Grundy County

Multimodal Transportation Master Plan

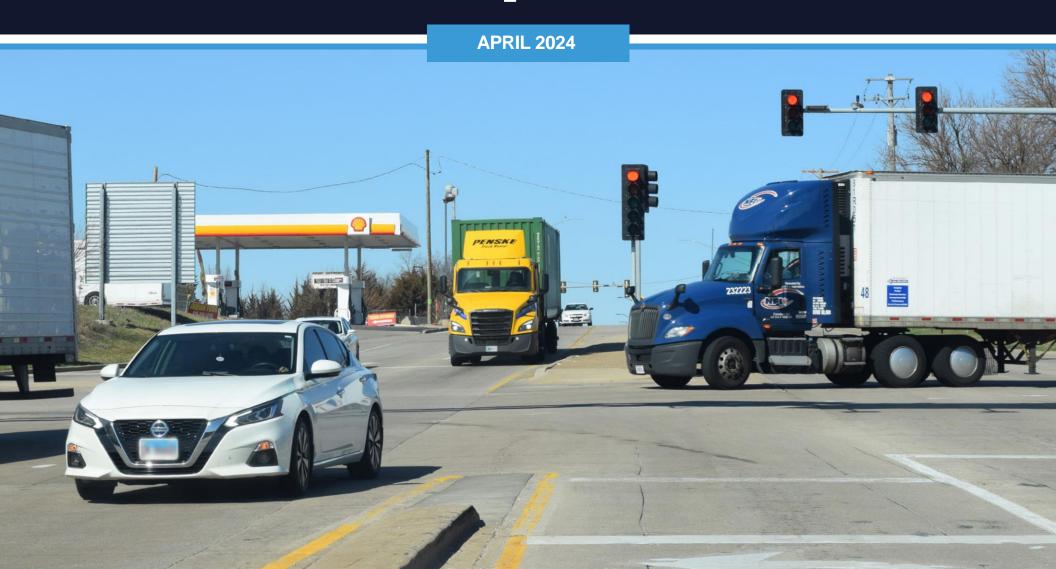


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Acknowledgments

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The study team also extends its thanks to the Advisory Committee members, stakeholder groups that participated in various ways, and participating Grundy County residents who helped shape this plan.

Introduction

The Grundy County Multimodal Transportation
Master Plan, also referred to as *Grundy Moves*,
comes at a key moment for communities across
the county. Grundy County has long been at the
crossroads of transportation infrastructure – **served**by two key Interstates, Class I railroads, and the



Section 1

Illinois River — which in turn has supported a diverse economic base in manufacturing, agriculture, energy, and other sectors. The county's population grew 7.6 percent between 2010 and 2022, which was the third highest out of 102 counties in Illinois. In recent years, industrial development has grown rapidly, driven by the strength of distribution and logistics sectors across the nation and the access provided by local multimodal transportation system. Between 2017 and 2021, the transportation and warehousing industry in the county grew in value by 73% and increased employment by 27%. Other industries such as professional and scientific services, construction, and manufacturing have seen significant increases as well. While this growth has provided new economic opportunities for the county, it has placed new demands on the transportation network.

The intent of the *Grundy Moves* plan is to reach consensus among local stakeholders on a set of improvements that will meet both existing and anticipated future investment needs for the transportation system. The cornerstone deliverable of this planning effort is a Transportation Improvement Program (TIP), which lists 49 priority projects. This TIP considers the transportation network in the county as a whole, and as result makes recommendations for improvement to state, county, municipal, and township facilities alike. It includes both near- and long-term priorities for improvement and is not fiscally constrained to one agency's budget.

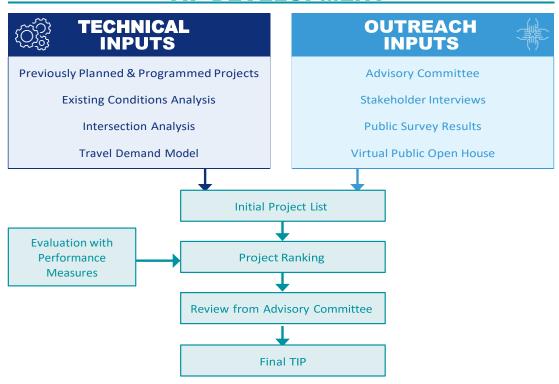
This report summarizes the methodology and findings from the *Grundy Moves* study in five following sections:

- Stakeholder Engagement Describes the stakeholder engagement process, which relied on a combination of engagement activities including the Advisory Committee, public survey, stakeholder interviews, and virtual public open house.
- **Development of the Transportation Improvement Program** Describes the TIP development process, final set of priority projects, and funding opportunities to support those projects.
 - **Existing Plans and Programs** Reviews prior public-agency project plans adopted in the study area and currently programmed projects.
 - **Existing conditions analysis** Reviews existing conditions of the transportation system in Grundy County, identifying current hot spots for safety and congestion, as well as analyses of key intersections.
 - Travel demand modeling Describes the travel demand modeling process and results, which identify anticipated locations of future congestion on the transportation system.
 - **Stakeholder engagement** Details how stakeholder engagement was used to produce the TIP.
- Recommended Transportation Improvement Program Provides information on the final projects selected to be in the TIP.
- Emerging Technologies and Innovative Ideas Reviews operational and management strategies to further improve performance on the transportation system without major capital investment.
- Next Steps Provide considerations for implementation of the plan and recommends further studies.



Projects in the TIP reflect consensus among diverse stakeholders across the county, including representatives from public sector agencies and private sector interests. The TIP includes projects identified from prior planning efforts and existing investment programs, a robust stakeholder engagement effort, and original technical analyses conducted as part of the *Grundy Moves* study. The latter includes regional travel demand modeling and intersection analyses of key nodes in the county's transportation network. After project concepts were assembled, the draft TIP was evaluated using performance measures that span the key goals of asset condition, mobility, safety, economic development, environment, and equity. Projects were then ranked into tiers, with the results further refined by the study's Advisory Committee.

TIP DEVELOPMENT



Stakeholder Engagement

Stakeholder engagement was a key component in the development of *Grundy Moves* and was embedded throughout the planning process. The project team developed a Stakeholder Engagement Plan at the beginning of the planning process which outlined the key stakeholder and community outreach activities. This included the establishment of an Advisory Committee, key stakeholder interviews, a public survey, a virtual public open house, and a project website. These engagement activities yielded crucial input during the planning process, which has been incorporated into the final *Grundy Moves* Plan. This rigorous process led to consensus on the transportation improvement program project list.











Advisory Committee

An Advisory Committee was established at the beginning of the planning process to help guide and provide input on major aspects of the plan. The committee included representatives from both the public and private sectors based on recommendations provided by Grundy County and the Grundy Economic Development Council.

Three in-person Advisory Committee meetings occurred at key points in the planning process and members were provided opportunities to influence all aspects of the study, including the development of the TIP. The first two meetings provided the committee with an overview of the technical existing conditions analysis and modeling process and results. The committee was presented with iterations of the draft TIP list and gave feedback on projects to include and criteria for prioritization. In the final meeting, the committee discussed potential transportation technology solutions and the next steps for implementing the plan. The committee also was given the opportunity for feedback on the final prioritized TIP. Public and stakeholder activities and their

Section 2

Advisory Committee Members:

- Ann L. Schneider & Associates
- City of Morris
- Grundy County
- CR Transport and Logistics
- Grundy County EconomicDevelopment Council
- Illinois Department of Transportation
 District 3
- Kendall-Grundy Farm Bureau
- Mid-West Truckers Association
- Narvick Brothers Construction
- Village of Channahon
- Village of Coal City
- Village of Diamond
- Village of Dwight
- Village of Mazon
- Village of Minooka
- Will County Governmental League



associated outcomes were provided at all three meetings and the committee members assisted with promoting public outreach efforts such as the survey and open house.



Figure 1. Advisory Committee Meeting #1 at Morris City Hall

Stakeholder Interviews

Stakeholder interviews were conducted with 16 key stakeholder organizations to solicit feedback and input on transportation concerns, issues, and opportunities to inform the plan. Topics covered included areas of congestion, safety concerns, and general ideas to improve travel in the county. Additionally, industry-specific questions were used to help identify unique travel needs of the various industries in the county. Interviews included organizations representing the following stakeholder groups:















Industrial and Commercial

Real Estate

Logistics

Freight Railroads and Ports Agriculture

Environmenta

Transit and Active Transportation

Public Engagement

The public was engaged with the project in three ways:

Survey

The project team developed and implemented a public survey to collect input from residents, visitors, and workers in Grundy County on key transportation challenges. The results assisted the project team in tailoring project messaging as well as inform recommendations for the TIP. The survey was also one of the first outreach activities and helped introduce the planning process to the public.

A total of 427 survey responses were collected. Over 83 percent of survey respondents were residents of Grundy County, with the remainder either working in or visiting the county.

Virtual Open House

As part of the public outreach process, the project team designed and hosted a virtual public open house to present the plan and its purpose; provide an overview and highlight tasks completed to date; and present initial recommendations as well as the draft projects list for public feedback and input. The virtual public open house was the final major outreach activity completed for *Grundy Moves* and provided an opportunity for public comment and input on plan recommendations.

A total of 249 participants attended the virtual public open house held in December 2023 and January 2024. The open house was open for comment for 36 days and available for viewing afterwards.



Figure 2. Public Survey Social Media Flyer



Figure 3. Virtual Open House Welcome Room



Project Website

GrundyMoves.com was created to assist with public communications and dissemination of project-related materials for the duration of the project. The website, launched in May 2023 contains general plan information, a study area map, outreach information and materials, project timeline, and project contact information. The website was used to disseminate the public survey and the virtual public open house. Over 1,300 visitors have accessed the website for project information as of February 2024.

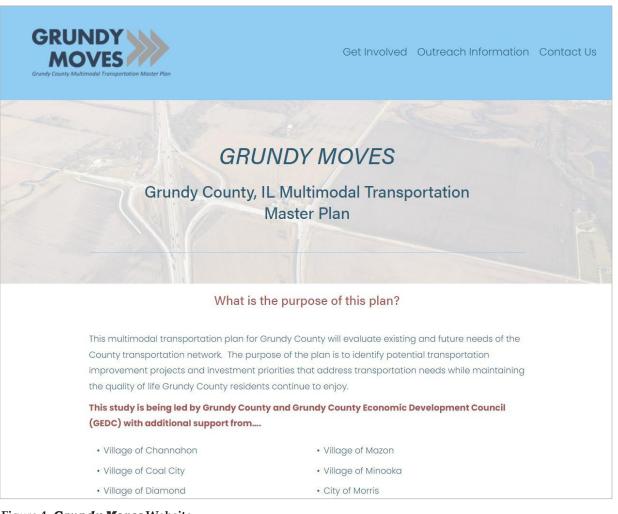


Figure 4. **Grundy Moves** Website

Development of the Transportation Improvement Program

This section reviews the development process for the transportation improvement program. It first reviews the sources for the project concepts, then describes the ranking and prioritization process. That process included both technical evaluation and review by stakeholder groups and the public. Finally, this section describes the updatable TIP database, which will allow the county and stakeholders to track project development over time.

Sources for Project Concepts

The TIP methodology was designed to produce a list that addressed current and future needs for the transportation network in Grundy County. Projects were considered based on an unconstrained timeframe and budget. Any jurisdiction of roadway was considered. Projects identified were required to be impactful at a regional scale, meaning they have the potential to impact mobility, safety, and development for the larger Grundy County region. As a result, the analysis excluded routine maintenance projects, which represent the bulk of existing planned and programmed projects.

The TIP drew from four overarching sources:









Section 3



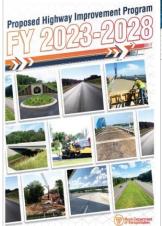


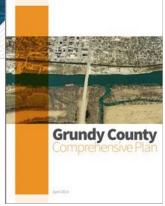
Existing Plans and Programs

The project team reviewed several previous planning efforts and projects currently programmed in the Chicago Metropolitan Agency for Planning's Transportation Improvement Program. The review identified about 30 initial projects sourced from the Illinois Department of Transportation (IDOT), Grundy County, local jurisdictions, and specific corridor studies. These sources included the following:

- State sources
 - * IDOT Long-Range Transportation Plan
 - IDOT Highway Improvement Program
- Regional sources
 - * Chicago Metropolitan Agency for Planning TIP
 - Grundy County Comprehensive Plan
 - GEDC Grundy County Transportation Priorities
- Local sources
 - Minooka Comprehensive Plan and TIP
 - Morris Comprehensive Plan and Downtown Master Plan
 - Channahon Comprehensive Plan
 - Coal City Strategic Plan, Assets Map, and CIP
 - Diamond Comprehensive Plan
- Other sources
 - Corridor Access Studies
 - Peoria Passenger Rail Plan







Existing Conditions Analysis

The existing conditions analysis provided an understanding of current system performance. Key topics include traffic volumes, congestion, safety, asset condition, and non-motorized modes. It also included a high-level review of several key intersections.

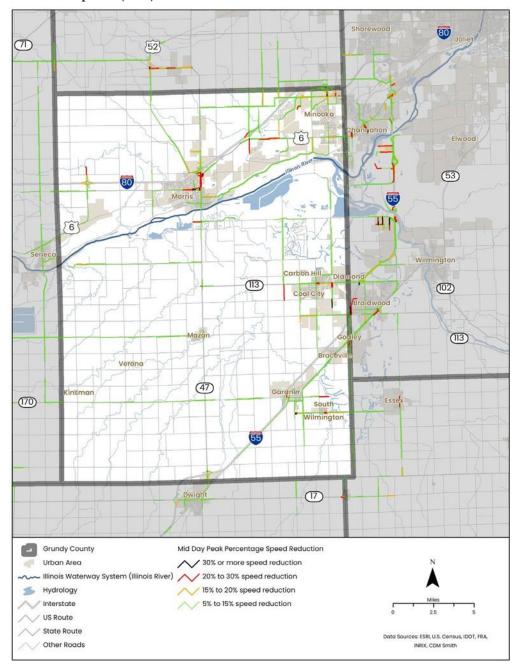
Traffic volumes - The project team analyzed traffic volumes and congestion to understand typical system performance throughout the county. Analysis was derived from IDOT Annual Average Daily Traffic data for 2021. These counts were supplemented by counts performed by the project team in the spring of 2023. The highest volumes in the county were found on I-80 with over 50,000 vehicles a day while other major arterials had up to 32,000 vehicles. These arterials such as IL 47 (in Morris), Ridge Rd (in Minooka), and US 6 (in Morris) have seen volume increases from 15-30% since 2015. Some roadways had over 30% of traffic from heavy vehicles.







Figure 5. Mid-Day Peak Percentage Speed Reduction Compared to Free-Flow Speeds (2022)



Congestion - Grundy County experiences the highest congestion levels during the midday and PM peak periods. Congestion is concentrated in the main urbanized areas in the north-central and northeast portions of the county. IL 47 and US 6 both experience between a 20 and 30 percent speed reduction compared to free-flow speeds in Morris, and US 6 experiences a 20 to 30 percent speed reduction just west of IL 47 and further east as it approaches Minooka and Channahon. Several local roadways in the Minooka/Channahon area also experience speed reductions of up to 30 percent, including Minooka Road, Ridge Road, and roadways that serve as frontage roads for I-80. There are also road segments over 20 and 30 percent in the eastern portion of the county, near Coal City and Gardner.

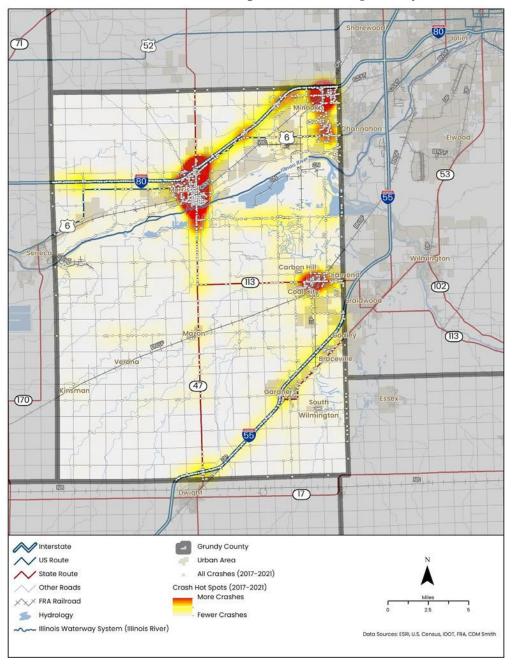


Safety - The project team analyzed crash data from 2017-2021 from IDOT. Crashes are centered in populated areas, including Morris, Minooka, and Coal City, as well as along major arterial corridors and interstates. Within these clusters, there are relatively large numbers of crashes at the intersections of IL 47 and Pine Bluff Road, Washington Street and Liberty Street, and Ridge Road and McEvilly Road. There were several major injury or fatal crashes on US 6 between Morris and Minooka, and on IL 47 for most of its extent in Grundy County.



Asset Condition - The project team also analyzed transportation asset condition data from IDOT (2022) which provides roadway pavement condition for facilities under the department's jurisdiction as well as some local agency facilities. There are poor roadway conditions on US 6 between Minooka and Morris, for a small segment of I-55, and on IL 53 in Braceville and Gardner. Fair pavement conditions are found on segments of both Interstates and along key local routes, such as portions of Minooka Road and Ridge Road.

Figure 6. Crash Hot Spot Analysis, 2017-2021





Grade Crossings - Four Class I railroads operate in Grundy County with over 60 crossings in the county. The Burlington Northern Sante Fe (BNSF) crossings have the largest total delay due to having the most train traffic. The BNSF tracks see approximately 64 trains pass each day, compared to 22 daily trains for the Union Pacific Railroad (UP) corridor and low single-digit numbers of trains each day for the other railroads. Due to the high frequencies on BNSF tracks, a closely spaced series of at-grade crossings, and local traffic volumes, at-grade crossing delays in Grundy County are highest in Coal City where there are about 1,000 minutes of daily delay. Outside of Coal City, the IL 47 grade crossing at the BNSF in Mazon also experiences large delays, with nearly 200 minutes of daily delay.

Non-motorized Network and Transit - The project team also reviewed the current state of the non-motorized and public transportation networks in Grundy County and found many areas without bicycle and pedestrian infrastructure such as sidewalks and safe crosswalks. Locations that do provide this infrastructure include downtown Morris where the commercial district has wide sidewalks and pedestrian-oriented streetscaping that encourage 'park once' behavior. In addition, the centers of Coal City and Minooka provide some non-motorized facilities. The I&M Canal State Trail provides regional recreational bicycling that parallels the Illinois River and traverses the entire county with multiple access points.

Grundy Transit System (GTS), the county's on-call transit agency, operates similar to paratransit services. According to GTS data, the service provided 16,030 on-demand rides in Fiscal Year (FY) 2023, with 53 percent of rides provided for senior or disabled residents. The two municipalities that produced the most ridership were Morris (63 percent) and Minooka (13 percent). Common destinations include large retail locations and distribution centers in Minooka.



IMPROVEMENTS

needed for bike/pedestrian infrastructure and connections





Intersection Analysis – The project team completed a planning-level assessment of safety and geometrics at 12 key intersections within the study area. These locations were identified based on review of congestion and safety data and in consultation with Grundy County and project staff. All intersections currently meet the FHWA capacity guidelines. Assessing pavement markings at all intersections to determine where they need repainting is recommended. High-level notes for individual intersections are in Table 1 on the following page.

Travel Demand Modeling

The study process also included travel demand modeling, which allows for future transportation conditions to be estimated based on socioeconomic growth and roadway network characteristics. Modeling scenarios help to identify likely future locations of congestion or operational issues, to assess the impact of potential projects on reducing future congestion. It also provides a stress-test on the roadway network to understand the impact of potential changes in land use over time.

The travel demand model developed for Grundy County was extracted from the larger Chicago Metropolitan Agency for Planning (CMAP) model and refined to better represent local traffic conditions. For example, the model was calibrated using the traffic counts collected for this study, providing base-year 2023 average weekday traffic volumes at key locations. The Grundy County model assumes no additional infrastructure changes for **the future year of 2050**, aside from the larger planned capital projects already included in the CMAP model. In addition to the baseline future growth assumptions, the project team developed two alternate future year scenarios based on varying intensity of industrial development. The industrial development areas were based on existing industrial areas and zoning, and do not reflect planned or preferred locations. Most of these locations are in the northern portion of the county.

Figure 7. Intersection Analysis Locations

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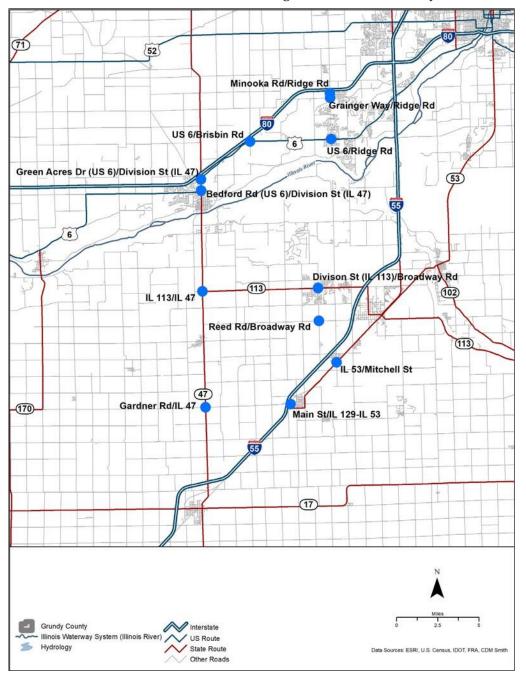


Table 1. Intersection Analysis Notes

Intersection	Municipality	Notes		
Minooka Road and Ridge Road	Minooka	This intersection should be considered as part of a system of improvements along Ridge Road from Minooka Road through the I-80 interchange.*		
US 6 and Ridge Road Minooka		Further study does not appear to be warranted at this time.*		
US 6 and Brisbin Road	Morris	Further study does not appear to be warranted at this time.		
US 6 / Green Acres Drive and IL 47 / Division Street	Morris	Future add-lanes may be needed with increased demand. Access management on the west approach is recommended to improving safety and access.		
US 6 / Bedford Road and IL 47/ Division Street Morri		The introduction of private driveway access control along IL 47 and correcting the slight skew of the intersection should be future considerations.		
IL 113 / Division Street and Broadway Road	Coal City	As future growth increases traffic volumes, more detailed analysis of this intersection is recommended. Limited right-of-way on IL 113 will provide a challenge for capacity improvement; however, Broadway Road appears to his sufficient right-of-way provided access control limits are included.		
Reed Road and Broadway Road	Coal City	Future add-lanes to a three-lane or five-lane section to address significant growth would encounter few if any obstacles. Additional right-of-way should be obtained in conjunction with any adjacent development.		
IL 53 and Mitchell Road (CR 8000)	Braceville	The 45-degree skew should be corrected to 90 degrees if Mitchell Road were to be realigned or relocated.		
Main Street and IL 129/IL 53	Gardner	Further study does not appear warranted at this time.		
Gardner Road and IL 47	Goodfarm Township	Further study does not appear warranted at this time.		
IL 113 and IL 47	Morris	Consider evaluation of the intersection for traffic signal warrants.		
Grainger Way and Ridge Road	Minooka	This intersection should be considered as part of a system of improvements along Ridge Road from Minooka Road through the I-80 interchange.*		

^{*}Subject to more thorough study depending on emerging economic development.



Results

Model outputs were reviewed to identify locations with poor performance on the roadway network under various future year scenarios. This review primarily included two measures, representing different dimensions of congestion:

- Volume-to-capacity (VC) ratios, which indicate whether traffic volumes exceed capacity for a roadway (i.e., a result over 1 indicates that volumes exceed capacity)
- Congested speeds over free-flow speeds, which normalize low travel speeds in model outputs by uncongested conditions.

Figure 8. Future Year Congestion, Base Scenario

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Base Scenario - The base future year scenario relies on underlying growth assumptions in the CMAP model and does not account for any additional industrial land use. The model indicates that most road segments are forecast to remain well under capacity and expected to operate under free-flow conditions.

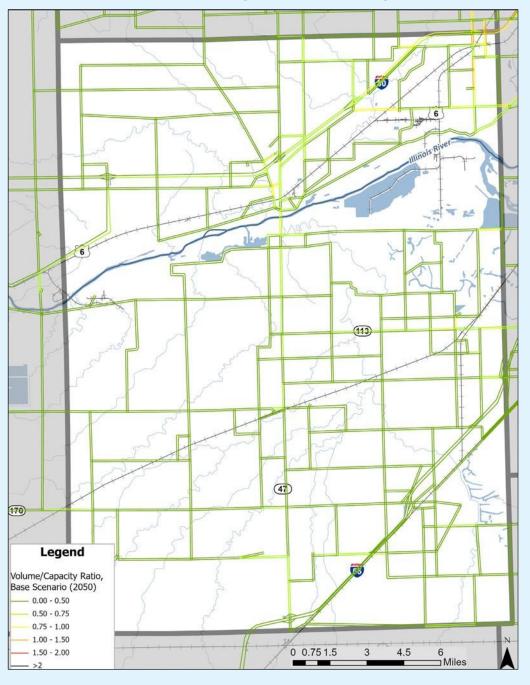
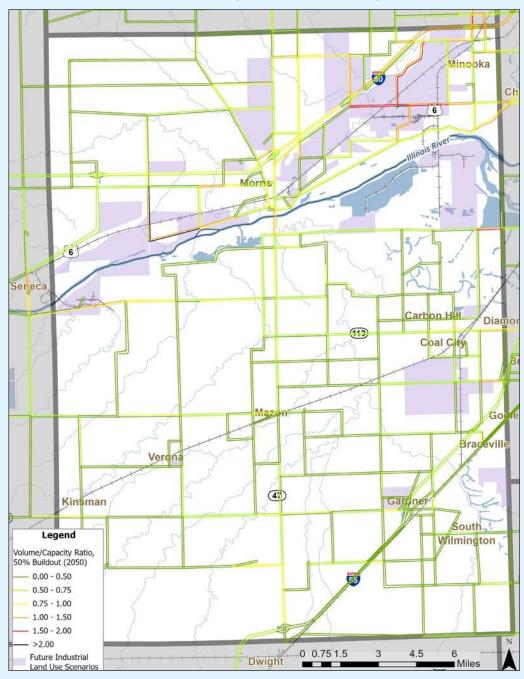


Figure 9. Future Year Congestion, Partial Buildout

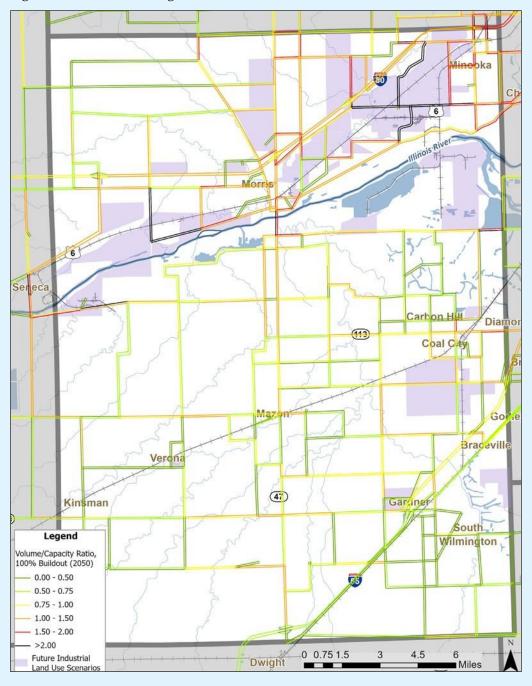
Partial Build-out Scenario - In the partial build-out scenario, roadway congestion on multiple facilities in Minooka and Channahon worsens compared to the base case, particularly along US 6 and Tabler Road, where V/C ratios exceed 1.5. Significant congestion also occurs on IL 47, especially over the Illinois River between Benton Street and Pine Bluff Road, where the V/C ratio reaches 2.3. I-80 in Minooka experiences V/C ratios ranging from 1.0 to 1.5. Some facilities near Morris experience a slight increase in congestion, especially along US 6/Bedford Road/Green Acres Drive, Nettle School Road, and Old Stage Road (see note below), although congestion on these facilities remains relatively low.



NOTE: Although showing high VC ratios, areas near Nettle School Road and Old Stage Road are unlikely to experience congestion in 2050, as properties there are not likely candidates for industrial development due to the potential for flooding.

Full Build-out Scenario - Locations with existing congestion either persist or intensify in the full build-out scenario. Interstate facilities are less severely impacted in this scenario, while arterial, collector, and local road facilities are more impacted. Numerous facilities throughout Minooka, Morris, and Seneca exhibit V/C ratios over 1.5. Some locations have V/C ratios above 4.0, indicating severe congestion. For example, the segment of US 6 between Brisbin Road and McLindon Road has a V/C ratio of 5.4.

Figure 10. Future Year Congestion, Full Buildout



Along with the survey, the open house allowed for comments from participants. Key feedback themes from the open house included:



Improving intersections



Relieving traffic



Balancing environmental equity and preservation with economic development



Improving pedestrian and bike infrastructure



Specific suggestions regarding projects listed on the draft TIP

Stakeholder Engagement

Outreach inputs for potential projects also were considered in addition to the technical inputs. Detail on the stakeholder engagement process is contained in Section 2, and the following are the ways it directly shaped the TIP. The Advisory Committee was a key part of the TIP development process, confirming projects identified from other sources as well as identifying new project concepts. It was presented with the initial list of planned and programmed projects and then informed as sources brought in new projects. Iterations with the committee led to some projects being dropped and others being added.

Additionally, the stakeholder interviews allowed the project team to hear directly from important users of the network on concerns which brought about other potential projects. Interview participants acknowledged transportation challenges as Grundy County continues to grow. Stakeholders noted the county is rapidly transforming from an economy largely based on agriculture to one based on industry, warehousing, and logistics. While this growth is welcomed by most stakeholders, it raises concerns regarding congestion, the environment, and the quality of life of residents. Interviewees noted that proactive planning for transportation improvements to manage development and the associated traffic impacts is crucial.

Most broadly, this study engaged the public in the TIP development through a survey and virtual open house which solicited responses about specific areas of concern to generate more potential projects. Survey respondents identified minimizing the negative effects of truck traffic as the biggest transportation need in Grundy County. This was followed by relieving congestion, providing more transit and bike and/or



pedestrian options, and improving safety. Respondents also noted specific areas for improvement on local roads including Ashley Road, Gore Road, Lisbon Road, McEvilly Road, McLindon Road, and Ridge Road as well as major roadways including I-80, US 6 (in various locations), IL 47, and IL 113.

Ranking and Prioritization Process

After the full TIP list was established and confirmed by the project team and Advisory Committee, a prioritization process was used to rank projects. Projects were scored using a multi-criteria analysis rubric and followed these steps:

- Identified six key goals and performance metrics within those goals
- Weighted the goals to reflect local priorities
- Developed a project evaluation tool to evaluate project concepts
- Ranked projects into three high-level tiers

The six goals were presented to the Advisory Committee, and members were able to propose weighting for the goals through a brief follow-up survey. The project team averaged the proposed weightings to arrive at the final weighting scheme shown in **Figure 11**.

The project team identified data sources that reflected the goals through performance metrics. This was followed by developing a scoring system and applying the weights provided by the Advisory Committee to produce the final scores. With the appropriate scores and weights, the project team found natural breaking points in the stratified project list and grouped them into three tiers. The tier allocations were discussed with the county and the Advisory Committee, and it was agreed to make minor adjustments for a small number of projects because of unavailable data or reasonable future development timelines. These tiered lists were presented to the public as part of the open house.

Transportation Improvement Program Database Development

The project team built a Microsoft Access database to house the project information for the TIP and allow for future updates. The database system is designed to input, store, and print project information. It is likely that the Grundy County Highway Department will maintain and update the TIP Database after the completion of this study. It is assumed that members of this study's Advisory Committee and other stakeholders will coordinate with the county to track the implementation of the recommendations of the study over time.

TIP Project Prioritization Goals and Weights













Figure 11. TIP Databased Mock-Up

