August 2025

Congestion Management Strategy Guidebook

Chicago Metropolitan Agency for Planning

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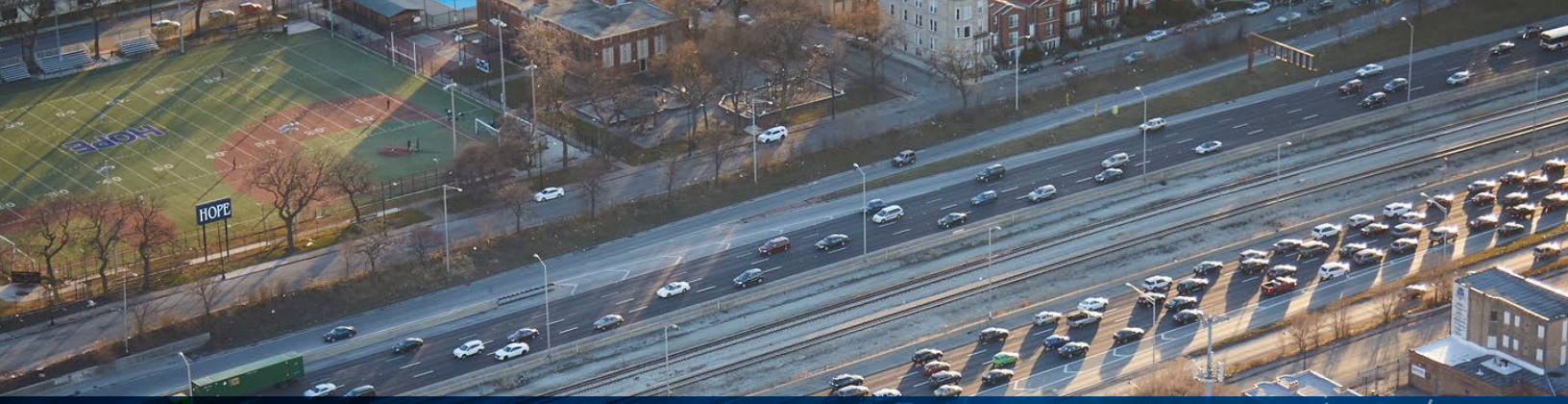


Introduction

Congestion is a visible, daily reminder of the challenges facing the region's transportation system. Whether it's a slow morning commute, a delayed delivery, or a missed transit connection, congestion affects the daily lives of people across the region. Northeastern Illinois consistently ranks among the most congested in the country, a reflection of both the scale of our economy and the growing demands on the region's infrastructure.

Addressing congestion is a shared responsibility among the Chicago Metropolitan Agency for Planning (CMAP) and its many partners. It is essential to improving quality of life and supporting inclusive economic growth. Yet, it is increasingly clear that we cannot rely on traditional approaches alone. Adding lanes and building new roads may be necessary in some contexts, but they are not always the most sustainable or cost-effective solutions — particularly given financial constraints, environmental concerns, safety considerations, and the spatial limitations of existing corridors.

This *Congestion Management Strategy Guidebook* reflects a commitment to a more holistic, forward-looking, and collaborative approach to congestion. It offers a tiered framework for understanding and addressing congestion that prioritizes strategies such as preserving systems, reducing vehicle miles traveled, encouraging mode shift, and improving traffic operations — before considering roadway capacity additions. This structure helps ensure that the region makes the most of its existing assets while supporting context-sensitive solutions that align with local needs and regional priorities.

Just as congestion challenges cross community and jurisdictional boundaries, so must our responses. The tools to address congestion are not held by any one agency alone. They span multiple levels of government, planning disciplines, and community partners. This guidebook is intended to support coordination among transportation implementers and stakeholders throughout the region. It underscores the need to use every tool in our collective toolbox — not just the tools traditionally available to one agency or one mode.

This guidebook is also part of a broader effort to integrate congestion management into regional transportation planning and investment decisions. It is accompanied by a corridor study template and other resources designed to help partners evaluate and implement strategies at the corridor scale, with an emphasis on real-world applicability, consistency, and outcomes.

By building shared understanding and encouraging collaboration, the region can take a more effective and results-oriented approach to congestion — one that reflects the values of northeastern Illinois and meets the needs of its communities today and into the future.

The congestion management process

The congestion management process (CMP) is a federally required element of regional transportation planning in urbanized areas with populations over 200,000. It serves as a systematic approach to identifying, evaluating, and managing congestion using performance data and a full range of available strategies. The CMP helps ensure that regional investments deliver strong outcomes for mobility, reliability, and public value while ensuring alignment with other regional goals.

The CMP consists of eight interrelated steps, each of which contributes to understanding system performance and identifying and assessing strategies. The Federal Highway Administration (FHWA) outlines that eight-step process, also shown in full in **Figure 1**.[1] This *Congestion Management Strategy Guidebook* is focused on fulfilling the sixth step — identify and assess strategies. Details on how CMAP and its partners apply the full CMP framework can be found on the Congestion Management Process webpage.

Figure 1 | Eight-step process model for congestion management

The CMP's role in regional transportation planning

At the regional level, CMAP and its partners may draw on the full, eight-step congestion management process to support decision-making across several major planning and programming efforts:

- **Regional Transportation Plan (RTP) development:** The CMP provides the framework for identifying congestion-related challenges and informing strategies and investments included in the RTP.
- **Project delivery and purpose and need development:** CMP data and strategies inform the development of a project's purpose and need, helping to define the problem based on regional performance and ensuring that proposed solutions are targeted, effective, and aligned with broader goals.
- **Transportation Improvement Program (TIP):** The CMP supports the programming process by ensuring that projects included in the TIP are consistent with congestion management objectives and align with regional priorities.
- **Project evaluation and selection:** CMP strategies help guide the development of performance-based criteria used to prioritize projects for regional funding programs and inclusion in the TIP.
- **Coordination across agencies:** The CMP fosters coordination among implementing agencies by establishing a shared understanding of congestion causes, available tools, and effective solutions that work across jurisdictional boundaries.
- **Corridor studies:** The CMP supports project-level decision-making by promoting the evaluation of alternatives and identifying context-sensitive and cost-effective strategies for reducing congestion.

Ultimately, the CMP ensures that congestion is addressed in a way that supports financial stewardship, improves system performance, and advances shared regional goals. It enables proactive planning using data, collaboration, and a full toolbox of strategies to get the most value from every investment. This *Congestion Management Strategy Guidebook* lays out that toolbox to support the integration of the CMP into the complete planning process.

For reference, the full federal regulations guiding the CMP can be found at 23 CFR 450.322.

Purpose of this guidebook

The purpose of the *Congestion Management Strategy Guidebook* is to provide a framework for addressing traffic congestion across northeastern Illinois. It is intended for transportation agencies, local governments, and planning partners who are responsible for identifying, evaluating, and implementing strategies that reduce congestion and improve the performance of the transportation system.

This guidebook helps decision-makers to:

- Select the most effective and efficient solutions to reduce congestion;
- Align with federal expectations for performance-based planning and project development; and,
- Ensure consistent application of congestion strategies in corridor studies, project scoping, and funding applications.

It offers a tiered strategy framework — the Mobility Solutions Ladder — that encourages users to first consider low-cost, high-impact solutions — such as system preservation, travel demand management, and operational improvements — before exploring new roadway capacity. Each tier is made up of many strategies, and not every strategy will be applicable in every situation. The Mobility Solutions Ladder is a flexible framework, allowing users to consider the range of potentially available strategies across tiers before system expansion. The guidebook also includes details to support local application of the strategies and to ensure coordination across jurisdictions.

How to use this guidebook

While the guidebook is rooted in regional goals and federal planning requirements, it is intended to be practical and adaptable for a range of users.

Whether used to shape a regional policy, scope a corridor-level study, or guide local improvements, this guidebook provides a common language and approach for making informed, cost-effective decisions about how to address congestion — together.

For CMAP and regional partners

CMAP uses this guidebook to inform policy development and project evaluation, and support performance-based decision-making in the RTP, TIP, and other planning efforts. The strategies and framework outlined here help ensure that congestion management is integrated into long-range planning, project selection, and investment programming at the regional level.

The guidebook also supports consistency across regional studies, scenario planning, and funding initiatives — helping CMAP and its partners assess system performance, identify the most efficient solutions, and advance coordinated strategies that align with federal requirements.

For implementing agencies and corridor-level planners

Transportation implementers — including the Illinois Department of Transportation (IDOT), the Illinois Tollway, transit agencies, and county departments of transportation — can use the guidebook to shape corridor studies and project planning. The Mobility Solutions Ladder provides a structured framework for identifying and considering congestion mitigation options, supporting a strategy selection process that reflects best practices and regional goals.

Agencies can also use the CMP corridor study template and supporting tools to ensure consistency in project documentation, enhance transparency in decision-making, and improve competitiveness for state and federal funding.

For municipalities and local planners

Local governments can use the guidebook to better understand the full range of strategies available to manage congestion in their communities — many of which can be implemented without major capital investments. The guidebook can support local transportation planning, inform comprehensive plans, and strengthen collaboration with regional partners on corridor studies or grant applications.

By using the strategy tiers outlined, municipalities can identify options that align with local priorities, make the most of existing infrastructure, and improve access for residents and businesses.

For community organizations, advocacy groups, and the public

Community organizations and advocacy groups can use this guidebook to better understand how transportation decisions are made and what strategies are available to reduce congestion in ways that support safer, more reliable travel. The Mobility Solutions Ladder provides a helpful lens for evaluating proposed projects, advocating for practical improvement, and participating in public processes.

Resident and community leaders can use the guidebook to identify options that may improve traffic conditions, transit access, or travel safety in their neighborhoods. Whether engaging in a corridor study, commenting on a transportation project, or working with local officials, this guidebook can help stakeholders ask informed questions and suggest practical, evidence-based solutions.

For consultants and technical staff

Consultants and engineering teams developing corridor plans, traffic studies, or project scopes for public-sector clients can use the guidebook to ensure alignment with the regional CMP framework. Incorporating these strategies early in project development supports more effective alternatives analysis, improves consistency across projects, and helps meet federal requirements for CMP compliance.

Strategy prioritization and the Mobility Solutions Ladder

Not all congestion solutions are created equal — and not every strategy is the right fit for every situation. Prioritizing strategies ensures that the most effective, efficient, and practical options are considered first, helping agencies make smart use of limited resources while delivering better outcomes for travelers and communities across the region.

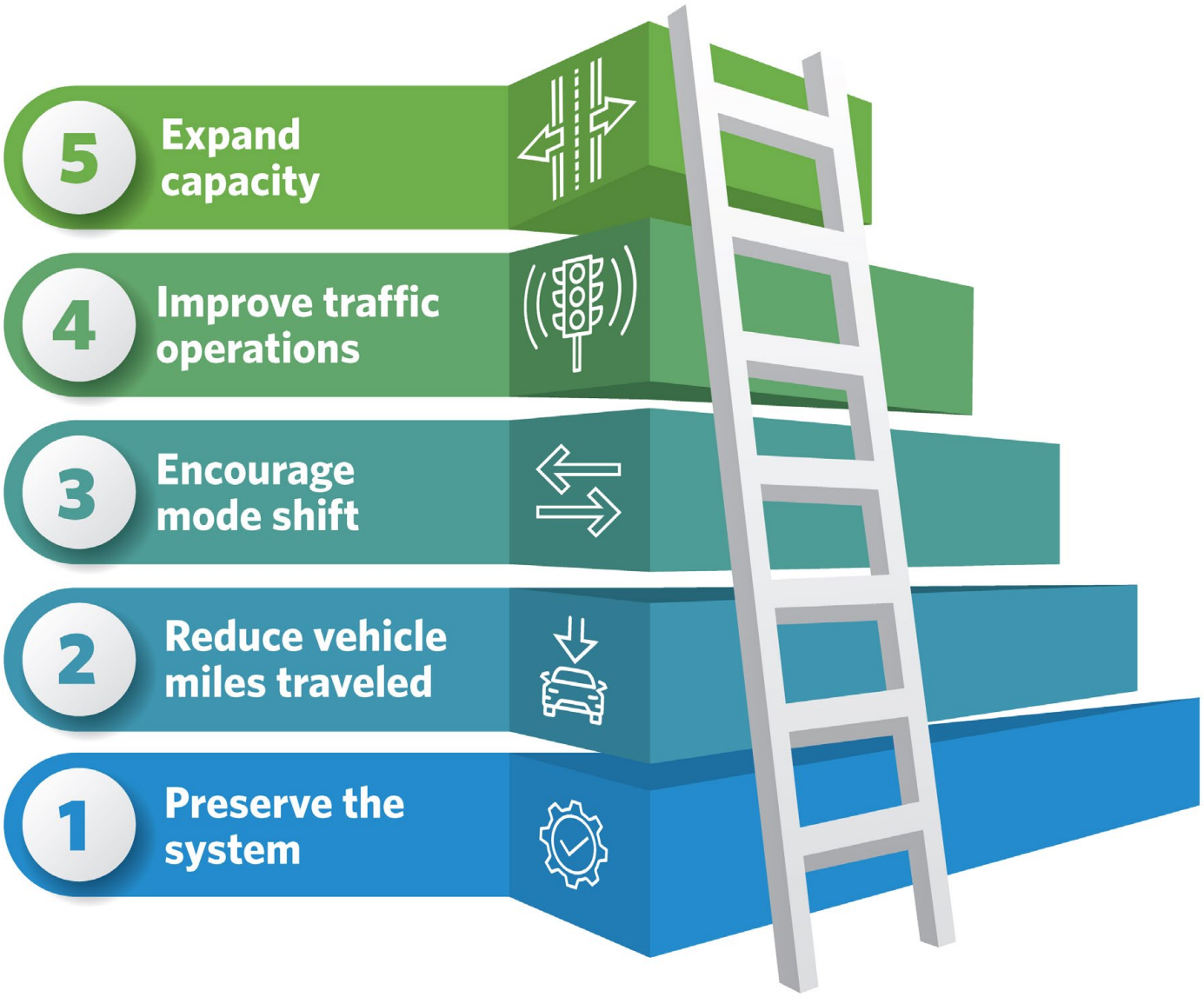
Importantly, application of strategies depends on the types of congestion challenges being addressed and the unique surrounding context. For example, traffic may move slowly in an area surrounded by dense development and near job and amenities centers — a signal that there is high demand for accessing those destinations. In this case, there may be ample opportunities to encourage mode shift to transit and active transportation; congestion may even be providing some safety benefits, by slowing vehicle speeds near areas with high pedestrian activity. Ultimately, approaching congestion management by improving access and increasing overall mobility may be more beneficial than speeding up vehicles.

On the other hand, congestion due to crashes, construction, weather, and special events introduces unexpected delays, making it hard to get around on time. These unpredictable slowdowns affect how reliably people and goods can reach their destinations. In this case, strategies to improve travel time reliability are key, especially where non-auto alternatives are limited. The Mobility Solutions Ladders offers strategies to consider when addressing a range of congestion challenges.

The Mobility Solutions Ladder

The Mobility Solutions Ladder is the foundation of this guidebook. It organizes available strategies into a clear, tiered structure that prioritizes practical, cost-effective solutions before considering more complex or capital-intensive options. It is a flexible, guiding framework that encourages partners to first consider strategies that optimize the existing transportation system and improve travel choices, reserving major roadway capacity additions as a last step when other options are insufficient.

Figure 2 | The Mobility Solutions Ladder for strategy selection



At its core, the Mobility Solutions Ladder is designed to improve mobility — the ability of people and goods to reach destinations reliably, safely, and efficiently. Mobility is not just about how fast traffic moves or how many vehicles a roadway can carry. True mobility reflects the quality of travel options available to people and their easy accessibility to those options, including access to jobs, services, and freight movement, regardless of mode. A system that only accommodates more vehicles without addressing trip quality, travel time reliability, or multimodal access — especially considering the unique causes of congestion and surrounding context — can induce more congestion over time, especially when new roadway capacity encourages longer or more frequent car trips.

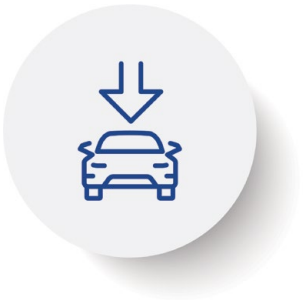
The Mobility Solutions Ladder helps agencies and communities focus on the most effective and fiscally responsible solutions by:

- Maximizing the use of existing infrastructure through maintenance and operational improvements;
- Reducing unnecessary vehicle trips through travel demand reduction strategies and thoughtful land use;
- Improving travel options that make non-driving modes more competitive and accessible;
- Applying smart technologies and traffic management tools to improve flow and safety; and,
- Evaluating roadway capacity additions only when other strategies cannot meet identified needs.

This tiered approach ensures that congestion is addressed with the right tool for the situation — prioritizing right-sized solutions across unique contexts, while providing strong returns on investment, extending the life of existing assets, and supporting the movement of people in goods in ways that benefit the entire region.

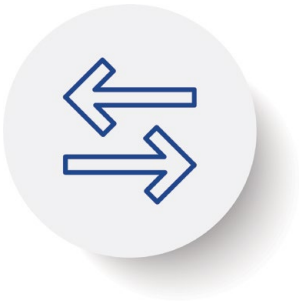
Preserve the system

While not always classified as a traditional congestion management strategy, system preservation plays a foundational role in maintaining reliable mobility. With limited budgets, prioritizing preservation of the existing system first is key, especially before considering investments that expand the system. These strategies focus on keeping existing roads, bridges, bikeways, and transit infrastructure in good working condition. Timely maintenance and asset management reduce the risk of unexpected disruptions — such as lane closures due to pavement failures or signal outages — that can create sudden and severe congestion. By securing sufficient budgets for state of good repair needs and investing in preservation early, agencies can extend the life of infrastructure, improve safety and reliability, and avoid costly emergency repairs that compound congestion.



Reduce vehicle miles traveled

Reducing vehicle miles traveled (VMT) focuses on decreasing the number and length of vehicle trips particularly during times when congestion is most severe. These strategies include supporting land use patterns that shorten travel distances and implementing pricing mechanisms that shift travel to off-peak hours. By directly reducing demand on the roadway network, VMT reduction strategies can provide long-lasting congestion relief without generating new travel that may offset initial performance improvements, while supporting system preservation and encouraging mode shift. In many cases, targeted mode shift strategies will be more beneficial than VMT reduction strategies, to manage congestion while also increasing mobility.

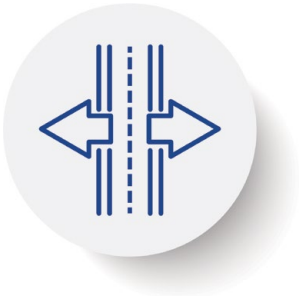


Encourage mode shift

Encouraging mode shift aims to provide people with more mobility options, increasing access to destinations without needing to drive alone. While mode shift strategies contribute to VMT reduction, they are addressed separately in this framework to recognize their unique role in expanding travel options and rebalancing how the system is used. This is especially true for northeastern Illinois, with an expansive regional transit system that sets the foundation for robust mode shift opportunities. Mode shift encourages people to move from single-occupancy vehicle (SOV) trips to alternatives like public transit, biking, walking, or carpooling. Distinguishing mode shift from broader VMT reduction strategies also emphasizes the importance of user choice and access to high-quality transportation alternatives. These strategies make better use of available capacity in other modes and improve overall network efficiency and resilience.

Improve traffic operations

Traffic operations improvements aim to enhance the efficiency, safety, and reliability of existing roadways without expanding physical capacity. This includes strategies like signal timing optimization, improved signage, updated intersection designs, coordinated incident management and other Intelligent Transportation System (ITS) strategies. These strategies are often cost-effective and relatively quick to implement, delivering meaningful benefits for both passenger and freight movement.



Expand capacity

Addressing bottlenecks through roadway capacity additions involves expanding road infrastructure to accommodate traffic that cannot be effectively managed through other means. These strategies may include adding lanes, constructing new interchanges, or building bypass routes, particularly to address freight travel, interregional trips, and safety or operational challenges. Roadway capacity projects should be considered only after other strategies have been found insufficient, given their higher costs and longer implementation timelines.

CMAP and implementer roles to advance the Mobility Solutions Ladder

Effectively managing congestion in northeastern Illinois requires coordination across agencies and alignment between regional planning and local implementation. CMAP plays a central role in shaping the region's long-range vision, conducting policy research, and guiding investment decisions. Implementing agencies — including IDOT, the Illinois Tollway, transit providers, and county and municipal departments of transportation — are responsible for delivering projects, maintaining infrastructure, and operating the transportation system. Their day-to-day decisions are critical to achieving the broader goals outlined in the RTP and carried forward through the CMP.

Advancing each tier of the Mobility Solutions Ladder requires contributions from both CMAP and implementing agencies. Some strategies are directly tied to regional policy and planning efforts, while others depend on agency-level decisions made during project scoping, corridor planning, and capital programming. Table 1 outlines specific actions that CMAP and its partners can take to support each tier of the Mobility Solutions Ladder. Together, these coordinated efforts ensure that congestion management is embedded in all aspects of transportation decision-making — from long-range policy to project delivery.

Table 1 | Mobility Solutions Ladder and regional roles

Mobility Solutions Ladder tier	What can CMAP do?	What can implementers do?
Preserve the system	Fund and support pavement management plans, traffic signal management plans, and asset inventory.	Implement state of good repair monitoring and improvements, preventative maintenance, modernization of asset management, and monitoring systems.
Reduce VMT	Perform regional policy research, analysis, advocacy, technical assistance (e.g., tolling and pricing policies in the region, regional land use planning, transit funding and governance policy development).	Consider transit, land use, and pricing strategies to reduce VMT.
Encourage mode shift		Implement or incorporate transit-supportive strategies in roadway projects (e.g., transit signal priority on key Pace and Chicago Transit Authority [CTA] bus corridors), Complete Streets design elements (e.g., bike lanes/sidewalks), and involve transit agencies in scoping and implementation efforts.
Improve traffic operations	Plan regional ITS initiatives. Prioritize programming of sub-allocated federal funds. Complete corridor plans.	Implement ITS strategies consistent with Regional ITS Architecture and regional planning initiatives.
Expand capacity	Complete corridor plans. Program suballocated federal funds.	Consider implementing foundational elements (e.g., fiber communication infrastructure) as a standard practice during capacity expansion. Implement sufficient operations and travel demand management strategies, including pricing where appropriate, to maintain the long-term mobility benefits of the project.

Key strategies for regional coordination

While the following chapters lay out a broad range of strategies across the tiers of the Mobility Solutions Ladder, this section highlights key congestion management strategies that have been identified by CMAP and its partners to prioritize for regional coordination. These strategies were identified through resource group meetings and stakeholder engagement. They are elevated to the regional scale not only because of their potential to provide significant positive impact on mitigating congestion, but also due to the technical complexity and level of collaboration required across jurisdictions, agencies, and modes. In the chapters below, each of these five strategies is accompanied by additional details, an explanation of benefits, deployment examples, and related resources.

Implementing these strategies at a broader scale allows the region to take a more unified and efficient approach to managing the multimodal transportation network. Regional coordination enhances consistency in how strategies are deployed, improves interoperability between systems, and ensures that tools and technologies work seamlessly across boundaries. It also helps identify opportunities for shared resources — such as data platforms, staffing expertise, technical tools, and communications infrastructure — that individual agencies may not be able to implement alone.

By advancing these strategies regionally, CMAP and its partners can strengthen system performance, promote innovation, and maximize the collective impact of local and corridor-level investments. This collaborative approach reflects the reality that congestion management does not stop at jurisdictional lines — and that the most effective solutions are often those developed and implemented together. Because of this, each of these strategies will be carried into the Regional Transportation Plan for continued development and advancement.

Intelligent Transportation Systems

ITS refers to the use of electronics, communications, and information processing technologies — used individually or in combination — to improve the performance, safety, and reliability of the transportation system.

Traffic incident management

Traffic incident management is a coordinated, multiagency approach to detect, respond to, and clear roadway incidents as safely and efficiently as possible.

Transit operations

Transit operations encompass the day-to-day management of transit services — including route planning, scheduling, vehicle dispatch, and real-time customer information systems. These operational elements directly influence travel time reliability, service frequency, and overall rider experience. These are enhanced by transit-supportive roadway infrastructure like bus lanes, transit signal priority, and queue jumping. In turn, they affect transit ridership, system performance, and public satisfaction.

Land use and design

Land use and design are powerful tools for managing congestion. Decisions about where and how we build directly influence how far people travel, what transportation options are available to them, and how efficiently the transportation system operates.

Pricing

Pricing strategies are among the most effective tools available for managing congestion, improving travel time reliability and supporting a shift toward more efficient travel behavior. By introducing a direct cost for the use of a roadway during peak periods, pricing can reduce unnecessary trips, smooth traffic flow, and encourage carpooling and transit use.

Strategies for congestion management

Strategies at-a-glance

Preserve the system

Reduce VMT

Encourage mode shift

Improve traffic operations

Expand capacity

Strategies to preserve the system

System preservation includes strategies to maintain the existing transportation infrastructure to ensure it operates efficiently and effectively. This tier focuses on activities that prolong the life of transportation assets, enhance their performance, and prevent deterioration. By prioritizing system preservation, the region can reduce maintenance costs, reduce congestion caused by infrastructure failures, and ensure a more reliable transportation network. Although system preservation is not a traditional congestion management strategy, it is a high priority for the region and therefore the first tier of the Mobility Solutions Ladder, encouraging preservation first, before additional investments in the transportation system.

Objectives achieved

The focus area advances system preservation by maintaining existing infrastructure.

Strategies

- Asset identification
- Asset performance monitoring systems
- Lifecycle management (including preventative maintenance)

Throughout the region, partner agencies find it difficult to balance the day-to-day demands of maintaining assets and tend to be more reactive in practice. Implementing system preservation strategies can increase efficiency and effectiveness of existing infrastructure. The following strategies have been identified as priority to advance system preservation initiatives within the region, to better understand, monitor, and maintain their assets. These strategies equip agencies with the tools and processes needed to make informed decisions, plan proactively, and extend the useful life of transportation infrastructure. Through discussions with regional partners, the following strategies were identified as key opportunities to support more effective system preservation.

Asset identification

Asset identification is the process of determining what infrastructure components an agency owns, locations, and characteristics. This includes developing and maintaining an inventory of devices such as dynamic message signs, cameras, sensors, and control systems, which can support ITS strategies.

For example, the CTA maintains an asset inventory structure to support long-term capital planning, maintenance, and investment decision-making.[2] The inventory covers a range of infrastructure (e.g., stations, miles of revenue track, rail yards, rail car shops, substations, and bus garages). The CTA uses this inventory to inform unfunded needs projections, model annual maintenance costs, support capital project prioritization, and identify opportunities to combine projects based on condition and location.

Context | Area of application

Urban, suburban, and rural | Arterials, business districts, expressways, truck routes, intersections, and transit stops

Additional resource

FHWA: Applying Transportation Asset Management to Intelligent Transportation Systems Assets: A Primer[3]

Asset performance monitoring systems

Asset performance monitoring systems are tools or software interfaces used by agencies to track the real-time operational status of assets. These systems can access assets through field devices, to determine whether they are online, log performance data over time, and issue alerts when devices fail or underperform. These systems help measure reliability and contractor accountability, as well as increase maintenance efficiency. Often, each device type or vendor has their own management platforms, making systemwide status assessments cumbersome. Integration of the various asset data into one management system can be valuable at the state and regional levels, for agencies such as IDOT, enabling streamlined management and offering new opportunities for data sharing and coordination. They can also support transit service sustainability by ensuring key assets are functioning to meet scheduled operations and maintain consistent ridership access.

The FHWA Transportation Performance Management (TPM) Toolbox provides resources to help transportation agencies implement data-driven performance management practices. This includes a guidebook with actionable steps, a self-assessment tool to evaluate an agency's maturity, and a resource library with best practices. The TPM is a strategic approach that uses performance data to guide investment and policy decisions aimed at achieving measurable outcomes in areas like safety, mobility, and infrastructure condition.

Context | Area of application
Urban, suburban, and rural | Arterials, business districts, freeways, truck routes, intersections, and transit stops

Additional resource
FHWA: TPM Toolbox[4]

Lifecycle management

Lifecycle management involves planning for the full lifespan of transportation assets, from installation through replacement, to ensure reliable performance and cost-effective operations. Each asset requires proactive planning for replacement before failure to avoid service disruptions and repetitive, costly temporary fixes. Prioritizing maintenance of transportation assets reduces the total cost of keeping those assets in good working condition.

For example, resurfacing programs can address congestion by maintaining and improving road condition while introducing opportunities to integrate other complete streets elements, encouraging mode shift to further manage congestion. For a technology example, highways radios are increasingly being retired and replaced by newer alternatives, such as mobile applications, such as Lake County's 1620 AM, retired in 2024 and replaced by the PASSAGE smartphone app and website.[5]

Context | Area of application
Urban and suburban | Arterials, business districts, freeways, truck routes, intersections, and transit stops

Additional resource
FHWA: Preventive Maintenance[6]

Strategies to reduce vehicle miles traveled

The reduce VMT tier aims to reduce the number and length of vehicle trips. Strategies are focused on reducing single occupancy vehicle (SOV) VMT per capita, recognizing that unique factors such as population growth and freight demand influence VMT beyond these strategies. Strategies within this focus area reduce overall vehicle travel through land-use changes, active transportation demand management, telework, and congestion pricing, especially in peak periods. Some strategies are best implemented at the regional level, while others are suited to corridor or location-specific planning. These strategies often overlap with other focus areas and are most effective when pursued in combination.

It is important to note that strategies that shift travel from SOV to other alternative modes would typically be considered VMT reduction strategies. However, recognizing the critical importance of reducing VMT and encouraging mode shift, CMAP and its partners have elevated mode shift as an independent focus area within the Mobility Solutions Ladder, following this tier. However, in many cases, mode shift strategies may be better suited to a given context, to manage congestion while maintaining and improving mobility.

Objectives achieved

This focus area aims to reduce VMT by increasing fair access to jobs and destinations, expanding travel options, improving reliability for all modes, and supporting optimized freight movement.

Strategies

Bolded strategies are covered in greater depth throughout the chapter, while additional strategies are briefly defined in the table at the end of the chapter.

- **Land use and design**
- **Congestion pricing**
- **Active Transportation Demand Management programs**
- **Telecommuting and flexible work arrangements**
- Even-related local demand management
- Public outreach and marketing
- Carpool and vanpool support
- Trip reduction ordinances
- Parking cash-out policies

Land use and design

Land use and design are powerful tools for managing congestion. Decisions about where and how we build directly influence how far people travel, what transportation options are available, and how efficiently the transportation system operates. While often considered separate from transportation infrastructure, land use policies shape travel demand over the long term — and can reduce the need for costly capacity expansion. By encouraging development patterns that bring homes, jobs, services, and transit closer together, communities can shorten trip distances, support non-driving travel options, and help reduce overall vehicle demand during peak periods. Communities designed to support walking, biking, and the use of transit promote a resilient transportation network and increase the likelihood that people will choose those modes when they are available.

In the context of congestion management, it is essential that land use considerations are not left out of corridor-level discussions. Coordinating with local municipalities, land use authorities, and developers early and often throughout the corridor planning process allows all relevant tools — not just transportation infrastructure — to be considered. This helps ensure that new development or redevelopment complements planned transportation investments and supports long-term performance goals.

Given the influence of land use planning and design on regional congestion, there is an ongoing opportunity to elevate this relationship and promote coordinated, strategic practices. Northeastern Illinois has many notable examples of such coordination, but more could be done to promote compact, mixed-use development near transit. Similarly, there is an opportunity to more closely consider roadway design to improve traffic flow, safety, and multimodal access — including in communities where substantial changes to land use are unlikely and transit is uncompetitive.

Benefits

- **For travelers:** Strategic land use and design places destinations (e.g., employment, education, medical services, etc.) closer together, reducing the need to drive and making walking, biking, and transit more convenient and reliable.

- **For transit operators:** Strategic land use and design increases ridership by placing more people and destinations within walking distance of transit. Higher demand along compact corridors enables more frequent and direct service, improving operational efficiency and better matching supply with consistent, all-day use.

- **For partner agencies:** Strategic land use and design helps agencies optimize system investments by concentrating on infrastructure and services where demand is highest, improving performance and supporting mode shift. This can have a significant impact on reducing congestion and VMT.

Key elements

Key elements of enhancing mobility through land use and design strategies include spatial distribution, density regulation, and transit infrastructure integration. **Key strategies include compact and mixed-use development, transit-oriented development, infill development, connected local streets networks, and even park and ride lots**. Effective land use planning establishes compact patterns that minimize travel distances and promote proximity between housing, jobs, and essential services. This increased density supports the viability of frequent and efficient public transit, especially when paired with development around transit hubs. Additionally, by incorporating mixed-use zoning and reallocating road space for active and shared modes, land use and design strategies can reduce car dependency.[7]

Deployment examples[8]

- **Compact and mixed-use development:** Integrate various land uses within a single area, reducing the need for long vehicle trips. For example, the Village of Franklin Park worked with CMAP to develop a corridor improvement plan for Grand Avenue. The plan sets the stage for renewed development in a mixed-use context. The corridor is served by a Pace bus route and sits amidst a walkable neighborhood, immediately south of the Franklin Park Metra Station.[9]

- **Transit-oriented development:** Concentrates housing and businesses around transit stations in compact, walkable neighborhoods. Northeastern Illinois provides policy support to encourage transit-oriented development (TOD). In 2020, the City of Chicago released the Equitable Transit Oriented Development Policy Plan, establishing equity as a central focus of future TOD efforts.[10] The plan aims to align transit investments with community needs, particularly in areas vulnerable to disinvestment or displacement. The Connected Communities Ordinance, adopted in July 2022, resulted from this policy plan and advances many of the plan's recommendations. Key provisions include flexible parking requirements, density and affordability bonuses, and people-friendly design standards.[11]

In addition, the Regional Transportation Authority (RTA) developed the *Transit-Friendly Communities Guide* with tools to enhance access to transit while supporting residential and commercial development near transit.[12] Its design concepts, fair access, trends, best practices, and implementation resources support more integrated, thoughtful land use and design decisions throughout the region.

- **Infill development:** Focuses growth on vacant or underutilized parcels within existing urban areas, making use of existing infrastructure. For example, new additional dwelling units, including coach houses and in-law apartments, are allowed in five pilot areas across the city of Chicago.[13] These units add additional, lower-cost dwellings to areas that are well served by transit.

- **Connected local streets network:** Provides more routing options for vehicles, bicycles, and pedestrians, reducing the pressure on regional arterials and allowing for more even traffic distribution, in neighborhoods with multiple access points and a grid or modified-grid street network

- **Park and ride lots:** Offer convenient parking near transit stations or carpool corridors, making it easier for travelers to switch from driving to shared or public transportation.

Context | Area of application

Urban, suburban, and rural | Arterials and freeways

Additional resources

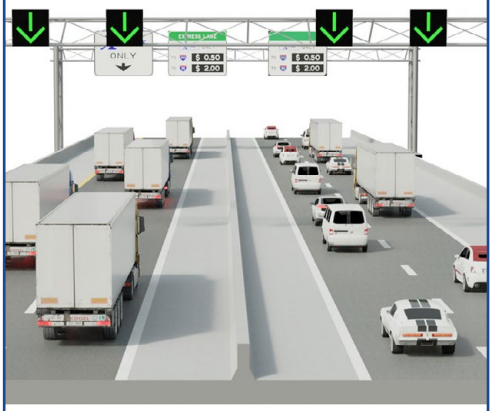
- U.S. Department of Transportation: Land Use as a Strategy for Transportation, Housing, and the Environment[14]
- Chicago Department of Transportation (CDOT): Transportation Demand Management Strategies for Transit-Served Developments[15]

Congestion pricing

Pricing strategies are among the most effective tools available for managing congestion, improving travel time reliability, and supporting a shift toward more efficient travel behavior. By introducing a direct cost for the use of a roadway during peak periods, pricing can reduce unnecessary trips, smooth traffic flow, and encourage carpooling and transit use. When applied strategically, pricing also reinforces the effectiveness of related strategies — such as transit investments, land use planning, and travel demand management — by making alternatives to single-occupancy driving more attractive and competitive. Pricing can serve as a foundational tool that aligns traveler choices with system performance goals.

Although congestion pricing has not yet been implemented in northeastern Illinois, it is a proven strategy in other major metropolitan areas. Cities like London, Stockholm, and New York City have implemented congestion pricing or tolling schedules that maintain higher vehicle throughput by preventing traffic volumes from exceeding roadway capacity.

Additionally, priced managed lane programs have been successful in improving traffic flow and reliability by integrating congestion pricing with strategic lane management. Notable design approaches include high occupancy toll lanes, express toll lanes, truck-only toll lanes, and bus toll lanes.[16] As the region considers future investments and system management strategies, pricing remains a powerful, underused tool that — when paired with reinvestment in transit and travel options — can unlock lasting improvements in congestion, reliability, and overall mobility.



Cars and trucks passing under a gantry on an expressway.

Benefits

- **For travelers:** Reduces delays and improves travel time reliability by maintaining free-flow conditions, therefore making trip planning more predictable. It also incentivizes the use of other travel options to avoid or reduce travel cost, including transit, carpooling, and off-peak travel.

- **For transit operators:** Reduces the impact of congestion on transit operations by increasing speeds, improving transit schedule adherence and reducing variability in travel times, encouraging mode shift.

- **For partner agencies:** Supports transportation system management by optimizing existing roadway capacity and reducing peak-period demand. Pricing may generate revenue that can be reinvested in the transportation system.

Key elements

As noted, pricing remains a future consideration as the region continues to explore and build public and stakeholder consensus. Three prevalent pricing mechanisms are used to manage roadway demand:

- **Variably priced lanes:** Apply tolls to aspects of a transportation asset that fluctuate based on traffic conditions, helping to maintain free-flow conditions.

- **Variable pricing on entire facilities:** Adjust tolls across full roadways or bridges, using pricing to manage overall congestion levels.

- **Cordon charges:** Impose a fee for driving into or within a specific high-demand area, typically to reduce congestion and environmental impacts in dense urban zones.

Key elements to explore include policy and program design, which define where pricing is applied (e.g., express lanes or restricted zones), how pricing rates are adjusted based on time of day or real-time traffic conditions, and how tolls are collected. Technology supports these efforts by eliminating the need for toll booths, instead collecting tolls electronically using transponders, toll tags, and license plate detection with recognition cameras. Enforcement is another element, which is typically implemented through automated systems that identify and process violations. Finally, revenue management ensures pricing programs cover operating costs (e.g., toll collection, enforcement), debt service, and maintenance. Leveraging the existing I-Pass system rather than introducing new systems can ensure a better customer experience and more interoperability.

Deployment examples

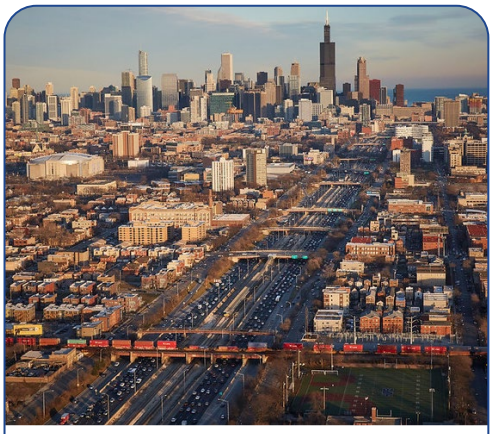
- **London Congestion Charge:** Applies a daily fee to vehicles entering a defined central zone. The program also expanded bus service and dedicated bus lanes. Immediately after implementation, traffic volumes dropped by 30 percent and transit ridership increased. More recent program adjustments include new charges for high-emission vehicles and re-allocated road space to alternative transportation modes (e.g., buses, bikes, and pedestrians).

- **Virginia I-66 Express Lanes:** The "Inside the Beltway" section of I-66 Express Lanes in northern Virginia is a dynamically priced freeway in the peak direction during the peak period. Vehicles with three or more people travel free if they are registered for a special E-ZPass. The tolling also contributes modestly to transit and other nearby transportation improvements (about $22 million in FY 25-26).[17]

- **New York City Congestion Pricing Program:** Charges tolls on vehicles entering Manhattan south of and including 60th Street with tolls that vary by vehicle type, time of day, and payment method. Passenger vehicles and motorcycles are tolled once daily, while trucks and buses are charged per entry. The program operates 24/7 and uses E-ZPass or Tolls by Mail.[18]

- **IDOT I-55 Managed Lane Study:** Assessed the feasibility of implementing two express toll lanes between I-294 and I-90/94 and between I-355 and I-294.[19] The project aimed to address congestion, improve travel time reliability, and support increased transit use within existing infrastructure and funding limits. The phase I, preliminary engineering and environmental study is complete. In May 2023, the Illinois General Assembly adopted a resolution in support of the I-55 Managed Lane Project.[20]

- **I-290 Eisenhower Expressway Record of Decision (ROD):** Marks the official conclusion of the National Environmental Policy Act process for the I-290 Eisenhower Expressway project.[21] With this ROD, the State of Illinois can proceed with the final design, acquisition of necessary right-of-way, and construction. The approved design features a 13-mile long eight-lane divided limited-access roadway with high occupancy toll lanes, high-capacity transit lanes, and express bus service. IDOT is updating the Environmental Impact Statement to consider additional tolling scenarios, and individual components of the I-290 project have been programmed, such as bridge and drainage work.



Aerial view of Chicago showcasing the I-290 Eisenhower Expressway.

Context | Area of application
Urban and suburban | Freeways

Additional resource
FHWA: Congestion Pricing[22]

Active Transportation Demand Management programs

Active Transportation and Demand Management (ATDM) is a real-time, dynamic approach to managing travel demand, traffic flow, and system performance. By leveraging data and technology, the ATDM optimizes roadway capacity, enhances safety, reduces emissions, and promotes sustainable travel choices. It influences traveler decisions across an entire trip, from destination and mode selection to route and lane choice. Unlike static transportation planning, this strategy continuously adapts to changing conditions, prioritizing efficiency over expansion. Advanced technologies that dynamically manage traffic conditions, such as adaptive ramp metering and adaptive traffic signals, are key components of this approach. The three primary categories are active traffic management, active demand management, and active parking management. **These active transportation demand management strategies increase operational efficiency, helping to reduce VMT**. The LA Express Park program provided by LADOT and the Demand-Responsive Parking Pricing program provided by SFMTA are examples of active transportation demand management

Context | Area of application
Urban, suburban, and rural | Arterials and freeways

Additional resource
FHWA: Active Transportation and Demand Management[23]

Telecommuting and flexible work arrangements

Telecommuting and flexible work arrangements reduce VMT by eliminating commute trips on remote workdays. Many telecommuters work remotely one to two days per week, which provides a significant reduction in VMT at a regional scale.[24] Telecommuting, broadly, increases access and connection for businesses, governments, health providers, and other entities. Public agencies can incentivize or require telecommuting and other travel alternatives through travel demand management programs or trip reduction policies. While the total impact of telecommuting varies based on a number of factors, one study of nationwide telecommuting patterns from 2020-2021 found that it may reduce person miles of travel by 9.1 percent for the telecommuter on telecommuting days.[25]

Adoption is influenced by job sector (i.e., jobs capable of being done remotely), employer policies, technological infrastructure, and workplace culture, all of which shape the feasibility and effectiveness of telecommuting as a strategy for reducing VMT. Furthermore, it is becoming more common for remote workspaces to be provided within residential developments. Onsite remote workspaces in apartments or condo buildings offer residents a dedicated area to work without needing to commute, especially where in-unit space is limited.

Context | Area of application
Urban, suburban, and rural | Business districts, and commute sheds

Case Study: Lake County Single Occupancy Vehicle (SOV) Reduction Study

The Lake County Single Occupancy Vehicle (SOV) Reduction Study was developed to identify projects and programs to reduce SOV travel in support of reducing congestion and emissions. The study outlines ways of achieving reductions in SOV travel through commute options programming, rideshare, transit, active transportation, and more.

Telecommuting Encouragements — a strategy featured in the study — emphasizes the opportunity to develop resources to assist employers in setting up telecommuting programs, such as employer surveys and consulting services, in response to the increased prevalence of telecommuting from the COVID-19 pandemic.

Table 2 | Additional strategies to reduce VMT

Strategy	Definition
Event-related local demand management	Strategies that mitigate traffic congestion during major events by promoting alternative travel modes, staggered arrival times, and other demand-management techniques.
Public outreach and marketing	Educational campaigns and informational efforts to promote sustainable transportation choices, reduce SOV usage, and increase awareness of alternative mobility options.
Carpool and vanpool support	Programs and incentives that encourage carpooling and vanpooling to reduce congestion and emissions by increasing vehicle occupancy rates.
Trip reduction ordinances	Municipal regulations that reduce vehicle trips by requiring or encouraging alternative commuting options from large employers or developments, including transit, active transportation, or telecommuting.
Parking cash-out policies	Policies that require medium and large employers to offer non-drivers an amount in transit or bikeshare credits equivalent to the cost of a parking space.

Strategies to encourage mode shift

Mode shift refers to strategies that encourage a change in how people travel, specifically shifting from SOVs to more sustainable and efficient means of travel. Mode shift is a distinct tier within the Mobility Solutions Ladder because of the effectiveness and importance of the transit network in northeastern Illinois. The goal is to reduce congestion and environmental impact by promoting alternatives such as public transit, cycling, and walking.

Strategies under this focus area may include improving infrastructure for alternative modes, implementing incentives or policies that promote public transportation, and integrating various transportation options to provide more seamless travel experiences. Expanding mode shift strategies requires not only enhancing transportation choices but also addressing the barriers that discourage people from adopting them, such as safety concerns, lack of first- and last-mile connectivity, and the perceived convenience of driving. Investments in infrastructure (e.g., protected bike lanes, pedestrian-friendly streets, and high-frequency transit services) can make alternative modes more appealing, while policies (e.g., reduced transit fares) can incentivize behavioral change.

Objectives achieved

This focus area increases fair access to jobs and destinations, expanding travel options, enhancing reliability for all modes, and optimizing freight movement, ultimately contributing to reduced VMT.

Strategies

Bolded strategies are covered in greater depth throughout the chapter, while additional strategies are briefly defined in the table at the end of the chapter.

- **Transit operations**
- **Arteria rapid transit**
- **Transit service frequency and reliability**
- **Bus-on-shoulder lanes on expressways and tollways**
- **Bicycle and pedestrian facilities**
- **Improved connections to intermodal passenger facilities serving external travelers**
- Dynamic transit parking
- Dynamic transit, demand-response transit, Mobility on Demand
- Employer incentives and support
- First-mile/last-mile connectivity
- Multimodal transportation centers, mobility hubs
- Traffic calming for bicycle and pedestrian activity
- Transit fare strategies
- Transit traveler information systems

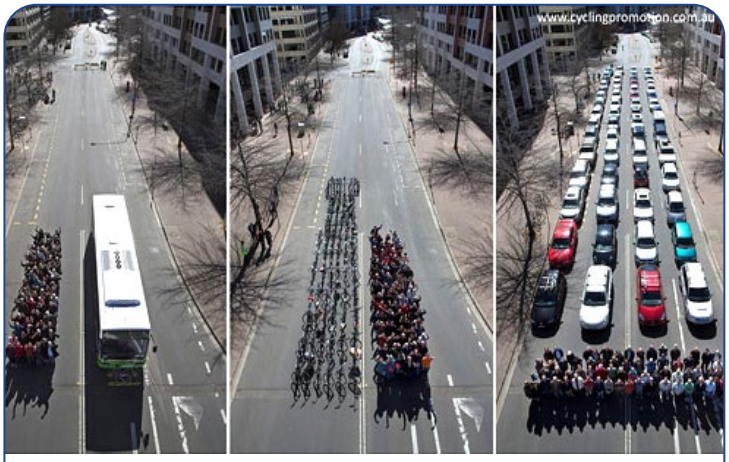
Transit operations

Transit is a vital component of a well-functioning, multimodal transportation system. It provides a reliable travel option for riders across northeastern Illinois and plays a key role in improving overall system performance by reducing demand on roadways, supporting more efficient land use, and enhancing mobility for people without access to a car.

Northeastern Illinois has a robust transit network that has available capacity. Understanding the critical role that transit plays within the wider transportation network, the region has an opportunity to leverage transit operations to enhance existing service to more effectively achieve regional mobility goals.

Transit operations encompass the day-to-day management of transit services including route planning, scheduling, vehicle dispatch, and real-time customer information systems. These operational elements directly influence travel time reliability, service frequency, and overall rider experience. In turn, they affect transit ridership, system performance, and public satisfaction.

Transit agencies work closely with roadway agencies, especially where bus routes operate on shared corridors or intersections. This coordination is essential for implementing transit-priority and access treatments — such as dedicated lanes, transit signal priority, and queue jumps — and for managing construction impacts, detours, and service reliability. Transit-priority infrastructure improves the rider experience and travel time reliability by helping to separate transit service from mixed traffic congestion.



A single bus takes up much less roadway space than a group of cars carrying the same number of people.
Source: Cycling Promotion fund

Effective transit operations are critical to achieve a wide range of transportation goals. When well-managed, transit improves corridor efficiency by moving more people within the same amount of space. It also supports regional efforts to reduce traffic congestion and enhance access to jobs, schools, and essential services.

Strong transit operations support not only the efficiency of the transit network, but also the broader goal of a connected, resilient, and accessible transportation system. By working across jurisdictions and with roadway partners, transit agencies help ensure that multimodal solutions are central to how the region manages congestion and enhances mobility for all travelers.

Benefits

- **For travelers:** Effective operations reduce travel times and improve reliability, making it easier for riders to plan and complete trips. Consistent service also enhances access to jobs, education, healthcare, and other key destinations.

- **For transit operators:** Effective operations support consistent scheduling, reduce delays, and simplify service delivery, allowing operators to respond efficiently to real-time conditions.

- **For partner agencies:** Effective operations enable better use of resources and improve system performance tracking, supporting broader goals in service quality, inclusive growth, and long-term planning.

Key elements

Key elements of coordinated transit operation activities include schedule planning, vehicle dispatch, and service monitoring to ensure routes are operating reliably. These elements are often supported by integrated fare systems, real-time communication tools, and trip planning platforms.

Agencies responsible for transit operations in the region include:

- **CTA:** operating bus and rail services in the city of Chicago and several surrounding suburbs
- **Metra:** managing commuter rail connecting Chicago with surrounding suburbs
- **Pace Suburban Bus:** delivering suburban bus, paratransit, and vanpool services
- **Local partner transit agencies**

The RTA provides oversight, funding coordination, and long-range planning services. IDOT and the Illinois Tollway support infrastructure investments, pedestrian access treatments, and policies with implications for transit operations. Local governments provide support through service partnerships, pilot initiatives, and more.

Deployment examples

- **Real-time traveler information:** Provides real-time updates on transit vehicle arrivals, service disruptions, and schedule changes through a variety of platforms (e.g., smartphone apps, websites, and digital signage). This information improves trip planning, reduces uncertainty, and supports more reliable and efficient transit operations.

- **Transit Signal Priority (TSP):** Improves transit travel times and reliability by modifying signal timing to reduce delays at intersections. TSP systems can be implemented in a variety of ways. Generally, approaching transit vehicles send a request for priority and traffic signals are adjusted to extend or grant early green signal time to allow the vehicle to traverse the intersection. TSP improves travel time and schedule consistency and enhances overall transit service efficiency. Implementing TSP regionally can be complex due to differences in signal infrastructure, detection technologies, and communication systems across jurisdictions. Coordinated planning is key to ensuring interoperability along transit routes that span multiple operating jurisdictions.[26]

  The region's unified TSP program supports both fixed-route and rapid bus services across 500 intersections in multiple jurisdictions.[27] In addition to improving travel times, the program enhances signal coordination and supports future scalability by standardizing technology across multiple agencies and corridors.

- **Bus only lanes and queue jumps:** Provide road space exclusively for transit vehicles, allowing them to bypass general traffic and maintain more consistent travel times. These lanes can be implemented along curbs, medians, or as contraflow lanes (i.e., bus lane in the opposite direction a one-way street), and require careful design to address potential traffic issues such as right turns, passenger access, and enforcement so they remain unobstructed.[28] Bus-only lanes increase transit reliability and encourage increased ridership. Chicago Transit Authority's Loop Link program has provided meaningful operational improvements through application of these strategies.

  Queue jumps at dedicated signals activate a few seconds before the general traffic signal, displayed as a white vertical bar, helping to maintain bus schedules by reducing delays at bottleneck locations.

- **Transportation demand management transit incentives:** Encourage travelers to shift from SOVs to transit by offering financial, convenience-based, or gamified rewards. These incentives are delivered through employer programs or regional partnerships and can include free or subsidized transit passes, parking cash-out programs, and point-based rewards for using transit.[29]

The Illinois Transportation Benefits Program Act requires employers with over 50 full-time employees near fixed-route transit in the RTA region to offer pre-tax payroll deductions.[30] The Ventra Transit Benefit Program allows employees to use up to $300 per month in pre-tax income for transit fares, helping reduce congestion and emissions while improving access to work.[31]

- **Better Streets for Buses Plan:** The CTA and CDOT launched this plan to enhance bus service across 17 key corridors. This plan includes dedicated bus lanes, upgraded bus stops, and bus priority traffic signals and provides a toolbox to identify solutions. Guided by community feedback, it serves as a comprehensive framework for ongoing bus infrastructure improvements.[32]

Arterial Rapid Transit

Arterial Rapid Transit (ART) is a high-frequency bus service designed to provide consistent, all-day mobility along arterial roads. Unlike traditional bus routes, ART enhances performance with targeted infrastructure improvements, such as queue jump lanes that allow buses to bypass congestion at busy intersections and traffic signal adjustments that give buses priority passage.

One example is Pace's Pulse program, which delivers ART service in the Chicago region with enhancements like level-boarding platforms, heated shelters, real-time arrival signage, and bike-friendly amenities.[33] The service runs along corridors that are well-suited for frequent transit due to their high residential densities and proximity to a significant number of jobs within a ¼-mile radius of all Pulse routes.

Context | Area of application

Urban and suburban | Arterials, dedicated lanes, and transit stops

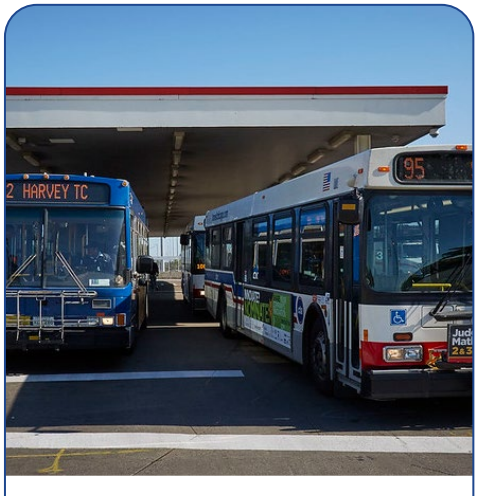
Additional resources

- FTA: Bus Rapid Transit[34]
- MARTA: Connect Clifton ART[35]

Transit service frequency and reliability

Improving transit frequency reduces wait times, shortens overall travel times, and improves accessibility, making public transportation a more practical alternative to driving. Improving transit reliability supports these outcomes by reducing variability in travel time, headways, and passenger wait times. Reliability is shaped by consistent vehicle arrivals, predictable schedules, and dependable service across the network. Strategies to improve reliability include optimizing operations, maintaining schedules, and prioritizing transit in traffic flow.

The CTA introduced the Frequent Network program to provide a 10-minute or better service on 20 key bus routes throughout the city.[36] The program is designed to enhance public transportation accessibility and reliability, making it a more viable option for daily commutes and contributing to a fairer and more sustainable future.



A CTA bus and Pace bus at a bus station.

Context | Area of application

Urban and freeways

Additional resources

- California Air Pollution Control Officers Association: Increase Transit Service Frequency[37]
- Modelling Reliability of Transportation Systems to Reduce Traffic Congestion[38]

Bus-on-shoulder lanes on expressways and tollways

Bus-on-shoulder lanes are part-time shoulder use strategies that allow buses to operate on the shoulders of expressways or tollways when mainline traffic slows due to congestion. These lanes are typically activated when travel speeds drop below a set threshold, enabling buses to bypass traffic queues and maintain schedule reliability.

Pace partnered with IDOT, the Illinois Tollway, the Illinois State Police, and the RTA to leverage existing expressway and tollway shoulders to allow buses to bypass traffic congestion. Currently, five Pace routes use the I-55 shoulder and two use the I-94 shoulder. Since the Expressway-Based Routes program's inception, ridership on the I-55 corridor has increased by over 700 percent, and on-time performance has improved from under 70 percent to over 90 percent. Bus-on-shoulder operations on IDOT expressways permit buses to use the shoulder under specific speed and safety conditions.[39]

Context | Area of application
Urban and suburban | Arterials and freeways

Additional resource
FHWA: Use of Freeway Shoulders for Travel[40]

Bicycle and pedestrian facilities and services

Bicycle and pedestrian facilities are dedicated infrastructure — such as sidewalks, crosswalks, bike lanes, greenways, and shared-use paths — that support travel without a motor vehicle. These facilities reduce congestion by enabling people to complete short-distance trips without relying on cars, which helps shift demand away from overloaded roadways. When designed for safety and connectivity, they can increase walking and biking rates, improve access to transit, and support more efficient use of space within the transportation network. Programs that focus on safer routes to schools, transit, and key destinations further encourage non-motorized travel. By reducing the number of short vehicle trips, especially during peak hours, these strategies help manage traffic volumes and improve overall system performance.

Regional partners provide significant support for bicycle and pedestrian strategies and deployment resources. For example, CDOT maintains the Complete Streets Program which aims to build a connected bike network that serves key destinations across Chicago. With an expanding network of close to 500 miles of bikeways, the program focuses on fair access by prioritizing investment on the South and West sides. Most new projects include protected bike lanes and neighborhood greenways, designed to create safer, more comfortable routes for people biking.[41, 42] Divvy, Chicago's bike-sharing system, further supports bicycle and pedestrian services by offering a convenient, low-emission way for residents and visitors to get around. This approach is applied across multiple programs, including traffic safety, bikeways, pedestrian infrastructure, and transit enhancements. Together, all these efforts support a multimodal transportation system that makes walking, biking, rolling, and riding transit safer and more accessible, while still accommodating drivers.

Case study: Divvy Bikes

Divvy is a bike share system that provides rental bikes, e-bikes, and e-scooters with over 600 public racks and posts spread throughout the City of Chicago and surrounding areas. Bike share programs like Divvy allow travelers to more easily choose active transportation over a personal vehicle, especially for short trips and for connecting to transit stops. Paired with a growing bike network, bike share programs encourage mode shift by increasing access to bikes and scooters while reducing reliance on vehicles for all trips.

Examples of strategies that support bicyclists and pedestrians include developer requirements to provide both private and public bike parking, ensuring secure, accessible, and visible facilities for residents, visitors, and patrons with public racks located in the right-of-way, or in 24/7-accessible areas. Policies that accommodate bicycles on transit make commuting by bicycle a more viable and convenient option for travelers. Streetscape and roadway improvements can be used to upgrade the bikeway network, including raised or buffered lanes where possible. Dedicated bike fleets — or bike libraries — offer additional flexibility, especially for temporary users or large campuses.

People biking along a bike path crossing over a bridge.

Context | Area of application
Urban and suburban | Business districts

Additional resource
FHWA: Pedestrian and Bicycle Funding Opportunities[43]

Improved connections to intermodal passenger facilities serving external travelers

Intermodal passenger facilities serve as key hubs where multiple transportation modes intersect, allowing travelers to seamlessly transfer between different systems. These improvements typically involve expanding transit services, improving infrastructure, and leveraging smart mobility solutions to provide more reliable and convenient access to major airports, train stations, and bus terminals.

Federal and state programs provide crucial funding for intermodal connectivity projects. These initiatives support enhancements to transit systems, station upgrades, and multimodal integration, making it easier for passengers to move between different transport options. The Chicago region is a major intermodal hub, with key projects aimed at strengthening connectivity for passenger travel. For example, modernization efforts at Chicago Union Station, including upgraded Metra and Amtrak facilities, are designed to enhance passenger experience and increase service efficiency. Collaboration between various entities including IDOT, regional transit agencies, and private stakeholders has been instrumental in advancing these projects.

Context | Area of application
Urban and suburban | Arterials, business districts, freeways, and transit stops

Table 3 | Additional strategies to encourage mode shift

Strategy	Definition
Dynamic transit parking	Parking solutions that adjust to fluctuations in transit demand, ensuring availability and encouraging park-and-ride activities.
Dynamic transit, demand-response transit, Mobility on Demand	Flexible transit services that adjust routes and schedules based on real-time demand, improving accessibility and efficiency. Transportation services that integrate various travel modes, offering flexible, on-demand options for urban mobility.
Employer incentives and support	Workplace programs that encourage employees to choose alternative commuting options.
First-mile/last-mile connectivity	Solutions such as bike-sharing, micro transit, and improved pedestrian infrastructure that enhance access to major transit hubs.
Multimodal transportation centers, mobility hubs	Integrated hubs that connect different transportation modes, such as buses, trains, and bike-sharing, providing seamless travel options.
Traffic calming for bicycle and pedestrian activity	Measures such as speed humps, curb extensions, and pedestrian crossings that enhance safety and encourage active transportation.
Transit fare strategies	Adjustments to fare structures, subsidies, or incentives that encourage greater public transit use.
Transit traveler information systems	Real-time data systems that provide transit users with accurate arrival times, route options, and service alerts.

Strategies to improve traffic operations

Traffic operations improvements refer to strategies aimed at enhancing the efficiency and effectiveness of the existing transportation network. Traffic operations improvements maximize the performance of current infrastructure, minimize congestion, and improve mobility and safety for all travelers.

Objectives achieved

This focus area supports a more connected, resilient, and efficient transportation system by increasing fair access to jobs and destinations, expanding travel choices, improving reliability, enhancing freight movement, strengthening system adaptability, and leveraging intelligent transportation technologies.

Strategies

Bolded strategies are covered in greater depth throughout the chapter, while additional strategies are briefly defined in the table at the end of the chapter.

- **Intelligent Transportation Systems and communications**
- **Traffic incident management**
- **Traffic signal improvements, including centralized communications**
- **Adaptive ramp meters**
- **Real-time traveler information**
- **Transportation management centers**
- **Transit signal priority**
- **Access management**
- **Delivery management strategies, including truck parking, overnight deliveries, and curb management**
- **Integrated Corridor Management (ICM)**
- Connected and automated vehicles
- Dynamic rerouting
- Event patron incentives for peak spreading
- Event-related traffic management
- Freight signal priority
- Intersection modifications
- Project coordination and scheduling
- Queue warning
- Real-time system monitoring and management information
- Road weather control and treatment strategies
- Transit queue jump lanes at signalized intersections
- Truck lane management
- Variable/dynamic lane use control
- Variable/dynamic speed limits and speed management
- Work zone demand and speed management

Traffic operational improvements have the potential to offer significant return on investment particularly when compared to traditional capacity expansion. Furthermore, with advancements in technology, these returns have the potential to continue to grow. Traffic management agencies within northeastern Illinois have experienced challenges implementing advanced operational strategies, leaving unrealized mobility and safety benefits. The region has a substantial opportunity to address these challenges and leverage these types of strategies to manage congestion now and into the future.

Intelligent Transportation Systems and communications

ITS refers to the use of electronics, communications, and information processing technologies — used individually or in combination — to improve the performance, safety, and reliability of the transportation system. As defined in federal regulation (23 CFR 940), ITS enhances how agencies operate and manage infrastructure in real time, allowing them to monitor conditions, optimize traffic flow, support incident response, and communicate directly with travelers.

ITS strategies offer significant benefits and consistently high returns on investment. Even so, regional programing and funding for ITS projects, available technical workforce, and foundational infrastructure have continued to be a challenge where policy and processes are rooted in traditional practices. As these practices evolve to support more advanced solutions, northeastern Illinois has an opportunity to leverage ITS to realize significant gains, particularly throughout the arterial network.

A rendering of ITS communications between a center and vehicles.

Benefits

- **For travelers:** Enables proactive traffic management strategies that reduce congestion-related emissions, improve travel time reliability, and enhance roadway safety.
- **For transit operators:** Supports on-time performance, lower fuel and labor costs, and better asset utilization.
- **For partner agencies:** Advances policy objectives (e.g., mode shift, emissions reduction, and fair access) while saving costs due to streamlined operations and coordination, as well as data-driven investment.

Key elements

Communication networks are the backbone of ITS deployments, facilitating real-time data exchanges between field devices, central systems, and operators. Many agencies leverage a hybrid approach to communication, combining fiber optic cable, wireless, and lease-line technologies. Regardless of type, communications infrastructure supports centrally controlled systems and data sharing (e.g., pushing video and data to partner agencies).

Deployment examples

- **Detection technologies:** Identify and transmit real-time data to operators collected via cameras and sensors. Types of data collected may include traffic information (e.g., count, classification, speed, incidents, wrong direction) and weather information (e.g., flooding, road surface state, temperature).
- **Adaptive traffic signal timing:** Adjusts regular traffic signal timing to adapt to real-time conditions. Detection in the field shares data with a software system that analyzes real-time conditions and adjusts the phasing and timing along a corridor to optimize traffic flow.
- **Traffic signal coordination:** Improves traffic flow by optimizing traffic signal timing along major corridors. For example, the Lake County Division of Transportation improved traffic flow through the implementation of Signal Coordination and Timing studies, which minimized stops and delays and thereby improved travel times and reduced fuel consumption and emissions.[44]

- **Video:** Provides situational awareness and monitoring of traffic conditions. Cameras may deliver clear, high-definition images that enable operators to view real-time conditions. They support operators and emergency responders with the detection, confirmation, and management of incidents, work zones, special events, and weather events (e.g., snow/ice removal).

- **Dynamic message signs:** Provide real-time information to travelers about incidents, travel times, detours, or special events. These are a common way for agencies to communicate current conditions and important messages to travelers and are commonly used with managed lane deployments to enhance communication and instruction.

- **Connected vehicles:** Uses short-range radio, cellular, or third-party cellular signals for the exchange of safety messages between vehicles and roadway infrastructure. Equipped with transceivers, vehicles and roadside units communicate real-time information such as road conditions or signal timing to enhance driver awareness and safety.

Traffic incident management

Traffic Incident Management (TIM) is a coordinated, multiagency approach to detect, respond to, and clear roadway incidents as safely and efficiently as possible. By bringing together transportation agencies, law enforcement, fire and emergency medical services, towing and recovery providers, emergency dispatchers, and public works personnel, TIM ensures that all responders are working from the same playbook to minimize delays, reduce secondary crashes, and protect the safety of both the public and emergency personnel. Inter-agency coordination can provide meaningful congestion mitigation on various networks and in different contexts, including expressways, arterials, and in the urban core

Incidents are a top cause of traffic congestion within northeastern Illinois — from major urban expressways to rural and local streets where even minor incidents can cause significant traffic disruptions. The region experiences substantial non-recurrent delay due to long incident durations, sometimes taking hours to clear vehicles and debris to regain traffic flow.[45] TIM programs have demonstrated measurable improvements in incident clearance times, reductions in secondary crashes, and significant savings in delay-related costs — and the region has an opportunity to better leverage TIM practices to achieve its safety and mobility goals.

Case study: IDOT's Emergency Traffic Patrol program

IDOT's Emergency Traffic Patrol (ETP) program dispatches emergency vehicles that can restore normal expressway traffic flow after crashes have occurred. The ETP workers, also known as Minutemen, patrol expressways and are dispatched to reported crashes, hazardous debris, or other traffic disruptions.

The ETP improves response times to congestion-causing crashes. With a dedicated response team focused on restoring traffic flow, this program increases the reliability of the transportation system by reducing the severity of slowdowns, helping people get where they need to go on time.

Benefits

- **For travelers:** Reduces delays and improves travel time reliability by quickly clearing incidents and minimizing the risk of secondary collisions.

- **For traffic operators:** Increases operational efficiency by streamlining multiagency coordination and integrating systems to implement operational responses needed to manage roadway incidents. It supports performance goals through measurable outcomes in safety, mobility, and time savings.

- **For transit operators:** Restores normal traffic conditions faster, reducing service delays and route detours for transit vehicles. Coordinated incident response also improves communication with dispatch and enables better decision-making during disruptions.

Key elements

TIM programs can begin with minimal investment and expand over time as relationships, systems, and data-sharing capabilities mature. Even modest efforts — such as establishing communication protocols or coordinating detour routes — can lead to meaningful improvements.

TIM relies on three program elements that guide planning and operations: strategic, tactical, and support. Strategic elements provide the organizational foundation for TIM, including program governance, multiagency coordination frameworks, and performance management tools, ensuring agencies plan collaboratively, maintain consistent policies, and evaluate program effectiveness. Tactical elements focus on field-level practices and resources that enable effective incident response, including standard operating procedures, responder roles, on-scene traffic control protocols, and the deployment of specialized equipment such as arrow boards or quick clearance vehicles. Support elements enable seamless communication and information exchange among TIM partners, including interoperable communications systems, shared data platforms, real-time video feeds, and traveler information tools that inform the public.[46]

Deployment examples

- **Towing and recovery programs:** Remove inoperable or damaged vehicles to restore roadway capacity after an incident. These programs rely on established coordination and agreements that ensure operator and relevant equipment are dispatched correctly and efficiently. Incentive based contracts can also encourage enhanced performance, including quicker response and clearance times.

  For example, IDOT's Emergency Traffic Patrol, also referred to as Minutemen, is a local towing and recovering program where state personnel quickly respond to incidents to help maintain clear travel lanes, providing coverage 24/7 across 1,037 lane miles on 7 major expressways. The Minutemen assist motorists by relocating inoperable vehicles, changing flat tires, and more.[47]

- **Detection and situational awareness:** Integrates monitoring systems, early-warning mechanisms, and real-time information to quickly identify incidents and facilitate a coordinated response. Operators rely on a network of monitoring and detection devices (e.g., sensors, cameras), weather forecasting systems, and interagency data sharing to identify and verify incidents quicker and provide more information to first responders.[48] Automated Incident Detection and Automated Video Detection are examples of tools that can be used to provide timely and accurate information about disruptions.[49]

- **Collaboration tools:** Support enhanced coordination amongst agencies with data and video sharing. For example, the award-winning TIMS2GO Mobile Incident Response Tool was developed by the Illinois Tollway as a web-based application that gives traffic managers real-time access to incident data, live video, and response updates. By enabling quick coordination with first responders and maintenance crews, TIMS2GO helps enhance safety, streamline response efforts, and improve public communication about road conditions and delays.

- **Lane management:** Allows highway operators to remotely indicate open and closed lanes in the TIM context. Some systems also open shoulder lanes to allow vehicles to bypass an incident. This type of lane management, known as the SmartRoad system, is currently deployed by the Illinois Tollway on I-90 and will also soon be fully operational on I-294.

- **TIM training programs:** Improve responder safety at incidents and reduce fatalities. For example, IDOT, the Illinois Center for Transportation, and Southern Illinois University Edwardsville developed and offer a nationally recognized program, with training that promotes better communication, coordination, and cooperation among emergency responders statewide

Traffic signal improvements, including centralized communications

Traffic signal improvements enhance operation, coordination, and responsiveness — often using centralized communications — to reduce delays, increase throughput, and adapt to changing traffic conditions. Connecting individual signals to a central system or traffic management center allows agencies to monitor performance, detect issues, and update signal timing remotely in near real time. This facilitates better coordination across intersections, quicker responses to traffic fluctuations, and more efficient signal plan updates — supporting active signal management that increases throughput by reducing intersection delays, minimizing split failures, and better managing turning movements. Furthermore, remote connectivity to traffic signals allows for more efficient maintenance, saving agency staff time and resources.

Regional coordination of traffic signal management is one of the most cost-effective methods to enhance operational efficiency and has demonstrated high benefit-to-cost ratios.[50]

Case study: DuPage County Central Signal System

DuPage County's Central Signal System uses pan-tilt-zoom cameras to monitor intersections and control traffic signals throughout the county. The system collects traffic volume and flow data, allowing for optimized signal timing. By identifying chokepoints, enabling remote monitoring and signal changing, and reducing response times, DuPage County is keeping road users moving even as traffic conditions change.

Context | Area of application

Urban and suburban | Arterials, business districts, freeways, truck routes, and intersections

Additional resources

- FHWA: Regional Traffic Signal Operations Programs Overview [51]
- FHWA: Traffic Signal Program Handbook[52]

Adaptive ramp meters

Ramp metering was first introduced in the U.S. on Chicago's Eisenhower Expressway in 1963, when traffic officers manually released vehicles from on-ramps. This early form of ramp control marked the beginning of metering strategies aimed at improving expressway flow. Advancing this strategy, adaptive ramp metering aims to improve freeway flow by regulating how vehicles enter from on-ramps based on real-time traffic conditions. Adaptive systems adjust metering rates dynamically to maintain safe spacing and minimize disruptions to mainline traffic. These systems can deactivate during periods of very low or very high congestion, optimizing their effectiveness. Adaptive ramp metering also considers conditions on adjacent arterial roads, balancing freeway efficiency with potential impacts on surface street traffic.

By smoothing merge operations and reducing conflict points, this approach can improve travel time reliability and enhance safety without requiring additional infrastructure. Building on these benefits, adaptive ramp metering can also serve as a foundation for broader corridorwide traffic management strategies. As a result of integrating data from multiple ramp locations, adaptive systems can coordinate metering rates across a network to maximize expressway throughput and better utilize available ramp storage. This systemwide coordination helps prevent localized backups from spilling onto surface streets and enables more efficient responses to changing traffic patterns.

Context | Area of application

Urban and suburban | Freeways

Additional resource

National Operations Center of Excellence: Adaptive Ramp Metering[53]

Real-time traveler information

Real-time traveler information is a strategy that provides current traffic and transit conditions to help individuals make informed decisions. By offering timely updates on incidents, work zones, road closures, and service changes, these systems help travelers avoid delays, improve route choices, and reduce uncertainty. Information is delivered through multiple channels, including dynamic message signs, 511 phone services, websites, in-vehicle systems, and common mapping apps. Effective traveler information systems support both pre-trip planning and mid-route adjustments. Additionally, incident management persists as a gap, with most current systems only providing advance information on expressways. When integrated with open data exchange standards, traveler information systems can improve coordination across jurisdictions and between public and private sectors.

Context | Area of application
Urban, suburban, rural | Arterials, freeways, and transit stops

Additional resource
FHWA: Real Time Traveler Information[54]

Transportation management centers

A transportation management center (TMC) serves as the operational hub for managing and monitoring expressway and broader surface transportation systems. It is where data from roadway sensors, cameras, and other sources are collected, processed, and transformed into actionable information. This information is used by the TMC staff to assess traffic conditions, respond to incidents, and implement control strategies such as signal timing adjustments, ramp metering, or lane management. TMCs also serve as coordination points for interagency collaboration, enabling real-time communication and joint response to traffic disruptions. In many regions, the TMC supports not only expressway operations but also the performance of the entire transportation network, bringing together multiple jurisdictions, modes, and service providers. While TMCs have always provided value, the capabilities and potential safety and mobility benefits that can be realized continue to increase with advances in ITS technologies.

The Illinois Tollway Traffic Operations Center and the IDOT Operations and Communications Center are the region's largest TMCs, providing expressway management (including managed lane systems), incident response coordination, and coordination with local partners. Local partners such as Lake County leverage TMCs to manage, operate, and maintain their local surface street transportation networks.

Context | Area of application
Urban and suburban | Arterials and freeways

Additional resource
FHWA: Transportation Management Centers[55]

Case study: Lake County Transportation Management Center

The Lake County Transportation Management Center (TMC) centralizes operations resources, network routing equipment, and system information. Trained traffic technicians view video feeds, weather information, dispatch summaries, traffic signal network information, and real-time network congestion reports to determine appropriate responses to congestion, weather delays, construction, equipment malfunctions, and crashes. The TMC also receives event notices from PASSAGE, or the "Program for Arterial Signal Synchronization and TrAvel GuidancE," which is an Intelligent Transportation System designed to provide motorists real time traffic congestion information due to crashes and construction events.

The TMC and PASSAGE programs help road operators manage congestion in real-time and empower road users to make informed decisions about their travel choices.

Transit signal priority

TSP adjusts traffic signal timing to reduce delays for transit vehicles at signalized intersections. It works by extending green signal phases or shortening red signal phases when a transit vehicle is approaching, helping to improve travel time and schedule reliability. TSP is applicable to buses, light rail, and streetcars operating in mixed traffic and can be configured with conditional rules based on factors like schedule adherence, vehicle occupancy, or congestion levels. Implementing TSP requires coordination between transit and traffic agencies, using various architectures which heighten the need for regional coordination to maintain interoperability. Field implementations use onboard and roadside technologies to detect vehicles and communicate with signal systems. TSP is typically effective in corridors where signal delay is a primary source of transit delay, such as high-frequency routes with closely spaced signals. Furthermore, TSP can be even more effective when schedules are adjusted to reduce schedule slack, improving travel times in addition to reliability.

In the region, TSP is deployed to improve bus travel times and reliability using proven technology. The RTA uses vehicle location and wireless communication to adjust signal timing, giving late buses extra green time and reducing delays. The system is being implemented across 13 priority corridors in coordination with the CTA, Pace, CDOT, IDOT, and other local agencies.

Context | Area of application

Urban and suburban | Business districts and transit stops

Additional resources

- CMAP Indicators: Number of Traffic Signals with Transit Priority and/or Queue Jumping[56]
- RTA: Transit Signal Priority[57]

Access management

Access management is the control of where and how vehicles enter or exit roadways to reduce conflict points and maintain roadway efficiency. It includes techniques such as additional spacing between intersections and driveways, additional dedicated left- and right-turn lanes, raised medians that limit turning movements, and right-of-way planning. An innovative example includes left turn traffic calming, which uses curbs, bollards, and speed bumps to encourage safer turning angles and slower speeds. These strategies reduce crash risks by limiting where vehicles conflict and improve traffic flow by minimizing disruptions caused by turning or merging vehicles. In addition to design-based strategies, effective access management relies on a strong foundation of planning, regulation, and stakeholder coordination. This includes the use of local and state policies, enforceable codes, land development regulations, and development review processes to guide where and how access is granted.

Challenges include the perception that access controls may harm business or that they are less valuable due to their low-cost nature. Addressing these concerns through education, case studies, and targeted outreach to business associations can build support and demonstrate that well-managed access enhances safety, supports economic vitality, and preserves the function of transportation networks. Proactive access management means equipping planners, permitting authorities, and transportation agencies with practical tools, training, and best practices to apply access management principles effectively and consistently.

Context | Area of application

Urban and suburban | Arterials

Additional resource

FHWA: What is Access Management?[58]

Delivery management strategies, including truck parking, overnight deliveries, and curb management

Effective delivery management strategies are critical for managing urban freight demand and minimizing conflicts with other road users. These strategies include adequate truck parking, overnight deliveries to reduce peak-hour congestion, and curb management policies to better allocate limited space for loading and unloading. Curb management has become an increasingly important tool as cities adapt to shifting transportation patterns and growing competition for curb space.

Key tactics include expanded and widened sidewalks, curb extensions, and raised crosswalks and intersections to calm traffic and improve visibility at crossings. Technology-based strategies include dynamic pricing, smart phone applications and reservations, parking detection and availability systems, and dynamic wayfinding systems.[59, 60]

Context | Area of application
Urban and suburban | Parking lots, truck routes, and urban curbs

Additional resource
Essential ITS: Parking and Curb Management[61]

Integrated Corridor Management (ICM)

ICM combines active management and systemwide integration to improve corridor performance. Active management involves continuously monitoring system conditions and dynamically adjusting operations, such as traffic signal timing, transit services, or traveler information, in real time based on changing demand or incidents. Integration ensures that these actions are coordinated across all modes and facilities in the corridor, so decisions benefit the entire system rather than isolated segments. This integration occurs through collaboration among agencies and jurisdictions, operational coordination of strategies across networks, and the sharing of data, systems, and communication tools. Together, these elements enable agencies to manage capacity, demand, and disruptions more effectively, supporting more efficient and resilient corridor operations.

Successful ICM implementation depends on several factors that must be in place before the system can function as intended. These include established data-sharing agreements that allow real-time information to flow freely between agencies, as well as interoperable technologies that support coordinated action across different systems and modes. Agencies must also have clear roles and responsibilities, along with the staffing and resources to respond dynamically when conditions change. Governance frameworks and decision-support tools must be in place to guide joint responses, particularly in high-stakes situations where actions by one agency can affect outcomes corridor-wide.

Context | Area of application
Urban and suburban | Arterials and freeways

Additional resources
- FHWA: Integrated Corridor Management, Transit, and Mobility on Demand[62]
- FHWA: Integrated Corridor Management and Freight Opportunities[63]
- FHWA: What is Integrated Corridor Management?[64]

Table 4 | Additional strategies to improve traffic operations

Strategy	Definition
Connected and automated vehicles	Integrated vehicle-to-vehicle and vehicle-to-information communication, improving safety and efficiency.
Dynamic rerouting	Real-time traffic redirection strategies to alleviate congestion and improve travel times. Coordination between public agencies and app providers will support this strategy, as more drivers rely on technology for rerouting
Event patron incentives for peak spreading	Discounts or incentives that encourage attendees to travel at off-peak times, reducing event-related congestion.
Event-related traffic management	Coordinated efforts to manage traffic surges during major events, such as temporary road closures or rerouting.
Freight signal priority	Traffic signal adjustments that prioritize freight vehicles by extending green time in the direction of freight travel, allowing trucks to move through signalized intersections without stopping.
Intersection modifications	Redesigns and operational improvements that enhance intersection capacity and safety and optimize the operation of public transit vehicles..
Project coordination and scheduling	Planning measures that minimize disruptions from construction and maintenance activities. Project coordination and scheduling could also include consideration major special events, to further minimize conflicts.
Queue warning	Real-time alerts that inform drivers about upcoming congestion, stopped traffic, or slowdowns using sensors, dynamic message signs, and in-vehicle notifications.
Real-time system monitoring and management information	Sensors and analytics that monitor traffic conditions and optimize flow.
Road weather control and treatment strategies	Roadway operations and surface treatments — such as salt, sand, or anti-icing chemicals — which maintain safety and mobility during adverse weather conditions like snow, ice, flooding, or low visibility.
Transit queue jump lanes at signalized intersections	Designated lanes that allow transit vehicles to bypass congestion, improving bus service reliability.
Truck lane management	Strategies that designate specific lanes for trucks, improving traffic flow and safety.
Variable/dynamic lane use control	Systems that modify lane assignments based on real-time traffic conditions, improving roadway efficiency.
Variable/dynamic speed limits and speed management	Speed regulation that adapts to real-time traffic flow and weather conditions.
Work zone demand and speed management	Temporary speed regulations, enforcement, and other strategies including alternative route planning and adjusted construction schedules that enhance safety and reduce congestion in work zones.

Strategies to expand capacity

This tier includes strategies for projects that cannot be addressed by the other strategy groups identified above, which may have proven insufficient or inappropriate. Needs to address in this tier might include external travel demand, freight demand, or traffic conflict issues like merging, diverging, or identified concentrations of traffic crashes. Strategies defined within this tier include freight-dedicated or freight-preferred facilities to address freight bottlenecks, connections to intermodal freight terminals, connections for passenger terminals for external trips, smart lanes that provide an alternative during incidents, and system-interchange improvements like flyovers and interchanges that address conflicting traffic movements.

To enhance financial viability and improve return on investment, agencies should also consider funding and pricing mechanisms such as value capture and tolling. These tools can help ensure that new infrastructure contributes to both system performance and fiscal sustainability. Value capture strategies allow for reinvestment of increased land value generated by new infrastructure, while tolling can manage demand and provide a direct funding source for ongoing operations and maintenance. Integrating these elements into project design helps maximize the long-term mobility benefits of capacity expansion.

Objectives achieved

This focus area enhances system performance and reliability and may support efficient freight movement.

Strategies

Bolded strategies are covered in greater depth throughout the chapter, while additional strategies are briefly defined in the table at the end of the chapter.

- **Address truck bottlenecks**
- **Dedicated truck lanes**
- **Dedicated truck facilities**
- **Freight network improvements**
- New or expanded facilities closely coordinated with new economic development
- Smart lanes (also known as flex lanes)
- System interchange improvements

Address truck bottlenecks

Truck bottlenecks occur when high volumes of freight traffic converge at key highway corridors, interchanges, or urban freight hubs, leading to congestion, delays, and increased transportation costs. These bottlenecks often result from outdated infrastructure, capacity constraints, and high traffic demand at critical junctions. The inefficiencies caused by bottlenecks not only slow the movement of goods but also contribute to higher emissions, increased fuel consumption, and economic losses across supply chains. Addressing truck bottlenecks may require targeted infrastructure improvements, improved traffic management, or dedicated freight corridors to ensure smoother and more efficient freight movement.

Examples include the ongoing improvement of the I-55 and I-80 corridors, both of which serve as major freight corridors. By investing in dedicated truck lanes and reconfiguring interchanges, these projects aim to improve mobility and reduce the economic impact of congestion on the freight industry.

Context | Area of application

Urban, suburban, rural | Arterials and freeways

Smart lanes

Smart lanes, also known as flex lanes, are a dynamic traffic management solution designed to improve road capacity and reduce congestion without the need for major infrastructure expansion. These lanes operate by opening or repurposing existing shoulders or designated lanes — during peak travel periods or in response to real-time traffic conditions — by using intelligent transportation technologies, such as automated lane controls, lane control signs, and variable message signs.

In northeastern Illinois, flex lanes have been implemented along I-90 with 2 reversible lanes spanning about 8 miles long, designed to optimize traffic flow by adjusting lane directions based on traffic demand. The ongoing I-294 Central Tri-State Reconstruction and Mobility Improvements project also includes the reconstruction of the expressway shoulders along a portion of the route to integrate flex lanes.

Context | Area of application
Urban and suburban | Arterials and freeways

Additional resource
FHWA: Managed Lanes[65]

System interchange improvements

System interchange improvements involve redesigning and reconstructing major highway interchanges to improve traffic flow, safety, and capacity. These improvements address common challenges such as congestion, weaving conflicts, and outdated designs that struggle to accommodate current traffic volumes and transportation demands.

Legislative support for system interchange improvements has come through infrastructure funding programs which allocates resources for major interchange reconfigurations. In Chicago, projects like the Jane Bryne Interchange reconstruction demonstrate the impact of strategic investments. By reconstructing outdated interchanges and implementing more modern designs such as flyovers or diverging diamond interchanges, these projects improve mobility, enhance safety, and reduce delays for freight, passenger, and transit vehicles.

Context | Area of application
Urban and suburban | Arterials and freeways

Case Study: Houbolt Road Bridge

The Houbolt Road Bridge created a direct route from the CenterPoint Intermodal Center to Interstate 80 over the Des Plaines River. This tolled bridge maintains reliable delivery times to and from the CenterPoint Intermodal Center while removing some freight traffic from local roads, improving the connectivity of the freight network while reducing the impact of freight travel on surrounding communities. Construction of the bridge was privately financed, and tolls will help ensure efficient and reliable travel on the facility in the long-term.

Freight network improvements

Improving connections throughout the freight network supports not only the efficient movement of goods but also enhances mobility for all travelers. Key freight network connections include intermodal freight terminals and grade separations. Improved freight network connections enhance logistics efficiency, reduce congestion, and lower transportation costs. This involves infrastructure upgrades, expanded freight corridors, and the integration of smart technologies. In freight-heavy regions like northeastern Illinois — home to the largest intermodal hub in North America — strengthening these connections is essential to maintaining economic competitiveness and reducing bottlenecks that slow freight movement.

Federal programs such as the National Highway Freight Program provide funding for freight-related improvements. The Chicago region's extensive freight network includes major internal facilities in Joliet,

Bedford Park, and the 75th Street Corridor, where rail congestion has historically been a challenge. The Chicago Region Environmental and Transportation Efficiency (CREATE) Program, a public-private partnership, has been instrumental in improving rail infrastructure and reducing conflicts between passenger and freight traffic.[66]

Context | Area of application
Urban and suburban | Arterials, business districts, freeways, and truck routes

Table 5 | Additional strategies to expand capacity

Strategy	Definition
Dedicated truck lanes	Exclusive lanes designed to improve freight movement efficiency and reduce conflicts with passenger vehicles.
Dedicated truck facilities	Infrastructure tailored to freight operations, such as truck-only rest areas and bypass routes.
New or expanded facilities closely coordinated with new economic development	Transportation investments that align with regional economic growth.

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The Chicago Metropolitan Agency for Planning (CMAP) is the region's comprehensive planning organization. The agency and its partners developed and are now implementing ON TO 2050, a long-range plan to help the seven counties and 284 communities of northeastern Illinois implement strategies that address transportation, housing, economic development, open space, the environment, and other quality-of-life issues.

See **cmap.illinois.gov** for more information.

433 West Van Buren Street
Suite 450
Chicago, IL 60607

cmap.illinois.gov
312-454-0400

Chicago Metropolitan Agency for Planning