WILL COUNTY

COMMUNITY FRIENDLY FREIGHT MOBILITY PLAN

WILL COUNTY CENTER FOR ECONOMIC DEVELOPMENT

APPENDIX J

PERFORMANCE MEASURES

September 2017

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1. INTRODUCTION

Moving Ahead for Progress in the 21st Century (MAP-21) and the Fixing America's Surface Transportation (FAST) Act include requirements for states and metropolitan planning organizations (MPOs) related to transportation performance measures. In addition, FHWA and FTA have recently finalized regulations informing state DOTs and MPOs on the performance measures and target setting process. With improvements in the availability of data and a desire to provide a more efficient transportation system, performance measures are becoming more prevalent in state and regional governments. Performance measurement is a critical element of accountability for public resources which allow agencies to understand current transportation, economic, and community conditions and track progress over time

In order to understand the current condition of the transportation system and to track the impact of programmatic choices, projects and investments over time, Will County is including freight and community specific performance measures in the Community Friendly Freight Mobility Plan. Good transportation, workforce, and economic competitiveness performance measures that are aligned with the Community Friendly Freight Plan goals and objectives provide Will County officials the tools and information needed to manage for results.

This technical memorandum discusses:

- **Section 1: Introduction**
  - What are performance measures?
  - Why use performance measures?
  - How were performance measures selected?
  - How will performance measures be used?
- **Section 2: Performance Measures by Goal Area**
  - Safety
  - Mobility
  - Preservation Enhancement
  - Workforce
  - Economic Competitiveness
  - Community

1.1 WHAT ARE PERFORMANCE MEASURES?

The following definitions from FHWA provide a good context of the discussion that is included in this technical memorandum.

- **Performance Management**: "Performance management is the practice of setting goals and objectives; an on-going process of selecting measures, setting targets, and using measures in decision-making to achieve desired performance outcomes; and reporting results."
- **Performance Based Planning and Programming**: "Involves using data to support long-range and short-range investment decision-making. It generally starts with a vision and goals, selection of performance measures, and use of data and analysis tools to inform development of investment priorities, which are then carried forward into shorter-term investment planning and programming."
- **Performance Measure**: "A metric used to assess progress toward meeting an objective."

1.2 WHY USE PERFORMANCE MEASURES?

The performance measures are aligned with the Community Friendly Freight Plan goals and objectives. Thus, Will County will use performance measures to:

- **Mobility** – Evaluate and improve how well the freight transportation system is operating.
- **Safety** – Evaluate and improve the safety of the freight transportation system.
- **Preservation Enhancement** – Evaluate and improve the condition of the freight transportation system.
- **Workforce** – Evaluate and improve the county's Transportation Distribution and Logistics (TDL) workforce availability.
- **Economic Competitiveness** – Evaluate and improve the County's economic competitiveness.
- **Community** – Evaluate and retain/improve community character and quality of life.

1.3 HOW WERE PERFORMANCE MEASURES SELECTED?

The following process assisted in identifying performance measures for the Will County Community Friendly Freight Plan:

1. **Define desired performance measures** based on Will County's Community Friendly Freight Plan vision, goals, and objectives by:
    a. Coordinating and obtaining input from state, regional, and county staff, and from private freight and logistic businesses to ensure the measures represent a balanced approached.
2. **Assess each performance measure** by answering the following questions:
    a. Is the measure meaningful?
    b. Is the measure useful in assessing progress in achieving the objectives?
    c. Is the measure simple enough to be understood by the public?
    d. Is the measure focused on public and private sector needs and demands?
    e. Is reliable data available to track the measure?

   f. Is the data cost-effective to collect and report?
   g. Can the data be compared over a given time period?
3. **Select measures** that are focused on achieving the Community Freight Friendly Plan objectives.
4. **Determine the amount of information needed** for each measure by answering the following questions:
   a. What performance information is currently being used? Is it useful information for the Community Freight Friendly Plan?
   b. What other information needs to be collected? Is data currently available or is new data required?
   c. What resources (time and cost) will be needed to collect and process the data?
   d. How often will the data need to be collected to assess progress?
5. **Define each performance measure** by identifying:
   a. The data source to assess the measure.
   b. The method used to calculate the measure.
   c. The reporting period for the measure.

1.4 HOW WILL THE PERFORMANCE MEASURES BE USED?

The Community Friendly Freight Plan performance measures will be used at the strategic level, decision-making level, and project selection level.

- **Strategic Level** – Performance measures assist in informing and monitoring how the Community Friendly Freight Plan objectives are being met.
- **Decision-Making Level** – Performance measures assist in informing and assessing programmatic decisions and funding levels for preservation, modernization, and expansion activities.
- **Project Selection Level** – Performance measures can be used as criteria in the project selection process to ensure the Community Friendly Freight Plan objectives are being addressed.

2. PERFORMANCE MEASURES BY GOAL AREA

This section provides recommended performance measures along with data sources for each of the six goal areas in the Community Friendly Freight Plan. The performance measures are intended to address national requirements identified in MAP-21 and the FAST Act, where applicable and local Will County values and desires.

2.1 SAFETY

Improving safety on Will County highways is critically important. Approximately 12 percent of all highway related fatalities involve large trucks[1]. Roadway safety is affected by several factors including driver behavior, enforcement, education, infrastructure conditions, and technology innovations. Improving safety requires coordination among federal, state, regional, and local agencies as well as private stakeholders.

The Illinois' Strategic Highway Safety Plan (SHSP) is a statewide, data-driven plan developed in partnership by Illinois Department of Transportation (IDOT) and key safety stakeholders and includes comprehensive and coordinated safety strategies involving Engineering, Education, Enforcement, and Emergency Medical Services with the goal to eliminate all fatal and serious injury crashes on all Illinois roadways. The SHSP contains ten emphasis areas to focus resources and efforts based on data and improve the safety performance of roadways through design and traffic operations, change roadway user behavior through traffic law enforcement and education programs, and enhance emergency response as it relates to all public roads. One of the emphasis areas in the SHSP is "Large Trucks" and one of the engineering strategies include *identifying high-crash corridors and initiate appropriate engineering and enforcement interventions*.

During the development of the Will County Community Friendly Freight Plan, a crash analysis was conducted to identify high-crash locations involving large trucks along corridors in Will County. This information helped identify safety improvements that will help reduce highway fatalities and serious injuries involving large trucks in Will County.

The Safety goal is to **provide a safe multimodal transportation system for motorized and non-motorized users** and the recommended safety performance measures and data sources are show in **Table 2-1**.

[1] Federal Highway Administration, Freight Management and Operation, February 1, 2017.

Table 2-1: Safety Performance Measures

Performance Measures	Data Sources
Number of fatalities involving trucks in Will County	IDOT safety data
Number of serious injuries involving trucks in Will County	IDOT safety data
Rate of collisions at pedestrian, private, and public at-grade rail crossings in Will County per number of at-grade rail crossings in Will County	Illinois Commerce Commission (ICC)

2.1.1 DATA SOURCES

The original source for three of the proposed safety measures is the IDOT safety database which can be accessed by Will County. The number of fatalities and serious injuries can be found in the IDOT database for all public roads in Will County.

The number of highway/rail at-grade crossings in Will County can be obtained through the Illinois Commerce Commission (ICC) database and reported annually.

2.2 MOBILITY

Mobility is defined as the ability to move or be moved freely and easily. Moving people and goods efficiently, affordably, and reliably is vital to Will County's economic competitiveness and quality of life. Local Will County businesses depend on its highways, rail, and waterways to deliver the goods needed to succeed in today's global economy. But as confirmed by the Freight Advisory Council (FAC) and from Transportation Forum stakeholders, freight travel can negatively impact mobility. Eliminating and reducing congestion caused by freight bottlenecks improves mobility for all system users and in turn will make it more efficient for local companies to import materials and export final goods to the market. There is a delicate balance between addressing freight and community mobility needs, but as noted in Will Connects 2040, Will County's *transportation system must strike a balance between honoring its rural history and adapting the transportation system to meet the demands of the 21st Century*.

Will County has experienced strong population growth over the past decades, remaining one of the fastest growing Counties in Illinois. By 2040, the Will County population is projected to be 1.2 million, which is 506 thousand (43%) more people than today[2]. On a similar trend, there will be 437 thousand employees working in Will County by 2040, which is an increase of 235 thousand (54%)[3].

[2] Will Connects 2040

[3] Ibid

Travel time reliability is critical for Will County industries and businesses as they must operate efficiently and effectively to remain competitive. Congestion creates additional business costs, and the lack of delivery reliability is a major concern as seen through the FAC survey results. Directed investments in freight corridors can work to raise the freight performance of Will County's roadways.

The Mobility goal is to **provide improved access to local, regional, national, and international trade markets while mitigating the impact to people's quality of life and to the environment** and the recommended mobility performance measures and data sources are show in **Table 2-2**.

TABLE 2-2: MOBILITY PERFORMANCE MEASURES

Performance Measures	Data Source(s)
Number of truck congested hours on the NHS roadway network within Will County.	CMAP NPMRDS analysis
Percentage of Will County NHS roadway system mileage providing for reliable Truck Travel Time Reliability (TTTR)	CMAP NPMRDS analysis
Number of designated truck parking spots identified in freight clusters.	Conduct an annual analysis using GIS/Stakeholder survey.

2.2.1 DATA SOURCES

IDOT and CMAP will be reporting the TTTR measure in order to be compliant with the federal rule on system performance measures. Will County plans to coordinate with CMAP to report the performance of the system performance for the movement of trucks based on CMAP's analysis of the National Performance Management Research Data Set. In addition to the measures listed from the NPRMDS data.

2.3 PRESERVATION ENHANCEMENT

The federal government, Illinois DOT, Will County, and the private sector have invested billions of dollars constructing roads, bridges, rail networks, intermodal facilities, airports, and water ports and navigation aids over the last century. Regular maintenance and routine improvements are required to keep infrastructure assets operating efficiently and safely. Properly preserving these assets extends the useful life and delays and/or eliminates the cost to reconstruct or replace infrastructure assets.

Based on the FAC survey results, the "wear and tear on infrastructure" ranked as the highest freight concern. When asked to rate the importance of 15 factors for moving freight more efficiently and supporting the regional economy, the top ranked factor was "infrastructure condition".

Nationally, asset management has been elevated in importance. Under MAP-21, states must address pavements and bridges on the National Highway System (NHS) but are encouraged to include all infrastructure assets within the highway right-of-way in their

risk-based asset management plan. MAP-21 defines asset management as: a strategic and systematic process of operating, maintaining, and improving physical assets, with a focus on engineering and economic analysis based upon quality information, to identify a structured sequence of maintenance, preservation, repair, rehabilitation, and replacement actions that will achieve and sustain a desired state of good repair over the life-cycle of the assets at minimum practicable cost.[4]

The preservation enhancement goal is to **preserve and maintain transportation assets and manage their operations using a spectrum of strategies, tools, and technologies** and the recommended preservation enhancement performance measures and data sources are show in

Table 2-3.

TABLE 2-3: PRESERVATION ENHANCEMENT PERFORMANCE MEASURES

Performance Measures	Data Source(s)
Percentage of NHS roadway on the truck route system in Will County in good condition	IDOT IRIS data
Percentage of NHS roadway on the truck route system in Will County in poor condition	IDOT IRIS data
Percent of bridge deck area on the Will County Truck Route System in good condition	IDOT ISIS Structure data
Percent of bridge deck area on the Will County Truck Route System in poor condition	IDOT ISIS Structure data

2.3.1 DATA SOURCES

Data for the pavement measures will come from IDOT's annual pavement inspections and submitted to the HPMS database maintained by FHWA. This data will only include the NHS routes as local routes are not inspected by IDOT. The definition of good condition pavement is based on the percent of mileage where all scores for international roughness index (IRI), cracking, rutting, and/or faulting (as applicable) are within thresholds established in the federal rulemaking. The definition of poor condition pavement is based on the percent of mileage where two or more scores for the same variables exceed thresholds established in FHWA rulemaking. Table 2-1 the thresholds.

[4] 23 U.S.C. 101(a)(2), MAP-21 § 1103, July 2014.

TABLE 2-4: PAVEMENT CONDITION THRESHOLDS

	Good	Fair	Poor
All non-urbanized or urbanized with <1M population pavement sections: IRI (Inches per mile)	< 95	95 – 170	> 170
Cracking (For flexible asphalt)	< 5%	5% - 20%	> 20%
Cracking (For jointed concrete pavement)	< 5%	5% - 15%	> 15%
Cracking (For Continuously Reinforced Concrete Pavement (CRCP))	< 5%	5% - 10%	> 10%
Rutting (Asphalt only)	< .20 in	.20 - .40 in	> .40 in
Faulting (Jointed concrete only)	< .05 in	.05 - .15 in	> .15 in

Data for the bridge condition measures will come from IDOT's bridge inspections submitted to the National Bridge Inventory (NBI). The definition of good bridge condition is having at least 7 out of 9 for NBI deck, superstructure, and substructure (and culverts as applicable) rating items. The term poor condition is defined as having a rating of a 4 out of 9 or lower for any one of the NBI deck, superstructure, and substructure (and culvert as applicable) rating items and is equivalent to the term 'structurally deficient'. Will County may consider obtaining similar pavement and bridge condition data on the County routes in order to track the progress of county road condition in the future.

2.4 WORKFORCE

The transportation professionals of tomorrow will require different skill sets than those of today. These incremental changes over time will require the transportation workforce to adapt by altering curriculums, partnerships, and training to meet the challenges of the rapidly changing 21st Century TDL sector of the economy.

The workforce goal is to **retain and attract TDL Workforce to meet the needs of current and future employers by working collaboratively with employers, educators, nontraditional workforce, trade and professional organizations, and the economic development community** and the recommended workforce performance measures and data sources are show in

Table 2-5. These measures are currently in draft form and will be coordinated and developed as part of the Workforce Action Plan.

TABLE 2-5: DRAFT WORKFORCE PERFORMANCE MEASURES[5]

Performance Measures	Data Source(s)
Average commute distance/commute time of TDL commuters	LEHD data
Vacancy rate of TDL jobs	WIB vacancy survey, EMSI data, BLS
TDL employer satisfaction	WIB survey
TDL Wage Growth	EMSI data
Employer engagement with Collaborative Partnership to share best practices	Actual participant levels

2.4.1 DATA SOURCES

Data for the workforce performance measures will come from Economic modeling (EMSI) data, longitudinal employer household dynamics (LEHD) data, Workforce Investment Board (WIB) survey data, and the Bureau of Labor statistics.

2.5 ECONOMIC COMPETITIVENESS

Will County is home to an increasing number of intermodal facilities, distribution centers, warehouses, and other industries that has made it a freight cluster in the Chicago Metropolitan Area. Several coordinated economic development efforts in the county have capitalized on the county's existing freight assets and these efforts have improved mobility for its businesses and residents. As noted in *CMAPs Metropolitan Chicago's Freight Cluster: A Drill-Down Report on Infrastructure, Innovation, and Workforce*, nearly all the goods that improve and sustain the welfare of residents and businesses arrive to the region via the freight system. Large volumes of goods flow both in and out of metropolitan Chicago, linking industries and consumers to state, national, and global markets.

Economic competitiveness is directly tied to Mobility discussed earlier in this section. Transportation infrastructure investments that reduce congestion increase the efficient movement of goods and people and it creates economic benefits for the community, such as:

- Improved attraction and retention of businesses and skilled, innovative workers.
- Greater efficiency of freight movement improves just-in-time inventory management.
- Increased worker productivity due to fewer hours spent in congestion.

The Economic Competitiveness goal is to **support economic development and competitiveness through the provision of a safe, reliable, and accessible multimodal**

[5] Workforce performance measures are in draft form and will be updated once the Workforce Action Plan is under development.

transportation system to move people and goods and the recommended economic competitiveness performance measures and data sources are show in

Table 2-6.

TABLE 2-6: ECONOMIC COMPETITIVENESS PERFORMANCE MEASURES

Performance Measures	Data Source(s)
Percentage of intermodal connectors in good condition	IDOT IRIS data
Number of bridges with weight restrictions on truck routes	IDOT ISIS bridge data
Number of bridges on truck routes that provide sufficient height for truck movment-13.6"	IDOT ISIS bridge data
Percent of commodity moved by truck in Will County (based on tonnage)	TBD
Percent of commodity moved by rail in Will County (based on tonnage)	TBD
Percent of commodity moved by water in Will County (based on tonnage)	TBD
Lane miles of designated truck routes	Getting Around Illinois IDOT data
Number of local governments that have adopted a standard permit form	County and Municipal staff

2.5.1 DATA SOURCES

Data for the pavement measures for intermodal connectors will come from IDOT's annual pavement inspections and submitted to the HPMS database maintained by FHWA. The definition of good condition pavement is based on the percent of mileage where all scores for international roughness index (IRI), cracking, rutting, and/or faulting (as applicable) are within thresholds established in the federal rulemaking .

Data for the bridge condition weight and height measures will come from IDOT's bridge inspections submitted to the National Bridge Inventory (NBI). Data for the standard permit form measure will come from coordination between County staff and municipal staff regarding their adoption of a standard form.

Data for the commodity measures comes from Transearch modal analysis data which Will County will need to procure if they wish to track this measure.

2.6 COMMUNITY

This freight plan is centered on being community friendly, thus the name Will County Community Friendly Freight Mobility Plan. Balancing the needs of a vibrant and growing TDL economy with maintaining the character of the County's communities and ensuring citizens' quality of life is a driving force for the development of this plan. Safe,

secure, and environmentally friendly freight movement is vital to the well-being of communities in Will County. As freight movement increases, strategies must be updated, developed, and implemented to protect against adverse impacts such as air, water, and noise pollution, and diminished access to jobs, healthcare, and education.

History has shown, that community opposition to the potential adverse effects of freight transportation can also impede implementation, thus Will County community needs must be carefully considered during freight transportation project planning, environmental review, and the permitting or approval processes. Will County, in coordination with IDOT and CMAP must work closely with numerous partners, including FHWA, the U.S. Environmental Protection Agency (EPA), and U.S. Army Corps of Engineers (USACE) to reduce the adverse impacts of freight activities.

Today, we understand that land use and freight planning activities must be more closely coordinated. Consequently, it is critically important that freight transportation system improvements are planned within the context of the adopted land use plan to accommodate freight-generating industries and businesses while at the same time protecting the health, safety, and quality of life of Will County residents.

As noted in FHWA's Freight and Land Use Handbook, if freight planning and land-use decision-making activities are well integrated, both the public and private sector may benefit through reduced congestion, improved air quality and safety, enhanced community livability, improved operational efficiency, reduced transportation costs, and greater access to facilities and markets. The freight community can be considered "a good neighbor" when such a balance between economic activity and external impacts is achieved. Public agencies can encourage this balance through:

- adoption of appropriate and coordinated land use policies,
- effective transportation systems and services,
- effective operations and management policies of transportation infrastructure and terminals, and
- continuous education and outreach programs to engage community and industry representatives.[6]

The Community goal is to **coordinate land use and transportation planning with partner agencies and municipalities to retain or improve the character of communities and enhance quality of life through sustainable transportation investments across all forms of travel** and the recommended economic competitiveness performance measures and data sources are show in

[6] FHWA Freight and Land Use Handbook

Table 2-7.

TABLE 2-7: COMMUNITY PERFORMANCE MEASURES

Performance Measures	Data Source(s)
Number of Designated Truck Route miles in residential and recreational areas	GIS Analysis using CMAP's Land Use Inventory and IDOT truck route data
Number of comprehensive plans that integrate freight planning and land-use decision-making activities	County and city comprehensive plans
Percent of truck traffic volume traveling on non-designated Truck Route System	TBD
Multijurisdictional collaboration on planning large logistics facilities on a case-by-case basis	Assessed for each application that comes up on an annual basis

2.6.1 DATA SOURCES

The number of designated truck route miles in residential and recreational areas can be accessed through GIS spatial analysis. The GIS layers needed include the designated truck route system, residential communities, and recreational areas. The spatial analysis will determine the extent of the truck route system that traverses through residential and recreational areas.

The number of comprehensive plans that integrate freight planning and land-use decision-making activities can be determined by reviewing the plans that have been completed.

APPENDIX A.

Safety Performance Measures	Source	Timeframe	Data Currently Available	Cost to Collect	Reporting Period
Number of fatalities involving trucks in Will County	IDOT	5-year moving average	Yes	Low	Annual
Number of serious injuries involving trucks in Will County	IDOT	5-year moving average	Yes	Low	Annual
Rate of collisions at pedestrian, private, and public at-grade rail crossings in Will County per number of at-grade rail crossings	ICC	5-year moving average	Yes	Low	Annual

Mobility Performance Measures	Source	Timeframe	Data Currently Available	Cost to Collect	Reporting Period
Number of truck congested hours on the NHS roadway network within Will County.	CMAP NPMRDS Analysis	12 months	Yes	Low	Annual
Percentage of Will County NHS roadway system mileage providing for reliable Truck Travel Time Reliability (TTTR)	CMAP NPMRDS Analysis	12 months	Yes	Low	Annual
Number of designated truck parking spots identified in freight clusters.	Aerial/Survey	12 months	No	Medium	Annual

Preservation Enhancement Performance Measures	Source	Timeframe	Data Currently Available	Cost to Collect	Reporting Period
Percentage of NHS roadway on the truck route system in Will County in good condition	IDOT IRIS data	12 months	Yes	Low	Bi-annual
Percentage of NHS roadway on the truck route system in Will County in poor condition	IDOT IRIS data	12 months	Yes	Low	Bi-annual
Percent of bridge deck area on the Will County Truck Route System in good condition	IDOT IRIS Structure data	12 months	Yes	Low	Bi-annual
Percent of bridge deck area on the Will County Truck Route System in poor condition	IDOT IRIS Structure data	12 months	Yes	Low	Bi-annual

Workforce Performance Measures	Source	Timeframe	Data Currently Available	Cost to Collect	Reporting Period
Average Commute distance/commute time of TDL commuters	LEHD data	12 months	Yes	Low	Bi-annual – Depending on Data Updates
Vacancy rate of TDL jobs	WIIB, EMSI, BLS	12 months	No	Medium	Annual
TDL employer satisfaction	WIIB Survey	12 months	No	Medium	Annual
TDL Wage Growth	EMSI data	12 months	Yes	Low	Annual
Employer engagement with Collaborative Partnership to share best practices	WIIB Meeting Data	12 months	No	Low	Annual

Economic Competitiveness Performance Measures	Source	Timeframe	Data Currently Available	Cost to Collect	Reporting Period
Percentage of intermodal connectors in good condition	IDOT IRIS data	12 months	Yes	Low	Bi-annual
Number of bridges with weight restrictions on truck routes	IDOT bridge data	12 months	Yes	Low	Bi-annual
Number of bridges on truck routes that provide sufficient height for truck movment-13.6"	IDOT bridge data	12 months	Yes	Low	Bi-annual
Percent of commodity moved by truck in Will County (based on tonnage)	TBD	TBD	No	High	TBD
Percent of commodity moved by rail in Will County (based on tonnage)	TBD	TBD	No	High	TBD
Percent of commodity moved by water in Will County (based on tonnage)	TBD	TBD	No	High	TBD
Lane miles of designated truck routes	Getting Around Illinois IDOT data	12 months	Yes	Low	Bi-annual
Number of local governments that have adopted a standard permit form	County and Municipal Staff	12 months	No	Medium	Bi-annual

Community Performance Measures	Source	Timeframe	Data Currently Available	Cost to Collect	Reporting Period
Number of Designated Truck Route miles in residential and recreational areas	GIS Analysis	12 months	TBD	Medium	Annual
Number of comprehensive plans that integrate freight planning and land-use decision-making activities	County and city comprehensive plans	12 months	Yes	Low	Annual
Percent of truck traffic volume traveling on non-designated Truck Route System	TBD	12 months	TBD	Medium	Annual
Multijurisdictional collaboration on planning large logistics facilities on a case by case basis	County would need to generate an annual report	12 months	No	Medium/High	Annual