan slated for FHWA review on or before June 30th, 2019.

Outreach

- Outreach for the LRTP started in the summer of 2015 with communication amongst key internal and external stakeholders.
- In the summer of 2016, IDOT produced a Draft Goals survey and promoted the survey through social media and at the 2016 Illinois State Fair. The survey was available online and received over 700 responses were received.
- In early 2017, IDOT enlisted the help of UIC to conduct 2 rounds of outreach pertaining to objectives for the goals.
  - February, saw the release of the Interactive outreach site AllOurIdeas.org/IDOTideas. We received 541 visitors, provided 16,353 votes on individual objectives.
  - May, IDOT solicited feedback on budgeting prioritization six goals, continued refinement of the objectives
  - June/July: MPO Presentations, Transport Chicago
  - July IDOT will hold 3 stakeholder workshops
    - Chicago
    - Springfield
    - Metro East

Current Status

- Working with consultant to draft Chapters:
  - System Update
  - Integrate Modal Plans
  - Identify Priorities
  - Financial Plan
  - Appendices & detailed research, requirements
Next Steps

- MPO/Stakeholder outreach
- Statewide workshops
- Internal staff meetings
- Public comment period on draft chapters
- Revisions made to plan based on public comments
- Final plan released

Questions?

Updates on the IDOT LRTP can be found at: https://www.illinois.gov

Specific questions about the plan can be emailed directly to Christopher.Schmidt@illinois.gov

Connect with us!

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Agenda

• Freight Traffic & Forecast
• Roadway Freight Bottlenecks
IL-Based Freight Volume 2014
1.2 billion tons, $2.8 trillion product value

WSP Combined Commodity Flow Dataset
Air Cargo: 1.8 Million Tons (2013, different data type)

- One-quarter international belly cargo, virtually all Chicago
- Three-quarters freighter cargo, largely domestic
- Southern IL within trucking distance of domestic hubs

<table>
<thead>
<tr>
<th>Inbound 2013</th>
<th>Belly Tons</th>
<th>% Tons</th>
<th>Freighter Tons</th>
<th>% Tons</th>
<th>Grand Total Tons</th>
<th>% Tons</th>
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<tbody>
<tr>
<td>ORD - Chicago</td>
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<td>93.8%</td>
<td>645,078</td>
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<td>862,163</td>
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<td>DPA - West Chicago</td>
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<tr>
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<td>0</td>
<td>0.0%</td>
<td>2</td>
<td>0.0%</td>
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<td>Grand Total</td>
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<td>725,302</td>
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<th>Outbound 2013</th>
<th>Belly Tons</th>
<th>% Tons</th>
<th>Freighter Tons</th>
<th>% Tons</th>
<th>Grand Total Tons</th>
<th>% Tons</th>
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<td>PIA - Peoria</td>
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<td>DPA - West Chicago</td>
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<td>57</td>
<td>0.0%</td>
<td>57</td>
<td>0.0%</td>
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<tr>
<td>CMI - Champaign</td>
<td>3</td>
<td>0.0%</td>
<td>5</td>
<td>0.0%</td>
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<td>0.0%</td>
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<tr>
<td>BMI - Bloomington</td>
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<td>4</td>
<td>0.0%</td>
<td>4</td>
<td>0.0%</td>
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<tr>
<td>MLI - Moline</td>
<td>3</td>
<td>0.0%</td>
<td>3</td>
<td>0.0%</td>
<td>3</td>
<td>0.0%</td>
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<td>Grand Total</td>
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<td>616,300</td>
<td>100.0%</td>
<td>814,790</td>
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Freight Passing Through IL

- Total truck VMT was 28 million vehicle miles in 2014
- 38% was from pass-through trucks
- Pass-through rail adds 44% to tonnage
75% of Tons, 83% of Value
But different commodities
- Rail coal leads Tons, Rail intermodal leads Value
- Truck tons led by bulks, value by machinery & electronics
IL Markets: Outbound Trading Partners

- **Tonnage Markets**: Gulf Coast, CA, Regional
- **Value Markets**: CA and WA, TX, Regional

**WSP Combined Commodity Flow Dataset**
Key Industry Highway Dependence: Food & Agriculture

Total IL Truck Flows & County Origins, 2014 Tons
Key Industry Highway Dependence: Machinery & Electronics

Total IL Truck Flows & County Origins, 2014 Tons
Key Industry Highway Dependence: Aggregates & Gasoline

Total IL Truck Flows & County Origins, 2014 Tons
### 2045 IL-Based Forecast: Added Volumes & Growth Rates

- **Tonnage:** 40% growth, +493 million tons, 70% by truck
- **Value:** 56% growth, +$1.5 trillion product value, 51% by truck

<table>
<thead>
<tr>
<th>Category</th>
<th>Mode</th>
<th>2014-2045 Growth</th>
<th>2014-2045 Tonnage</th>
<th>2014-2045 Value</th>
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<tbody>
<tr>
<td><strong>Inbound</strong></td>
<td>Truck - FAF Dis</td>
<td>1.8%</td>
<td>493 million tons</td>
<td>$1.5 trillion</td>
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<td></td>
<td>Rail Intermodal - STB</td>
<td>0.9%</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Rail Carload - STB</td>
<td>0.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Water - TS</td>
<td>2.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Outbound</strong></td>
<td>Truck - FAF Dis</td>
<td>1.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rail Intermodal - STB</td>
<td>0.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rail Carload - STB</td>
<td>1.1%</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Water - TS</td>
<td>0.3%</td>
<td></td>
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</tr>
<tr>
<td><strong>Within</strong></td>
<td>Truck - FAF Dis</td>
<td>1.1%</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Rail Intermodal - STB</td>
<td>0.2%</td>
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<tr>
<td></td>
<td>Rail Carload - STB</td>
<td>0.4%</td>
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<td></td>
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<tr>
<td></td>
<td>Water - TS</td>
<td>-0.3%</td>
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**WSP Combined Commodity Flow Dataset**
2045 Forecast: Total Truck VMT Grows 82%

Through trucks grow faster, add half the new VMT
Agenda

• Freight Traffic & Forecast
• Roadway Freight Bottlenecks
Truck Bottleneck Identification

What is a freight bottleneck?

A freight bottleneck is a part of the transportation system that causes disproportionally high costs to the movement of freight in terms of delay and unreliability.
Truck Bottleneck Identification

1. Segment Network
2. Assess Performance
3. Locate Bottlenecks
4. Validate & Identify Causes
5. Prioritize

• Segments should have comparable characteristics
  • Congestion
  • Traffic levels/operations
  • Geometry
• Adopt segmentation in NPMRDS
• Focus on highways
Truck Bottleneck Identification

1. Segment Network
2. Assess Performance
3. Locate Bottlenecks
4. Validate & Identify Causes
5. Prioritize

- Calculate two metrics based on NPMRDS and Truck AADT
  - **Recurring Travel Time Delay**: Can be anticipated
  - **Non-Recurring Travel Time Unreliability**: Cannot be anticipated
- Set thresholds based on policy
- Different thresholds for urban and rural
Truck Bottleneck Identification

1. Segment Network
2. Assess Performance
3. Locate Bottlenecks
4. Validate & Identify Causes
5. Prioritize

NPMRDS Travel Time Data
Truck Bottleneck Identification

1. Segment Network
2. Assess Performance
3. Locate Bottlenecks
4. Validate & Identify Causes
5. Prioritize

Recurring Travel Time Delay
Non-Recurring Travel Time Unreliability
## Truck Bottleneck Identification

1. Segment Network
2. Assess Performance
3. Locate Bottlenecks
4. Validate & Identify Causes
5. Prioritize

<table>
<thead>
<tr>
<th>Threshold Transpo Delay (hr/mile-yr)</th>
<th>Threshold Unreliability</th>
<th>Bottleneck Miles</th>
<th>% Bottleneck Miles of Total</th>
<th>Number of TMC Bottlenecks</th>
</tr>
</thead>
<tbody>
<tr>
<td>38,048.0</td>
<td>11,891.2</td>
<td>498.28</td>
<td>2.5%</td>
<td>749</td>
</tr>
</tbody>
</table>
Truck Bottleneck Identification

1. Segment Network
2. Assess Performance
3. Locate Bottlenecks
4. Validate & Identify Causes
5. Prioritize

- Listened to stakeholders
- Got confirmation on performance issue locations
Truck Bottleneck Identification

1. Segment Network
2. Assess Performance
3. Locate Bottlenecks
4. Validate & Identify Causes
5. Prioritize

- Use complementary data sets to validate performance issues
- Search for agreement between data sets
- Start to find causes for performance issues
- Correlate performance issues with:
  - **Demand**
    - Freight Analysis Framework Tons 2014
    - Freight Analysis Framework Incremental Tons 2045 to 2014
    - Volume to Capacity Ratio
  - **Incidents**
    - Frequency of truck related collisions, injuries, and fatalities per year (2010 to 2014)
  - **Pavement Condition**
    - Pavement CRS
    - Pavement IRI
Truck Bottleneck Identification

1. Segment Network
2. Assess Performance
3. Locate Bottlenecks
4. Validate & Identify Causes
5. Prioritize

- Rank High, Medium, Low
- Combined percentile rank of Delay and Unreliability
749 Bottlenecks: Statewide View – Better Maps Coming

Bottleneck Locations N&E

Bottleneck Locations S&W
Northeast IL Bottleneck Close-Up – Better Maps Coming
Thank You!

J.Bryan@wsp.com
Sebastian.Guerrero@wsp.com
Jamy.Lyne@wsp.com
<table>
<thead>
<tr>
<th>Strategic Goal</th>
<th>Objective</th>
<th>Strategy</th>
<th>Performance Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve Safety</td>
<td>Minimize roadway incidents involving freight vehicles</td>
<td>Provide safety alerts to drivers through IDOT in Motion</td>
<td>Number of fatalities/injuries involving freight vehicles</td>
</tr>
<tr>
<td></td>
<td>Ensure the Department’s Intelligent Transportation System (ITS) has adequate safety notification protocols</td>
<td>Evaluate ITS procedures for the delivery of safety messages and explore other innovative ITS uses to improve safety</td>
<td>Completion of ITS architecture plan update</td>
</tr>
<tr>
<td>Improve Efficiency</td>
<td>Establish performance measure to evaluate efficiency of freight movement</td>
<td>Establish procedures to use the National Performance Management Research Data Set (NPMRDS) to calculate performance</td>
<td>Truck Travel Time Reliability (TTTR) Index performance measure using NPMRDS traffic data</td>
</tr>
<tr>
<td></td>
<td>Update the Department’s Illinois Transportation Automated Permits (ITAP) truck permitting process</td>
<td>Secure funding to proceed with an update of the ITAP system</td>
<td>Completion of upgrade (Phase 3) to the ITAP platform</td>
</tr>
<tr>
<td>Grow The Economy</td>
<td>Secure stable dedicated state funding source for freight projects</td>
<td>Establish a funding source that can be used on freight projects that provide economic benefits to the state and local economies</td>
<td>Dollar amount of funds secured with regional breakdown of projects</td>
</tr>
<tr>
<td></td>
<td>Improve international competitiveness of Illinois</td>
<td>Support freight projects that enhance access to global markets</td>
<td>Volume and value of commodities shipped to foreign markets</td>
</tr>
<tr>
<td>Preserve Existing</td>
<td>Perform routine maintenance in order to control deterioration of roadways and lessen number of critical repairs</td>
<td>Monitor pavement condition to identify roadways maintenance needs</td>
<td>Pavement Condition Rating Survey (CRS) assessments</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Reduce stress on roadway system by establishing multimodal alternatives for freight shipments</td>
<td>Explore scenarios where modal connections can be improved to facilitate shipments by rail, water, and air</td>
<td>Modal breakdown of shipping volumes</td>
</tr>
<tr>
<td>Expand Infrastructure</td>
<td>Optimize the limited funds that are available for new construction projects</td>
<td>Utilize a performance-based project prioritization tool to evaluate projects</td>
<td>Evaluation criteria which determines the return on investment of each project</td>
</tr>
<tr>
<td>Strategically</td>
<td>Ensure design policies encourage innovation and design flexibility to support multi-modal transportation goals</td>
<td>Update design policies and provide training related to freight-friendly design elements (e.g. Diverging Diamond Interchanges)</td>
<td>Number of design policy updates issued, together with training seminars/presentations given</td>
</tr>
<tr>
<td>Support Multimodal</td>
<td>Enhance coordination of multimodal planning with Illinois Metropolitan Planning Organizations (MPOs), local jurisdictions, and adjoining states</td>
<td>Engage with MPOs, local jurisdictions, and adjoining states on corridor planning that includes and encourages the use of all modes of transportation</td>
<td>Level of planning engagement with other entities, including joint projects and studies</td>
</tr>
<tr>
<td>Distribution</td>
<td>Encourage mode shifting to lessen environmental impacts</td>
<td>Reduce vehicle emissions from freight vehicles by promoting more environmentally friendly modes, such as rail, water, and air</td>
<td>Volume of greenhouse gas emissions</td>
</tr>
</tbody>
</table>