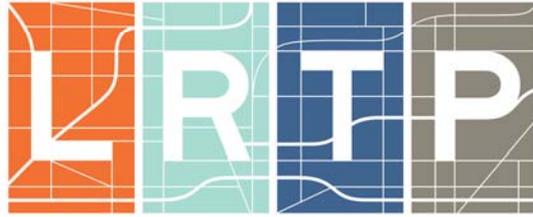


ILLINOIS DEPARTMENT
OF TRANSPORTATION



LONG RANGE
TRANSPORTATION PLAN



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ILLINOIS DEPARTMENT OF TRANSPORTATION

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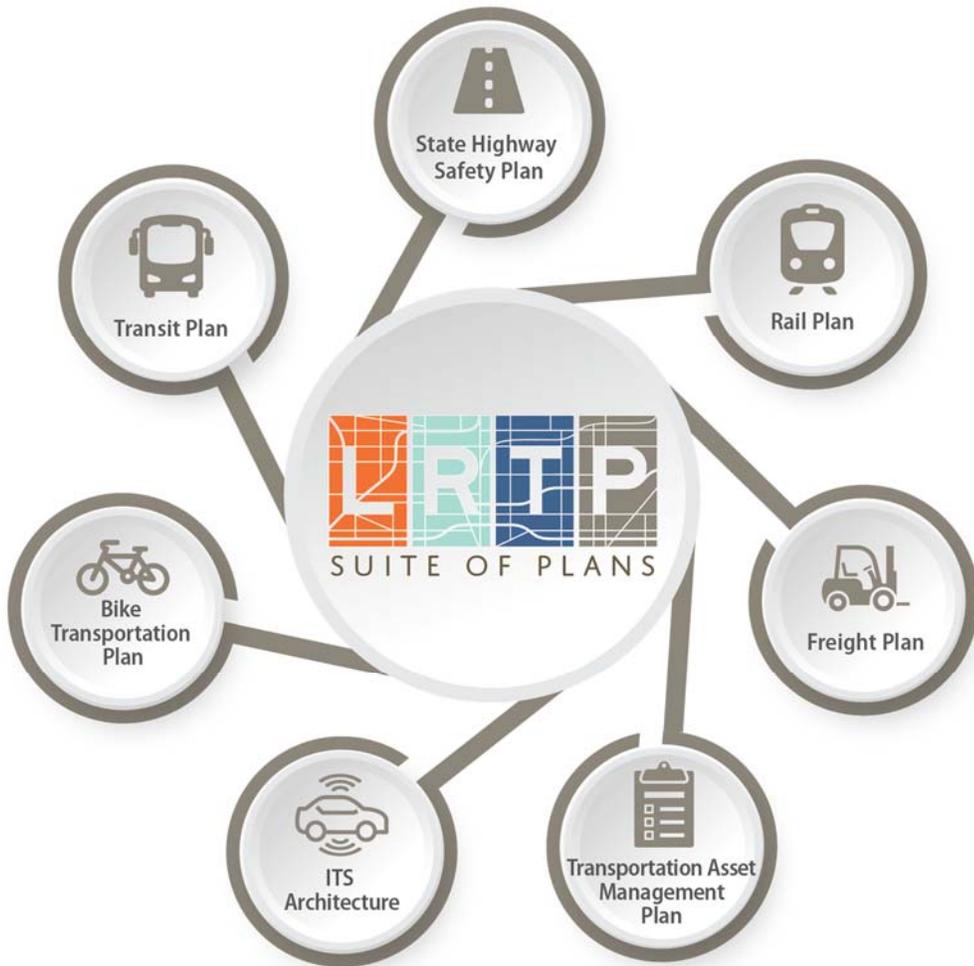
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1. Introduction

1.1 PURPOSE OF THE STATEWIDE LONG-RANGE TRANSPORTATION PLAN

The primary purpose of the Illinois Long-Range Transportation Plan (LRTP) is to provide strategic direction for the development of the Illinois transportation system. The 2017 LRTP vision for transportation in Illinois is to provide innovative, sustainable and multimodal transportation solutions that support local goals and grow Illinois' economy. This vision was established in conjunction with thousands of stakeholders who participated in outreach activities throughout the planning process, as outlined in Appendix A, Public Involvement Activities.

The LRTP is designed to provide the overarching framework for the development of Illinois Department of Transportation (IDOT) programs and specific modal plans. It establishes a set of policies to guide future system development, rather than specific improvements, which are programmed separately and released annually as part of IDOT's Multi-Year Highway Improvement and Multi-Year Multimodal Improvement Programs (MYP). The LRTP is also designed to act as the parent policy umbrella for other relevant policy and mode-specific plans developed by IDOT as part of a *Suite of Plans*. As depicted in the graphic below, this suite of interrelated plans includes the Strategic Highway Safety Plan, Rail Plan, Freight Plan, Transportation Asset Management Plan, Intelligent Transportation Systems (ITS) Architecture, Bike Plan and Transit Plan, each of which are part of the appendices to this plan.



All IDOT plans are designed to provide progressive and action-oriented frameworks for Illinois' transportation system. Plan policies provide a framework to guide the sustainable development of an integrated system that is safe, efficient and reliable; enhances quality of life; supports the economic prosperity of the state; and promotes data-driven, performance-based decision making.

1.2 OVERVIEW

1.2.1 MULTIMODAL ECONOMY

The economic vitality of Illinois is key to the well-being and quality of life for businesses and residents throughout the state. Illinois' transportation network is critical to the growth and development of both state and local economies – supporting the efficient movement of people and goods. Over the past century, Illinois has seen the steady development of one of the largest and most effective multimodal transportation systems in the nation, including roadways, passenger and freight railroads, transit and commuter services, bikeways, airports, waterways and canals, port districts, and intermodal facilities.¹ IDOT's role is to ensure that the state's transportation network continues to support the economic growth of Illinois.



MULTIMODAL VERSUS INTERMODAL:

In the LRTP, "Multimodal" refers to differing travel modes, whereas "Intermodal" refers to freight or cargo and associated shipping facilities where more than one shipping company is involved in the movement of goods.

Illinois is at the center of the nation's freight network and provides key linkages between the east and west coasts. The state's role in goods movement supports Illinois' diverse array of industries that range from advanced research in biotechnical pharmaceuticals and production technologies to traditional agricultural and mining operations. Despite being a mature economy, Illinois continues to

adjust to changes in global economic forces, increased automation and intelligent technology advances that create new levels of industrial efficiency. To meet the transportation implications of these pressures, it is IDOT's responsibility to ensure that necessary adjustments are made to the state's transportation network and that investments in the state system are not in conflict with local goals and objectives. Partnerships and collaboration are key to the success of the transportation system. IDOT seeks regular input from the industry groups and residents to identify new opportunities to address and improve the future needs of its multimodal assets.

Illinois' transportation system includes an extensive multimodal network of roadways, bus routes, rail lines, airports, waterways, ports, bicycle and pedestrian facilities:

- The National Highway System (NHS) in Illinois is the 4th largest in the nation, containing 7,945 miles; only Texas, California and Florida have more.²
- In 2017, the total state highway system consisted of approximately 15,968 miles of roadways and the number of bridges under the Department's jurisdiction was 8,135.³
- Illinois' freight rail system is comprised of 45 railroads, including all seven Class I railroads, three regional and 26 shortline railroads, and nine terminal carriers, and nearly 10,000 miles of tracks. The rail network ranks second

¹ For the purpose of the LRTP, "Multimodal" refers to differing travel modes, whereas "Intermodal" refers to freight or cargo and associated freight shipping facilities where more than one shipping company is involved in the movement of goods.

² FHWA, Office of Planning, (March 2015)

³ IDOT FY 2018-2023 Proposed Highway Improvement Program

among all states in total railroad track mileage. Northeastern Illinois is the hub of the nation's rail system, boasting the largest intermodal system in the nation and the third largest in the world.

- There are 78 airports in Illinois that are publicly owned, open to the public and eligible for public funding.
- Illinois' maritime network includes Lake Michigan, 1,095 miles of navigable inland waterways, 29 river locks and 350 active ports.⁴
- Illinois transit system is comprised of 63 public transit operators/providers. There is some type of transit service in 96 of 102 Illinois' counties⁵.
- Two-thirds of Illinois state and local roads provide bicycle accommodations⁶, and according to the Alliance for Biking and Walking Benchmarking Report, in 2015, Illinois had approximately 1,875 miles of dedicated multi-use trails that have been funded through federal programs, state funds, and local resources⁷. In 2015, the League of American Bicyclists ranked Illinois the 14th most bicycle friendly state in the nation.

"The single greatest challenge we face at IDOT is not just a lack of infrastructure funding, but the lack of understanding that our infrastructure is undeniably linked to the prosperity of our economy and our future."

– Illinois Secretary of Transportation, Randy Blankenhorn

1.2.2 SUSTAINABLE FUNDING NEEDED

Stakeholders have sent a strong message to IDOT supporting improved and increased multimodal options as part of the LRTP process. Illinois' vast multimodal network provides tremendous opportunity to better link existing and new segments of the system together to create more options; however, resource needs are outpacing available funds. IDOT is struggling to maintain the existing system, therefore new infrastructure is difficult to justify when it comes to the expenditure of existing funds. Currently, IDOT administers steady streams of funding for highways and bridges, but multimodal options do not receive the same level of fiscal attention, and as federal and state revenues decline, the ability to address all the state's multimodal needs is decreasing.

Sustainable revenues for transportation was identified as a key concern by stakeholders across the state. Additionally, the funding challenges IDOT has been facing were deepened in the latter portion of 2017 when, as part of the fiscal year (FY) 2018 budget, over \$300 million was cut from the FY2018 annual highway program, and language was included indicating that future years' funding would also see this level of loss. These cuts deepened a wide gap that already exists between infrastructure needs and available funding.

Although this plan looks out to the future, without addressing funding challenges today, the ability to continue to address Illinois' transportation system holistically will remain uncertain. To that end, this plan explores new ways to be effective stewards of public funds, adopting asset management planning and performance-based project selection tools in order to best leverage existing funds to meet Illinois' infrastructure needs. These operational and policy improvements represent

⁴ Maritime Performance Measures Report, UIC, 2015

⁵ IDOT Website, Accessed December 2017

⁶ IDOT Bike Plan, 2012

⁷ The League of American Bicyclists, Bicycle Friendly State 2015 Ranking
http://www.bikeleague.org/sites/default/files/2015_state_ranking_chart.pdf

steps toward effective fiscal management; yet, additional funding is required to pay for the escalating costs and strategic system expansions necessary to accommodate the needs of commerce, residents and travelers.

IDOT is considering a wide range of strategies that would increase revenues from existing sources, introduce new mechanisms for collecting revenue, tap into federal and private resources, and make better decisions with existing funds through the identification of eleven potential strategies:

INCREASE REVENUES FROM EXISTING SOURCES

1. Raise motor fuel tax rates, index to inflation, and capture sales tax on motor fuels
2. Increase, index and restructure vehicle license fees

EXPLORE NEW MODES OF FUNDING ACQUISITION

3. Explore mileage-based user fees as an alternative to motor fuel taxes
4. Promote value capture financing among local governments
5. Introduce express toll lanes on new highway capacity

SEEK INVESTMENT FROM OUTSIDE THE STATE

6. Pursue federal grant opportunities
7. Leverage federal financing programs to attract private investment
8. Pursue public-private partnerships (P3s) and implement innovative delivery options)

MAKE SMARTER DECISIONS WITH EXISTING FUNDS

9. Enhance asset management practices
10. Allocate transportation funding based on project need
11. Foster projects that support the Illinois economy

1.2.3 EMERGING TRENDS

As new transportation technologies emerge, Illinois is faced with new funding, policy and design challenges to accommodate these technologies and to guide their safe implementation. Even though much remains unknown in terms of how greatly these technologies will become part of the overall transportation system, IDOT must be proactive in planning for these changes and transformations. Many of these new technologies will provide opportunities to improve the transportation system whether it be by decreasing first-mile/last-mile issues through on-demand car services and other shared mobility options, through the improved safety features being built into vehicles to prevent collisions, or by the possibility of decreasing roadway congestion through truck platoons. Connected and autonomous vehicles (C/AV) and crowd-sourced data related to travel times, travel routes and travel mode options and other new technologies have arrived swiftly and without much warning. Regardless of the new technology or the certainty with which it will become part of the overall system, IDOT must be nimble and participatory in the discussions regarding implementation to help safeguard the travelling public, regardless of mode. Due to the relatively long life cycle of infrastructure, IDOT must also consider policy changes that incorporate flexible system design to accommodate multiple modes and allow for new technologies to be tested or implemented as existing infrastructure undergoes updates and new infrastructure is put in place.

1.3 LRTP GOALS

In conjunction with stakeholder input, IDOT has identified five overarching goals that are the foundation of the LRTP. Each of these goals are accompanied by a series of objectives, strategies and performance measures that form a chapter of the LRTP. Each chapter discusses a series of topics contributed and vetted by thousands of stakeholders with an interest in improving the multimodal transportation system of our state. More information on stakeholder outreach that occurred as part of the development of the LRTP can be found in Appendix A. The five goals identified for the LRTP are economy, livability, mobility, resiliency and stewardship, as illustrated in the graphic below.



As mentioned earlier, the LRTP establishes a set of policies to guide the future development of the transportation system rather than specific improvements, which are programmed separately and released as part of IDOT's annual MYP. These goals will also provide the broad framework for new decision-making and future analysis tools, like the performance-based project selection tool and asset management plan. Tools such as this support data-driven decision-making and will serve to implement the goals, objectives and strategies of this plan. IDOT has developed a performance-based project selection tool to assist with data-driven decision making during the project programming process. In order to complement the use of this tool, each goal chapter of the LRTP contains certain specific actions/strategies that should also be considered during the project programming phase. These actions/strategies have been denoted with **P – for Programming** – in each goal chapter.

PLAN CHAPTERS

The LRTP has been developed as a policy-based plan linked to an interrelated *Suite of Plans* as discussed in Section 1.1. Following this introduction, there are six main chapters of the LRTP, followed by a series of appendices containing supplemental information related to IDOT's multimodal assets and programs, funding sources and challenges, stakeholder involvement, and other relevant IDOT plans that comprise the *Suite of Plans*. The six chapters that make up the main body of the LRTP appear in the document in the following order:

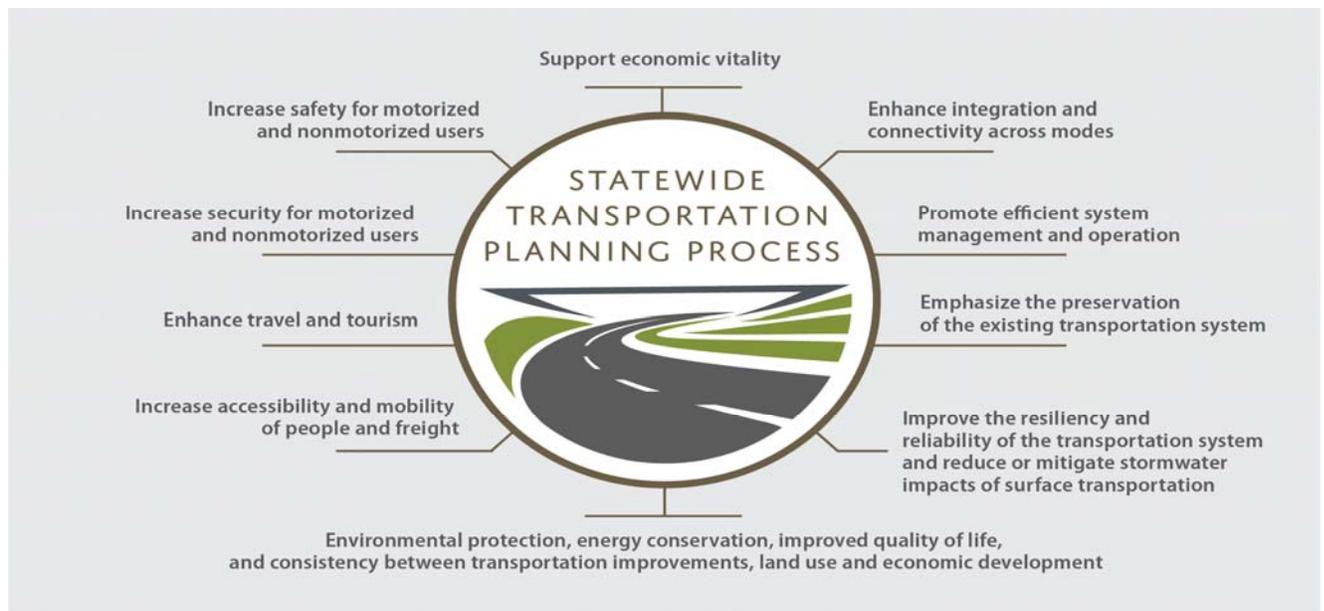
1. Economy
2. Livability
3. Mobility
4. Resiliency
5. Stewardship
6. Transportation Funding

1.4 STATE AND FEDERAL PERFORMANCE TARGETS, MEASURES AND PROJECT SELECTION

In addition to helping IDOT refine its vision, the LRTP was developed to respond to state and federal requirements. State requirements include developing and maintaining a continuing, comprehensive and integrated planning process for the development of a statewide master plan for transportation. The plan shall include highway, waterway, aeronautic, mass transportation and railroad systems and identify priority subsystems or components of each system that are critical to the economic and general welfare of this state, regardless of public jurisdictional responsibility or private ownership. The plan must also include a comprehensive and multimodal freight component. The plan shall be developed or revised and submitted to the governor and General Assembly every five years.⁸

The intent of the transportation plan is to guide program development and to foster efficient and economical transportation services in ground, air, water and all other modes of transportation through the state.

Federal requirements include the development of a long-range (minimum 20-year time frame) statewide transportation plan that provides for the development and implementation of a multimodal transportation system. The statewide long-range transportation plan should facilitate the safe and efficient management, operation and development of surface transportation systems that will serve the mobility needs of people and freight and foster economic growth and development within and between states and urbanized areas, while minimizing transportation-related fuel consumption and air pollution.⁹ The statewide transportation planning process scope includes the ten primary goals identified in the graphic below.



⁸ 20 ILCS 2705/2705-200

⁹ U.S. Government Publishing Office, 23CFR 450.206 (April 2016)

In May 2016, the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) jointly issued the final rule on Statewide and Nonmetropolitan Transportation Planning and Metropolitan Transportation Planning, implementing changes to the planning processes that had been established by the Moving Ahead for Progress in the 21st Century Act (MAP-21) and the Fixing America's Surface Transportation Act (FAST Act). These changes further clarified federal guidance on the need for performance management and performance-based planning and programming to ensure the most effective investment of federal transportation funds.

As of the release of the LRTP, IDOT has established targets for safety, which can be found in Appendix G, the State Highway Safety Plan (SHSP), and is in the process of developing targets for infrastructure condition and system performance. IDOT is also working to establish performance targets associated with the goals and objectives of the LRTP, which go beyond the targets required by federal rules. Remaining IDOT performance targets are on schedule for completion by the federal deadline in May 2018.

As part of the LRTP goals chapters, IDOT has developed performance measures associated with each of the plan objectives under the overarching goals of economy, livability, mobility, resiliency and stewardship. The following performance measures will be used to assess progress as part of IDOT's performance management cycle.

- Data-driven decision making
- Focus on maintenance and modernization of existing assets
- Accountability and transparency in project selection
- Selection of projects that provide the greatest return on investment
- Innovation in delivering critical safety elements of projects
- Demonstrate why more transportation funding is needed

1.5 PLAN IMPLEMENTATION

Successful implementation of the LRTP goals will be embodied by the planning and programming of multimodal projects across the state. These projects will meet performance goals and will support economic stability and growth in communities. Selecting the best projects will require collaboration and planning between IDOT and multiple agencies including other state agencies, local governments, Metropolitan Planning Organizations (MPO), transit agencies, business groups, non-profit organizations and the residents of Illinois. IDOT is currently working with MPOs and transit agencies to establish and implement performance targets and to develop measures and data sources associated with MAP-21 and FAST Act performance goals covering the following areas:

- ✓ Safety
- ✓ Infrastructure Condition
- ✓ Congestion Reduction
- ✓ System Reliability
- ✓ Freight Movement and Economic Vitality
- ✓ Environmental Sustainability
- ✓ Reduced Project Delivery Delays

In addition to the federal performance goals, the LRTP goal chapters, as well as the other IDOT modal plans, define additional performance goals that IDOT has identified through the planning processes associated with those plans. The LRTP goal chapters for Economy, Livability, Mobility, Resiliency, and Stewardship contain specific objectives and strategies that align with the federal performance goals as depicted graphically below.

FHWA FEDERAL-AID PROGRAM PERFORMANCE GOALS		IDOT LRTP GOAL				
SAFETY	To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.		LIVABILITY	MOBILITY	RESILIENCY	STEWARDSHIP
INFRASTRUCTURE CONDITION	To maintain the highway infrastructure asset system in a state of good repair.	ECONOMY		MOBILITY	RESILIENCY	STEWARDSHIP
CONGESTION REDUCTION	To achieve a significant reduction in congestion on the National Highway System.	ECONOMY	LIVABILITY	MOBILITY	RESILIENCY	STEWARDSHIP
SYSTEM RELIABILITY	To improve the efficiency of the surface transportation system.		LIVABILITY	MOBILITY	RESILIENCY	STEWARDSHIP
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.	ECONOMY		MOBILITY		STEWARDSHIP
ENVIRONMENTAL SUSTAINABILITY	To enhance the performance of the transportation system while protecting and enhancing the natural environment.		LIVABILITY	MOBILITY	RESILIENCY	STEWARDSHIP
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 practices.					STEWARDSHIP

2. Economy

The economic vitality of Illinois is key to the well-being and quality of life for businesses and residents throughout the state. Illinois' geographical location near the center of the nation and the diversity of statewide transportation options have made the Illinois multimodal transportation network an economic keystone and a vital hub for national and regional travel and freight movement. Over the past century, Illinois businesses, residents and visitors have benefited from the steady development of one of the largest and most effective multimodal transportation systems in the nation, including roadways, passenger and freight railroads, transit and commuter services, bicycle and pedestrian infrastructure, airports, waterways and canals, port districts, and intermodal facilities.

While Illinois' central location will continue to play a major role in its economic achievements, location alone will not guarantee Illinois' success long term. The movement of people and goods must occur efficiently and cost-effectively in order for Illinois to remain a desirable place to live and do business. IDOT will need to adjust transportation planning processes and policies to consider changes in current and emerging demographic trends, travel trends and freight movement so that it can effectively determine where reinvestment, maintenance and strategic expansion projects will best support economic growth throughout the state. IDOT must also examine these changes to support economic and community diversity throughout different parts of the state.

ECONOMY GOAL:

Improve Illinois' economy by providing transportation infrastructure that supports the efficient movement of people and goods.

WHAT IS THE ECONOMY?

The economy, in the broadest sense, can be described as “the organized system of human activity involved in the production, consumption, and distribution of good and services.”¹ The vitality, or health, of all economies are intricately linked to how people and goods are moved, or rather, how well the mobility of people and goods occurs. How well or effective the mobility of people and goods are impacts production, consumption and distribution; all three of the main tenets of the definition of the economy. The overall effectiveness of the transportation system has a direct impact on the mobility of people and goods, and therefore it has a direct impact on the economy. If the transportation system does not provide seamless linkages between modes, adequate multimodal options, safety and security, resiliency to disruptions, or the system is in significant disrepair, then people and goods do not move efficiently and cost-effectively. If people and goods do not move efficiently and cost-effectively, then the economy either suffers or does not prosper as a result.

2.1 ECONOMY AND IDOT

Today, economic vitality and competitiveness remain key to the future of the state. Illinois is the center of the nation's Class I Railroad system, the interstate highway network and the North American inland waterway system. Chicago O'Hare Airport is one of the world's top three busiest airports, handling the complex needs of domestic and international travelers and freight shippers. Illinois is host to several large inland intermodal ports, such as CenterPoint Intermodal Center in Joliet/Elwood, one of North America's largest master-planned inland ports, which encompasses more than 6,500 acres of rail- and highway-adjacent land and includes both Burlington Northern – Santa Fe and Union Pacific intermodal parks.

¹ Merriam-Webster Dictionary, Accessed January 2018

Illinois is a leading state in agriculture, industrial production, business services and higher education. Annually, Illinois is a national leader in corn and soybean production. The state is also a national leader in pork production.² In 2014, Illinois ranked third among states in manufacturing production with over \$99 billion in total output. The state is home to 34 Fortune 500 corporate headquarters, including economic giants like ADM, Allstate, Boeing, Caterpillar, John Deere, McDonalds, Mondelez International, State Farm, United Airlines and Walgreens. The diversity of these major companies ranges from major manufacturers to national retail operators to agricultural processors. Illinois serves as a global market center for corporate finance, national wholesale business, warehousing/logistics and international commodity trading. Over the past two decades, IDOT has worked closely with the Illinois Department of Commerce and Economic Opportunity and the Illinois Department of Agriculture to identify key elements of the transportation system that can improve the state's global competitiveness and support the location or retention of jobs in Illinois communities.

In the future, connected and autonomous vehicles (C/AV), 3D printing, automation and other advanced technologies will have the potential to change all aspects of mobility – from the way we commute to how we plan and develop freight movement and economic vitality for Illinois. While there may be many safety benefits associated with C/AV and other new technologies, they also have the potential to disrupt traditional transportation modes and the current way we do business. Disruptions like this have the potential to create both positive benefits and to have negative impacts that must be mitigated or managed. As an example, in addition to the potential safety benefits of C/AV, a few other examples of positive changes include better first-mile/last-mile connectivity, the ability for people to work while commuting and reduction in waste due to less personal vehicle-ownership. Some of the negative impacts include vehicle parking, curb-side management, potential idling and air quality impacts. The positive and negative aspects of these large-scale changes need to be examined, understood and addressed with the appropriate policy changes, all while considering the impacts they have on our economy.

It is the role of IDOT to provide reliable and effective access for Illinois residents, communities and businesses. At the network level, IDOT is responsible for the state highway system and the quality of roadways needed to deliver products to economic markets and consumers. At the local level, IDOT works with local governments to provide access to regions, communities and sites that provide opportunities for immediate economic development and employment growth. At this local level, IDOT works with local providers to improve access to rail services, ports, air transportation, transit services and local highway access. Where it can, IDOT assists communities pursuing economic development opportunities by resolving key transportation issues due to the location or expansion of industrial activity that will result in significant employment gains or retention.

Beyond economic development, transportation provides significant benefits to the quality of life in Illinois communities. IDOT must also consider that residents and visitors need suitable access to health care services, education, job opportunities and social activities, such as entertainment and recreation. IDOT evaluates these benefits when it works to improve and enhance its existing system, and also endeavors to improve safety by reducing the number of fatalities/injuries through funding assistance to local agencies working to improve local streets and roads, transit services, and pedestrian and bicycle access.

PERFORMANCE BASED PROJECT SELECTION PROCESS

The success of Illinois largely depends upon the ability for people and goods to move throughout the state, but increasing funding constraints have hampered IDOT's ability to perform system expansion work. Due to limited resources, IDOT needed to establish a process by which strategic system expansions could be evaluated, so that those with the most benefits could be considered. IDOT developed the Performance-Based Project Selection (PBPS) tool to help evaluate

² Facts about Illinois Agriculture", Illinois Department of Agriculture, 2017.

capacity enhancement projects. Economic impacts rose to the top of the criteria IDOT chose to include in the PBPS for project evaluations. In 2017, IDOT utilized this tool to evaluate and prioritize major expansion projects within the FY 2018-2023 Multi-Year Highway Improvement Program (MYP). The PBPS tool includes the following performance measures for considering economy in project evaluations:³

- Travel time reliability
- Freight hours of delay
- Intermodal accessibility
- Economic development proximity index

2.2 IMPACT OF TRANSPORTATION INVESTMENT

The most direct impacts of transportation investments that support the economy are improved safety, operating efficiency of the transportation system, increased capacity to meet travel demand, and new access to places, services and markets. More importantly, these impacts improve the quality of life for the average resident of Illinois and support the state's economy. Having good transportation access creates jobs and business opportunities, while access to healthcare, educational institutions and government services provide opportunities to improve quality of life across communities statewide.

Because Illinois benefits from being a national transportation hub with an extensive multimodal transportation system, the cost of shipping and receiving goods are reduced for both businesses and consumers. On a daily basis, the state's multimodal transportation system provides vital linkages for workers to jobs, students to schools, families to shopping, and individuals to health care providers. IDOT works in conjunction with and provides funding for other modal providers, such as public transit and aeronautic providers, as well as local government agencies, to ensure these needs are met with dependability and responsiveness.

2.3 OBJECTIVES AND STRATEGIES

IDOT has developed five objectives to guide its investment decisions to support the economy. Each objective contains recommended actions/strategies, performance measures, data sources and implementation strategies that IDOT will pursue. The LRTP content, as a whole, will be considered policy guidance for programming decisions; however, each objective below also denotes some of the more specific recommended actions/strategies that will be used to guide programming decisions. These have been denoted with **P** in Section 2.3.1.

The five objectives are:

- 1 Encourage multimodal regional coordination in the identification of transportation solutions to provide for efficient movement of freight, people and services supporting economic growth.
- 2 Support projects that improve intermodal efficiency, connectivity and coordination of services to enhance continuity and accommodate the efficient movement of people, goods and services across all modes.
- 3 Support land use and transportation connectivity.
- 4 Identify and address issues affecting freight commerce and passenger services.
- 5 Support economic development in Illinois communities.

³ Transportation Investment Performance Selection presentation, May 17, 2017.

2.3.1 OBJECTIVES, STRATEGIES AND PERFORMANCE MEASURES

OBJECTIVE 1.

Encourage regional coordination in the identification of solutions to transportation problems to provide for efficient movement of freight, people and services supporting economic growth.

RECOMMENDED ACTIONS/STRATEGIES:

1.1 Support multimodal transportation projects that create growth and employment opportunities throughout the state. P

To maintain Illinois' position as a vital hub for national and regional transportation, IDOT must continue to invest in the state's multimodal transportation system to enhance the state's economic advantage and expand and retain economic development and employment. This includes supporting projects and programs that improve access to Illinois jobs and that improve and maintain transportation to Illinois businesses and industries, attracts interstate and international trade, and grows tourism by providing access to recreational, cultural and entertainment locations across the state.

1.2 Enhance coordination and collaboration in planning, programming and implementation activities with regional and local partners.

A key component of directing the transportation investments that support the Illinois economy is effective coordination with the metropolitan planning organizations, local governments, transportation agencies, modal and transportation industry representatives, businesses and institutions, and residents and users of the state's transportation system. The need for enhanced coordination and collaboration is especially true in this environment of limited resources.

1.3 Ensure the development of state multi-year and annual multimodal plans and programs includes consultation and coordination with regional and local planning partners. P

The Illinois transportation system is a complex combination of public and private services and facilities. In developing state multimodal plans and programs, it is imperative that close, effective coordination with regional and local planning stakeholders, including adjacent states, occurs to ensure understanding of needs, priorities, constraints, and resources to maximize the effectiveness and efficiency of IDOT's plans and programs.

PERFORMANCE MEASURES:

→ **Support the incorporation of freight movement and economic vitality objectives within IDOT-funded regional studies**

To ensure consistency with IDOT goals, IDOT will support the inclusion of economic vitality objectives, including the movement of goods, as part of local, regional and statewide studies that include IDOT funding.

→ **Regular IDOT participation in regional planning and programming meetings held by the state's 16 MPOs**

To ensure coordinated planning and programming consistent with IDOT goals, IDOT will actively participate in the regional planning and programming meetings for all of the state's MPOs.

→ **Ensure preparation of state multi-year and annual multimodal plans and programs includes consultation and coordination with regional and local planning partners**

IDOT will continue to enhance their public involvement process to provide timely and meaningful consultation and coordination with regional and local planning stakeholders as part of the development process for the state's multi-year and annual multimodal plans and programs.

IMPLEMENTATION:

- **Commit IDOT staff to participate in the planning and programming processes of the 16 MPOs to support projects consistent with IDOT goals, including economic growth**
Lead: IDOT Districts, IDOT Office of Planning and Programming, IDOT Office of Intermodal Project Implementation
Partners: MPOs
- **Expand consultation, coordination and outreach for development of multiyear plans and programs**
Lead: IDOT Office of Planning and Programming, IDOT Office of Communication, IDOT Districts, IDOT Office of Intermodal Project Implementation
Partners: Illinois State Freight Advisory Council, MPOs, other planning partners
- **Conduct before-after studies of IDOT supported transportation projects and their economic impacts**
Lead: IDOT Office of Planning and Programming
Partners: IDOT Office of Highway Project Implementation
- **Enhance the measurement of mobility-related objectives in the PBPS tool by developing a statewide traffic model**
Lead: IDOT Office of Planning and Programming
Partners: IDOT Districts, MPOs, other planning partners

OBJECTIVE 2.

Support projects that improve connectivity and coordination of services to enhance continuity and accommodate the efficient movement of people, goods and services across all modes to address intermodal efficiency.

RECOMMENDED ACTIONS/STRATEGIES:

2.1 Review and evaluate intermodal connections across the state. **P**

IDOT will work with its partners to identify and evaluate the performance of intermodal connections in the state and identify needed improvements. There are approximately 140 designated National Highway System Intermodal Connectors in the state that provide access from the highway system to major intermodal facilities (transit, truck, rail, aviation, port terminals, and multimodal passenger facilities). There are also over 200 intermodal freight facilities (connections between some combination of air, rail, truck, waterway and pipeline).

2.2 Improve efficiency of transfers of freight and passengers between modes. **P**

Intermodal transportation improves the efficiency of the overall transportation system. By improving intermodal connections that are designed to improve the flow of people and goods movement, the service efficiencies of each system are incorporated. The objective is to work towards a seamless intermodal transportation system.

2.3 Work collaboratively with ports and waterways stakeholders to identify and address issues related to transporting commerce via navigable waterways.

The Illinois waterway system provides a relatively low cost means of transporting heavier lower-valued commodities, such as coal and agricultural products. IDOT will work closely with stakeholders, including the Illinois State Freight Advisory Council and port districts/terminals, agriculture and energy industries,

2.4 Advocate for the success of Illinois' passenger rail program.

The State of Illinois provides financial support for 30 daily Amtrak trains that travel to Milwaukee, St. Louis, Quincy and Carbondale. High speed rail is in the final phase of implementation from Chicago to St. Louis with

new or upgraded train stations in Dwight, Pontiac, Normal, Lincoln, Springfield, Carlinville and Alton. IDOT will continue to advocate for enhancing the state's passenger rail program.

2.5 Identify shifts in population and employment centers and ensure that there are adequate airport services provided to those population and employment centers. P

Illinois has nearly 830 aviation facilities (including heliports, seaplane, balloon, glider, and ultra-light facilities and grass landing strips), including 110 publicly-owned aviation landing facilities. These aviation facilities provide connections between communities large and small, allow for rapid medial transport, and serve aviation enthusiasts across the state. IDOT will continue to monitor the state's aviation facilities and demographic shifts to ensure access is provided.

PERFORMANCE MEASURES:

→ **Prepare regular assessment of performance of designated National Highway System (NHS) intermodal connectors**

To identify needs and monitor performance, IDOT will regularly assess the performance of designated NHS intermodal connectors across the state.

→ **Number of aviation, highway, and rail program investments that support improved use, safety and ease of access to intermodal facilities**

IDOT will track the number of intermodal project and program investments.

→ **Prepare regular waterborne commerce report assessing the utilization of port districts and other port terminals**

IDOT will prepare a waterborne commerce report regularly that tracks the utilization and expansion plans of port districts and other major port terminals in the state.

→ **Increased education and marketing of passenger rail options and transfer options between modes**

To support the state's investments that are improving intercity passenger rail, IDOT will increase coordination and support for education and marketing of passenger rail options, including transfer options.

→ **Percent of population and employment with drive access to a commercial airport**

To ensure statewide access to aviation facilities, IDOT will evaluate the percentage of population and employment within a reasonable drive of a commercial airport.

IMPLEMENTATION:

→ **Develop regular report on Illinois National Highway System Intermodal Connectors**

Lead: IDOT Office of Planning and Programming

Partners: IDOT Districts, Illinois State Freight Advisory Council, MPOs, other planning partners

→ **Develop regular report on Illinois Waterborne Transportation**

Lead: IDOT Office of Planning and Programming

Partners: Illinois Department of Commerce and Economic Opportunity, Army Corps of Engineers, Illinois State Freight Advisory Council, Port Districts/Terminals

→ **Develop new marketing campaign for intercity passenger rail**

Lead: IDOT Office of Communications

Partners: IDOT Office of Intermodal Project Implementation

OBJECTIVE 3.

Support land use and transportation connectivity.

RECOMMENDED ACTIONS/STRATEGIES:

- 3.1 Support land use and transportation connectivity, especially in and near intercity passenger rail and commuter rail stations, through planning studies, project analyses and public education programs. P**

To better capitalize on transit investments in passenger rail stations, it is desirable to bring potential riders closer to these stations to increase ridership. This requires planning and public education to encourage denser, livable mixed-use and a walkable pattern of development around passenger rail stations. By coordinating land use projects with investments in transportation, communities can better manage growth and improve the quality of life for their residents and workers.

- 3.2 Enhance consideration of land use and transportation connectivity through coordination and collaboration in planning and programming efforts. P**

Transportation investment decisions should consider the effects on land use and development, including consistency with applicable short-range and long-range land use and development plans. This requires increased coordination with agencies and local jurisdictions to ensure transportation planning and programming decisions are compatible with the surrounding community.

- 3.3 Enhance performance-based project selection process and accompanying tools to ensure consideration of land use and transportation connections. P**

There are many benefits to incorporation of land use and transportation connectivity. These benefits include improved mobility options, improved public security, increased transit ridership, and reduced air pollution and energy consumption. IDOT will continue to enhance their PBPS tool to better consider land use and transportation connectivity benefits.

PERFORMANCE MEASURES:

- **Amount of funds supporting land use and transportation connectivity and the number of funded studies**

IDOT will track the amount of funding and the number of studies that include consideration of land use and transportation connectivity, including transit-oriented development and context-sensitive and complete street studies.

- **Regular participation in MPO and regional planning and programming efforts that implement land use and transportation connectivity**

To ensure coordinated planning and programming consistent with IDOT goals, IDOT will increase their participation in MPO and regional planning and programming efforts that address land use and transportation connectivity.

- **Additional factor(s) within performance-based project selection tool to address land use and transportation connections**

To improve the alignment of IDOT goals and their programming priorities, IDOT will identify and implement additional factors within their PBPS tool that address the benefits of land use and transportation connectivity.

IMPLEMENTATION:

- **Develop regular report on land use and connectivity**

Lead: IDOT Office of Planning and Programming

Partners: IDOT Districts, MPOs, other planning partners

→ **Enhance the measurement of land use and connectivity-related objectives in the PBPS tool**

Lead: IDOT Office of Planning and Programming

Partners: IDOT Districts, MPOs, other planning partners

OBJECTIVE 4.

Identify and address issues affecting freight commerce and passenger services.

RECOMMENDED ACTIONS/STRATEGIES:

4.1 Collaborate and consult with freight and passenger stakeholders to address regional, statewide and multi-state freight and passenger transportation issues.

It is critical to actively involve freight and passenger stakeholders to identify and address transportation issues at local, regional, and state levels, including multi-state efforts. In fact, IDOT is required by state law to use the principles of Context Sensitive Solutions for their projects, which includes stakeholder involvement from the earliest stages of a project and for the entire life of these facilities. In support of this type of collaboration and consultation IDOT created the Illinois State Freight Advisory Council (ISFAC,) comprised of freight industry and public sector representatives, economic development organizations, academics, and industry (agricultural, manufacturing, energy) representatives. IDOT has also been an active participant in the Mid-American Freight Coalition (formerly the Mississippi Valley Freight Coalition) since its founding in 2006. The Coalition consists of ten states that cooperate in the planning, operation, preservation, and improvement of freight transportation infrastructure. IDOT is also a key partner in the Chicago Region Environmental and Transportation Efficiency (CREATE) program with USDOT, Amtrak, the nations freight railroads and the City of Chicago, and the Will County Freight Advisory Council with the Will County Center for Economic Development, USDOT, the Illinois Trucking Association, Midwest Truckers Association, and others.

4.2 Provide investment and technical support to transportation projects that improve freight and transportation connectivity through the integration of multimodal service options. P

The efficient use of the state's transportation system requires intermodal and multimodal connectivity. To achieve the goal of seamless integration requires continued investment and technical support for effective and efficient projects that improve this connectivity.

4.3 Support new technologies that provide improved operational efficiencies and travel/route planning and safety. P

Over the past few years, there has been tremendous growth in new technology. An example is the dramatic growth of transportation network companies that provide user-friendly apps that connect riders to drivers using their own personal vehicle who are providing real-time ridesharing services – such as Uber and Lyft. The availability of real-time travel information extends to when packages are going to be delivered, to when the next bus or train will be arriving, to dynamic route navigation that provides the shortest travel time route. As technology continues to advance, it will be very beneficial to employ technologies that can provide improved operational efficiencies and effectiveness.

4.4 Support state funding to public aviation facilities to assist the local community efforts to keep and attract additional business to their communities. P

Public aviation facilities play a critical role for passenger travel and air cargo, and can attract and retain businesses to their communities. With steady demand for aviation services likely to continue, IDOT's role includes

encouraging, fostering and assisting in the development of aeronautics in the state. IDOT should continue and expand its financial assistance, its safety and education programs, and its inspections and other technical oversight.

4.5 Address policy and planning implications of autonomous vehicles being introduced within both passenger and commercial/freight fleets. P

The rapid advancement of autonomous vehicle technology will result in driverless vehicles being introduced for both passenger and freight movement. IDOT and its planning stakeholders need to closely monitor these advancements and the associated policy and planning implications. This includes understanding evolving issues regarding regulation, safety, testing and deployment, coordination with autonomous vehicle stakeholder, support for testing activities, and consideration of the future implications of autonomous vehicles.

PERFORMANCE MEASURES:

- **Amount of funding specifically for freight and/or passenger connection improvement projects**
IDOT will track the funding and the number of intermodal/multimodal freight and/or passenger connection improvement projects.
- **Amount of funding for innovative freight vehicle improvement studies and tests**
IDOT will track the funding and the number of studies and tests involving innovative freight vehicle improvement, including digital communications and vehicle-embedded automated systems.
- **Measure the progress toward full implementation of the web-based roadway information system**
IDOT will continue to monitor progress of implementing the web-based roadway information system, including information needs and speed of information being delivered to all service areas in the state.
- **Amount of funding for improved airport access**
IDOT will track the amount of funding and number of projects that improve airport access.
- **Number of new policies and/or processes to address autonomous vehicles**
IDOT will track the implementation of new policies and processes on driverless vehicles utilizing the transportation system.

IMPLEMENTATION:

- **Continued participation and consultation with freight and passenger transportation industry partners through the Mid-America Freight Coalition, Illinois State Freight Advisory Council, Will County Freight Advisory Council, and other stakeholder groups**
- **Lead:** IDOT Office of Planning and Programming
- **Partners:** IDOT Districts, Illinois State Freight Advisory Council, Mid-America Freight Coalition, MPOs, other planning partners
- **Develop and implement Illinois Competitive Freight Grant Program**
Lead: IDOT Office of Planning and Programming
Partners: IDOT Districts, Illinois State Freight Advisory Council, MPOs, other planning partners
- **Develop research program with Illinois Universities targeting innovative freight vehicle improvement**
Lead: IDOT Office of Planning and Programming
Partners: Illinois Universities

→ **Establish Illinois State Autonomous Vehicle Advisory Council**

Lead: IDOT Office of Planning and Programming

Partners: IDOT Districts, autonomous vehicle representatives, safety and insurance representatives

OBJECTIVE 5.

Support economic development in Illinois communities.

RECOMMENDED ACTIONS/STRATEGIES:

5.1 Support Illinois communities through economic development grants under programs like the Economic Development Program. P

IDOT will support economic development in Illinois communities by encouraging new or expanded development through grant programs that improve access. IDOT's Economic Development Program provides state assistance for improving highway access to new or expanding industrial, distribution or tourism developments. The program provides state funds to support the construction of direct highway access improvement projects for imminent development projects that will expand the state's job base.

5.2 Invest in transportation projects that improve access to intermodal facilities in order to improve economic competitiveness. P

Improved access to intermodal facilities (air, rail, truck, water and pipelines) is critical to improving the movement of goods in Illinois. IDOT will support transportation projects that provide more efficient access to intermodal facilities across the state.

5.3 Invest in intermodal projects that meaningfully increase and improve access to economic growth opportunities. P

IDOT will support increased economic growth opportunities in Illinois communities through support of intermodal projects. This support includes transportation improvement projects for better access, reduced travel times, and improved safety.

PERFORMANCE MEASURES:

→ **Number of communities that benefit and the number of jobs supported (created/retained) from IDOT economic development grants**

IDOT will track the number of jobs that are created and the number of communities that benefit from the IDOT Economic Development Program and similar economic grant programs.

→ **Number of highway and transit investments that improve access to intermodal and multimodal facilities**

IDOT will track the number of projects that improve access to airports, river ports, heavy traffic generators, rail passenger stations and intermodal facilities.

→ **Number of freight related projects that enhance access to supply chains or that enhance access to economic growth opportunities**

IDOT will track the number of airport, rail, port or intermodal projects that enhance access to markets and suppliers, or that enhance access economic growth opportunities.

→ **Number of studies funded that support economic development**

IDOT will track the amount of funding and the number of studies that support economic development in the state.

IMPLEMENTATION:

- **Commit IDOT staff to supporting economic development through transportation improvement projects and economic development grant programs**
Lead: IDOT Office of Planning and Programming
Partners: IDOT Districts, Illinois Department of Commerce and Economic Opportunity, economic development groups
- **Develop regular report on the economic benefits of Illinois transportation infrastructure investments**
Lead: IDOT Office of Planning and Programming
Partners: IDOT Districts, IDOT Office of Intermodal Project Implementation
- **Enhance the measurement of economy-related objectives in the PBPS tool using REMI and state traffic model development**
Lead: IDOT Office of Planning and Programming
Partners: IDOT Districts, Illinois Department of Commerce and Economic Opportunity, MPOs, Other planning partners

2.3.2 IMPLEMENTATION SUMMARY

The implementation actions to align transportation investments with the economy goal to achieve these practical improvements and efforts is essential to the success of this LRTP. The following (Table 2.1) are proposed to successfully implement the overarching economy goal and its five objectives:

Table 2.1: Implementation Actions

IMPLEMENTATION ACTION	LEAD	PARTNERS
<i>Encourage regional coordination in the identification of solutions to transportation problems to provide for efficient movement of freight, people and services supporting economic growth.</i>		
Commit IDOT staff to participate in the planning and programming processes of the 16 MPOs to support projects consistent with IDOT goals, including economic growth	IDOT Districts, IDOT Office of Planning and Programming, IDOT Office of Intermodal Project Implementation	MPOs
Expand consultation, coordination and outreach for development of multiyear plans and programs	IDOT Office of Planning and Programming, IDOT Office of Communication, IDOT Districts, IDOT Office of Intermodal Project Implementation	Illinois State Freight Advisory Council, MPOs, other planning partners
Conduct before-after studies of IDOT supported transportation projects and their economic impacts	IDOT Office of Planning and Programming	IDOT Office of Highway Project Implementation
Enhance the measurement of mobility-related objectives in the PBPS tool by developing a statewide traffic model	IDOT Office of Planning and Programming	IDOT Districts, MPOs, other planning partners
<i>Support projects that improve connectivity and coordination of services to enhance continuity and accommodate the efficient movement of people, goods and services across all modes to address intermodal efficiency.</i>		
Develop regular report on Illinois National Highway System Intermodal Connectors	IDOT Office of Planning and Programming	IDOT Districts, Illinois State Freight Advisory Council, MPOs, other planning partners
Develop regular report on Illinois Waterborne Transportation	IDOT Office of Planning and Programming	Illinois Department of Commerce and Economic Opportunity, Army Corps of Engineers, Illinois

IMPLEMENTATION ACTION	LEAD	PARTNERS
		State Freight Advisory Council, Port Districts/Terminals
Develop new marketing campaign for intercity passenger rail	IDOT Office of Communications	IDOT Office of Intermodal Project Implementation
<i>Support land use and transportation connectivity.</i>		
Develop regular report on land use and connectivity	IDOT Office of Planning and Programming	IDOT Districts, MPOs, other planning partners
Enhance the measurement of land use and connectivity-related objectives in the PBPS tool	IDOT Office of Planning and Programming	IDOT Districts, MPOs, other planning partners
<i>Identify and address issues affecting freight commerce and passenger services.</i>		
Continued participation and consultation with freight and passenger transportation industry partners through the Mid-America Freight Coalition, Illinois State Freight Advisory Council, CREATE program, Will County Freight Advisory Committee, and other stakeholder groups	IDOT Office of Planning and Programming	IDOT Districts, Illinois State Freight Advisory Council, Mid-America Freight Coalition, CREATE program partners, Will County Freight Advisory Council, MPOs, other planning partners
Develop and implement Illinois Competitive Freight Grant Program	IDOT Office of Planning and Programming	IDOT Districts, Illinois State Freight Advisory Council, MPOs, other planning partners
Develop research program with Illinois Universities targeting innovative freight vehicle improvement	IDOT Office of Planning and Programming	Illinois Universities
Establish Illinois State Autonomous Vehicle Advisory Council	IDOT Office of Planning and Programming	IDOT Districts, autonomous vehicle representatives, safety and insurance representatives
<i>Support economic development in Illinois communities.</i>		
Commit IDOT staff to supporting economic development through transportation improvement projects and economic development grant programs	IDOT Office of Planning and Programming	IDOT Districts, Illinois Department of Commerce and Economic Opportunity, economic development groups
Develop regular report on the economic benefits of Illinois transportation infrastructure investments	IDOT Office of Planning and Programming	IDOT Districts, IDOT Office of Intermodal Project Implementation
Enhance the measurement of economy-related objectives in the PBPS tool using REMI and state traffic model development	IDOT Office of Planning and Programming	IDOT Districts, Illinois Department of Commerce and Economic Opportunity, MPOs, Other planning partners

3. Livability

A transportation system that provides reliable, safe access to jobs, education, health care and goods and services is as important to rural communities as it is to urban communities. By integrating livability principles into transportation planning, Illinois can maximize the efficiency of existing transportation investments and provide improved access within the state and beyond. IDOT is approaching livability in transportation with innovative and practical strategies – using a collaborative transportation planning process to guide successful implementation.

Incorporating livability into transportation planning is not a new concept. Transportation stakeholders have been making places more livable through transportation initiatives for several generations. Although most livability initiatives are implemented at the regional level, a focus at the state level is just as feasible and beneficial. Therefore, IDOT is incorporating the goal of livability into the LRTP to help define transportation needs or problems prior to developing solutions.

LIVABILITY GOAL:

Enhance the quality of life across the state by ensuring that transportation investments advance local goals, provide multimodal options, and preserve the environment.

The *Livability in Transportation Guidebook* developed by the U.S. Department of Transportation's (USDOT) Federal Highway Administration (FHWA) and Federal Transit Administration (FTA)¹ describes livability in the following way:

Livability is about using the quality, location, and type of transportation facilities and services available to help achieve broader community goals such as access to good jobs, affordable housing, quality schools, and safe streets. This includes addressing road safety and capacity issues through better planning and design, maximizing and expanding new technologies such as intelligent transportation systems (ITS) and quiet pavements, and using travel demand management (TDM) approaches in system planning and operations. It also includes developing high quality public transportation to foster economic development, and community design that offers residents and workers the full range of transportation choices. And, it involves strategically connecting the modal pieces—bikeways, pedestrian facilities, transit services, and roadways—into a truly intermodal, interconnected system.

WHAT IS LIVABILITY?

The concept of livability is often used when describing initiatives related to improving quality of life while supporting broader sustainability goals. Livability consists of multidimensional issues relative to land use, environmental protection, enhanced mobility and accessibility, public health, and economic well-being.

Livability in transportation is about integrating the quality, location and type of transportation facilities. As such, livability can be understood as a set of flexible principles to guide transportation decision-making, including:

¹ https://www.fhwa.dot.gov/livability/case_studies/guidebook/livabilitygb10.pdf, accessed August 10, 2017.

- **Access:** Provide access to jobs, schools, recreational facilities, shopping and businesses via transportation and land-use planning.
- **Choice:** Offer a range of multimodal transportation options, affording people choices to destinations.
- **Quality of life:** Support the public's overall well-being – including health, social, economic and other types of well-being – within one's own community.

Fostering livability in transportation projects and programs results in improved quality of life; creates more efficient, robust and accessible transportation network; promotes active lifestyles; and serves the mobility needs of transportation users. Livable transportation systems provide better access to jobs, services and housing, thereby helping to reduce impacts on and enhance the natural and built environment, and support more efficient land-use development patterns. Furthermore, livable transportation systems accommodate a range of modes by creating mobility choice within balanced multimodal transportation networks.

LIVABILITY PRINCIPLES

Several national efforts and initiatives have goals that align with livability: context-sensitive solutions, new urbanism, complete streets and walkable communities. The national discussion of livability became more significant with the creation of the joint Interagency Partnership for Sustainable Communities between the USDOT, U.S. Department of Housing and Urban Development (HUD), and the Environmental Protection Agency (EPA) in June 2009. The initiative of this interagency partnership resulted in the identification of six principles of livability²:

- **Provide more transportation choices.** Develop safe, reliable and economical transportation choices to decrease household transportation costs, reduce our nation's dependence on foreign oil, improve air quality, reduce greenhouse gas emissions and promote public health.
- **Promote equitable, affordable housing.** Expand location- and energy-efficient housing choices for people of all ages, incomes, races and ethnicities to increase mobility and lower the combined cost of housing and transportation.
- **Enhance economic competitiveness.** Improve economic competitiveness through reliable and timely access to employment centers, educational opportunities, services and other basic needs by workers, as well as expanded business access to markets.
- **Support existing communities.** Target federal funding toward existing communities – through strategies like transit-oriented, mixed-use development and land recycling – to increase community revitalization and the efficiency of public works investments and safeguard rural landscapes.
- **Coordinate and leverage federal policies and investment.** Align federal policies and funding to remove barriers to collaboration, leverage funding, and increase the accountability and effectiveness of all levels of government to plan for future growth, including making smart energy choices such as locally generated renewable energy.
- **Value communities and neighborhoods.** Enhance the unique characteristics of all communities by investing in healthy, safe and walkable neighborhoods, whether they be rural, urban or suburban.

3.1 LIVABILITY AND IDOT

All states administer livability-related federal funding programs. Furthermore, some states have developed initiatives that combine multiple livability-related issues.³ There are a number of initiatives IDOT has undertaken in recent years to enhance livability and bring a greater focus on improving livability to projects selected and implemented across the state.

² https://www.fhwa.dot.gov/livability/case_studies/guidebook/livabilitygb10.pdf, accessed August 10, 2017.

³ https://www.fhwa.dot.gov/livability/fact_sheets/statedotsandlivability.cfm, accessed September 8, 2017.

These initiatives range from joint councils, to analytical tools, to cutting edge research and policy, some of which are described in greater detail below.

"Our roads are your main streets." – IDOT Secretary Randy Blankenhorn

I-LAST

IDOT links livability and sustainability together in the belief that sustainable transportation choices create a more livable environment. One example of this is the Illinois-Livable and Sustainable Transportation (I-LAST) Rating System and Guide. In January 2010, the American Council of Engineering Companies – Illinois (ACEC-IL), alongside IDOT and the Illinois Road and Transportation Builders Association (IRTBA), formed a Joint Sustainability Group and created I-LAST. The I-LAST is a practical manual for transportation infrastructure practitioners, and serves as both a rating system and a guide for livable and sustainable transportation infrastructure in Illinois. The purpose of I-LAST is as follows⁴:

- Provide a comprehensive list of practices that have the potential to bring sustainable results to highway projects.
- Establish a simple and efficient method of evaluating transportation projects with respect to livability, sustainability and effect on the natural environment.
- Record and recognize the use of sustainable practices in the transportation industry.
- Encourage the use of innovative and experimental sustainable concepts.

I-LAST is not an official policy or procedure IDOT follows, and is purely advisory in nature. I-LAST includes a point system for evaluating the following eight measures in a project at the beginning and end of the design phase, and during construction:

- Planning
- Design
- Environmental
- Water Quality
- Transportation
- Lighting
- Materials
- Innovation

The overall impact of I-LAST has been to serve as an inventory of best practices and to provide a simple framework for evaluating different scales and phases of transportation projects. IDOT continues to develop and encourage the use of the I-LAST rating system to incorporate livability into every phase of project development.

⁴ I-LAST, Illinois-Livable and Sustainable Transportation Rating System and Guide, September 27, 2012.

PERFORMANCE-BASED PROJECT SELECTION PROCESS

IDOT utilized a performance-based project selection process to evaluate and prioritize major expansion projects within the Proposed Multi-Year Highway Improvement Program (FY 2018-2023) in 2017. The process aligns with the goals of the LRTP. This informed and open decision-making process provides the following for state taxpayer dollars:

- Evaluates projects using a consistent set of criteria.
- Aligns funding with projects that provide high return on investment.
- Connects transportation solutions with corridor needs.
- Provides opportunity for ongoing public and stakeholder engagement.

The process focuses on a series of performance measures alongside community input on the importance of each goal. The following details the goals and supporting performance measures developed for the performance selection process⁵:

Traffic Operations/Congestion	Safety	Economic Development	Livability
<ul style="list-style-type: none">▪ Annual average daily traffic▪ Volume/capacity ratio▪ Hours of delay	<ul style="list-style-type: none">▪ Safer roads index▪ Safety benefit	<ul style="list-style-type: none">▪ Travel time reliability▪ Freight hours of delay▪ Intermodal accessibility▪ Economic development proximity index	<ul style="list-style-type: none">▪ Access to jobs▪ Access to multimodal choices▪ Active transportation accessibility▪ Environmental impact

The performance measures for livability are used to quantify the benefits of each major project in coordination with four other overarching transportation goals and subsequent performance measures. When funding becomes available, this process allows IDOT to select those projects that provide the greatest benefit for the cost. The overall purpose of this process is to identify what factors are most critical in driving needs and may help IDOT move forward with targeted spot improvements, delivering a portion of the original project's intended benefit for less money. Integrating livability into this process exhibits IDOT's emphasis on livability as it relates to the future transportation network within the state.

SUSTAINABLE HIGHWAY CONSTRUCTION (ILLINOIS CENTER FOR TRANSPORTATION)

IDOT, through an intergovernmental agreement with the Illinois Center for Transportation (ICT), uses research to support green and other sustainable programs throughout the transportation industry. IDOT and ICT have worked together to identify and implement sustainable solutions in various areas of the Department, and strive to incorporate sustainable aspects in each research project.

One major focus of this research is the performance of asphalt pavements with varying levels of recycled materials, including recycled binders, to ensure that these recycled pavements are not only utilizing fewer virgin resources, but also are providing the performance that the public requires on the roadways. IDOT and ICT have also collaborated on efforts to protect the water supply, both during construction and through the appropriate use of salt during the snow and ice season. ICT has also worked with IDOT to identify types of native vegetation that can be used to prevent soil erosion, and the most effective species of trees to populate wetland mitigation projects. Projects on LED lighting, bus on shoulder programs and the use of wind energy to power rest areas are also in various stages of implementation. These projects assist in mitigating the environmental impacts of IDOT's regular operating and maintenance of the transportation system. Mitigating environmental impacts enhances the livability of Illinois.

⁵ Transportation Investment Performance Selection presentation, May 17, 2017.

CONTEXT SENSITIVE SOLUTIONS (CSS)

The Federal Highway Administration defines CSS as a collaborative, interdisciplinary approach that provides all stakeholders the opportunity to develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic and environmental resources, while maintaining safety and mobility.⁶ In much simpler terms, the transportation network should be designed in response to its surroundings – its context. Therefore, CSS represents flexibility in the application of design controls, guidelines and standards to design a facility that is safe and meets the needs of all users.

IDOT's CSS policy was adopted in 2005. Since then, IDOT has used the CSS approach on numerous projects. IDOT's BDE Manual (July 2015, Chapter 19) outlines the CSS process and policy.⁷ Stakeholder involvement is a critical element of any good CSS process and helps to ensure that local issues, such as preservation of scenic landscapes or historic neighborhoods and the ability to walk, bike and access public transit, are considered with more traditional measures such as safety and congestion. A CSS process helps IDOT identify and address these local concerns and is useful for all transportation projects to improve the quality of life (i.e., livability) for all stakeholders involved. It is a method of involving the public early and often in projects before decisions are made. The CSS process works as a partnership between IDOT and stakeholders (e.g., business owners, homeowners, commuters) to come up with working solutions to transportation needs on projects.

In terms of livability, CSS provides an opportunity for IDOT to gain an understanding from stakeholders regarding accessibility issues of adjacent facilities related to projects (e.g., hospitals, airports). In some instances, these facilities are impacted, and CSS is imperative to ensuring operations and accessibility will not be affected, or will be minimally affected, by construction. For example, CSS was used in the I-74 upgrade project through Peoria, and allowed The Sisters of the Third Order of St. Francis Medical Center to provide input on how construction would be conducted in an effort to keep operations at the hospital minimally impacted. This included discussion on ways to keep the emergency room entrance open and timing on medical helicopter landings to prevent construction debris impacts.

3.2 IMPORTANCE OF LIVABILITY

The overall theme of what constitutes livability is challenging to define; however, transportation investments significantly impact livability within the state and its communities. Transportation projects in and of themselves are not economic development; rather, the communities and businesses supported by each project foster improved livability and drive economic growth.

There are often parallels between livability and the four other fundamental goals of the LRTP. The following details the importance of livability as it relates to the other LRTP goals:

- *Mobility* – IDOT's overarching goal for the state's transportation network is to move people and freight as efficiently as possible. Livability realizes the importance of all modes of transportation and the quality of space, urban or rural, that the transportation system supports.
- *Economic Growth* – Building and maintaining infrastructure can be cost-prohibitive, but by improving the efficiency and effectiveness of existing infrastructure, the livability results are realized. Strategic investments in infrastructure by IDOT increase the economic vitality and livability of the state.

⁶ <https://www.ite.org/css/>, accessed September 22, 2017.

⁷ IDOT BDE Manual, Chapter 19 (July 2015).

- *Stewardship* – Effective transportation planning consists of informed choices regarding future planning. Comprehensive planning can build consensus about how IDOT manages transportation investments and the correlating livability changes.
- *Resilience* – By understanding elements of the system that are at risk to natural or man-made disasters, IDOT can improve the response to extreme conditions. In doing so, IDOT increases the livability of the transportation network and ensures the resiliency of the system.

3.3 OBJECTIVES AND STRATEGIES

IDOT has developed five objectives to guide its investment decisions that support livability and the environment. Each objective contains recommended actions, performance measures, data sources and implementation strategies that IDOT will pursue. The LRTP content as a whole will be considered guidance for programming decisions; however, each objective below also denotes some of the more specific recommended actions/strategies that will be used to guide programming decisions. These have been denoted with **P** in Section 2.2.3.

The five objectives are:

1. Enhance collaboration and coordination between IDOT and regional and local transportation agencies and adjoining states in transportation decision-making.
2. Support projects that enhance the livability of Illinois – making connections between people, and the places they need to go.
3. Enhance the effectiveness of the multimodal transportation system through better traveler information, utilizing technology where possible, to maximize efficiency of existing facilities and services.
4. Enhance existing policies and practices related to under-served populations so outreach and inclusion are effective and go beyond meeting the minimum federal requirements.
5. Utilize a sustainable approach to transportation planning, design, construction and operation which promotes environmental stewardship and energy conservation.

3.3.1 OBJECTIVES, STRATEGIES, PERFORMANCE MEASURES AND DATA SOURCES

OBJECTIVE 1.

Enhance collaboration and coordination between IDOT and regional and local transportation agencies and adjoining states in transportation decision-making.

RECOMMENDED ACTIONS/STRATEGIES:

1.1 Collaborate with Metropolitan Planning Organizations (MPOs) and adjoining states to collectively benefit from joint multimodal planning efforts.

IDOT should explore options for a symposium to discuss potential partnerships for projects. The focus of the symposium would be to ensure agencies responsible for planning utilize the 3C planning process (Continuing, Comprehensive, and Cooperative) in transportation planning. Within the state, an example of a multimodal planning effort is CMAP's Local Technical Assistance Program, which directs resources to communities pursuing planning work that helps implement CMAP's Comprehensive plan.

1.2 Enhance coordination with MPOs on freight and multimodal planning.

IDOT should meet with MPOs to discuss specific freight and multimodal issues present within their boundaries. These meetings represent an opportunity to address freight needs and issues in a comprehensive fashion and integrate freight planning into the ongoing multimodal transportation planning process.

1.3 Seek partnerships with stakeholders to support the promotion of Illinois' intermodal system.

IDOT should assist in facilitating and organizing meetings with public and private stakeholders, users, and groups to promote the strategic investments and efficiency improvements made in all modes of transportation (e.g. air, rail, and water). The Context Sensitive Solutions (IDOT policy since 2005) concept aims to achieve a transportation network that is sensitive to and inclusive of all users, and should be one of IDOT's fundamental conduits to achieve this action.

PERFORMANCE MEASURES :

→ **Number of executed planning intergovernmental agreements**

An intergovernmental agreement (IGA) is any agreement that involves or is made between two or more governments in cooperation to solve problems of mutual concern. IDOT uses IGAs for cooperative planning, development review, or resource sharing between or among a broad range of governmental entities. IDOT will support any IGA that affords local government's opportunities to collaborate, pool resources, and improve the provision of services to citizens.

→ **Participation in industry stakeholder/user groups**

Focusing on the needs of stakeholders is an integral part of IDOT. Engaging with stakeholders helps IDOT to understand their needs and identify opportunities and challenges. Federal legislation does not require IDOT to start or maintain stakeholder groups; however, IDOT has found that such groups provide valuable input as a part of the state (or regional) public involvement process for transportation planning and programming, including for example the Illinois State Freight Advisory Council. IDOT will determine participation in stakeholder events via the review of meeting attendance records.

→ **Number of agencies utilizing a performance-based project selection process**

IDOT will provide support to agencies (i.e. MPOs) utilizing a performance-based project selection process that supports different types of projects designed to implement the objectives in this LRTP; then uses specific data driven evaluation criteria for each project type that are used for scoring and ranking projects.

IMPLEMENTATION :

→ Develop consistent outreach and engagement strategies for IDOT Districts to utilize on projects.

Lead: IDOT Office of Communications, IDOT Bureau of Design & Environment, IDOT Bureau of Local Roads and Streets

Partners: IDOT Districts

→ Facilitate and encourage the collaboration and development of a waterways forum to provide guidance to IDOT on ports and waterways issues.

Lead: IDOT Office of Planning and Programming

Partners: IDOT Office of Legislative Affairs

→ Encourage performance based project selections processes for local project selection.

Lead: IDOT Office of Planning and Programming

Partners: IDOT Bureau of Local Roads and Streets

→ Strengthen the existing Illinois State Freight Advisory Council (ISFAC).

Lead: IDOT Office of Planning and Programming, ISFAC

Partners: Public/Private Sector Representatives, Freight Stakeholders

OBJECTIVE 2.

Support projects that enhance the livability of Illinois – making connections between people, and the places they need to go.

RECOMMENDED ACTIONS / STRATEGIES :

2.1 Use performance-based project selection tool results to prioritize projects for funding. (P)

IDOT should explore what level of funding would be required to achieve a certain level of performance for indicators of livability. The relevance of the level is an important consideration in IDOT projects, given limited funding and the need to prioritize investments.

2.2 Develop livability measures to prioritize non-highway projects for funding. (P)

The Performance Based Project Selection tool is focused on capacity improvements for highway projects. IDOT should work to develop investment and policy priorities by identifying data on performance, along with public involvement and policy considerations, for how to prioritize non-highway projects. This process of prioritization should account for performance outcomes using analytical methods, as well as policy priorities, and concerns such as equity, environmental justice, and other considerations.

2.3 Consider enhanced multimodal connectivity when prioritizing projects for funding. (P)

Using a strategic prioritization and programming process allows IDOT to prioritize projects based on quantitative data addressing factors such as congestion and safety; however, it also accounts for assigning higher prioritization of projects with multimodal characteristics. This process would ensure IDOT projects and plans are developed, and funding is programmed in a consistent, goal-oriented manner.

PERFORMANCE MEASURES :

→ Percent of funding spent on projects that provide access to multimodal choices

Utilizing the For the Record (FTR), IDOT's annual report of the awards and obligations made for the Annual Illinois Highway Improvement Program, IDOT will be able to determine the percentage of funding spent on projects providing multimodal choices. IDOT will establish a percentage applicable to funding spent on projects providing multimodal choices on a regional level.

→ Number of multimodal connections within Illinois

Key regional areas in the state need to be connected to each other through multiple modes of transportation. A successful performance measure to evaluate multimodal connectivity will measure access and amenities. Therefore, IDOT will review its existing network inventory and quantify multimodal connections, and then work to increase connections to underserved populations by linking services to existing services at connecting points.

→ Number of livability measures used to prioritize projects

Performance measures are often used to assess the impacts of projects after they have been implemented; however, this measure aims to evaluate and prioritize projects *before* they take effect. IDOT will support a set of livability criteria used to evaluate projects and should be used to determine which project best support the livability goals and should therefore be prioritized for implementation.

IMPLEMENTATION :

→ Develop sustainability/livability "best practices" to be verified in the preliminary phases of project development.

Lead: IDOT Bureau of Design and Environment

Partners: IDOT Bureau of Local Roads and Streets

- Promote sustainable multimodal transportation services, in an effort to reduce single occupancy vehicle (SOV) travel.

Lead: IDOT Office Planning and Programming, IDOT Bureau of Operations

Partners: IDOT Office of Communications, IDOT Office of Highways Project Implementation

- Refine and review livability data and performance management for project prioritization.

Lead: IDOT Office Planning and Programming

Partners: Local Stakeholders

OBJECTIVE 3.

Enhance the effectiveness of the multimodal transportation system through better traveler information, utilizing technology where possible, to maximize efficiency of existing facilities and services.

RECOMMENDED ACTIONS / STRATEGIES :

3.1 Better understand the need for and implement Intelligent Transportation Systems (ITS) statewide and invest in proven ITS strategies. (P)

IDOT is currently updating the Illinois Statewide Architecture and Strategic Plan, which is a review of the current use of ITS in Illinois and provides recommendations to the integration and deployment of ITS. IDOT should support the overall advancement of ITS through investments in major initiatives, such as Connection Protection⁸, which provides real-time transit information to predict whether a user will make their connection.

3.2 Provide General Transit Feed Specification (GTFS) data to Google for inclusion in Google Maps.

Google Maps is a readily used geographic locator service that helps people plan trips; whereby, GTFS data is public transit agency data published to allow the public to view public transportation schedules with associated geographic information. IDOT should assist transit agencies in publishing GTFS data into Google applications, as well as other wayfinding applications.

3.3 Improve transit ridership levels and riders' experiences through the use of rider-oriented technology.

An example of rider-oriented technology includes a rider mobile application which identifies transit schedules, stops, services in an area, and schedules demand response trips. IDOT should assist in implementing this technology with the State's transit agencies. For example, the Regional Transportation Authority's (RTA) service boards (CTA, Pace, and Metra) have mobile and computer applications; specifically, Ventra, which helps manage and pay fares for many of the public transit providers in the RTA boundary.

3.4 Improve transit connectivity between service areas and providers. (P)

Stakeholders consistently request a convenient and seamless transit system. To that end, IDOT should work with transit providers to identify areas that lack services, and determine potential extensions of services to provide improved connectivity.

3.5 Promote multimodal transportation through the use of social media.

Transportation agencies are increasing their use of social media, which calls for a better understanding of social media usage characteristics. IDOT should engage in interactive communications through social media to improve the overall image of the agency. Additionally, IDOT should collaborate with transportation agencies throughout

⁸ https://www.its.dot.gov/infographs/connection_protection.htm, accessed 3/14/18.

the state, and utilize their social media platforms to further promote projects, endeavors, and other notable moments.

3.6 Centralize incident notification, to provide timely incident information to travelers.

IDOT should review the specialized needs for incident reporting and management required to efficiently capture, track, and automatically notify transportation users to relevant incidents and accidents. The review should be regionally and statewide, and result in an effort that could be implemented statewide, to assist in achieving IDOT's goal of zero fatalities.

3.7 Implement ITS architecture. (P)

IDOT should provide a framework to guide planning and interoperable deployment of ITS architecture and identify an interface for standardization. An example of efficient, interoperable, and cost-effective ITS architecture are regional traffic management centers (TMCs). Currently within Illinois, Lake, DuPage, and Kane counties, along with the City of Chicago, implement and operate arterial TMCs with great success. Since many major routes in the areas covered by the TMCs are under state jurisdiction, IDOT's cooperation has been critical to the success of the TMCs.

PERFORMANCE MEASURES :

→ Compare changes in vehicle speed, crash rates and traffic volumes from the incorporation of ITS in major metro areas

The focus of this measure, once reported, will be the accountability assessment of each IDOT District's ITS program. Data collected to assess this measure will include: IDOT traffic data and IDOT crash data. This performance measure is intended to assist IDOT in meeting the goals and objectives established by IDOT's ITS program.

→ Percentage of transit vehicles and routes supplying General Transit Feed Specification (GTFS) data

The successful use of this performance measure is linked to the availability of technical resources to generate the measure. IDOT will work with state transit providers to evaluate vehicle GTFS data at the regional and statewide levels. Analysis of this GTFS data can unveil important transit performance profiles such as ridership-by-hour, by-trip, and by-stop, trip activity ranking, stop activity ranking, and activity-by-period.

→ Creation or expansion of mobility management projects

IDOT will support state and local transportation agencies to utilize their data to effectively create or expand mobility management projects (i.e. Transit Riders Information Project in Champaign County, Illinois). A mobility management project manages a coordinated community-wide transportation service network comprised of the operations and infrastructures of multiple trip providers in partnership with each other. IDOT will track the number of or expansion of mobility management projects.

→ Create a quantitative and comprehensive framework to enhance transportation agency social media programs

Social media permeates every aspect of modern life, and transportation is no exception. Most transportation agencies currently measure social media effectiveness through built-in metrics such as the number of friends and followers or "likes", or by using third-party applications such as Google analytics. However, collecting this information does not provide meaningful analysis as to the understanding of the social media's true effectiveness. IDOT will work with state and local transportation agency data (e.g. CTA) to quantify and provide effective information to enhance their social media programs.

→ Review typical incident management times

As an agency, IDOT is focused on receiving the most benefit of its existing infrastructure and resources, and key to accomplishing this is understanding the performance of the system. Through the review of IDOT's incident reports, IDOT will determine the performance of incident management (e.g. notification, response, duration, clearance and recovery time) and develop a plan for moving forward with enhancing any issues identified in incident management.

IMPLEMENTATION :

- Utilize the state ITS Architecture and Strategic Plan Update to align funding for planning and installation of ITS strategies and improvement of existing facilities.
Lead: IDOT Office of Planning and Programming, IDOT Bureau of Operations
Partners: MPOs, Counties, Municipalities
- Collaborate planning efforts between transit providers to increase service connectivity, technological improvements for riders and overall promotion of multimodal transportation.
Lead: IDOT Office of Intermodal Project Implementation, IDOT Bureau of Planning
Partners: Regional Transportation Authority, Counties, Transit Providers
- Review current incident management and notification systems and align funding for improvements.
Lead: IDOT Bureau of Operations, IDOT Office of Communications
Partners: IDOT Bureau of Safety Programs and Engineering
- Support transit agencies providing GTFS data to Google.
Lead: IDOT Office of Intermodal Project Implementation
Partners: IDOT Bureau of Planning
- Research how social media can be used to enhance the transportation system and provide best practices/resources to local transportation agencies.
Lead: IDOT Office of Communications
Partners: IDOT Bureau of Local Roads and Streets, IDOT Office of Planning and Programming

OBJECTIVE 4.

Enhance existing policies and practices related to under-served populations so outreach and inclusion are effective and go beyond meeting the minimum federal requirements.

RECOMMENDED ACTIONS / STRATEGIES :

- 4.1 Review and enhance existing IDOT policies and practices related to environmental justice and under-served populations.**
Many government agencies are responsible for engaging environmental justice and under-served populations. IDOT should look to best practices and compare existing efforts to ensure the state is utilizing the best methods available and the use of best practices are supported by IDOT policy.
- 4.2 Improve effectiveness in receiving feedback from under-served populations during the transportation planning and design process.**
IDOT should ensure there are multiple avenues for receiving public feedback on projects - from digital engagement to public meetings, and postcards to paper comment forms - IDOT should make it easy and simple for the public to tell them what they think about projects and policies. This also means project information should

be conveyed in meaningful, non-technical ways so everyone understands the project scope and how it will support the local community.

4.3 Identify unique ways to mitigate impacts of new projects on under-served populations.

Effective outreach with under-served populations will not only provide opportunities to participate, but will increase understanding of differing perspectives related to community-specific issues and concerns not previously known, identify potential controversies and issues, and develop viable solutions to mitigate adverse impacts and to address existing transportation problems. Strategies, methods, approaches, and techniques that can be used to reach members of under-served populations may include: utilizing existing stakeholder networks, specialized meetings, and incorporating best practices that go beyond traditional methods and techniques.

4.4 Explore options to implement supply and demand based pricing to support additional service or infrastructure. (P)

An efficient and flexible transportation system that meets mobility demands is essential for the health of Illinois' economy and standard of living. IDOT should provide transportation alternatives for under-served populations through assessing gaps in service where demand is high, adjusting pricing based on ability to pay for services and building infrastructure in areas that have grown.

4.5 Develop a public involvement manual for use on transportation projects.

IDOT will work with the Office of Communications, Bureau of Outreach, BDE, Highways, and the District offices to develop public engagement standards and templates that will make it easier for District staff to have the support needed to effectively engage the public throughout the life of a project.

PERFORMANCE MEASURES :

→ Number of policies and practices changed to better accommodate under-served populations

Communities across the state have expressed the need to provide access and enhanced livability to all areas of the state. Under-served populations should be considered in the planning phases of all transportation projects – both roads and transit. IDOT should ensure outreach strategies and methods afford everyone the opportunity to be engaged at the outset of transportation planning initiatives. IDOT's Bureau of Design and Environment (BDE) manages the statewide design manual for projects (<https://idot.illinois.gov/Assets/uploads/files/Doing-Business/Manuals-Guides-&-Handbooks/Highways/Design-and-Environment/Illinois%20BDE%20Manual.pdf>). The BDE Manual provides uniform policies for IDOT and consultant personnel, to prepare the required documentation in the development of a typical roadway project.

→ Number of outreach opportunities specifically directed at under-served populations

As the state develops its plans and programs, staff should work to seek out underserved-populations and find opportunities to engage local stakeholders.

→ Number and availability of affordable alternative modes of transport for under-served populations

The number and availability of alternative modes of transportation is largely governed by local agencies and is directly impacted by the resources available to them. To achieve this recommended strategy, IDOT will have to work with partner agencies to align funding, policies, and performance standards to support the recommended actions, and also coordinate on tracking the number and availability. To this point, IDOT tracks project information through numerous documents and databases including, the Statewide Transportation Improvement Program (STIP) Multi-Year Multi-Modal Program (MYP), and For the Record. The MPOs develop a Transportation Improvement Program which includes the projects identified in the MYP, including any changes to projects.

IMPLEMENTATION:

- Facilitate communication and promote collaboration between under-served population areas and transit agencies and organizations via the state MPOs.

Lead: IDOT Office of Planning and Programming

Partners: MPOs, Transit Agencies, Municipalities, Under-Served Population Stakeholders

- Update IDOT policies and practices related to environmental justice and under-served populations.

Lead: IDOT Bureau of Design and Environment, IDOT Office of Communications, IDOT Office of Planning and Programming

Partners: Environmental Justice Population Organizations, MPOs, Under-Served Population Stakeholders

OBJECTIVE 5.

Utilize a sustainable approach to transportation planning, design, construction and operation which promotes environmental stewardship and energy conservation.

RECOMMENDED ACTIONS/STRATEGIES:

5.1 Incorporate and support sustainable technology in operations of current and future IDOT assets, including multimodal transportation services. (P)

IDOT is committed to incorporating sustainable solutions in the operation of their transportation system. Current solutions implemented by IDOT include the Curb Your Car Week event and International Walk to School Day, or the use of hybrid and alternative fuel vehicles in the IDOT vehicle fleet. Currently, IDOT recognizes and records the use of sustainable practices statewide; and, IDOT should continue this effort as sustainable practices become more typical. IDOT should perform an audit of its facilities, focusing on utility usage/consumption, waste management, and recycle practices. The results of the audit should be used as guidance to determine areas for improvement.

5.2 Increase the use of recycled materials in construction projects.

Research has proven that recycled pavements offer the same durability as non-recycled pavements. That said, IDOT currently uses recycled pavements in projects, when applicable, and should continue to be used and improved upon. Furthermore, IDOT should continue to identify and develop methods for quality assurance of pavement aggregate substitutes that do not lessen the durability or performance of pavement.

5.3 Reduce emissions by implementing performance-based project selection. (P)

IDOT should develop guidance for integrating reducing emissions into a performance-based funding approach, taking into consideration appropriate emission reduction performance measures, and using performance measures to support investment choices and enhance decision-making. The guidance should include consideration of reducing greenhouse gas emission reduction.

5.4 Support reduction in the use of single occupancy vehicles (SOVs). (P)

The fundamental strategy to reduce travel demand, or to redistribute this demand is through the use of Transportation Demand Management (TDM). TDMs aim to alleviate highway congestion and traveler delay, which can be achieved through a variety of strategies, including: carpooling/ride shares, traveler information, and pedestrian/bike facilities. IDOT should determine which metropolitan areas would benefit from the promotion of TDM programs.

5.5 Realize positive air quality gains and reduced energy consumption with efficient passenger and freight operations.

Anticipated development of the Illinois transportation network will inevitably lead to the increase of transportation energy consumption, resulting in a substantial growth on transportation energy demand. IDOT needs to evaluate current emissions and consumption to determine areas where improvements can be made.

PERFORMANCE MEASURES :

→ Number of sustainability audits of IDOT facilities

In an effort to be fiscally and environmentally responsible, IDOT is continuously working to improve its sustainability practices. IDOT will conduct sustainability audits of its facilities to assess the application of sustainability practices (e.g. pounds of recycled materials per year) at each facility. In support of this, IDOT will determine a reasonable number of energy efficient facilities to be constructed annually, to assist in reaching overall sustainability goals and objectives.

→ Percentage of recycled materials used on construction projects

The problems associated with the environmentally safe and efficient disposal of waste continue to grow. The highway construction industry can effectively recycle large quantities of the construction material used in transportation projects. IDOT-Construction Services will calculate the percentage of recycled materials used on construction projects within a one-year time period.

→ Percent of non-SOV travel*

Percent of Non-SOV travel, where SOV stands for single-occupancy vehicle, refers to a measure of the single occupancy vehicle mode share. FHWA provides data options for use in calculating this federally required performance measure, per MAP-21. IDOT Office of Planning and Programming will calculate the percentage of non-SOV travel on a two year basis.

→ Total emissions reductions of Congestion Mitigation and Air Quality (CMAQ) funded projects*

Total emissions reduction refers to the 2-year and 4-year cumulative reported emission reductions for all projects funded by CMAQ funds, of each criteria pollutant and applicable precursors under the CMAQ program for which the area is in non-attainment or maintenance. IDOT will utilize data from the non-attainment areas within Illinois to calculate emissions reductions on CMAQ projects, which is federally required per MAP-21.

→ Percent of per capita emissions of greenhouse gases reduced

IDOT is taking an innovative approach to reviewing transportation air quality. Traditional transportation air quality analysis has only considered localized impacts of short-lived pollutants, but using the FHWA's Infrastructure Carbon Estimator (ICE) tool, IDOT will analyze air quality impacts in a non-traditional manner. FHWA's ICE is a spreadsheet tool that estimates the lifecycle energy and greenhouse gas emissions from the construction and maintenance of transportation facilities. This tool will help IDOT in its planning and pre-engineering analysis of projects.

→ Number of energy/fuel-efficient vehicles added annually to IDOT and other fleets statewide

In an effort to decrease transportation costs for IDOT vehicles, more fuel-efficient vehicles have been introduced to the statewide fleet in recent years. IDOT will track the number of fuel-efficient vehicles utilizing IDOT fleet data that is updated on a regular basis.

→ Number of TDM efforts implemented and coordinated in Illinois.

Transportation Demand Management (TDM) refers to various strategies that change travel behavior in order to increase transport system efficiency and achieve specific planning objectives. There are numerous TDM

strategies using various approaches to influence travel decisions. Some improve transportation options; some provide incentives to change travel mode, time, or destination; others improve land use accessibility; some involve transport policy reforms and new programs that provide a foundation for TDM. IDOT’s Office of Planning and Programming will work with regional transit and transportation agencies (e.g. MPOs) to determine estimates for TDM efforts currently incorporated in their transportation network. Specifically, IDOT will study opportunities for collaboration and enhancement of the TDMs used throughout the state.

*Federally required performance measures per MAP-21.

IMPLEMENTATION :

- Incorporate sustainable solutions in the operation of IDOT’s Transportation System.
Lead: IDOT Office of Highway Project Implementation
Partners: IDOT Office of Planning and Programming
- Facilitate the use of sustainable technology and update requirements on usage of the technology in existing and future IDOT guidance (i.e. plans and manuals).
Lead: Office of Highway Project Implementation
Partners: Local Stakeholders, IDOT Bureau of Local Roads and Streets
- Enhance Performance Based Project Selection by consideration of metrics for air quality improvement.
Lead: IDOT Bureau of Programming
Partners: IDOT Bureau of Planning

3.3.2 IMPLEMENTATION

Implementation of livability into transportation is fundamentally focused on improving system performance and coordinating funding efforts. Aligning transportation investments with the livability goal to achieve these practical improvements and efforts is essential to the success of this LRTP. The following (Table 3.1), delineated into four categories, are proposed to successfully implement the overarching livability goal and its five objectives:

Table 3.1: Implementation Actions

IMPLEMENTATION ACTION	LEAD	PARTNER(S)
<i>Collaboration/Outreach & Engagement</i>		
Develop consistent outreach and engagement strategies for IDOT Districts to utilize on projects.	IDOT Office of Communications, IDOT Bureau of Design and Environment, IDOT Bureau of Local Roads and Streets	IDOT Districts
Encourage performance based project selection processes for local project selection.	IDOT Office of Planning and Programming	IDOT Bureau of Local Roads and Streets
Develop sustainability/livability “best practices” to be verified in the preliminary phases of project development.	IDOT Bureau of Design and Environment	IDOT Bureau of Local Roads and Streets
Refine and review livability data and performance management for project prioritization.	IDOT Office of Planning and Programming	Local Stakeholders
Support transit agencies providing GTFS data to Google.	IDOT Office of Intermodal Project Implementation	IDOT Bureau of Planning
Facilitate communication and promote collaboration between under-served population areas and transit agencies and organizations via the state MPOs.	IDOT Office of Planning and Programming	MPOs, Transit Agencies, Municipalities, Under-Served Population Stakeholders

IMPLEMENTATION ACTION	LEAD	PARTNER(S)
Update IDOT policies and practices related to environmental justice and under-served populations.	IDOT Bureau of Design and Environment, IDOT Office of Communications, IDOT Office of Planning and Programming	Environmental Justice Population Organizations, MPOs, Under-Served Population Stakeholders
<i>Plans/Guidance</i>		
Facilitate and encourage the collaboration and development of a waterways forum to provide guidance to IDOT on ports and waterways issues.	IDOT Office of Planning and Programming	IDOT Office of Legislative Affairs
Research how social media can be used to enhance the transportation system and provide best practices/resources to local transportation agencies.	IDOT Office of Communications	IDOT Bureau of Local Roads and Streets, IDOT Office of Planning and Programming
Incorporate sustainable solutions in the operation of IDOT's Transportation System.	IDOT Office of Highway Project Implementation	IDOT Office of Planning and Programming
Facilitate the use of sustainable technology and update requirements on usage of the technology in existing and future IDOT guidance (i.e. plans and manuals).	Office of Highway Project Implementation	Local Stakeholders, IDOT Bureau of Local Roads and Streets
Enhance Performance Based Project Selection by consideration of metrics for air quality improvement.	IDOT Bureau of Programming	IDOT Bureau of Planning
<i>Multimodal</i>		
Strengthen the existing Illinois State Freight Advisory Council (ISFAC).	IDOT Office of Planning and Programming, ISFAC	Public/Private Sector Representatives, Freight Stakeholders
Promote sustainable multimodal transportation services, in an effort to reduce single occupancy vehicle (SOV) travel.	IDOT Office of Planning and Programming, IDOT Bureau of Operations	IDOT Office of Communications, IDOT Office of Highways Project Implementation
Collaborate planning efforts between transit providers to increase service connectivity, technological improvements for riders and overall promotion of multimodal transportation.	IDOT Office of Intermodal Project Implementation, IDOT Bureau of Planning	Regional Transportation Authority, Counties, Transit Providers
<i>Funding</i>		
Utilize the state ITS Architecture and Strategic Plan Update to align funding for planning and installation of ITS strategies and improvement of existing facilities.	IDOT Office of Planning and Programming, IDOT Bureau of Operations	MPOs, Counties, Municipalities
Review current incident management and notification systems and align funding for improvements.	IDOT Bureau of Operations, IDOT Office of Communications	IDOT Bureau of Safety Programs and Engineering

4. Mobility

A robust transportation system that offers multiple modal options, whether by car, train, bus, bicycle, or foot and high-quality infrastructure is crucial to achieving mobility of people and goods. Planning for a large state with a diverse mix of urban and rural areas is challenging. Meeting the transportation and mobility needs of such a diverse population is practicable; but, requires a comprehensive approach to transportation planning.

Mobility is a core component of the vision of the Illinois' LRTP. Furthermore, IDOT's vision for mobility is to develop a multimodal network, moving people from place to place to support economic development. The strategies and implementation programs outlined in this chapter look at all modes of transportation in Illinois in an effort to link transportation and planning intended to improve mobility, while also managing existing issues.

MOBILITY GOAL:

Support all modes of transportation to improve accessibility and safety by improving connections between all modes of transportation.

WHAT IS MOBILITY?

The concept of mobility is being able to get to the places you need to go. Achieving mobility requires the coordination of strategic, long range land use planning and transportation planning. The level of performance of a transportation system/network can be evaluated by means which relate to users (e.g. Was the route congested?), modes (e.g. What mode did you use?), land use, cost (How much did it cost?), environmental impacts, and more. Modes of transport are largely considered mobility as it is the main component in the movement of people and freight. A decrease in mobility performance, or transit modes that support mobility, can result in increased user costs. These include fuel consumption increases, time in traffic congestion, and an overall negative quality of life.

Mobility encompasses the interactions between all modes of transportation and are increasingly important for the movement of people and goods. A well-designed transportation network provides mobility choices for users, to move both goods and people, alike.

From the user perspective, mobility is the ability to utilize the transportation network effectively to reach access points via effective multimodal transitions. From a goods perspective, mobility is the ability to utilize the transportation network to effectively provide the delivery of products throughout multimodal connections to their end users. This, in turn, will continue to drive economic activity in Illinois.

MOBILITY OF PASSENGERS AND GOODS IN ILLINOIS

Illinois boasts an extensive transportation network, comprised of numerous transportation modes and publicly- and privately-owned facilities. This includes the state's substantial roadway network, multiple aviation facilities, pedestrian and bicycle infrastructure, public transit entities, the second-largest rail and freight system in the nation, and a number of waterways, canals, and ports. The interconnected nature of this network is defined as multimodal connectivity.

The overall system continues to grow and improve due in part to Illinois' central location within the United States and its distinction as a top agricultural and industrial producer. The progress is most notable near the larger population regions

surrounding Chicago to the north and St. Louis to the south. This system of interconnected transportation methods is crucial to providing and maintaining accessible and reliable transportation for both people and goods.

Optimized mobility is of particular interest to commercial and private passengers, especially those traveling on urban corridors or heavily traveled rural corridors that experience heavy congestion. Mobility options such as passenger rail, commuter rail, bicycle and pedestrian facilities are increasingly important in efforts to manage congestion, reduce energy consumption and improve system operations. Each of these options are essential to the success of mobility within the state.

The availability of transportation options contributes to improved quality of life in communities across the state. In general, a lack of choice in a transportation network and subsequent reduction in mobility forces users to choose driving as their only mode of transportation. While this is not problematic for everyone, those who are unable to drive (due to age, disability, vehicle access, etc.) are left with an absence of mobility. As a result, the lack of mobility for users impedes economic activity by reducing the transportation options for people to get to work, appointments and run daily errands.

The structure of the rural economy is different from urban areas, requiring different transportation infrastructure. Mobility is both the willingness and capability for movement, and the location decisions related to mobility create relationships which require continuous changes to the infrastructure: by physical change (e.g. construction), space (e.g. living or working), or local connection (e.g. identity, habit, integration). Hence, mobility is fundamental to one’s locational behaviors. For example, a rural resident will have a different set of challenges than an urban resident when accessing health care providers and services. Furthermore, an urban resident on the edges of a city will experience challenges different than the resident living in the city’s central business district (e.g. downtown). These challenges can range from limited choice, options to access, and even quality of health care providers and services. Within Illinois, these challenges are most apparent in downstate Illinois, particularly in the more rural portions of the state. Reviewing mobility within the various areas of the state in terms of the context of urban and rural, results in several overall challenges (see **Table 4.1**).

Table 4.1: Mobility and Context of the State

AREA	CHALLENGES RELATED TO REDUCED MOBILITY OPTIONS
Rural	<ul style="list-style-type: none"> ▪ Reliable and cost-effective transit service is a challenge. ▪ Wide range of stakeholders. ▪ Complementary programs are typically unsupported.
Small Urban	<ul style="list-style-type: none"> ▪ Political boundaries limit mobility, due to counties and municipalities operating specific services. ▪ Dispersed land-use patterns create challenges to providing service in growing communities. ▪ Regional connectivity.
Large Urban	<ul style="list-style-type: none"> ▪ Specialized and human services transportation services are limited. ▪ Services lack coordination. ▪ Ease of connections between modes or service providers.

In terms of the future, mobility of the Illinois transportation network is anticipated to be greatly impacted by the development and deployment of autonomous vehicles. Currently, many automobiles have features such as automatic braking, collision warning and lane departure warning, which all aid in safe driving on the roads. Future technological advances will extend these capabilities and foster an environment for others to create autonomous vehicles in which the vehicle can take over the task of a human driver. Autonomous vehicles will fundamentally impact passenger travel and

improve safety, productivity and mobility of people. In general, time used driving could be utilized in a more constructive way, and travel times could decrease. Those who cannot drive, including our aging populations, may gain increased access and mobility, and autonomous taxi services may increase mobility for those who do not own a vehicle. Several of the contextual identifiers outlined in Table 4.2 for why mobility is problematic could potentially be addressed with the development of autonomous vehicles. The creation of multimodal mobility platforms offering mobility as a service is an essential way to connect urban mobility services now and in the future. While a fully automated vehicle is still under development, it will eventually be integrated onto roadways as technology advances. For example, the National Highway Traffic Safety Administration (NHTSA) has already developed several guidance documents in an effort to help states with legislation, procedures and conditions for automated driving systems.¹

3.1 MOBILITY AND IDOT

An overarching role for IDOT is to provide and maintain a transportation network that offers options and alternatives for its users. IDOT is committed to maintaining a safe environment and improving the quality of life for transportation users and the surrounding communities. IDOT enables this process through its integrated and engaging multi-modal planning and programming approach. Example projects that support this approach include CREATE², the 606³, and Bikeshare. Through this approach, it is the Department's goal to provide needed and dynamic logistical links among highway, rail, public transportation, air, water, bicycle and pedestrian options. Each of these multimodal options are described further in the TSU, which is an appendix of this plan.

IDOT fundamentally supports mobility, and in turn, all other goals of this plan, by exploring opportunities to combine resources with other units of government, take advantage of technological enhancements and continue to research best practices. That said, IDOT recognizes the importance of the state-local partnership when considering mobility of the transportation network and strives to promote a dynamic planning relationship with all local agencies. Therefore, the IDOT District-level planning process is essential to improved mobility at the local level. To effectively plan for improved mobility across the state and beyond, IDOT District planning efforts are a coordinated effort with local Metropolitan Planning Organizations (MPOs) and local officials. IDOT consults with local officials on the allocation of funding, transportation planning, highway and transit program development, project development and other transportation issues.⁴

While the following sections detail what IDOT's role is related to mobility in terms of highways and bridges, transit, aviation, and railways; if we are to achieve the vision set out for mobility at the outset of this chapter, more must be done to integrate all modes of transportation. The future must include local priorities, comprehensive planning, and funding in order to be successful.

HIGHWAYS AND BRIDGES

IDOT continuously assesses and identifies the highway system's needs for improvement, repair and strategic expansion. This involves road and bridge performance-based assessments, identification of high crash locations, identification of segments with regular congestion issues, and pavement/structural condition reports. It is through this data gathering and analysis that IDOT is able to take a comprehensive approach to planning for state-maintained highways and bridges.

¹ NHTSA website, <https://www.nhtsa.gov/technology-innovation/automated-vehicles>, accessed on September 21, 2017.

² The CREATE program identifies approximately 70 improvement projects to provide over \$31 billion in benefits in the Chicago metropolitan region.

³ The 606! is 2.7 miles of multi-use recreational trail and park alternative transportation corridor in the City of Chicago. <https://www.the606.org/>, accessed January 9, 2018.

⁴ IDOT, Local Planning website, <http://www.idot.illinois.gov/transportation-system/local-transportation-partners/local-planning/index>, accessed September 21, 2017.

The majority of the planning for highways and bridges can be found in the annual multi-year program, called the Proposed Highway Improvement Program for fiscal years 2018 – 2023 (MYP). This program details how it will invest transportation dollars in the state and local highway system.⁵ IDOT anticipates spending a total of \$11.65 billion over the six-year 2018-2023 program horizon. However, the majority of the funds will go to improve the existing system. Due to limited dollars for expansion of the system, IDOT utilized a performance-based project selection process to evaluate and prioritize major expansion projects within the MYP in 2017. The process aligns with the goals in this LRTP.

IDOT is also in the process of developing the Transportation Asset Management Plan (TAMP), another planning tool for highways and bridges. The TAMP is a data-driven and performance-based document, required by FHWA, outlining investment strategies for preserving existing assets over the duration of 10 years. The intent of the plan is to achieve a desired state of acceptable condition over the life cycle of the assets. A draft of the IDOT TAMP is anticipated in April 2018, with implementation of the TAMP no later than June 30, 2019. Asset management planning is important, as it keeps infrastructure in better overall condition, prevents projects from being delayed until action is absolutely needed, and consistent asset investments overtime helps grow the economy and ensures the system remains competitive.

TRANSIT

IDOT's role in Illinois' transit system includes the oversight of state and federal funding for transit projects across the state. IDOT reviews proposed capital projects submitted by transit operators in downstate and northeastern Illinois.⁶ It is anticipated that IDOT will spend \$1.85 billion in funding for transit-centric projects and improvements between FY 2018-2023. The recently completed, Illinois Statewide Public Transportation Plan, which will include a discussion on correlating transit with other modes, and depict improvements for mobility in Illinois.

IDOT's role in the transit system is not always tangibly defined as with highways. For example, IDOT invests in the planning of transit by identifying strategies and reviewing the public's relationship with transit. Specifically, IDOT looks at transit as a way to create productivity by enhancing workforce accessibility, or reviews how transit can reduce the amount of money spent to move people. Ultimately, IDOT's role with transit is more planning driven and economically-focused. Transit helps drive the economy, as it provides access to jobs, schools, appointments, and various other activities.

The CTA 2016 Annual Ridership Report stated that it experienced its highest one-day rail ridership total ever when it provided 1.15 million rail rides for the World Series Championship parade.⁷

In terms of transit and IDOT, of note, is a result from the recent (2016) annual Illinois Traveler Opinion Survey conducted by IDOT. The purpose of the survey is to provide a snapshot of public opinion in a given year on multiple issues related to transportation in Illinois. The survey aims to provide IDOT with actionable insights which aid in future planning. Most notable from the 2016 survey is how strongly those surveyed support public transit.⁸ Further public support is depicted in actual ridership numbers across the state. In northeastern Illinois (e.g. Chicago region) in 2015, the Regional Transportation Authority (RTA) recorded 634.9 million trips, with the Chicago Transit Authority (CTA) having a ridership of

⁵ FY 2018 – 2023 Proposed Highway Improvement Program, IDOT, May 2017.

⁶ Transforming Transportation for Tomorrow FY 2015-2020 Proposed Multimodal Transportation Plan, page 16-17, IDOT, April 11, 2014.

⁷ 2016 Calendar Year, Annual Ridership Report, CTA, February 1, 2017.

⁸ 2016 Illinois Traveler Opinion Survey, IDOT, December 2017, page 3.

516.0 million trips, Metra had 81.6 million trips, and Pace made 33.1 million trips.⁹ Downstate, urban bus systems provided nearly 40 million rides in 2013, while six million demand response rides were provided in the same year.¹⁰

AVIATION

Airports may not be the first thing most people associate with IDOT; however, IDOT plays an important role in the development of airports across the state. Airports are one of the most vital economic assets and transportation links in a state. Illinois has ten primary airports (i.e. airports that have schedule enplanements of at least 10,000 passengers within a single calendar year); Chicago O'Hare International is consistently rated as one of the busiest airports in the nation. In 2014, O'Hare was ranked third in passenger boardings and fourth in freight movement, moving more than 3.7 million tons¹¹, and Chicago Rockford International Airport is a key freight hub for the United Parcel Service (UPS).

Likewise, airports are critical freight connectors, and are a fundamental conduit to bringing freight shipments to the state. Goods are commonly shipped by truck to and from airports to sorting centers throughout the state. Therefore, as road and rail networks improve, airports are able to capitalize and develop as national freight nodes.

Since Illinois participates in the State Block Grant Program (SBGP), IDOT regulates and monitors all airport activity in the state of Illinois for airports classified as "other than primary." Activity includes the coordination and implementation of programs focused on improving the state's airport and aviation facilities and the prioritization of safety, system preservation, capacity and operational abilities, airport upgrades, and capacities. The data for the airport system is collected from IDOT's annual airport pavement condition survey, the Airport Inventory Report, and airport inspections results.

RAILWAYS

IDOT partners with the Federal Railroad Administration (FRA), privately owned railroads, Amtrak and local governments to provide rail passenger service, operate stations and improve freight mobility by investing in rail infrastructure. The FY 2015-2020 Proposed Multimodal Transportation Program (a component of the FY 2015-2020 MYP) includes a \$3.090 billion component reserved for railroad improvements. IDOT is responsible for assisting in project development, overseeing the funding and planning of new or enhanced high-speed and conventional-speed passenger rail routes, mitigating the negative impacts of rail abandonment and attracting new rail passengers.

The management of the movement of goods is an essential aspect of mobility and livability needs. Illinois has 46 freight railroad companies operating within the state and is the only state in which all seven Class 1 railroads operate. The Chicago region is the world's third busiest intermodal hub, covering 16,000 acres where six of the seven Class I railroads converge, and where nearly a quarter of the nation's rail shipments arrive or pass through.¹² Further freight details are outlined in the TSU (Appendix B). To that end, IDOT is a key partner of the Chicago Region Environmental and Transportation Efficiency Program (CREATE) program, a public-private partnership between the U.S. Department of Transportation, IDOT, the City of Chicago Department of Transportation, Cook County, the Association of American Railroads, Amtrak, Metra, and the six Class I freight railroads in the Chicago area (BNSF Railway, Canadian Pacific Railway, Canadian National Railway, CSX Transportation, Norfolk Southern Corporation, and Union Pacific Railroad), the Belt Railway Company of Chicago, and the Indiana Harbor Belt Railroad. The CREATE partners will invest billions to increase rail infrastructure efficiency and residents' quality of life by improving transportation flow through the Chicago region. It

⁹2015 Regional Ridership Report, RTA.

¹⁰ <http://www.idot.illinois.gov/transportation-system/Network-Overview/transit-system/index>, IDOT, January 4, 2018.

¹¹ Aviation in Illinois Fact Sheet, IDOT, April, 2016.

¹² https://www.fhwa.dot.gov/ipd/project_profiles/il_create.aspx, January 5, 2018.

will reduce rail and motorist congestion, improve passenger rail service, enhance public safety, promote economic development, create jobs, improve air quality, and reduce noise from idling or slow-moving trains. New overpasses and underpasses will reduce the time Chicago-area motorists spend waiting at railroad crossings, reduce accidents at existing grade crossings and improve emergency vehicle routes. Rail commuter travel times, schedule reliability and capacity will improve as well. Emissions from cars, trucks and locomotives will be greatly reduced, as will noise from idling or slow-moving trains. Green space will also be restored along Lake Michigan.¹³

The CREATE program identifies approximately 70 improvement projects to provide over \$31 billion in benefits. A majority of the projects are grouped along or near four rail corridors running through the Chicago region. Currently, 28 of the 70 overall projects are considered complete. Example completed projects at the core of keeping freight moving in the Chicago area include: adding a new track on a new bridge in Melrose Park, Illinois, affecting 27 freight trains; construction of a rail flyover in Chicago, Illinois, affecting 46 freight trains, 78 Metra trains, and 14 Amtrak trains; and, grade separation of tracks in Bridgeview, Illinois, affecting 80 freight trains. Furthermore, the CREATE program will help address the increase of freight rail trade in Chicago, which is anticipated to double from the year 2012 to 2045.¹⁴

3.2 IMPORTANCE OF MOBILITY

Just as previous transportation decision makers invested in the interstate highway system to provide for the mobility needs of future generations, IDOT is investing in the State's transportation system to provide a legacy for future users. This LRTP is intended to guide the future legacy by reviewing the State's mobility, identifying infrastructure investments, and realizing various new innovative initiatives. Together, with the other LRTP goals, mobility within the state will improve and the future transportation legacy of the state could be achieved. The following details the importance of mobility as it relates to the other LRTP goals:

The ultimate goal of transportation is 'access'; one's ability to reach desired goods, services, and activities. Transportation decisions often involve tradeoffs between different forms of access, which assumes mobility is an end in itself, rather than a means to an end. Therefore, the context of mobility may be perceived differently when reviewed in parallel with the four other goals of the LRTP.

- *Livability* – Mobility is crucial to the livability of a state. Positive influences in mobility in the state will lead towards greater livability.
- *Economic Growth* – Building new transportation infrastructure generates construction and engineering jobs in the short-term; however, the long-term benefit of the infrastructure investment can be attributed to the greater mobility the investment provides.
- *Stewardship* – Mobility of goods and people is fundamental to a functional society. IDOT, in an effort to be a good steward for society, is anticipated to start trending transportation investments from moving vehicles to moving people and goods.
- *Resilience* – IDOT strives to develop and maintain a transportation system that responds to and recovers from adverse conditions with resilience. Improvements in mobility will, in turn, increase resilience in the transportation system.

¹³ <http://www.createprogram.org/index.htm>, accessed August 16, 2017.

¹⁴ U.S. DOT Freight Analysis Framework 4.0, https://ops.fhwa.dot.gov/freight/freight_analysis/faf/, January 5, 2018.

3.3 OBJECTIVES AND STRATEGIES

IDOT has developed three objectives to guide its investment decisions to improve statewide mobility. Each objective contains recommended actions, performance measures, data sources and implementation strategies which IDOT will pursue. The LRTP content as a whole will be considered guidance for programming decisions; however, each objective below also denotes some of the more specific recommended actions/strategies that will be used to guide programming decisions. These have been denoted with **P**.

The three objectives are:

1. Enhance intermodal freight connectivity and mobility to improve continuity and accommodate the efficient movement of goods and services.
2. Invest in and support multimodal transportation infrastructure improvements and strategic performance-based expansion of services that support the effective movement of passengers.
3. Increase route efficiency and safety for all users by improving infrastructure condition and addressing capacity issues.

3.3.1 OBJECTIVES, STRATEGIES, PERFORMANCE MEASURES, DATA SOURCES, AND IMPLEMENTATION

OBJECTIVE 1.

Enhance intermodal freight connectivity and mobility to improve continuity and accommodate the efficient movement of goods and services.

RECOMMENDED ACTIONS/STRATEGIES:

1.1 Explore scenarios where modal connections can be improved to facilitate shipments by rail, water and air.

IDOT will develop scenarios that offer the opportunity for state and regional agencies, municipalities, and communities to collectively plot a future strategy, allowing a system-wide approach that considers multimodal and intermodal connections. An example would be the corridor management approach, which focuses on specific corridors within the state.

1.2 Work collaboratively with freight stakeholders to identify and address issues related to transporting freight within Illinois.

Typically, freight stakeholders often have interests that cover a much broader area (i.e. their interests and travel patterns might involve several MPOs or states, and beyond). Furthermore, given the diversity of freight stakeholders, there is no single approach to their stakeholder engagement. IDOT will exhibit the following characteristics to increase the effectiveness of freight stakeholder outreach in determining issues related to transporting freight in Illinois: develop custom outreach approaches; recognize the importance of timing; engage the freight community early; include freight in non-freight projects and plans; and, use freight stakeholders to inform highway design.

1.3 Enhance intermodal connectivity by identifying and implementing improvements needed to truck routes, ports, airports and rail lines that provide access to Illinois intermodal facilities. (P)

Intermodal shipping provides many benefits to both businesses and the public. It is the fastest growing sector of the freight industry and is projected to continue growing in the future. IDOT will work with the freight industry to determine the combination of modes and routes that make the most cost effective and efficient transportation path for their goods, and then identify projects to implement along those routes.

1.4 Establish procedures to use the National Performance Management Research Data Set (NPMRDS) to calculate performance.

FHWA's NPMRDS is used by states to monitor system performance. NPMRDS provides comprehensive and consistent data for passenger and commercial freight roadway performance across the NHS. Furthermore, NPMRDS is defined as the baseline dataset to meet the newly established federal congestion and freight performance reporting regulation. IDOT will provide resources to MPOs to use the NPMRDS.

1.5 Evaluate existing and proposed innovative intelligent transportation systems (ITS) technology to improve safety. (P)

Intelligent Transportation Systems (ITS) technologies advance transportation safety and mobility, and enhance productivity by integrating advanced communications technologies into transportation infrastructure and into vehicles. ITS encompasses a broad range of wireless and traditional communications-based information and electronic technologies. IDOT will evaluate familiar ITS technologies which include electronic toll collection, in-vehicle navigation systems, rear-end collision avoidance systems, and dynamic message signs. The evaluation will determine which ITS technologies are further promoted and implemented by IDOT in other areas of infrastructure development (i.e. work zones).

1.6 Explore ITS technologies to foster the most efficient movement of freight. (P)

Successful implementation of ITS technologies for the benefit of the freight industry depends on interagency cooperation and strong partnerships with industry stakeholders. IDOT will analyze the intermodal freight transportation system in Illinois and identify physical and information exchange bottlenecks.

1.7 Investigate potential use of commercial connected/autonomous vehicles (CAV) for the movement of freight. (P)

In 2016, more than 70 percent of freight tonnage moved in America was via truck. The figure is expected to grow steadily in the coming years, per the latest American Truck Association estimates. Connected/Autonomous vehicles (CAVs) have great potential for improving existing, high-demand transportation services. Increasing automation in the movement of freight is anticipated to address driver shortage and improve safety. IDOT will accelerate the investment, development, and testing of CAV capabilities to further the efficient movement of freight within Illinois and beyond.

PERFORMANCE MEASURES:

→ **Modal breakdown of annual shipping volumes**

IDOT will utilize the Freight Analysis Framework (FAF) to determine the modal breakdown of freight volumes. The FAF, produced through a partnership between the Bureau of Transportation Statistics (BTS) and the Federal Highway Administration (FHWA), integrates data from a variety of sources to create a comprehensive picture of freight movement among states and major metropolitan areas by all modes of transportation. Starting with data from the 2012 Commodity Flow Survey and international trade data from the Census Bureau, FAF incorporates data from agriculture, extraction, utility, construction, service, and other sectors.

→ **Number of intermodal facilities for freight movements**

Intermodal facilities have become a more important component of freight movements as containerized freight is increasingly used to transport goods. Intermodal movements allow shippers to use a combination of modes and thereby utilize the efficiencies of each mode to reduce cost. Through the FAF, IDOT will determine the number of intermodal facilities utilized for freight movements.

→ **Number of intermodal facilities with National Highway System (NHS) connections**

Intermodal connectors serve heavy truck volumes moving between freight terminals and the NHS, primarily in major metropolitan areas. Connectors are short, averaging less than two miles in length and generally have a

lower design than mainline NHS routes, which are primarily Interstates and arterials. IDOT will determine the number of NHS connections that currently meet changing expectations.

→ **Truck Travel Time Reliability (TTTR) index**

Truck travel time reliability is a federally required performance measure, per MAP-21. TTTR is defined as the consistency of dependability in travel times, as measured from day-to-day and/or across different times of the day. Data source options for this include the NPMRDS or an equivalent data set. IDOT will use NPMRDS and set targets by the federal deadline.

→ **ITS Statewide Architecture and Strategic Plan Update**

The purpose of the ITS Statewide Architecture and Strategic Plan is to assist stakeholders in using the architecture for project definition and program planning. Furthermore, stakeholders can better ensure they take advantage of system integration opportunities, develop a correct system design, and create systems that interoperate with other technical systems throughout the state. IDOT will provide an annual project status of the update of the plan.

→ **Live, internet-based, intermodal dashboard of approved freight routes, current travel times and rerouting suggestions**

An interactive dashboard on the IDOT website will help IDOT manage the complexities of freight movements and streamline the delivery of freight within Illinois.

→ **Number of studies concerning commercial CAV and impacts on the freight transportation network**

Autonomous vehicle technology is rapidly advancing, and as these vehicles are incorporated into the transportation network, adaption will be essential. For example, operations may become more productive, freight may move faster, and federal regulations could be dramatically altered to accommodate a new driving environment. IDOT will work with freight industry leaders to analyze the potential changes and challenges via various studies, and help prepare the industry for a new trucking environment.

IMPLEMENTATION:

- Begin outreach efforts to freight companies and stakeholders in an effort to identify and address issues related to freight transportation in Illinois.

Lead: IDOT Office of Planning and Programming, IDOT Bureau of Communications Services

Partner(s): IDOT Districts, Freight Companies, Freight Stakeholders

- Support efforts to freight stakeholders to explore where modal connections can be improved to facilitate shipments by rail, water and air.

Lead: IDOT Office of Planning and Programming

Partner(s): Local Government, Planning Agencies, Freight Companies, Freight Stakeholders

- Provide resources to MPOs on using the NPMRDS data source to measure performance.

Lead: IDOT Office of Planning and Programming

Partner(s): MPOs

- Identify how ITS can improve freight movement within and through the state.

Lead: IDOT Office of Planning and Programming, IDOT Bureau of Operations

Partner(s): Freight Stakeholders

OBJECTIVE 2.

Invest in and support multimodal transportation infrastructure improvements and strategic performance-based expansion of services that support the effective movement of passengers.

RECOMMENDED ACTIONS/STRATEGIES:

2.1 Identify and define regional multimodal demands and needs, and/or associated costs across the state. (P)

To be efficient and fair, a transportation network must serve diverse demands. Physically, economically, and socially disadvantaged people in particular need diverse mobility options. IDOT will utilize comprehensive transportation models that consider multiple modes, generated traffic impacts, and the effects of various mobility management strategies (e.g. price changes, public transit service quality improvements) to determine regional travel demands and their associated costs.

2.2 Identify shifts in population and employment centers and ensure adequate services are provided to these areas. (P)

It is necessary to understand demographic and socioeconomic trends to better estimate the future characteristics of a population, as well as forecast its demand for services and the extent to which those demands can be met. IDOT will work with local governments to understand future characteristics of a population and forecast demand for services. From these development forecasts, estimates of magnitude and distribution of future land uses are used to project future trips and travel in the region.

2.3 Develop tools for identification and development of Complete Streets projects.

The Complete Streets movement aims to develop an interconnected street network that is accessible and safe for users of all ages, abilities, and modes of transportation. Complete Streets support not only changes to community streets, but also a shift in the decision-making process and policies. IDOT will develop best practices to integrate into their own policy documents to foster effective development of Complete Streets projects.

2.4 Work with Human Services Transportation Planning (HSTP) coordinators and adjacent transit providers to determine the feasible times and locations for transit transfers between providers.

Human Service Transportation generally refers to transportation services catered to the “transportation disadvantaged” elderly, disabled, and low-income populations. The State of Illinois is divided into 11 HSTP regions, each of which develops their own human service transportation plan. IDOT will work with them to identify feasible times and locations for transit transfers between providers.

2.5 Identify the need for corridor signal prioritization and other related technologies/strategies for improving multimodal corridors. (P)

Several corridors throughout the state present significant transportation challenges. Signal priority is simply the idea of giving special treatment to transit vehicles at signalized intersections. Implementing signal prioritization on multimodal corridors will increase the throughput of a corridor and address several corridor challenges. Other technologies/strategies for improving multimodal corridors include bus rapid transit, bus-only/managed lanes, bicyclist signals or express bus.

2.6 Increase the coordination between freight rail, intercity passenger rail, and commuter rail networks and other transportation modes.

Both freight rail and passenger rail have experienced increased demand in recent years throughout the state on many parts of the Illinois rail network. The differing operational needs for freight and passenger railroads can make operations coordination challenging, and it is important for IDOT when implementing increased freight and/or passenger rail operations to understand those issues.

2.7 Develop a statewide bike/pedestrian facilities inventory and prioritize projects to fill in gaps in the overall system. (P)

The inventory will be summarized in an existing conditions report, and will be catalogued using GIS software for ease of future use. This inventory will assist IDOT to prioritize existing facilities and plan for building future facilities. The inventory should be updated periodically to reflect changes made at the county level.

2.8 Ensure use of performance-based project selection processes on all new IDOT projects. (P)

Illinois residents deserve to understand how priorities are set for investments in maintaining, modernizing, and expanding the state's roads, bridges, and transit. The use of a performance-based project selection process is a transparent process IDOT will use in the selection of projects. The data-driven collaborative process leads to clear transportation priorities.

2.9 Foster a collaborative environment for CAV work and innovations, specifically focusing on the movement of freight.

In an effort to set standards for connected, autonomous vehicles, IDOT should form a coalition between state agencies and academic institutions. The overall goal of the coalition will be to support research, testing, policy, funding pursuits and deployment, as well as share data and provide unique opportunities for the movement of freight by connected, autonomous vehicles.

PERFORMANCE MEASURES:

→ **Percent of funding programmed on projects that provide access to multimodal choices**

IDOT will review the STIP and MYP to determine projects with an accessibility component to another transportation mode. The costs of the selected projects will be totaled and compared against the total programmed on all projects in that fiscal year. The resulting amount will be analyzed to determine whether IDOT is focusing enough of its funding on projects with multimodal accessibility.

→ **Establishment of facilities inventory**

IDOT will develop a scope of work outlining what is specifically to be included in the facilities inventory and how the data is to be collected. The inventory will include all facilities managed by IDOT within the State of Illinois.

→ **Number of multimodal facilities for passenger movement and use**

IDOT will determine the number of multimodal facilities within the State of Illinois using the proposed inventory of IDOT facilities database. IDOT will further analyze these facilities to determine their fundamental use, including but not limited to, number of transfers at the facility, number of rides performed at the facility, and origin/destination routes possible for a user of the facility.

→ **Percent of funding programmed on projects with bicycle/pedestrian/alternative transportation elements**

IDOT will review the STIP and MYP to determine projects with a bicycle/pedestrian/alternative transportation element. The costs of the selected projects will be totaled and compared against the total programmed on all projects in that fiscal year. The resulting amount will be analyzed to determine whether IDOT is focusing enough of its funding on bicycle/pedestrian/alternative transportation projects.

→ **Creation or expansion of the Transit Riders Information Project (TRIP), or similar system**

Providing information on transit routes and schedules will result in more usage of travel. One tool for providing that information is a website or cell phone application that provides route and schedule information for riders. IDOT will create or expand a technology system for relaying that information.

→ **Number of corridor signal priority measures implemented**

IDOT will determine, using data collected in the proposed facilities inventory, the number of corridors operating with signal priority measures (i.e. advanced traffic controls and bus automatic vehicle location systems).

→ **Percentage of completion of passenger rail system**

IDOT will annually track passenger rail projects completed within the state by cross-referencing the STIP. The most recent passenger rail project, still under construction in segments throughout the state, is the high-speed rail initiative.

→ **Number of IDOT projects selected using performance-based selection process**

IDOT and its business partners will be able justify project selection and prioritization when based on performance. Annually, IDOT will determine the number of projects selected based on performance and publish this information in an overall trends analysis report available to the public.

IMPLEMENTATION:

- Continue to develop technology enhancements to relay information to the traveling public.

Lead: IDOT Office of Intermodal Project Implementation, IDOT Office of Communications

Partner(s): Transit Providers

- Begin analyzing NPMRDS data for Illinois and generate initial data sets for performance measures.

Lead: IDOT Office of Planning and Programming

Partner(s): Metropolitan Planning Organizations

- Maintain and adjust policies that will ensure the continued efficacy and improvement of multimodal facilities/connection points and HTSP providers.

Lead: IDOT Office of Intermodal Project Implementation

Partner(s): IDOT Office of Planning and Programming

- Monitor all STIP projects featuring pedestrian and bicycling facilities. Log all newly constructed facilities.

Lead: IDOT Office of Planning and Programming

Partner(s): IDOT Office of Intermodal Project Implementation

OBJECTIVE 3.

Increase route efficiency and safety for all users by improving infrastructure condition and addressing capacity issues.

RECOMMENDED ACTIONS/STRATEGIES:

3.1 Identify and rank worst bottlenecks and chokepoints to establish an action plan to remediate selected areas.

(P)

Precise bottleneck identification is one of the best ways traffic engineers can demonstrate the need for, and the benefits of, investing in transportation improvements. IDOT should identify potential bottlenecks, rank bottlenecks to obtain candidate locations, and conduct detailed analysis of the candidates to obtain accurate performance characteristics and to identify specific problems causing the bottlenecks.

3.2 Focus on roadway system preservation by performing needed maintenance before segments/structures are in critical need of repair. (P)

The demands on IDOT's highway network and available transportation funding are greater than ever. These demands, combined with growing, public expectations for safety, quality, and performance, require highway

agencies to maintain the highest level of service practical. To meet these demands, IDOT is developing a Transportation Asset Management Plan to maximize asset life while maintaining assets regularly. Therefore, IDOT is working to make the system work better, run more smoothly, and last longer.

3.3 Focus on bridge repair and replacement by addressing the most critical needs and performing required maintenance. (P)

IDOT is faced with significant challenges in addressing highway bridge preservation and replacement needs. A successful bridge program seeks a balanced approach to preservation and replacement. The objective of a good bridge preservation program is to employ cost effective strategies and actions to maximize the useful life of bridges. The process for accomplishing this is through the Transportation Asset Management Plan where the goals are to maximize asset life by providing maintenance solutions at appropriate intervals in asset life.

3.4 Incorporate safety design elements in all new roadway plans and ensure design policies support freight-friendly design elements in roadway plans. (P)

Safety is the principal design consideration on all IDOT projects. All roadway plans have maximum safety as their overall objective. IDOT should develop a framework for integrating safety into roadway design, taking into consideration safety effects of design variations, thinking beyond nominal design values, consider supplementing safety effects of variations in different design elements. Given Illinois' level of freight moving through the system – freight friendly design elements should be considered as well.

3.5 Promote safety through awareness programs and alerts regarding areas experiencing high crash rates.

IDOT develops average crash rates for different types of intersection and roadway segment cross-sections for statewide analyses. IDOT should update the Safer Roads Index (SRI) Ratings to include potential safety promotion programs.

3.6 Promote rail and highway safety by identifying and improving hazardous highway at-grade crossings. (P)

To avoid at-grade collisions, warning/control devices are required at grade crossings. IDOT should work with the FRA and the FRA GradeDec¹⁵ evaluation tool to improve hazardous at-grade crossings. GradeDec provides a full set of standard benefit cost metrics for a rail corridor, a region, or an individual grade crossing. Model output allows a comparative analysis of grade crossing alternatives designed to mitigate highway-rail grade crossing accident risk and other components of user costs.

3.7 Explore various congestion management strategies for implementation within Illinois metropolitan areas. (P)

Travel demand continues to rise in Illinois. Existing road infrastructure is not able to keep pace with this increase in travel demand – actually, it is impractical to build enough roads and infrastructure to effectively accommodate the demand. Therefore, congestion management strategies are essential to managing predicted future demand. IDOT should consider transportation demand management for the State's metropolitan areas, reviewing the following strategies and the application of each: conventional toll roads, high occupancy vehicle lanes, variable priced lanes, and others determined through stakeholder involvement.

PERFORMANCE MEASURES:

The Moving Ahead for Progress in the 21st Century (MAP-21) Act and the Fixing America's Surface Transportation (FAST) Act placed an increased emphasis on performance measurement, requiring the establishment of national performance

¹⁵ <https://www.fra.dot.gov/Page/P0337>, accessed February 15, 2018.

measures. These national measures will help IDOT evaluate the effectiveness of transportation investments, and better communicate the performance of Illinois' transportation system to the public. The following required MAP-21 performance measures will be integrated throughout IDOT's planning and programming process, regarding Objective 3 of the overall mobility goal. These measures are comprehensive in nature and require no further explanation:

- **Number and rate of fatalities (per 100 Million VMT and mode)**
- **Number and rate of serious injuries (per 100 Million VMT and mode)**
- **Number of non-motorized fatalities and non-motorized serious injuries**
- **Percentage of NHS bridges classified as being in good condition**
- **Percentage of NHS bridges classified as being in poor condition**
- **Percentage of Interstate pavement in good condition**
- **Percentage of Interstate pavement in poor condition**
- **Percentage of non-Interstate NHS pavement in good condition**
- **Percentage of non-Interstate NHS pavement in poor condition**
- **Percentage of person-miles traveled on the Interstate considered reliable**
- **Percentage of person-miles traveled on the non-Interstate NHS considered reliable**
- **Truck travel time reliability index**
- **Annual hours of peak hours excessive delay, per capita**
- **Percent of non-SOV travel**

In addition to the required reporting for MAP-21, as identified above, IDOT has identified the following performance measures to help track route efficiency and related capacity issues. Again, the majority of these are comprehensive in nature and need no further explanation.

- **Mileage of highly congested routes**
- **Number of rail-crossing fatalities, serious injuries and crashes reported**
- **Number of congestion management strategies**

Congestion management strategies are required in metropolitan areas with population exceeding 200,000. Example strategies include managed lanes, bus-on-shoulder, car pools, and employer flex hours. IDOT will determine the number of strategies utilized within required metropolitan areas in Illinois.

IMPLEMENTATION:

- Increase participation in and continue support of the Strategic Highway Safety Plan, working towards "Driving Zero Fatalities to a Reality."
Lead: IDOT Bureau of Safety Programs and Engineering
Partner(s): MPOs, Counties, Municipalities
- Develop and share crucial safety information and support educational programs aimed at reducing dangerous behaviors committed by transportation users and operators.
Lead: IDOT Bureau of Safety Programs and Engineering
Partner(s): IDOT Office of Communications
- Develop and share bottleneck analysis and action plan to remediate selected areas.

Lead: IDOT Office of Planning and Programming

Partner(s): IDOT Districts, Metropolitan Planning Organizations, Local Governments

- ➔ Prepare and implement the Transportation Asset Management Plan

Lead: IDOT Office of Planning and Programming

Partner(s): IDOT Districts

- ➔ Work to coordinate transportation demand programs occurring throughout the state.

Lead: IDOT Office of Planning and Programming

Partner(s): IDOT Districts, Metropolitan Planning Organizations, Local Governments

3.3.2 IMPLEMENTATION SUMMARY

Mobility is always evolving and as such, implementation strategies will continue to evolve; however, the State’s long-term vision will remain to provide support for the implementation of mobility projects. Taken as a whole, the following implementation strategies represent the State’s current understanding on what actions could be taken to ensure the LRTP’s objectives are achieved. The implementation strategies are organized into four defined categories, pertinent to the aspect it implements.

Table 3.2: Implementation Actions

IMPLEMENTATION ACTION	LEAD	PARTNER(S)
<i>Collaboration/Outreach & Engagement</i>		
Begin outreach efforts to freight companies and stakeholders in an effort to identify and address issues related to freight transportation in Illinois.	IDOT Office of Planning and Programming, IDOT Bureau of Communications Services	IDOT Districts, Freight Companies, Freight Stakeholders
Support efforts to freight stakeholders to explore where modal connections can be improved to facilitate shipments by rail, water and air.	IDOT Office of Planning and Programming	Local Government, Planning Agencies, Freight Companies, Freight Stakeholders
Continue to develop technology enhancements to relay information to the traveling public.	IDOT Office of Intermodal Project Implementation, IDOT Office of Communications	Transit Providers
Increase participation in and continue support of the Strategic Highway Safety Plan, working towards "Driving Zero Fatalities to a Reality."	IDOT Bureau of Safety Programs and Engineering	MPOs, Counties, Municipalities
Work to coordinate transportation demand programs occurring throughout the state.	IDOT Office of Planning and Programming	IDOT Districts, MPOs, Local Governments
<i>Plans/Guidance</i>		
Begin analyzing NPMRDS data for Illinois and generate initial data sets for performance measures.	IDOT Office of Planning and Programming	Metropolitan Planning Organizations
Maintain and adjust policies that will ensure the continued efficacy and improvement of multimodal facilities/connection points and HTSP providers.	IDOT Office of Intermodal Project Implementation	IDOT Office of Planning and Programming
Develop and share bottleneck analysis and action plan to remediate selected areas.	IDOT Office of Planning and Programming	IDOT Districts, MPOs, Local Governments
Provide resources to MPOs on using the NPMRDS data source to measure performance.	IDOT Office of Planning and Programming	Metropolitan Planning Organizations

IMPLEMENTATION ACTION	LEAD	PARTNER(S)
Prepare and implement the Transportation Asset Management Plan	IDOT Office of Planning and Programming	IDOT Districts
<i>Multimodal</i>		
Identify how ITS can improve freight movement within and through the state.	IDOT Office of Planning and Programming, IDOT Bureau of Operations	Freight Stakeholders
Develop and share crucial safety information and support educational programs aimed at reducing dangerous behaviors committed by transportation users and operators.	IDOT Bureau of Safety Programs and Engineering	IDOT Office of Communications
<i>Funding</i>		
Monitor all STIP projects featuring pedestrian and bicycling facilities. Log all newly constructed facilities.	IDOT Office of Planning and Programming	IDOT Office of Intermodal Project Implementation

5. Resiliency

The state's transportation system provides connectivity within and through the state and is a critical link in the economic and social viability of its residents and businesses. Any disruption to the performance of this system could result in serious impacts, including costs extending beyond those associated with a road closure or repair. Potential disruptions to the state's transportation system could come from a range of natural hazards (flooding, snowstorms, extreme heat, earthquakes) and man-made hazards (accidents, hazmat spills, cyber-attacks, terrorism, etc.), which all need to be considered and planned for as part of a comprehensive process. The state's transportation system needs to be resilient to shocks or impacts from hazards or other disruptions to reduce/eliminate the broader effects. The state has established a resiliency goal, which is to "Proactively assess, plan and invest in the state's transportation system to ensure that our infrastructure is prepared to sustain and recover from extreme events and other disruptions."

Achieving this goal requires consideration from various perspectives. FHWA, in identifying the definition of resilience, noted that, "Resilience is the ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions." From IDOT's perspective, this requires action from maintenance, operations, planning, design and emergency response staff to achieve resiliency across the department. Efforts need to be proactive and coordinated to achieve the state's goal of reducing system disruptions.

RESILIENCY GOAL:

Proactively assess, plan and invest in the state's transportation system to ensure that our infrastructure is prepared to sustain and recover from extreme events and other disruptions.

WHAT IS RESILIENCY?

Resiliency involves understanding how changing environmental conditions and human threats could impact IDOT assets and then taking action to address identified issues. Impacts to understand include present day concerns – like how land development and the loss of impervious surfaces has impacted localized flooding – as well as likely conditions in the future when changing weather patterns, due to climate change, will increase the frequency of system disruptions from flooding and other hazards. Technological advances in automobile operation or intelligent transportation systems, including signals, may also introduce new vulnerabilities over what is found today (e.g., from cyber-attack). A long-term perspective on resiliency is critical for transportation infrastructure as decisions made today have implications for decades to come given the long lifecycles of transportation assets.

FHWA, in identifying the definition of resilience in the context of the transportation system, states that:

Resilience is the ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions.¹

FHWA has been helping to lead the dialogue on resiliency in the transportation profession and their resilience website (<https://www.fhwa.dot.gov/environment/sustainability/resilience/>) provides a wealth of information. The site contains the results of a number of resiliency pilot studies conducted across the country, climate projections geared towards

¹ <https://www.fhwa.dot.gov/legisregs/directives/orders/5520.cfm>, accessed September 28, 2017

transportation professionals, detailed case studies showing how resiliency can be incorporated into transportation projects, and syntheses of best practices in this emerging and rapidly developing field of study.

5.1 RESILIENCY AND IDOT

Illinois has experienced a range of impacts to its transportation system from various natural and man-made disasters over the past decades. Notable events include the 1993 flooding along the Mississippi River, the November 2015 snowstorm in the northern part of the state, the July 2017 flooding in Chicago’s northern suburbs (see Figure 1), and the July 2017 oil train derailment in Plainfield (see Figure 2). While IDOT responded efficiently to these events, there is always room for improvement. Better mitigation techniques and closer collaboration with local officials will dramatically reduce the impacts of extreme events on the transportation system. A commitment to taking a proactive approach to avoiding or reducing impacts from similar events in the future will be required to achieve the goal outlined in this plan.

IDOT has taken a first step towards this goal with the completion of the Illinois All-Hazards Transportation System Vulnerability Assessment in October 2017.

This assessment established a framework for evaluating the vulnerability of the state’s transportation system to various natural and man-made hazards. Man-made hazards studied included chemical, biological, radiological, and nuclear incidents; explosives and small arms attacks; electro-magnetic pulse; and cyber-attacks. Natural hazards studied included precipitation, temperature, wind, and geologic threats (landslides, earthquakes, etc.). Natural hazards were evaluated under both current and future climate conditions. Impacts to state transportation assets were evaluated and the consequences assessed (based on asset criticality and sensitivity) to assign a vulnerability score to each asset.

The framework of the vulnerability assessment established vulnerability through measuring the interaction of how:

- (1) **Critical** an asset is to the transportation network;
- (2) **Exposed** an asset would be to a defined hazard; and
- (3) **Sensitive** an asset is to each hazard. The resulting scores can be used by IDOT to determine where to prioritize resiliency activities².

The resulting scores can be used by IDOT to determine where to prioritize resiliency activities.

5.2 IMPORTANCE OF RESILIENCY

Illinois’ transportation system provides critical connectivity within and through the state and is a key link in the economic and social viability of its residents and businesses. Any disruption to this system could result in serious impacts, including costs extending beyond those associated with a road closure or repair. The state’s transportation system needs to be made resilient to such shocks from either natural hazards or other human-caused disruptions to reduce/eliminate negative effects for residents, businesses and users.

While detailed asset and location cannot be provided due to security reasons, the vulnerability assessment performed as part of the recently completed *Illinois All-Hazards Transportation System Vulnerability Assessment* concludes that the following percentage of IDOTs assets should be given priority as part of the state transportation planning process, based on the importance of and risk to the asset:

BRIDGES	1.6%	RAIL CORRIDORS	4.0%
ROAD CORRIDORS	3.4%	OPERATIONS	9.5%

² Illinois All Hazards Transportation System Vulnerability Assessment, October 2017



Figure 1: State Route 132 (Grand Avenue) in Lake County was closed to traffic at the Des Plaines River in July 2017 after several inches of rain fell on the area. Many arteries in Chicago's northern suburbs, including many major east-west roads crossing the Des Plaines River, were closed due to flooding, causing travel headaches and disrupting commutes. (Image source: Paul Valade, Associated Press)



Figure 2: An oil train derailed in Plainfield in July 2017 shutting down a Canadian National rail line and many roads in the area including State Route 126. About 40,000 gallons of oil leaked from ruptured rail cars. Fortunately, no fire or explosion occurred as the result of the accident, limiting the effects. (Image source: Fox 32 News)

Resilience should be represented in major policy considerations, as well as in system operation and management. The following describes the importance of resiliency as it relates to the other LRTP goals:

- *Safety* – Resiliency involves providing a safer transportation system for system users, while also reducing the dangers for first responders
- *Mobility* – Resiliency involves minimizing disruptions which can impact the user experience, causing delays and/or major inconveniences
- *Economy* – Resiliency involves minimizing the socioeconomic costs of disruptions caused by impairment of travel/goods movement
- *Stewardship* – Resiliency involves minimizing long-term costs for infrastructure repair/maintenance

5.3 OBJECTIVES AND STRATEGIES

IDOT has developed five objectives to guide its actions on resiliency across the agency. These objectives will assist in increasing the resilience of the transportation system to both natural and man-made hazards. Each objective contains a list of recommended actions, performance measures and implementation strategies that IDOT will pursue. The LRTP content as a whole will be considered guidance for programming decisions; however, each objective below also denotes some of the more specific recommended actions/strategies that will be used to guide programming decisions. These have been denoted with **P** in Section 5.3.1.

The five objectives identified for the resiliency section include:

- 1 Improve safety by reducing the number of injuries/fatalities attributable to extreme events
- 2 Minimize the frequency and duration of facility closures due to extreme events and other disruptions
- 3 Enhance transportation system redundancy
- 4 Identify the current and future transportation system’s vulnerability to extreme events and climate change
- 5 Address the transportation system’s vulnerability to extreme events and climate change within the transportation planning and design process

5.3.1 OBJECTIVES, STRATEGIES, PERFORMANCE MEASURES, AND DATA SOURCES

OBJECTIVE 1.

Improve safety on the Illinois transportation system by reducing the number of injuries/fatalities attributable to extreme events

RECOMMENDED ACTIONS/STRATEGIES:

1.1 Engage in close coordination with operations stakeholders to reduce injuries and fatalities from extreme events.

IDOT has worked hard to assure readiness for extreme events and will continue to work closely with highway safety, maintenance, traffic operations and state police personnel to implement effective strategies to reduce injuries and fatalities statewide. IDOT has also worked with the Federal Emergency Management Agency (FEMA), Homeland Security, and other federal, state, and local agencies to prepare and respond to extreme events.

1.2 Increase use of preemptive road closures for extreme events.

IDOT will increase the use of preemptive road closures during flooding and major snowfalls to improve safety. This could include the use of immovable barriers to block roads that have been closed due to flooding to prevent attempts at bypassing them. IDOT and its partners will also refine the use of dynamic message boards and cellphone applications to provide the motoring public with the most up-to-date road conditions and closures.

With the implementation of ITS technology, weather-dependent variable speed limits can be used based on real time conditions.

1.3 Address known and/or recurring roadway flooding areas

Known and recurring roadway flooding areas will be prioritized for improvement, including upgrading drainage, addressing low capacity bridges and culverts so they can handle greater flood flows, and, in limited cases, raising the profile and/or using more damage-resistant materials for roadways in low-lying and flood-prone areas. **(P)**

PERFORMANCE MEASURES:

→ Number of flood-flow deficient bridges and culverts

IDOT will maintain an inventory of flood-flow deficient bridges and culverts. Near-term maintenance and longer-term opportunities to efficiently and effectively address these facilities will be identified and prioritized to improve safety and provide cost-effective benefits.

→ Number of state route closures due to flooding

Closures of state routes could have safety, economic, and mobility impacts. IDOT will track the number of state routes closed due to flooding. This will include the information associated with the closure, such as rainfall amount, extent of flooding, the duration of road closure, and methods used to communicate and implement the road closure.

→ Number and proportion of extreme events for which outreach/social media campaigns are undertaken

Social media has the ability to quickly and broadly reach the traveling public. The use of outreach/social media during extreme events by IDOT to inform and encourage the public to avoid closed roads will be tracked.

IMPLEMENTATION:

→ Enhance the roadway closure and detour information available to travelers during extreme events so as to increase traveler's ability to make informed decisions.

Lead: IDOT Office of Communications

Partners: IDOT Bureau of Operations, IDOT Districts

→ Improve and enhance coordination between IDOT maintenance leads and traffic operations/incident management staff, and local and state emergency response professionals to identify any conclusions to be drawn from extreme event response activities.

Lead: IDOT Bureau of Operations

Partners: IDOT Districts, Local and State Emergency Response Professionals

→ Hold annual multi-department and multi-agency coordination meetings to discuss emergency response methods and available tools and develop a plan to increase detour planning efforts and improve system outage communication efforts.

Lead: IDOT Bureau of Operations, Bureau of Traffic

Partners: IDOT Districts, IDOT Office of Communications, State Police, FEMA, Illinois Emergency Management Agency

OBJECTIVE 2.

Minimize the frequency and duration of facility closures due to extreme events and other disruptions

RECOMMENDED ACTIONS/STRATEGIES:

2.1 Improve capabilities for dealing with extreme events by enhancing real-time traffic operations capabilities.

IDOT was an early adopter of real-time traffic operations/incident management techniques, including the long-standing Emergency Traffic Patrol (Minutemen) service, highway advisory radio, real-time road condition websites, dynamic message signs, road weather information systems, as well as extensive snow removal equipment and procedures. New technologies, such as Active Transportation and Demand Management and smart corridors provide integrated strategies to dynamically manage and control traffic, as well as broadened use of current ITS technology will facilitate traffic operations management for road closures.

2.2 Enhance emergency response plans that consider strategic planning for events.

IDOT will partner with other federal, state, and local agencies to enhance emergency response plans to broaden planning for extreme events. A critical component is the real-time communication and coordination with IDOT partners required to prepare and respond to these events.

2.3 Continue active involvement in the critical infrastructure sub-committee of the Illinois Terrorism Taskforce.

The Illinois Terrorism Taskforce includes a Critical Infrastructure Committee. These groups have broad composition ranging from institutions and industry representatives to emergency responders and labor organizations. The Illinois Terrorism Task Force is addressing prevention, protection, mitigation, response, and recovery capabilities. For example, potential recovery strategies for addressing extreme events could include having extra materials/components/equipment on hand in noted areas of concern and putting contracts in place with private contractors and/or local/state governments to assist with repair as needed after events to eliminate any contracting lag.

PERFORMANCE MEASURES:

→ **Number of facility closures (or capacity limitations) attributable to extreme events**

IDOT will annually track damage from extreme events, such as flooding, extreme heat, or landslides on the IDOT system normalized by the number of events and their severity.

→ **Number of response plans incorporating natural or man-made disasters**

IDOT will track the number of enhancements to response plans that incorporate natural or man-made hazards.

IMPLEMENTATION:

→ **Coordinate with maintenance staff and consult the All Hazards vulnerability assessment to identify regular/recurring flood conditions on state highways and have design engineers utilize that information to act to improve flooding conditions through the capital improvement program.**

Lead: IDOT Bureau of Operations, IDOT Bureau of Design and Environment

Partners: IDOT Districts, IDOT Office of Planning and Programming

→ **Develop contractor emergency response on-call contracts and agreements with local governments and surrounding states to provide response and recovery support during future events.**

Lead: IDOT Districts, IDOT Bureau of Operations

Partners: IDOT Office of Planning and Programming, Illinois Emergency Management Agency

→ **Develop a severe storm index, which will allow IDOT to better understand the frequency of extreme weather events.**

Lead: IDOT Office of Planning and Programming

Partners: IDOT Bureau of Design and Environment

- **Enhance coordination with maintenance staff and emergency response staff to identify and implement strategies for reducing the impact of events, and develop and document a set of strategies for reducing the impact of events on the transportation system.**

Lead: IDOT Bureau of Operations

Partners: IDOT Districts

OBJECTIVE 3.

Enhance transportation system redundancy

RECOMMENDED ACTIONS/STRATEGIES:

3.1 Coordinate with appropriate state and local agencies to update emergency response plans

IDOT will coordinate with its partners to update emergency response plans to include a comprehensive detour routing and communication plan for all state facilities, including methods to coordinate outages early to purveyors of mapping software applications which provide routing information for drivers.

3.2 Create a comprehensive system of detour routes and closure plans for major roadways

IDOT will develop a comprehensive statewide system of detour routes by IDOT District beginning with interstates, freeways, and expressways, and followed by other principal arterials, which includes scenarios for outages in at-risk areas.

3.3 Coordinate activities across agencies and modes to create comprehensive and consistent multimodal response plans.

IDOT's comprehensive system of detour routes will include coordination across agencies and emergency response documents and incorporation of multiple modes, since the potential for modal changes exists during extreme events.

3.4 Create a signing and digital information plan for detours.

IDOT currently prepares traffic control and detour plans for construction projects. To specifically address detours resulting from extreme events, IDOT will develop a plan for signing and digital information for detour routes, and investigate the potential for web-based interactive detour route mapping.

3.5 Enhance the resiliency of new projects by considering system redundancy and emergency operation

During the planning and design process, IDOT will consider system redundancy and emergency operations, including detour requirements to better incorporate resiliency into its projects. **P**

PERFORMANCE MEASURES:

- **Number of major roadways with at-risk areas having pre-planned detour routes/closure plans and similar measures for other modes**

Based on the identification of at-risk areas on major roadways from the *All Hazards Transportation System Vulnerability Assessment*, detour plans will be developed that include alternate routings and coordination/integration of other modes, as applicable.

- **Total length of major roadways with at-risk areas having detour route signage (or plans for rapid reaction temporary signage)**

Based on the identification of at-risk areas on major roadways from the *All Hazards Transportation System Vulnerability Assessment*, detour route signage plans will be developed and sufficient rapid reaction temporary signage will be available for these signage plans.

IMPLEMENTATION:

- **Develop detour plans for at-risk areas on major state routes based on information from the All Hazards Transportation System Vulnerability Assessment.**

Lead: IDOT Bureau of Operations

Partners: IDOT Districts, IDOT Bureau of Design and Environment

- **Develop detour signage and digital information plans for at-risk areas on major state routes based on information from the All Hazards Transportation System Vulnerability Assessment.**

Lead: IDOT Bureau of Operations

Partners: IDOT Districts, IDOT Bureau of Design and Environment

OBJECTIVE 4.

Identify current and future transportation system vulnerabilities to extreme events and climate change

RECOMMENDED ACTIONS/STRATEGIES:

4.1 Better define system vulnerabilities from current extreme events

The vulnerability of an asset is based on its importance (criticality), and the risk (exposure and sensitivity) to a given event. IDOT will continue to refine and improve the determination of vulnerability based on these factors for a range of potential natural and man-made hazards.

4.2 Prioritize next steps from the vulnerability analysis that need addressing

A number of next steps were identified in the All-Hazards Transportation System Vulnerability Assessment. These next steps will be systematically prioritized by IDOT to provide the most effective improvements to the vulnerability analysis.

4.3 Expand the assessment to additional assets and stressor types **P**

IDOT's transportation system vulnerability analysis will continue to be improved by incorporating recent comprehensive asset inventory data as it becomes available, and newer, improved climate and other hazard information in order to better define vulnerabilities for all system assets.

4.4 Develop a prioritization scheme through internal coordination to enable action in addressing noted system vulnerabilities **P**

IDOT will develop prioritize assets based on their vulnerability and develop near and longer-term improvement programs to create a more resilient transportation system that meets current and future concerns.

PERFORMANCE MEASURES:

- **System-wide vulnerability analysis results that are based on the latest information**

Number of database systems, system-wide vulnerability analysis results are integrated within.

IMPLEMENTATION:

- **Identify actions needed to incorporate climate change into decision-making by coordinating with climate scientists and other state adaptation planning efforts to get an official set of projections for use in IDOT activities, educating staff on climate science basics and findings of vulnerability analysis, and getting broad agency-wide buy-in on recommended methodology and prioritization systems.**

Lead: IDOT Bureau of Design and Environment, IDOT Office of Planning and Programming

Partners: IDOT Districts, IDOT Bureau of Operations

- **Apply official climate projections for use by project-level staff.**

Lead: IDOT Bureau of Design and Environment

Partners: IDOT Districts, IDOT Bureau of Operations

- **In coordination with the state climatologist, develop educational materials on incorporating resiliency and climate change into efforts across IDOT.**

Lead: IDOT Office of Planning and Programming, IDOT Bureau of Design and Environment

Partners: IDOT Districts, IDOT Bureau of Operations

OBJECTIVE 5.

Address transportation system vulnerabilities to extreme events and climate change within the transportation planning, design, and asset management processes

RECOMMENDED ACTIONS/STRATEGIES:

5.1 Address noted system vulnerabilities to extreme weather and climate change effects. P

IDOT's All-Hazards Transportation System Vulnerability Assessment evaluated the resiliency of the transportation system in terms of its ability to both handle stresses and quick recover when those stresses result in damage. IDOT is beginning to address these identified vulnerabilities through a wide range of planning, design and asset management strategies, including retrofitting or upgrading facilities, updating design standards, incorporation into maintenance cycles, network redundancy, real-time information systems, and rapid rebuilding readiness.

5.2 Incorporate prioritization of resiliency needs into transportation planning process and project scoring systems. P

IDOT's All-Hazards Transportation System Vulnerability Assessment classified the state's transportation assets for vulnerability in terms of both the importance of the asset and risk to the asset. This vulnerability information will be used to identify and assess adaptation and mitigation strategies in the transportation planning process and incorporated into IDOTS PBPS tool to ensure appropriate consideration of resiliency in the programming process.

5.3 Develop a risk-based design approach for new projects, considering climate change projections and the need for adaptation.

IDOT will develop a process for better incorporating resiliency into their design approach for new projects. This will include a risk-based approach for incorporating the best available and actionable scientific and engineering data. For example, for hydraulic design, consideration of the changes in the frequency and severity of storms and floods that might result from a changing climate is needed. IDOT will also incorporate potential adaptation options in the design process to address the vulnerabilities identified in the All-Hazards vulnerability assessment. These design approach improvements will be incorporated into the IDOT Bureau of Design and Environment Manual.

5.4 Undertake detailed adaptation analysis on all high-vulnerability facilities.

Based on the All-Hazards Transportation System Vulnerability Assessment, IDOT is focusing on adaptation efforts for those assets identified as most at-risk or vulnerable. Adaptation is responsible risk management and represents a more holistic planning approach. Adaptation strategies for these vulnerable assets can include a wide range of solutions, including natural, structural, or policy-based adaptation strategies, and can range from site-specific to regional adaptation strategies. The many different adaptation options have differing costs and benefits. IDOT also recognizes the importance of engaging stakeholders in analyzing adaptation strategies.

5.5 Incorporate system resiliency measures into project design efforts and the asset management system. P

Typical asset management systems rely on gradual, predictable deterioration curves based on the past performance of assets. It is now necessary to include preparation for the unpredictable impacts of major external threats. This necessitates a risk-based asset management program that considers redundancy, robustness, and resiliency. IDOT will develop a risk-based approach for planning and asset management that incorporates resilience through potential processes, including mitigation and adaptation programs, prioritization process for restoring asset functionality, and emergency response contracts for rapid mobilization.

PERFORMANCE MEASURES:

→ **Number of and funding amount for resiliency-related projects**

IDOT will track the amount of funding and number and types of projects that are resiliency-related.

→ **Number/weight of resilience factors in the performance-based project selection tool**

IDOT will incorporate resilience factors in their PBPS tool. Initially, the focus for incorporation of resilience will be related to transportation assets with high vulnerability classifications.

→ **Number of design projects using a risk-based design approach, considering climate change projections**

IDOT will track the number of design projects that use a risk-based design approach that considers climate change projections.

→ **Number of specific asset types of high-vulnerability assets for which a detailed adaptation analysis has been conducted**

IDOT will track the number of specific asset types for which adaptation analysis has been performed.

→ **Number of extreme weather risks identified and addressed in the asset management plan**

IDOT will track the number of extreme weather risks that are identified and addressed in the asset management plan.

IMPLEMENTATION:

→ **Commit IDOT resources to begin a broader roll-out of the concepts of resiliency to climate change and extreme weather by holding an informational event with representation from planning, design, operations, asset management and maintenance to define requirements, targets and required actions.**

Lead: IDOT Office of Planning and Programming

Partners: IDOT Bureau of Design and Environment, IDOT Bureau of Operations, IDOT Districts

→ **Incorporate potential facility disruptions as a part of all ongoing maintenance and asset management, and facilitate activities and implement strategies to reduce future system impacts.**

Lead: IDOT Office of Planning and Programming, IDOT Bureau of Operations

Partners: IDOT Districts

→ **Incorporate resiliency into ongoing practices and develop projects that address identified system vulnerabilities.**

Lead: IDOT Office of Planning and Programming

Partners: IDOT Districts, IDOT Bureau of Design and Environment

→ **Coordinate with the project scoring system team to develop and implement a project scoring method and risk-based design approach to project design.**

Lead: IDOT Office of Planning and Programming

Partners: IDOT Bureau of Design and Environment

- ➔ **Coordinate with asset management team to incorporate climate change and extreme events into their activities.**

Lead: IDOT Office of Planning and Programming

Partners: IDOT Districts

5.3.2 IMPLEMENTATION SUMMARY

Implementation of IDOT’s resiliency goal to *proactively assess, plan and invest in the state’s transportation system to ensure that our infrastructure is prepared to sustain and recover from extreme events and other disruptions* will require the development of new internal policies, and more targeted coordination with partner agencies at the federal, state and local levels. IDOT will take the following actions to realize the goals and objectives laid out in this chapter. The following (Table 5.1) are proposed to successfully implement the overarching resiliency goal and its five objectives:

Table 5.1: Implementation Actions

IMPLEMENTATION ACTION	LEAD	PARTNERS
<i>Improve safety on the Illinois transportation system by reducing the number of injuries/fatalities attributable to extreme events</i>		
Enhance the roadway closure and detour information available to travelers during extreme events so as to increase traveler’s ability to make informed decisions.	IDOT Office of Communications	IDOT Bureau of Operations, IDOT Districts
Improve and enhance coordination between IDOT maintenance leads and traffic operations/incident management staff, and local and state emergency response professionals to identify any conclusions to be drawn from extreme event response activities.	IDOT Bureau of Operations	IDOT Districts, Local and State Emergency Response Professionals
Hold annual multi-department and multi-agency coordination meetings to discuss emergency response methods and available tools and develop a plan to increase detour planning efforts and improve system outage communication efforts.	IDOT Bureau of Operations, Bureau of Traffic	IDOT Districts, IDOT Office of Communications, State Police, FEMA, Illinois Emergency Management Agency
<i>Minimize the frequency and duration of facility closures due to extreme events and other disruptions</i>		
Coordinate with maintenance staff and consult the All Hazards vulnerability assessment to identify regular/recurring flood conditions on state highways and have design engineers utilize that information to act to improve flooding conditions through the capital improvement program.	IDOT Bureau of Operations, IDOT Bureau of Design and Environment	IDOT Districts, IDOT Office of Planning and Programming
Develop contractor emergency response on-call contracts and agreements with local governments and surrounding states to provide response and recovery support during future events.	IDOT Districts, IDOT Bureau of Operations	IDOT Office of Planning and Programming, Illinois Emergency Management Agency
Develop a severe storm index, which will allow IDOT to better understand the frequency of extreme weather events.	IDOT Office of Planning and Programming	IDOT Bureau of Design and Environment
Enhance coordination with maintenance staff and emergency response staff to identify and implement strategies for reducing the impact of events, and develop and document a set of strategies for reducing the impact of events on the transportation system.	IDOT Bureau of Operations	IDOT Districts
<i>Enhance transportation system redundancy</i>		
Develop detour plans for at-risk areas on major state routes based on information from the All Hazards Transportation System Vulnerability Assessment.	IDOT Bureau of Operations	IDOT Districts, IDOT Bureau of Design and Environment
Develop detour signage and digital information plans for at-risk areas on major state routes based on information from the All Hazards Transportation System Vulnerability Assessment.	IDOT Bureau of Operations	IDOT Districts, IDOT Bureau of Design and Environment

IMPLEMENTATION ACTION	LEAD	PARTNERS
<i>Identify current and future transportation system vulnerabilities to extreme events and climate change</i>		
Identify actions needed to incorporate climate change into decision-making by coordinating with climate scientists and other state adaptation planning efforts to get an official set of projections for use in IDOT activities, educating staff on climate science basics and findings of vulnerability analysis, and getting broad agency-wide buy-in on recommended methodology and prioritization systems.	IDOT Bureau of Design and Environment, IDOT Office of Planning and Programming	IDOT Districts, IDOT Bureau of Operations
Apply official climate projections for use by project-level staff.	IDOT Bureau of Design and Environment	IDOT Districts, IDOT Bureau of Operations
In coordination with the state climatologist, develop educational materials on incorporating resiliency and climate change into efforts across IDOT.	IDOT Office of Planning and Programming, IDOT Bureau of Design and Environment	IDOT Districts, IDOT Bureau of Operations
<i>Address transportation system vulnerabilities to extreme events and climate change within the transportation planning, design, and asset management processes</i>		
Commit IDOT resources to begin a broader roll-out of the concepts of resiliency to climate change and extreme weather by holding an informational event with representation from planning, design, operations, asset management and maintenance to define requirements, targets and required actions.	IDOT Office of Planning and Programming	IDOT Bureau of Design and Environment, IDOT Bureau of Operations, IDOT Districts
Incorporate potential facility disruptions as a part of all ongoing maintenance and asset management, and facilitate activities and implement strategies to reduce future system impacts.	IDOT Office of Planning and Programming, IDOT Bureau of Operations	IDOT Districts
Act to incorporate resiliency into ongoing practices and develop projects that address identified system vulnerabilities.	IDOT Office of Planning and Programming	IDOT Districts, IDOT Bureau of Design and Environment
Coordinate with the project scoring system team to develop and implement a project scoring method and risk-based design approach to project design.	IDOT Office of Planning and Programming	IDOT Bureau of Design and Environment
Coordinate with asset management team to incorporate climate change and extreme events into their activities.	IDOT Office of Planning and Programming	IDOT Districts

6. Stewardship

In order to achieve the vision and goals set forth in this LRTP, purposeful and regular stewardship between IDOT and the state's transportation stakeholders is key. Implementation of the 2017 LRTP will help Illinois enjoy enhanced stewardship of transportation resources through effective planning, efficient decision making, wise investments, proper accountability, and rigorous performance measurement and reporting. Advancing innovative financial approaches, minimizing environmental impacts and continuously collecting information on stakeholder preferences defines IDOT's overall approach to stewardship.

STEWARDSHIP GOAL:

Safeguard existing funding and increase revenues to support system maintenance, modernization, and strategic growth of Illinois' transportation system.

WHAT IS STEWARDSHIP?

The Illinois Department of Transportation (IDOT) and the Illinois Division of the Federal Highway Administration (FHWA) have a joint Stewardship and Oversight Agreement¹ that defines stewardship as the efficient and effective management of public funds. While the Stewardship and Oversight Agreement's primary concern is federal-aid programs, IDOT believes it is imperative that this principle is applied to all public funds whether they are federal, state or local. Stewardship is an ethic that embodies the responsible planning and management of resources and can be applied to the environment and nature, economics, health, property, information and other resources.

FHWA has defined *stewardship* and *oversight* as follows²:

Stewardship is the efficient and effective management of the public funds that have been entrusted to the FHWA. Oversight is the act of ensuring that the federal highway program is delivered consistent with applicable laws, regulations and policies.

TRANSPORTATION STEWARDSHIP IN ILLINOIS

Within the transportation industry, stewardship and oversight encompasses the broad management of a wide range of issues:

- Financial stewardship and oversight of funding programs
- Environmental stewardship and streamlining to advance projects more efficiently
- Stewardship of a Disadvantaged Business Enterprise (DBE) and Equal Employment Opportunity (EEO) program in order to assist small and disadvantaged businesses
- Resource management to effectively monitor and track the use of various supplies and materials

As it relates to IDOT's goal above, stewardship is defined here as the safeguarding of the Illinois transportation funding system used to provide maintenance, preservation, strategic expansion and modernization of Illinois' transportation

¹ <https://www.fhwa.dot.gov/federalaid/stewardship/agreements/il.pdf>, accessed September 6, 2017

² FHWA Stewardship Oversight Implementation Agreement Guidance, December 9, 2013

network and identifying new ways to enhance the system. While the definition is slightly different from the one FHWA is focused on, the intent is the same, which is the efficient and effective management of the public funding within Illinois.

6.1 STEWARDSHIP AND IDOT

With such a large amount of state maintained facilities, stewardship is an important part of making sure the state remains mobile. While the overarching role for IDOT is to provide and maintain a transportation network that offers options and alternatives for its users, IDOT is also responsible for effectively managing the funding that Illinois receives from its various sources. In this era of increased funding challenges, IDOT is exploring new ways to be good stewards of public funds in order to best leverage its existing funds to provide the infrastructure that Illinois needs, both now and in the future.

Illinois boasts the fourth-largest highway system in the nation and the third-largest Interstate network. In 2016, the combined state and local roadway systems in Illinois encompassed 146,958 miles³, and 26,770 bridges⁴. IDOT is responsible for 15,918 miles, which is comprised of Interstates, U.S. Highways, and State Routes.⁵ According to the Illinois Highway Statistics Sheet for 2016, the Annual Vehicle Miles of Travel (AVMT) was 107,171 million miles.

MULTI-YEAR PROPOSED HIGHWAY IMPROVEMENT PROGRAM (MYP) ⁶

Resource needs are outpacing available funding sources and financing mechanisms. Aging infrastructure requires greater investments to maintain its safety and extend its useful life. Expansion of the transportation system, while relatively limited, has become expensive. Illinois utilizes all of the conventional funding sources for operation, maintenance and preservation of its system. These funding sources include state and formula federal motor fuel tax revenues, vehicle registration and license fees, bond issuances, and the pursuit of opportunities for competitive federal funding opportunities. However, there remains a long-term funding gap between stagnating revenue streams and rising costs; therefore, the state must consider identifying long-term sustainable funding sources that are protected from the cyclical nature of short-term funding measures.⁷ This issue is further addressed within **Chapter 7, Funding**; however, the following details the MYP, which is utilized by IDOT to help them be better stewards of funding sources.

IDOT annually develops a fiscally constrained six-year program, the MYP, detailing how it will invest transportation dollars in the state and local highway system. For FY 2018-2023 the MYP totals \$11.65 billion, and includes a FY 2018 annual highway program of \$2.2 billion. The FY 2018-2023 MYP will:

- ➔ Provide funding to maintain 2,463 miles of state maintained roads and replace or rehabilitate 707 bridges.
- ➔ Provide funding to maintain 743 miles and 274 bridges on the locally maintained system.
- ➔ Provide funding for railroad crossing safety improvements throughout the state.
- ➔ Provide funding for traffic and safety improvements that further enhance highway safety as part of IDOT's regular highway improvement program by targeting specific fatal and severe crash locations.
- ➔ Enhance public right-of-way accessibility as part of IDOT's regular highway improvement program by removing barriers to accessibility as identified in IDOT's Americans with Disabilities Act (ADA) Transition Plan.

³ Illinois Highway and Street Mileage Statistics, Tables HS-1, December 2016.

⁴ Illinois Highway Statistics Sheet 2016.

⁵ Illinois Highway and Street Mileage Statistics, Tables HS-1, December 2016. Total does not include ramp or collector-distributor mileage.

⁶ FY 2018-2023 Proposed Highway Improvement Program, IDOT, <http://www.idot.illinois.gov/Assets/uploads/files/Transportation-System/Reports/OP&P/HIP/2018-2023/2018-23%20MYP%20Book.pdf>, accessed January 9, 2018.

⁷ http://www.metroplanning.org/work/project/17?utm_source=%2ftransportation&utm_medium=web&utm_campaign=redirect, accessed November 6, 2017.

Illinois continues to rank sixth in the nation in terms of aggregate federal funding for highway and bridges under Fixing America's Surface Transportation (FAST) Act. The aforementioned \$11.65 billion available for FY 2018-2023 includes \$8.02 billion for improvements to the state highway system. It is estimated the proposed six-year program will maintain 2,463 miles of highways and rehabilitate 707 bridges. The FY 2018-2023 state program includes:

- **Roadway Maintenance:** \$4.33 billion is scheduled for reconstruction, resurfacing/widening and safety projects. This includes \$730 million for interstate resurfacing projects and \$466 million for safety improvements.
- **Bridge Maintenance:** \$2.6 billion is scheduled to address bridge needs across the state.
- **Congestion Mitigation and Expansion:** \$1.09 billion is scheduled to address traffic congestion. This includes \$326 million for construction of the new I-74 bridge over the Mississippi River and \$12 million for Phase II engineering on I-39.

IDOT also provides local governments funding for the following special programs, which total \$431 million:

- \$131 million for the county consolidated program
- \$24 million for high-growth cities
- \$60 million for needy townships
- \$90 million for the township bridge program
- \$42 million for upgrading local truck routes
- \$24 million for state matching assistance
- \$60 million to foster economic development

TRANSPORTATION ASSET MANAGEMENT PLAN (TAMP)

IDOT is currently in the process of developing the Transportation Asset Management Plan (TAMP), a proactive planning tool to aid IDOT in being good stewards of future highway and bridge investments. The TAMP is a data-driven and performance based document, required by the FHWA, outlining investment strategies for preserving existing assets over the duration of 10 years. A draft of the IDOT TAMP is anticipated in January 2018, with implementation no later than June 30, 2019. Asset management planning is important, as it keeps infrastructure in better overall condition, prevents projects from being delayed until action is absolutely needed, and consistent asset investments overtime helps grow the economy and ensures the system remains competitive.

PUBLIC/PRIVATE PARTNERSHIPS AND INNOVATIVE PROJECT DELIVERY

Public-Private Partnerships (P3) are a form of project delivery permitted by the State of Illinois for use in transportation projects. As opposed to motor fuel tax and other similar tools, P3s are not a source of funding. Instead, they are a way to provide specific project financing, expedite project delivery, stimulate innovation and generate cost-efficiency through the use of a legal agreement between the public and private sector parties to construct specific projects. There are multiple forms of P3s, ranging from a model in which a developer designs and builds an asset under a single contract ("Design-Build" or "DB") to a model where the private party designs, builds, finances, operates and maintains an asset ("Design-Build-Finance-Operate-Maintain" or "DBFOM").

IDOT currently has limited P3 authority, and is one of five DOTs across the country that does not have the ability to utilize the Design-Build delivery method. Expanding P3s and other innovative project delivery methods through work with the state legislature will be important to further enhance IDOT's project delivery toolbox.

PERFORMANCE-BASED PROJECT SELECTION PROCESS

IDOT utilized a performance-based project selection process to evaluate and prioritize major expansion projects within the Proposed Multi-Year Highway Improvement Program (FY 2018-2023) in 2017. The goal of this tool is to identify projects that provide the state with the highest return on investment. The process quantifies the economic development, livability, mobility and other benefits of each project. Through a data-driven process, the tool helps IDOT identify and prioritize projects that provide the greatest benefit to local communities.

Although not all projects will come out on top, a secondary benefit of this process is identifying ways to address individual needs that may be driving the need for a project.

By understanding the need, IDOT can then identify ways to move forward with targeted spot improvements, delivering a portion of the original project's intended benefit for less money. Use of this tool exhibits IDOT's recognition of the importance of stewardship as it relates to the future transportation network within the state. Additionally, this informed and open decision-making process provides the following for state taxpayer dollars:

- Evaluates projects using a consistent set of criteria.
- Aligns funding with projects that provide high return on investment.
- Connects transportation solutions with corridor needs.
- Provides opportunity for ongoing public and stakeholder engagement.

6.2 IMPORTANCE OF STEWARDSHIP

What constitutes good stewardship is defined differently throughout the U.S., as previously noted; however, the components of the IDOT Long Range Transportation Plan (LRTP) significantly impact stewardship within the state and its communities. There are often parallels between stewardship and the four other fundamental goals of the LRTP. The following details the importance of stewardship as it relates to the other LRTP goals:

- *Mobility* – IDOT's overarching goal for the state's transportation network is to move people and freight as effectively as possible. Stewardship recognizes the importance of funding and financing for all modes of transportation and the interaction between them.
- *Economic Growth* – Economic activity within Illinois is driven by the entire system, of which transportation, logistics and intermodalism are integral parts. Stewardship means making smart investments in infrastructure and operations increase the economic vitality of the state as a whole.
- *Livability* – Efficient management of its resources can help to build consensus about how IDOT manages physical change and the correlating livability changes within the state. Stewardship advances responsible management and strategic investment in Illinois' existing resources and assets, and taking steps to enhance the integrity of the state's natural resources.
- *Resilience* – By improving its response to extreme weather and other events, IDOT effectively manages Illinois' transportation network and ensures the resiliency of the system. A stewardship approach to resiliency aims to prevent undesirable changes and prepares for adaptation to rapid and uncertain changes that cannot be avoided within the state.

6.3 OBJECTIVES AND STRATEGIES

IDOT has developed four objectives to guide its decisions that support stewardship. Each objective contains recommended actions, performance measures, data sources and implementation strategies that IDOT will pursue. The LRTP content as a whole will be considered guidance for programming decisions; however, each objective below also denotes some of the more specific recommended actions/strategies that will be used to guide programming decisions.

These have been denoted with **P**.

The four objectives are:

1. Invest in improvements in airports, roads, bridges, rail, freight, ports, waterways, bicycle and pedestrian infrastructure, and new traffic and transit technologies.
2. Ensure transparency in project selection and prioritization and that project selection is guided by sound data and performance-based processes.
3. Support innovation in project delivery opportunities.
4. Maximize funding and leverage resources wisely.

6.3.1 OBJECTIVES, STRATEGIES, PERFORMANCE MEASURES, DATA SOURCES, AND IMPLEMENTATION

OBJECTIVE 1.

Invest in improvements for airports, highways/streets, freight, ports, waterways and new traffic and transit technologies.

RECOMMENDED ACTIONS/STRATEGIES :

1.1 Complete current ongoing major infrastructure improvements. (P)

IDOT has made strides to its existing facilities in an effort to improve the user experience. Improvements include the Jane Byrne Interchange, I-74 Mississippi River Bridge, Chicago to St. Louis High Speed Rail, and the O'Hare Modernization Program. Programs like CREATE invest in critically needed improvements to increase the efficiency of the region's passenger and freight rail infrastructure in the Chicago-area. Completion of current major infrastructure improvements allows IDOT to focus on other areas throughout the state that can benefit from the major improvements.

1.2 Identify needed capacity enhancements, capital improvements and new technology implementation. (P)

Illinois is in the heart of the country, and therefore serves as an important link in travelers destinations. IDOT will analyze data and work with stakeholders to identify areas where congestion or improvements are needed to enhance safety and the overall travel experience. Reviewing current and past data and information on file will aid in prioritization of areas needing work.

1.3 Identify new "mega" projects which will improve the existing transportation system and infrastructure and identify alternative funding opportunities. (P)

Mega Projects are multi-billion dollar endeavors that address current and emerging multimodal transportation needs. Typically, the projects span two or more governing jurisdictions and last several years. Current projects include High Speed Rail, Jane Byrne Interchange, I-74 Mississippi River Bridge, and CREATE. Potential projects include the managed lanes project for I-55 and I-290 in DuPage and Cook counties. IDOT should continue to review projects and gather public opinions for potential mega projects, as well as determining ways to fund these multi-billion projects.

1.4 Identify potential projects or partnerships to address connected/autonomous vehicles (CAV) being introduced within both passenger and commercial/freight fleets. (P)

IDOT will work with partners to identify ways and strategies to best implement the use of CAVs. These vehicles will likely be introduced in a transitional phase with existing traffic. This means changes will be required to existing pavement markings, traffic signals, and installing CAV technology.

PERFORMANCE MEASURES :

→ **Volume/number of projects completed**

Utilizing the For the Record (FTR), IDOT's annual report of the awards and obligations made for the Annual Highway Improvement Program, IDOT can track projects for each fiscal year (FY). While FTR covers highways, resources like regional transportation agencies, local transportation agencies, and MPOs can provide information regarding other projects.

→ **Number of projects evaluated through performance based project selection tool**

New capacity projects are to be evaluated using the performance based project selection tool before funds are identified for the project. Using this tool assists in prioritizing mega projects but also quantifying the benefits achieved by the project.

→ **Funds anticipated to be spent (programmed) on strategic capital and expansion plans addressing system preservation, capacity expansion and technology implementation**

Plans like the IDOT Statewide Transportation Improvement Program (STIP) and the MPO Transportation Improvement Programs (TIP) are documents of proposed projects within a four-year period. These are developed to secure project funding, but also provide an easy way to classify the type of project. IDOT's Multi-Year Improvement Program (MYP) is a fiscally constrained six-year program detailing how it will invest transportation dollars in the state and local highway system; thus, providing another way of analyzing the distribution of funds. Additionally, regional and local transportation agencies and local partners and organizations can provide information regarding their distribution of funds to project types.

→ **Number of new projects and/or partnerships to address CAVs utilizing the transportation system**

In order to effectively implement CAVs, IDOT will need to work hand-in-hand and with the assistance of regional and local transportation agencies and local transportation partners/organizations. A transparent working relationship allows for discussion regarding the requirements and implementation of CAVs. From this, IDOT can begin to compile a list of projects which will require support.

IMPLEMENTATION :

→ Deliver completed projects within the ongoing major infrastructure programs.

Lead: IDOT Office of Highways Project Implementation

Partner(s): MPOs, IDOT District Offices, IDOT Regional Offices, Transportation Agencies

→ Identify new projects and/or partnerships with the private sector in order to foster the implementation of CAVs and other new technologies within the transportation industry.

Lead: IDOT Office of Intermodal Project Implementation, IDOT Office of Highways Project Implementation

Partner(s): MPOs, IDOT District Offices, IDOT Regional Offices, Transportation Agencies

→ Create a long-term plan of major capacity enhancement, infrastructure expansion, and preservation projects, and the associated funding necessary to implement each (i.e., Expressway Vision⁸).

⁸ The Expressway Vision is a multijurisdictional, multimodal approach to guide future capital investments, coordinate transportation operations, address growing freight congestion, and provide game-changing public transit options for the existing expressway system in northeastern Illinois. The vision is due in mid-2018, and is funded by IDOT

Lead: IDOT Office of Planning and Programming, IDOT Office of Highway Project Implementation

Partner(s): MPOs, IDOT District Offices, IDOT Regional Offices, Transportation Agencies

OBJECTIVE 2.

Ensure selection and prioritization decisions on projects is transparent and guided by sound data and performance-based decisions.

RECOMMENDED ACTIONS / STRATEGIES :

2.1 Develop performance-based project selection process and accompanying tools. (P)

IDOT should develop a tool that evaluates projects on their anticipated performance. Additionally, IDOT should complete an inventory of needs that identify what level of funding would be required to achieve a certain level of performance. The relevance of the level is an important consideration in IDOT projects, given limited funding and the need to prioritize investments.

2.2 Enhance asset management process and accompanying tools.

IDOT is in the process of developing a Transportation Asset Management Plan. Additionally, large transit agencies within Illinois are required to develop a Transit Asset Management Plan. IDOT is developing a Tier II (smaller transit agencies) Group Transit Asset Management Plan, which will help in the asset management process. The TAMP documents outline investment strategies for preserving existing assets and the anticipated condition of those assets after the horizon of the plan.

2.3 Develop tools, dashboards, websites and feedback opportunities to demonstrate how projects progress and how funding is spent.

Currently, several IDOT projects have associated project websites, where the public can find information regarding the project, including pamphlets, informative brochures, meeting announcements, and other interactive features. Utilizing the Internet to allow the public the opportunity to provide feedback, outside of the public comment period, would give instant feedback during the progression of a project. An internal IDOT interface would allow for tracking, document organization, and fund tracking. Developing tools, dashboards, and websites for IDOT performance in achieving identified goals and performance measures will allow stakeholders to understand the performance of IDOT.

2.4 Ensure projects are meeting established schedules.

IDOT should develop schedules for all projects and work to ensure projects are accomplished within those schedules. Timely implementation of projects saves costs and produces the project more quickly.

PERFORMANCE MEASURES :

→ Volume/number of projects selected utilizing a performance-based project selection process

IDOT's MYP uses system performance metrics as a determining factor in creating the program. IDOT will provide support to regional and local transportation agencies in an effort to utilize a performance-based project selection processes.

→ Pavement/infrastructure/vehicle condition

With an extensive network of interstates, highways, transit vehicles, transit facilities and bridges, IDOT has many transportation features to manage and maintain. The Illinois Capital Needs Assessment, Illinois Roadway

Information System and Illinois Structure Information System help organize the large amount of data into various databases. IDOT and regional/local transportation agencies should work together to streamline tracking and monitoring pavement/infrastructure/vehicle conditions.

→ **Increased life span of pavements and bridges**

IDOT tracks the condition of bridges and pavements, which provides a record of infrastructure over a period of time. This information is retained and can be accessed via the Illinois Roadway Information System and Illinois Structure Information System. Reports on infrastructure from regional and local transportation agencies will also be crucial to monitoring life spans. This information is used to develop the TAMP which also identifies investment strategies for increasing the life span of pavements and bridges.

→ **Number of tools developed to share project and funding information with the public**

IDOT is divided into supporting offices, which have individual coordination responsibilities. IDOT also has a suite of publications (IDOT MYP and IDOT FTR) to provide information to the public regarding projects and their funding. IDOT should continue to expand the methods and media types they use in disseminating this information to the public.

→ **Number of projects meeting established schedules**

IDOT's FTR compares road, bridges and safety, and traffic improvements planned to be accomplished during a FY, relative to those actually accomplished. This report, in combination with other documents, should be used to track the progression of a project from conception to completion. Tools for public consumption, such as a dashboard should be considered when relaying project accomplishment information.

→ **Federally required performance measures**

In 2012, the Moving Ahead for Progress in the 21st Century Act (MAP-21) mandated—and in 2015 the Fixing America's Surface Transportation Act (FAST) reauthorized—USDOT to measure the performance of the system. MAP-21 created a performance-based and multimodal program to strengthen the U.S. transportation system, which is comprised of a series of nine rules overseen by FTA and FHWA. The following required MAP-21 performance measures will be integrated throughout IDOT's planning and programming process, regarding Objective 2 of the overall stewardship goal. These measures are comprehensive in nature and require no further explanation:

- **Transit equipment – state of good repair**
- **Transit facilities – state of good repair**
- **Transit infrastructure – state of good repair**
- **Transit rolling stock – state of good repair**
- **Percentage of Interstate pavement in good condition**
- **Percentage of Interstate pavement in poor condition**
- **Percentage of non-interstate National Highway System (NHS) pavement in good condition**
- **Percentage of non-interstate NHS pavement in poor condition**
- **Percentage of NHS bridges classified as in good condition**
- **Percentage of NHS bridges classified as in poor condition**

IMPLEMENTATION :

- Develop web-based/app-based tools, dashboards and websites, and expand feedback opportunities in order to demonstrate to stakeholders and the public how projects advance through the development process and how funding is spent.
Lead: IDOT Office of Communications
Partner(s): IDOT Bureau of Communication Services
- Enhance internal IDOT tracking tools in order to ensure projects are achieving timely schedules and progressively advancing through the development process.
Lead: IDOT Office of Planning and Programming
Partner(s): IDOT Office of Highways Project Implementation
- Fully integrate the recently developed performance-based project selection tool into project programming and planning to track results (e.g., public-facing tools ranking projects).
Lead: IDOT Office of Planning and Programming
Partner(s): IDOT Bureau of Planning, IDOT Bureau of Programming, IDOT Bureau of Local Roads
- Expand and enhance asset management tools both for IDOT and local transportation partners.
Lead: IDOT Office of Planning and Programming, IDOT Office of Intermodal Project Implementation
Partner(s): MPOs, Transit Agencies

OBJECTIVE 3.

Support innovative project opportunities.

RECOMMENDED ACTIONS / STRATEGIES :

3.1 Support public-private partnerships (P3s) and private sector project financing initiatives. (P)

Public-private partnerships (P3s) and private sector funding provides a new way to drive projects without solely relying on state resources. Subsequently, this could result in shorter construction times and savings on project budgets.

3.2 Explore innovative project financing and delivery methods. (P)

Innovative project financing allows multiple ways for a project to be funded, or a project to be funded that would not have originally received consideration due to cost. Additionally, looking outside of typical delivery methods provides the opportunity for more projects to be completed and possibly better completion times.

3.3 Work with industry to gain authority for Design-Build and Construction Manager/General Contractor through legislation.

Design-Build (DB) and Construction Manager/General Contractor (CMGC) provide more certainty, or earlier certainty, when it comes to project schedule and budget/cost. They also provide innovation, with increased opportunity and better constructability. As of 2016, Illinois is authorized to use DB with certain limitations, and does not have authority for CMGC usage.

3.4 Explore outreach and education for MPOs and local government officials on innovative project financing and delivery initiatives.

MPOs and local governments should partner with the state; thus, providing a new route for project funding and delivery. Outreach and education allows MPOs and local governments to see how valuable of a role they can play in improvements throughout the state.

PERFORMANCE MEASURES :

→ Number of P3 projects in the state

IDOT publishes several documents or reports, like the MYP and For the Record, which provide details on funding, processes, and proposed projects and initiatives. Reviewing these and budgets for various agencies (i.e. IDOT, regional, local, partners) can determine the number of P3 projects in the state.

→ Number of events and publications, per year, providing information on innovative financing and delivery programs and financing-related opportunities

IDOT views their role as one of providing resources on IDOT initiatives. Providing resources, events, or training on innovative financing, delivery programs, and financing-related information is a way to support these initiatives. Each year, the IDOT Fall Planning Conference is hosted, providing discussion on topics regarding metropolitan and rural transportation. Events like this can expand and briefly touch on financing topics, or events can be developed specifically to discuss financing and delivery programs.

→ Number of events focused on outreach to MPOs and local governments on innovative financing and delivery programs

IDOT should look to expand current conferences or publications aimed to MPOs and local governments to include financing and delivery discussion. Alternatively, IDOT should look to possibly create events specifically catered to discussion of financing and delivery.

IMPLEMENTATION :

- Conduct outreach and education events for MPOs and local government officials on innovative project financing and delivery methods in order to increase knowledge and understanding of methods and benefits, and uses in other states.

Lead: IDOT Office of Communications, IDOT Office of Planning and Programming

Partner(s): MPOs, Local transportation officials

- Educate stakeholders and the public on innovative project financing and delivery methods in order to increase knowledge of methods and use in other states.

Lead: IDOT Office of Planning and Programming

Partner(s): IDOT Bureau of Innovative Project Delivery, MPOs, Local government officials

- Seek state legislation to expand IDOT's use of P3s and innovative project financing and delivery methods, including Design-Build.

Lead: IDOT Office of Planning and Programming, IDOT Office of Legislative Affairs

Partner(s): IDOT Bureau of Innovative Project Delivery, IDOT Office of Highways Project Implementation, Public-Private partners

- Study innovative project financing and delivery methods and their use within Illinois to advance various major projects.

Lead: IDOT Office of Planning and Programming

Partner(s): IDOT Bureau of Innovative Project Delivery

- Seek state legislation to increase state transportation funding, including possible new revenue sources.

Lead: IDOT Office of Legislative Affairs

Partner(s): IDOT Office of Planning and Programming; Office of the Secretary

OBJECTIVE 4.

Identify funding sources and leverage resources wisely to maximize the value of investments.

RECOMMENDED ACTIONS / STRATEGIES :

4.1 Explore increase in state transportation funding, including new revenue sources.

IDOT should work towards identifying and promoting areas in legislature where funding opportunities are available. For example, the “lockbox” amendment to the Illinois Constitution (passed in November 2016), requires revenues raised from transportation-related fees and taxes to be spent only on transportation projects. Additionally, working with partners may open access to new revenue sources.

4.2 Identify opportunities to support non-highway funding program(s) for all multimodal transportation projects. (P)

IDOT should work with regional and local agencies to identify areas where funding would be beneficial to the overall improvement of multimodal transportation. Illinois has the second largest public transportation system, second largest rail system, and one of the busiest airports in the nation. Maintaining non-highway transportation features is critical for maintaining Illinois’ success and accessibility.

4.3 Develop time/money/effort saving platforms across transportation agencies.

Central Management Services (CMS) currently offers local governments joint purchasing for many commodities, services and equipment, which is a beneficial partnership between local governments and the State. IDOT and other agencies throughout the state should look into options like joint purchasing and common management tools, among others, to help save time and money.

4.4 Expand Economic Development Program (EDP) to better define projects that provide greater benefits for investments. (P)

The purpose of the EDP is to provide state assistance in improving highway access to new or expanding industrial, distribution or tourism developments. By evaluating the project benefits, the limited funding will be distributed to projects that help meet the focus of the EDP.

PERFORMANCE MEASURES :

→ Value of new transportation revenue sources

Budgets from IDOT, regional and local transportation agencies, and local transportation partners will help classify incoming revenue, which can be linked to a source.

→ Number of successful joint procurements and estimated cost savings

IDOT is only authorized to handle construction related procurements. The Chief Procurement Office is responsible for advertising procurements, and the Chief Procurement Officer contains information including awards of procurements.

IMPLEMENTATION :

→ Work with regional and local transportation agencies and other local transportation partners on joint tools to save time/money/effort.

Lead: IDOT Office of Planning and Programming

Partner(s): IDOT Bureau of Local Roads and Streets, Transportation Agencies

- Work with the Illinois Legislature, stakeholders, regional and local transportation agencies and other local transportation partners on identifying new revenue options.
Lead: IDOT Office of Planning and Programming; IDOT Office of Legislative affairs
Partner(s): Private businesses, Stakeholders, Transportation Agencies
- Seek state and/or federal legislation to create dedicated non-highway funding program(s) for multimodal transportation projects.
Lead: IDOT Office of Planning and Programming, IDOT Office of Legislative Affairs, IDOT Office of Intermodal Project Implementation
Partner(s): Multimodal stakeholders, Transportation Agencies

6.3.2 IMPLEMENTATION SUMMARY

The IDOT LRTP has a long-term horizon, but several short-term and long-term actions are necessary prerequisites to long-term results. The following provides more specific guidance about how to implement the various objectives supporting the goal of stewardship and begin transforming ideas into action. The actions to implement the stewardship goal have been delineated into four categories; whereby, each category clearly defines the desired directive of the action.

Table 6.1: Implementation Actions

IMPLEMENTATION ACTION	LEAD	PARTNER(S)
<i>Collaboration/Outreach & Engagement</i>		
Deliver completed projects within the ongoing major infrastructure programs.	IDOT Office of Highways Project Implementation	MPOs, IDOT District Offices, IDOT Regional Offices, Transportation Agencies
Identify new projects and/or partnerships with the private sector in order to foster the implementation of C/AVs and other new technologies within the transportation industry.	IDOT Office of Intermodal Project Implementation, IDOT Office of Highways Project Implementation	MPOs, IDOT District Offices, IDOT Regional Offices, Transportation Agencies
Develop web-based/app-based tools, dashboards and websites, and expand feedback opportunities in order to demonstrate to stakeholders and the public how projects advance through the development process and how funding is spent.	IDOT Office of Communications	IDOT Bureau of Communication Services
Enhance internal IDOT tracking tools in order to ensure projects are achieving timely schedules and progressively advancing through the development process.	IDOT Office of Planning and Programming	IDOT Office of Highways Project Implementation
Conduct outreach and education events for MPOs and local government officials on innovative project financing and delivery methods in order to increase knowledge and understanding of methods and benefits, and uses in other states.	IDOT Office of Communications, IDOT Office of Planning and Programming	MPOs, Local transportation officials
Educate stakeholders and the public on innovative project financing and delivery methods in order to increase knowledge of methods and use in other states.	IDOT Office of Planning and Programming	IDOT Bureau of Innovative Project Delivery, MPOs, Local government officials
<i>Plans/Guidance</i>		
Create a long-term plan of major capacity enhancement, infrastructure expansion, and preservation projects, and the associated funding necessary to implement each (i.e., Expressway Vision).	IDOT Office of Planning and Programming, IDOT Office of Highway Project Implementation	MPOs, IDOT District Offices, IDOT Regional Offices, Transportation Agencies

IMPLEMENTATION ACTION	LEAD	PARTNER(S)
Fully integrate the recently developed performance-based project selection tool into project programming and planning to track results (e.g., public-facing tools ranking projects).	IDOT Office of Planning and Programming	IDOT Bureau of Planning, IDOT Bureau of Programming, IDOT Bureau of Local Roads
Work with regional and local transportation agencies and other local transportation partners on joint tools to save time/money/effort.	IDOT Office of Planning and Programming	IDOT Bureau of Local Roads and Streets, Transportation Agencies
<i>Multimodal</i>		
Expand and enhance asset management tools both for IDOT and local transportation partners.	IDOT Office of Planning and Programming, IDOT Office of Intermodal Project Implementation	MPOs, Transit Agencies
<i>Funding</i>		
Seek state legislation to expand IDOT's use of P3s and innovative project financing and delivery methods, including Design-Build.	IDOT Office of Planning and Programming, IDOT Office of Legislative Affairs	IDOT Bureau of Innovative Project Delivery, IDOT Office of Highways Project Implementation, Public-Private partners
Study innovative project financing and delivery methods and their use within Illinois to advance various major projects.	IDOT Office of Planning and Programming	IDOT Bureau of Innovative Project Delivery
Seek state legislation to increase state transportation funding, including possible new revenue sources.	IDOT Office of Legislative Affairs	IDOT Office of Planning and Programming, Office of the Secretary
Work with Illinois Legislature, stakeholders, regional and local transportation agencies and other local transportation partners on identifying new revenue options.	IDOT Office of Planning and Programming; IDOT Office of Legislative affairs	Private businesses, Stakeholders, Transportation Agencies
Seek state and/or federal legislation to create dedicated non-highway funding program(s) for multimodal transportation projects.	IDOT Office of Planning and Programming, IDOT Office of Legislative Affairs, IDOT Office of Intermodal Project Implementation	Multimodal Stakeholders, Transportation Agencies

7. Transportation Funding and Financing

The Illinois Department of Transportation (IDOT) is committed to promoting and providing safe, cost-effective transportation that enhances the quality of life, improves multimodal connectivity, fosters economic prosperity and demonstrates respect for the environment. Inherent in this overarching goal is the requirement to fund the operation, maintenance and strategic expansion of Illinois' multimodal transportation network.

In this era of increased funding challenges, IDOT is exploring new ways to be effective stewards of public funds, adopting asset management practices and performance-based project selection tools in order to best leverage existing funds to provide the infrastructure that Illinois needs. These operational improvements represent positive steps toward effective fiscal management; however, additional funding is required to pay for the escalating cost of system preservation, modernization, and strategic expansion that is necessary to accommodate the needs of commerce and the general population.

A "transportation lockbox," passed overwhelmingly by public vote in November 2016, is intended to ensure that the taxes and fees paid at the fuel pump, on licenses, on vehicle registration and for other transportation-related purchases go toward improving Illinois' infrastructure. Exactly how the lockbox will impact the funding available for transportation will be determined over time. As for the lockbox impact today, IDOT cannot currently assume a significant inflow of capital. In passing the lockbox amendment, the people of Illinois voted clearly in favor of transportation investment and the importance of funds raised for transportation be invested in transportation.

Illinois' infrastructure needs are outpacing available funds. Aging infrastructure requires greater investments to maintain its safety and extend its useful life. Capital expansion, while limited due to funding constraints, has become very expensive due to escalating costs of both materials and labor. Moreover, once built, new transportation infrastructure requires ongoing maintenance throughout its life, which, in turn, requires more funding. The combination of increased costs and reduced revenues requires the balancing of resources and needs to maximize return on investment.

Looking to the future, IDOT is taking a proactive stance in addressing its funding needs. The agency is considering a wide range of strategies that would increase revenues from existing sources, introduce new mechanisms for collecting revenue, tap into federal and private resources, and make better decisions with existing funds.

New, sustainable funding sources and financing tools will be required to ensure that Illinois' infrastructure continues to contribute to the state's economic growth and mobility. Understanding and addressing the financial resources needed to maintain world-class infrastructure is the focus of this chapter. This chapter begins with an overview of major cost-influencing factors followed by a discussion of why revenue growth has begun to trail the cost of maintaining existing infrastructure. Finally, the chapter concludes by describing approaches the State of Illinois may consider to fill the growing funding gap.

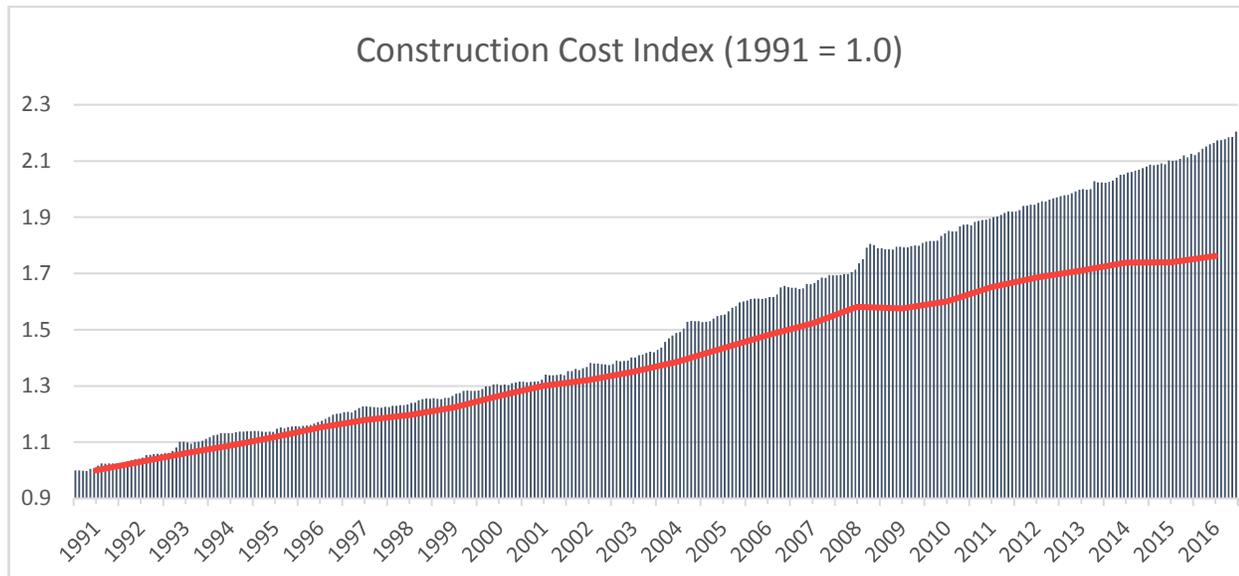
7.1 INFRASTRUCTURE DEMAND AND COSTS

IDOT supports a broad suite of transportation facilities including elements related to all transportation modes, including highways, rail, transit, water, aviation, bicycling and pedestrian. The metropolitan area around Chicago, combined with the agriculturally oriented downstate portion of Illinois, makes for a diverse set of user needs and funding challenges to be addressed.

7.1.1 INCREASING COSTS

Construction costs have risen significantly over time. Increases in fuel, materials, equipment and labor costs have all contributed to this increase which has caused construction indices to outpace inflation over the last 15 years. Figure 7-1 illustrates the annual growth in the construction cost index versus the consumer price index (CPI).¹

Figure 7-1: Construction Cost Index vs. CPI



One major contributing factor to these increased costs is the demand for materials overseas, particularly steel, in the rapidly expanding markets of Asia. Steel and other materials have been in high demand for the past 15 years, driving up the prices of domestic construction materials, equipment made of steel, tools, and a variety of other products. Another cause of construction cost escalation is a lack of skilled labor and the movement of construction workers to high-growth markets.

7.1.2 FLAT TRAVEL DEMAND

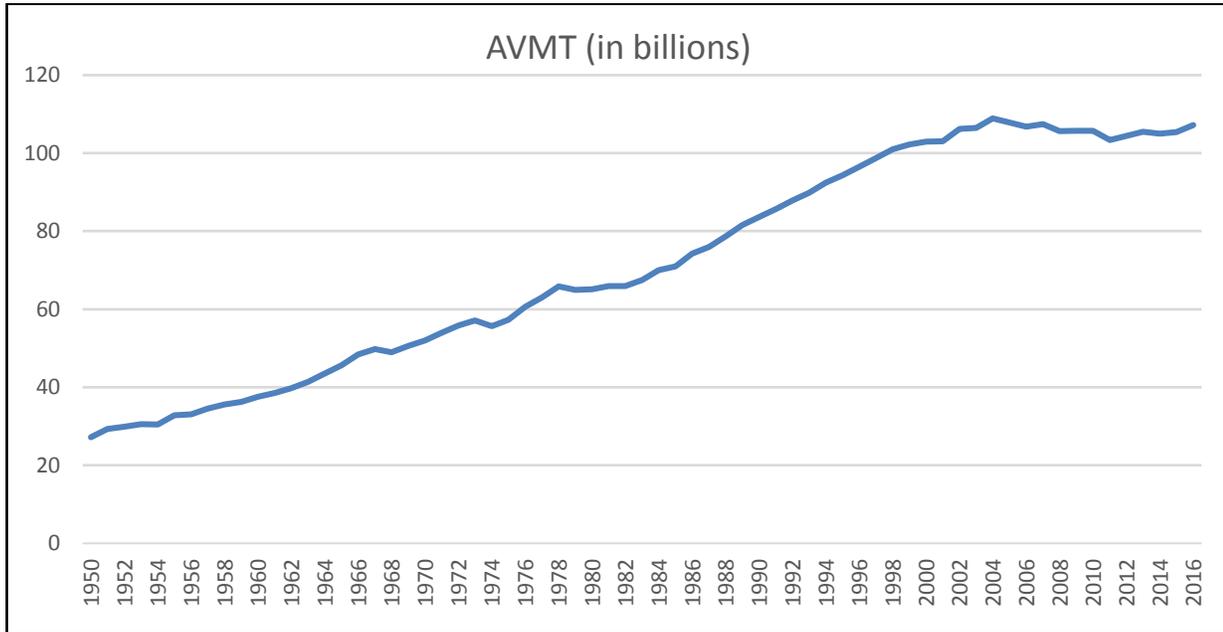
Figure 7-2 shows historical Annual Vehicle Miles of Travel (AVMT) from 1950 to 2016 and provides two insights. First, there was a substantial increase in demand for infrastructure (primarily highway infrastructure) between when the interstate system was built in the 1950s and 1960s and the early 2000s. During this time, the network of highways from Chicago expanded to connect many suburban areas within the greater metropolitan region. Population growth during this period was less than one percent annually, yet AVMT grew by 2.6 percent on average, indicating growth in multi-car/multi-driver households.

The second insight is the flattening of AVMT over the past 12 years, which has been caused by a number of forces, including slowing population growth (0.2 percent growth between 2000 and 2016), increasing fuel prices, the growth of telecommuting and a shift to online retail purchasing. For the Chicago area, changes in transit ridership were evaluated to see if mode shift to transit was a major factor, but based on the City of Chicago's data, annual Chicago Transit Authority bus and rail trips increased by only 0.4 percent annually between 2004 and 2016, indicating that there was no major shift from auto to transit use.

¹ WSP analysis of Engineering News-Record, "Construction Cost Index History - As of December 2016," Accessed May 31, 2017, http://www.enr.com/economics/historical_indices/construction_cost_index_history; and McMahon, Tim, "Historical Consumer Price Index (CPI-U) Data," InflationData.com, Accessed May 31, 2017, https://inflationdata.com/Inflation/Consumer_Price_Index/HistoricalCPI.aspx?reloaded=true.

Stagnating AVMT has caused motor fuel tax revenue collection to plateau as shown in Figure 7-2, in the next section.

Figure 7-2: Annual Vehicle Miles of Travel in Illinois (in billions)



7.2 FUNDING FOR TRANSPORTATION INFRASTRUCTURE

7.2.1 IDOT'S MAJOR FUNDING SOURCES

OVERVIEW

As shown in Table 7-1, IDOT's primary funding sources are the federal government, state motor fuel taxes, and motor vehicle and operators licenses.² Federal funding, much of which comes from the federal motor fuel tax, spiked after the passage of 2009's American Recovery and Reinvestment Act (ARRA), also referred to as the "stimulus package," and again in 2015. State motor fuel taxes and license fees have either remained steady or fallen since 2009.³ Though revenues from smaller sources, such as title and inspection fees, grew over this same period, these gains do not make up for the overall losses in these other areas. Adjusted for inflation, the 2016 revenues for Illinois' Highway Funds (which primarily fund IDOT) equal just 95 percent of their 2009 value. Figure 7-3 shows how total highway fund cash receipts have changed since 2009 in both nominal and inflation-adjusted terms.

Table 7-1: Highway Fund Cash Receipts (\$Millions, Nominal)

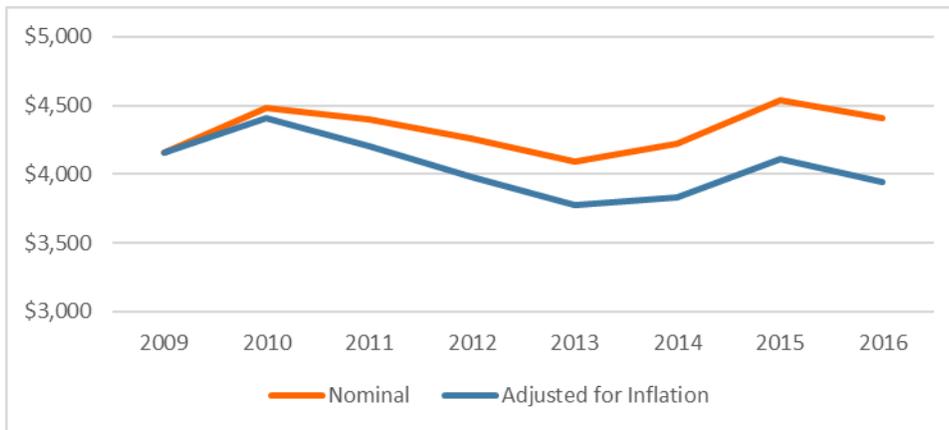
	2009	2010	2011	2012	2013	2014	2015	2016
Federal Government	1,282.5	1,783.3	1,732.0	1,610.5	1,485.3	1,502.9	1,721.2	1,537.5
Motor Fuel Taxes	1,392.6	1,268.4	1,243.1	1,220.7	1,191.2	1,223.5	1,222.6	1,277.1
Motor Vehicle and Operators Licenses	1,255.0	1,225.5	1,221.4	1,222.8	1,183.6	1,215.4	1,240.0	1,257.5
Title & Inspection Fees and Fines	77.3	74.5	76.0	79.5	125.2	129.4	136.7	138.4

² Illinois Comptroller, Detailed Annual Report of Revenues and Expenditures, 2010, 2012, 2014, and 2016.

³ Ibid.

Local Government	65.5	74.9	78.8	66.4	64.6	90.3	140.6	124.3
Miscellaneous	83.9	52.9	51.2	55.7	44.3	63.4	76.9	75.3
Total	4,156.7	4,479.5	4,402.5	4,255.6	4,094.2	4,224.7	4,538.1	4,410.2

Figure 7-3: Highway Fund Cash Receipts (Nominal and Inflation-Adjusted)



FEDERAL FUNDING

The amount of federal transportation funding available to the states is determined via major transportation authorization bills passed by Congress every several years, which set the maximum amount of funding to be appropriated to various transportation programs in each fiscal year. The current authorization, the Fixing America's Surface Transportation (FAST) Act, is five-year legislation intended to improve the nation's surface transportation infrastructure, including roads, bridges, transit systems, and rail transportation network.

The federal government allocates transportation funding to states based on statutory formulas and to local and state public agencies through competitive discretionary grant programs. These programs are described in more detail in Appendix C. Illinois' apportionment of formula-based FAST Act funds from FY2016 through FY2020 is estimated to be \$7.5 billion, or 3.6 percent of the total. This share represents less than Illinois' 4.0 percent share of the national population.

The federal Highway Trust Fund is the primary source of federal highway and transit funding. It is funded primarily by user taxes on motor vehicle fuel; a federal tax of 18.4 cents per gallon on gasoline and of 24.4 cents per gallon on diesel fuel accounts for 90 percent of the Highway Trust Fund revenue. The remaining 10 percent comes from other truck-related taxes, including an annual tax on heavy vehicle use, a load-rating-based tax on truck tires, and a retail sales tax on trucks and trailers. Despite its name, the Highway Trust Fund also supports non-highway infrastructure improvements including but not limited to non-motorized transportation and transit (it supports all Title 23 eligible projects).

The federal motor fuel tax has maintained the same rate since 1993. In recent years, the revenues generated by the federal motor fuel tax have fallen below expenditures from the Highway Trust Fund. Per federal legislation, the Highway Trust Fund cannot have a negative balance, and thus has needed to be supplemented through transfers from the general fund. The FAST Act includes \$70 billion in transfers from the general fund of the U.S. Treasury to the Highway Trust Fund. Congress continues to investigate potential long-term solutions to the solvency of the Highway Trust Fund.

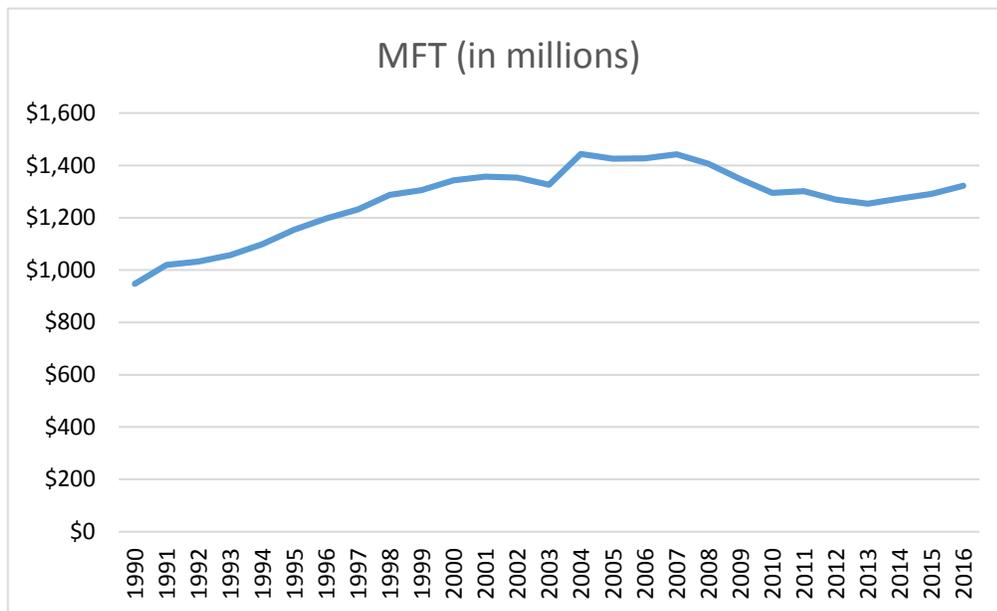
STATE MOTOR FUEL TAX REVENUES

Like the federal government, all states levy motor fuel taxes to fund construction and maintenance of the vast system of roads and highways in the United States. While motor fuel taxes have historically been a primary funding source for state transportation funds, many states are now seriously considering whether and how motor fuel taxes will provide a sustainable revenue source for the future, as travel demand flattens and vehicles become more efficient.

In Illinois, the motor fuel tax has not been increased since 1990, when it was raised to 19 cents per gallon of gasoline and 21.5 cents per gallon of diesel.⁴ Like many states, Illinois has a fixed per-gallon tax, making motor fuel revenues directly reliant on the gallons of fuel purchased. As noted above, vehicle miles traveled have been relatively flat since 2004, resulting in flat motor fuel tax receipts, as shown in Figure 7-2.

To further dampen projections of future motor fuel tax proceeds, motor vehicles are rapidly becoming more fuel efficient. Since 1991, new passenger car fuel efficiency has increased over 28 percent and new light truck fuel efficiency has increased over 23 percent.⁵ With new hybrid and electric vehicles quickly gaining market share and improved fuel efficiencies for standard vehicle technologies, new passenger cars will be expected to average 55.3 miles per gallon and new light trucks 39 miles per gallon by 2025, according to current Corporate Average Fuel Economy (CAFE) standards.⁶ Together, these trends will result in a growing funding gap if motor fuel taxes continue to be relied upon as the primary funding source for transportation. Combined with the impact of rapidly escalating construction costs, this will result in a continual deterioration of IDOT's purchasing power.

Figure 7-4: Illinois Motor Fuel Tax Revenue



⁴ Illinois Department of Revenue, "Increase in the Tax Rate for Motor Fuel," Informational Bulletin, July 1989, <http://www.revenue.state.il.us/publications/bulletins/1990/FY90-04.PDF>.

⁵ Bureau of Transportation Statistics, "Table 4-23: Average Fuel Efficiency of U.S. Light Duty Vehicles," Accessed 31 2017, May, https://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/national_transportation_statistics/html/table_04_23.html.

⁶ Environmental Protection Agency and National Highway Traffic Safety Administration, "2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards," *Federal Register*, vol. 77, no. 199 (October 15, 2012): 63027 and 63031, <https://www.gpo.gov/fdsys/pkg/FR-2012-10-15/pdf/2012-21972.pdf>.

REGISTRATION FEES AND STATE LICENSES

A variety of other highway user taxes and fees generate revenue for IDOT, as shown in Table 7-2. These items are an important and relatively sustainable source of funding, but these revenues, too, have been flat in recent years, as seen in Table 7-1, above.

Table 7-2: Illinois License and Registration Fee Amounts

TYPE OF LICENSE/REGISTRATION	FEE AMOUNT
Driver's license	\$0 - \$30, based on age
Commercial driver's license	\$50 - \$60
Annual auto and pick-up truck registration	\$101 - \$114
Annual heavy truck registration	\$158 - \$3,191, based on weight
Title certification	\$95

BOND ISSUANCES

Illinois issues bonds to raise funds for capital projects. Proceeds from these bond issuances are accounted for in three different funds: Transportation Bond Series A, B and D . Series A funds finance land acquisition, construction, reconstruction, extensions and improvements on state highways; Series B funds finance mass transportation and aviation infrastructure.; and Series D bonds finance work on state highways, arterial highways, freeways, roads, bridges, grade separations of highways and railroads, and also includes bridges on roads maintained by counties, municipalities, townships and road districts.

These bonds are then repaid by revenues from a combination of the state's General Revenue Fund, Road Fund, and Capital Projects Fund.

Illinois' General Revenue Fund is primarily funded by the state income tax, sales tax and federal government reimbursements, as well as other miscellaneous taxes and fees. The Road Fund receives revenue primarily from motor fuel taxes, vehicle license/registration fees and federal government reimbursements. The Capital Projects Fund was created to fund the Illinois Jobs Now! Bill in 2009, and receives revenue from a video gaming tax, an expanded sales tax, a portion of lottery funds, increased liquor taxes and increased motor vehicle registration fees. Revenues from these sources have underperformed expectations, due in part to delayed implementation, requiring funds to be transferred from the General Revenue Fund and the Road Fund to make up the difference.

OTHER TRANSPORTATION FUNDING IN ILLINOIS

Though IDOT is a major spender of transportation dollars in Illinois, it is not the only one. Municipalities, counties, townships, transit systems, airports, railroads, port authorities and the Illinois State Toll Highway Authority all fund infrastructure improvements in the state. In some cases, the State of Illinois provides transportation funding to other entities or acts as a pass through for federal funds, while in other instances, these entities raise funds directly via tolls, fees or local taxes. Appendix D describes some of these other transportation programs and funding sources by transportation mode.

7.2.2 LONG-TERM FUNDING GAP

As described above, the state's current revenues for transportation have been stagnating for over a decade. At the same time, construction costs are increasing faster than inflation, vehicle miles of travel are exhibiting flat growth and vehicles are becoming more fuel efficient. With a fixed state motor fuel tax at \$0.19 per gallon for gasoline and \$0.215 per gallon for diesel fuel, the state's annual funding is failing to keep up with needs, making the state reliant on a series of capital bills every ten years to improve infrastructure.

Illinois' highway and transit networks were key factors to growth and development of the state over the past several decades. To support future growth, enhanced flow on all modes and greater flexibility to integrate transportation services through multimodal strategies and investments will be required. However, IDOT lacks the funding to undertake major enhancements. Of IDOT's approximately \$12 billion annual capital budget, more than 86 percent of funds go to maintenance, replacement and repair of existing infrastructure, rather than strategic expansion. Even the remaining 14 percent of the capital budget intended for strategic expansion includes modernization projects, and not just extensions or brand-new elements.

In order to secure Illinois' infrastructure future, the state must consider long-term sustainable funding sources that are protected from the "boom and bust" cycles of state capital bills. While capital bills are an important funding source, recent bills have focused on financing infrastructure improvements using bonds (which require repayment from future revenues), rather than generating sustainable revenue sources. These capital bills do not provide the reliability that Illinois requires for ongoing investment in its transportation assets.

In November of 2016, Illinois voters supported a measure to amend the state's constitution to protect transportation funds. In the past, proceeds from transportation-related taxes and fees were at risk of being diverted to fund non-transportation services. The new "transportation lockbox" ensures that the taxes and fees paid at the pump, at the Department of Motor Vehicles (DMV) and other transportation-related fee collections will go toward improving Illinois' transportation infrastructure. The transportation lockbox marks a step in the right direction toward ensuring that transportation revenues are spent on transportation, but even with the lockbox, Illinois' transportation funding needs will continue to outpace available resources.

Enhanced management practices will also help IDOT control costs and extend the useful life of existing transportation assets. In compliance with the Moving Ahead for Progress in the 21st Century Act (MAP-21), IDOT is developing a transportation asset management plan (TAMP) covering Illinois' National Highway System (NHS) bridge and pavement assets. This TAMP will set out IDOT's plans for making informed decisions about how best to efficiently and effectively manage our physical assets, moving from a "worst first" system of investment to a more strategic system focused on proactive preservation.

IDOT continues to make a concerted effort to track the pavement preservation needs of its more than 16,000-mile state highway system. Annually, IDOT assesses pavement condition, ride quality and a whole host of other data points on the conditions of the roads. Similarly, IDOT manages the state's bridge system using a comprehensive process that includes bridge inspection and inventory data, needs analysis, and funding allocation methods in order to maximize the use of available funds to address the assigned condition goal.

IDOT predicts that over the next six years if current funding levels remain the same, the number of deficient roadways in need of improvement will increase from 2,785 miles in 2016 to 5,588 miles in 2023. The number of bridges needing immediate improvement is expected to increase from 622 in 2016 to over 1,000 in 2023. This growing backlog of needs represents potential delays and economic loss to the traveling public that can only be addressed with appropriate funding.

Each year IDOT develops a plan detailing anticipated funding and projects to be accomplished. This program document, the proposed highway improvement program, often referred to as the multi-year program or MYP, is a six-year strategic capital investment plan for the highway system. The FY 2018-2023 MYP identifies a total of \$11.65 billion of highway investments on state and local highways. This program will:

- Provide funding to maintain 2,463 miles of state-maintained roads and replace or rehabilitate 707 bridges.
- Provide funding to maintain 743 miles and 274 bridges on the locally maintained system.
- Provide funding for railroad crossing safety improvements throughout the state.
- Provide funding for traffic and safety improvements that further enhance highway safety as part of IDOT's regular highway improvement program by targeting specific fatal and severe crash locations.
- Enhance public right-of-way accessibility as part of IDOT's regular highway improvement program by removing barriers to accessibility as identified in IDOT's Americans with Disabilities Act (ADA) Transition Plan.

While significant at \$11.65 billion, the MYP does not provide the funding needed to address all of the deficiencies in IDOT's system. In the current MYP, the majority of the funds available are spent on maintaining the existing system.

7.3 STRATEGIES FOR BRIDGING THE FUNDING GAP

With the issues related to lagging revenues and accelerating costs framed in the previous sections, this section focuses on approaches to filling the funding gap. Some possible options are increases to existing tax/fee systems, as well as enabling legislation that supports the efficient and effective use of innovative funding and financing mechanisms. Others will require significant changes to current operating procedures and internal IDOT policies. For strategies that require legislative action, IDOT would need to work with elected officials to champion the initiatives that will help it achieve funding goals. While challenging, these approaches represent examples of how other states have taken steps to help fund transportation capital and/or operations and maintenance needs.

Eleven potential strategies for increasing revenues and managing costs have been identified, grouped into four high-level categories as follows:

INCREASE REVENUES FROM EXISTING SOURCES

1. Raise motor fuel tax rates, index to inflation, and capture sales tax on motor fuels
2. Increase or restructure vehicle license fees
3. Strategically pursue federal grant opportunities

EXPLORE NEW MODELS OF FUNDING

4. Explore mileage-based user fees as an alternative to motor fuel taxes
5. Promote value capture financing among local governments
6. Introduce express toll lanes to better manage congestion

SEEK INNOVATIVE FINANCING AND INVESTMENT MECHANISMS

7. Leverage federal financing programs to attract private investment
8. Pass Design-Build legislation and pursue public-private partnerships (P3s)

MAKE MORE STRATEGIC DECISIONS WITH EXISTING FUNDS

9. Enhance asset management practices
10. Allocate transportation funding based on project need
11. Foster projects that support the Illinois economy

These strategies are discussed in this chapter, with additional detail provided in Appendix C.

7.3.1 RAISE MOTOR FUEL TAX RATES, INDEX TO INFLATION, AND CAPTURE SALES TAX ON MOTOR FUELS

As discussed in section 3.1, Illinois last raised its motor fuel tax in 1990, when it was increased to 19 cents per gallon for gasoline/gasohol, and to 21.5 cents per gallon for diesel fuel.⁷ This rate has not been tied to inflation, causing its real value to shrink over the last two-and-a-half decades. Had the motor fuel tax increased annually with inflation, today's rates would be 33.5 cents for gasoline and 37.9 cents for diesel.⁸

Only three states have gone longer than Illinois without an increase in their motor fuel tax, and more than half of all states have raised motor fuel taxes and/or altered their structure since 2012.⁹ Illinois' gas tax rate is the 38th lowest among states, while its diesel rate is the 35th lowest.¹⁰ Illinois, like six other states, collects sales tax on motor fuel; however, the proceeds of this five percent tax go into the General Revenue Fund rather than toward transportation-specific funds.¹¹ When the price of fuel exceeds three dollars per gallon, drivers are paying a total tax rate about double the motor fuel tax on a gallon of fuel. State rankings that estimate motor fuel taxes paid including sales tax rank Illinois 18th highest for gasoline and 10th highest for diesel.¹² As Table 7-3 shows, these taxes remain lower than or on par with several of Illinois' peer states, including most of its closest neighbors. The table is sorted in descending order by Gasoline Total Taxes. Tax estimates for states where taxes vary by price of gasoline are based on the price of fuel on November 1, 2017, as reported by AAA.

Table 7-3. Motor Fuel Taxes in Illinois and Peers (¢/gallon)¹³

STATE	GASOLINE			State Excise Tax	DIESEL	
	State Excise Tax	Other State Taxes/Fees	Total Taxes (without Federal)		Other State Taxes/Fees	Total Taxes (without Federal)
Pennsylvania	0.00	59.30	59.30	0.00	74.70	74.70
Michigan	26.30	15.84	42.14	26.30	16.24	42.54
California*	41.70	11.62	53.32	20.00	35.07	55.07
New York	8.05	35.60	43.65	8.00	31.43	39.43
Indiana*	28.00	13.90	41.90	26.00	22.00	48.00
Florida	4.00	36.80	40.80	4.00	29.77	33.77
New Jersey	10.50	26.60	37.10	13.50	30.70	44.20
Illinois	19.00	16.05	35.05	21.50	17.07	38.57
Wisconsin	30.90	2.00	32.90	30.90	2.00	32.90
Georgia	26.30	4.79	31.09	29.40	4.79	34.19
Iowa	30.50	0.00	30.50	32.50	0.00	32.50
South Carolina*	28.00	0.75	28.75	28.00	0.75	28.75
Ohio	28.00	0.01	28.01	28.00	0.01	28.01
Tennessee*	26.00	1.40	27.40	27.00	1.40	28.40
Kentucky	24.60	1.40	26.00	21.60	1.40	23.00

⁷ In addition to the motor fuel tax, Illinois levies a .8 cent per gallon environmental impact fee and a .3 cent per gallon underground storage fee.

⁸ Rates adjusted based on the historical Consumer Price Index, https://inflationdata.com/Inflation/Consumer_Price_Index/HistoricalCPI.aspx?reloaded=true.

⁹ Sophie Quinton, "Reluctant States Raise Gas Taxes to Repair Roads," Pew Charitable Trusts, July 26, 2017, <http://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2017/07/26/reluctant-states-raise-gas-taxes-to-repair-roads>.

¹⁰ Tax Policy Center, <http://www.taxpolicycenter.org/statistics/state-motor-fuels-tax-rates-2000-2011-2013-2017>, February 2017.

¹¹ <http://www.ilga.gov/commission/lru/2015taxhandbook.pdf>; general fund dollars may be used to support transportation, but are not restricted for this purpose. A small portion of the general sales tax in portions of Illinois does support the Downstate Public Transportation Fund.

¹² American Petroleum Institute, State Motor Fuel Taxes, <http://www.api.org/~media/Files/Statistics/State-Motor-Fuel-Notes-Summary-November-2017.pdf>, November 2017.

¹³ Ibid.

Louisiana	20.00	0.01	20.01	20.00	0.01	20.01
Texas	20.00	0.00	20.00	20.00	0.00	20.00
Arizona	18.00	1.00	19.00	26.00	1.00	27.00
Missouri	17.00	0.35	17.35	17.00	0.30	17.30
US National Average	22.94	10.39	33.33	21.51	11.39	32.90
* Designates states that have recently passed legislation to increase their tax. The figure given shows how much the tax/fee will be once fully implemented.						

Other states that have raised motor fuel taxes have seen their revenues increase significantly. For example, after Wyoming raised its motor fuel tax 71 percent from 14 cents to 24 cents, motor fuel tax revenues grew 40 percent, while a 14 percent increase from 21 cents to 24 cents in Massachusetts resulted in 11 percent higher motor fuel revenues in the subsequent year.¹⁴

Alongside an increase in the motor fuel tax, indexing the rate to inflation would allow revenues to grow with the economy without requiring additional legislative action. Over the past decade, the Consumer Price Index (CPI) has lagged construction cost escalation, as demonstrated in 7.2.1, though indexing would still go a long way in narrowing the growing funding gap.

If raising the motor fuel tax were deemed politically untenable, an alternative could be to set aside the sales tax already collected on motor fuel for transportation purposes. Sales tax is applied to motor fuels at the standard 6.25 percent rate used for many goods, with 80 percent of the proceeds going to the State of Illinois General Revenue Fund, and 20 percent to local governments. Of the state's 80 percent disbursement, the vast majority is designated for the General Revenue Fund. No portion of the state sales tax is dedicated to transportation purposes despite the transportation lockbox provisions noted above.¹⁵

Unlike Illinois, 10 states assign a portion of their general sales and use tax to transportation-specific purposes (including California and Indiana, among Illinois' peers).¹⁶ For example, Indiana, which has a 7 percent general sales and use tax rate, currently allocates 1.152 percent of its general sales and use tax collections to transportation funds. In FY2019 and thereafter, Indiana will decrease the share of sales and use tax collections on non-motor fuels that is allocated to transportation funds, while simultaneously increasing the share of sales and use tax collections on motor fuels that supports transportation-related funds.

Allocating the proceeds from the existing sales tax on motor fuel could enable Illinois to shrink its transportation funding gap without raising transportation-related taxes.

7.3.2 INCREASE OR RESTRUCTURE VEHICLE LICENSE FEES

IDOT receives revenue from vehicle registration and title fees, truck registration fees (based on gross vehicle weight), oversized/overweight truck permit fees, aircraft registration fees and pilot license fees. The standard vehicle registration fee was increased by \$2 in 2013, bringing the total fee for registration and title to \$196 (\$101 for vehicle registration, and

¹⁴ National Conference of State Legislatures, "Recent legislative actions likely to change gas taxes," July 19, 2017, <http://www.ncsl.org/research/transportation/2013-and-2014-legislative-actions-likely-to-change-gas-taxes.aspx>; Tax Policy Center, "Motor Fuel Tax Revenue 1997-2014," June 13, 2017, <http://www.ncsl.org/research/transportation/2013-and-2014-legislative-actions-likely-to-change-gas-taxes.aspx>.

¹⁵ There is, however, a designated transfer from the general fund to the Downstate Public Transportation Fund of 3/32 of net revenue from Madison, Monroe, and St. Clair counties, and other counties and municipalities that have downstate mass transit districts; <http://www.ilga.gov/commission/lru/2015taxhandbook.pdf>.

¹⁶ American Association of State Highway and Transportation Officials, A 50-State Review of State Legislatures and Departments of Transportation, November 2016.

\$95 for title). However, the revenues from this increase were designated for the Illinois Department of Natural Resources (IDNR) and have not contributed to meeting Illinois' transportation funding needs.

Raising vehicle license fees is a sensible approach to increasing IDOT's revenues. These fees are a more stable source of revenue than motor fuel and sales tax, as they are less susceptible to short-term changes in oil prices and economic trends. License and registration fees make up a small fraction of the total costs of car ownership, such that fee increases are unlikely to alter buying decisions.

However, there may be challenges to this approach. As demonstrated in Table 7-4, Illinois' registration fees are higher than many of its peers. Most of the states with higher fees than Illinois use variable rates, in which the fee is based on the vehicle value or weight. These systems have the benefit of charging more either to those with higher value vehicles or to vehicles that, due to their higher weight, have a greater impact on roadway condition. Transitioning to a value- or weight-based system in Illinois may be a more politically palatable alternative than increasing the flat rate for everyone and is something that IDOT could explore with the legislature, alongside consideration of across-the-board fee increases.

Table 7-4. Vehicle License Fees in Illinois and Peers

STATE	VEHICLE REGISTRATION FEE RANGE ⁺	REGISTRATION FEE FOR TYPICAL VEHICLE [^]	
		VEHICLE [^]	RATE TYPE
Arizona	\$27 - \$1680	\$424.32	Variable formula based off vehicle value
Iowa	\$15 - \$1028	\$353.90	Variable formula based off vehicle weight, year and list price
California*	\$111.50 - \$905	\$324.00	Variable rate based off vehicles value
Michigan	\$76 - \$462	\$216.00	Variable rate based off vehicle price and year
Tennessee*	\$106.00	\$106.00	Flat Rate
Illinois	\$101.00	\$101.00	Flat Rate
Wisconsin	\$75.00	\$75.00	Flat Rate
New Jersey	\$33.50 - \$84	\$59.00	Variable rate based off weight and year
Texas	\$50.75 - \$54	\$50.75	Variable rate based off weight
Pennsylvania	\$37.00	\$37.00	Flat Rate
Indiana*	\$36.35	\$36.35	Flat Rate
Ohio	\$34.50	\$34.50	Flat Rate
Louisiana**	\$10-\$100	\$34.00	Variable rate based off vehicle value
New York**	\$26-\$140	\$26.85	Variable rate based off weight
Missouri	\$18-\$51	\$24.25	Variable rate based off taxable horse power
Florida	\$14.50-\$32.50	\$22.50	Variable rate based off vehicle weight
Kentucky	\$21.00	\$21.00	Flat Rate
Georgia	\$20.00	\$20.00	Flat Rate
South Carolina*,**	\$20.00	\$20.00	Flat Rate

⁺Assumes minimum weight of 1,650 lbs., max of 7,000; and minimum price of \$1,000, max of \$100,000.

[^]Rates based off 2017 \$34,000.00, 3,497 lbs. vehicle.

* Designates states that have recently passed legislation to increase their fee. Fee shown as expected once fully implemented.

** Designates states with biennial collection of registration fees. In these cases, their biennial rate has been halved to compare with annual rates.

7.3.3 EXPLORE MILEAGE-BASED USER FEES AS AN ALTERNATIVE TO MOTOR FUEL TAXES

To account for the decline in motor fuel tax revenues due to increasing fuel efficiency and the growing popularity of electric vehicles, many states are considering charging mileage based user fees (MBUF) based on vehicle miles traveled (VMT). MBUF, also known as road usage charging (RUC), requires drivers to pay a fee for each mile driven.

Oregon, California, Minnesota, Colorado and other states have all introduced MBUF pilot programs, and each employ different strategies and technologies for assessing and collecting the fee.

- Oregon successfully completed two road usage charge (RUC) pilots in 2007 and 2013, which led to the establishment of OReGO, the nation's first legislatively mandated MBUF program. Under OReGO, up to 5,000 volunteer participants are paying 1.5 cents per mile and are receiving credits for any motor fuel taxes paid at the pump.¹⁷
- In 2011, Minnesota completed a 500-person, statewide MBUF pilot study which used variable rate, time of day pricing.¹⁸
- In March 2017, California completed the California Road Charge Pilot Program, a 9-month pilot where 5,000 vehicles participated in a statewide feasibility study to explore MBUF, reporting VMT and being assessed a simulated 1.8 cents per mile road charge.¹⁹
- Colorado also recently concluded a four-month, 100-person MBUF research study and pilot.²⁰
- Other MBUF pilot programs are launching in Washington and Hawaii, and regional pilot studies are being explored through a 14-state western states coalition (RUC West), and the I-95 Corridor Coalition.

Following the lead of these states, a 2016 Illinois Senate bill proposed to implement MBUF within Illinois. The bill would have provided drivers of passenger vehicles with three options for identifying or estimating how many vehicle miles are traveled. The first option, and the one most commonly considered across jurisdictions, would require drivers to install a device which would automatically collect and report a vehicle's distance and location, thus only charging the driver for miles driven within Illinois. A second option would assess MBUF based on a driver's annual odometer reading. The third option would allow drivers who did not want to report their miles to pay a flat annual fee of \$450, based on an annual VMT of 30,000 miles at a 1.5 cents per mile rate. Each of the options assumed a single per-mile rate, established by the Illinois legislature. However, MBUF systems could also be structured to support variable, differentiated pricing schemes where rates could vary based on vehicle type, vehicle weight, emissions, fuel efficiency, geographic location or time of day. Ultimately, this bill was not successful.

However, as electric and high efficiency cars still cause wear on roadways and congestion, and if the trend towards their greater use continues, Illinois may need to revisit the feasibility of MBUF as a way to provide a more scalable, flexible, equitable and user-based funding source for the state's transportation system. IDOT has remained actively engaged in nationwide MBUF discussions and will continue to gather lessons learned and best practices from other states that could be used in a future Illinois MBUF pilot.

A pilot program would enable Illinois to explore and evaluate solutions to challenges associated with MBUF programs, such as technology costs, privacy concerns, data security, jurisdictional issues, administrative costs, equity between rural and urban drivers, driver convenience, and means to maximize MBUF enforcement. To support the pilot program, IDOT should seek funding from FHWA's \$95 million Surface Transportation System Funding Alternatives (STSFA) grant program, which funds states or groups of states exploring usage-based transportation funding programs.

7.3.4 PROMOTE VALUE CAPTURE FINANCING AMONG LOCAL GOVERNMENTS

Value capture financing (VCF) approaches aim to link the beneficiaries of a public infrastructure investment to the project by implementing a mechanism for those beneficiaries to pay for portions of the capital, operations and/or maintenance

¹⁷ <http://www.myorego.org>

¹⁸ <http://www.dot.state.mn.us/mileagebaseduserfee/>

¹⁹ <http://www.californiaroadchargepilot.com>

²⁰ <https://www.codot.gov/programs/ruc>

costs. Value capture includes many types of revenue generating mechanisms, including special assessment districts, tax increment financing (TIF) and developer impact fees, described below.

SPECIAL ASSESSMENT DISTRICTS

A special assessment district is an officially designated area from which additional property taxes are collected for a specific use, which can include transportation improvements. The properties (or subset of properties) located within the district boundary are assessed with a higher tax rate. Special assessment districts can be organized in a variety of ways, depending on the intent of the revenue raised from the district. A special assessment district may levy the additional taxes or fees based on distance from the project, type of land use, total acreage or frontage. Special assessment districts are typically structured to generate either a specified level of revenue or to last a set number of years.

Illinois has two forms of special assessment districts, one called a Special Assessment District (SAD) and the other called a Special Service Area (SSA). SADs are more difficult to establish, requiring demonstration of benefits that are specific to only the properties included within the district. SSAs require that 70 percent of property owners in the proposed district sign a petition approving the district, and approval of the governing municipality and/or county.

TAX INCREMENT FINANCING (TIF)

Tax Increment Financing (TIF) is commonly used in real estate redevelopment projects where the assessed value of a parcel is expected to increase substantially and a portion of that increase is diverted to associated infrastructure or project uses (or the repayment of debt). TIF typically involves local governments financing infrastructure projects/development within a discrete, defined district.

Unlike special tax assessment districts, TIF does not involve a tax rate increase. Instead, the rise in property values resulting from the real estate project (or in this case, the transportation project) generates additional revenues that would not have materialized without the new project. Local governments are typically cautious about TIF because it obligates bonding capacity and future property taxes, but are more willing to approve a TIF deal if the new development will stimulate economic growth in the near-term that would not materialize without it. TIF is not commonly used over large areas because it is difficult to identify the portion of the assessed value increase associated with the infrastructure improvement.

In Illinois, establishment of a TIF district typically requires a finding of blight, and the TIF is intended to spur development activity that would not otherwise occur. Illinois passed a bill in 2016 that explicitly allows transit TIF districts around four specific transit projects (three CTA projects and the implementation of Chicago Union Station's master plan), but did not create a mechanism for development of future transit/transportation TIF districts.

DEVELOPER IMPACT FEES

Developer impact fees are one-time charges imposed on developers in order to help cover the cost of new or expanded infrastructure required as a result of the development. The intention of impact fees is to allocate the cost of improvements in an equitable manner by ensuring that developers pay for the strain the development puts on the transportation system. Like half of all states, Illinois authorizes local governments over 400,000 in population to impose "Road Improvement Impact Fees" (605ILCS 5/5-901 et seq.) in cases where their improvements are "specifically and uniquely attributable to the new development paying the fee." In many high-growth communities, local transportation development impact fees and infrastructure requirements are enforced to ensure that development is orderly and public infrastructure is built concurrently with growth.

Direct developer contributions may result from a negotiation between a large developer and the project sponsor during the planning stages of development. A developer may propose an extension to the new system, additional stops or a change in alignment that will provide direct benefit to their property (as well as generate additional ridership). In exchange, the project sponsor may request a financial contribution to balance the larger public benefits resulting from greater ridership with the private benefits to the developer.

VCF mechanisms can be combined to support capital projects. For example, the city of Alexandria, Virginia, financed the Potomac Yard Metrorail Station through a planned mixed-use, transit-oriented district. The new station is being entirely self-financed from new development surrounding the station, with \$240 million in revenue from a combination of tax-increment financing, two different special assessment districts and developer impact contributions.

To advance the use of value capture financing for transportation in Illinois, IDOT must ensure that local governments are aware of the VCF strategies at their disposal and work with the legislature to create a more robust legal framework for exercising these tools.

7.3.5 INTRODUCE EXPRESS TOLL LANES TO BETTER MANAGE CONGESTION

As part of the I-55 Managed Lane Project and the I-290 Phase 1 Study, IDOT is studying various options for introducing “managed lanes” that would optimize traffic flow and/or vehicle throughput. These include pricing-based options such as Express Toll Lanes (ETL) and other options discussed in more detail in Appendix C. ETLs operate alongside free general-purpose lanes and require payment for vehicles to use the lanes. Toll rates for ETLs may be fixed or variable, fluctuating depending on the time of day or real-time congestion levels.

Particularly during peak periods, demand for Illinois’ highways exceeds their supply, resulting in congestion. Building new highway capacity is expensive, and research has shown that expanded capacity often does little to relieve congestion.²¹ This is because the new capacity attracts additional drivers, leading to a net increase in VMT and little if any improvement in congestion. Though congested freeways may not collect revenue from their users, they still exact a cost – the time spent waiting in traffic. Charging vehicles for use of the road can reduce demand, as users combine trips, carpool or, in the case of variable pricing, shift trips to non-peak periods. ETLs provide drivers with the choice to continue using free lanes or to pay a toll to use an express lane for a faster trip. Experience in other locales shows that ETLs are used by people of all income levels, and that they typically result in reduced congestion in the free lanes as well as in the tolled lanes.²²

FHWA has several programs that states must apply for and follow to toll federal aid highways. Mainstream Tolling Programs include the Section 129 General Tolling Program and the Section 166 HOV/HOT Program. Each of these programs has specific criteria and limitations on what types of roadways can be tolled, particularly related to existing free highways that a state wishes to convert to tolled facilities.

FHWA also has two pilot programs that are available for states with appropriate projects that do not fit the Mainstream Tolling Programs. These are the Value Pricing Pilot Program (VPPP), and the Interstate System Reconstruction and Rehabilitation Pilot Program (ISRRPP). The VPPP allows conversion of existing free roadways to variably priced toll

²¹ See, e.g., Noland, R.B. and L.L. Lem, “A review of the evidence for induced travel and changes in transportation and environmental policy in the US and the UK,” Transportation Research D, 2002, <https://www.accessmagazine.org/wp-content/uploads/sites/2/2015/04/Replogle-Induced-TR-D.pdf>; Litman, T, “Generated Traffic and Induced Travel: Implications for Transport Planning,” Victoria Transport Policy Institute, 2010, <http://www.vtpi.org/gentraf.pdf>.

²² U.S. Federal Highway Administration (FHWA), “Income-Based Equity Impacts of Congestion Pricing: A Primer,” 2008.

facilities to reduce congestion. The ISRRPP allows tolling of existing interstates to generate funding for maintenance and reconstruction of the interstate system. Each of these pilots has limited slots for which states can apply.

IDOT will continue to pursue the addition of ETLs as part of existing and future highway expansion projects, allowing the users of these enhancements to pay some of the costs when using the facility. The Chicago Metropolitan Agency for Planning (CMAP), IDOT and the Tollway Authority are working together to capture guidance for improving mobility on the expressway system. This “Long-Range Expressway Vision for Northeastern Illinois” is multimodal in scope, and focused on operational improvements to the existing expressway system using various forms of tolling as well as other tools in lieu of capital expansion. This vision document is expected to be complete in mid-2018.

ETLs can be an effective tool for both raising funds and improving mobility, and it is critical that they be part of IDOT’s menu of funding strategies going forward.

7.3.6 STRATEGICALLY PURSUE FEDERAL GRANT OPPORTUNITIES

The U.S. Department of Transportation offers numerous opportunities for state and local governments to apply for discretionary grant funding. These programs play a critical role in funding major capital projects and may also fill gaps that enable P3 projects or traditionally funded projects to come to fruition.

To maximize its ability to win federal discretionary grants, IDOT must develop a proactive strategy by identifying competitive projects that meet the grant programs’ criteria within the required timeframes. It must also coordinate the years that it plans to apply for the various programs with other state and local participants in order to limit in-state competition. Finally, IDOT should plan its applications with enough lead time to be sure that comprehensive, quality data and supporting information is available to craft a compelling narrative supported by a strong and defensible cost-benefit analysis.

Major competitive grant programs are described briefly here; more detail is available in Appendix C:

- **INFRA** (Infrastructure for Rebuilding America) – First introduced in the FAST Act under the name Fostering Advancements in Shipping and Transportation for the Long-Term Achievement of National Efficiencies (FASTLANE) grants, INFRA grants support large-scale projects of national and regional significance, especially highway and freight-related projects which support economic vitality and use innovative approaches to leverage federal dollars.
- **TIGER** (Transportation Investment Generating Economic Recovery) – TIGER grants fund innovative transportation investments, including projects that span different modes or jurisdictions. The program seeks projects that increase access to safe, reliable and affordable transportation and spur economic development.
- **Capital Investment Grants (CIG)** – CIG funding supports major transit projects under four distinct categories. New Starts are fixed guideway projects costing above \$300 million or seeking more than \$100 million in CIG funding, while Small Starts are fixed guideway or bus rapid transit (BRT) projects with a total cost under \$300 million and seeking less than \$100 million in CIG funding. Core Capacity projects must increase capacity on existing fixed guideway systems by at least 10 percent in corridors at (or soon to be at) capacity. Finally, Programs of Interrelated Projects may combine these project types, so long as the projects in the programs relate to one another and begin construction within a similar timeframe.
- **Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD)** – Authorized by the FAST Act, ATCMTD grants are intended for deployment of technologies related to: advanced traveler information systems; transportation management; maintenance, monitoring and condition assessment; safety systems, including vehicle-to-vehicle and vehicle-to-infrastructure communication; autonomous vehicles;

integration of intelligent transportation systems and Smart Grid; electronic pricing and payment; advanced mobility and access; etc.

- **Rail Development Programs** – The FAST Act authorized three competitive grant programs for rail-related projects. The Consolidated Rail Infrastructure and Safety Improvements (CRISI) program funds regional and corridor planning, environmental analysis, workforce development, research, and training projects related to improving the safety, efficiency and reliability of freight and passenger rail systems. The Federal-State Partnership for State of Good Repair (FSPSGR) program supports projects that reduce the SGR backlog on Amtrak and public infrastructure, as well as Restoration and Enhancement Grants that offer operating assistance for intercity passenger rail routes to initiate, restore or expand service.

7.3.7 LEVERAGE FEDERAL FINANCING PROGRAMS TO ATTRACT PRIVATE INVESTMENT

In addition to grant programs and formula funding, the federal government offers financing and credit assistance programs that enable recipients to more easily attract private investment or lower their overall borrowing cost. IDOT has not taken advantage of many of these programs in the past; doing so in the future could help accelerate and deliver projects with fewer state dollars.

Federal financing programs are summarized below. For more detail, see Appendix C.

- **TIFIA** (Transportation Infrastructure Finance and Innovation Act) – TIFIA provides loan guarantees, direct loans and standby lines of credit for large and regionally/nationally significant projects. More favorable interest rates and terms than those offered by the private market make recipients of TIFIA assistance attractive prospects for private investment.
- **Private Activity Bonds (PABs)** – PABs incentivize private investment by allowing private entities to benefit from the lower costs of tax-exempt bonds when investing in transportation infrastructure. Public entities act as conduit issuers of PABs, issuing tax-exempt debt for transportation projects with substantial private sector participation.
- **Grant Anticipation Revenue Vehicles (GARVEEs)** – Grant Anticipation Revenue Vehicles (GARVEEs) allow states to use expected future-year federal aid highway appropriations (specifically Title 23 funding) to repay principal, interest and other issuance costs related to debt financing instruments. Although notes, certificates, mortgages and leases are eligible debt financing instruments under GARVEE, it is typically used for bonds.
- **Grant Anticipation Notes (GANs)** – Similar to GARVEEs, GANs may be used by agencies receiving funding from the Federal Transit Administration (FTA) under Title 49. Unlike GARVEEs, GANs do not cover interest or issuance costs. “Note” is the term used for shorter-term debt, which includes transit funding due to the fact that this funding is subject to annual Congressional appropriations, and therefore less predictable long term. GANs may be backed by federal formula funds or discretionary grants.
- **Railroad Rehabilitation & Improvement Financing (RRIF)** – The FRA’s RRIF program provides direct loans and loan guarantees to acquire, improve or rehabilitate intermodal or rail equipment or facilities, including track, bridges, yards, buildings and shops; refinance outstanding debt incurred for the purposes listed above; and develop or establish new intermodal or railroad facilities. Direct loans can fund up to 100 percent of a railroad project with repayment periods of up to 35 years and interest rates equal to the cost of borrowing to the government.

7.3.8 PASS DESIGN-BUILD AND REVISE PUBLIC-PRIVATE PARTNERSHIP LEGISLATION

Public-Private Partnerships (P3) are a form of project delivery permitted by the State of Illinois for use in transportation projects. P3s are not a source of funding; rather, they are a way to structure legal agreements between the public and

private sector parties to provide financing, expedite delivery, stimulate innovation or drive cost-efficiency through the transfer of risk.

At a high level, “traditional delivery” refers to design-bid-build (or DBB) where design is completed by the project owner or under one contract and a contractor bids on and constructs the project under a separate contract. There are multiple forms of P3s, ranging from a model in which the developer designs and builds an asset under a single contract (“Design-Build” or “DB”) to a model where the private party designs, builds, finances, operates and maintains an asset (“Design-Build-Finance-Operate-Maintain” or “DBFOM”).

DBs and other types of P3s can provide greater budget and schedule certainty to the public entity due to the financial incentives laid out in the P3 agreement. They can also provide cost savings by integrating the various components of project delivery and operations into one contract, which reduces friction costs between phases of project development. The transfer of risk between the public and private sector is another potential benefit as the private partner is often better equipped to mitigate certain risks, thereby creating cost efficiencies.

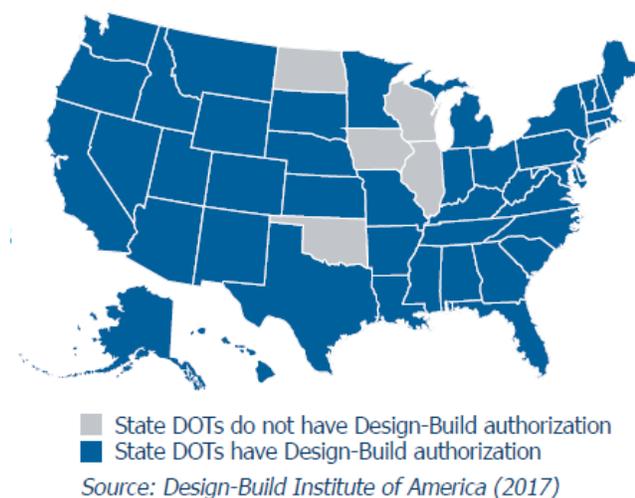
There are also potential costs to P3 project delivery. P3 transactions can be complex and require more management than traditional contracting. There is a need to align the public entity’s goals with the private sector’s appetite for the project, along with a need to anticipate all possible financial, legal and technical contingencies. Thus, P3 projects tend to have higher transaction costs than traditional delivery. In some cases, these higher costs are offset by lower design costs since most design is passed on to the private partner.

Public entities generally weigh the benefits and costs of P3 delivery by analyzing the “value for money,” or the difference in cost of delivery between a private capital approach and a public approach. This form of study allows the public entity to quantify and analyze the costs and benefits of a variety of procurement models.

P3-enabling legislation varies widely among states, but the basic goal is the same: to allow public entities to take advantage of the benefits of P3 project delivery while protecting the public interest. As of January 2016, 36 states, the District of Columbia and Puerto Rico have enacted legislation enabling P3s for transportation projects.

Though Illinois authorized P3s in 2011’s *Public-Private Partnerships for Transportation Act (Ill. Rev. Stat. Ch. 630 §5/5 et seq.)*, no P3s have come to fruition. Many states with successful P3 programs differ in important ways from Illinois. For example, while Illinois requires legislative approval of individual P3 projects, other states have P3 offices or advisory bodies that review and approve P3 projects on an ongoing basis without significant legislative involvement. These entities vary in their makeup and authority, but typically play a role in identifying and screening candidate projects, and may also assist with procurement. In addition, other states allow for unsolicited P3 proposals, claims resolution via binding arbitration, imposition of tolls and other elements that are missing from Illinois’ legislation. Furthermore, Illinois is one of only five states that do not authorize Design-Build contracts, as illustrated in Figure 7-5.

Figure 7-5. Design-Build Authorization Across the United States



By modifying the P3 legislation to include some of these practices of states with more robust P3 portfolios, and by passing legislation authorizing Design-Build as a delivery mechanism, Illinois may be able to more successfully advance worthwhile P3s and claim the resulting benefits and cost savings.

Appendix D provides more information on key elements of P3s, their benefits and costs, comparison across states, and factors to consider when selecting optimal P3 projects.

7.3.9 ENHANCE ASSET MANAGEMENT PRACTICES

Asset management is “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.”²³

Robust asset management systems and practices enable organizations to make better decisions, improve productivity and performance of assets, use limited resources more effectively, and enhance credibility.

IDOT developed a Transportation Asset Management Gap Analysis and Implementation Plan in 2015 which laid out the agency’s vision and goals, and a work plan comprising seven initiatives to promote achievement of those objectives. Since then, IDOT has begun enacting the work plan and will continue to do so in the years to come with a preliminary Transportation Asset Management Plan prepared by April of 2018. In addition, IDOT is in the process of acquiring an Enterprise Asset Management system that will contain facility condition data that can be used to inform decision-making.

7.3.10 ALLOCATE TRANSPORTATION FUNDING BASED ON PROJECT NEED

Asset management approaches promote making investment decisions based on performance-driven criteria and evaluation of competing projects. This process contrasts with Illinois’ long-followed informal policy in which 45 percent of transportation funding flows to northeastern Illinois, and the remaining 55 percent to the rest of the state. This funding formula prevents IDOT from exercising flexibility and allocating funds where they are most needed. As funding needs in northeastern Illinois grow, having the option to allocate a higher proportion of the state’s funds to the region may alleviate some of the pressure to identify novel funding sources. While efforts to transition away from the 55/45 split have met resistance from downstate communities in the past, they too would see gains from a funding system that judges each project individually on its merits. The current funding formula at times constrains downstate communities from undertaking large, multi-year projects due to insufficient funds and forces them into a situation where they must spend a smaller portion of funding on smaller projects that are not necessarily high priorities.

Relaxing the funding formula would provide IDOT with greater flexibility to meet Illinois’ greatest transportation needs, wherever they may be in a given year.

7.4 SUMMARY AND CONCLUSIONS

The economic vitality of Illinois is directly tied to a high-quality transportation system. The creation of roads, railroads, airports and water transportation facilities led to Illinois becoming the transportation hub for the nation. However, due to the increasing gap between infrastructure improvement needs and available revenues, the transportation system in Illinois can barely be maintained or strategically expanded, much less foster broad economic expansion. Decisive action

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

is needed now to increase funding for our transportation system to bring it up to a state of good repair and strategically expand capacity where needed.

Champions are needed to promote new and innovative ways of funding the future system with the public and lawmakers, as most of the potential strategies outlined herein will require approval by the Illinois General Assembly and potentially voter referendums. Among such strategies are potential increases to existing user fees and taxes. Other innovative strategies discussed in this plan are becoming increasingly viable on a national level.

Ultimately, IDOT must work with the governor, the General Assembly, the Illinois Congressional delegation, local governments and the people of Illinois to understand our infrastructure needs and determine what funding levels are appropriate for addressing transportation needs in the future and what combination and structure of user fees, taxes and other funding methods should be employed to provide adequate resources for the modal programs.

ILLINOIS DEPARTMENT OF TRANSPORTATION LONG-RANGE TRANSPORTATION PLAN

DRAFT TRANSPORTATION SYSTEM UPDATE - 2017

ILLINOIS DEPARTMENT OF TRANSPORTATION

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B1. Introduction

B1.1 BACKGROUND

The Transportation System Update report is prepared as part of the Illinois Department of Transportation (IDOT) 2017 Long Range State Transportation Plan (Plan) to provide information about IDOT's multimodal assets and programs.

Illinois lies at the heart of the nation's transportation network. Illinois businesses, residents, and visitors have access to one of the greatest multimodal transportation systems in the nation including the second largest public transportation system, the second largest rail system, the third largest interstate system, the fourth largest highway system, and one of the busiest airport systems. The success of Illinois, its residents, businesses, and visitors relies on a safe, effective, accessible, and progressive transportation system where all modes connect in ways that improve travel options and help build communities.¹

The main purpose of this plan is to provide strategic direction for the Illinois transportation system. The guiding strategic priorities of the plan are to improve safety and mobility, support economic growth, promote livability, increase resiliency, and to provide stewardship.

¹ Illinois Department of Transportation Website, July 2017

B2. Aviation

B2.1 DESCRIPTION

Aviation plays a critical role in Illinois, in terms of passenger travel, air cargo and other aeronautical activities. For example, O'Hare International Airport is ranked third in the nation in enplanements, and fourth in air cargo activity.² The St. Louis Downtown Airport in Cahokia and Sauget is a thriving general aviation airport. It has eight air charter providers, seven maintenance companies, one aircraft parts and supplies wholesaler, the nation's oldest certified flight school, and an Air and Space museum. Chicago/Rockford International Airport is home to UPS' second largest domestic air hub sorting facility, and is Foreign Trade Zone 176. Furthermore, the airport showed a 16% increase in landed weight from 2015 to 2016, and is anticipated to exceed one million pounds in landed weight in 2017, which will likely place the airport in the top 25 airports in the U.S. by landed weight^{3,4}. In total, a recent study indicates that the state's aviation facilities support more than 312,581 jobs and contributes \$54 billion to the state's economy.⁵

Across Illinois there are 116 public use aviation landing facilities and 12 airports that offer scheduled commercial air carrier service.⁶ 78 of these airports are publicly owned, with 38 privately owned.⁷ These facilities foster connections between communities large and small, provide landing space for medical transporters, provide access to local businesses, enable aviation services such as aerial application or survey, and enhance aviation enthusiasts' quality of life.

² US Department of Transportation, Federal Aviation Administration. Passenger Boarding (Enplanement) and All-Cargo Data for U.S. Airports. www.faa.gov/airports/planning_capacity/passenger_allcargo_stats/passenger/. Accessed June 7, 2017.

³ U.S. DOT Federal Aviation Administration. CY2016 Final All-Cargo Landed Weights. https://www.faa.gov/airports/planning_capacity/passenger_allcargo_stats/passenger/media/preliminary-cy16-cargo-airports.pdf. Accessed September 2017.

⁴ Rockford Register Star. "Cargo activity surges 39 percent at Rockford airport in first half of 2017". <http://www.rstar.com/news/20170725/cargo-activity-surges-39-percent-at-rockford-airport-in-first-half-of-2017>. Accessed September 2017.

⁵ U.S. DOT Federal Aviation Administration. The Economic Impact of Civil Aviation on the U.S. Economy. Economic Impact of Civil Aviation by State. https://www.faa.gov/about/plans_reports/media/2017-economic-impact-report.pdf September, 2015.

⁶ Illinois DOT. Airport Inventory. P. 39. <http://www.idot.illinois.gov/Assets/uploads/files/Transportation-System/Reports/Aero/2012inventory.pdf>. Accessed June 7, 2017.

⁷ Ibid. p. 56

Figure 2.1 is a map of all public use aviation facilities throughout Illinois.

IDOT, empowered by the Illinois Aeronautics Act (620 ILC/5)⁸, encourages, fosters, and assists in the development of aeronautics in the state and encourages the establishment of airports and other air navigation facilities. Additionally IDOT administers the State Block Grant Program (SBGP) for the Federal Aviation Administration (FAA), with “responsibility for administering Federal Airport Improvement Program (AIP) grants at airports classified as “other than primary” airports – that is, nonprimary commercial service, reliever, and general aviation airports. IDOT is responsible for determining which locations will received funding for ongoing project administration”. Overall, IDOT supports public airports through financial assistance, inspections and technical oversight, and supports the aviation industry with safety and other education programs offered to pilots, aircraft owners, mechanics, and industry professionals. IDOT is managing the State’s investment in a third metropolitan Chicago airport, the South Suburban Airport, with the intention of providing additional capacity for the metropolitan region and the state.

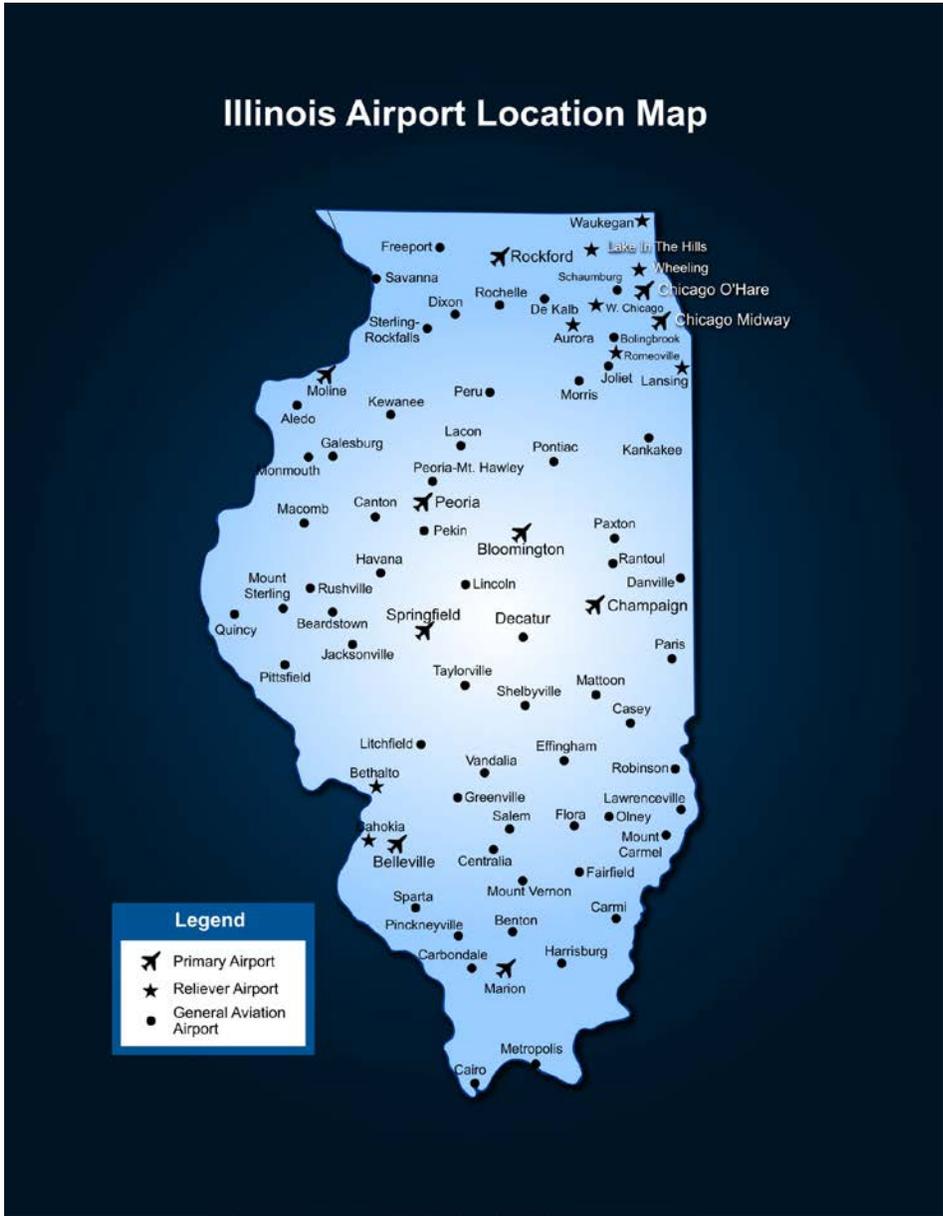
Systems goals for aviation in Illinois include:

- To promote an aviation system that improves Illinois’ quality of life by supporting health, welfare, and safety-related services and activities.
- To promote a safe aviation system, as measured by compliance with applicable State and FAA standards.
- To advance a system of airports that is supportive of Illinois’ economy, ensuring that the aviation system is matched to Illinois’ socioeconomic and demographic characteristics.
- To protect and support an aviation system that maintains the flexibility to respond to changes in future needs in Illinois, while considering the environment.
- Determine where Illinois’ aviation system of public airports is currently adequate and where there are deficiencies.
- Identify the need for change in the aviation system and the Department’s policies to meet Illinois’ future aviation needs.⁹

⁸ Illinois General Assembly. <http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=1803&ChapterID=48>. Accessed July 18, 2017.

⁹ IDOT. Aviation White Paper. May 12, 2016.

Figure 2.1 Public Use Airports in Illinois



Source: IDOT Aviation Inventory, 2017

B2.1.1 BASED AIRCRAFT

As a measure of aviation activity, IDOT utilizes an FAA metric that accounts for the number of planes and other aircraft, operational and airworthy, stored at a specific airport or storage facility for the majority of a given year. This count is called “based aircraft” and is self-reported by airport operators. Aircraft owners choose a facility to house their aircraft based on a number of factors including:

- the physical characteristics of the facility (runway length and instrument approach capabilities)
- proximity to business or home
- the availability of services (fuel and maintenance)
- the cost and availability of aircraft storage options

In late 2017, at nonprimary public-use public-owned airports, Illinois had 4,418 based aircraft, classified as follows:

- 3,317 single-engine propeller airplanes
- 462 multi-engine propeller airplanes
- 324 jet airplanes
- 122 rotorcraft (helicopters)
- 27 gliders
- 57 military aircraft
- 109 ultralight aircraft

Aurora Municipal Airport has the highest number of based aircraft at 311, followed by Chicago Executive Airport in Wheeling with 263.¹⁰ It is important to note that the busiest airports in the state do not necessarily have the most based aircraft. The combination of airport purpose, congestion, and the premium on available land at busy airports often dictate that local aircraft are parked at other airports. Chicago’s O’Hare International Airport is an example of this situation, as it does not have any based aircraft.

Many aircraft that call Illinois home are not necessarily captured in the FAA based aircraft metric. IDOT utilizes the metric because of its importance to planning and programming federal airport improvement program monies at eligible airports. However, IDOT does track total aircraft in Illinois at primary commercial service airports, and other Illinois registered aircraft not captured in the FAA metric for other purposes. Depending on the selection and criteria, IDOT numbers range from a total of 5,256 aircraft to 8,562 aircraft.

B2.1.2 AIRCRAFT OPERATIONS

An aircraft operation is defined as a takeoff or a landing. Counts are recorded by the Federal Aviation Administration (FAA) control tower activity or for airports without a tower, by visual assessment or machine, but counts are not completed every year for all airports; for airports without a tower, FAA counts should be supplemented by independent counts for the most accurate and timely information however, the most recent counts for Illinois airports are from 2012, for select airports. Throughout all of 2016 at all publicly operated airports in Illinois there were nearly 2.5 million air operations recorded according to the FAA. A detailed breakdown of air operations is shown in Table 2.1.

Table 2.1 Total Air Operations in Illinois - 2016

Itinerant ¹¹					Local			
Air Carrier	Air Taxi	General Aviation	Military	Total	Civil	Military	Total	Total Operations
1,056,382	530,126	412,010	22,218	2,020,736	431,615	19,081	450,696	2,471,432

Source: Federal Aviation Administration: Air Traffic Activity System, 2017

¹⁰ Ibid. pp. 19 – 24.

¹¹ "Itinerant" movements are those in which aircraft proceed to or arrive from another location; or where aircraft leave the circuit but return without landing at another airport. Local movements are where aircraft do not leave the circuit.

B2.1.3 PASSENGER ENPLANEMENTS

In 2015 twelve airports in Illinois recorded passenger enplanements (boardings). Table 2.2 details total enplanements at all Illinois airports for 2014 and 2015. The table also provides each airport's ranking of all 550 airports in the United States based on enplanements. The top three most active airports in the state are O'Hare International, Midway International, and Quad Cities International. In 2016 the State of Illinois had nearly 49.7 million enplanements, an increase of 2.97% from 2015.¹²

Table 2.2 Total Enplanements in Illinois 2015-2016

Rank (of 544)	ST	City	Airport Name	CY 16 Enplanements	CY 15 Enplanements	% Change
3	IL	Chicago	Chicago O'Hare International	37,499,201	36,305,668	3.29%
25	IL	Chicago	Chicago Midway International	11,044,353	10,830,850	1.97%
141	IL	Moline	Quad City International	364,328	368,114	-1.03%
153	IL	Peoria	General Downing - Peoria International	307,189	318,162	-3.45%
184	IL	Bloomington-Normal Airport	Central IL Regional Airport at Bloomington-Normal	188,490	186,633	1.00%
223	IL	Rockford	Chicago/Rockford International	101,790	108,379	-6.08%
228	IL	Springfield	Abraham Lincoln Capital	93,269	90,413	3.16%
235	IL	Savoy	University of Illinois-Willard	89,314	89,836	-0.58%
241	IL	Belleville	Scott AFB/MidAmerican	79,988	32,589	145.44%
389	IL	Marion	Williamson County Regional	9,851	10,570	-6.80%
399	IL	Decatur	Decatur	8,335	8,034	3.75%
408	IL	Quincy	Quincy Regional-Baldwin Field	7,847	9,159	-14.32%
				Total 2016 Illinois Enplanements	49,793,955	

Source: FAA - Passenger Boarding Data for U.S. Airports, 2015

B2.1.4 AIR CARGO

Air cargo, by tonnage, is the fifth most utilized mode of freight shipment in Illinois behind truck, rail carload, rail intermodal, and water Freight moved by air is usually of high value, time sensitive, and low-weight, because of cost and competing transportation alternatives. Chicago's O'Hare International Airport is one of the nation's primary air hubs, particularly for international trade, and it stands out as the state's principal air

¹² FAA. Passenger Boarding for U.S. Airports. https://www.faa.gov/airports/planning_capacity/passenger_allcargo_stats/passenger/media/preliminary-cy16-commercial-service-enplanements.pdf. Accessed September 2017.

cargo facility. As shown in Table 2.3 Inbound Air Cargo Shipments to Illinois, 2014 handled 91.2 percent of Illinois inbound air tonnage and as shown in Table 2.4 Outbound Air Cargo Shipments from Illinois, 2014, O'Hare handled 87.5 percent of outbound air tonnage, as well as held equally predominant positions in both belly and freighter activity, with inbound tonnage percentages of 94.5 and 90.1, respectively and outbound tonnage percentages of 93.3 and 85.6, respectively.

The airport in Rockford (Chicago Rockford International Airport), which is a regional air hub for the United Parcel Service (UPS), is second to O'Hare in both inbound and outbound air cargo, with 5.6 percent of inbound tonnage and 8.6 percent of outbound tonnage. The UPS regional air hub influence is reflected in the belly and freighter percentages at the Rockford Airport. The belly percentages for both inbound and outbound are virtually nonexistent, indicating freighter shipment is predominant at 7.5 percent for inbound tonnage and 11.4 percent for outbound tonnage.

Peoria's General Wayne A. Downing Peoria International Airport and Chicago's Midway International Airport are ranked third and fourth, for both inbound and outbound air cargo. For inbound tonnage, Peoria is at 1.5 percent and Midway at 1.4 percent, with Peoria having slightly more total tons at 15,312, compared to 14,049 for Midway. For outbound tonnage, Peoria is at 1.8 percent and Midway at 1.6 percent, with Peoria having slightly more total tons at 15,532, compared to 14,132 for Midway. A more detailed discussion of air cargo and a breakdown by airport is in the *Air Cargo Traffic Highlights* section of the 2017 Illinois State Freight Plan.

Table 2.3 Inbound Air Cargo Shipments to Illinois, 2014

Airport Name	Belly		Freighter		Grand Total	
	Tons	% Tons	Tons	%Tons	Tons	%Tons
Chicago O'Hare International	242,166	94.5%	705,432	90.1%	947,598	91.2%
Chicago Midway International	14,048	5.5%	0	0.0%	14,049	1.4%
General Downing - Peoria International	5	0.0%	15,307	2.0%	15,312	1.5%
Chicago/Rockford International	119	0.0%	58,497	7.5%	58,616	5.6%
Total	256,338	100%	779,236	99.6%	1,035,575	99.7%

Source: BTS T-100

Due to statistically small numbers, some percentages above are shown as 0.0%.

Table 2.4 Outbound Air Cargo Shipments from Illinois, 2014

Airport Name	Belly		Freighter		Grand Total	
	Tons	% Tons	Tons	%Tons	Tons	%Tons
Chicago O'Hare International	197,471	93.3%	560,730	85.6%	758,201	87.5%
Chicago Midway International	14,132	6.7%	0	0.0%	14,132	1.6%

General Downing - Peoria International	4	0.0%	15,529	2.4%	15,532	1.8%
Chicago/Rockford International	127	0.1%	74,370	11.4%	74,497	8.6%
Total	211,734	100.0%	650,629	99.4%	862,362	99.5%

Source: BTS T-100

Due to statistically small numbers, some percentages above are shown as 0.0%.

B2.2 IMPLEMENTATION STRATEGIES AND PROGRAMS

B2.2.1 FEDERAL AIRPORT IMPROVEMENT PROGRAM STATUS

H.R. 658, the FAA Modernization and Reform Act of 2012, enacted on February 14, 2012 authorized appropriations to the FAA from Fiscal Year 2012 through Fiscal Year 2015. The legislation also seeks to improve aviation safety and capacity of the national airspace system, provide a framework for integrating new technology safely into the nation's airspace, provide a stable funding system, and advance the implementation of the Next Generation Air Transportation System (NextGen). The FAA is currently operating under an extension, H.R.3823, the Disaster Tax Relief and Airport and Airway Extension Act of 2017. The Act extends the agency's authority and provides funding at current levels through March 2017. It also includes some important safety and security additions including the development of a cybersecurity framework to reduce cybersecurity risks to the national airspace system, a pilot project to detect and mitigate unauthorized operation of unmanned aircraft around airports and other critical infrastructure, as well as changes to the hiring process for air traffic controllers.¹³ The federal Airport Improvement Program (AIP) is a critical source of funding for airport projects in Illinois, funding nearly ninety percent of all airport projects. Planning, design, and construction projects are eligible under AIP. For federal fiscal year 2017, IDOT anticipates receiving \$160 million from the AIP.¹⁴ As previously mentioned, Illinois is one of ten states that participates in the AIP State Block Grant Program for nonprimary commercial service, reliever, and general aviation airports. Each State is responsible for determining which locations will receive funds for ongoing project administration¹⁵.

According to Elliott Black of the FAA Office of Airport Planning and Programming, the AIP State Block Grant Program puts a high priority on reliever airports, citing the importance of relievers such as Chicago Executive, Waukegan and DuPage airports in reducing congestion at O'Hare Airport and diverting some of the business-related air traffic that otherwise would go there.¹⁶ Examples of AIP Block Grants that have helped provide improvements to these airports include \$6.4 million for operational improvements at Chicago Executive Airport's main runway in 2014¹⁷ and a \$1.3 million perimeter roadway at DuPage Airport programmed for FY 2016-2017¹⁸.

¹³ Federal Aviation Administration. FAA Reauthorization. <https://www.faa.gov/about/reauthorization/>. Accessed June 8, 2017.

¹⁴ IDOT. Aviation White Paper p. 9. May, 2016.

¹⁵ FAA. State Block Grant Program. https://www.faa.gov/airports/aip/state_block. Accessed September 2017.

¹⁶ Aviation Pros Magazine, "The Magic of AIP Funding". April 15, 2015.

¹⁷ Chicago Daily Herald. "Chicago Executive gets \$6.4 million grant." September 15, 2014.

¹⁸ IDOT FY 2016-2021 Proposed Transit/Rail/Airport Improvement Program.

<http://www.idot.illinois.gov/Assets/uploads/files/Transportation-System/Reports/OP&P/HIP/2016-2021/FY%202016-2021%20Transit-Rail-Airport%20Improvement%20Program%20Book.pdf>. Accessed September 2017.

B2.2.2 ILLINOIS AVIATION SYSTEM PLAN

The Illinois Aviation System Plan (IASP) should be considered a continual planning process which produces, periodically, a formal narrative and analysis of the overall Illinois Aviation System. This document, which has not been fully updated since 1994, identifies system needs and sets short-to-long term goals and objectives in consideration with the National Airspace System and aviation industry evolution as well as coordination with industry stakeholders and other IDOT planning processes, such as the LRTP. The formal narrative and analysis of the IASP should be based in part on routinely updated and maintained individual system plan components and studies such as an Aircraft operations at non-towered airports, the Illinois Aviation Inventory Report, regional specific planning, and the Illinois Statewide Aviation Economic Impact Study. Several individual system plan components and the overall Illinois Aviation System Plan process are used in project ranking/planning/programming/design *and* evaluation. A quick review of aviation system planning documents across the nation reveals that Illinois may be the state running on the longest time span without a full system plan update. The average system plan completion date among states falls at 2010 with the greatest amount of updates occurring in 2016. The FAA provides funding for aviation system planning.

B2.2.3 STATE-LOCAL AIRPORT IMPROVEMENT PROGRAM

For FY 2017, Illinois has programmed a single-year State-Local Airport Improvement Program, for which a continuous program was last in effect in FY 2004, followed by a one year State-Local Program funded in FY-2012 which resulted in \$7.5 million in improvements. The program supports improvements at airports that are ineligible or low priority for the federal Airport Improvement Program but are a high priority for the state or for the local community. For FY 2017, the State of Illinois has identified airport improvement projects and has committed \$9.8 million with \$1.7 million in local matching funds for these improvement projects.¹⁹ A continual State-Local program has numerous advantages over single year sporadic spending. For instance, a continual program allows airports to better plan, coordinate, and compete for these dollars – by knowing program priorities and criteria in advance. The Illinois Aviation System Plan would help determine the criteria where continual State-Local Program would be guided to address system needs not captured by the Federal AIP.

B2.2.4 ESSENTIAL AIR SERVICE PROGRAM

The Airline Deregulation Act (ADA), passed in 1978, gave air carriers almost total freedom to determine which markets to serve domestically and what fares to charge for that service. The Essential Air Service (EAS) program was put into place to guarantee that small communities that were served by certificated air carriers before airline deregulation continue to maintain a minimal level of scheduled air service. The United States Department of Transportation is mandated to provide eligible EAS communities with access to the National Air Transportation System. This is generally accomplished by subsidizing two round trips a day with 30- to 50-seat aircraft, or additional frequencies with aircraft with 9-seats or fewer, usually to a large- or medium-hub airport. USDOT currently subsidizes commuter and certificated air carriers to serve approximately 60 communities in Alaska and 115 communities in the lower 48 contiguous states that otherwise would not receive any scheduled air service.²⁰

There are three communities in Illinois in the EAS program: Decatur, Marion and Quincy. Details of these three communities' annual subsidy provided by the EAS program is provided in

¹⁹ IDOT. FY-2017 State-Local Airport Improvement Program Project List. <http://www.idot.illinois.gov/Assets/uploads/files/Transportation-System/Reports/OP&P/AIP/FY17%20State-Local%20Project%20List.pdf>. Accessed June 8, 2017.

²⁰ USDOT. Essential Air Service Overview. <https://www.transportation.gov/policy/aviation-policy/small-community-rural-air-service/essential-air-service>. Accessed June 8, 2017.

Table 2.5 Essential Air Service Program in Illinois - 2015

Community	Nearest Hub Airport	Annual Subsidy (2015)	Per Passenger Subsidy
Decatur	St. Louis	\$2,667,922	\$208
Marion	St. Louis	\$2,104,616	\$107
Quincy	St. Louis	\$1,956,856	\$99
Total Illinois EAS Subsidy		\$6,729,394	

B2.2.5 MIDWAY MODERNIZATION PROGRAM

In August, 2015 Mayor Rahm Emanuel announced a program to modernize and improve Chicago – Midway Airport. The program would direct approximately \$250 million to improve and upgrade restaurants, shops, parking and security checkpoints.²¹ The initial phase of the project is focused on improvements to retail and concessions and totals approximately \$75 million. This project will include 21 new food and retail outlets, creating 1,000 new employment opportunities.²² Future phases of the program will expand the security checkpoint areas and expand parking locations near the airport.

B2.2.6 O’HARE MODERNIZATION PROGRAM

The O’Hare Modernization Program (OMP) is transforming O’Hare International Airport into an airport with six parallel east-west runways, two crosswind runways, a new terminal and other enhancements, with the goals of reducing weather related delays and increasing capacity at the third busiest airport in the nation. The OMP runway projects currently completed include the new Runway 9L/27R on the north airfield and the extension of Runway 10L/28R on the south airfield, opened in 2008, and the new Runway 10C/28C opened in 2013. The City of Chicago has modified the construction schedule for the completion of the other runways planned in the OMP, but is completing the OMP airfield improvements reflected in the approved build out.²³ Since its inception the OMP has adjusted and schedules have shifted. In 2016 the City of Chicago reached agreement with two major airlines serving O’Hare to construct another new runway, 9C/27C, to increase capacity and further reduce delays. The estimated cost for the new runway is estimated a \$1.3 billion.²⁴ An illustration of O’Hare runway reconfiguration is displayed in Figure 2.2.²⁵ The OMP projects are largely within the purview of the FAA and City of Chicago, and therefore IDOT does not hold construction lettings, manage, or oversee the OMP program; even so it is discussed in this report due to the important role O’Hare International Airport plays in the larger system of Illinois airports .

²¹ Karp, Gregory. Midway Airport to get \$248 million upgrade. <http://www.chicagotribune.com/business/ct-midway-airport-upgrades-0807-biz-20150806-story.html>. Chicago Tribune. August 6, 2015. Accessed June 8, 2017.

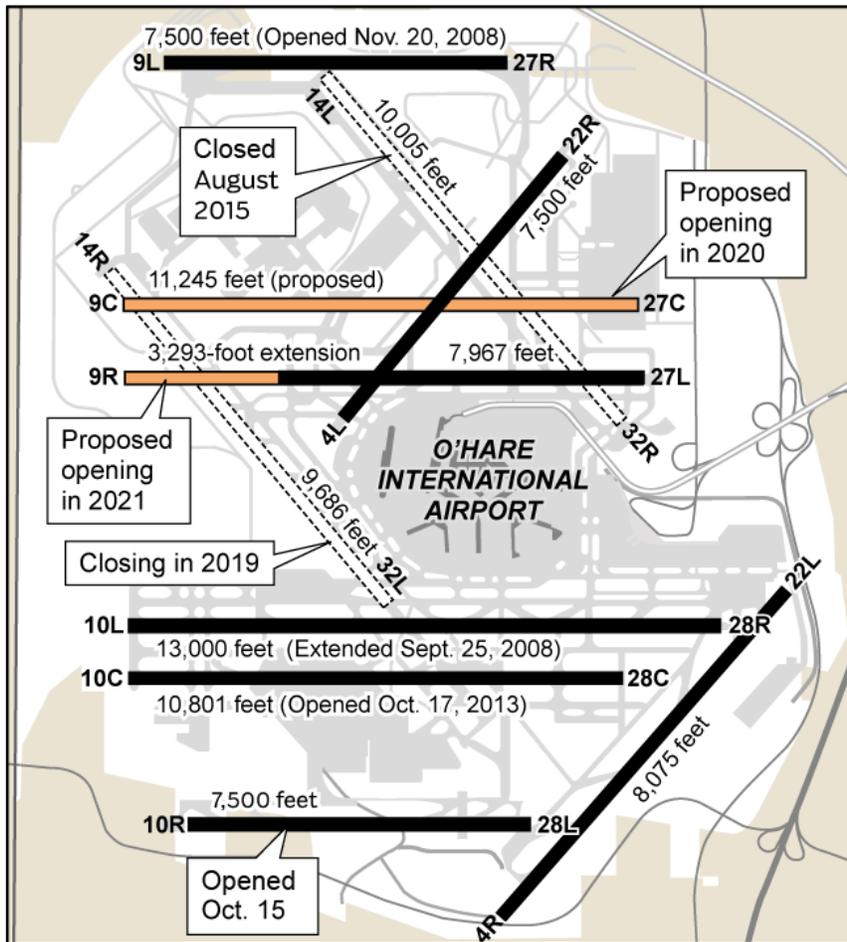
²² Lazare, Lewis. Midway Airport modernization project begins Friday with debut of new eateries. <http://www.bizjournals.com/chicago/news/2017/05/11/midway-airport-modernization-project-begins-friday.html>. Chicago Business Journal. May 11, 2017. Accessed June 8, 2017.

²³ FAA. Final Re-Evaluation of the O’Hare Modernization EIS. Pp. 1-1. ftp://public-ftp.aql.faa.gov/2015%20re-eval/final%20re-eval/chapter_1.pdf. 2015. Accessed June 8, 2017.

²⁴ Schaper, David. O’Hare to Get 6th Runway, But Without Expanded Terminals, Delays May Continue. <http://www.npr.org/sections/thetwo-way/2016/02/01/465101435/ohare-will-get-a-sixth-runway-but-without-expanded-terminals-delays-may-continue>. National Public Radio. February 1, 2016. Accessed June 9, 2017.

²⁵ Tribune Graphics. <http://www.chicagotribune.com/ct-map-of-new-runway-opened-at-ohare-airport-20151015-htmlstory.html>. October 15, 2015. Accessed June 9, 2017.

Figure 2.2 O'Hare Modernization Program Runway Construction



Source: Chicago Tribune, 2015

B2.2.7 SOUTH SUBURBAN AIRPORT

The concept of a third airport in the metropolitan Chicago region has been considered since 1984. In 1998, a South Suburban Airport site was selected near Peotone (approximately 40 miles south of the Chicago) and environmental studies began.

Taking a phased approach to airport development, the project studies are concentrated on a five-year inaugural airport program and an ultimate airport build-out. The inaugural airport program consists of a single runway, a passenger terminal with six to nine gates, and air cargo and general aviation facilities on approximately 5,000 acres. The ultimate airport, envisioned to be constructed twenty years or more after the inaugural airport is operational, is planned to have six parallel runways and a passenger terminal complex with 250 gates on approximately 20,000 acres.

In 2000, the State, in conjunction with the FAA, initiated a two-tiered environmental approval process. The Tier 1 Environmental Impact Statement (EIS) was prepared to determine a preferred location. The Tier 1 EIS study received a FAA Record of Decision (ROD) in 2002, which allowed the project to move forward with further study and land acquisition. The Tier 2 EIS was initiated shortly after the Tier 1 EIS ROD was issued and is still underway. An airport master plan study is also being conducted in conjunction with the Tier 2 EIS, and land acquisition began in 2002. To date, approximately 4,500 acres have been acquired. In 2017, IDOT sought proposals from private interests to potentially develop and operate the future airport.

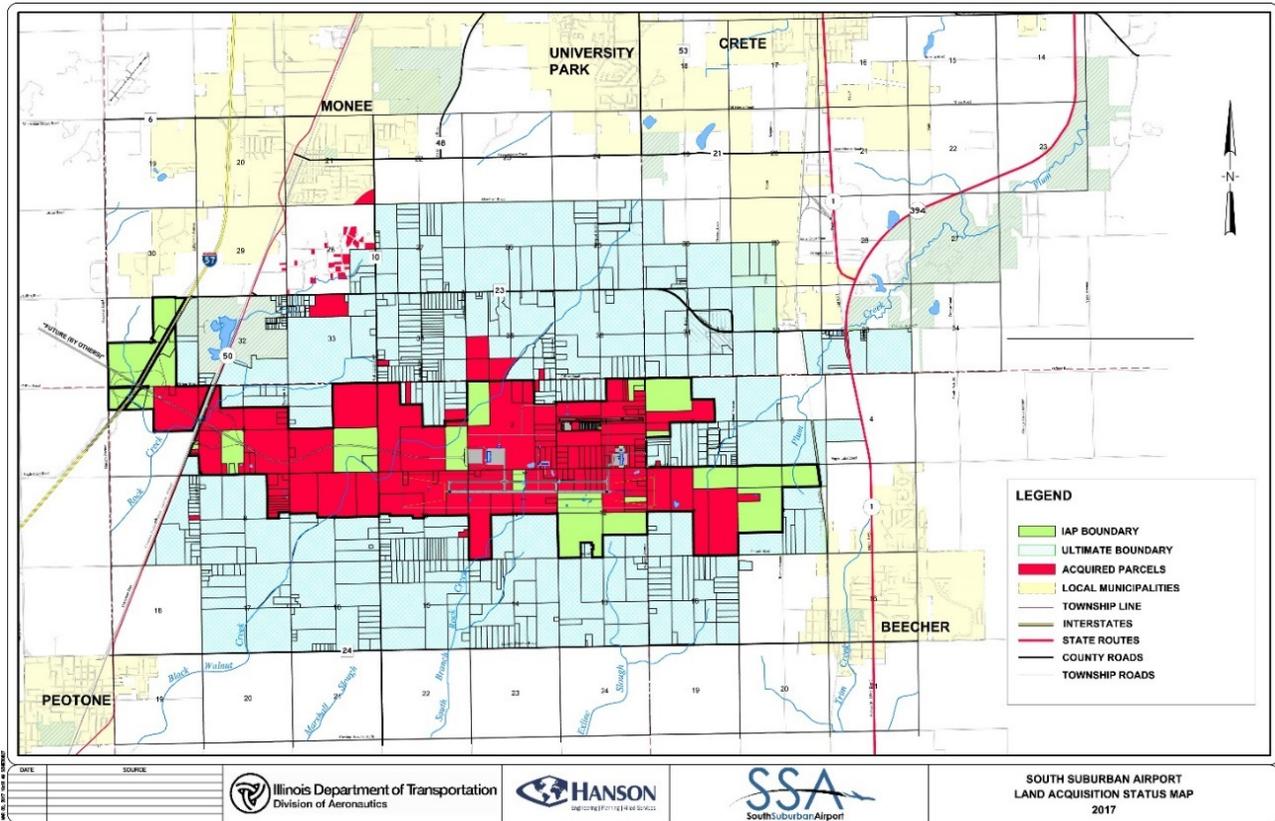
Both the Tier 2 EIS and Master Plan study are in progress. The Master Plan study,²⁶ following FAA guidance, is comprised of several reports documenting study findings. These reports are listed below, with FAA approval dates in parentheses:

- Existing Conditions (December, 2011)
- Aviation Forecasts (March, 2011)
- Facility Requirements (November, 2011)
- Alternatives Analysis (June, 2012)
- Interchange Access Justification Report (December, 2016)
- Airport Access Plan
- Airport Layout Plan
- FAA Airspace Analysis
- Environmental Considerations
- Facility Implementation Plan
- Financial Feasibility Report
- Community Involvement

The Tier 2 EIS process requires a significant amount of analysis which culminates with the issuance of the Tier 2 Final EIS and ROD.

²⁶ South Suburban Airport, Master Plan Process. www.southsuburbanairport.com/MasterPlan/MP-process.htm. Accessed June 30, 2017.

Figure 2.3 South Suburban Airport and Layout with Land Acquisition Status



Source: South Suburban Airport Project Office, July 2017

B3. Bicycle and Pedestrian Facilities

B3.1 DESCRIPTION

Bicycling and walking, sometimes referred to as non-motorized or active transportation, are important modes for local transportation in Illinois. Walking is most conducive for trips under one mile (5 to 20 minutes of travel), while bicycling is often used for trips between one and five miles (5 to 30 minutes). Bicycling and walking can be independent modes, but are often combined with public transit to facilitate longer distance trips. Bicycling and walking do not require significant amounts of pavement or fossil fuel to operate, but do require physical activity, which is why they are referred to as active transportation modes.

IDOT has a role in supporting these modes beyond administering federal funding for federally specified programs. Adding multi-use paths or trails, sidewalks, or on-road bicycle facilities along state roads promotes safer connections for pedestrians and bicyclists. A designated statewide long-distance bicycle route system can foster bicycle tourism as well as add connections in rural areas where non-motorized transportation infrastructure may be limited.

IDOT chairs the Inter-Agency Bikeway Coordinating Working Group (BCWG), which at a minimum is comprised of representatives from Illinois Department of Natural Resources (IDNR), Illinois Department of Commerce and Economic Opportunity, Illinois State Board of Education, Illinois Association of County Engineers, and the Cook County Forest Preserve District. This group meets quarterly and focuses on non-motorized issues such as Transportation Alternatives funding, State Bikeway Plan development, and Complete Streets implementation.

Other agencies also have a significant role in planning for and developing the bicycle and pedestrian network. For example, the IDNR has been involved in developing multi-use trails throughout the state. IDNR cooperates with IDOT and the Federal Highway Administration in administering the Recreational Trails Program, which is funded through federal transportation legislation. IDNR also administers the Bicycle Path Grant Program, which supports the development of linear paths on non-road right-of-way, although IDNR is not accepting funding applications for this program at this time.

Local agencies' actions to build multi-use trails, bicycle routes, and sidewalks make important contributions to bicycle and pedestrian activity and the State's overall network of facilities. Many individual communities have developed bicycle and pedestrian plans, and building these facilities increases the multimodal options in a community. Metropolitan Planning Organizations (MPOs) include bicycle and pedestrian plans in their long-range transportation plans. MPOs are responsible for programming some federal funds to local jurisdictions for planning and construction of bicycle and/or pedestrian facilities through the Transportation Alternatives Program (TAP), Surface Transportation Block Grant Program (STP), Congestion Mitigation and Air Quality (CMAQ) Program and others. IDOT also supports bicycle planning in local communities by granting State Planning and Research Funds for bicycle planning.

B3.1.1 STATE RANKING AND STATISTICS

The Alliance for Biking and Walking (ABW) collects data from across the U.S. in order to release periodic reports detailing each individual State's levels of bicycling and walking, adopted policies, and funding

information. According to ABW's 2016 Benchmarking Report²⁷, 3.1 percent of Illinois commuters walk to work and 0.6 percent cycle to work; Illinois ranks 18th in the number of walking commuters and 19th overall in number of cycling commuters; and Illinois ranks 29th in per capita spending on bike/walk projects, spending \$2.20 per capita.

The U.S. Department of Transportation-Bureau of Statistics, State Transportation Statistics 2015 Report, further supports the ABW's 2016 Benchmarking Report, which suggests 3.7 percent of Illinois commuters either walked (3.1 percent) or biked (0.6 percent) to work in 2013 (Table 3.1). These values are equal to the national average for biking to work (0.6 percent) and slightly more than the national average for walking to work (2.8 percent).

The League of American Bicyclists (LAB) runs a program called The Bicycle Friendly State, which is designed to establish best practices to help improve safety, comfort, and accessibility of bicycling. The ranking compares all 50 states across five distinct attributes: Legislation & Enforcement, Programs & Policies, Infrastructure & Funding, Education & Encouragement, and Evaluation & Planning.²⁸ According to their 2015 Ranking and Report Card, Illinois is ranked 14th most Bicycle Friendly State out of all 50 states; lower than in 2012, when Illinois was ranked 9th. Illinois scored 4 out of 5 points for its Legislation & Enforcement and Education & Encouragement, 3 out of 5 for its Policies & Programs, and 2 out of 5 for both its Infrastructure & Funding and Evaluation & Planning.²⁹

Table 3.1: 2013 Commuter Mode Share, All Person Trips

Mode	Illinois (%)	U.S. (%)
Drove Alone	73.6	76.4
Carpool	8.3	9.4
Public transit	9.1	5.2
Bicycle	0.6	0.6
Walked	3.1	2.8
Other (motorcycle, taxi, ferry, school bus, airplane)	1.0	1.3
Worked at Home	4.2	4.4

Source: US Department of Transportation, Bureau of Transportation Statistics, Illinois Transportation by the Numbers, 2013.

B3.1.2 MULTI-USE FACILITIES

According to the ABW Benchmarking Report, in 2015, Illinois had approximately 1,875 miles of dedicated multi-use trails that have been funded through federal programs, state funds, and local resources. Most trails are suitable for a variety of users, like walkers, runners, and bicyclists. Trails are often located in parks or natural areas, and may be circular or wandering, making them less attractive for point-to-point destination travel. However, linear trails and segments between communities may be an option for transportation purposes.

Some of the longer linear trails in the state include³⁰:

²⁷ The League of American Bicyclists, Bicycle Friendly State 2015 Ranking http://www.bikeleague.org/sites/default/files/2015_state_ranking_chart.pdf

²⁸ The League of American Bicyclists, Bicycle Friendly State Report Card Illinois http://bikeleague.org/sites/default/files/BFS2015_Illinois.pdf

²⁹ Illinois Department of Transportation, Bicycle and Pedestrian Infrastructure. http://www.idot.illinois.gov/Assets/uploads/files/Transportation-System/Fact-Sheets/Bicycle%20Facts_041216.pdf

³⁰ IDOT, Alphabetical Listing of Trails. www.dot.il.gov/bikemap/trailist.htm. Rails-to-Trails Conservancy, TrailLink www.trailink.com/.

- Chicago Lakefront Trail. Paralleling Lake Michigan, the 20-mile trail runs from the far north to the far south sides of the city. The path is paved and is often used by bicyclists and walkers for commuting to work or accessing social and recreation activities in the adjacent neighborhoods and along the waterfront.
- Fox River Trail and Illinois Prairie Path. Starting in Aurora, the 35-mile north-south Fox River Trail connects to the Illinois Prairie Path at Batavia, Elgin, Geneva and continues further north to Algonquin. The 62-mile Illinois Prairie Path travels from Elmhurst to Wheaton, and splits into four other paths that terminate at the Fox River, in the communities of Aurora, Batavia, Elgin, and Geneva.
- Great River Trail. This 60-mile trail parallels the Mississippi River, between Savanna and Rock Falls, in the Quad Cities region. The trail is a combination of on and off street facilities.
- Hennepin Canal Parkway. This 105-mile trail is the longest in Illinois. The east-west segment travels between Bureau Junction near the Illinois River and the Quad Cities area with a trail head at the Rock River. The 29-mile north-south segment connects Sterling and Rock Falls, at the Rock River, to the east-west corridor.
- Rock Island Trail and Greenway. This is the first state-owned trail. The 27-mile greenway on old railroad right-of-way connects Alta (Peoria County) and Toulon (Stark County) and communities in between. A 13 mile extension was completed in 2014 and now connects Alta and Peoria.
- Tunnel Hill State Trail. This trail connects Harrisburg (Saline County) to Karnak (Pulaski County), for a total trail length of 45 miles. The trail passes through ten communities and the Cache River Natural Area, and is near the Shawnee National Forest.

Figure 3.1 Chicago's Lakefront Trail



Figure 3.2 Rock Island Trail



B3.1.3 ON-STREET BICYCLE FACILITIES

Throughout the state, there are approximately 5,000 miles (31 percent) of the nearly 17,000-mile state highway system identified as being suitable for bicycling.³¹ Bicycling is at least somewhat comfortable on more than 63 percent of all roads, out of the 146,000 plus miles of all roads in the state.

On-road facilities range from:

Figure 3.3 West Kinzie St. Cycle Track - Chicago

³¹ US DOT Bureau of Statistics, State Transportation Statistics 2015, https://www.rita.dot.gov/bts/sites/rita.dot.gov/bts/files/STS_2015.pdf

- Suggested routes that are unsigned and unmarked, but are identified on maps.
- Signed bike routes, usually found on local or very low volume roads.
- Sharrows, which are painted arrows with a bicycle symbol, indicating that the road is to be shared by bicycles and motor vehicles.
- Bicycle lanes, which are generally 5 feet wide, next to either the sidewalk or parked cars and adjacent to moving traffic. These may sometimes be buffered with a few feet between the bicycle lane and moving traffic. The buffer is usually a series of white painted lines intended to indicate that motor vehicles should not cross.
- Separate, on-street protected bicycle lanes, known as protected bike lanes or cycle tracks. These differ from buffered bicycle lanes because there is usually a physical barrier between the bike lane and the motor vehicle traffic lane. Physical barriers include planters, curbs, parking vehicles, bollards, medians, or other physical separation. Protected bike lanes are usually adjacent to the parkway or sidewalk.



Paved shoulders or an extra wide outside lane are other options that provide space for pedestrians and bicyclists when no other facility is available. Paved shoulders often have rumble strips to prevent run-off-the-road vehicle incidents, so IDOT adjusts the width of the strips when the paved shoulder serves as a bicycle accommodation. Extra width on an outside lane provides a similar benefit to bicyclists and walkers providing room to travel adjacent to traffic flow.

B3.1.4 OTHER BICYCLE FACILITIES

Other infrastructure important for bicyclists includes bicycle parking, bicyclist-specific signaling at traffic lights, public bicycle rental programs, wayfinding, and bicycle stations. Bicycle stations are a premium amenity, as they are usually buildings that can house bicycle repair facilities, showers and clothing lockers, temporary bicycle parking, and temporary bicycle rental / bicycle share services. Bicyclist specific signals at traffic lights are common in Europe, but are now beginning to be utilized throughout the U.S. Locations where these signals are installed include Long Beach and Davis, California and Denver, Colorado. In 2012 new bicycle lanes and bicycle signals were added to a 1.2 mile section of the Dearborn corridor from Polk to Kinzie in downtown Chicago.³² Bicycle parking is a necessity for ensuring bicycling activity. Bicycle parking takes many forms, including racks, lockers, corrals, stations, and is sheltered or unsheltered. Bicycle parking should be installed at locations where bicyclists need secured parking. Locations include transit stations, activity centers like schools and recreational facilities, and commercial centers. Commercial centers include office locations, retail streets and centers, dining establishments, neighborhood stores of all types, and entertainment locations. Sheltered parking is preferable, to protect from rain and other weather conditions. Many commercial centers in Chicago provide private bike parking and valet services.

Figure 3.4: Bicycle Traffic Signal on Dearborn St. - Chicago



Source: Chicagonow.com. 12/9/13

³² Kuhrt-Brewer, Carole. Chicago Bike Lanes: Dearborn St. Lane Named Best in the Country. <http://www.chicagonow.com/show-me-chicago/2013/12/chicago-bike-lanes-dearborn-st-lane-named-best-in-the-country/>. Accessed July 18, 2017.

Bicycle parking corrals are either permanent or temporary. Permanent bicycle corrals are located on-street, and replace automobile parking with rack(s) that store multiple bicycles. Temporary bicycle corrals are set up to support a specific event. The corrals are similar to coat-check or automobile valet services, in that a bicyclist receives a claim ticket needed to retrieve their bicycle at the end of their visit.

Temporary public bicycle rental or bicycle share services are gaining in popularity in the U.S. The first programs offered free bicycles, usually painted a noticeable color, and were unlocked, parked throughout the community, and available to anyone. Due to theft, vandalism, or maintenance problems, these services faded although some still exist - primarily in communities with college students.

The second generation of bicycle share services are either for-profit or are supported through advertising revenues, and require pre-registration. A system of bicycles is installed at various locations throughout a densely populated area such as a business district. Bicycles are available to members for a small fee and are either reserved in advance or are used on-demand. Rentals are sometimes free for the short period (e.g., half-hour) after which a small fee is assessed. Members sign-in, unlock a bicycle from the bicycle docking station, and borrow the bicycle for a set period. Bicycles can be returned at any open docking station. Currently, bicycle-share services are in use in Washington, D.C., New York and Boston, with more underway. Divvy, owned by the Chicago Department of Transportation and operated by Motivate, is Chicago's bicycle share system. Initial startup costs for Divvy were supported by CMAQ funding that was administered by IDOT. Divvy started in June 2013 and currently (2017) includes 580 stations and 5,800 bikes across Chicago. In 2016, Divvy expanded to the suburban Chicago communities of Oak Park and Evanston. 13 stations were added in Oak Park and 10 stations were added in Evanston.³³

B3.1.5 PEDESTRIAN FACILITIES

Pedestrian facilities – sidewalks and paths, benches, crosswalks, pedestrian signals – are often located in urbanized areas. These facilities provide safe spaces for community residents to walk to jobs, shopping, visiting neighbors, or for health. Streets in urban communities often have sidewalks while suburban and exurban developments may not. Rural roads may have paved shoulders that can serve as pedestrian walkways although many do not.

Pedestrian infrastructure also includes dedicated bridges or underpasses, streetlights, special pavements or painted crosswalks, signage, medians and islands, push-button signals, and other traffic calming devices like corner bump-outs. New strategies such as in-pavement flashing lights at crosswalks, rapid-flash beacons for safer crossings on high volume roads, and advance stop bars are being installed to reduce pedestrian fatalities and injuries.

Because sidewalks offer access to buildings and land uses, they must be accessible under the Americans with Disabilities Act (ADA). Guidance on sidewalk width, acceptable slope, curb cuts and corner access is

Figure 3.5 Pedestrian Crossing with Median Island



³³ DIVVY. Expansion. <https://www.divvybikes.com/expansion>. Accessed July 18, 2017.

defined by the US Access Board, and additional proposed ADA guidance for public rights-of way is included in the Public Rights-of-Way guidelines and addendum guidance for shared-use paths.^{34, 35}

Pedestrian facilities are most often the responsibility of local communities. IDOT's commitment to providing pedestrian facilities along roads under its jurisdiction is detailed in the Complete Streets policy.

B3.2 IMPLEMENTATION STRATEGIES AND PROGRAMS

The Illinois Complete Streets law was enacted in October 2007.³⁶ A "complete street" is one that can accommodate all users safely including the most vulnerable whom are identified as youths, persons with disabilities, and the elderly. The legislation requires IDOT to give full consideration to bicycle and pedestrian facilities in the planning, design, and construction of state transportation facilities with some exceptions.

The Complete Streets legislation reads:

605 ILCS 5/4-220. Bicycle and pedestrian ways.

1. Bicycle and pedestrian ways shall be given full consideration in the planning and development of transportation facilities, including the incorporation of such ways into State plans and programs.

2. In or within one mile of an urban area, bicycle and pedestrian ways shall be established in conjunction with the construction, reconstruction, or other change of any State transportation facility except:

(1) in pavement resurfacing projects that do not widen the existing traveled way or do not provide stabilized shoulders; or

(2) where approved by the Secretary of Transportation based upon documented safety issues, excessive cost or absence of need.

3. Bicycle and pedestrian ways may be included in pavement resurfacing projects when local support is evident or bicycling and walking accommodations can be added within the overall scope of the original roadwork.

4. The Department shall establish design and construction standards for bicycle and pedestrian ways. Beginning July 1, 2007, this Section shall apply to planning and training purposes only. Beginning July 1, 2008, this Section shall apply to construction projects.

(Source: P.A. 95-665, eff. 10-10-07.)

In 2010 the Illinois Legislature amended the Illinois Vehicle Code to require motorists to stop and yield the right-of-way to a pedestrian crossing the roadway within a crosswalk or approaching the roadway. (P.A. 625 ILCS 5/11-1002).³⁷

³⁴ US Access Board. Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way. <https://www.access-board.gov/attachments/article/743/nprm.pdf>. Accessed September 2017.

³⁵ Federal Register, Vol. 78, No. 30. Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way; Shared Use Paths. <https://www.access-board.gov/attachments/article/1108/sup-snpnm.pdf>. Accessed September 2017.

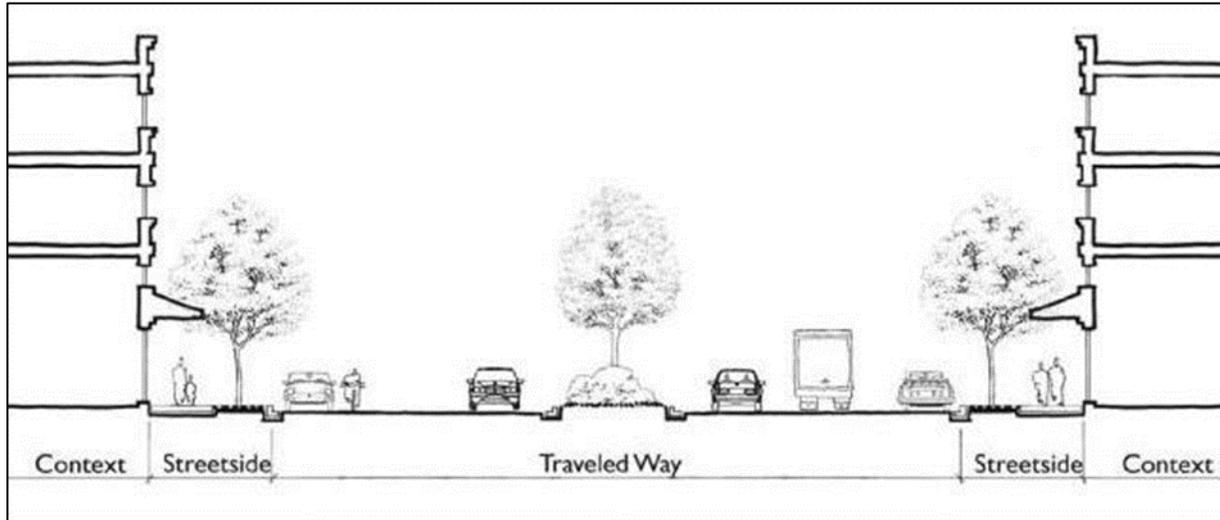
³⁶ Illinois General Assembly, Public Act 095-0665. www.ilga.gov/legislation/publicacts/fulltext.asp?Name=095-0665.

³⁷ Illinois General Assembly: <http://ilga.gov/legislation/publicacts/fulltext.asp?Name=096-1165>. Accessed July 19, 2017.

The Complete Streets statute only applies to local agencies where work is being performed on a state-maintained highway as part of a local improvement project. However, there is guidance for provision of pedestrian facilities on local projects in Chapter 41 of the Bureau of Local Roads and Streets manual.

Figure 3.6 is an example of a complete street layout which includes sidewalks separated from the road with a planted parkway and a bicycle facility (lane, sharrows, or other) adjacent to the parking lane. The road provides accessibility for all users.

Figure 3.6 Example of Complete Street Design



Source: Institute of Transportation Engineers, *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach*, 2010. Page 70.

In June 2010, IDOT amended its Bureau of Design and Environment manual to incorporate the new law in Chapter 5 Local Agency Agreements and Chapter 17 Bicycle and Pedestrian Accommodations.³⁸ The manual details the decision process for excluding a facility, exceptions and partial exceptions to considering accommodations, and details the warrants that must be met before bicycle accommodations can be made. In March 2011, IDOT amended Section 17-1.03 of the manual to reflect that if any of the following conditions exist, the state shall provide adequate on or off-road accommodation:

- The highway or street is designated as a bikeway in a regionally or locally adopted bike plan or is published in a regionally or locally adopted map as a recommended bike route.
- The projected two-way bicycle traffic volume (see Section 17-1.04) approximate 25 ADT or more during the peak three- months of the bicycling season five years after completion of the project.
- The route provides “primary access” to a park, recreational area, school, or other significant destination.
- The route provides unique access across a natural or man-made barrier (e.g., bridges over rivers, bridges over railroad yards, bridges over freeways or expressways, highways through a National Forest). Bicyclists will be accommodated on the bridge unless bicycles are otherwise prohibited to

³⁸ Illinois Department of Transportation, Bureau of Design and Environment Manual

operate on the roadway approaches. For projects that meet no other warrants, a minimum shoulder width of 4 ft. (1.2 m) shall satisfy this warrant.

- The highway project will negatively affect the recreational or transportation utility of an independent bikeway or trail. Highway projects will negatively affect at-grade paths and trails when they are severed, when the projected roadway traffic volumes increase to a level that prohibits safe crossings at-grade, or when the widening of the roadway prohibits sufficient time for safe crossing.

Additional details regarding project submittals, calculating demand, engaging the public and building support, design criteria and standards, and other considerations are also in the manual.

For pedestrian accommodations, conditions that require pedestrian accommodation (Section 17-4.03, BDE Manual, May 2017) are:

- If there is current evidence of frequent pedestrian activity (dirt trails / paths).
- If there is a history of pedestrian-related crashes.
- The new road or improvement will create a safety issue for pedestrian travel.
- There is a urban or suburban development that would attract pedestrian travel along the route to be improved.
- Pedestrian-attracting development adjacent to the road exists, or is expected within the next five years.
- The road provides “primary access” to a significant destination, including parks, recreational areas, and other significant destinations or across a natural or man-made barrier.

B3.2.1 TRANSPORTATION ALTERNATIVES

The aforementioned MAP-21, enacted in July 2012, consolidated a number of previous federal programs that funded bicycle and pedestrian projects. MAP-21 combined the Transportation Enhancements, Recreational Trails, and Safe Routes to Schools programs. Other changes in MAP-21 include:

- Reduced the total amount of funding available.
- Kept the funding share at 80 percent federal and 20 percent local.
- Made the Recreational Trails Program an optional set-aside.
- Changed some of the types of projects that can be funded. For example, projects that address Americans with Disabilities Act (ADA) compliance are now identified as being eligible for these resources. MAP-21 also allocated programming authority of a portion of the funds to the Metropolitan Planning Organizations (MPO) with urban populations of more than 200,000.

Out of the \$233 million of Transportation Enhancement funds allocated to Illinois under the previous federal transportation legislation, IDOT has committed \$199 million, with the last round of projects announced on October 12, 2016 funding 33 projects for \$30.7 million. The next round of ITEP applications is being accepted from October 2 to December 1, 2017 with an award announcement projected in Spring 2018. Since the start of the Transportation Enhancements program in 1991, pedestrian and bicycle facilities, including trails, have received about half of all funding available – nearly \$217 million out of the \$410 million that has been programmed. Other eligible project types that do not involve pedestrian and bicycle facilities are landscape/streetscape and other scenic beautification, conversion of abandoned railroad corridors to trails, historic preservation, vegetation management in transportation rights of way, archaeological activities relating to impacts from implementation of transportation projects, stormwater management, and construction of turnouts or viewing areas.

For the Safe Routes to Schools program, IDOT has committed approximately \$43.5 million since the program began in 2005; as of June 2012, awardees are reported to have spent a little more than \$12.6 million (28%). Twenty-one educational and encouragement projects that have been funded include bike rodeos in Matteson and Lena, designated days to walk to school in Marysville and Plano, training programs to teach students how to be safe bicyclists and walkers, crossing guard trainings, planning for ‘walking school bus’ events and a variety of other educational and encouragement programs.

Per the ABW’s 2016 Benchmarking Report, the percentage of federal funds obligated for biking and walking projects totaled nearly \$153 million from FY 2009 to FY 2014. Table 3.2 depicts a percentage breakdown of these funds, per federal program, for FY 2009 to FY 2014.

Table 3.2 Federal Funding Programs for Biking and Walking Projects (FY 2009 - 2014)

Federal Program	Percentage of Funds (%)
CMAQ	26
STP/TE TAP/TE*	27
Other STP	4
SRTS	17
RTP	1
HSIP	0
NHPP	6
TAP	2
ARRA	12
All Other Programs	5
Total	100

*At this time Transportation Enhancement part of STP funding source.

Illinois has experienced an increase in federally funded bicycle and pedestrian projects in recent years. From FY 2006-2008 to FY 2009-2011, the total amount of funds for bicycle and pedestrian projects tripled. The increase from FY 2009-2011 to FY 2012-2014 was not as noticeable; however, funding still increased over 20 percent.

Table 3.3 details federal funds obligated from FY 2006 to FY 2014.

Table 3.3 Federal Funds Obligated to Bicycle and Pedestrian Projects (FY 2006 - 2014)

FY	Total Amount of Funds (\$)
2006-2008	22,020,429
2009-2011	67,802,006
2012-2014	85,031,839
Total	174,854,274

Source: Alliance for Biking and Walking, 2016 Benchmarking Report.

B3.2.2 CONGESTION MITIGATION AND AIR QUALITY PROGRAM (CMAQ)

With passage of the Clean Air Act Amendments of 1990, the Congress made great strides in America's efforts to attain the National Ambient Air Quality Standards (NAAQS). The 1990 amendments required further reduction in the amount of allowable vehicle tailpipe emissions, initiated more stringent control

measures in areas that still failed to meet the NAAQS-known as nonattainment areas-and provided for a stronger, more rigorous link between transportation and air quality planning. Further establishing this link, one year later, the Congress passed the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991. This far-reaching legislation brought transportation into the multi-modal arena and also set the stage for an unprecedented focus on environmental programs. Part of this approach was the Congestion Mitigation and Air Quality Improvement Program. The CMAQ program was implemented to support surface transportation projects and other related efforts that contribute air quality improvements and provide congestion relief. Administered by FHWA, the CMAQ program has been reauthorized under every successive Transportation Bill up to and including the FAST Act in 2015. Through the close of the MAP-21 period in 2015, the CMAQ program has provided more than \$30 billion to fund over 30,000 transportation related environmental projects for State DOTs, metropolitan planning organizations, and other sponsors throughout the US. As with its predecessor legislation, the FAST Act provides funding to areas in nonattainment or maintenance for ozone, carbon monoxide, and/or particulate matter. In addition, those States that have no nonattainment or maintenance areas still receive a minimum apportionment of CMAQ funding for either air quality projects or other elements of flexible federal aid highway spending. The FAST Act provides from \$2.3 to almost \$2.5 billion in CMAQ funding for each year of the authorization-2016 through 2020. While project eligibilities remain largely the same, the legislation places increased emphasis on diesel engine retrofits including construction equipment, port-related landside non-road or on- road equipment and alternative fuel infrastructure in designated alternative fuel corridors. ³⁹

The State of Illinois receives an allocation of federal CMAQ funds. Under the Intermodal Surface Transportation Efficiency Act (ISTEA), Transportation Equity Act for the 21st Century (TEA-21), and the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), funding apportionments for each state were calculated based on a formula using weighted populations in ozone and PM2.5 nonattainment and maintenance areas. Under MAP-21 and the FAST Act, the federal funds are allocated using the proportions from the final year of SAFETEA-LU. In Illinois, CMAQ funds are distributed between the nonattainment areas of the state based on the same formula used in ISTEA, TEA-21, and SAFETEA-LU. Currently, the only two MPOs with ozone and PM2.5 nonattainment areas in Illinois are CMAP and the East-West Gateway Council of Governments (EWGCOG). CMAP receives approximately 95.21 percent of the annual apportionment and EWGCOG receives approximately 4.79 percent. As of MAP-21, 25% of the funds must be obligated on projects that improve PM2.5.⁴⁰

B3.2.3 STATE BIKEWAYS PLAN

Illinois completed its first statewide bicycle plan in 2014. This plan provides IDOT with a foundation for bicycle and pedestrian planning in Illinois. The plan draws on existing policies as defined in the Bureau of Design and Environment and the Bureau of Local Roads and Streets manuals, including previous planning and programming implemented by IDOT. The plan includes an assessment of current conditions, identifies goals for future enhancements to infrastructure and education and encouragement programs, and sets a path for implementation. Based on the existing conditions analysis, plan recommendations included the following:

- Bicycling related planning and policy recommendations,

³⁹ Federal Highway Administration. Air Quality: CMAQ Program. https://www.fhwa.dot.gov/environment/air_quality/cmaq/. Accessed July 19, 2017.

⁴⁰ IDOT, MPO Cooperative Operations Manual. P. 12. <http://www.idot.illinois.gov/Assets/uploads/files/Transportation-System/Manuals-Guides-&-Handbooks/Highways/Metropolitan%20Planning%20Organization%20Cooperative%20Operations%20Manual.pdf>. Accessed July 19, 2017.

- Bikeway safety, design and maintenance recommendations,
- Regional-scale bikeway network recommendations,
- Bikeway network implementation and prioritization recommendations,
- State bicycling performance measures,
- Education, outreach and enforcement recommendations, and
- Funding recommendations.

B3.2.4 BICYCLE MAPS

Mapping a network of suitable bicycle routes was one of the first initiatives of IDOT's bicycle program. These maps cover the state and provide measures of suitability for bicycling on roadways in the state. These recommendations have six different levels, ranging from "most suitable" to "not recommended for bicycling" and two other classifications ("bicycles prohibited," generally on interstates, and "use at your discretion," for roads that are unpaved). IDOT assessed the roads using a Bicycle Level of Service calculation, which considers traffic volume and speed, pavement condition, lane and shoulder widths, the number of lanes, on-street parking, and the percentage of truck traffic on the road. In addition, the ratings assume an average or better than average level of skill for an adult bicyclist, who is comfortable with sharing the road with vehicular traffic.

State bicycle maps are available in print by request, or on line by county, in downloadable printable format.⁴¹ IDOT-produced maps rely on data from the Illinois Roadway Information System (IRIS), a Geographic Information System (GIS) database that includes information on most Illinois roadways.

B3.2.5 GO GREEN

Illinois has committed to bicycling as a priority, as part of the State's sustainability initiative. There is a bicycling information page on the Green.Illinois.gov website under the Sustainable Transportation tab, which compiles a listing of all efforts and program by all state agencies involved with bicycling.⁴²

As an example of how bicycling (and walking) are becoming embedded into state government activity, the 2014 Annual Report of the Green Governments Coordinating Council notes the efforts by various agencies to promote the use of bicycling by providing bicycle parking at facilities, as ways to reduce greenhouse gas emissions and to improve employee health.

⁴¹ <http://www.idot.illinois.gov/travel-information/recreation/trails-paths-streets/index>

⁴² GreenIllinois.Gov. <https://www.illinois.gov/gov/green/Pages/BikeContents.aspx>.

B4. Freight System

B4.1 DESCRIPTION

The efficient movement of goods is critical to the economy of Illinois and the United States. Illinois is the freight epicenter of the nation due to its critical role in the movement of freight nationwide. Freight of all kinds is being shipped to and from Illinois on a daily basis by truck, rail, water, and air. Illinois is served by all seven Class I railroads and the National Highways System in Illinois contains 7,945 miles⁴³; the 4th largest in the nation. IDOT plays an important role supporting the infrastructure that allows freight to effectively and reliably move in and out of the state. In addition to this section, more detailed information on freight modes, goods movement, and conditions can be found in 2017 Illinois State Freight Plan.

B4.1.1 OVERVIEW OF FREIGHT FLOWS

Freight traffic flows by mode, commodity, and geography are a fundamental way to understand the demand on Illinois infrastructure, and the connection between freight and the economy of the state. Several datasets, as described in the 2017 Illinois State Freight Plan, were combined to develop an accurate overview of Illinois' freight flows.

In 2014, 1.23 billion tons of freight was moved to, from, or within Illinois. This cargo was valued at \$2.97 trillion. The modal breakdown and directional flow of this freight movement is shown below in Table 4.1. The top half of Table 4.1 shows tonnage and value for inbound, outbound, and within state flows. The bottom half shows the mode share percentages based on these tonnages and values.

Table 4.1 Mode and Type of Flow Overview, 2014

	Inbound		Outbound		Within		Grand Total	
	Tons 2014 (M)	Value 2014 (B USD)						
Truck - FAF Dis	129.1	\$296.3	133.8	\$415.2	401.4	\$360.8	664.2	\$1,072.3
Rail Intermodal - STB	48.8	\$647.3	56.2	\$662.4	0.1	\$3.9	105.1	\$1,313.6
Rail Carload - STB	195.2	\$198.1	129.5	\$161.9	24.2	\$11.1	348.9	\$371.2
Water - TS	21.2	\$10.6	80.0	\$19.7	6.6	\$1.2	107.8	\$31.5
Air - T100	1.0	\$97.7	0.9	\$87.0	-	\$0.7	1.9	\$185.4
Grand Total	395.3	\$1,250.0	400.4	\$1,346.2	432.3	\$377.7	1,227.9	\$2,974.0
Truck - FAF Dis	32.7%	23.7%	33.4%	30.8%	92.9%	95.5%	54.1%	36.1%
Rail Intermodal - STB	12.3%	51.8%	14.0%	49.2%	0.0%	1.0%	8.6%	44.2%
Rail Carload - STB	49.4%	15.8%	32.3%	12.0%	5.6%	2.9%	28.4%	12.5%
Water - TS	5.4%	0.8%	20.0%	1.5%	1.5%	0.3%	8.8%	1.1%
Air - T100	0.3%	7.8%	0.2%	6.5%	0.0%	0.2%	0.2%	6.2%
Grand Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, Air, and Water

* STB: Surface Transportation Board; TS: Transearch; T100: 2014 Bureau of Transportation Statistics T-100 Segment Database (value calculated based on average value per ton figures from FAF)

A comparison of inbound, outbound, and within state flows, by tonnage and by value is presented below in Figure 4.1. As shown on the left side of Figure 4.1, by tonnage, freight flows inbound, outbound, and within

⁴³ FHWA. NHS Estimated MAP-21 NHS Mileages.

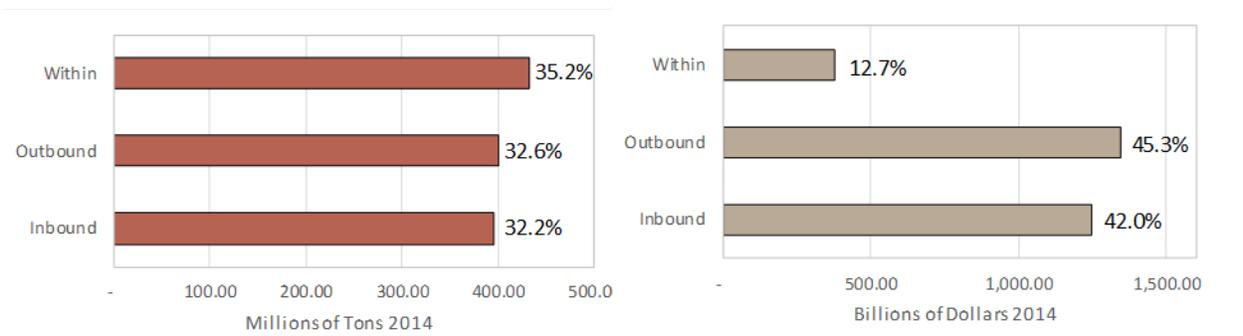
https://www.fhwa.dot.gov/planning/national_highway_system/nhs_maps/map21estmileage.cfm. Accessed September 2017.

the state are roughly evenly distributed, at 32.2 percent, 32.6 percent, and 35.2 percent, respectively. These percentages are based on the total tonnages for inbound, outbound, and within state flows shown in Table 4.2: Mode and Type of Flow Overview, 2014, divided by the grand total of 1,227.9 million tons.

As shown on the right side of Figure 4.1, the value of inbound and outbound freight was roughly equal at 42.0 percent and 45.3 percent, respectively, whereas, the value of freight moving only within the state was much lower, at 12.7 percent. These percentages are based on the total values of inbound, outbound, and within state freight flows shown in Table 4.3: Mode and Type of Flow, 2014, divided by the grand total of \$2,974.0 billion.

These figures exclude freight that passes through the state, such as transcontinental rail shipments hubbed in and around Chicago or interstate truck trips from Wisconsin to Indiana.

Figure 4.1 Freight Flow Overview (Shares Labeled), 2014



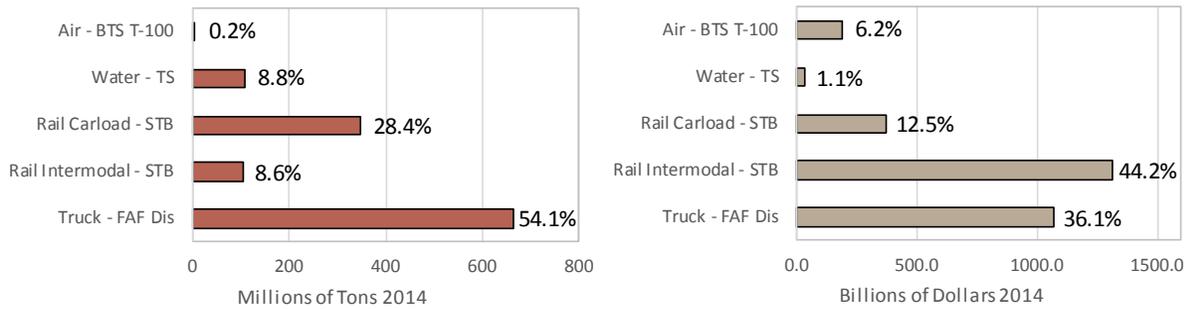
Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water

A comparison by mode share is shown below. This comparison summarizes the modal breakdown from the Grand Total column in Table 4.1: Mode and Type of Flow Overview, 2014.

As shown on the left side of Table 4.1: Modal Overview, 2014, over half (54.1 percent) of all tonnage is transported by truck. Rail intermodal shipments represent 8.6 percent of tonnage. Rail shipments by carload represent 28.4 percent of tonnage. Water represents 8.8 percent of tonnage. Air represents 0.2 percent of tonnage.

As shown on the right side of Figure 4.2: Modal Overview 2014, the rail intermodal mode jumps to a mode share of 44.2 percent in terms of value, which is larger than the mode share for truck of 36.1 percent. This reflects the importance of intermodal to the region and the relatively high value commodities that use this mode. The truck mode in Illinois carries a significant tonnage of gravel and other low value commodities which accounts for its lesser value share of 36.1 percent. Rail carload value also drops considerably from a tonnage share of 28.4 percent to a value share of 12.5 percent due to a large percentage of bulk commodities, such as coal and cereal grains. Water's mode share also decreases considerably going from a tonnage share of 8.8 percent to a value share of only 1.1 percent due once again to its concentration in bulk commodities. On the other hand, the air mode increases to 6.2 percent in terms of value.

Figure 4.2 Modal Overview, 2014



Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water

Several other findings from Table 4.2: Modal Overview, 2014, also stand out:

- The inbound rail carload tonnage is substantially larger than the truck inbound tonnage, which are 195.2 and 129.1 million tons, respectively.
- The inbound and outbound truck tonnage is essentially balanced (129.5 and 133.8 million tons, respectively), and trucking handles the vast majority of traffic that stays within the state (401.4 million tons).
- There is roughly four times more tonnage outbound by water than inbound by water (80.0 and 21.2 million tons, respectively).
- Most of these outbound water flows are lower value commodities, as the gap is smaller by value, with total values of \$19.7 billion for outbound and \$10.6 billion for inbound, which by percentage of overall value correlates to 1.5 percent and 0.9 percent, respectively.
- Inbound air cargo⁴⁴ represents 7.8 percent of the value and outbound air cargo represents 6.5 percent of the value, but air cargo is negligible in terms of tonnage share.

Understanding the flow of individual commodities is necessary to characterize the drivers of freight activity. Figure 4.3 through Figure 4.6 show commodity flows by tonnage, value, mode, and type.

As shown in Figure 4.3, the largest commodity flow in 2014 by tonnage is coal, representing 14.9 percent of all tons moved to, from, and within the state, with the majority of these flows heading inbound. As shown by Figure 4.5, Mode Share of Top 15 Commodities by Tonnage, 2014, 76.8 percent of coal is transported by rail carload in unit trains, although the water mode is used more intensely than other states, accounting for 18.0 percent of tons moved of this commodity. Inbound flows of coal are primarily supplying power plants for local energy generation.

Figure 4.3 also shows that cereal grains are the second largest commodity by tonnage, representing 10.7 percent of all flows to, from, and within Illinois. This is unsurprising given the importance of this industry to Illinois' economy. Most of these cereal grain movements are internal, heading to consumption markets and food processing facilities around the state, although outbound flows to other states are also substantial.

As shown in

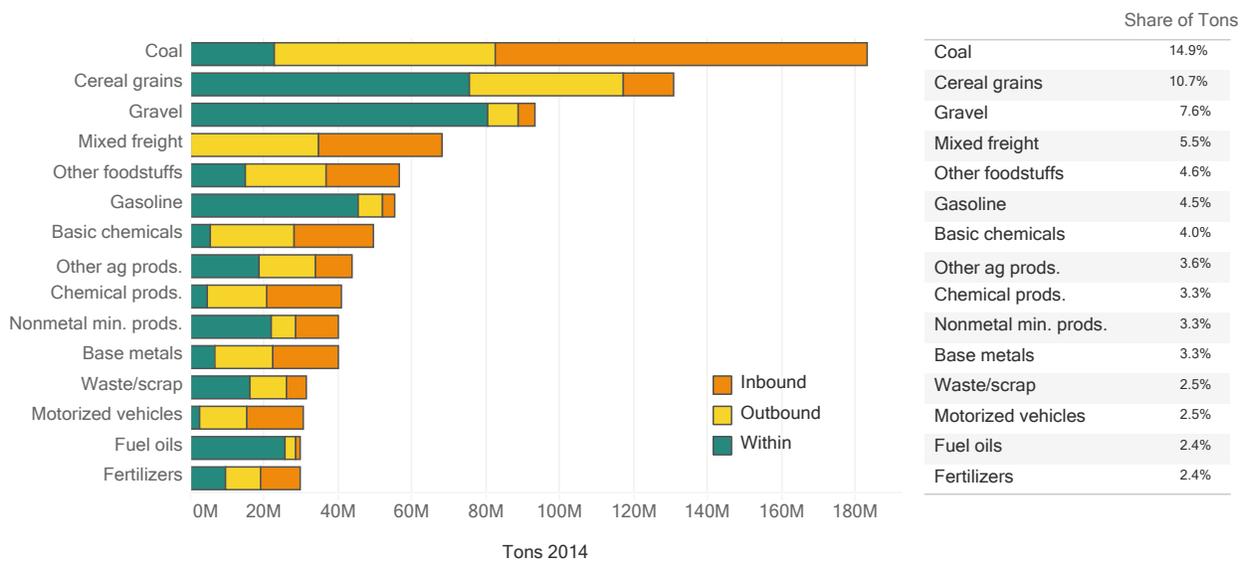
⁴⁴ Air cargo totals are included in Figure 4.1 and 4.2 but are excluded from subsequent tables and figures because they were generated from a database that did not contain commodity level information.

Figure 4.5: Mode Share of Top 15 Commodities by Tonnage, 2014, approximately 61.8 percent of these grain tons were carried by truck, with an additional 22.3 percent being transported by rail carload.

Figure 4.3: Top 15 Commodities by Tonnage by Type of Flow, 2014, also shows that the third largest commodity by tonnage is gravel, representing 7.6 percent of tons. Gravel is used primarily in the construction sector. Because of its high weight to value ratio, gravel is typically only shipped short distances, which is why the majority of gravel shipments that start in Illinois have destinations in Illinois.

As shown in Figure 4.5: Mode Share of Top 15 Commodities by Tonnage, 2014, gravel is transported mainly by truck, with a mode share of 86.1 percent.

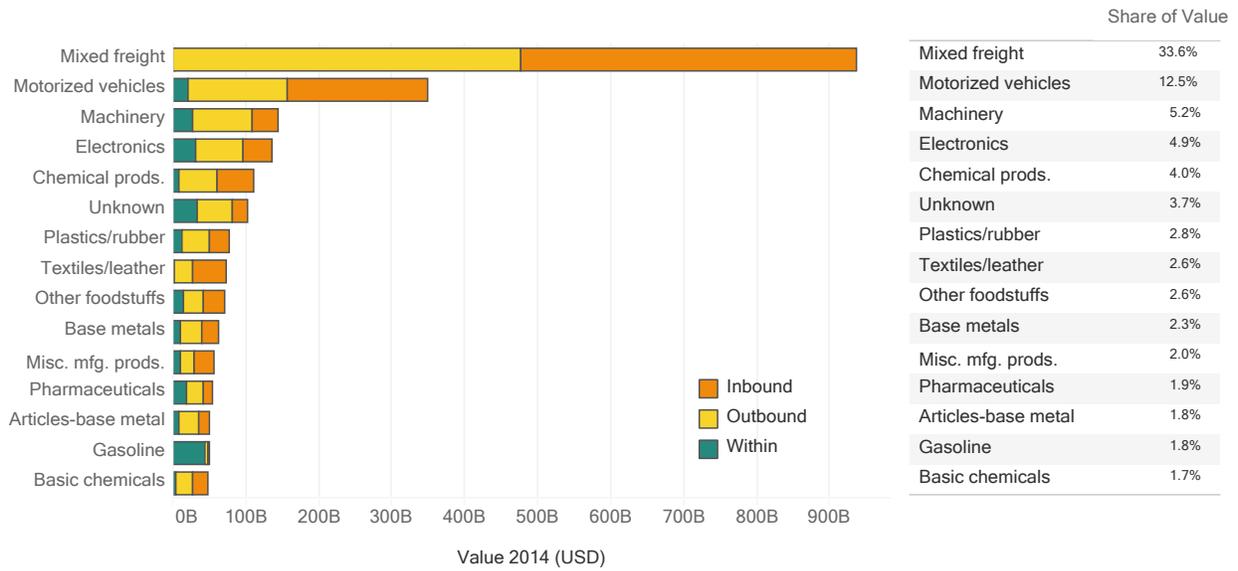
Figure 4.3 Top 15 Commodities by Tonnage by Type of Flow, 2014



Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water

[The corresponding SCTG Commodity Codes for the above are: Coal (15), Cereal Grains (02), Gravel (12), Mixed Freight (43), Other foodstuffs (07), Gasoline (17), Basic chemicals (20), Other ag prods. (03), Chemical prods. (23), Nonmetal min. prods. (31), Base metals (32), Waste/scrap (41), Motorized vehicles (36), Fuel oils (18), and Fertilizers (22).]

Figure 4.4 Top 15 Commodities by Value by Type of Flow, 2014



Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water

[The corresponding SCTG Commodity Codes for the above are: Mixed freight (43), Motorized vehicles (36), Machinery (34), Electronics (35), Chemical prods. (23), Unknown (N/A), Plastics/rubber (24), Textiles/leather (30), Other foodstuffs (07), Base metals (32), Misc. mfg. prods. (40), Pharmaceuticals (21), Articles-base metal (33), Gasoline (17), and Basic chemicals (20).]

Analyzing commodity flows by value provides an overview of the supply-chains that are most important to the state's economy. As shown in

Figure 4.4: Top 15 Commodities by Value by Type of Flow, 2014, shipments of Mixed Freight are by far the largest commodity flow in the state (33.6 percent); however, this is a special category used for rail intermodal traffic and it can be composed of a wide range of products. Given the importance of Chicago in nationwide intermodal logistics and the movement of international trade, it is expected that this commodity group appears prominently in the data. An issue that might be overstating the importance of these shipments is that some rail intermodal containers that pass through Chicago on transcontinental shipments are rebilled (issued a second waybill) in Chicago as they switch railroads. It is possible these shipments are counted twice as shipments that terminate in the state and then originate again. Rebilling generally occurs at any east/west rail interchange and thus can affect data at St. Louis as well, although Chicago is the chief location. Adjusting for it is not simple—there is no way to perfectly connect rebilled shipments. However, the effect of this data issue on total results is likely to be of secondary importance: it tends to exaggerate volumes more than it distorts broad traffic patterns.

Figure 4.4: Top 15 Commodities by Value by Type of Flow, 2014, is also useful to highlight the key outbound commodities for the state. For commodities such as machinery, electronics, chemical products, and plastic/rubber, the state ships more to other states than it receives for local consumption. Outbound flows of these high value commodities are important for the local economy because they are an indication of manufacturing activity and high value added production.

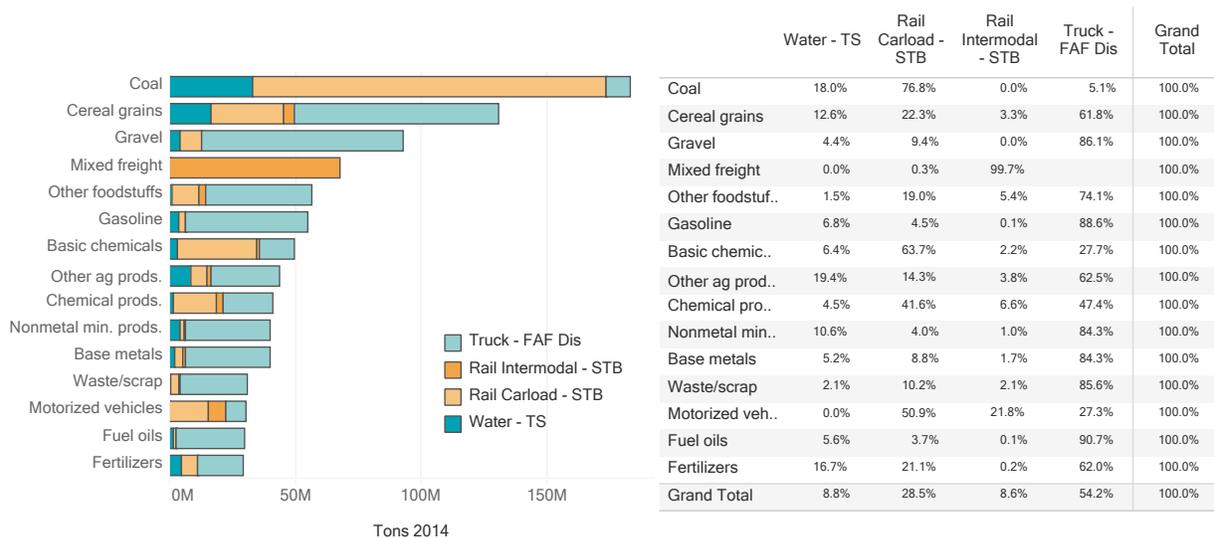
As shown in Figure 4.6: Mode Share of Top 15 Commodities by Value 2014, with the exception of chemical products, truck is the most important mode for these commodities. The truck mode share for chemical products was only slightly less than that for rail carload. The truck mode share for these commodities is as follows:

- Machinery (69.3 percent)
- Electronics (63.8 percent)
- Chemical Products (37.4 percent)
- Plastic/Rubber (67.4 percent).

As shown by Figure 4.4: Top 15 Commodities by Value by Type of Flow, 2014, the second largest commodity group in Illinois by value is motorized vehicles, representing 12.5 percent of flows in the whole state. This reflects the importance of this sector to the state's economy.

As shown by Figure 4.5: Mode Share of top 15 Commodities by Tonnage, 2014, around half of these flows are moving by rail carload (50.9 percent) and the rest are split between truck (27.3 percent) and rail intermodal (21.8 percent).

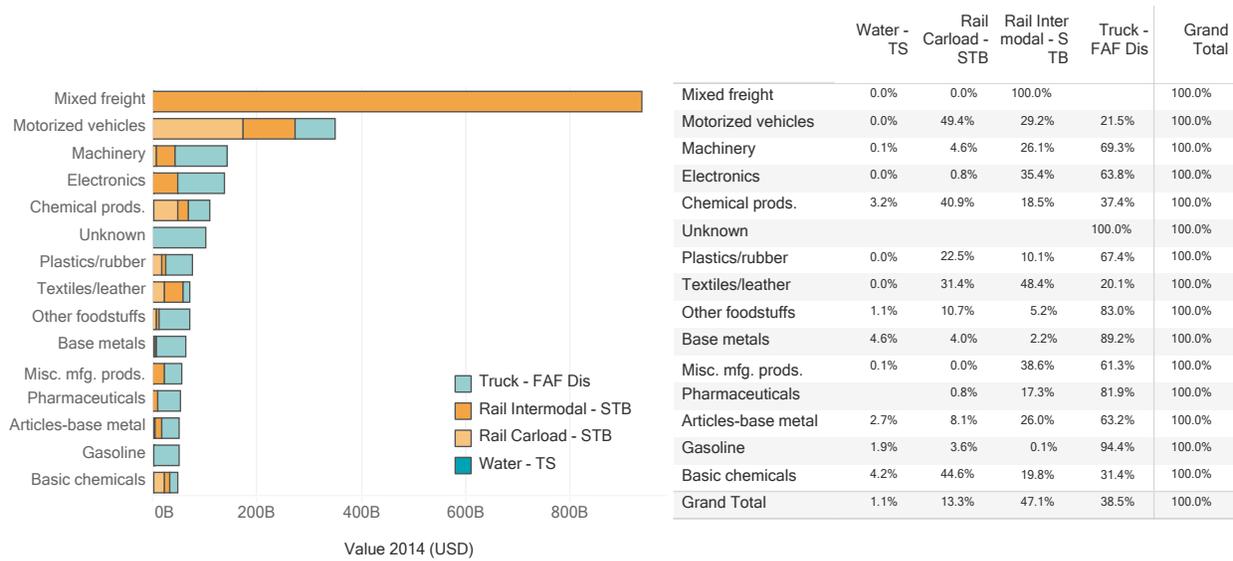
Figure 4.5 Mode Share of Top 15 Commodities by Tonnage, 2014



Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water

[The corresponding SCTG Commodity Codes for the above are: Coal (15), Cereal grains (02), Gravel (12), Mixed freight (43), Other foodstuffs (07), Gasoline (17), Basic chemicals (20), Other ag prods. (03), Chemical prods. (23), Nonmetal min prods. (31), Base metals (32), Waste/scrap (41), Motorized vehicles (36), Fuel oils (18), and Fertilizers (22).]

Figure 4.6 Mode Share of Top 15 Commodities by Value, 2014



Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water

[The corresponding SCTG Commodity Codes for the above are: Mixed Freight (43), Motorized vehicles (36), Machinery (34), Electronics (35), Chemical prods. (23), Unknown (N/A), Plastics/rubber (24), Textiles/leather (30), Other foodstuffs (07), Base metals (32), Misc. mfg. prods. (40), Pharmaceuticals (21), Articles-base metal (33), Gasoline (17), and Basic chemicals (20).]

B4.2 IMPLEMENTATION STRATEGIES AND PROGRAMS

B4.2.1 ILLINOIS RAIL PLAN

The 2017 Illinois State Rail Plan, as a coordinated part of the overall Illinois State Transportation Plan, reviews the existing rail infrastructure, provides recommendations for improving the rail system, and explores possible connections between rail and other modes of transportation. As the Rail Plan is a stand-alone comprehensive planning document that includes both freight and passenger rail, it is not entirely focused on freight movement in Illinois. However, in its description of the rail lines and railroads operating in Illinois, the Rail Plan provides a valuable resource to understanding the data presented in the 2017 Illinois State Freight Plan regarding rail freight mode share and rail freight commodity flows.

The primary goal of the Rail Plan is to create a vision of what rail services will look like in the future. The Plan identifies anticipated trends, needs and issues that will affect rail service and demand over the next two or three decades. It also provides a long range investment program framework for rail services within the State.

B4.2.2 RAIL FREIGHT LOAN PROGRAM

The Rail Freight Loan Program provides capital assistance to communities, railroads, and shippers to improve rail freight service and promote statewide economic development. Through the Rail Freight Loan Program, IDOT provides capital funding in the form of low interest loans, creating a revolving, self-sufficient funding program. In FY 2018, the General Assembly provided \$1.7 million for the Rail Freight Loan Program. Each project considered for financial support must produce economic benefits that meets or exceeds the funding provided by the state, as determined through a benefit/cost analysis.

B4.2.3 REGIONAL, MULTI-STATE AND NATIONAL EFFORTS

IDOT is also engaged in several efforts to improve freight movement from a local, regional, multi-state and national perspective. Some of these efforts are briefly reviewed here, and are discussed in more detail in the 2017 Illinois State Freight Plan.

CREATE PROGRAM

The existing Chicago railroad system has infrastructure limitations that result in motorist, public transit, passenger rail, and freight rail delays and congestion on a daily basis.

Recognizing that rail capacity improvements within the Chicago metropolitan area contribute directly to local and national economic growth and environmental improvements, the Chicago Region Environmental and Transportation Efficiency Program (CREATE) program was formed in 2003.

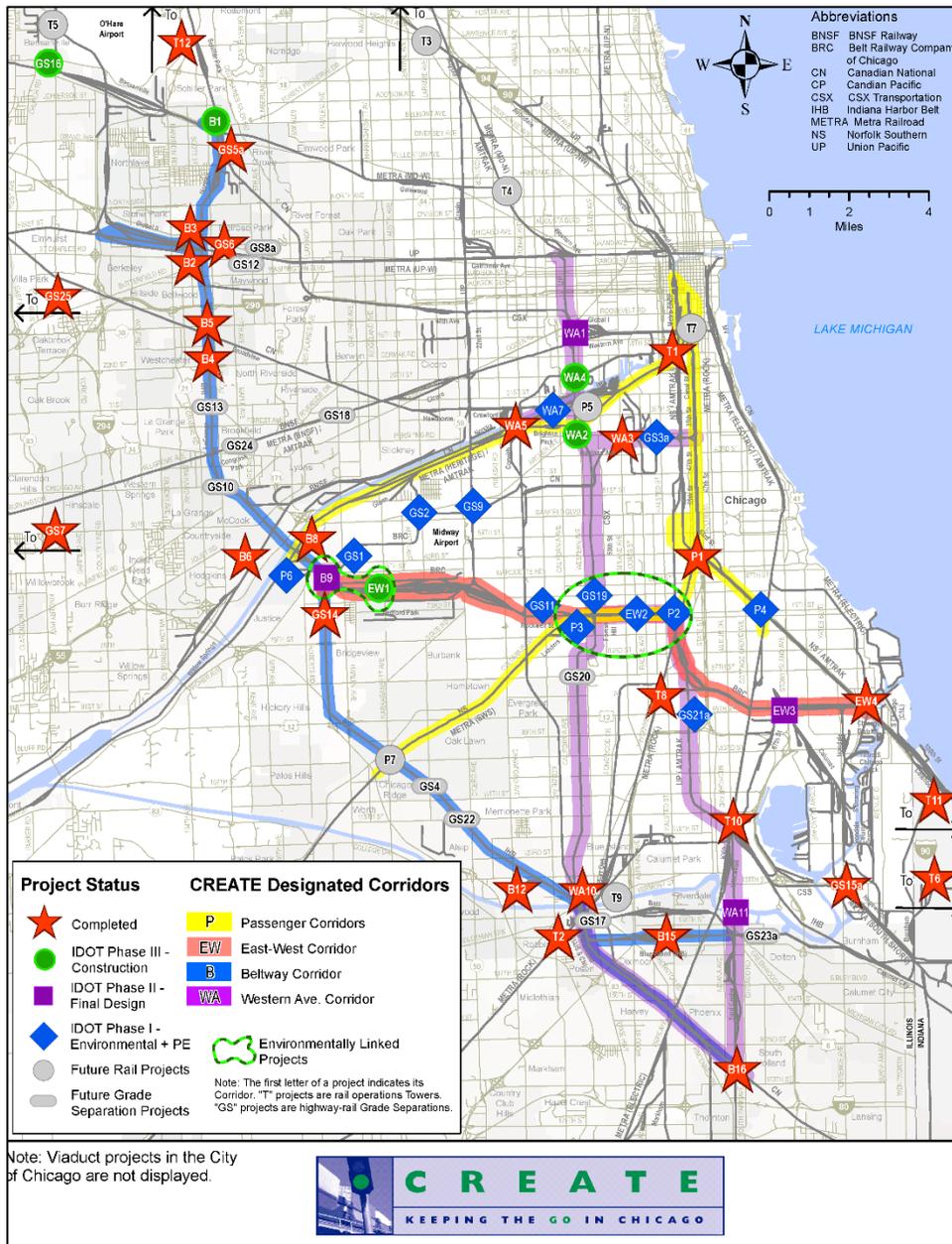
CREATE is a public-private partnership between the U.S. Department of Transportation, the Illinois Department of Transportation, the City of Chicago Department of Transportation, Cook County, the Association of American Railroads, Amtrak, Metra, and the six Class I freight rail

carriers in the Chicago area (BNSF Railway, Canadian Pacific Railway, Canadian National Railway, CSX Transportation, Norfolk Southern Corporation, and Union Pacific Railroad), the Belt Railway Company of Chicago, and the Indiana Harbor Belt Railroad. The CREATE program includes 70 rail and grade separation projects that will result in increased efficiency and reliability of rail service within the Chicago region, while also providing additional benefits to highway users through the elimination of at-grade crossing delays and other conflicts. To date, the CREATE partners have committed over \$1.4 billion to the program, which is estimated to have a total cost of approximately \$4.4 billion.

The CREATE Program is a multi-billion dollar investment in the metropolitan Chicago region's railroad infrastructure. To date, 28 projects have been completed, with 42 under development. The CREATE program improvements will benefit the nation by increasing the efficiency and safety of the railroad network, and reducing costs due to delays and crashes

Thus far, 28 of the 70 projects have been completed, with the remaining 42 projects in various phases of development. Figure 4.7 shows the status of the projects as of January 2017.

Figure 4.7 Status of CREATE Projects as of January 2017



Source: Chicago Region Environmental and Transportation Efficiency Program, <http://www.createprogram.org/projects.htm#other>, Accessed April 2017.

MID-AMERICA FREIGHT COALITION

The Mid-America Freight Coalition³⁷ (MAFC) is a regional organization of ten midwestern states that cooperates in the planning, organization, preservation, and improvement of transportation infrastructure. The ten states that are members of MAFC are Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Ohio, and Wisconsin. The ten member states share key interstate corridors, major inland waterways. MAFC members submit and review proposed research projects that may be of interest to the group. Typically, several projects are completed and published each year based on those selected from this slate of proposed projects.

WILL COUNTY COMMUNITY FRIENDLY FREIGHT MOBILITY PLAN

The Will County Community Friendly Freight Mobility Plan³⁹ is a partnership between Will County and the Will County Center for Economic Development (CED), with additional support from the Illinois Department of Transportation, the Workforce Investment Board of Will County, Three Rivers Association of Realtors, Federal Highway Administration, and the Chicago Metropolitan Agency for Planning (CMAP). With the development of two large, modern intermodal centers and the addition of over 100 million square feet of new industrial space, and more intermodal centers and industrial spec planned, Will County is the largest inland port in North America. The Will County Community Friendly Freight Mobility Plan will be multimodal and will provide strategies and goals to guide freight policies, programs, projects and investments throughout Will County in a community-friendly manner. The Will County Community Friendly Freight Mobility Plan will encompass a holistic planning approach covering freight mobility, land-use integration, workforce development, education/training and community livability. The Will County Community Friendly Freight Mobility Plan began in October 2016 and is slated for completion in late 2017.

HOUBOLT ROAD BRIDGE

IDOT, CenterPoint Properties, Will County, and the City of Joliet have partnered to deliver the Houbolt Road Bridge project over the Des Plaines River, connecting I-80 to North America's largest inland port located in the municipalities of Elwood and Joliet in Will County. The project will help facilitate the movement of goods throughout the region, relieve congestion and safety concerns in nearby communities, and further strengthen the state's economy. The project has a cost estimate of \$170 million to \$190 million. Under the agreement, CenterPoint will build and operate a new toll bridge on Houbolt Road over the Des Plaines River and the BNSF Railroad tracks at a cost of \$150 million to \$170 million. Will County has passed a resolution allowing tolls to be issued and collected by CenterPoint. An IDOT contribution of \$21 million will widen Houbolt Road and reconfigure the existing interchange with I-80 to a diverging-diamond design to accommodate the increased traffic demand. The City of Joliet will work with IDOT to implement and oversee the improvements⁴⁵.

⁴⁵ Governor Bruce Rauner Press Release, July 11, 2016

B5. Rail

B5.1 DESCRIPTION

With the rise of fuel prices and increase in congestion, alternatives to driving are in higher demand than ever before; therefore, the use of the Illinois rail system is trending positively. The recent growth in rail passenger ridership in Illinois is a strong indicator of the importance of rail travel in maintaining a balanced transportation system and demonstrates the need for an efficient passenger rail network.

Illinois has long advocated for and invested in the passenger rail network, resulting in a mature commuter rail system and an intercity rail system that links to the national rail network. As such, passenger rail in Illinois is not a stand-alone network but rather an integral element of the transportation system network. Illinois represents a major crossroads in the nation's rail network and Chicago represents the largest rail hub in North America. The Illinois rail system provides residents and visitors with various rail alternatives for all activities ranging from the daily commute for business to leisurely getaways.

B5.1.1 INTERCITY PASSENGER RAIL

The Passenger Rail and Improvement Act of 2008 (PRIIA) requires States to submit a State Rail Plan if they are receiving federal funding for facilities, infrastructure, and equipment to provide or develop intercity passenger rail transportation⁴⁶. The U.S. Department of Transportation will not officially approve PRIIA grants for a project unless the project is part of the State Rail Plan⁴⁷. Since PRIIA defines passenger rail as intercity and commuter rail, this section will only discuss these types of rail systems in Illinois, which include Amtrak, Metra, and the Northern Indiana Commuter Transportation District (i.e. South Shore Line), as well as their intermodal connections.

AMTRAK

In 1970, Congress created Amtrak to take over intercity passenger rail services that twenty, financially distressed railroad companies operated in the United States⁴⁸. Most of these companies were looking to unload their money-losing passenger rail operations, even though they provided a vital public service. Over fifty years later, Amtrak operates 44 routes that serve over 500 destinations in 46 states and three Canadian provinces⁴⁹. These services are comprised of long-distance routes, medium-distance (regional or corridor) routes, state-supported routes, and state-supported commuter rail routes.

Illinois is at the center of Amtrak's national passenger rail system. Of the 38 national Amtrak trains, 11 Amtrak routes traverse Illinois, creating a hub for travelers and an opportunity for Illinois to provide quality service that affects nationwide travel⁵⁰. As detailed in Table 5.1 below, Amtrak operates eight long-distance routes and four medium-distance routes (regional) to and from Chicago's Union Station as well as four in-state routes. Each of these rail segments are depicted in Figure 5.1.

⁴⁶ Subdivision information for this and other Class I railroads has been temporarily transferred from the 2012 State Rail Plan and will be verified to ensure that all information is up-to-date.

⁴⁷ United States Code 49 Section 24402(b)(1)

⁴⁸ <https://www.amtrak.com/ccurl/998/601/Amtrak-National-Fact-Sheet-FY2015,0.pdf>

⁴⁹ Amtrak, <https://www.amtrak.com/national-facts>, accessed July 27, 2017.

⁵⁰ Amtrak Illinois, http://illinoisrail.org/amtrak_illinois/, accessed July 27, 2017

Figure 5.1 Amtrak in Illinois



Source: Amtrak website, www.amtrak.com

Table 5.1 Amtrak Routes in Illinois

Route		Route Length	Track Owners	Travel Time	Service Cars	No. of Cities Served
<i>Long-Distance Routes</i>						
California Zephyr	Chicago-Galesburg-Emeryville, CA	2,438 miles	Burlington Northern Santa Fe, Union Pacific	52 hrs.	Superliner Sleepers and Coach Service	42
Capitol Limited	Chicago-Cleveland-Washington DC	780 miles	Norfolk Southern, CSX	18 hrs.	Coach and First Class	16
Cardinal	Chicago-Cincinnati-New York	1,147 miles	Norfolk Southern, CSX, Buckingham Branch RR, Amtrak	26.5 hrs.	First Class Sleeper, Reserved Business Class, Reserved Coach Class	32
City of New Orleans	Chicago-Champaign-New Orleans	934 miles	Canadian National	19 hrs.	Coach and First Class Sleeper	19
Empire Builder	Chicago-St. Paul/Minneapolis-Seattle, WA/Portland, OR	2,206 miles (Chicago-Seattle) 2,257 miles (Chicago-Portland)	Metra, Canadian Pacific, Burlington Northern Santa Fe	46 hrs., 10 min. (Chicago to Seattle) 45 hrs., 55 min (Chicago to Portland)	Superliner Sleeper and Coach	46
Lake Shore Limited	Chicago-Cleveland-New York or Boston	1,017 miles (Chicago to Boston) 959 miles (Chicago to NYC)	Norfolk Southern, CSXT, Metro North RR, Amtrak	22 hrs., 40 min. (Chicago to Boston) 20 hrs. (Chicago to NYC)	Heritage or Viewliner Diner Cars, Amfleet Coaches and Lounges, Viewliner Sleeper	24
Southwest Chief	Chicago-Kansas City-Los Angeles	2,265 miles	Burlington Northern Santa Fe	43 hrs., 15 min.	First Class Sleeper, Reserved Business Class, Reserved Coach Class	33

Route	Route Length	Track Owners	Travel Time	Service Cars	No. of Cities Served	
Texas Eagle	Chicago-St. Louis-San Antonio (some continue onto Los Angeles)	1,306 miles (Chicago to San Antonio) 2,265 miles (Chicago to Los Angeles)	Canadian National, Union Pacific, Burlington Northern Santa Fe	32 hrs., 10 min. (Chicago to San Antonio) 65 hrs., 50 min. (Chicago to Los Angeles)	Reserved Coach and Superliner Roomettes and Bedrooms	41
Medium-Distance Routes						
Blue Water	Chicago-Port Huron, MI	319 miles	Canadian National/Grand Trunk Western, Amtrak, Michigan DOT, Norfolk Southern	7 hrs.	N/A	11
Hoosier State	Chicago-Indianapolis	196 miles	Norfolk Southern, CSX	5 hrs.	Coach	6
Pere Marquette	Chicago-Grand Rapids, MI	176 miles	CSXT, Norfolk Southern	4 hrs.	Coach	5
Wolverine	Chicago-Detroit/Pontiac (connects to Amtrak's Thruway Program mid-way)	304 miles	Norfolk Southern, Canadian National, Amtrak, Conrail	6 hrs., 40 min.	Coach	N/A
In-State Routes						
Lincoln Service	Chicago-Bloomington/Normal-Springfield-St. Louis	284 miles	Canadian National, Union Pacific, Norfolk Southern, Kansas City Southern, Terminal Railroad Association of St. Louis	5.5 hrs.	Coach	11
Illini and Saluki Service	Chicago-Champaign-Carbondale	310 miles	Illinois Central (Canadian National)	5.5 hrs.	N/A	11
Carl Sandburg and Illinois Zephyr Services	Chicago-Quincy	258 miles	Burlington Northern Santa Fe	4 hrs., 28 min.	N/A	10
Hiawatha Service	Chicago-Milwaukee	85 miles	Metra, Canadian Pacific	1.5 hrs.	Coach	5

Source: Draft Rail Plan, May 17, 2017.

Figure 5.2 Amtrak Routes in Illinois

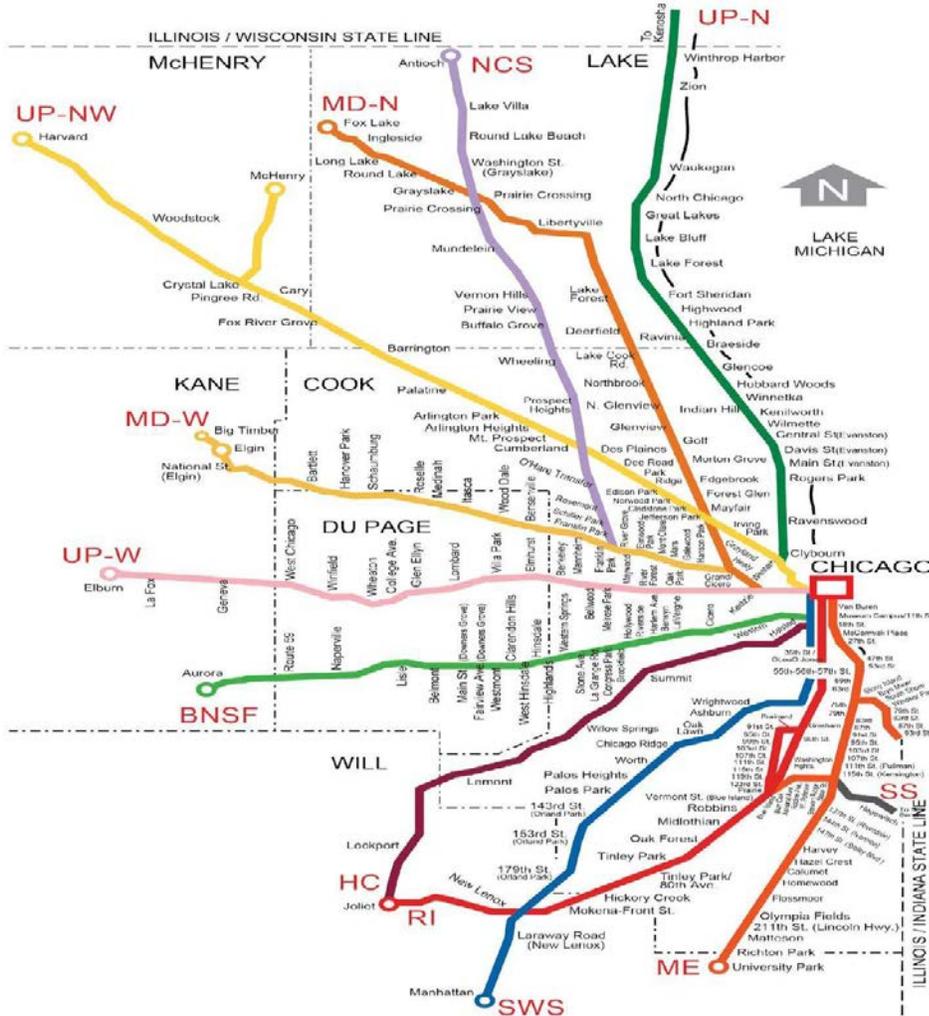


Source: IDOT, <http://www.idot.illinois.gov/Assets/uploads/images/Travel-Information/passenger-rail/Amtrak%20Map%20for%20Travelers.jpg>, accessed June 29, 2017.

B5.1.2 COMMUTER RAIL

Metra and the Northern Indiana Commuter Transportation District (NICTD) provide commuter rail service within Illinois. Metra and NICTD commuter transportation districts are depicted in Figure 5.3. The following discusses the rail operations for each provider.

Figure 5.4 Metra Commuter Rail Lines



Source: Metra, www.metrarail.com, accessed June 29, 2017.

METRA

Metra is one of the largest commuter rail systems in the nation serving a six-county region of 8,364,162 people living on 5,112 square miles⁵¹. Metra operates 11 rail lines with 488 route miles. It uses 1,100 miles of track, 800 bridges, and 2,000 signals each weekday⁵².

⁵¹ U.S. Census, 2016

⁵² Metra, www.metrarail.com, accessed June 29, 2017.

Figure 5.5 Metra Train in Chicago



Source: Metra Facebook Page, <https://www.facebook.com/MetraRail/>

In 1974, the Illinois General Assembly created the Regional Transportation Authority to coordinate public transportation throughout Chicago's metropolitan region. The Regional Transportation Authority created the Northeast Illinois Regional Commuter Railroad Corporation (NIRC) in the early 1980's to operate commuter service on rail lines threatened by private carrier bankruptcy and line sales. The Northeast Illinois Regional Commuter Railroad Corporation began operating commuter services on the bankrupt Rock Island Railroad in June 1981 and on the former Milwaukee Road commuter rail lines a year later⁵³. In 1983, the Regional Transportation Authority was reorganized to provide three service boards responsible for day-to-day operations of system wide bus, rapid transit, and commuter rail service. In 1984, the Commuter Rail Service Board introduced "Metra" as the service mark for their commuter rail system.

Today, Metra oversees all commuter rail operations within Northeastern Illinois (except for the Hegewisch Station which is on the Northern Indiana Commuter Transportation District's South Shore Line). Metra is responsible for day-to-day operations, fare and service levels, capital improvements, and planning. The Metra directly operates seven of its lines and contracts with two freight carriers, the Burlington Northern Santa Fe Railway and the Union Pacific Railroad, to run four others. These 11 separate lines radiate out of Chicago's Loop with 241 stations in more than 100 communities. Under Purchase of Service Agreements (PSAs), the freight carriers use their employees and own or control the rights-of-way and most of the other facilities required for operations. Metra owns the rolling stock and controls fares, service, and staffing levels. The following provides a general description of Metra's lines.

Table 5.2 Metra Transit Lines

Route	Route Miles	Owner/Operator	No. of Trains (Weekdays)	No. of Trains (Weekends)	Notes
Union Pacific North Line	Ogilvie Transportation Center to Kenosha, WI 51.6	Union Pacific	35 (each direction)	13-14 (Sat.) 9-10 (Sun.)	
Milwaukee District North Line	Chicago Union Station to Fox Lake 51.6	Metra	30 NB & 31 SB	12 each direction (Sat.) 10 each direction (Sun.)	Several other rail services operate on this line.

⁵³ RTAMS, <http://www.rtams.org/rtams/home.jsp>, accessed June 29, 2017.

Route		Route Miles	Owner/Operator	No. of Trains (Weekdays)	No. of Trains (Weekends)	Notes
North Central Service	Chicago Union Station to Antioch	52.8	Metra & Canadian National/Metra	11 NB & SB	None	Can transfer onto Milwaukee District West Line.
Union Pacific Northwest Line	Ogilvie Station to Harvard or McHenry	61.3 (Harvard) 55.7 (McHenry)	Union Pacific	33 NW & 32 SE Harvard has 11 and McHenry has 3 in each direction.	12 NW & SE (Sat.) 9 stop in Harvard and none in McHenry 8 NW & 7 SE (Sun.) 7 to Harvard and none to McHenry.	
Milwaukee District West Line	Chicago Union Station to Big Timber (Elgin)	39.8				
Union Pacific West Line	Ogilvie Station to Elburn	43.6	Union Pacific	30 W & 29 E	10 W & E (Sat.) 9 W & E (Sun.)	No service to Kedzie on weekends.
Burlington Northern Santa Fe Line	Chicago Union Station to Aurora	37.5	Burlington Northern Santa Fe	47 each direction	14 each direction (Sat.) 9 each direction (Sun.)	No weekend service to Halsted, LaVergne, Congress Park, Highlands, and West Hinsdale
Heritage Corridor Line	Chicago Union Station to Joliet	37.2	Canadian National/Metra	3 NB & 4 SB	None	
Southwest Service Line	Chicago Union Station to Manhattan	40.8	Norfolk Southern/Metra	15 each direction (3 serving Laraway Road and Manhattan)	3 each direction (Sat.)	
Rock Island District Line	LaSalle Station to Joliet (express mainline) and Beverly Branch	46.8 (collectively)	Metra & CSX/Metra	36 each direction (16 express, 14 Beverly Branch, 6 all stops)	20 each direction (6 express, 6 Beverly Branch, 4 all stops)	All stops: except 95 th Street Longwood and 103 rd Street Washington Heights
Metra Electric District Line	Millennium Station to University Park (mainline) 93 rd Street (South Chicago Branch) Blue Island (Blue Island Branch)	40.6 (collectively)	Metra	N/A	N/A	Only Metra line using electric propulsion.

Source: Draft Rail Plan, May 17, 2017.

NICTD

The Northern Indiana Commuter Transportation District (NICTD) operates the South Shore Line, which serves Chicago's southeast side, northwestern and north central Indiana, and southwestern Michigan. The NICTD assumed ownership of this line when the South Shore Line's private operator went bankrupt in 1989. Overall, the South Shore Line spans 89.7 miles from Millennium Station in Chicago to the South Bend International Airport in Indiana. People boarding or alighting this train can only use the South Shore Line if they are traveling to or from Chicago's Hegewisch Station or stations within Indiana. This train cannot serve commuter trips that Metra can make.

The NICTD runs the aforementioned South Shore Line on tracks that Metra and they own. The South Shore Line uses an overhead catenary wire system rather than diesel locomotives. The Northern Indiana Commuter Transportation District operates 21 westbound and 22 eastbound trains on weekdays. Two of these trains travel only between Carroll Avenue and the South Bend Airport. On weekends, the Northern Indiana Commuter Transportation District operates nine westbound and 11 eastbound trains. Two of the eastbound trains travel only between Carroll Avenue and the South Bend Airport.

Figure 5.6 South Shore Line Train



Source: South Shore Line Facebook, <https://www.facebook.com/SouthShoreLine/>

MULTIMODAL CONNECTIVITY

Intermodal connections are key to providing efficient transportation options to users. Intermodal connections are defined as an intercity passenger rail service facility's ability to let passengers conveniently connect with other transportation modes⁵⁴. This section profiles but does not include all existing intermodal connections at intercity passenger rail stations in Illinois, which includes: Chicago Union Station, Glenview, Homewood, Joliet, La Grange, Naperville, and Summit.

⁵⁴ IDOT, Illinois State Rail Plan, December 2012.

Table 5.3 Illinois Stations with Intermodal Connections

Station	Intermodal Connections							Other or Local Bus Service
	Chicago Transit Authority (Rail and Bus)	Amtrak (Rail)	Amtrak Thruway Motorcoach (Bus)	Metra (Rail)	Pace (Bus)	Illinois Highway Network (Road)	Megabus (Bus)	
Chicago Union Station	X	X	X	X	X	X	X	
Glenview		X		X	X	X		
Homewood		X		X	X	X		
Joliet		X		X	X	X		
La Grange Road		X		X	X	X		
Naperville		X		X	X	X		
Summit		X		X	X	X		
Champaign Illinois Terminal		X	X			X		
Carbondale Multimodal Station		X				X		X

Source: IDOT, Draft Rail Plan, May 2017.

B5.2 IMPLEMENTATION STRATEGIES AND PROGRAMS

B5.2.1 HIGH-SPEED RAIL

The Federal Railroad Administration (FRA) launched the High-Speed Intercity Passenger Rail Program in June 2009 as part of the American Recovery and Reinvestment Act (ARRA). Illinois was selected in January 2010 to receive a federal award to bring high-speed passenger rail service (the High Speed Rail Project (HSR) to Illinois.

Approximately 99 percent of the 35 million annual trips made in the Chicago to St. Louis corridor are accomplished through automobile and air travel⁵⁵. The Chicago to St. Louis Rail Corridor is 284 miles long, with various configurations and owners. The HSR project would work to establish a more balanced modal use of the transportation network, with passenger trains designated to operate up to 110 miles per hour. Work is limited to infrastructure improvements and safety component improvements, as the current corridor operates on a single-track mainline for much of its length. A full build out of an additional second track is a future vision, but not currently funded. Construction activities along the corridor are scheduled to be largely complete in 2017.

⁵⁵ IDOT, Illinois High Speed Rail website, accessed July 2017.

Figure 5.7 Quad Gate Arms in Odell, Illinois



Source: City of Bloomington, Illinois website, <http://www.cityblm.org/government/departments/public-works/traffic/high-speed-rail>.

In September 2010, one of the first construction projects of the HSR project began. Since then, construction has continued along the corridor yearly between April and August. Construction is anticipated to be completed by the end of 2017. Construction work includes: building new/reconstructing sidings and second track, upgrades to bridges and culverts, drainage improvements, installation and upgrades to signal and wayside equipment, continued crossing and approach improvements, fencing installation, and utility improvements. Operations of trains up to 110 miles per hour began in 2012 between Dwight and Pontiac.

As further development of the HSR project, a feasibility study for 220 mile per hour trains from downtown Chicago, to Champaign-Urbana, and on to St. Louis and/or Indianapolis was conducted in 2013. This would connect the University of Illinois to Chicago, as well as three of the region's key cities together. It was determined the cost to build this project would be substantial and required further study⁵⁶.

B5.2.2 RE-INSTALEMENT OF PASSENGER RAIL SERVICE

Supporting intermodal connections is a very important part of having an efficient transportation system. Intermodal not only refers to passenger rail transit, but also freight rail. Promoting and expanding intermodal connectivity was included in the 2012 Illinois State Rail Plan.

The 2012 Rail Plan discussed the re-instatement of two intercity passenger rail services which would provide new intermodal connections. The Chicago-Rockford-Dubuque intercity passenger rail service has been put on hold due to insufficient funds⁵⁷. IDOT and Iowa Department of Transportation applied for High-Speed Intercity Passenger Rail funding in 2009 for service between Chicago and Iowa City. New stations would provide new intermodal connections. Funding was awarded in 2010 and service was scheduled to begin in 2015⁵⁸. However, the project was also put on hold due to the state budget impasse. IDOT has since moved

⁵⁶ IDOT, 220 mph High Speed Rail Preliminary Feasibility Study, September 24, 2013.

⁵⁷ Chicago Tribune, <http://www.chicagotribune.com/news/local/breaking/chi-plan-for-amtrak-service-from-chicago-to-rockford-on-hold-20150209-story.html>. Accessed in July 2017.

⁵⁸ Senator Dick Durbin website, <https://www.durbin.senate.gov/newsroom/press-releases/durbin-harkin-announce-230-million-in-funding-for-new-rail-service-from-chicago-to-iowa-city-through-the-quad-cities>. Accessed in July 2017.

forward with the project within the Chicago to Moline portion, with Iowa DOT declining to fund its portion of the project from Moline to Iowa City in 2014⁵⁹. Currently, the Chicago to Moline project has completed environmental studies along the BNSF portion of the route from Chicago to Wyanet, and is continuing environmental studies along the Iowa Interstate Railroad (IAIS) portion from Wyanet to Moline.⁶⁰

B5.2.3 RAIL SAFETY AND SECURITY

Rail safety has historically been and continues to be a priority for the railroads, the Illinois Commerce Commission (ICC), and IDOT. Safety has potential impacts on the general public and the efficiency of rail operations. Although the major railroads have long had their own police and security forces, the focus of rail safety is more recent, with an emphasis on the potential threat of terrorists using rail to disrupt transportation, or to harm large numbers of citizens.

A number of federal and Illinois state agencies, in concert with railroads and rail operators, continue to make progress with regard to rail safety and security. The following is a summary of these issues and ongoing activities in Illinois.

RAIL SAFETY IN ILLINOIS

Rail safety requirements are provided through a combination of federal and state laws. A majority of safety-related rules and regulations fall under the jurisdiction of the FRA, as outlined in the Rail Safety Act of 1970⁶¹ and other legislations, such as the most recent Rail Safety Improvement Act of 2008⁶². Many of FRA's safety regulations are found in Title 49 Code of Federal Regulations Parts 200-209⁶³.

For rail passenger operations, the same FRA safety standards apply, with the addition of specific regulations regarding passenger equipment safety standards and passenger train emergency preparedness. Recommendations from the FRA's Railroad Safety Advisory Committee (RSAC) for proposed improvements to continually upgrade existing safety standards are generated as passenger equipment technology improves. FRA then issues the final rule at the conclusion of its rule-making process.

Figure 5.8 Fencing Installed in Dwight, Illinois as Part of Illinois High Speed Rail Project

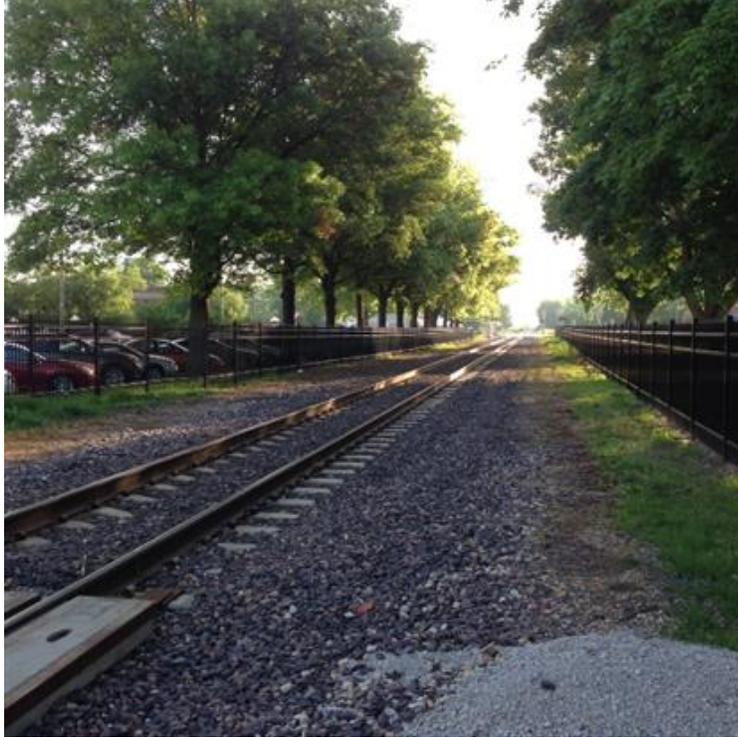
⁵⁹ The Dispatch/The Rock Island Argus, http://www.qconline.com/news/local/illinois-commits-to-chicago-moline-passenger-rail/article_fd9a15d9-6b9c-59a0-8912-23f88dc5df01.html. Accessed in July 2017.

⁶⁰ The Gazette, <http://www.thegazette.com/subject/news/business/transportation/railroad/iowa-leaving-53-million-for-amtrak-service-sitting-on-the-track-20141027>. Accessed in July 2017.

⁶¹ <http://uscode.house.gov/statutes/pl/91/458.pdf>, accessed July 26, 2017.

⁶² <https://www.fra.dot.gov/eLib/Details/L03588>, accessed July 26, 2017.

⁶³ <https://www.gpo.gov/fdsys/granule/CFR-2010-title49-vol4/CFR-2010-title49-vol4-part209>, accessed July 26, 2017.



Source: IDOT, HSR website, http://www.idothsr.org/media_center/

Rail safety issues generally fall into the following broad categories:

- Employee safety
- Inspection and maintenance of track, signals, bridges, and infrastructure
- Inspection of locomotives and cars
- Operating rules and practices
- Radio communications
- Control of drug and alcohol use
- Accident reporting
- Rail-highway grade crossing safety
- Passenger equipment safety standards
- Passenger train emergency preparedness
- Movement of hazardous materials
- Development and implementation of new technology
- Other areas specific to the rail industry.

The primary responsibility for enforcement of federal rail and safety regulations falls under FRA's jurisdiction. In Illinois, the ICC also actively participates in the enforcement of regulations as authorized by 49 CFR Part 212⁶⁴. IDOT is also involved in efforts to improve the safety of the rail system.

⁶⁴ <https://www.gpo.gov/fdsys/granule/CFR-2010-title49-vol4/CFR-2010-title49-vol4-part209>, accessed July 26, 2017.

GRADE CROSSING SAFETY IN ILLINOIS

The rail safety area most visible to the public and the most potential harm to the public is the interface between the rail and highway systems at grade crossings. Currently in Illinois, there are 7,651 public at-grade crossings, 3,649 at-grade crossings on private property (which are not under the jurisdiction of the State), and 320 pedestrian crossings⁶⁵.

IDOT is committed to an effective relationship with the ICC for grade crossing safety. IDOT currently has safety strategies and efforts being implemented which they refer to as the Three E's – Education, Enforcement, and Engineering⁶⁶ as follows:

- **Education** - The state is active in developing programs to educate the dangers at grade crossings. The ICC is involved in Operation Lifesaver, which targets both motorists and pedestrians in a continuing effort to reduce train-related incidents in these categories. It also aims to improve driver and pedestrian behavior at railroad crossing by being compliant with traffic laws in place regarding crossing signs and signals.
- **Enforcement** - It is key to enforce the existing laws regarding traffic and trespassing on railroads, especially when warning signals have been activated.
- **Engineering** - IDOT continuously works to identify and implement physical and system improvements to improve safety. This includes installation and upgrading of grade crossing warning signs, automatic warning devices, and grade separations, where necessary. The State of Illinois Highway-Rail Grade Crossing Safety Action Plan focuses on the engineering of capital improvements to further railroad crossing safety on local roads.

RAIL SAFETY INSPECTION

Through a cooperative agreement with the FRA, the Rail Safety Section of the ICC provides oversight responsibility through the enforcement of State laws and rules. This oversight is conducted on freight railroads in Illinois, as well as the Illinois portion of the MetroLink light rail system. There are four main areas of rail safety handled by the Rail Safety Section. These include track safety, transportation of hazardous materials, railroad signals and train control, and railroad operating practices⁶⁷.

- **Track Safety:** Inspect railroad tracks to determine compliance with the FRA and State Track Safety Standards; investigate complaints of unsafe/defective trackage, excessive train speeds, and improper yard procedures.
- **Hazardous Materials:** Conduct equipment inspections at railroad yards, sidings and interchange tracks, railroad terminals, and along mainlines to observe and note violations in marking, placarding, and the placement of hazardous material cars.
- **Railroad Signals and Train Control:** Inspect railroad signal systems to determine compliance with FRA and State Signal Safety Standards, investigate complaints of unsafe or defective signal systems, and perform railroad crossing signal inspections.

⁶⁵ ICC Crossing Safety Improvement Program FY 2018-2022 Plan, <https://www.icc.illinois.gov/reports/report.aspx?rt=20>. Accessed September 2017.

⁶⁶ IDOT Rail Safety website, <http://www.idot.illinois.gov/transportation-system/safety/rail-safety/index>. Accessed July 2017.

⁶⁷ Illinois Commerce Commission, Inspection Program website, <https://www.icc.illinois.gov/railroad/InspectionsProgram.aspx>. Accessed July 2017.

- **Railroad Operating Practices:** Conduct inspections for the purpose of determining compliance with all sections of the Federal Operating Practice Regulations and Hours of Service Act, and inspection of railroad facilities to determine compliance with standards regarding structural clearances, employee facilities, and sanitary regulations.

HAZARDOUS MATERIALS

The Secretary of the Department of Transportation is responsible for regulation of the transportation of hazardous materials, as defined in the Hazardous Materials Transportation Act (HMTA). Hazardous material regulations are applicable to interstate, intrastate, and foreign carriers by rail car, aircraft, motor vehicle, and vessel⁶⁸. The State of Illinois also adheres to the Illinois Hazardous Materials Transportation Act (430 ILCS 30)⁶⁹. The Illinois Environmental Protection Agency regulates the transportation of used tires, special waste including hazardous waste, and potentially infectious medical waste⁷⁰.

The ICC enforces the hazardous materials regulations in Illinois in cooperation with the FRA. The ICC's Hazardous Materials Safety Program is comprised of four main components:

- Inspection of railroad equipment and shipper/consignee facilities
- The provision of technical assistance to shippers/consignees and rail carriers
- The inspection and escort of nuclear materials
- Education and outreach activities to shippers/consignees, rail carriers, emergency responders and the general public

POSITIVE TRAIN CONTROL

Positive train control (PTC) refers to technologies designed to automatically stop or slow a train before certain accidents occur. PTC is designed to prevent collisions between trains and derailments caused by excessive speed, trains operating beyond their limits of authority, incursions by trains on tracks under repair, and by trains moving over switches left in the wrong position. PTC systems are designed to determine the location and speed of trains, warn train operators of potential problems, and take action if operators do not respond to a warning.

The Rail Safety Improvement Act of 2008 required railroads to place PTC systems in service by December 31, 2015 on Class I railroads (lines with over 5 million gross tons annually) over which any poisonous- or toxic-by-inhalation hazardous materials are transported, and on main lines with regularly scheduled commuter or intercity passenger operations. PTC requirements currently exclude Class II or Class III railroads that have no passenger service. However, trains of Class II and III railroads that operate on lines that must have PTC are also required to be PTC-equipped. The December 31, 2015 deadline was extended by three years to December 31, 2018 with an additional two years if certain requirements are met.⁷¹ As part of the extension, railroads are also required to submit a PTC Implementation Plan outlining when and how they would have their PTC systems fully installed and activated.

⁶⁸ United States Department of Transportation, Federal Motor Carrier Safety Administration. <https://www.fmcsa.dot.gov/regulations/hazardous-materials/how-comply-federal-hazardous-materials-regulations>. Accessed in July 2017.

⁶⁹ Illinois General Assembly, <http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=1650&ChapterID=39>. Accessed in July 2017.

⁷⁰ Illinois Environmental Protection Agency, Transportation of Wastes, <http://www.epa.illinois.gov/topics/waste-management/waste-disposal/special-waste/transportation-permits/index>. Accessed in July 2017.

⁷¹ USDOT-FRA, <https://www.fra.dot.gov/ptc>, accessed August 25, 2017.

PTC projects in Illinois include the following⁷²:

- **Illinois Department of Transportation (IDOT):** \$18.87 million to complete the design, delivery, installation, and testing of a fully integrated Interoperable Electronic Train Management System (I-ETMS) PTC system on two routes for Amtrak's use on 14.7 route miles of Terminal Railroad Association of St. Louis (TRRA) right-of way in a dense urban area of St. Louis on both the Illinois and Missouri banks of the Mississippi River. Amtrak ridership figures for 2014 show 1,136,271 passengers pass through the St. Louis Station that would directly benefit from PTC system implementation on this rail line.
- **Regional Transportation Authority (Metra):** \$20.2 million for three subprojects on Metra's Commuter Rail Division to implement wayside PTC signals, reconfigure signals, and upgrade an existing PTC automatic block signaling systems on Metra's Milwaukee District West (MD-W) and North (MD-N) lines in Northeastern Illinois. Metra's commuter rail network is the fourth busiest in the country, with nearly 14 million passenger trips on the MD-W and MD-N lines each year. Each day, over 1,300 Metra, freight, and Amtrak trains operate in the region. Since they frequently share the same track, precise scheduling and close coordination among railroad partners are required to plan the complex interaction between these trains each day.

RAIL SECURITY

The Department of Homeland Security (DHS) and IDOT are the responsible parties for security related to transportation modes in Illinois. These agencies have addressed transportation security largely through identifying critical infrastructure assets, developing protection strategies, and developing emergency management plans.

The lead state agency for rail security in Illinois is the ICC, in coordination with IDOT and the Illinois Terrorism Task Force (ITTF). There are currently five committees that serve the ITTF, and IDOT is the chair of the Critical Infrastructure Committee⁷³.

The Critical Infrastructure Committee includes organizations ranging from institutions and industry representatives to emergency responders and labor organizations. They use these work groups to provide guidance on specific topics and areas deemed to be of greatest priority. One such group is the Railroad Safety subcommittee, which focuses on areas of common interests within the railroad industry to address all aspects of railroad security. The subcommittee works to provide a common goal of making Illinois a leader in railroad security that other states will easily be able to adopt using combined talents to achieve the maximum assistance from resources available through DHS.

⁷² USDOT-FRA, <https://www.fra.dot.gov/eLib/details/L18716>, accessed July 26, 2017.

⁷³ IEMA, <https://www.illinois.gov/iema/ITTF/Pages/Committees.aspx>, accessed July 26, 2017.

B6. Multimodal Connectivity

B6.1 DESCRIPTION

Multimodal connectivity encompasses the interaction of several modes of transportation. Multimodal transportation networks provide choices for users and provide users with the ability to trade between a variety of factors, such as time, cost, environmental impact, social interaction, lifestyle preferences, and others. Building a multimodal transportation network also provides redundancy in the system, so that if one mode is unusable, another mode can be accessed, which may be important in the event of an emergency. A multimodal facility can be as simple as a bus stop, where a pedestrian becomes a transit rider or more complex where intercity passenger rail, intercity bus, local bus service, and other modes connect and interact.

Multimodal connections are increasingly important for the movement of people throughout communities and regions. Multimodal connections for passengers also affect economic activity by providing transportation options and choices. These options are increasingly important in efforts to control vehicle congestion, reduce energy consumption, and improve system operations. IDOT's role is to foster multimodal connections to ensure an efficient and effective transportation system and transportation choices for travelers.

B6.1.1 MULTIMODAL PASSENGER FACILITIES AND CONNECTIONS

Multimodal passenger facilities are those that provide passengers a place to transfer from one mode to another, such as airport terminals and transit stations. Connectors are those important links between a facility and the larger transportation network; for example, a connector might be a road from an airport used by both buses and personal vehicles, which leads to an expressway.

In Illinois:

- As of 2012, Illinois has 115 public-use airports. Of these, seven offer connections to transit, at least part-time. Midway International Airport in Chicago has sidewalks to the terminal from the surrounding neighborhood and bicycle access, making walking and bicycling viable access options.
- Amtrak has 30 train stations on the 15 services that travel in Illinois. Of the 30 stations, 16 are served by bus transit, one has ferry connections, six connect with intercity bus, and seven eight have transfers to commuter rail. Five stations do not have a transit stop directly at the station. Three have other transit connections a short distance away. Moreover, as all of the Amtrak stations are located within municipal boundaries, they are accessible by bicycle or walking, although some stations are more pedestrian- and bicycle-friendly than others.
- Intercity bus services in Illinois have a mix of multimodal facilities. Some sites are stops on the road, business locations, or school buildings. Other sites are at Amtrak stations, local transit or airport facilities, and some are intercity bus company buildings. In some cases, the internet has facilitated on-line ticket purchases, eliminating the need for ticketing agents and station areas.
- Most transit rail stations in Illinois – light rail in metropolitan St. Louis as well as heavy and commuter rail in metropolitan Chicago – have bus transit connections, and are accessible by foot or bicycle. Some suburban rail stations are accessible only by personal motor vehicle.

Figure 6.2 shows the locations of multimodal passenger facilities in Illinois; Figure 6.3 shows those in the metropolitan Chicago region.

B6.1.2 MULTIMODAL TRAVEL

In addition to multimodal connection points and facilities, multimodal travel occurs daily throughout Illinois. Multimodal travel combines modes or uses infrastructure in new ways to speed travel and increase access or mobility for users. For example:

- Nine of the 15 urban bus transit systems operating in Illinois have bicycle racks on buses to assist riders with their multimodal transportation. All Illinois rail transit providers also allow bicycles on their trains, with some travel time restrictions.
- The two water-taxi services in the state (Chicago and Rock Island) have stops that connect to local transit services and carry pedestrians and bicyclists.
- The two IDOT ferries between Grafton and Brussels (Illinois Route 100) and between Kampsville and Eldred (Illinois Route 108) and the for-profit ferry that operates on the Mississippi River out of Golden Eagle in Calhoun County carry walkers, automobiles, bicyclists, buses, and semi-trailers.
- Although buses share roads with automobiles and trucks daily, a program is underway that allows Pace express buses to operate on I-55 shoulders during peak periods. Riding on the shoulder lets the bus – and its riders – bypass peak-period congestion. On-time performance of the two Pace routes utilizing the bus on shoulder lanes have increased to 92 percent from the 68 percent of on-time performance prior to the start of the program, and ridership has doubled. In 2014, the Illinois General Assembly enacted legislation permanently allowing bus-on-shoulder service and expanding that permission to all the region's expressways and tollways. Pace and the Illinois State Toll Highway Authority constructed a "flex lane" on the Jane Addams Tollway (I-90), which opened for Pace buses on September 5, 2017 as part of the 16-mile I-90 SmartRoad enhancement⁷⁴. Pace and IDOT are also studying future bus-on-shoulder services on the Edens Expressway (I-94).⁷⁵

B6.2 IMPLEMENTATION STRATEGIES AND PROGRAMS

B6.2.1 COMPLETE STREETS

After the passage of Complete Streets legislation in 2007, IDOT began developing policies and implementing practices to more fully integrate multimodal designs into its roadway improvements. The provision of facilities to provide for the safe and efficient movement of bicyclists and pedestrians in roadway corridors is now considered in every IDOT improvement.

As stated in the Design Manual:

- IDOT will consider the travel needs of all users of a transportation corridor including bicyclists and pedestrians.
- Bicycle and pedestrian travel demand in the vicinity of a project is determined; when sufficient demand is indicated, IDOT will provide the appropriate accommodations.
- The proper application of criteria and guidelines will result in consistent designs and subtle roadway design changes that will facilitate bicycle and pedestrian travel.
- Facilities for the safe travel of bicyclists and pedestrians within an improvement corridor are considered an integral part of a highway project for funding purposes and thus are eligible for cost participation.

⁷⁴ Pace Bus. http://constance.pacebus.com/sub/news_events/Pace_2017.asp. Accessed September 2017.

⁷⁵ Pace Bus. http://www.pacebus.com/sub/vision2020/expressway_brt.asp. Accessed 6/30/17.

- Adequate bicycle and pedestrian accommodations shall be included where they can be accommodated.

While there are exceptions based on project scope and/or facility type identified in the manual, highway improvements currently being developed by IDOT give full consideration to the provision of bicycle and pedestrian accommodations.

B6.2.2 MULTIMODAL PASSENGER FACILITIES

Interest in supporting multimodal connections is growing, as communities and transportation agencies recognize the value and need for facilitating multimodal travel. Centers are planned for Carbondale and in multiple communities along the developing Illinois High Speed Rail corridor.

CHICAGO UNION STATION

In 2012 a partnership of Chicago Department of Transportation, Metra, Amtrak and Regional Transportation Authority published a Master Plan for the redevelopment of Chicago's Union Station located between Canal and Clinton Streets in downtown Chicago. Union Station is one of the region's key transportation facilities and economic drivers. It is the third-busiest railroad terminal in the United States, serving over 300 trains per weekday carrying about 120,000 arriving and departing passengers – a level of passenger traffic that would rank it among the ten busiest airports in the U.S. Most travelers at Union Station take Metra commuter trains. The Station is also the hub of Amtrak's network of regional trains serving the Midwest as well as most of the nation's overnight trains, which connect to the Atlantic, Gulf, and Pacific coasts.⁷⁶ Goals for the Master Plan and future development of Union Station included:

- Providing capacity for increases in Metra and intercity ridership
- Making the terminal more inviting for passengers
- Providing direct and convenient transfers to buses, CTA trains, taxis, shuttles, etc.
- Creating a terminal that is vibrant, civic asset and catalyst for growth in the West Loop.

In 2016 an important part of the Master Plan was implemented with the opening of a new bus transit center on Canal Street. The transit center has space to accommodate up to nine buses at a time and serves six CTA bus routes. The project total cost was approximately \$41.5 million and will improve connections for passengers between rail and buses as well as relieve congestion problems around Union Station by moving the bus transfer facility off-street. According to CTA the six routes serving Union Station carry an estimated 3,400 riders daily.⁷⁷

CARBONDALE STATION

Planning work has been conducted for a new multimodal station centered around the construction of a new Amtrak station in Carbondale, Illinois. The project would facilitate connections between Amtrak, passenger vehicle, pedestrians, buses, bicycles, transit, and taxi. Total design and construction costs are estimated to be approximately \$18.5 million.⁷⁸ In 2016 the City of Carbondale and its partners submitted a TIGER grant application seeking funds to support the construction of the new Carbondale multimodal facility. The application was unsuccessful, but the community continues to identify alternative funding options.

⁷⁶ Union Station Master Plan. <http://www.unionstationmp.com/background/2012master.php>. Accessed July 19, 2017.

⁷⁷ Wisniewski, Mary. Union Station Transit Center for CTA Buses to Open Sunday. Chicago Tribune, 8/30/16. <http://www.chicagotribune.com/news/local/breaking/ct-union-station-transit-center-20160829-story.html>. Accessed July 19, 2017.

⁷⁸ City of Carbondale: 2016 TIGER Application. <http://explorecarbondale.com/sites/default/files/images/multimodal/01-Carbondale%20Station.pdf>. Accessed 6/30/17.

Figure 6.1 Rendering of Proposed Carbondale Station, 2016



Source: Carbondale Station TIGER Application, 2016

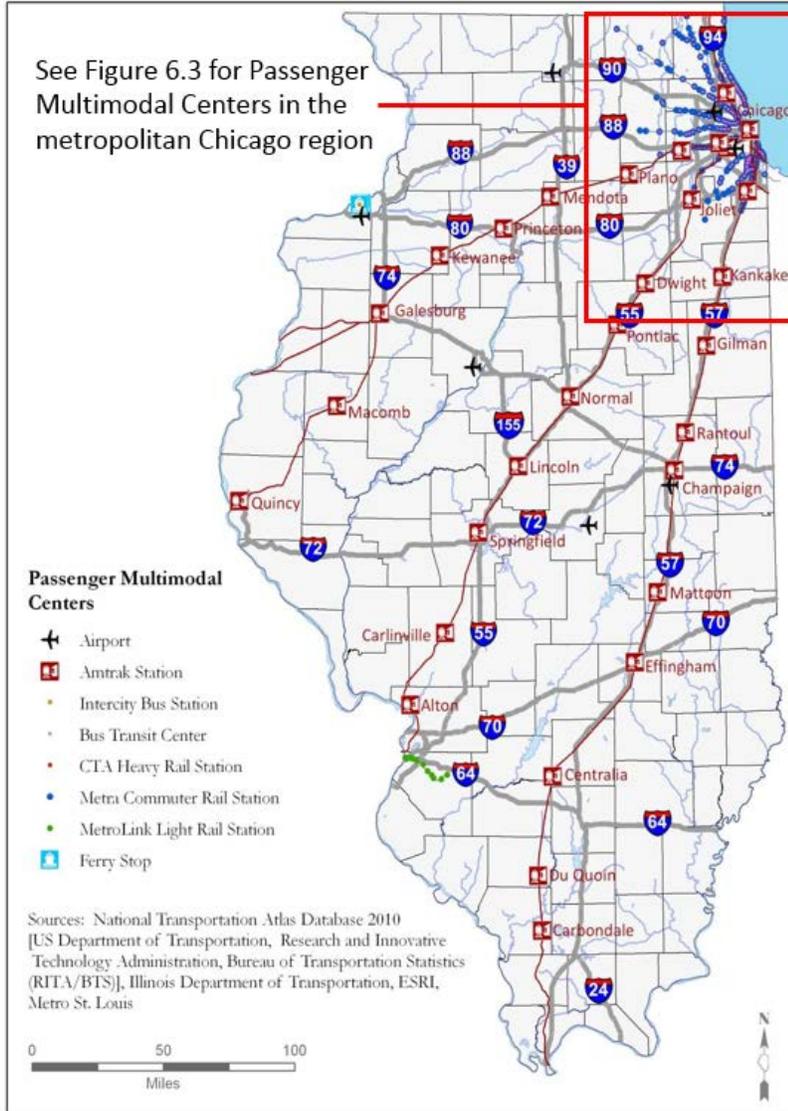
ILLINOIS HIGH SPEED RAIL MULTI MODAL STATION IMPROVEMENTS

The Illinois Department of Transportation (IDOT) continues to move forward with station planning and construction for communities along the Chicago to St. Louis corridor. Funded through the Federal Railroad Administration's (FRA) High-Speed Intercity Passenger Rail (HSIPR) program, the Chicago-St. Louis High Speed Rail project includes provisions for upgraded station facilities with improved passenger safety and convenience, better transportation connectivity, technology enhancements, and promoting economic development. New construction or improvements to existing stations include:

- **Joliet** - The City received a discretionary grant from IDOT to construct a multi-modal facility and to make safety improvements at this station. Construction is being led by the City and is ongoing.
- **Dwight** - A new station was built south of the current location on property owned by the Village. The station officially opened for service on October 28, 2016.
- **Pontiac** - A new station is being built southwest of the existing station on property owned by the City. Construction was completed summer 2017.
- **Normal** - A new multi-modal facility, funded outside of this project with a Transportation Investments Generating Economic Recovery (TIGER) grant received by Normal, was opened in July 2012. The High-Speed Rail project is funding a second platform and upgrades to the south waiting room. Construction is ongoing and is anticipated to be completed in 2017.
- **Lincoln** - The existing station and related facilities are planned to receive upgrades. Construction is underway and is anticipated to be completed in 2017.
- **Springfield** - Upgrades to the Springfield station, including access and parking lot improvements, are in the final design stage. Construction is anticipated to begin in 2018.
- **Carlinville** - A new station is planned to be built near the current facility. Construction is underway and is anticipated to be completed in 2017.

- **Alton** - A new station and multi-modal facility is being built northwest of the existing station on property owned by the city. Construction is underway and was completed in the summer of 2017.⁷⁹

Figure 6.2 Passenger Multimodal Centers



⁷⁹ Illinois High Speed Rail. http://www.idothsr.org/2010_const/improvements.aspx. Accessed 6/30/17.

B7. Highways

B7.1 DESCRIPTION

Streets and highways are fundamental elements of our integrated transportation system. Due to its size, location, and historic function as a transportation hub, Illinois has the fourth largest highway system in the nation, and the third largest Interstate network. In 2016, the combined state and local roadway systems in Illinois encompassed 146,958 miles⁸⁰ and 26,775 bridges.⁸¹

This network ranges from heavily traveled urban streets and expressways to lightly used rural roads. In 2016, this network carried nearly 294 million vehicle miles of travel on an average day.⁸² Multiple agencies – the state, counties, townships, and municipal governments – are responsible for the highway system.

B7.1.1 ILLINOIS HIGHWAY NETWORK

Illinois was among the first states to begin building Interstate highways and opened its first Interstate route to traffic in the late 1950s. In urban areas, the construction of the Interstate highway system provided an alternative to local streets for long-distance truck and automobile traffic. In addition, the Interstate system improved access and mobility for Illinois citizens and visitors passing through Illinois. Today, portions of two coast-to-coast Interstates (I-80 and I-90) cross Illinois. Five major east-west Interstates (I-24, I-64, I-70, I-74, I-88 and I-94) and three major north-south Interstates (I-55, I-57 and I-39) provide access for freight and travelers through Illinois.

Illinois is third in the nation in the number of miles of Interstates. The 2,185 miles of the State's Interstate system comprise 1.48 percent of all roads in the State, but carry 31 percent of all traffic.

Out of the 146,958 miles of roads in the state, IDOT is responsible for 15,918 miles.⁸³ The roads under IDOT's jurisdiction are comprised of the Interstates, US Highways, and State Routes. Out of the 15,918 miles, 2,185 miles are Interstates. IDOT manages the majority of these while the Illinois State Toll Highway Authority (Tollway) manages 293 miles as toll roads.⁸⁴ The state highway system (including all road miles managed by the Tollway) represents approximately 11 percent of all road miles in Illinois and carries 41 percent of all travel in Illinois.⁸⁵

In addition to Interstates, the State has 165 miles of other freeways, 5,243 miles of principal arterials, 8,925 miles of other arterials, 22,731 miles of collectors and 107,708 miles of local roads.

Source: Illinois Travel Statistics 2016

Augmenting the Interstate system are 144,773 miles of state, county, township, and local highways and roads, making the Interstate network accessible from every region of Illinois. The state and local road systems are classified as urban or rural to respond to federal funding guidelines. Urban roads (within urban areas of 5,000 residents or more) make up 34 percent of the system and carry 76 percent of all traffic. Rural roads make up 66 percent of the network and carry the remaining 24 percent of the total daily vehicle miles.

⁸⁰ Illinois Highway and Street Mileage Statistics, Tables HS-1, December 2016

⁸¹ Illinois Highway Statistics Sheet 2016.

⁸² Illinois Travel Statistics 2016, Table M-1. February 2017.

⁸³ Illinois Highway and Street Mileage Statistics, Tables HS-1, December 2016. Total does not include ramp or collector-distributor mileage.

⁸⁴ Illinois Highway and Street Mileage Statistics, Tables HS-C, December 2016.

⁸⁵ Illinois Travel Statistics 2016, Table S-1. February 2017. Travel percent does not include Tollway travel.

Figure 7.1 is a map of the Illinois roadway network by functional classification. The local street network is not shown. Figure 7.2 shows the total miles of each functional classification and the traffic carried by each class. This figure graphically illustrates the relationship between roadway classification and the level of traffic that uses each type of road.

Figure 7.1 Illinois Road Network by Functional Classification

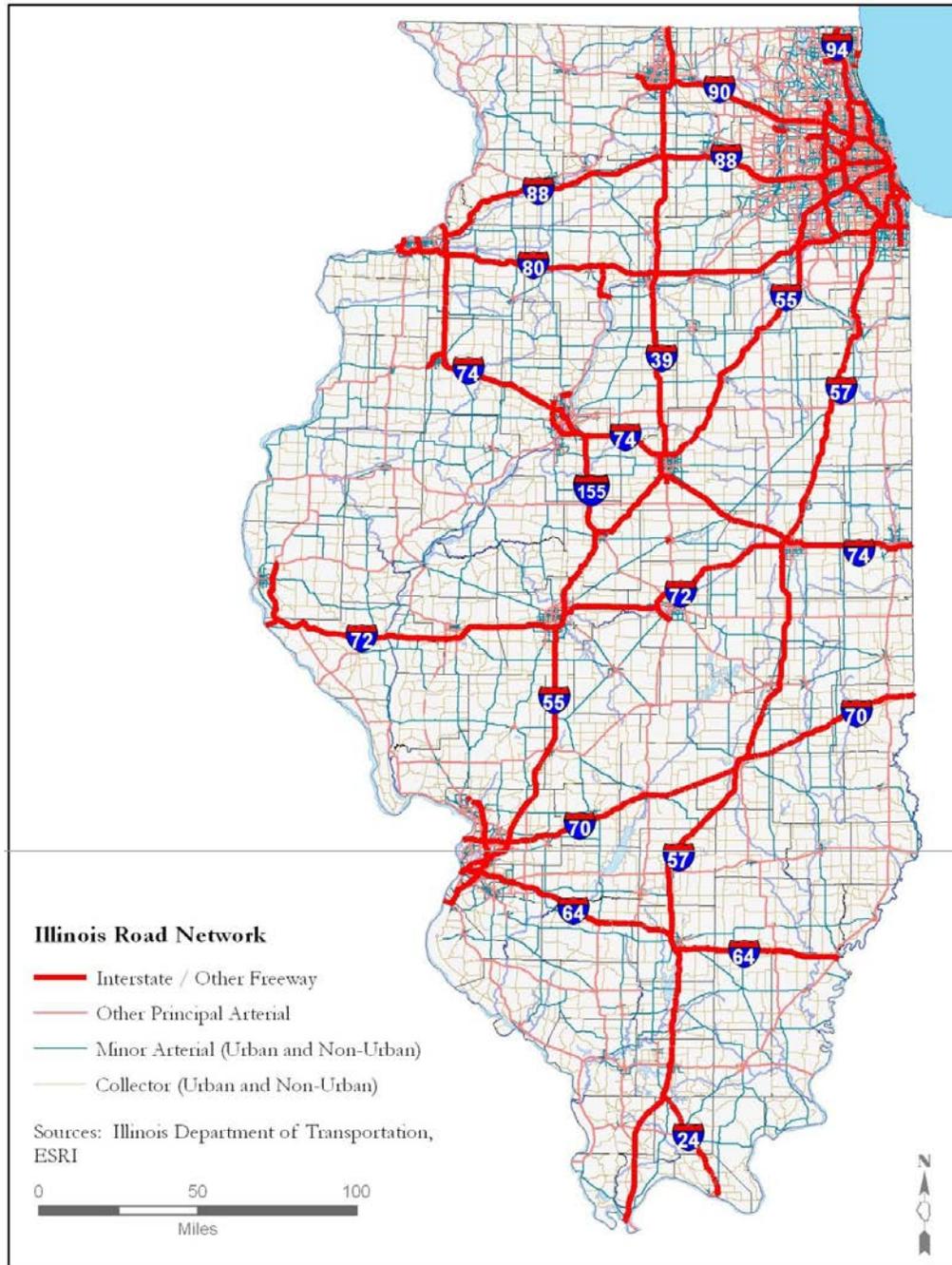
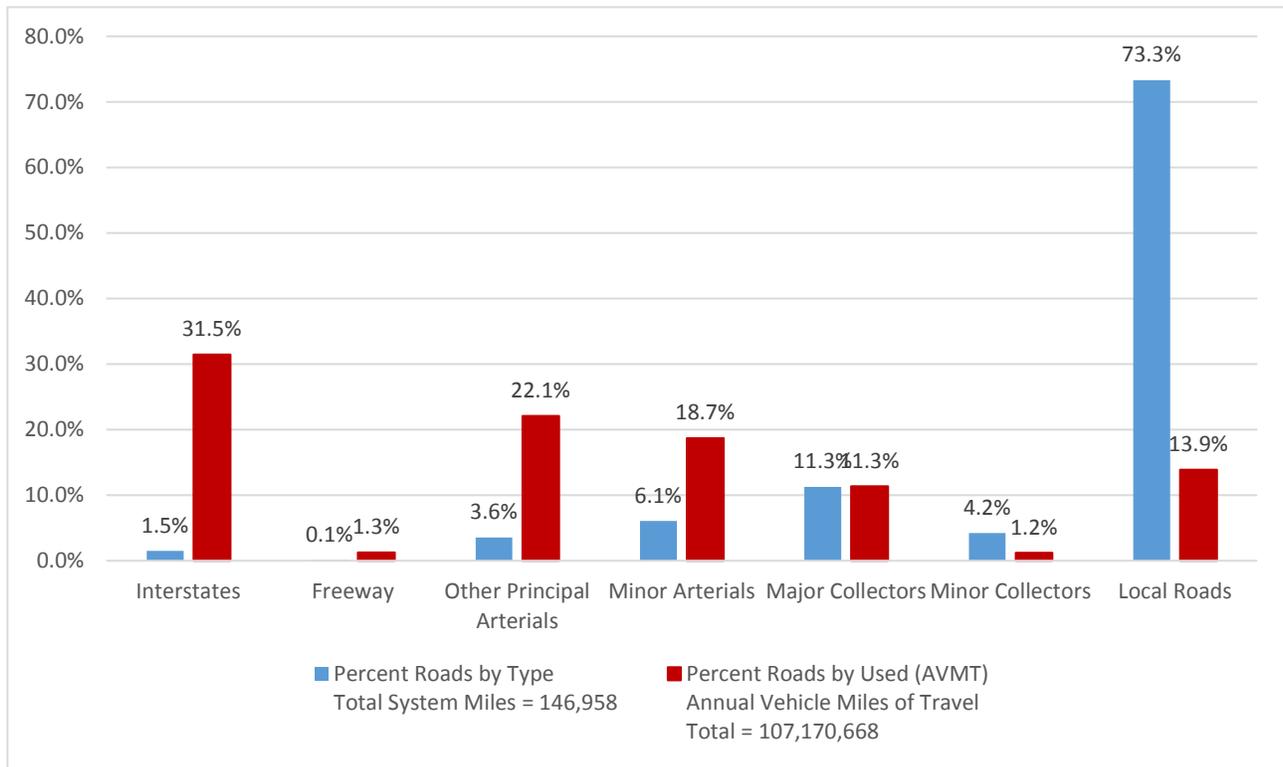


Figure 7.2 Illinois Road Network Composition and Usage



Source: Illinois Department of Transportation. Illinois Travel Statistics 2016, Table FC-1

B7.1.2 ILLINOIS STATE TOLL HIGHWAY AUTHORITY

The Illinois State Toll Highway Authority (Tollway) was created by legislation in 1967 “to promote the public welfare and to facilitate vehicular traffic by providing convenient, safe, modern, and limited access highways.” Under the direction of the Tollway Board of Directors, the Tollway builds, operates, and maintains the roads under its jurisdiction. The Tollway is authorized to issue bonds to expand and make capital improvements to its system and to collect tolls to fund its operations and to repay bonds.

The Tollway operates and maintains 293 miles (2016) of the state’s Interstate highways, the majority located in the Chicago metropolitan area. A map of the Illinois Tollway system is Figure 7.3.

Recent (2016) accomplishments by the Tollway include:

- Completion of the 4-year, 62-mile I-90 Rebuilding and widening project from Rockford to Chicago.
- Addition of the Illinois Route 390 Tollway, with the implementation of cashless tolling.
- \$1.15 billion in Capital Program expenditures for roadway construction, expansion, and system wide maintenance.

Figure 7.3 Illinois Toll Highway Network



Source: Illinois Tollway, www.illinoistollway.com, accessed June 20, 2017.

B7.1.3 BRIDGES AND STRUCTURES

As of 2016, there are 26,770 bridges in Illinois that must be inspected. IDOT is responsible for 7,835 bridges (29 percent), the Tollway is responsible for 571 (2.0 percent) and the remaining 18,364 (69 percent) belong to others (counties, townships, municipalities and others, like private companies such as railroads). There are 39 bridges that cross the three major rivers that make up 71 percent of the state's boundaries and crossing the three rivers – the Mississippi, the Ohio and the Wabash – requires coordination with the adjacent states of Iowa, Missouri, Kentucky, and Indiana.

IDOT also has a number of other structures it is responsible for including pedestrian / bicycle crossings, tunnels, culverts, and pipeline structures. The majority (70 percent) of the nearly 34,200 bridges and other structures traverse some form of water.

B7.1.4 LOCAL HIGHWAY AGENCIES

Collectively, the counties, townships, and municipalities of Illinois are responsible for the operation and maintenance of 130,745 miles of roads.⁸⁶ These local agencies use a mix of federal transportation funds, state motor fuel tax funds, and locally generated funds to address the needs of the roads and bridges under their jurisdiction.

B7.1.5 COMMERCIAL VEHICLE OPERATIONS

Illinois is a center for motor carrier transportation. With a vast economic base to serve; motor carriers serve all elements of the Illinois economy as they:

⁸⁶ Illinois Travel Statistics 2016, Table C-1. February 2017

- transport manufactured products from industries to all parts of the country
- make farm-to-market shipments to Illinois grain processors and rail and water terminals
- deliver coal and other minerals to and from Illinois ports
- ship consumer goods to retailers throughout the state

The Surface Transportation Assistance Act of 1982 provided for the designation of a national network of highways to promote uniformity throughout the nation for legal truck sizes and weights on a National Truck Network. The network includes all Interstate highways and large portions of the Federal-aid primary system. In addition, the act required that “reasonable access” be provided along other designated routes to allow trucks to travel from the National Truck Network to terminals and to points of loading and unloading.

As a result, IDOT developed and implemented a “Designated State Truck Route System for Large Vehicles and Combinations” to govern the movement of these vehicles. Over time, this system has evolved to respond to new federal and state mandates. IDOT maintains an interactive map of the Designated State Truck Route System that includes state and local streets and highways that have been designated as truck routes. These maps can be found on IDOT’s website.⁸⁷

In 2014, trucks in Illinois carried \$664 million tons of freight valued at nearly \$1.2 billion. The inbound and outbound truck tonnage is essentially balanced (129.1 and 133.8 million tons, respectively), and trucking handles the vast majority of traffic that stays within the state (401.4 million tons). A full discussion of the trucking industry’s contribution to the movement of freight in Illinois is contained in the *Truck Traffic Highlights* section of the 2017 Illinois State Freight Plan.

B7.2 IMPLEMENTATION STRATEGIES AND PROGRAMS

B7.2.1 HIGHWAY PROGRAM

Each year IDOT develops a multi-year capital improvement program that weighs the need to preserve the existing system in a state of good repair with the need to enhance or expand the highway network to address congestion and economic development demands. Before being included in the Highway Program improvements are evaluated based on goals, needs, and available resources.

For the highway program, IDOT uses a mix of federal transportation funds, state motor fuel tax and vehicle registration fees, bonds and miscellaneous revenue sources to build, operate, and maintain the roads under its jurisdiction. For the FY 2017 to 2022 program, IDOT has committed \$7.680 billion for the highway network, with \$1.368 billion allocated for FY 2017.⁸⁸

IDOT has a number of strategies in place that address the multitude of road maintenance, preservation, operations, and planning issues. Some of these strategies require coordination with other state agencies, other transportation agencies, and local jurisdictions. Strategies include:

- Performance Based Project Selection Tool for enhancement and expansion projects
- Transportation Asset Management Plan for maintenance of pavement and bridges

⁸⁷ www.gettingaroundillinois.com

⁸⁸ Illinois Department of Transportation, Proposed Highway Improvement Program

- Pavement management, with the Pavement Condition Rating Program
- Bridge management, with the Illinois Structure Information System (ISIS), Structures Information Management System (SIMS), SIMS-County, Bridge Inspection Program (BIS), and Township Bridge Program
- Environmental coordination
- Traffic management strategies, including Intelligent Transportation Systems (ITS) technologies
- Traveler information and communication programs, such as the Getting Around Illinois website⁸⁹
- Safety, with the Strategic Highway Safety Plan
- Emergency response to incidents, with the Emergency Traffic Patrol Program
- Enforcement activities
- Commercial motor carrier programs

B7.2.2 SCENIC BYWAYS PROGRAM

Illinois has seven nationally designated scenic byways. The National Scenic Byways Program was created to highlight roads that “possess outstanding scenic, historic, recreational, cultural, archeological and/or natural qualities” and new off-site advertising is prohibited as a way to ensure the continued scenic beauty of the road. The seven Illinois National Scenic Byways⁹⁰ are:

- Great River Road
- Historic National Road
- Historic Route 66
- Illinois Lincoln Highway
- Illinois River Road
- Meeting of The Great Rivers
- Ohio River Scenic Byway

Figure 7.4 Great River Road



Source: USDOT-FHWA, www.fhwa.dot.gov, accessed June 20, 2017.

The Historic National Road is also designated an “All-American Road”. A road with the All-American designation is deemed a tourist destination by itself, and is considered one of the most scenic with unique features not found in other places. The Historic National Road in Illinois is part of the National Road, the first federally funded interstate highway, which travels through Indiana, Maryland, Ohio, Pennsylvania, and West Virginia and ends in East St. Louis.

B7.2.3 COMPLETE STREETS

Illinois passed Complete Streets legislation in October 2007. This legislation requires IDOT to fully consider including bicycle and pedestrian facilities on any new construction or additional capacity on state roads, with some exceptions. The criteria for including these facilities include safety, current or future projected need, and local support. The Complete Streets program is discussed in more detail in the Bicycle and Pedestrian section (3.0) of this report.

⁸⁹ www.gettingaroundillinois.com/

⁹⁰ www.dot.state.il.us/byways.html#a. Accessed July 16, 2012.

B7.2.4 REGIONAL, MULTI-STATE, AND NATIONAL EFFORTS

IDOT is engaged in several efforts to improve conditions for local, regional, multi-state, and national motor carrier traffic. In addition to coalitions focused on policy advocacy, IDOT is involved in several on-going studies that have implications for improved freight movement. These efforts are briefly reviewed here, and are also discussed in the 2017 Illinois State Freight Plan.

I-290

Preliminary engineering and environmental studies (Phase I) for the improvement of the I-290 Eisenhower Expressway from Mannheim Road to Racine Avenue in DuPage and Cook Counties were recently completed resulting in a combined Final Environmental Impact Statement and Record of Decision that explored multimodal alternatives related to specific transportation needs identified including: improve mobility for regional and local travel, improve access to employment, improve safety, improve transit connections and opportunities, and improve facility deficiencies. Due to anticipated costs and revenue options, public/private partnerships are being investigated for this project.

I-55

Preliminary engineering and environmental studies (Phase I) for the improvement of I-55 from I-355 (Veterans Memorial Tollway) to I-90/94 (Dan Ryan Expressway) in DuPage and Cook Counties are currently underway. This project is examining the addition of one managed lane in each direction (generally within the existing median of I-55). The study was started in the spring of 2012 and is following the Federal National Environmental Policy Act (NEPA) process, as well as IDOT's Context Sensitive Solutions (CSS) policy. Due to anticipated costs and revenue options, public/private partnerships are being investigated for this project.

I-74 BRIDGE

The Iowa Department of Transportation and IDOT have worked together to complete the I-74 Mississippi River Bridge. The existing I-74 Mississippi River bridge is an important east-west link between Iowa and Illinois. With growing population and employment, traffic projections estimate that 99,900 vehicles per day will travel the bridge by 2035, an increase of nearly 26,000 cars from 2016 data. It was determined the existing bridges would be replaced in an effort to improve the I-74 corridor from Moline, Illinois to Davenport, Iowa.

The new I-74 bridges will be along a new alignment that is to the east of the existing bridges. It will include a pedestrian/bike path on the downstream side of the southbound bridge, with a pedestrian overlook at the center of the arch. An elevator would be installed for accessibility to the path on the bridge. In addition to the bridge replacement the project includes interchange ramp reconfigurations and local roadway improvements. Overall, the project will improve mobility, operations, and safety.

Currently, construction phases 0 and 1 have been completed, which included road improvements. Phase 2, which includes road improvements and the new Mississippi River bridge construction will conclude in 2022. Existing bridge demolition is scheduled for 2021. Phase 3 will include landscaping, trail, and road work.⁹¹

⁹¹ I-74 Mississippi River Bridge project website, <http://www.i74riverbridge.com/>. Accessed in July 2017.

MISSISSIPPI RIVER BRIDGE, ST. LOUIS

The New Mississippi River Bridge was completed in February 2014, creating a new gateway between Illinois and Missouri that provides better connections to and through St. Louis. The project was completed in order to ease traffic congestion on other bridges, reduce traffic crashes, improve travel times, and enhance economic growth.

In addition to the completion of the 1,500 foot cable-stayed bridge, the project included two interchange projects and a roadway connection project. The total estimated cost was \$667 million. The bridge carries two lanes in each direction, but is wide enough to be re-striped for three lanes in each direction if traffic volumes warrant. Five additional components were included as a future phase of this project. One of these includes a companion bridge with four additional lanes of traffic.⁹²

MID-AMERICA FREIGHT COALITION

The Mid-America Freight Coalition⁹³ (MAFC) is an organization of ten state transportation agencies in the mid-west that share the Great Lakes, key Interstate corridors or major inland waterways. The coalition works together for planning, operating, preserving and improving transportation infrastructure throughout the member states. MAFC is currently working on an Upper Midwest Freight Corridor Study; analysis of truck parking management systems, and benefits and limitations of J-turn intersections.

⁹² New Mississippi River Bridge Project website, <http://www.newriverbridge.org/index.html>. Accessed in July 2017.

⁹³ Mid-America Freight Coalition. midamericafreight.org/. Accessed April 3, 2012. MAFC was formerly known as the Mississippi Valley Freight Coalition.

B8. Public Transit

B8.1 DESCRIPTION

Public transit service is an essential transportation service, vital to the state’s economic well-being, especially if Illinois is to remain competitive in the global marketplace. Transit, by moving more people per vehicle, offers solutions to traffic congestion and reduces oil dependency. Transit also improves community quality of life, because it provides transportation options to work, education, shopping, health care, recreation, and other trips that might not have been possible for some users.

There are 55 public transit agencies in Illinois. Three provide services in the metropolitan Chicago region in Illinois and two provide service to the Illinois portion of metropolitan St. Louis (Metro East). The remaining 50 provide services in 85 counties representing small urban and rural areas.

Illinois actively supports transit services throughout the state with many programs that help both rural and urban transit providers. IDOT’s Office of Intermodal Project Implementation (OIP) provides technical assistance and financial resources to public transportation providers to create mobility options for people throughout Illinois. In Illinois, 55 public transit operators provide a mix of rail, bus, and on-demand service.⁹⁴ Many other human services agencies provide specialized services to persons with disabilities, low-income people, and seniors.

B8.1.1 DOWNSTATE TRANSIT

Downstate transit, according to the 2017 IDOT Transit Asset Report, is considered as those agencies outside of metropolitan Chicago (northeastern) and metropolitan St. Louis (southwestern). This classification includes 50 public transit agencies: 14 in urbanized areas and 36 in small urban or rural areas. Services funded by the 50 agencies range from fixed-route, fixed-schedule transit, to multi-county, demand-responsive vehicles.

URBANIZED AREAS

Services in the 14 downstate urbanized areas consist of a mix of fixed route bus and/or paratransit service. Transit ridership and vehicle fleet information for agencies are summarized in

Table 8.1.

Table 8.1 Downstate Urbanized Areas Transit Utilization

Agency	Ridership (Millions)
Champaign-Urbana MTD	13.29
Connect Transit (Bloomington/Normal)	2.59
Danville Mass Transit	0.64
Decatur Public Transit System	1.46
Huskie Bus & Voluntary Action Center (DeKalb / Sycamore)	0.13

⁹⁴ There are 55 providers that receive funding from Illinois; the Northern Indiana Commuter Transportation District operates the South Shore Line into Millennium Station in Chicago and is partially funded by the Chicago RTA, but is not funded by IDOT. www.idot.illinois.gov/transportation-system/Network-Overview/transit-system/index, accessed June 20, 2017.

Galesburg Transit (City of Galesburg)	0.15
CityLink (Greater Peoria MTD)	3.48
Quincy Transit Lines (City of Quincy)	0.52
River Valley Metro MTD (Kankakee / Bourbonnais)	0.96
Rock Island County Metropolitan MTD (Metro)	3.30
Rockford MTD	1.74
Saluki Express (Carbondale)	0.56
Sangamon MTD (Springfield)	1.90
Stateline MTD (South Beloit)	n/a

MTD = Mass Transit District

Sources: Agency websites, US Department of Transportation, Federal Transit Administration, National Transit Database, American Public Transportation Association, Illinois Statewide Public Transportation Plan website:

http://ilpublictransportation.businesscatalyst.com/map_transit.htm.

Connect Transit (formerly Bloomington-Normal PTS):⁹⁵ Operates 17 fixed route buses with a late night program (9:30 p.m. to 12:00 a.m.) Monday through Saturday, excluding major holidays. All buses are accessible to people with disabilities and have bike racks. Connect Transit, in cooperation with Illinois State University (ISU), operates Redbird Express, a free campus shuttle service available to the community during the school year from 7:00 a.m. to 3:00 a.m., Monday through Sunday, on days when ISU is in session. Connect Transit operates a Bloomington Tripper Route and Normal Tripper Route, which only operate at set times Monday through Friday, excluding major holidays.

Champaign-Urbana MTD (CUMTD):⁹⁶ Operates 22 fixed route buses during the day on weekdays, with fewer buses at night and on Saturdays and Sundays. All buses are accessible to people with disabilities and have bike racks. In addition to paratransit service, CUMTD provides a half-fare cab program for registered seniors and people with disabilities. Finally, CUMTD offers Safe Rides, which is a seasonal program for late night travel for University of Illinois Urbana-Champaign students that cannot be completed by a fixed route bus.

Danville Mass Transit:⁹⁷ Operates 14 fixed routes, Monday through Saturday, except on major holidays. All buses are accessible to people with disabilities. Paratransit services are available. Evening dial-a-ride is available from 6:15 p.m. to 9:40 p.m.

Decatur Public Transit System(DPTS):⁹⁸ DPTS operates 15 fixed routes and a downtown trolley, Monday through Saturday, except on major holidays. All buses and trolleys are accessible to people with disabilities, but do not have bike racks. "Operation Uplift" is provided as a paratransit service for those unable to use the fixed route bus system due to disability.

DeKalb / Sycamore:⁹⁹ Two providers operate bus service in the DeKalb / Sycamore area. Northern Illinois University's (NIU) Huskie Bus operates 11 fixed routes; service levels vary based on the NIU schedule.

⁹⁵ Connect Transit website: <https://www.connecttransit.com/default.asp>

⁹⁶ Champaign-Urbana MTD website: www.cumtd.com

⁹⁷ Danville MT website: www.ridedmt.org/

⁹⁸ Decatur PTS website: <http://www.decaluril.gov/departments/transit/routes-and-schedules>

⁹⁹ DeKalb transit websites: City of DeKalb, <http://cityofdekalb.com/473/Transit>; Huskie Bus, www.huskieline.com/; Voluntary Action Center, <http://cityofdekalb.com/555/Voluntary-Action-Center>

Three of these routes are specifically weeknight routes. There is one route specific for weekends and NIU breaks. A shuttle bus to the Elburn Metra station is available on Fridays and Sundays. The Barsema Express, a residential hall peak time route, operates Monday through Thursday. Additionally, NIU operates "Freedom Mobile," the university's paratransit system, to supplement when Huskie Line is not a reasonable option.

The Voluntary Action Center (VAC) provides two circular routes, which operate from 7 a.m. to 9 p.m. Monday through Friday, except on holidays. Kishwaukee College contracts for a separate service available to students, faculty and staff of the college. The VAC also provides demand response service throughout DeKalb County, for registered residents.

Galesburg Transit:¹⁰⁰ Galesburg Transit operates four fixed bus routes with one-hour headways; meaning it will take up to an hour to reach the location a person left from. Service is provided Monday through Saturday 7:00am until 6:15pm. Galesburg Handivan is a curbside transportation system operated by the city of Galesburg to provide accessible public transportation to individuals who are unable to utilize the bus system or other regular forms of transportation because of a permanent or temporary disability which severely restricts their mobility. Handivan provides non-emergency, lift-equipped service to a variety of destinations within the city limits.

Peoria CityLink:¹⁰¹ CityLink operates 20 fixed route bus lines in the greater Peoria area, Monday through Saturday, with some Sunday service. A few routes are only operational Monday through Friday. An additional route provides transportation from various residential facilities to the Community and Workshop Training Center. All fixed route buses are accessible to people with disabilities and are equipped with bike racks. CityLink provides a paratransit service call CityLift for those not capable to use fixed-routes. CityLink also provides half-fares for veterans.

Quincy Transit Lines:¹⁰² The Quincy Transit Lines offers fixed route services, paratransit services, and senior citizen transportation in the City of Quincy. Bus services are offered seven days per week with the exception that no buses operate on Thanksgiving or Christmas. Quincy Transit Lines (QTL) operates eight fixed-route buses Monday through Friday and two fixed-route buses on Saturday and Sunday. QTL also operates four Para-transit buses and four senior citizen vans Monday through Friday and one Para-transit bus on Saturday and Sunday.

MetroLINK [Rock Island County Metropolitan Mass Transit]:¹⁰³ MetroLINK operates 12 fixed route bus lines, Monday through Saturday, with fewer routes operating on Sundays. MetroLINK also operates "The Connect" route Monday through Friday for Western Illinois University. All buses are accessible to people with disabilities and have bike racks. Additionally, MetroLINK operates a paratransit service. The Channel Cat Water Taxi provides services on the Mississippi River seven days a week from Memorial Day through Labor Day. Nearly the entire Metro fleet runs on clean burning, compressed natural gas.

Rockford MTD:¹⁰⁴ Operates 18 daytime fixed route buses, six night routes and two late night shuttles. Service is daily, year round, except for major holidays and with reduced service on Saturday and Sunday

¹⁰⁰ Galesburg Transit: <http://www.ci.galesburg.il.us/services/transit/>

¹⁰¹ Greater Peoria Mass Transit: <http://www.ridecitylink.org/>

¹⁰² Quincy Transit Lines: <http://www.quincyl.gov/government/CityDepartments/Transit>

¹⁰³ Rock Island County Metropolitan Mass Transit: www.gogreenmetro.com/

¹⁰⁴ Rockford MTD: www.rmtd.org/

(five routes on Sunday). Rockford MTD also provides paratransit service. Buses are accessible to people with disabilities and bike racks are available.

River Valley Metro MTD:¹⁰⁵ Operates 10 fixed-routes in Kankakee and surrounding cities, Monday through Saturday year round with the exception of major holidays. River Valley Metro also operates commuter routes to the University Park Metra Station and Chicago Midway Airport. All buses are accessible to people with disabilities and have bike racks. MetroPLUS provides paratransit services.

Saluki Express [Carbondale]:¹⁰⁶ The Saluki Express Bus Service has two routes (Summer East and Summer West) during the eight week summer semester. There is no bus service on July 4 and one week in August between summer session and fall semester. Regular academic year routes begin four days prior to the start of the fall semester. The regular academic year routes consist of six weekday routes and three weekend routes (while school is in session).

Sangamon MTD:¹⁰⁷ Operates 16 daytime and five night routes, Monday through Saturday, with reduced services on Saturday. Operations do not run on major holidays. They also offer several supplemental service routes. All buses are lift-equipped, and most have a kneeling feature for access. All fixed-route buses are equipped with bike racks. SMTD currently use 3 types of environmentally-friendly alternative fuels. Per the Illinois Green Fleets database, the MTD operates 25 CNG buses.

Stateline MTD:¹⁰⁸ Operates demand response only for the SMTD area and connects to the Rockford and Beloit (WI) transit systems. Service is available seven days a week with fewer hours on Saturday and Sunday. No service is provide on major holidays.

RURAL AREAS

There are 85 downstate counties classified as rural areas and covered by public transit services. Figure 8.1 is a map of rural public transit service throughout Illinois. A number of these agencies – along with many others – receive human services transportation funding (5307). Human services transportation is discussed in section B8.2.4. Human services transportation differs from public transportation in that public transportation is open to all users, while human services transportation provides transportation exclusively for persons with disabilities, senior citizens, and low-income people.

There are four counties currently without any rural public transit service (Winnebago, Knox, Henderson, and Adams,). Henderson is working on an independent application. In 2016 Sangamon County initiated a new on-demand transit service for Sangamon and Menard Counties. Sangamon/Menard Area Regional Transit (SMART) acquired vehicles through IDOT.

Table 8.2 and Table 8.3 lists the small urban and rural areas with public transit that receive funding (5311) through IDOT. Transit service ranges from intra-city to out-of-state transportation. A number of counties share the same transportation provider, while others have a transit system for their county only. Some agencies provide comprehensive information through a website, while others have a Facebook page or a

¹⁰⁵ River Valley Metro MTD: www.rivervalleymetro.com/

¹⁰⁶ Saluki Express: <http://studentcenter.siu.edu/services/saluki-express/>

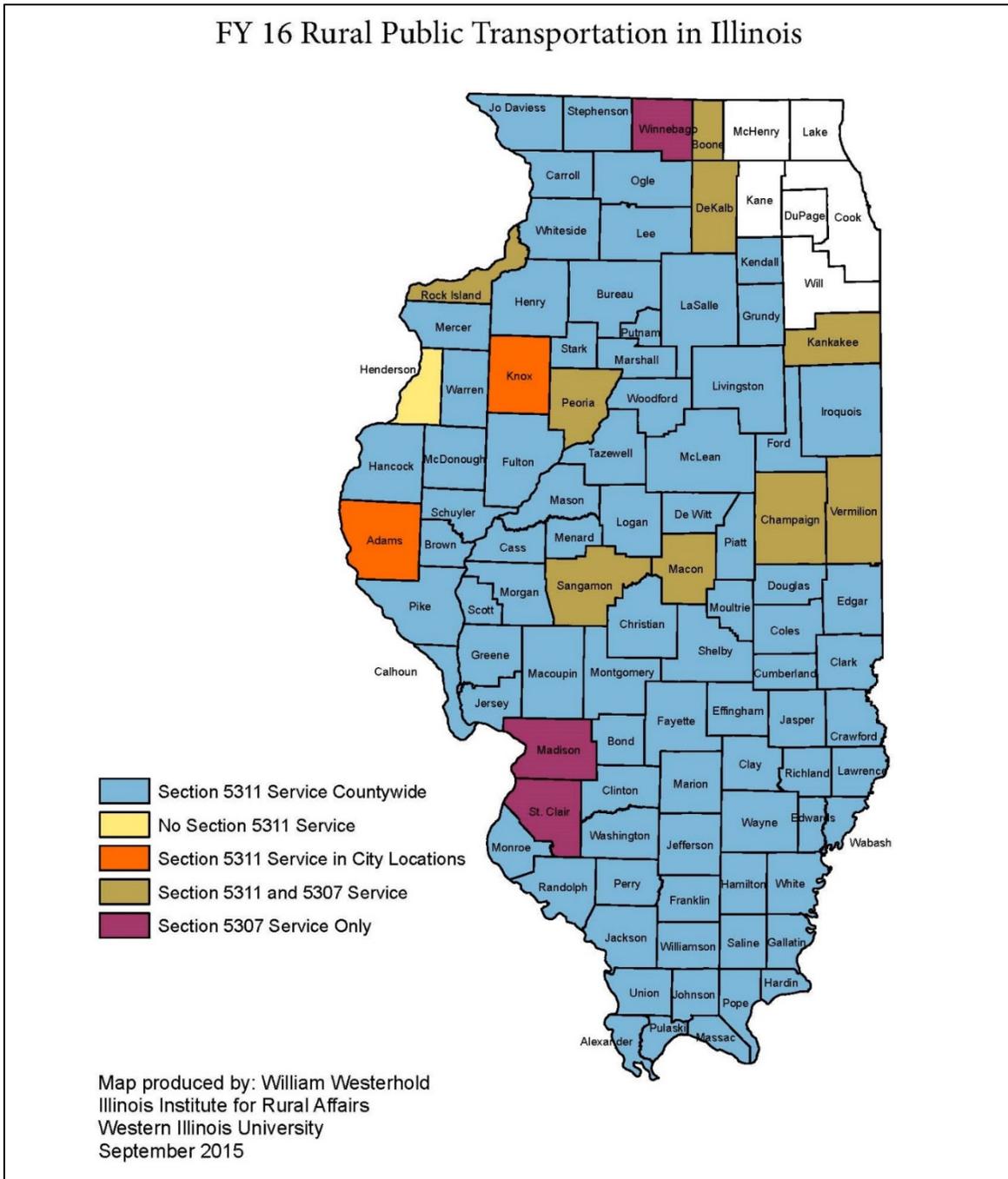
¹⁰⁷ Sangamon MTD: www.smtd.org/

¹⁰⁸ Stateline MTD: www.smtd.biz/

telephone number. Most providers are demand response, meaning that customers must call in advance for service, although some have fixed route bus service.

The Rural Transportation Assistance Center (RTAC) supports these rural area transit providers with a number of programs. RTAC is discussed in more detail in section B8.1.4.

Figure 8.1 FY 2016 Public Transit Services in Illinois



Source: Rural Transit Assistance Center. <http://www.iira.org/wp-content/uploads/2014/09/fy16ruralpublicTrans.pdf>, accessed June 20, 2017.

Notes: Per www.transit.dot.gov: The Formula Grants for Rural Areas (Section 5311) program provides capital, planning, and operating assistance to states to support public transportation in rural areas with populations of less than 50,000, where many residents often rely on public transit to reach their destinations. The Urbanized Area Formula Grants (Section 5307) makes federal resources available to urbanized areas and to governors for transit capital and operating assistance in urbanized areas and for transportation-related planning.

A number of these agencies – along with many others – receive human services transportation funding (5307). Human services transportation is discussed in section B8.2.4. Human services transportation differs from public transportation in that public transportation is open to all users, while human services transportation provides transportation exclusively for persons with disabilities, senior citizens, and low-income people.

There are four counties currently without any rural public transit service (Winnebago, Knox, Henderson, and Adams,). Henderson is working on an independent application. In 2016 Sangamon County initiated a new on-demand transit service for Sangamon and Menard Counties. Sangamon/Menard Area Regional Transit (SMART) acquired vehicles through IDOT.

Table 8.2 Downstate Rural Area Public Transportation Providers

Agency	Website or Contact	Service Area
Bond County Senior Center	www.bondseniors.org	Bond
Boone County Council on Aging	http://www.keenage.org/transportation.html	Boone
Bureau & Putnam Area Rural Transit (BPART)	www.ridebpart.org/	Bureau, Putnam
Carroll County Transit	www.ccseniorcenter.org/Transportation.html	Carroll
C-CARTS (Champaign County Rural Transportation System)	http://c-carts.com/	Champaign
Central Illinois Public Transit (CIPT)	www.cefseoc.org/CIPT/CIPT.htm	Clay, Effingham, Fayette, Montgomery, Moultrie, Shelby, Christian
Coles County Council on Aging (Dial-a-Ride)	http://www.colescouncilonaging.org/dialaride.html	Coles, Douglas
CountyLink (Rural Peoria County Public Transportation)	http://www.ridecitylink.org/countylink	Peoria County, Outside of Peoria city limits and City Link service area
CRIS Rural MTD	www.ruraltransits.org/	Vermillion
East Central Illinois MTD	217-465-8143	Clark, Edgar
Fulton County Rural Transit (FCRT)	http://www.fultoncountyruraltransit.com/p/blog-page.html	Fulton
Grundy Transit System	www.grundyco.org/about/public-transport	Grundy and certain stops in Joliet
Hancock County	www.hancockhealth.info/rides/index.html	Hancock
Henry County Public Transportation (Abilities Plus)	http://www.ride-hcpt.com/	Henry, Stark and western portions of Bureau
Jackson County MTD	http://www.jcmttd.com/	Jackson
Jo Daviess County Transit (The Workshop)	http://www.theworkshopgalena.org/jo_daviess_county_transit_bus_seniors_disabled.html	Jo Daviess
Kendall Area Transit	http://www.co.kendall.il.us/kendall-area-transit/	Kendall

Lee Ogle Transportation System	www.lotsil.org/	Lee, Ogle
Logan- Mason County Public Transportation	http://www.capcil.org/transportation.htm	Logan, Mason
Macoupin County Public Transit	www.mcphd.net/general_information_transpertation.php	Macoupin

Table 8.3 Downstate Small Urban and Rural Public Transportation Providers (Continued)

Agency	Website or Contact	Service Area
Marshall-Stark Transportation	309-364-2287	Marshall, Stark
McDonough County Public Transportation / Go West Transit	http://www.837ride.com/ http://www.wiu.edu/student_services/go_west/	McDonough County, City of Macomb
Monroe-Randolph MTD	618-443-4433 ext. 201	Monroe, Randolph
North Central Area Transit	www.cityofottawa.org/government/transportation	City of Ottawa, LaSalle County
Piattran (Piatt County Public Transportation)	www.piattran.org/index.php	Piatt
Pretzel City Area Transit	www.seniorresourcecenter.net/services/transportation/#pretzel	Stephenson
Rides MTD	www.ridesmtd.com/	Crawford, Cumberland, Edwards, Gallatin, Hamilton, Hardin, Jasper, Lawrence, Pope, Richland, Saline, Wabash, Wayne, White, Williamson, Clark, Edgar, Effingham
RIM Rural Transit	www.ridetherim.org	Mercer, Rock Island
Sangamon/Menard Area Regional Transit (SMART)	(217) 679-5009	Menard (Sangamon not funded)
Shawnee MTD	www.shawneemtd.com	Alexander, Johnson, Massac, Pulaski, Union
SHOW BUS	http://www.showbusonline.org/	DeWitt, Ford, Iroquois, Kankakee, Livingston, McLean, Macon
South Central Transit MTD	www.southcentraltransit.org	Clinton, Franklin, Jefferson, Marion, Perry, Washington
Tri-County Rural Transit	1-844-TRI-RIDE, or 1-844-874-7433	Calhoun, Greene, Jersey
Voluntary Action Center (TransVac & MedVac)	http://vacdk.com/transportation/	DeKalb
Warren Achievement Center (Warren County Public Transportation)	http://www.warrencountyil.com/about-us/public-transportation	Warren
WeCare, Inc.	https://www.wecareofmorton.com/services/transportation/ (309) 263-7708 or (800) 538-6906	Tazewell, Woodford
West Central MTD/City of Beardstown, Illinois River Valley Public Transit	www.wcmttd.org www.cityofbeardstown.org/index.aspx?nid=1091	Brown, Morgan, Pike, Scott, Cass, Schuyler

Whiteside County Public Transportation	www.whitesidecountyseniorcenter.org/transportation.html http://tranpro.utc.uic.edu/php/provInfo.php?p_cid=940	Whiteside
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Note: This list contains 37 transit services providers. Some services are funded by multiple transit agencies.
 Sources: Provider websites, Urban Transportation Center, UIC TRANPRO website, www.utc.uic.edu/tranpro/index.html

8.1.2 SOUTHWEST ILLINOIS TRANSIT (METRO EAST)

Two different agencies provided transit service in southwestern Illinois (the St. Louis region): St. Clair County Transit District (SCCTD)/Metro and Madison County Transit (MCT). The SCCTD and MCT are part of the Metro-East Mass Transit District, which is the taxing authority for transit funds. Figure 8.2 shows the transit system map for service in Illinois;

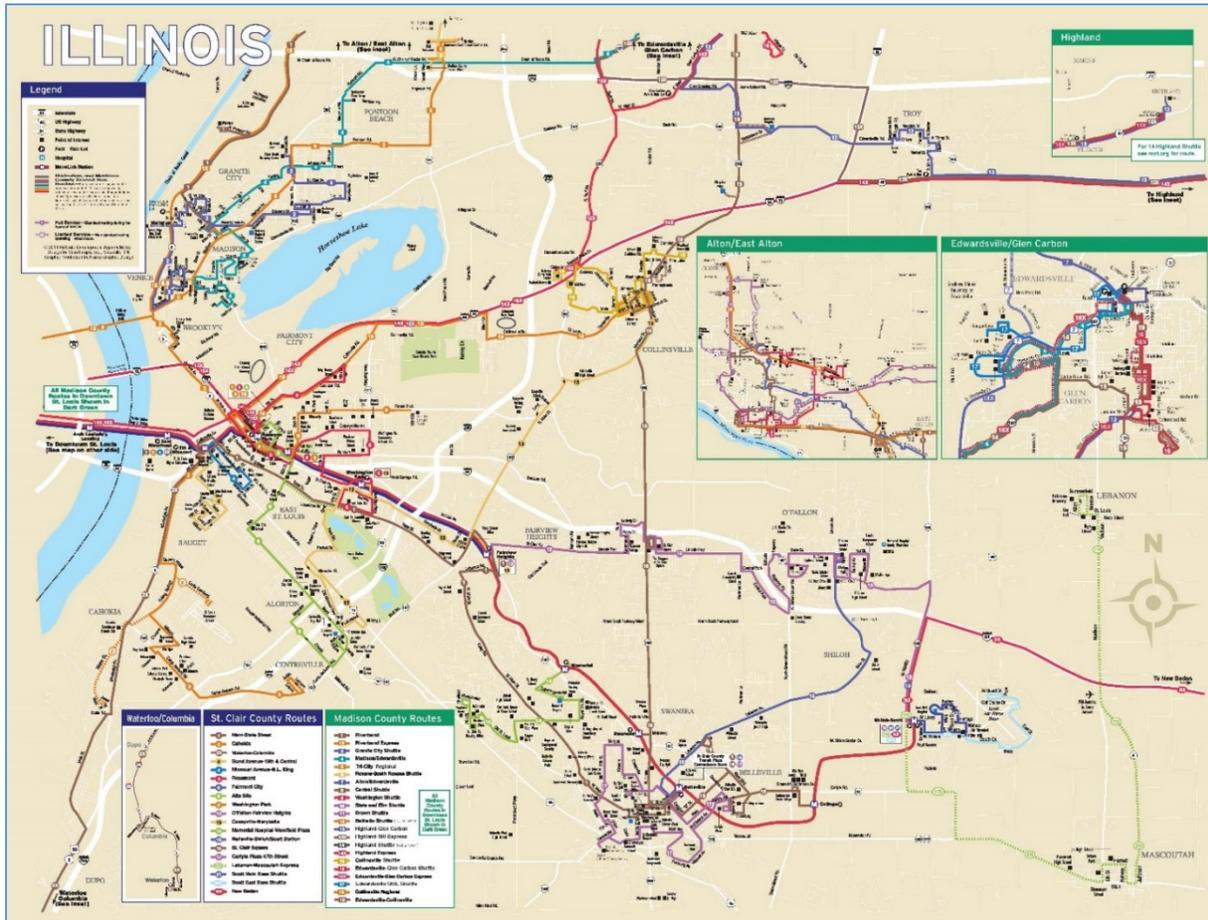
Table 8.4 lists ridership for fiscal year 2016.

Table 8.4 Southwestern Illinois 2016 Ridership

Agency	Ridership (Millions)
MCT, Fixed Route Bus	2.6
SCCTD/MetroBus and MetroLink	2.2

Sources: MCT website, www.mct.org/MCTInfo/MCT_Overview.aspx, SCCTD website, <http://www.scctd.org/> Bi-State Development Agency 2016 Comprehensive Annual Financial Report

Figure 8.2 Southwest Illinois Transit System



Source: Metro Transit, 2016. https://www.metrostlouis.org/wp-content/uploads/2016/02/IL_WEB-MAP.pdf

ST. CLAIR COUNTY TRANSIT DISTRICT AND METRO

The St. Clair County Transit District (SCCTD) contracts for Metro service in Illinois.¹⁰⁹ The Bi-State Development Agency provides transit operations, under the name Metro in Missouri and Illinois. Metro operates MetroLink, a light rail transit (LRT) service and MetroBus, the fixed route bus network.

Metro operates 18 fixed route bus lines in St. Clair County:

- Scott Air Force Base shuttles (2)
- Metrolink Station Shuttle
- Sauget Industrial Parkway bus line
- Waterloo bus line in Monroe County
- Lebanon and Mascoutah express bus route
- 12 fixed route services

Figure 8.3 MetroLink to Shilo-Scott Station



Ten of Metro Link's 11 Illinois stations have park-and-ride facilities, and all have bus connections with the exception of East Riverfront. Figure 8.2 is a map of all transit service in the Illinois portion of the St. Louis region.

Metro's bus and rail system in Illinois is 100 percent accessible. Alternative Transportation System provides paratransit service in St. Clair County, on behalf of SSCTD.

Bicycles can be brought on board MetroLink trains at all times, and must be loaded on the first two train cars. Bicycle parking is available at eight of the 11 MetroLink stations in Illinois. All Metro buses have bike racks. Metro provides service information to customers by a variety of methods.

Trip Planner, Metro's Tripfinder (Metro's Mobile App), assists riders via phone or with printed maps and schedules. Additionally, trip planning is available through Google Transit. Rider and service alerts are available on its web site, Twitter and RSS feeds. Metro has a presence on social media. Metro also sends out an e-mail newsletter, called the Metro Memo. Metro sponsors a blog, Next Stop, which is one more way to disseminate information about the agency and transit to the public and its users.

The SCCTD provides additional information for Illinois residents. In addition to purchasing transit and paratransit service, SCCTD contracts for special event transit with Metro. SSCTD has also worked with Metro to build a bicycle trail adjacent to portions of the MetroLink right-of-way, which extends from Shilo-Scott MetroLink station to the Memorial Hospital MetroLink station.

MADISON COUNTY TRANSIT

Madison County Transit¹¹⁰ (MCT) provides 24 fixed route bus lines throughout Madison County and into St. Louis, with varying schedules. In addition to fixed route, MCT provides paratransit service, a guaranteed ride home service for MCT Express passengers, and express services to special events. MCT coordinates with Metro and SCCTD on their half-fare program. MCT also operates the eight county St. Louis region's car and vanpooling service, RideFinders.

All MCT buses are accessible to people with disabilities and are equipped with bicycle racks. MCT Express buses have free wi-fi. MCT also develops and maintains a series of trails throughout Madison County, with the goal of

¹⁰⁹ Metro: www.metrostlouis.org/. St. Clair County Transit District: www.scctd.org.

¹¹⁰ Madison County Transit: www.mct.org

preserving abandoned rail corridor right-of-way for potential future transit use. MCT keeps in touch with its customers via its website and its e-news service, which provides e-mail updates on routes and general information. It also has a Facebook page and a text alert system. Madison County has partnered with the East-West Gateway Commerce Center to improve transit services between the community and new job centers.

B8.1.3 NORTHEASTERN ILLINOIS TRANSIT

Transit operations in the six-county northeastern Illinois region are extensive, covering a 3,700- square-mile service area¹¹¹. Three service boards report to the Regional Transportation Authority (RTA): the Chicago Transit Authority (CTA), Metra (commuter rail), and Pace (suburban bus).

CTA provides bus and rail rapid transit service within Chicago and its immediate suburbs. Metra provides commuter rail service between Chicago and nearly 100 other communities in the region. Pace operates the suburban bus services, and all paratransit, vanpool, and rideshare services for the entire region. The Northern Indiana Commuter Rail District (NICTD), which operates the South Shore line between downtown Chicago and South Bend International Airport in Indiana, is a State of Indiana agency which receives RTA operating funding (through Metra via a purchase-of-service agreement) for service provided on its route between downtown Chicago and the state line.

While the service boards have operational responsibility, the RTA provides funding, planning and fiscal oversight for these operations. The RTA¹¹² publishes the region’s transit map in English and Spanish and provides on-line regional trip planning for transit users. The RTA is also responsible for coordinating the Program Management Plan for the FTA 5316 Job Access Reverse Commute and 5317 New Freedom Programs. The RTA supports planning, capital, and operating projects sponsored by transit providers, local governments, and other agencies through a variety of technical assistance and funding. Table 8.5 shows ridership and vehicle fleet information for the three service boards under the RTA.

Table 8.5 Northeast Region 2015 Ridership and Fleet Information

Agency	Ridership (Millions)	Fleet ¹
CTA Fixed Route Bus	274.3	1,888
CTA Heavy Rail	241.7 ²	1,492
Metra Commuter Rail	81.6	843 passenger cars 146 locomotives
Pace Fixed Route Bus, Vanpool and Paratransit	29.6 (fixed route) 2.1 (vanpool) 5.1 (paratransit & Dial-A-Ride)	720 buses 680 vans, 503 paratransit vehicles

Source: Regional Transportation Authority – Mapping and Statistics, accessed May 2, 2017.

¹ 2015 Comprehensive Financial Report.

<http://rtachicago.org/files/documents/businessandfinance/financialreports/2015%20Comprehensive%20Annual%20Financial%20Report.pdf>

² http://w.transitchicago.com/assets/1/ridership_reports/2015_Annual.pdf

CHICAGO TRANSIT AUTHORITY

The CTA operates 140 bus routes. Buses make over 25,000 trips daily, and serve nearly 12,000 bus stops.¹¹³ The CTA rail system, referred to as “The ‘L’”, has eight transit routes, with 145 stations, and approximately 224.1

¹¹¹ 2015 Comprehensive Annual Financial Report for the RTA.

www.rtachicago.org/files/documents/businessandfinance/financialreports/2015%20Comprehensive%20Annual%20Financial%20Report.pdf

¹¹² RTA system maps: <http://www.rtachicago.org/index.php/plan-your-trip.html>

¹¹³ Chicago Transit Authority: www.transitchicago.com/

miles of track. Two routes—the Red and Blue Lines — provide service 24 hours, every day. Altogether, annual ridership for CTA system was 497 million trips in 2016.¹¹⁴

All CTA buses and trains are accessible to people with disabilities and more than 60 percent of all rail stations have accessible elevators or ramps. The CTA is working to achieve 100 percent station accessibility.

The CTA is becoming more sustainable and multi-modal through the use of a variety of fuels in its bus fleet and support vehicles.¹¹⁵ The CTA purchased two all-electric buses, which produce zero tailpipe emissions. The CTA converted the entire remaining bus fleet to ultra-low sulfur diesel. CTA currently operates more than 250 hybrid buses, which make up nearly 15 percent of the total bus fleet. Hybrid buses achieve at least 20 percent greater fuel efficiency than standard diesel buses. The CTA is using outdoor power cords to plug in hybrid buses during cold weather and is installing additional bus fuel-efficiency technologies. All CTA buses are equipped with racks that carry two bicycles. Support vehicles include hybrid-electric, vehicles that can run on ethanol, and vehicles that run on compressed natural gas. The CTA has introduced a new family of 'L' railcars into service, known as the 5000 Series. These are equipped with a regenerative braking system that can transfer electricity back to the third rail, supplementing power to nearby CTA trains. Bicycles are permitted on board CTA rail trains most times (with exceptions for peak periods and certain holidays). More than 80 CTA rail stations have indoor or sheltered bicycle racks for secure storage.

Figure 8.4 CTA Bus Bike Rack



CTA has about 12,000 bus stops¹¹⁶, and has more than 400 displays installed at bus shelters and rail stations which provided estimated arrival times. In addition to the visual display, a push button will provide verbal updates of bus arrival times. All rail stations are equipped with variable message signs that provide updated arrival times of trains. Audible announcements inform customers of an approaching train. The CTA Train Tracker and CTA Bus Tracker information systems allow people with smartphones or web access to determine when the next few buses or trains will be arriving at their location. The CTA also provides updates on arrival times by text message. In addition, other non-CTA applications present the CTA data in different user interfaces, adding information options for transit users.

The CTA stays in touch with the public and riders through its website, Twitter, Facebook, text message or e-mail, and RSS feeds. In addition to the RTA trip planner, trip planning for CTA service is available through Google Transit.¹¹⁷ The CTA also has a number of informational videos available on YouTube.¹¹⁸

¹¹⁴ Chicago Transit Authority, Planning and Development, Planning Analytics. Annual Ridership Report, Calendar Year 2015. www.transitchicago.com/assessments/1/ridership_reports/2015_Annual.pdf Accessed May 3, 2017.

¹¹⁵ Chicago Transit Authority, Going Green: <http://www.transitchicago.com/goinggreen/vehicles.aspx>

¹¹⁶ Chicagobus.org, Accessed August 2017

¹¹⁷ Google Transit: transit.google.com

¹¹⁸ CTA Connections: www.transitchicago.com/news_initiatives/connections.aspx

METRA

Metra contracts for or directly operates commuter rail service on 11 routes radiating out of downtown Chicago.¹¹⁹ There are 241 stations on the 487-route-mile system. In 2016, Metra provided over 80.4 million rides, which requires more than 1,000 pieces of rolling stock (including locomotives, trailer and cab coaches, and multiple-unit electric cars). Metra train lines are fully accessible, and most stations are accessible or have partial accessibility. Riders needing assistance are encouraged to call to determine the accessibility level of a particular station. A limited number of bicycles are permitted on Metra trains with a few travel time exceptions (e.g., peak periods and certain holidays). Most Metra stations offer outdoor bicycle parking.

Figure 8.5 Metra Commuter Station



Metra communicates with the public in a number of ways. There are variable message signs and audible announcements with train arrival times at stations. Metra's website and a separate mobile phone version, provide schedules, fare, and additional information about the system. Metra offers service alerts via e-mail or Twitter and posts on its websites. Its "My Metra" service allows users to arrange for automatic ticket purchases, personalize service alerts and provides real-time arrival information. Mobile tickets can be purchased via the Ventra app.

PACE

For its bus operations, Pace¹²⁰ currently provides services on 209 fixed routes in more than 202 communities, as well as express service to many events and activities. There are nine Pace-owned fixed-route service divisions, which recorded 28.1 million unlinked passenger trips in 2015. Pace's contracted service ridership totaled 2.6 million in 2015.¹²¹ Pace has several different types of paratransit services. Pace's Dial-a-ride paratransit network serves mostly senior citizens and persons with disabilities. It is available in all six counties in the metropolitan region, and provided 0.9 million unlinked trips in 2015. Ridership on the ADA Paratransit service was 4.2 million unlinked trips. Pace's vanpool ridesharing operations, provided 2.1 million unlinked trips in 2015.¹²² Pace operates RideShare,¹²³ a ride-match service for commuters interested in carpooling or signing up for a new or existing vanpool. Pace's Call-n-Ride offers reservation-based shared-ride service to anyone within the six county service area.

Figure 8.6 PACE Bus



Source: www.pacebus.com, accessed

Pace continues to implement its Vision 2020 plan. Current initiatives according to their website include: New Arterial Bus Rapid Transit Network (Pulse), I-90 Market Expansion Program, North Avenue Corridor Study, North Shore Study, and Pace Illinois Route 390 Tollway Corridor Service Study. Pace has continued its I-55 Bus on Shoulders service, which began in late 2011. It has added several trips and routes in response to passenger requests, and eliminated others due to low ridership. In 2014, the pilot project became permanent after enacted legislation in the Illinois General Assembly. A flex lane on the Jane Addams Tollway (I-90) is scheduled to be

¹¹⁹ Metra: metrarail.com/about-metra/our-history

¹²⁰ Pace: www.pacebus.com/

¹²¹ 2015 RTA Regional Ridership 2015 Report.

¹²² RTAMS, Ridership Statistics, Pace Paratransit and Vanpool. www.rtams.org/rtams/paceVanRidership.jsp. Accessed May 3, 2017.

¹²³ Pace RIDESHARE: www.pacerideshare.com

open for Pace buses in spring 2017. Pace and IDOT are studying possible bus-on-shoulder services on the Edens Expressway (I-94).¹²⁴

All Pace buses are handicap accessible. Pace has a combination of bus shelters and signed bus stops, and is working toward improving passenger amenities at its bus stops, as Pace moves toward adopting a posted-stop-only boarding and alighting policy. All Pace buses have bicycle racks that accommodate up to two bicycles. Throughout its system, Pace owns twelve Park-n-Ride lots for use by its riders, and has agreements in place with the owners of nineteen additional lots for Park-n-Ride use.

Pace provides information on its services through its website, Facebook, Twitter, You Tube, RSS feeds, text messaging, and real-time e-mail notifications through its bus tracking system. Pace has a version of Bus Tracker suitable for mobile phones. Some Pace shelters contain QR codes for use in the QR code scanning application. The mobile application, Ventra, provides real-time data for Pace, CTA, and Metra services.

B8.1.4 HUMAN SERVICES TRANSPORTATION

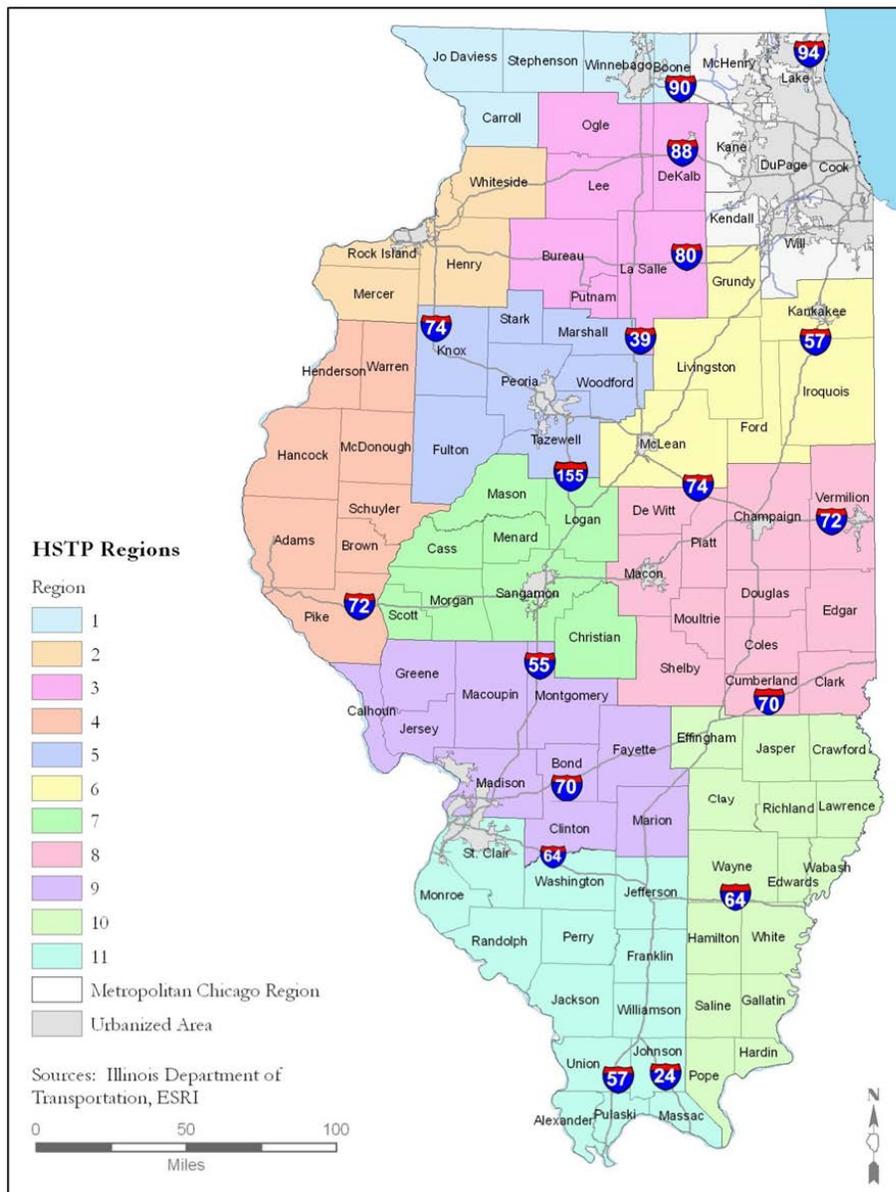
“Human services transportation” refers to transportation for persons with disabilities, low-income populations, the elderly and sometimes veterans and youth. In the past, transportation for these groups was often uncoordinated, resulting in duplicative, fragmented, underutilized or non-existent service. In 2005, SAFETEA-LU included language requiring that human services transportation (HST) be coordinated and in 2007, the FTA developed guidelines for locally developed coordination plans for the federal human services transportation funding programs.

Illinois began to work on the issue in 2004 and created the Interagency Coordinating Committee on Transportation (ICCT). The ICCT serves in an advisory role to IDOT for HST plans and implementation. To facilitate the development of these plans, IDOT created eleven HST planning regions, and support a plan coordinator each responsible for the development and implementation of the plan within the planning region. An additional region, which covers the metropolitan Chicago area, is administered by the RTA. Figure 8.7 shows the planning regions.

To date, all regions have developed plans. For each region to develop a plan, a Regional Transportation Committee was formed, an analysis of demographics, needs and current services in the area is completed, and extensive discussions with stakeholders are conducted to establish services needed in the district. Each plan, which is suggested to be updated every three years, includes a list of projects that are reviewed and incorporated into the STIP.

¹²⁴ Pace, Bus-on-Shoulder Service. www.pacebus.com/sub/vision2020/expressway_brt.asp. Accessed May 4, 2017.

Figure 8.8 Illinois Human Services Transportation Planning Regions



B8.2 IMPLEMENTATION STRATEGIES AND PROGRAMS

B8.2.1 PUBLIC TRANSPORTATION PROGRAM

To meet the needs of the state’s residents, workers, employers and visitors, IDOT supports public transit by distributing federal and state funds. A number of federal programs allocate resources to different public transit initiatives and state and local programs contribute money necessary to meet federal funding requirements for these initiatives. The federal funding programs, along with information on human services transportation funding programs, are discussed in more detail in the Transportation Funding report.

For the FY 2016 – 2021 multi-year public transportation program, IDOT has identified a total of \$3.5 billion for public transit from state sources. An additional \$3.2 billion will come from the federal government, with

approximately \$1.4 billion to come from local sources, for a total of more than \$8.1 billion statewide from all sources.

B8.2.2 TRANSIT PLANNING ACTIVITIES

ILLINOIS DEPARTMENT OF TRANSPORTATION

The Illinois Statewide Public Transportation Plan is integrated within the state Long Range Transportation Plan. This plan is meant to assess existing public transportation services and create an inventory. This helps in determining gaps and needs for future service, and develops and proposes strategies for meeting needs. An update of this plan is anticipated to coincide with the completion of this Long Range Transportation Plan.

A fundamental topic of discussion in development of the current plan is the potential for increasing the amount of technology used in the state to support transit operations and to make it easier and more attractive for potential passengers to use¹²⁵. The following technologies are available and are suggested for urban fixed route systems within Illinois in the future: schedule system, trip planning, computer-aided dispatch/automatic vehicle location (CAD/AVL), onboard 'next stop' audio and visual annunciator system, automatic passenger counts, 'next bus' information, and fare collection. Currently, the CTA, Connect (Bloomington-Normal), and St. Clair County Transit have deployed a majority of the aforementioned technology systems, with minimal exceptions. CUMTD (Champaign-Urbana, MetroLink (Rock Island), Rockford, Springfield, Danville, Madison County, and Go West (Macomb) are at various stages of implementing the suggested technology systems. In contrast, Peoria, River Valley (Kankakee), Decatur, Quincy, and Galesburg have yet to implement any of the technology systems.

A trend and suggestion for the rural demand systems in Illinois is to move toward 'cloud-based computing', relieving the rural transit agencies the responsibility to provide a person skilled to manage their system and instead a service, or individual, would operate the system remotely. Currently, nearly half of the rural transit agencies operate this type of system.

REGIONAL TRANSPORTATION AUTHORITY (RTA)

In addition to transit planning conducted by IDOT, the RTA publishes the Regional Transit Strategic Plan (the Strategic Plan) every five years. The current plan is due to be replaced in 2018. The plan provides a visionary roadmap for near-term transit investment in the RTA six-county area. This plan helps the Chicago region's transit agencies in planning and funding future projects, as well as unique day-to-day activities, that are needed to meet passenger needs. Current projects, as a result of the Strategic Plan's efforts, include¹²⁶:

- **Regional Transit Signal Priority Implementation Program:** Transit Signal Priority (TSP) utilizes existing vehicle location and wireless communication technologies to advance or extend the green light of a traffic signal to allow a CTA or Pace bus to continue through an intersection when the bus is running behind schedule – helping to reduce travel times and ensure on-time arrivals. TSP is currently (July 2017) deployed along 13 priority corridors to help CTA and Pace buses travel along 100 miles of roadway and through about 400 intersections operated by IDOT, CDOT, and other local departments of transportation throughout the region.
- **Interagency Signage:** The RTA has developed a new system of signs, maps, route diagrams and schedules to help riders more easily navigate the regional transit system. All the products are designed to complement and reinforce each other, making transferring between services as seamless and intuitive as possible. The overall plan is to deploy these sign and information products at train stations where CTA,

¹²⁵ Technology Applications, Draft Technical Memorandum for the Statewide Public Transportation Plan, September 2016.

¹²⁶ RTA, Plans and Programs website, <http://www.rtachicago.org/index.php/plans-programs.html>. Accessed in July 2017.

Metra, and Pace services connect. The first phase of the project was completed in 2013, installing interagency signs at four demonstration locations. In August of 2014, the RTA, CTA, Metra, and PACE completed a manual to promote consistency across the RTA transit services. The next phase of the program is to install signage at an additional 19 locations.

- **Community Planning:** The RTA's Community Planning program provides funding as well as technical assistance to applicants for implementation and planning projects that benefit the community and the regional transit system. Eligible projects include transit-oriented development (TOD) plans, transit corridor plans, TOD zoning code updates, TOD developer discussion panels, transit neighborhood mobility improvement plans, plans to develop special funding districts in transit areas, and other innovative implementation approaches. The Community Planning program strives to not just plan for the future but to provide assistance that achieves results. To date (July 2017), the program has completed more than 100 transit-oriented development and implementation plans since the late 1990's using a combination of RTA, local and federal funds, totaling nearly \$10 million.
- **Innovation, Coordination, and Enhancement (ICE):** The ICE program was established as part of the 2008 Mass Transit Reform Legislation. The program provides funding assistance to enhance the coordination and integration of public transportation and to develop and implement innovations to improve the quality and delivery of public transportation. Projects funded through this program advance the vision and goals of the RTA by providing reliable and convenient transit services and enhancing efficiencies through effective management, innovation, and technology.
- **Section 5310:** The Enhanced Mobility of Seniors and Individuals with Disabilities Program (Section 5310) aims to improve mobility for seniors and individuals with disabilities by removing barriers to transportation service and expanding transportation mobility options. This program supports transportation services planned, designed, and carried out to meet the special transportation needs of seniors and individuals with disabilities. The RTA and IDOT are co-designated recipients of Section 5310 funding for Northeastern Illinois.
- **Access to Transit Improvement Program:** The RTA established the Access to Transit Improvement Program to seek capital funding for small-scale projects that increase pedestrian and bicycle access to the transit system. The Access to Transit Improvement Program is intended to leverage RTA and local funds with federal [Congestion Mitigation and Air Quality Improvement Program \(CMAQ\)](#) funding to help implement recommendations contained in studies completed through the RTA's Community Planning program or CMAP'S Local Technical Assistance (LTA) program. Projects selected as part of the RTA's Access to Transit Improvement Program will be assisted by RTA staff in developing information required for a CMAP application.
- **Green Transit Plan:** The RTA and its partners have developed the Chicago Regional Green Transit Plan, which calculates the environmental benefits of transit in the region and provides a roadmap to making the regional transit system greener. The plan includes a series of strategies aimed to grow transit ridership and market share, promote transit-orientated communities, and improve operational efficiency and green the transit system.

B8.2.3 REGIONAL MAINTENANCE CENTERS

Regional Maintenance Centers (RMC) provide maintenance services for IDOT grantee and not-for-profit agency paratransit vehicles in a specified region. Currently, IDOT has contracted with the Rockford MTD and Sangamon MTD. These agencies provide for non-routine maintenance and repair for paratransit vehicles for other agencies within a 60-mile radius. The RMC ensures that smaller providers can maintain their equipment with trained repair staff and without having significant delays in repairs. The RMC charges for its services; costs are paid by the respective transportation provider.

B8.2.4 RURAL TRANSPORTATION ASSISTANCE CENTER

The Rural Transportation Assistance Center (RTAC) is a unit of the Illinois Institute for Rural Affairs at Western Illinois University in Macomb.¹²⁷ The mission of RTAC is to promote the safe and effective delivery of public transportation in rural areas, and more efficiently use public and private resources. RTAC has two primary responsibilities: it runs the Rural Transit Assistance Program (RTAP), which is funded by the Federal Transit Administration, and it serves as the clearinghouse for the ICCT, a state legislated body created in 2003.

The ICCT is chaired by the Office of the Governor, co-vice chaired by IDOT and a representative of a community-based organization involved in transportation, and supported by ICCT Clearinghouse staff. The ICCT has produced a Transportation Coordination Primer that guides counties in developing a coordinated public transportation system and provides technical assistance as counties work through the planning and implementation process.

¹²⁷ Illinois Institute for Rural Affairs. <http://www.iira.org/>

B9. Waterways and Ports

B9.1 DESCRIPTION

The State of Illinois has 1,095 miles of navigable waterways bordering or traversing the state, comprising the Illinois Maritime Transportation System (IMTS). A navigable waterway is defined as waters of the United States that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for the use to transport interstate or foreign commerce¹²⁸. From a transportation perspective, the State's rivers and Lake Michigan are primarily used for freight traffic. Passenger travel on the waters is most often for recreation.

IDOT's role in managing the State's waterways, harbors and ports is limited, although IDOT provides land and roadway access to and from the water terminals. Since lakes and rivers are an important environmental resource, the Water Resources Division of the IDOT was transferred to the Illinois Department of Natural Resources (IDNR) in 1995. IDNR and the Illinois Environmental Protection Agency (IEPA) coordinate with the US Army Corps of Engineers (Corps) in supervising the State's waterways. IDOT is proposing to regain oversight of transportation functions related to Illinois Ports and Illinois Inland Waterways in an effort to fill a void that remains over state government's involvement and multimodal planning over transportation issues on the IMTS. Through the involvement in port and inland waterways, IDOT will lead the way in the planning, development, and implementation of strategies that will support a truly comprehensive transportation system in Illinois.

The jurisdictional authority of the Corps over the nation's rivers was established in the Rivers and Harbors Act of 1899¹²⁹ and the Corps' involvement continues. IDNR Office of Water Resources Division of Resource Management works with the Corps to ensure that the waterways remain navigable while the IEPA is primarily concerned with water quality.

Activity generated from Illinois ports and waterways has a significant impact on the state. Waterways and ports support nearly 50,000 jobs and contributes \$6.4 billion to the state's economy.¹³⁰

B9.1.1 LAKES AND RIVERS

The IMTS is a link between the Atlantic Ocean (via the St. Lawrence Seaway) and the Gulf of Mexico. Lake Michigan is an important water resource, with three major ports along the waterfront in Illinois and many others in the other bordering states. Commercial traffic on Lake Michigan and the river network facilities is almost exclusively bulk freight and the ships and barges mainly carry coal, agricultural products, fertilizers, and petroleum products.

NAVIGABLE WATERWAYS

The primary navigable waters in Illinois include Lake Michigan, the Illinois River and canal system, and the Mississippi, Ohio, and Kaskaskia rivers. Other waters in the state are also navigable although most are used for recreation.

¹²⁸ U.S. Government Publishing Office. Definition of Navigable Waters of the United States. 33 CFR 329 - DEFINITION OF NAVIGABLE WATERS OF THE UNITED STATES. <https://www.gpo.gov/fdsys/pkg/CFR-2010-title33-vol3/pdf/CFR-2010-title33-vol3-part329.pdf> .

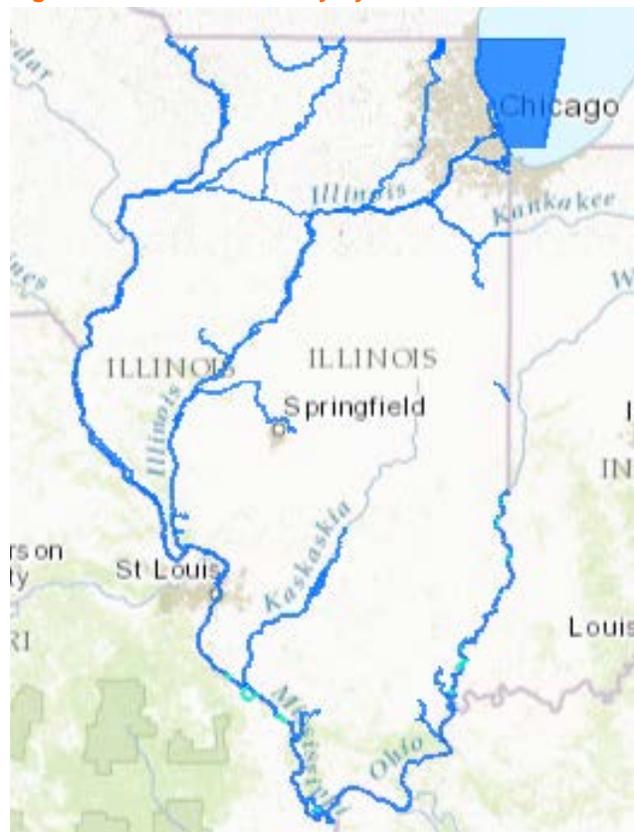
¹²⁹ US Army Corps of Engineers. A Brief History. www.usace.army.mil/About/History/BriefHistoryoftheCorps/Introduction.aspx. Accessed June 1, 2017.

¹³⁰ United States Chamber of Commerce. Waterways Work for Illinois. https://www.uschamber.com/sites/default/files/legacy/lra/docs/Illinois_USChamb_Waterway_StateFactSheet_071213a.pdf. Accessed June 3, 2017.

Illinois waterborne traffic totaled 107.8 million tons in 2014, representing 8.8 percent of the freight tonnage in the state. The movement of waterborne freight through Illinois is predominately north-to-south, since the Illinois River and canal system connects Lake Michigan to the Mississippi River and allows for transport to occur between the Great Lakes and the Gulf of Mexico. Other major freight flows by water in Illinois occur on the Mississippi River along the western border of Illinois and on the Ohio River at the southern end of Illinois. The Kaskaskia River also has freight traffic. Illinois' waterborne freight is heavily skewed in the outbound direction, led by coal and agricultural products including cereal grains and other agricultural products heading down the Mississippi River to New Orleans. Of the 107.8 million tons of Illinois waterborne freight in 2014, 74 percent was outbound, 20 percent inbound and 6 percent was within-state. Illinois has 1,095 miles of navigable waterways that either border or pass through the state, including the nation's only all-water connection between the Great Lakes and the Mississippi River system. As shown in Figure 9.1: Illinois Waterway System, the five major waterways used to transport freight in Illinois are:

- Lake Michigan
- The Illinois River System connecting Lake Michigan to the Mississippi River including:
 - Chicago River
 - Calumet River
 - Des Plaines River
 - Chicago Sanitary and Ship Canal connecting the Chicago River to the Des Plaines River
 - Calumet-Sag Channel connecting the Calumet River to the Des Plaines River
- The Mississippi River on Illinois' western border
- The Ohio River on the state's southern border,
- The Kaskaskia River

Figure 9.1: Illinois Waterway System



Source: Illinois Department of Natural Resources

A more detailed discussion of waterborne freight flows is in the *Water Traffic Highlights* section of the 2017 Illinois State Freight Plan.

LOCKS AND DAMS

Navigation on the four major rivers in the state is controlled by a series of locks and dams. There are 15 lock and dam structures along the Mississippi River. The Illinois River and canal system have nine lock and dam facilities; on the Ohio River, along the Illinois border with Kentucky, there are currently three lock and dam structures. The final lock and dam in the state is on the Kaskaskia River, in Modoc. Table 9.1 details all locks and dams on navigable waterways in Illinois.

Table 9.1 Locks and Dams in Illinois

Name	Location [River Bank]	River Milepoint	Corp District
[Upper] Mississippi River			
12	Bellevue, Iowa [R]	567	Rock Island
13	Fulton, Illinois [L]	522	Rock Island
14	Pleasant Valley, Iowa [R]	493	Rock Island
15	Rock Island, Illinois [L]	483	Rock Island
16	Illinois City, Illinois [L]	457	Rock Island
17	New Boston, Illinois [L]	437	Rock Island
18	Gladstone, Illinois [L]	410	Rock Island
19*	Keokuk, Iowa [R]	364	Rock Island
20	Canton, Missouri [R]	343	Rock Island
21	Quincy, Illinois [L]	325	Rock Island
22	New London, Missouri [R]	301	Rock Island
24	Clarksville, Missouri [R]	273	St. Louis
25	Winfield, Missouri [R]	241	St. Louis
Melvin Price*	Alton, Illinois [L]	201	St. Louis
Chain of Rocks / 27	Granite City, Illinois [L]	185.5	St. Louis
Illinois River and Canal System: River Milepoint from Grafton, Illinois			
Chicago Harbor	Chicago [R]	327 [Main]	Chicago
T.J. O'Brien	Chicago [R]	327 [South]	Rock Island
Lockport	Lockport [L]	291	Rock Island
Brandon Road	Joliet [R]	286	Rock Island
Dresden Island	Morris [L]	272	Rock Island
Marseilles [Lock]	Marseilles [L]	245	Rock Island
Starved Rock	Ottawa [R]	231	Rock Island
Peoria	Creve Coeur [L]	158	Rock Island
LaGrange	Versailles [R]	80	Rock Island
Ohio River: River Milepoint from Pittsburgh Point			
Smithland	Hamletsburg [L]	919	Louisville
52	Brookport [R]	939	Louisville
53	Grand Chain [R]	963	Louisville
Kaskaskia River			
Kaskaskia	Modoc [R]	0.8	St. Louis

*Main lock length = 1,200 feet

River milepoints run north/east to south/west

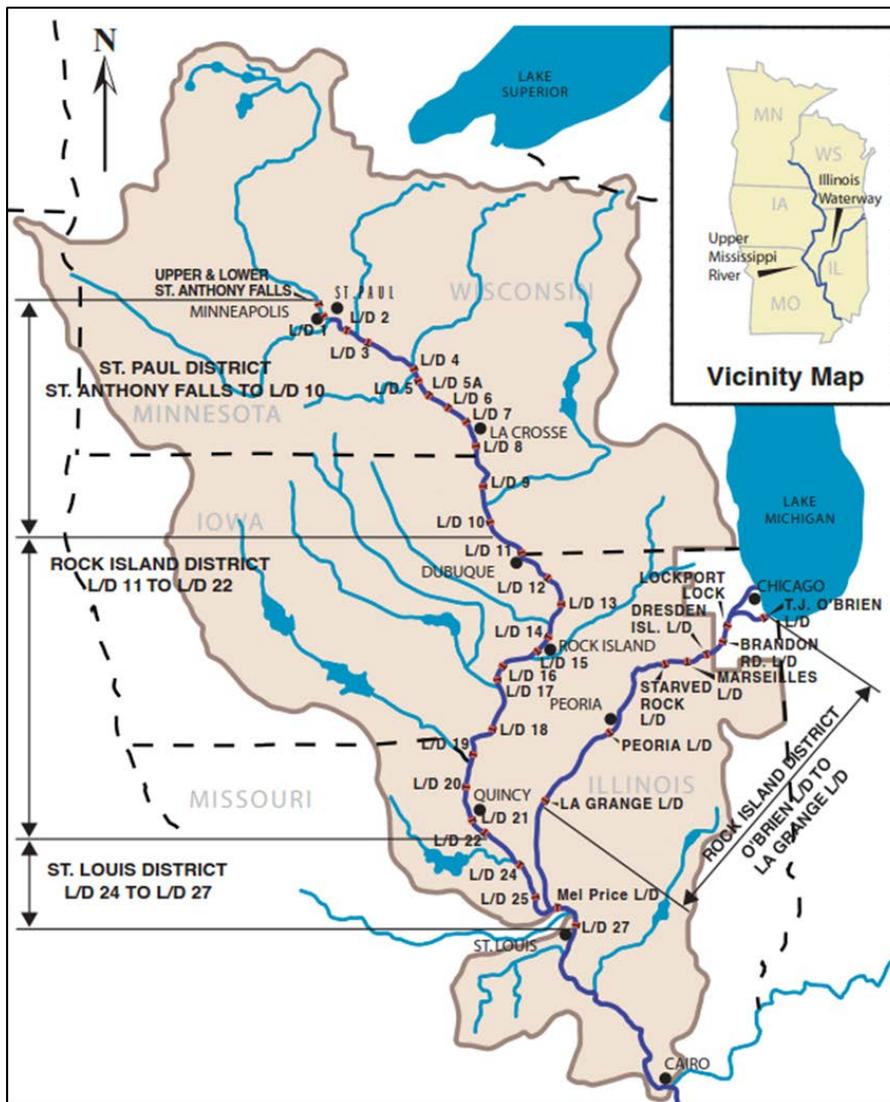
Source: US Army Corps of Engineers, various websites

The IDNR Office of Water Resources owns and maintains a number of low head dams along the Fox River, one on the Rock River, and operates Stratton Lock and Dam to allow recreational navigation between the Chain O' Lakes and the Fox River down to the Algonquin Dam.

On the Illinois Waterway, four lock and dams (Brandon Road, Dresden, Marseilles and Starved Rock) are located on property owned by the State of Illinois, but the lock and dam structures are owned, operated and maintained by the Corps. The Lockport Lock and Dam was originally constructed by the Metropolitan Water Reclamation District, but today is operated and maintained by the Corps. The Chicago River Lock and Dam was also similarly constructed and today is operated and maintained by the Corps. On the Calumet River, the Corps owns, operates and maintains the O'Brien Lock and Dam. The remaining two lock and dams on the lower Illinois River (LaGrange and Peoria), along with the other locks and dams on the remaining Illinois rivers (Mississippi, Ohio and Kaskaskia) are operated and maintained by the Corps per their federal responsibility to maintain the inland waterway system, which also includes flood control and ecosystem restoration. On the Upper Mississippi River, Locks 11 through 22 are managed by the Rock Island District. The Rock Island District also operates and manages all locks on the Illinois River and canal system, except for the Chicago Harbor, which is under the Chicago District. On the Mississippi, Locks 24 through 27 are under the purview of the St. Louis District, which also is responsible for the Kaskaskia Lock and Dam.¹³¹ Figure 9.2 illustrates the location and jurisdiction of locks and dams within and bordering Illinois.

¹³¹ Illinois Department of Natural Resources, Email to IDOT, November 13, 2017

Figure 9.2 Lock and Dam Locations and Controlling Jurisdictions in Illinois



Source: US Army Corps of Engineers

B9.1.2 PORTS AND HARBORS

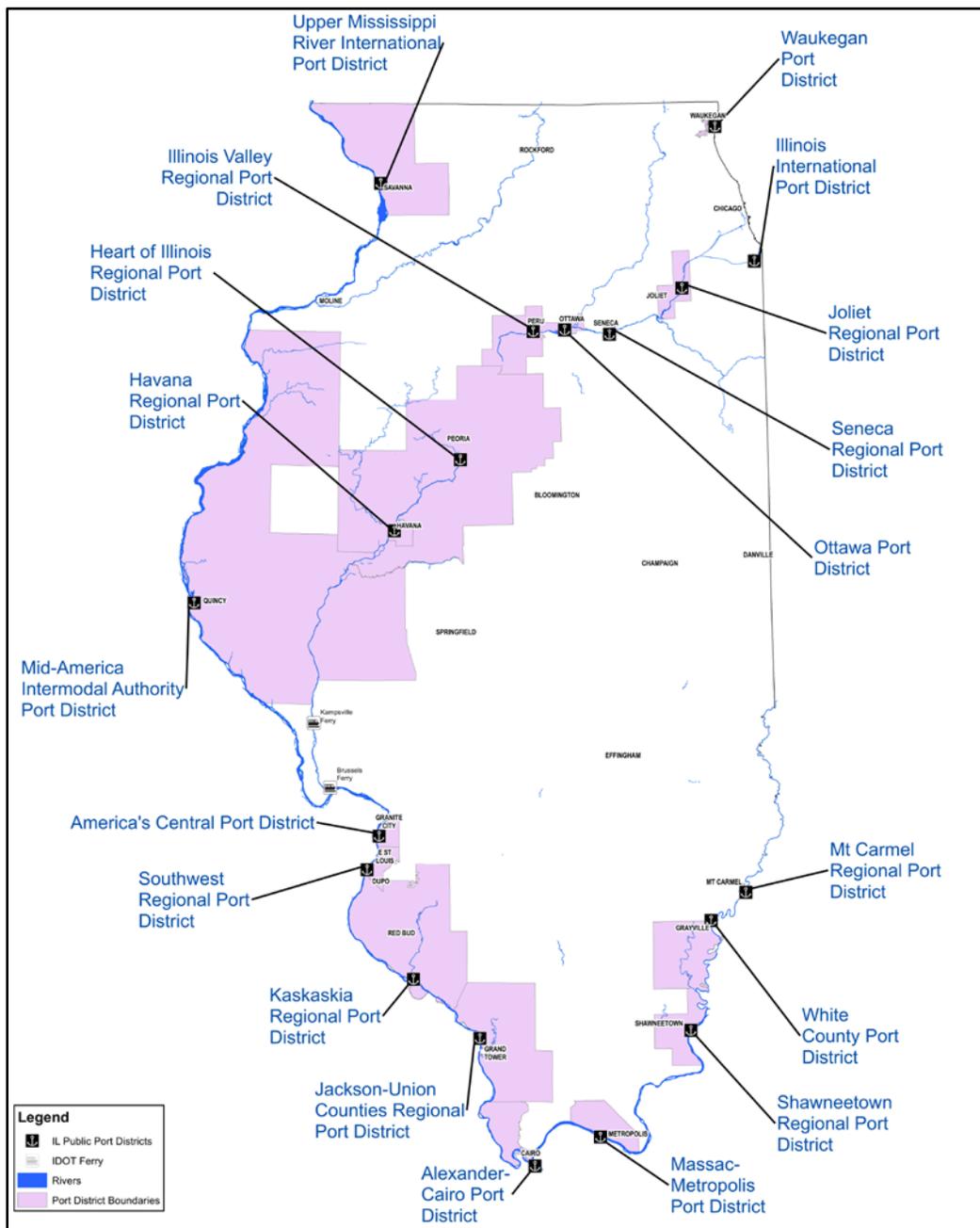
Ports and harbors are two water facility terms that are often used interchangeably. A port provides infrastructure and services for loading and unloading cargo and passengers, while a harbor is where ships are sheltered and can anchor close to a shore. Harbors are more often along lakes, seas, and oceans, while ports are in harbors and along rivers.

In Illinois, Lake Michigan has three harbors for large ocean going vessels and more for recreational boats. The harbors along Lake Michigan that handle freight-bearing ships are the Waukegan Harbor, Chicago Harbor, and the Calumet Harbor. Waukegan is also a port, while the Calumet Harbor connects to the Illinois International Port / Port of Chicago via the Calumet River and Lake Calumet. The Chicago Harbor is not a port, but some freight cargo passes through, to access the Chicago River and the Illinois River and canal system. The Chicago District of the Corps has jurisdiction for the harbor facilities on Lake Michigan.

Port development and activity in Illinois involves private industry and the State, which uses enabling legislation to create port districts. The enabling legislation gives ports tax-exempt status and the ability to issue bonds for port development. Port districts are required to submit financial reports to the Office of the State comptroller. The 19 legislatively created public port districts in Illinois are displayed in Figure 9.3 .

IDOT can provide technical and operating assistance to port districts in coordination with Illinois Department of Commerce and Economic Opportunity (DCEO). DCEO often works with port districts to facilitate economic development in the area. IDOT supports water freight movement by providing the roads to and from the water terminals. Private industry creates loading and unloading facilities on riverfront sites for their own use after obtaining approvals from the municipal jurisdiction, the Corps, and the IDNR. These facilities include docks, wharves, mooring sites, terminals, and other storage facilities, loading and unloading equipment, and other supportive structures.

Figure 9.3 Active Port Districts in Illinois



Source: Illinois Department of Transportation, 2017

B9.1.3 FERRIES AND WATER TAXIS

IDOT operates two free ferries across the Illinois River. These ferries are located in southwestern Illinois and operate all hours, year round. One ferry is the Illinois Route 108 connecting link between Kampsville and Eldred. Illinois Route 108, which is the eastern branch of the Great River Road Scenic Byway connects to Illinois Route 100, which is the main branch of the scenic byway. The second IDOT ferry, which is further south, connects Illinois Route 100 near Grafton to County Highway 1 / Illinois River Rd, which leads to the town of Brussels. This ferry is near Pere Marquette State Park and the mouth of the Illinois River, where it merges with the Mississippi. The two IDOT ferries are operated 24 hours a day, seven days a week. Other ferries include one at Cave-in-Rock. This ferry, operated by the Kentucky Transportation Cabinet in agreement with IDOT, crosses the Ohio

River and connects Illinois Route 1 to Kentucky Route 91. The Cave-in-Rock Ferry operates year round from 6:00 a.m. to 9:30 p.m.

Along the Mississippi River, there are ferries / water taxis in Moline (Rock Island County), Meyer (Adams County), Golden Eagle (Calhoun County) and Modoc (Randolph County). The furthest ferry service south on the Mississippi River boarding Illinois is the Ste. Genevieve-Modoc Ferry, operated by the New Bourbon Regional Port Authority in Missouri.

The Channel Cat water taxi in Moline is operated by MetroLink, the public transit provider for the Quad Cities region. The taxi operates daily from Memorial Day to Labor Day and then on weekends only in September. There are four landing sites: two in Moline and two in Iowa, in Bettendorf and East Davenport. The taxi takes passengers and bicycles, but no motor vehicles.¹³²

In Calhoun County, the Calhoun Ferry Company operates two for-profit ferry services between Calhoun County, Illinois and Missouri. The Golden Eagle Ferry takes vehicles across the Mississippi River between Golden Eagle in Calhoun County and Kampville in St. Charles County, Missouri. The Winfield Ferry crosses the Mississippi River near Batchtown in Calhoun County into Lincoln County, Missouri connecting with Route 79.¹³³

Chicago has two services that operate water taxis. Chicago Water Taxi operates on the Chicago River between Michigan Avenue and Chinatown / Ping Tom Memorial Park, with two additional stops at LaSalle / Clark and Madison streets. The Madison Street landing offers access to Metra's Ogilvie Transportation Center. 134 Shoreline Sightseeing operates on the Chicago River with four stops, at Michigan Avenue, Erie Street, Wacker at Wells, and the Willis (Sears) Tower / Union Station. Other taxi options include service between the Museum Campus and Navy Pier, and between Navy Pier and Michigan Avenue or the Willis Tower.¹³⁵

B9.2 IMPLEMENTATION STRATEGIES AND PROGRAMS

A number of state agencies are involved with the State's waterways and ports. IDNR and IEPA address environmental issues, while DCEO assists with economic development activities by administering the Port Development Revolving Fund and the River Edge Redevelopment Zone Program. IDOT can provide technical, capital, and operating assistance to port districts in coordination with DCEO, and is involved with port development by ensuring access to the state road network.

B9.2.1 PORT DEVELOPMENT REVOLVING LOAN FUND

DCEO maintains the Port Development Revolving Loan Fund to facilitate and enhance the utilizations of Illinois' waterways. Funds from the program are available to active port districts in the state through a competitive process. The maximum loan request is \$3,000,000 and may be used for up to 50% of a project's financing. The maximum loan term is 20 years with a top interest rate of 5% per annum.¹³⁶

B9.2.2 RIVER EDGE REDEVELOPMENT ZONE PROGRAM

The River Edge Redevelopment Zone (RERZ) Act supports municipalities with river access to remediate environmentally-challenged property located adjacent to or surrounding an Illinois River. The law enables

¹³² Channel Cat Water Taxi. General Information. <https://www.gogreenmetro.com/231/Channel-Cat>. Accessed June 2, 2017.

¹³³ Great River Road. [http://www.greatriverroad.com/SecondaryPages/ferries.htm#Calhoun County, Illinois](http://www.greatriverroad.com/SecondaryPages/ferries.htm#Calhoun%20County,%20Illinois). Accessed June 2, 2017.

¹³⁴ Chicago Water Taxi. Route Map. <https://www.chicagowatertaxi.com/Chicago-River-Boat-Map>. Accessed June 2, 2017.

¹³⁵ Shoreline Sightseeing. Water Taxis. <http://shorelinesightseeing.com/water-taxi/>. Accessed June 2, 2017.

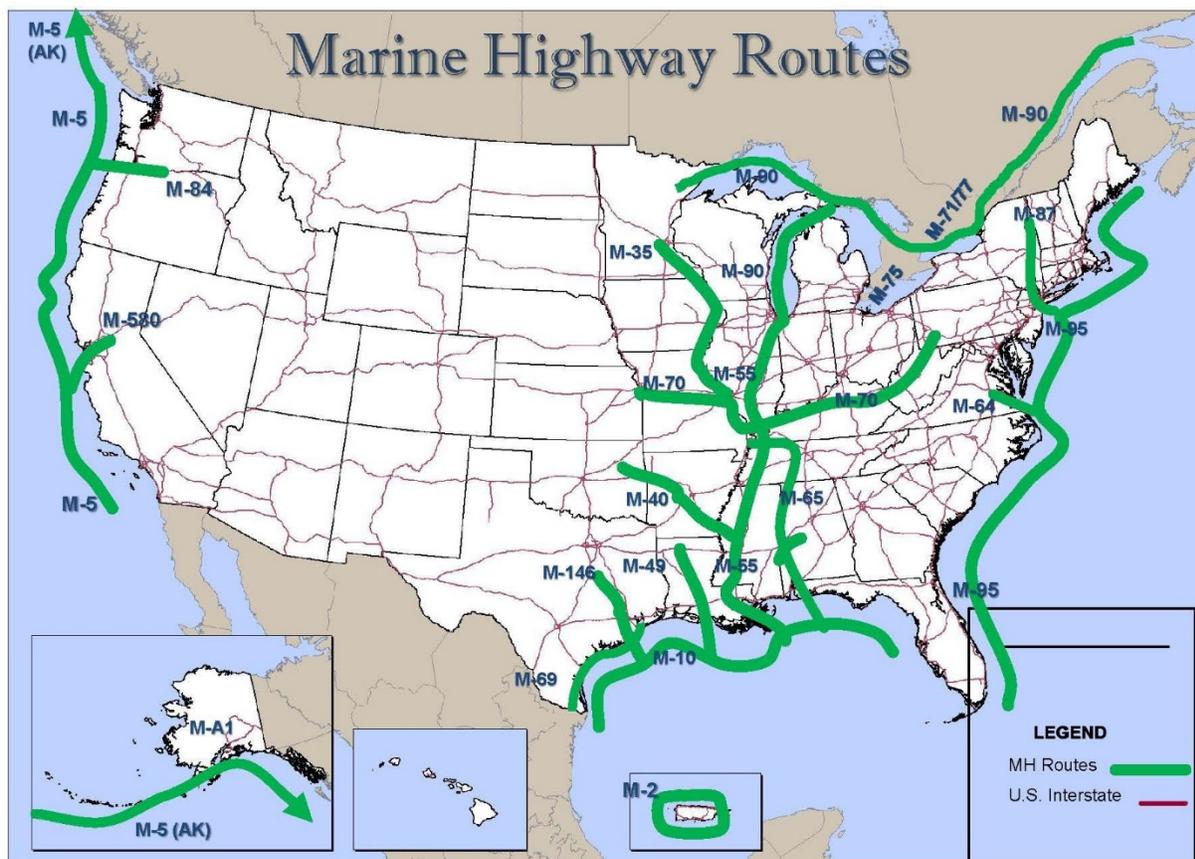
¹³⁶ FindLaw. Illinois Statutes Chapter 30. Finance § 750/9-11. Port Development Revolving Loan Program. <http://codes.findlaw.com/il/chapter-30-finance/il-st-sect-30-750-9-11.html>. Accessed June 5, 2017.

communities to designate an area as a redevelopment zone, and allows the municipality to access grants or to provide tax incentives to remediate and cost-effectively clean the environmentally-challenged land. The River Edge Redevelopment Zone Act took effect in 2006 and is administered by DCEO. RERZ offers several incentives for the redevelopment along Illinois rivers, largely focused on sales tax exemptions and property tax abatements. The DCEO has designated River Edge Development Zones in Aurora, East St. Louis, Elgin, Peoria, and Rockford.

B9.2.3 MARINE HIGHWAY CORRIDORS

In 2010, the USDOT, as part of a national initiative (America's Marine Highway Program) to facilitate the use of the nation's waterways system for transportation purposes to relieve landside traffic congestion, improve air quality, and other environmental concerns. The Marine Highway System currently include 24 all-water Marine Highway Routes that serve as extension of the surface transportation system.¹³⁷ Figure 9.4 displays all Marine Highway Corridor in the United States. Illinois is part of three corridors: M-55, which includes the Mississippi and Illinois Rivers, from New Orleans to Chicago; M-70, which includes the Mississippi, Missouri, and Ohio Rivers, from Kansas City to Pittsburgh; and M-35 that links the Upper Mississippi River with the M-55 Corridor. The M-55 corridor was selected to address congestion on I-55; M-70 will provide additional support for travel along I-70. The M-35 and M-55 Corridor forms a continuous all-water route from the beginning of the Mississippi River to the Gulf of Mexico.

Figure 9.4 United States Marine Highway Corridors



¹³⁷ U.S. DOT Maritime Administration. America's Marine Highway Program. <https://www.marad.dot.gov/ships-and-shipping/dot-maritime-administration-americas-marine-highway-program/>. Accessed June 5, 2017.

Source: www.marad.dot.gov

B9.2.4 AMERICA'S CENTRAL PORT

The Tri-City Regional Port District was created in 1959 by the Illinois State Legislature as an economic development tool for the communities of Venice, Madison and Granite City in southwestern Madison County, Illinois and was re-branded as “America’s Central Port” in 2011. The \$50 million South Harbor project in Madison added a new space for “multi-modal capacity” — allowing companies transporting goods to transfer them among rail, truck, river barge and other modes of transportation, and was completed in late 2015. The project funding included a \$14.5 million USDOT grant and a \$4 million DCEO grant, along with a private loan. The South Harbor improvement is anticipated to generate an additional 25% of Port District cargo in the five years following its completion, up from its nearly 3 million tons of cargo handled in 2015.¹³⁸

B9.2.5 KASKASKIA REGIONAL PORT DISTRICT

The Kaskaskia Regional Port District (KRPD) is another example of a successful port district development. The KRPD was created by state statute on June 22, 1965, and currently encompasses four terminals along the 90-mile navigable portion of the Kaskaskia River in southwestern Illinois. Its 2015 Annual Report cited its standing as the 76th port district in the nation among the top 150 by volume as ranked by the Corps of Engineers, and an increase in cargo moved through the terminals from approximately 0.8 million tons in 2011 to 1.4 million tons in 2015, an increase of 76% over four years. Along with fertilizer and chemicals, the port moves grain, steel, stone used in scrubbers at a coal power plant, and sands used in the hydraulic fracturing, or fracking, process for drilling oil and gas. In 2015, construction started on a new road connecting Illinois Route 15 to a proposed entrance to the planned new, 128-acre port terminal in Fayetteville. Much of the acreage for the planned terminal was acquired from IDNR in 2012.¹³⁹

¹³⁸ Belleville News-Democrat. “America’s Central Port to christen South Harbor soon”. <http://www.bnd.com/news/local/article38351142.html>. Accessed September 2017.

¹³⁹ Kaskaskia Regional Port District. 2015 Annual Report. <http://www.kaskaskiaport.com/2015%20Annual%20Report.pdf>. Accessed September 2017.