Foreword

Throughout Illinois history, transportation has held an important role in shaping and developing the state. This is evident today as business and leisure travelers rely on the transportation system to support and enable all manner of economic, social, educational and cultural activity. The Illinois Department of Transportation (IDOT) has a responsibility to ensure that the transportation system can answer these needs and address future transportation demand.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) was signed into law in August 2005 and authorizes federal surface transportation programs for highways, highway safety, and transit through 2009. This act resulted in changes to rulemaking for statewide transportation plans. In compliance with the required changes, this Illinois State Transportation Plan will amend the 2005 Illinois Transportation Plan. Illinois law requires a plan update by December 31, 2007.

The initial phase of the update will be the adoption of technical amendments prior to July 1, 2007, to meet federal compliance deadlines. The final plan update will be completed in December 2007 to meet state legislative requirements.

The Illinois State Transportation Plan sets forth policies and goals that guide the development of the state transportation system. The plan identifies issues and key needs that will influence transportation decision making during the next 20 years or more. Instead of a specific list of projects, this plan provides the strategic framework for the future direction of transportation in Illinois.

The Illinois State Transportation Plan update consists of several special reports that address varying subjects. These special reports are designed to add information to the existing 2005 Illinois State Transportation Plan and to meet SAFETEA-LU requirements. These special reports include:

- Transportation System Update (Aviation, Bicycles and Pedestrians, Freight Railroads and Intermodal Facilities, Highways, Intercity Passenger Service, Public Transit, and Waterways and Ports)
- Trends, Issues and System Condition
- System Preservation and Maintenance
- Mobility and Reliability
- Transportation Safety
- Global Competitiveness and System Security
- Environmental Coordination and Quality of Life (including sub-reports on Context Sensitive Solutions and Human Services Transportation)
- Transportation Funding
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1.0 Introduction

Preservation and maintenance of transportation system infrastructure is essential to protecting the public’s investment, improving the safety and efficiency of the system, and adapting the system to the transportation needs of the future.

1.1 Background

The preservation and maintenance of transportation assets is and will continue to be a high priority in Illinois. The Illinois Department of Transportation (IDOT or the Department), in coordination with its transportation partners, works to ensure adequate maintenance levels are achieved across all modes of transportation.

Even with the dramatic growth in travel demand over the last decade, more than 95 percent of the Department’s highway revenues have been used to maintain, preserve, and upgrade the existing system. Overall investment priorities have emphasized system preservation over replacement and expansion activities.

In the case of public transportation, the majority of transit capital resources have also been dedicated to bringing the system assets to a state of good repair. In northeast Illinois significant investments have been made in improvements that modernize and rehabilitate one of the country’s oldest transit systems. In downstate areas, transit providers focus their attention on maintaining their vehicles and facilities to sustain existing levels of service.

1.2 Policies and Goals

The IDOT system preservation and maintenance policies and goals, identified in the 2007 Illinois State Transportation Plan, touch all aspects of infrastructure preservation and range from planning to design to innovative construction techniques, material choices, and management practices through proper dissemination of information to all transportation partners. IDOT’s policy is to preserve and manage the existing transportation system. The following Department goals relate to system preservation and maintenance:

*Policy: Preserve and Manage the Existing Transportation System*

- Preserve existing transportation systems to provide safe, convenient and efficient transportation.
- Maintain comprehensive transportation management systems for bridges and structures, traffic congestion, public transportation, airports, safety, and intermodal connections.
• Promote innovative management practices and technologies to improve transportation system management and the cost-effective expenditure of public funds.

• Ensure that transportation system design and engineering methods are state of the art and include robust life-cycle cost analysis procedures.

• Explore innovative construction techniques, materials and construction contract arrangements to improve the service life of transportation facilities, gain cost efficiencies and minimize construction time periods.

• Encourage dissemination of innovative methods and techniques on system management, design, engineering, materials, construction and construction contracts to local governments and other transportation providers.

1.3 Other System Preservation Factors

1.3.1 Safety

Safety is an integral part of the preservation of the infrastructure. Illinois’ transportation system is among the safest in the world. The fatality rate on Illinois highways has declined by almost two-thirds since 1982, despite a steady growth in travel during the same period. However, portions of the transportation system still experience crash rates that exceed public expectations. With projected future increases in the demand for transportation, keeping the transportation system safe will continue to be a serious challenge.

1.3.2 Costs

Among the factors responsible for the focus on preservation are the high cost of building new facilities, a slowdown in the growth of public revenues for transportation, and the growing needs of a mature and heavily used system that requires an increasing share of funding resources for preservation and maintenance. In addition, maintenance and rehabilitation costs are climbing. For example, major interstate highway reconstruction costs can be as high as $60 million per mile in urban locations. On other parts of the highway system, narrow pavements, roadway deterioration, and bridge deficiencies are significant problems that must be addressed in a timely fashion in order to prevent more extensive and costlier repairs if conditions further deteriorate. IDOT’s recent multi-year programs have focused heavily on system preservation with a special emphasis on bridge maintenance.

1.3.3 Freight

Due to its geographic location, Illinois lies at the heart of the nation’s interstate highway system and therefore experiences significant commercial freight. Three coast-to-coast interstates (I-70, I-80, and I-90) pass through Illinois. These interstates are joined by
major north-south interstates, including I-39, I-55, and I-57; major east-west interstates including I-24, I-64, and I-74; as well as I-72, I-94, I-88 and I-155. In total, 2,164 miles of interstate highway serve Illinois. Illinois must adequately maintain its interstate system and truck routes to facilitate the movement of intrastate and interstate freight. In addition, IDOT seeks to reduce the number of commercial vehicles that illegally exceed weight limits on Illinois’ public roads and bridges and maximize the use of alternative, non-roadway modes to transport overweight and oversize loads.
2.0 Issues

In Illinois, aging and deteriorating transportation infrastructure, heavy freight traffic that causes pavement and bridge wear and tear, and increasing congestion present a significant challenge to maintaining and preserving existing transportation facilities. For example, in its most recent analysis of future need, IDOT estimates that without continued investment in resurfacing and reconstruction of roadway surfaces, approximately 3,945 miles of state highways could deteriorate into an unacceptable condition over the next five years. This represents about 25 percent of the entire state highway system and includes approximately 540 miles of highways on the interstate system.

IDOT is implementing a number of programs that employ a more balanced integration of intermodal and other innovative strategies to maximize preservation of its existing assets. These program and policies support the Department’s long-range maintenance objectives and are discussed in detail in Section 3.

With the passage of the North American Free Trade Agreement (NAFTA), trade between the three signatory countries (i.e., Canada, Mexico, and the United States) has dramatically increased, significantly shifting traditional patterns of production, distribution, and transport. Trade traffic across all modes of transport, including highway, rail, and air, has increased, often overwhelming the capacity of existing infrastructure, particularly along the border where 60 to 80 percent of goods are transported by truck. The value of “just-in-time” delivery and the cost of delay have risen sharply, and in tandem, prompting analyses and assessments of the capacity of the current transportation infrastructure to absorb increased trade flows and to ensure future mobility.

Commercial vehicles carrying loads that exceed lawful weight limits can significantly impact pavement wear and increase the cost and frequency of road and bridge maintenance. IDOT has a number of regulations in place that support the preservation and maintenance needs of its roadways, highways, and bridges. This is also the case for trucks hauling overweight or oversize loads by special permit. The Department is authorized by the State of Illinois Size and Weight Law [625 ILCS 5/Ch. 15] to issue special permits. These special permits allow the operation of vehicles or loads that exceed the legal maximum dimensions and weights. The permits are valid only for those highways under IDOT jurisdiction.
The 2020 Metropolis Freight Plan takes an in-depth look at the overweight freight issues and current Illinois policies and regulations in comparison with other midwestern states and policy implications. The Metropolis Freight Plan key findings include:

- Create regional policy board
- Develop coordinated strategies for protecting industrial lands well served by freight and transit (e.g. freight centers)
- Create a rational, efficient freight road network
- Adopt user fees and variable pricing for the region’s roadways
- Complete the Chicago Region Environmental and Transportation Efficiency (CREATE). CREATE is a public-private partnership between the state of Illinois, the city of Chicago, Metra, and the nation’s freight railroads. It was developed to support and enhance freight movement in, around, and through the Chicago area.

The truck-specific recommendations of the freight plan include:

- Correct the truck route and tollway mismatch
- Improve arterials
- Fill in gaps in the 80K/8’6” truck routes network in northeastern Illinois
- Develop a comprehensive centralized source of trucking information
- Create new mechanisms for collaborative local truck route planning

Many of the recommendations discussed in the 2020 Metropolis Freight Plan are addressed or being reviewed in IDOT programs and policies. This independent plan also found Illinois freight regulations to be one of the more comprehensive trucking regulations. Even with the economic implications that it poses, IDOT is committed to more sustainable and rigorous overweight restrictions for commercial freight as reflected in Table 2-1.

As travel on Illinois roadways increases, congestion remains a major issue. During the five-year period between 2001 and 2005, the total vehicle miles traveled on the roadway system has increased steadily from 103 million vehicle miles of travel (VMT) in 2001 to nearly 108 million VMT in 2005. The total number of crashes on the roadway system has declined by 4.9 percent. In addition, injuries resulting from crashes have decreased by 9.9 percent and crash-related fatalities have declined by 3.6 percent.
Table 2-1: Truck Regulations Compared to Other Midwestern States

<table>
<thead>
<tr>
<th>Regulations</th>
<th>IL</th>
<th>IN</th>
<th>IA</th>
<th>KY</th>
<th>MI</th>
<th>MO</th>
<th>WI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allows at least 80,000 lb. default weight (excluding seasonal reductions &amp; local restrictions)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Allows 8’6” default width</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Has road/truck route designations</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Has state level local access rules for 80,000 lb. access</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Has state level local access rules for 8’6” wide truck access</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
</tbody>
</table>

Although overall congestion has increased and Chicago and its surrounding area is ranked as one of the three most congested cities in the nation, the total number of crashes, crash-related injuries, and fatalities on Illinois roadways have steadily declined during the five-year period. Most importantly, fatality rates on Illinois roadways have decreased by 7.9 percent and remain significantly lower than the average highway fatality rate across the United States.

Against the backdrop of competing financial priorities, preservation and maintenance will play a greater role. A broader intermodal approach, a combination of innovative strategies, and policy linkages will remain the focus in the future.
3.0 Identifying Preservation and Maintenance Needs

3.1 Highways

For decades, IDOT has made a concerted effort to track the pavement needs of the more than 16,000-mile state highway system. IDOT, through its Office of Planning and Programming, has done this primarily through an annual Condition Rating Survey (CRS).

Since it was first implemented in 1974, the CRS has grown to become a sophisticated tool that helps assess pavement condition. IDOT collects and analyzes pavement condition information on approximately half of the state highway system each year and uses it to determine the quality of the overall ride and the level of physical deterioration of a particular highway segment. Data are collected and analyzed for the entire interstate system each year. The CRS data collection and analysis produces an overall condition rating for each roadway segment on the state highway system. This rating provides an assessment of the overall condition of the state highway system and is an important tool in pavement management activities.

The CRS data, in conjunction with traffic and roadway functional classification, identifies pavement needs in terms of two categories: “Needs Improvement” and “Acceptable.” The condition of the highway segments in the Needs Improvement category has deteriorated to the point where improvement is recommended immediately. Delaying the improvement of these highway segments could significantly raise the cost to bring the highway segment to an acceptable level of condition, which increases the impact on the capital program and the driving public.

Highway segments in the Acceptable category are broken down into two subcategories: “Accruing” and “Adequate.” Highway segments categorized as Accruing are those that will need improvement within five years of the evaluation. Segments categorized as Adequate are expected to remain in Acceptable condition during or beyond the five-year time frame.

The 2007 CRS showed that there are approximately 13,955 miles of pavement (or about 87 percent) in Acceptable condition, with 2,145 (or about 13 percent) in the Needs Improvement category. Tables 3-1 and 3-2 below show these results by facility type.
Table 3-1: 2007: Condition Rating Survey—Mileage by Roadway Type

<table>
<thead>
<tr>
<th></th>
<th>Acceptable (Accruing and Adequate)</th>
<th>Needs Improvement</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interstate</td>
<td>1,733.87</td>
<td>155.67</td>
<td>1,889.54</td>
</tr>
<tr>
<td>Other Marked Roadways</td>
<td>10,003.78</td>
<td>1,423.26</td>
<td>11,427.04</td>
</tr>
<tr>
<td>Unmarked Roadways</td>
<td>2,216.93</td>
<td>566.17</td>
<td>2,783.10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13,954.58</strong></td>
<td><strong>2,145.10</strong></td>
<td><strong>16,099.68</strong></td>
</tr>
</tbody>
</table>

Table 3-2: 2007 Condition Rating Survey—Percent by Roadway Type

<table>
<thead>
<tr>
<th></th>
<th>Acceptable (Accruing and Adequate)</th>
<th>Needs Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interstate</td>
<td>10.8%</td>
<td>1.0%</td>
</tr>
<tr>
<td>Other Marked Roadways</td>
<td>62.1%</td>
<td>8.8%</td>
</tr>
<tr>
<td>Unmarked Roadways</td>
<td>13.8%</td>
<td>3.5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>86.7%</strong></td>
<td><strong>13.3%</strong></td>
</tr>
</tbody>
</table>
It is important to note that while the condition of 87 percent of all roadways is acceptable, the number of miles of roadway needing improvement has grown from 1,425 in 2003 to 2,051 in 2006, after the longest period of decline in recent history between 1998 and 2003. Figures 3-1 and 3-2 show the historic needs of the state highway system as a whole and by sub-system.
To keep pace with deterioration of the highway system and hold the statewide acceptable condition rate steady, approximately 800 to 1,000 miles of state highways need to be resurfaced, rehabilitated, or reconstructed each year. In its most recent analysis of future need, IDOT estimates that without continued investment in resurfacing and reconstruction of roadway surfaces, approximately 3,945 miles of state highways would shift to the Needs Improvement category over the next five years.

As the state highway system continues to age, construction costs increase, and funding for transportation becomes more scarce, the need for a more proactive and predictive approach will increase. Toward that end, IDOT seeks to build upon the foundation of the CRS. Relying more on the predictive aspects of the CRS will help IDOT to create a system-wide approach toward preservation and maintenance that allocates available funds based on a combination of need, statewide distribution of various factors (such as population, vehicle registrations, traffic, and existing transportation system infrastructure), and geographic distribution.

In addition, IDOT is seeking to develop and implement more innovative techniques for resurfacing, rehabilitation, and reconstruction projects. For example, the Superpave (Superior Performing Asphalt Pavements) method of design more closely matches the expected use of the roadway and its environment to the pavement structure and composition, which prolongs wearability and adds structural life. Employing more innovative preventive maintenance techniques will also play a role in the comprehensive theme for preservation and maintenance. Bonded overlays, for example, allow larger rehabilitation or reconstruction efforts to be deferred at a minimum of cost and with minimum disruption to the riding public. IDOT will continue research and implementation of new methods and materials for system preservation.

### 3.2 Bridges

As part of its massive transportation infrastructure, IDOT is responsible for over 8,000 bridges along the state highway system. In order for IDOT to determine when to rehabilitate or replace these bridges, a bridge (or structure) inventory must be maintained, classifying each bridge according to serviceability, safety, and essentiality for public use. Based on this classification, IDOT determines a priority for replacement or rehabilitation and the associated cost. IDOT uses the Illinois Structure Information System (ISIS) and Bridge Analysis and Monitoring System (BAMS) to monitor and maintain highway structures in Illinois.

To accomplish this, IDOT has brought together information from the Program Planning System (PPS), which contains improvement project data specific to individual bridges, and ISIS, which includes inventory and inspection information, into BAMS. BAMS analyzes inventory and inspection information to determine each bridge’s level of structural deficiency or functional obsolescence and classifies bridges into various levels of need that can be generally categorized as “Needs Improvement” and “Acceptable.” Bridges in the Acceptable category can be further divided as Accruing or Adequate.
Bridges in the Needs Improvement category are exhibit a higher level of deficiency and should be reviewed for possible programming for funding. IDOT’s strategic goal is to maintain 93 percent of its bridges in Acceptable condition. As such, not all bridges with a low inspection rating or specific deficiency will be programmed for funding. Work on bridges without critical deficiencies might be deferred; other bridges may have been closed with no intention of being re-opened; and others still may ultimately be closed when their condition warrants. Some bridges in the Acceptable category have some level of deficiency or need that might require evaluation for funding and addition to the program in the next five to six years. The Acceptable category also includes bridges that do not have a specific deficiency warranting programming.

The result of the BAMS analysis is an accounting of current and immediate bridge needs, anticipated future needs, and identification of prior needs that were either addressed in previous years (history) or not adequately addressed (ongoing needs). For each program cycle, the bridge inventory is reevaluated for additional candidate bridges for inclusion in the multi-year and annual programs and to verify changes in the condition and status of the bridges included in the previous multi-year program. Table 3-3 summarizes the state system bridge needs for 2006.

### Table 3-3: 2006 BAMS Analysis - State System Needs

<table>
<thead>
<tr>
<th>Table</th>
<th>Interstate</th>
<th>Other Marked Roadways</th>
<th>Unmarked Roadways</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Urban</td>
<td>Rural</td>
<td>Total</td>
<td>Urban</td>
</tr>
<tr>
<td>Needs Improvement</td>
<td>39</td>
<td>28</td>
<td>67</td>
<td>143</td>
</tr>
<tr>
<td>Acceptable</td>
<td>685</td>
<td>899</td>
<td>1,584</td>
<td>1,097</td>
</tr>
<tr>
<td>Total</td>
<td>724</td>
<td>927</td>
<td>1,651</td>
<td>1,240</td>
</tr>
</tbody>
</table>

The BAMS is most often associated with inventorying and tracking the condition of bridges that meet the federal definition of a bridge—a structure with a clear span opening of 20 feet or more—and that are therefore eligible for federal funding. It is important to note though that the BAMS is also used to inventory and track the condition of the smaller bridges and structures that do not meet the federal definition of a bridge. This practice is encouraged by the Federal Highway Administration (FHWA). It allows IDOT to meet its responsibility to provide the general public with a safe and efficient highway system.

Illinois State Transportation Plan
11 System Preservation and Maintenance
The timely and accurate assessment of the bridge condition is critical to the identification, selection, and prioritization of bridge needs in the programming process. The BAMS used by IDOT to analyze and monitor bridge deficiencies and improvement programs on a statewide basis provides a logical and uniform approach to prioritizing bridge needs for repair, rehabilitation, and replacement. For each program cycle, the bridge inventory is reevaluated for additional deficient candidate bridges for inclusion in the multi-year and annual programs and to verify changes in the condition and status of the bridges that were included in the previous multi-year program.

### 3.3 Funding Highway and Bridge Needs

IDOT placed a top priority on system maintenance and preservation in its “Fiscal Year 2008-2013 Proposed Highway Improvement Program.” The $10.875-billion program is made up of a $3.21-billion local program and a $7.67-billion state program. For the state program, $3.81 billion (or 50 percent) is dedicated to system maintenance, and $1.8 billion (or 23 percent) is dedicated to bridge maintenance. Combined, system maintenance and bridge maintenance account for 73% of the entire state program.

The $3.81 billion allocated to system maintenance includes $718 million for interstate resurfacing and $271 million for safety improvements. In total, more than 4,190 miles of state highways will be improved, which includes 503 miles of the Illinois interstate system and 3,689 miles of non-interstate roadways. Also included are safety improvements at 145 specific locations. The $1.8 billion dedicated to bridge maintenance will fund the rehabilitation or replacement of 957 bridges throughout the state.

### 3.4 Transit Needs

Similar to highways, transit agencies identify their system preservation needs based on inventories and conditions/age of facilities and vehicles. The range of transit assets owned and operated by transit agencies in Illinois include buses, rail cars, locomotives, paratransit vehicles, vans, garages, maintenance facilities, storage yards, track, structures, communications, signals, power distribution, stations, and passenger facilities. The goal of many transit agencies in Illinois is to bring all of their transit assets to a state of good repair.

#### 3.4.1 Northeastern Illinois Transit

The Regional Transportation Authority (RTA) is responsible for public transportation in northeastern Illinois, and it is comprised of three operating agencies: the Chicago Transit Authority (CTA), which provides rapid transit and bus service; Metra, which provides commuter rail service; and, Pace which provides suburban bus service.
In February 2007, the RTA completed its strategic plan, “Moving Beyond Congestion,” outlining its vision for moving the public transit system forward and the challenges associated with doing that. Moving Beyond Congestion explains that for its Fiscal Year 2007–2011 capital program, the RTA is expecting an annual average of $606 million for capital programming, $338 million less than it was for its 2002–2006 capital program. This projected reduction in revenue is primarily the result of the following:

- The expiration of the Illinois Fund for Infrastructure, Roads, Schools, and Transit (FIRST) Program
- The difficulty associated with not being able to expand its capital program through borrowing without additional revenues to service the debt
- The use of capital funds to cover operating expenses
- The increase in the proportion of federal funds for the overall capital cost of the project, which increases the need for matching funds

This resulted in a 2007 capital program that is at its lowest since 1998 and half of what it was in 2004. It has also resulted in a series of unmet needs for each of the service providers. This has also resulted in great deal of unmet capital needs. For the CTA, these unmet needs include new vehicles (both rail cars and buses), rail station and bus passenger facilities, and various other infrastructure and operational improvements. Unmet needs for Metra include diesel electric locomotive remanufacturing, purchasing 160 new rail cars, and other various operational structural improvements to its system. Pace’s unmet capital needs include the replacement of buses and the expansion of bus services, the improvement and park and ride facilities, and other operating and equipment upgrades.

The 2007–2011 capital program represents the first step for the RTA toward the implementation of “Moving Beyond Congestion.” Its three primary area of focus are investing to maintain existing transit services and keep the system in a state of good repair; investing to enhance the existing system, building upon it to make it more efficient and user friendly; and investing to expand the system with new services that will have regional impact, benefit, and significance. The five-year capital program requires about $16.1 billion, which will require $10 billion in additional funds through 2011. The needs of each service provider by area of focus are shown in the Table 3-4 below.
### Table 3-4: 2007-2011 RTA Capital Needs by Operator

<table>
<thead>
<tr>
<th>Operator</th>
<th>Maintain the System</th>
<th>Enhance the System</th>
<th>Expand the System</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTA</td>
<td>$6.3 billion</td>
<td>$328.9 million</td>
<td>$655.2 million</td>
</tr>
<tr>
<td>Metra</td>
<td>$3.7 billion</td>
<td>$405.6 million</td>
<td>$4.0 billion</td>
</tr>
<tr>
<td>Pace</td>
<td>$0.3 billion</td>
<td>$348.4 million</td>
<td>$70.0 million</td>
</tr>
<tr>
<td>Total</td>
<td>$10.3 billion</td>
<td>$1.083 billion</td>
<td>$4.725 billion</td>
</tr>
</tbody>
</table>

Source: RTA, Moving Beyond Congestion, 2007

### 3.4.2 Downstate Transit

The annual Capital Needs Assessment is an important planning tool for both IDOT and Illinois Public Transportation Association (IPTA). Each fiscal year, data is collected and used to develop a budget analysis. This analysis helps to determine equipment and facility needs for all downstate transit operators. The 2006 Capital Needs Assessment surveyed 44 agencies.

Based on the 2006 Annual Downstate Investment Needs report, a ten-year capital need totaling $773 million was estimated for vehicles, facilities, technology enhancements, and other needs for small urban services operators (Section 5307 grantees); $23.9 million for senior and disabled citizen service operators (Section 5310 grantees); and, $135.4 million for rural operators (Section 5311 grantees) over course of the following ten years. This totaled $932.2 million and averages $93.2 million per year for all three operator types.

For 2007, the estimated ten-year capital needs decreased by $31.2 million, a 3 percent decrease. This decrease in capital need indicates that agencies are receiving some funding needed in order to accommodate their needs, but much more funding is still very much needed. The results for 5307 and 5311 grantees are diagramed in Figure 3.3 below.
Downstate Investment Needs

<table>
<thead>
<tr>
<th>Year</th>
<th>Small Urban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>713.1</td>
<td>159.4</td>
</tr>
<tr>
<td>2005</td>
<td>789.2</td>
<td>152.4</td>
</tr>
<tr>
<td>2006</td>
<td>773</td>
<td>135.4</td>
</tr>
</tbody>
</table>
4.0 Other Strategies and Implementation Programs

Over the past several years, the state of Illinois has been reaching out to a broad range of transportation “customers” to identify concerns and improve transportation facilities and services. The State Transportation Plan is responding to the need to reconnect transportation decision-making with urban, economic, and environmental systems while preserving and maintaining the existing systems.

The strategies and implementation programs discussed in this section are consistent with the input received through the outreach effort and present alternative approaches to preserving and maintaining the transportation infrastructure of the state. The policies are varied and range from transportation demand and system management activities to system maintenance activities.

4.1 Intelligent Transportation Systems (ITS)

Intelligent Transportation Systems (ITS) play a key role in the overall theme for the preservation and maintenance of the transportation system. ITS goes beyond preserving and maintaining the physical condition of the transportation system by increasing the capacity of the system and making it more efficient.

IDOT initiated its ITS development in the 1960s when the IDOT Traffic Systems Center (TSC) established one of the first real-time expressway surveillance and management systems in the world. Since its initial deployment, IDOT has recognized the need for technological advancements to increase the safety and efficiency of the state’s surface transportation system. ITS, through the integrated application of sensors, computers, electronics, and communication technologies and management strategies is critical to the Department’s transportation system preservation, safety, and efficiency goals. For example, strategies such as congestion pricing help increase capacity and make the system more efficient by imposing fees or higher tolls for driving during the most congested periods each day to discourage rush hour driving and encourage motorists to choose an alternative option. The Illinois State Toll Highway Authority is applying congestion pricing to the tollway system with variable pricing for trucks.

Other strategies are being developed to better utilize technological capabilities and produce more efficient and effective ways to influence and improve the choices available to drivers. Potential future ITS applications could help to preserve the existing transportation system by making it even more efficient by linking vehicles with highway guidance communication networks. These applications could become critically important in enhancing transportation safety, efficiency, and mobility and could significantly increase capacity to the surface transportation system without major
expansion investments. ITS applications currently in various stages of development and implementation include the following:

- Expanded Use of Digital Message System (DMS) boards. IDOT is integrating its transportation communications centers to deliver instantaneous messages of major traffic situations from one system to the next.
- Employment of an integrated marketing campaign for transit. IDOT is working with transit service providers such as the Regional Transportation Authority (RTA), Chicago Transit Authority (CTA), Metra and Pace to implement a marketing plan with a unified “tag line” or message, prompting drivers to get off the roads and into public transportation or ride-share programs.
- Utilize XM Satellite Radio capabilities for instant information. XM radio allows IDOT to provide construction updates that are broadcast to drivers.
- Free kiosks with Illinois mapping capabilities. Located at state highway rest areas and available online, this IDOT service will allow free access to an internet-based computer program which will feature travel information.
- Utilize Vehicle Infrastructure Integration (VII) Technology. Through VII, vehicles and trucks will be linked to data processing centers and each other. These probes will continually collect a variety of data while vehicles are in motion, providing even more instantaneous information on traffic flow and travel conditions.
- Improve Convenience to Trucking Industry. IDOT is examining ways to increase the regional truck parking capacity available for long-distance drivers across Illinois.
- Develop Intermodal Connectors. IDOT’s objective is to improve connections among intermodal freight routes to ease congestion among commercial carriers, including highways, rail facilities, and ports on the national highway system.
- Automated Vehicle Identification (AVI) technology. AVI can significantly reduce delays and bottlenecks created at traditional toll booths that require motorists to stop and deposit tolls. AVI, sometimes known as “open road tolling,” scans participating vehicles while they drive through toll booths at normal speeds and charges toll fees against their prepaid accounts. AVI is currently in place or under construction on portions of the toll highway system in northeastern Illinois High-Occupancy Vehicle (HOV) lanes, and HOV options are being considered and integrated in planning studies.
- Public-Private Partnerships. Based on the example of the Federal Veterans Administration’s recent partnership with a corporation in Virginia to help fund a High-Occupancy Tolling (HOT) expansion, IDOT is continuing to research private/public partnership option to expand in this area.

The various elements of the National ITS program will continue to be deployed in Illinois to provide a comprehensive state-of-the-art transportation system to meet the future needs of travelers throughout the state. The details of ITS and other transportation demand and system management strategies are discussed below.
4.2 Context Sensitive Solutions

Context Sensitive Solutions (CSS) is “an interdisciplinary approach that seeks effective, multimodal transportation solutions by working with stakeholders to develop, build, and maintain cost-effective transportation facilities which fit into and reflect the project’s surroundings.” Its context being further described as “the interrelated conditions in which something exists or occurs, environment, or setting.” Every project has a context that varies with and is unique to that particular project.

CSS has been formally adopted by IDOT. This process followed the legislature’s enactment in 2003 of legislation “requiring the Illinois Department of Transportation to embrace the principles of Context Sensitive Solutions in policies and procedures for the planning, design, construction, and operation of its projects for new construction, reconstruction, or major expansion of existing transportation facilities.” Illinois is the only state to have formally established CSS by statute.

Although CSS is most often thought of in terms of the design of new transportation facilities, it can play a major role in how existing facilities are maintained. Incorporating the principles of CSS into maintenance and preservation activities helps to ensure that the right treatment or activity is chosen for a particular circumstance and to address the needs of a particular community. IDOT’s application of CSS continues to evolve in an effort to meet changing needs in the transportation of people, goods, and services. A process for implementing context sensitive design principles has recently emerged and is now been applied in developing the state’s transportation programs, plans, and projects. This is a new initiative, yet it encompasses the entirety of the state’s process for planning, implementing, and maintaining transportation systems.

4.3 System Capacity Preservation

This section discusses strategies and linkages that can be employed to relieve the burden that continues to be placed on roadways and highways that are not improved. The IDOT approach is to address these needs through broader, systemwide strategies and policies affecting access management, transportation demand, and system management, and ITS technologies targeted at more efficient use of existing facilities.

4.3.1 Balanced Growth and Corridor Planning

In the 1990s, Illinois was particularly struggling against vanishing open spaces, decaying urban infrastructure, increased traffic congestion, and declining quality of life in many of its communities. A lack of balanced growth was seen as the key to the problem. All too often, new transportation projects failed to take into account their impact on nearby land uses, while new development projects failed to take into account the heavy demands they would place on the existing transportation system. The need for preservation and maintenance was merged into the better planning processes for existing corridors.
The Illinois Tomorrow Corridor Planning Grant Program is a balanced growth initiative with intermodal focus. The program helps fund plans and studies by local communities that integrate land development, transportation, and infrastructure needs. The program is providing grant funding to counties and municipalities in urbanized areas to support planning activities that promote the integration of land use, transportation, and infrastructure facility planning in transportation corridors in Illinois. Grants typically range from $20,000 for a bicycle path study or intersection improvement to $500,000 for corridor-wide planning.

Applications for corridor planning grants are evaluated based on how well they address the following goals:

- Preserve open space
- Relieve congestion
- Promote cooperative inter-jurisdictional relationships
- Promote economic development policies
- Promote contiguous and infill development and redevelopment
- Promote development in areas with existing transportation and utility infrastructure
- Promote development in areas with currently available housing
- Enhance travel choices
- Create public-private coalitions
- Promote collaboration among local governments
- Promote development of industry, labor, public interest, and environmental organizations
- Minimize infrastructure cost to taxpayers

4.3.2 Human Services Programs and Intermodal Opportunities to Support Preservation Needs

IDOT funding supports a wide range of public transportation services. IDOT disburses federal funds and provides matching state funds for Sections 5310, 5316, and 5317 programs that directly serve elderly, disabled, and low-income populations.

IDOT also provides significant operating, capital, and technical assistance to 47 transit systems throughout Illinois, including the northeastern Illinois Regional Transportation Authority, the Metro-East transit districts, and numerous rural and small urban transit systems. This funding includes reduced fare subsidies given to transit agencies to provide reduced fares for students, elderly, disabled, and low-income persons. IDOT’s transit programs support public transit and paratransit services that reach a large number of elderly, disabled, and low-income persons throughout the state.
IDOT further assists rural and other small transit or human services transportation providers by allowing them to use IDOT’s Regional Maintenance Center for all non-routine vehicle maintenance and repair. This program is open to all recipients of Section 5310 and Section 5311 funds.

4.4 System Maintenance

The application of preventative maintenance to the state highway system is critical toward its long-term preservation. The primary goal of preventive maintenance is to slow down the rate of deterioration of a roadway. This practice helps maximize the use of current investments by delaying the need for larger rehabilitation or reconstruction projects. As such, it also allows for the more careful consideration and programming of the larger, more extensive improvements that are likely to follow. Preventive maintenance can also help to improve overall customer satisfaction with the highway system by increasing the overall condition of the system with relatively minor expenditures of time and money and minimal service interruptions.

IDOT maintenance efforts for state highways and bridges include a wide variety of activities. These include preventative maintenance activities such as crack sealing and filling, joint re-sealing, pot hole repairing, and micro-surfacing as well as activities that are more custodial in nature such as the mowing the right-of-way and snow plowing. The maintenance of the state highway system is done in three ways: through IDOT forces, the Contracted Maintenance Program, and the Municipal Maintenance Program.

IDOT Forces. The majority of maintenance done to the state highway systems and its bridges is done with IDOT’s in-house forces. In 2005, approximately $132 million was spent on maintenance and of this amount $20.9 million, or just under 16 percent, was used for preventative maintenance. Snow and ice removal accounted for almost 28 percent of the total, or $36.5 million, and the remaining $74.6 million was spent on custodial activities including mowing, drainage way maintenance, and signing and pavement markings.

Contract Maintenance Program. The objective of the Contract Maintenance Program is to supplement the maintenance performed by state forces. Contract maintenance addresses district defined needs and its work is generally limited to the repair and restoration of the immediate needs of the right-of-way. The Contract Maintenance Program is not intended to fund large capital improvements such as major bridge rehabilitation or lane widening or additions, and projects funded through the program are generally limited to $500,000. The Contract Maintenance Program was funded with $35 million in 2005, $34.5 million in 2006, and $34.5 million in 2007. The funds are distributed to each IDOT district according to a formula that considers the number of state highway system lanes miles, the overall CRS rating and the total square footage of deficient bridge deck in the district. No district receives less than 5 percent of the total.

Municipal Maintenance Program. The intent of the Municipal Maintenance Program is to provide incorporated governments with the funds needed to undertake routine
maintenance on the portion of the state highway system within its jurisdiction on behalf of IDOT. The maintenance performed by the municipal forces includes preventative as well as custodial-related activities.

Over the coming years, the challenge for IDOT will be to develop a system that budgets and programs maintenance funds based on specific activities and on future needs. IDOT will also be challenged with integrating the two types of funding used for maintenance activities: operational and program funds. Operational funds are used by IDOT forces and come with the same constraints and limitations that salary funds do. Program funds are used for the Contract and Municipal maintenance programs and are subject to available road and construction funds. Because programs funds are derived from what is left over after IDOT pays it debt service and funds operations (including salaries), the maintenance programs summarized above must often compete with each other for funding. Resolving these issues will allow preventative maintenance activities to be applied in the most efficient way and to aid in the preservation of the state highway system.
5.0 Public Concerns

Concerns regarding the preservation and maintenance of the transportation system include the method of prioritizing projects and determining funding for the programs to implement these projects. The 2007 Illinois State Transportation Plan sets out policies and goals to guide the state’s efforts to meet transportation needs and incorporates state and federal laws that provide specific societal directives that must be addressed in the programming process. The Department maintains inventories and condition ratings on existing transportation facilities, such as highway pavements and bridges that are used to assess needs. Input is also received from the public, business community, and partners such as the metropolitan planning organizations representing the urbanized areas in the state with a population of 50,000 or more.

The ability to meet these priorities, as well as societal priorities and federal requirements, is inherently challenging. In some cases, priorities will conflict, and more often, scarce funding resources limit the ability to respond to all priorities. While efforts are made to address all issues, concerns, and priorities of the public, no program can expect to receive full funding when competing against a wide variety of social, environmental, and economic needs. As a result, trade-offs and choices must be made. For example, one trade-off is to address more road and bridge preservation needs and reduce or delay congestion mitigation and system expansion projects.

The process for making trade-offs involves consultation with the Governor and the state legislature. The Governor and the legislators are elected to represent and consider their constituents’ interests when vying for the constrained resources available through state funding. The Department receives guidance from the state legislature through their appropriations of state funds for transportation programs and through direct communication with the legislative leadership and individual legislators concerning issues key to their constituents. The Governor is consulted and, as the chief executive of the state, sets guidelines, concurs in trade-offs, and approves the final decisions made to develop and implement programs.