Chapter 1
Existing Conditions

This chapter provides an overview of recent trends and existing conditions on the transportation network in DuPage County. The conditions discussed include socioeconomic trends, traffic volumes and commute flows, asset condition, safety, and access to alternative modes of transportation. Overall, this chapter provides a baseline of the strengths and challenges that must be considered and balanced with anticipated future needs in DuPage County.

As noted in the Introduction, DuPage County is made up of many mature, suburban communities. Similar to other suburban communities, the DuPage County population is made up of largely high-to-middle-class income households with an average of two to three vehicles per household. This contributes to a high average of vehicle miles driven per household/person compared to more urban counterparts.

The transportation network expanded between 1985 and 2005, to support the strong population and employment growth. The County now has a large transportation network with limited room for capacity expansion and substantial maintenance needs. With these factors in mind, the County will need to prioritize investment in maintenance and improving system efficiencies.

In addition, although population growth has slowed, changes in population needs and growth in the surrounding counties continues to place new demands on the system. Balancing investment in vehicle capacity with investment in alternative modes of transportation will be an important part of meeting future mobility needs in a county with limited room for capacity increases, an aging population, and growing equity concerns.

1.1 Socioeconomics

1.1.1 Population Growth and Trends

DuPage County underwent significant population growth between 1980 and 2000 when the population increased from approximately 660,000 to 900,000, an increase of 36 percent or 1.6 percent per year.\(^1\) Thus, the transportation network grew to meet those quickly growing demands. Growth has since slowed. Between 2000 and 2015 the population increased to 930,000, an increase of 3 percent or 0.2 percent per year.\(^2\) As the more mature County entered the 21st century, growth trends and transportation needs changed. Population growth slowed, employment and commute trends changed, the proportion of residents over the age of 65 grew, and the population become more economically and ethnically diverse. These socioeconomic changes indicate a shift in mobility needs including increased dependency on alternative modes of transportation.

\(^1\) U.S. Census data 1990 and 2000

\(^2\) U.S. Census data 1990 and American Community Survey data 2015
As the population rapidly increased, so did the County’s roadway network. Between 1980 and 2000, DuPage County constructed approximately 263 new lane-miles of road— an increase of 42 percent. The combination of roadway widening and development along corridors resulted in many roadways and intersections reaching existing right-of-way (ROW) and environmental limits. With little remaining expansion opportunity on many of its corridors, the County began to focus on enhancement and state of good repair projects. Between 2000 and 2015, the County constructed only 75 additional lane-miles, an increase of 8 percent. The primary focus of investment instead pivoted to maintaining the existing system in a state of good repair and providing strategic system enhancements. These enhancements included active alternatives such as sidewalks and multi-use paths.

DuPage County has historically had relatively high per capita household income when compared to Illinois and the overall United States. In 2014, DuPage County’s median household income was about $79,000, which is nearly 40 percent higher than the state median of about $57,000 and about 48 percent higher than the national median of about $53,500. However, DuPage County has seen an increase in the number of residents below the poverty line. An estimated 7.1 percent of the population was under the poverty line in 2014, up from nearly 3 percent in 1990. In addition, the number of persons in DuPage County with a disability continues to grow such that almost 1 in 12 DuPage County residents (about 73,000) in 2018 had a recognized disability. Part of the increase in disabilities in the County can be explained by an aging population. An estimated 13 percent of residents (or 120,000) are over 65 years of age in DuPage County, up from 9 percent in 1990. These sociodemographic shifts present new challenges to DuPage County’s transportation system by introducing additional diverse mobility needs.

Similar to other counties in the region, DuPage County’s population is becoming more ethnically diverse. In 1990 DuPage County’s population was over 88 percent white; in 2015, it is estimated to be 78 percent white. New immigrants are the greatest source of population growth, as over 14 percent of DuPage County’s residents are foreign-born.

### 1.1.2 Land Uses

#### Changing Land Use Patterns

Understanding land use patterns in DuPage County is critical for understanding current and potential future travel patterns. The County’s existing highway network was designed and built around the development and population growth patterns that emerged over the second half of the 20th century. Since then, many of the development patterns have changed, contributing to a potential shift in transportation needs within the County over the next 10 to 20 years.

Development in DuPage County began with farms and homesteads. Much of the County’s current arterial highway network began as dirt roads that connected farms with towns. Communities

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3. A lane-mile is defined as one mile of one lane of pavement, twelve feet in width.
4. American Community Survey data
5. American Community Survey data
6. U.S. Census data and American Community Survey data
7. ibid
8. ibid
soon began to emerge that were centered on the three major rail lines to and from Chicago. The 20th century brought the automobile and a much more mobile population. Communities continued to grow but farms and country homesteads turned into retail and housing developments. Interstate highway construction from 1950 through 1990 contributed I-290, I-294, I-88, and I-355 to the County network. These major routes and their interchanges with county and state arterials allowed commercial office, industrial, and warehousing developers to capitalize on the mobile suburban population. By the 21st century, land available for development became limited and growth slowed. Development patterns shifted from new development of unused land to redevelopment of existing uses, often with increases in density.

As a mature county with most of its land developed, DuPage County is faced with new challenges including:

- Limited right-of-way available for roadway capacity increases.
- Environmental challenges, including increased flooding challenges due more volume of impermeable surfaces, and a changing climate.
- Aging housing stock and infrastructure.

The challenge of the next 10 to 20 years will be working with communities to adapt to changing mobility needs as a new suburban landscape emerges.

**Existing Distribution of Land Uses**

As shown in Figure 1-1, the predominant land use in DuPage County is single family residential, comprising 32 percent of the County's total acreage. Residential growth is largely related to higher density single family and multifamily dwelling buildouts on smaller parcels or redeveloping older dilapidated commercial units. Currently there are more than 360,000 residential units \(^9\) (Table 1-1). Open space and transportation/utilities land uses are the second and third largest, accounting for 21 and 19 percent of the acreage, respectively. Transportation and utilities include facilities such as roadways, power lines, and water towers. It also indicates there is little undeveloped space (4 percent) available for future uses meaning development is more likely to reuse underutilized residential and commercial areas. The County is already seeing these trends transforming vacant or closed retail space into residential density in some downtown areas through mixed use developments.

Industrial clusters are primarily located in the northeast corner of the County with clusters in Addison, Bensenville, Wood Dale, and Elk Grove Village. These clusters support freight and logistics movements to and from O'Hare International Airport (O'Hare) and the surrounding economy. Other major industrial corridors in the County include IL 390, Gary Avenue, Lemont Road, Stearns Road, Munger Road, Kress Road, and Fabyan Parkway in West Chicago. Warehouse clusters in Aurora are located along Ferry Road and Eola Road.

Commercial uses are clustered along major corridors throughout DuPage County, including the I-88 and I-355 Tollways. Commercial retail and office space now exceed 150 million square feet in

DuPage County. New commercial office and retail building is expected to slow over the next 20 years due to changing retail and work environments and commercial retail mall and strip center developments will likely undergo major changes.

The major institutional uses in DuPage County are the Argonne National Laboratory in Lemont and Fermilab in Batavia. Universities dot the landscape of DuPage County and include College of DuPage in Glen Ellyn, Benedictine University, Wheaton College, Elmhurst University, and North Central College.

![DuPage County Land Uses as a Percent of Total Acreage in 2016](image)

**Figure 1-1. DuPage County Land Uses as a Percent of Total Acreage in 2016**

**Table 1-1. DuPage County Housing Occupancy**

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2010</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total housing units</td>
<td>335,600</td>
<td>356,200</td>
<td>361,400</td>
</tr>
<tr>
<td>Occupied housing units</td>
<td>325,600</td>
<td>337,100</td>
<td>345,700</td>
</tr>
<tr>
<td>Vacant housing units</td>
<td>10,000</td>
<td>19,000</td>
<td>15,700</td>
</tr>
<tr>
<td>Vacancy rate</td>
<td>3.0%</td>
<td>5.3%</td>
<td>4.3%</td>
</tr>
<tr>
<td>Owner-occupied housing units</td>
<td>248,800</td>
<td>251,800</td>
<td>252,200</td>
</tr>
<tr>
<td>Renter-occupied housing units</td>
<td>76,800</td>
<td>85,300</td>
<td>93,500</td>
</tr>
</tbody>
</table>

*Source: US Census Bureau 2000 and 2010 Census, American Community Survey 2018*

Open space is distributed throughout the County and is mostly owned by the DuPage County Forest Preserve District and local park districts. Much of this land is environmentally sensitive.
DuPage Forest Preserve, DuPage County, and its communities see these lands as valuable assets and will continue to work to protect, enhance, and connect these properties.

1.1.3 Commute Flows and Modes

Commuting to and from work is one of the most dominant travel purposes on the roadway network. Although non-work trips account for more total daily and weekly trips on the system, the commute trip impacts all segments of the network because work trips are generally longer—averaging more than 30 minutes or 10 miles—and occur in concentrated time periods in the morning and evening.


Figure 1-2, the largest proportion of these trips is residents from outside counties headed to a work location in DuPage County (47 percent). Another 30 percent of trips are DuPage County residents headed to jobs in another county. The remaining 23 percent are trips that remain within DuPage County.

As presented in Table 1-2, the most common destination/origin for DuPage County-based work trips is Cook County, accounting for 44 percent of total trips. Another 18 percent of trips occur between DuPage and Will County or DuPage and Kane County. Of the remaining 15 percent, the most common destination is Lake County, IL (3 percent of total trips). All other counties account for less than 2 percent of commute trips made to or from DuPage County.

<table>
<thead>
<tr>
<th>To/From</th>
<th>Trips</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within DuPage County</td>
<td>210,300</td>
<td>23%</td>
</tr>
<tr>
<td>Cook County</td>
<td>397,800</td>
<td>44%</td>
</tr>
<tr>
<td>Will County</td>
<td>87,300</td>
<td>10%</td>
</tr>
<tr>
<td>Kane County</td>
<td>73,300</td>
<td>8%</td>
</tr>
<tr>
<td>Other Counties</td>
<td>140,600</td>
<td>15%</td>
</tr>
<tr>
<td>Total</td>
<td>909,300</td>
<td></td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, Center for Economic Studies, LEHD, 2017-2018

DuPage County roadways carry a significant portion of regional trips between surrounding counties, trips not captured in Table 1-2. As the region continues to grow, these through trips will grow and DuPage County roadways will play an increasing role in moving goods and people through the region and state.

The majority (82 percent) of commutes are made alone via personal vehicle.\(^{10}\) Of the remaining 18 percent of commute trips: 7 percent are made via carpool, 8 percent are made via transit, and

\(^{10}\) CMAP Community Profile, DuPage County. June 2020 Release.
Figure 1-2. DuPage County Daily Work Trips, 2017

3 percent use other methods, such as taxi, walk, or bicycle. Most of the commute-to-work trips are those headed into Cook County. Transit trips comprise 20 percent of commuter trips from DuPage into Cook County. Conversely, only 2 percent of Cook County residents commuting to DuPage County do so via transit. Alternate modes of travel (walking, biking, taxi, etc.) are most common for trips that remain within DuPage County. This mode accounts for 12 percent of commute trips within DuPage County.

1.2. Transportation Systems

This section provides an overview of DuPage County’s transportation network to better understand the needs of the existing system. It also evaluates trends over time to better understand if the condition of the transportation system is improving or deteriorating. Special attention is given to the facilities that DuPage County Department of Transportation (DuDOT) owns and maintains, but the section also examines other systems, including transit and freight, to provide a holistic picture of DuPage County’s network.

1.2.1 Highways

**Figure 1-3** presents the highways in DuPage County by jurisdiction. DuPage County shares a border with three adjacent counties (Cook, Kane, and Will) and is connected to these adjacent counties and the northeastern Illinois region by a series of freeways and tollways, arterial routes, and collector roadways. There are five interstate routes through the County providing regional connections for DuPage County and the majority of these are tolled.

There are over 3,870 lane-miles of highway in DuPage County which carry over 24,000,000 vehicle miles traveled (VMT) each day. Of the 3,870 miles, the Illinois Department of Transportation (IDOT) owns and maintains approximately 1,100 lane-miles of roadways (including Interstates, U.S. routes, state routes, and unmarked routes). DuDOT owns and maintains 970 lane-miles of roadways and municipalities own and maintain 1,400 lane-miles of roadways. Townships also own and maintain several hundred lane-miles of roadways. A great majority of daily VMT occur on the IDOT and County systems.

DuPage County-maintained roadways are an important component of the roadway system in the County. DuPage County maintains about 25 percent of the lane miles and 21 percent of the total
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Figure 1-3. Highways in DuPage County by Jurisdiction

Source: DuPage County DOT
VMT in DuPage County occurs on DuDOT roadways. DuPage County’s system is largely comprised of minor arterials that interconnect and distribute traffic from neighborhoods to the principal intercounty arterials under the jurisdiction of the state and to the state and Tollway interstate highway system. Certain County highways such as 75th Street, Army Trail Road, County Farm Road, Eola Road, Stearns Road, Lemont Road, and Bloomingdale Road are higher functional class arterials that carry a high number of regional trips.

IDOT and the Illinois Tollway maintain all the interstates and major highways in DuPage County. Overall, the two agencies maintain more than one-third of the lane-miles in the County. IDOT maintains about 28 percent of the lane-miles and carries nearly 37 percent of the total VMT. The Illinois Tollway maintains about 10 percent of the lane-miles and carries nearly 24 percent of the VMT as the expressway network provides critical regional connections.

Another third (nearly 36 percent) of the lane miles are maintained by municipalities and townships. These include a range of road types from small local connectors to regionally significant arterials such as Washington Street in Naperville, York Street in Elmhurst, and Schick Road in Bloomingdale.

1.2.2 Non-Motorized Transportation

Non-motorized modes of transportation are a key component of any holistic transportation system, whether used as a primary form of transportation or a means to access public transit. Walking and cycling infrastructure—including sidewalks, trails, and on-street bike facilities—is an important factor in the success of transit, public health, mitigation of traffic congestion, and equity concerns.

Trails and Bikeways

DuPage County is home to an extensive and growing network of pedestrian and bicycle trails. In 2008, the DuPage County Regional Bikeway Plan reported 331 miles of off-road trails and paths in the County, with an additional 99 miles planned. Today, DuPage County boasts well over 500 miles of regional and local bikeways. In addition, 13 pedestrian and bicycle bridges help to make these trails safer and more efficient for use by separating users from busy roadway crossings.

The backbone of DuPage County’s bicycle and pedestrian network is the Regional Trail Network, a 216-mile system of primarily off-street trails that provides active transportation options within the County as well as connections to regional destinations. The network is highlighted by the 42-mile Illinois Prairie Path, and the 14-mile Great Western Trail, the country’s first successful conversion of an abandoned railroad ROW into a multi-use trail in 1963. Figure 1-4 shows the full regional trail network. Additionally, DuPage County maintains much of the Southern DuPage Regional Trail, a system of multiuse paths within highway ROWs that stretches from Aurora to Burr Ridge.

In addition, approximately 323 miles of shorter local bikeways provide access to local destinations from the longer regional trails. Many of these routes are on-street bike lanes or signed routes, and they fill in the gaps or provide local access to the Regional Trail Network.

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Figure 1-4. Regional Bikeways in DuPage County
Existing local bikeways are shown along with the regional trails in **Figure 1-4**. Although much of DuPage County is served by either a regional or local bikeway, there are still some communities that have more limited access to bicycle and mixed-use facilities, and both the County and local municipalities continue to work and plan towards improved non-motorized transportation infrastructure.

**DuPage Trails App**

DuPage County has developed an online mapping application that provides information about the regional and local trail networks. Features include:

- Trail names, mile markers, and surface types
- Popular destinations
- Where to find emergency assistance
- Navigation to any location
- Real-time trail alerts
- Parking lot, restroom, rest area, and information kiosk locations

The application enhances the experience of all trail users, from avid cyclists to those on the occasional stroll, and is compatible with all personal computers, tablets, and smartphones.

**Sidewalks and the Pedestrian Environment**

DuDOT owns and maintains approximately 220 miles of roadways within the County, many of which are large arterial routes with heavy traffic. In 2004, the County adopted the Healthy Roads Initiative which encouraged DuDOT to develop sidewalks and bike paths where practicable. The County has installed more than 200 miles of sidewalk and almost 40 miles of multiuse path. Approximately 70 percent of County highways currently have sidewalks or multiuse paths on at least one side of the street and DuDOT is actively incorporating pedestrian improvements in each of its engineering contracts.

DuPage County’s streets, overall, are considered more walkable than average in the Chicago metropolitan area. According to a CMAP analysis, the majority of DuPage County earned a Pedestrian Environmental Factor (PEF) of four or five, out of five possible points.

In compliance with federal guidance on pedestrian accessibility and safety, DuDOT developed its first ADA Transition Plan. The plan was adopted in early 2020 and describes how the County is complying with the law that governs accessibility to public facilities and buildings. It also establishes goals and procedures for reporting and eliminating barriers to accessibility.

DuPage County has an online ADA complaint form and has begun tracking complaints and specific ADA improvements in compliance with guidelines.

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12 Chicago Metropolitan Agency for Planning, GO TO 2040 Pedestrian Environment Factor analysis
1.3 DuDOT Asset Condition

DuDOT actively tracks and manages the condition of the many assets that comprise its transportation system including pavements, sidewalks and trails, traffic signals and equipment, bridges, walls, storm sewer and drainage assets, communication equipment, and fleet and capital facilities.

1.3.1 Pavement Condition

The County surveys pavement conditions on a 2-year cycle to assess state of good repair. These assessments support annual and multi-year pavement maintenance programs. Pavement is rated according to the Condition Rating Survey (CRS) metric with a scale of 1 (failing) to 9 (new pavement). DuPage County pavement averages a condition rating of 6.36, which is considered good. The County strives to maintain its system in such a way as to not have any pavement in the failing category. The 2019 CRS performance field ratings indicate the pavement conditions are 5 percent poor, 39 percent fair, and 56 percent good or excellent (Figure 1-5).

![Figure 1-5 DuPage County Highway Pavement Condition, 2019](image)

Source: DuPage County DOT pavement data

Pavement condition is closely related to the age, type of roadway, and its usage. The County’s pavement data indicates that the average age of County highway surfaces is about 8 years. DuDOT assesses the condition, roughness, traffic, and truck traffic volumes on a segment. That pavement profile dictates the depth and structural quality of the mix that is used to resurface roads. The County also employs a strategy of crack sealing that extends the life of roadways at a relatively low expense. DuPage County has developed a Pavement Performance Data Model that predicts how roadway pavement segments maintained by the County will degrade over time. This model is used to evaluate the budget needed to repair the roads in the 1- to 5-year time frame.

1.3.2 Bridge Condition

Bridge condition is a primary concern for DuPage County. Each bridge is inspected once every 2 years unless it is in poor condition which then causes the County to inspect annually. Currently, 94 percent of bridges owned by DuPage County are in satisfactory condition.
There are 424 bridges in DuPage County. The majority of these bridges are owned and maintained by IDOT and the Illinois Tollway. DuDOT owns and maintains 50 bridges and has agreements with other agencies to maintain or inspect 33 additional bridges. Of the 50 bridges owned and maintained by DuDOT nine are roadway bridges, 13 are pedestrian bridges, and 28 are stream or drainage feature bridges. 13 DuDOT bridges have an average sufficiency rating of 82 out of 100 with 41 bridges in good condition, six bridges in fair condition, and three load posted bridges with poor sufficiency ratings. A map of the structures owned by DuPage County can be found in Appendix 1-B.

1.3.3 Traffic Signals

There are 885 traffic signals in DuPage County. The County owns and operates 324 traffic signals and maintains another 10 through agreement. IDOT owns and maintains 309, and municipalities own and maintain 252 signals. Of the DuPage County traffic signals, 85 percent operate as part of a traffic signal interconnect system, as shown in Figure 1-6. IDOT and the municipalities also operate their own interconnected systems.

In many cases, interconnect systems will include signals owned and operated by multiple agencies. Together, these traffic signal interconnect systems play a vital role in congestion relief by coordinating the timing of signals. Implementing these interconnected signals is part of a regional effort to reduce congestion, fuel consumption, and greenhouse gas emissions.

DuPage County is currently working to expand Intelligent Transportation Systems around the county to the majority of its signals. This expansion includes extension of fiber optic cable, purchasing new traffic signals and controller computers that support cameras and new communication technologies.

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13 DuPage DOT Bridge data
14 DuPage DOT Bridge data
Figure 1-6. Traffic Signals by Jurisdiction, 2018
Maintaining all of these signals is a 24/7 operation. DuPage County contracts with an electrical maintenance company to make emergency repairs when signals are damaged due to crashes, weather events or normal wear and tear. Electrical maintenance is a significant contract that handles many issues related to our traffic signal and electrical systems. It is important because it permits qualified technicians to perform emergency repairs to signals, poles, lighting and other signal assets to maintain a safe driving environment.

1.4 System Performance

One of the goals of this plan is to understand where the county highway system performs well and where it needs work. Establishing system performance contributes to the effort of modeling future conditions and building a rational and performance-based program.

The primary ways in which DuDOT evaluates the system are:

- Traffic System Performance
- Motorized and Non-Motorized Safety

1.4.1 Traffic System Performance

Performance is typically quantified using metrics such as traffic delay, volume to capacity ratios, travel time, and other metrics. The County has been active over the last three decades in tracking traffic volumes, speeds, travel times, intersection delays, and highway capacity.

Figure 1-7 shows average daily traffic volume on all major roads in the county. The highest volumes are on the interstate and state routes. On County routes, average daily traffic (ADT) volumes range from 3,000 ADT to over 50,000 ADT, with an average ADT of approximately 24,000. State and Tollway facilities generally handle greater volumes of traffic. State arterials often carry 40-60,000 vehicles per day and at state intersections such as IL 83 at 22nd Street in Oak Brook or IL 83 at IL 64/North Avenue in Elmhurst, intersection volumes often exceed 100,000 vehicles per day.

At many of the major intersections in the County, there is extensive rush hour congestion despite the addition of turn lanes, coordinated signal timing, and other measures. There may be no practical method of relieving further congestion without constructing a costly overpass. At these
Figure 1-7 Average Daily Traffic All DuPage Systems, 2014-2017
locations, the State and County will need to consider whether the potential benefits of an overpass are worth the cost, impacts, and potential disruption during construction.

DuPage County performs annual traffic system performance studies. At the county scale, DuDOT performs peak hour travel time studies on minor and principal arterial highways of all jurisdictions. At the local level, DuDOT contracts engineering firms to perform signal coordination arterial performance studies that appraise performance in specific corridors and recommend adjustments to signal timing and coordination. **Figure 1-8** demonstrates the peak hour travel time performance index across the county. The travel time index is a measure of the time it takes a vehicle to traverse a segment of road between two intersections. A travel time index of 1 indicates that there is no delay and traffic flows efficiently. A travel time of 2 or more indicates that there is some significant delay in that corridor.

County highways that frequently exceed indices of 2, include the following:

- Eola Road (Diehl Road to New York Street)
- Army Trail Road (Bloomingdale Road to Gary Avenue)
- Naperville Road (Warrenville Road to US 34/Ogden Avenue)
- Finley Road (North of US 34/Ogden Avenue)
- York Road (North of IL 19/ Irving Park Road)
- 63rd Street (W of Cass Avenue to IL 83)
- Plainfield Road (Lemont Road to IL 83)

These sections include many candidate intersections where the County may focus its funds to provide system enhancements.

### 1.4.2 Safety

Ensuring safety for all users of the roadway network is the top priority of DuDOT. Safety begins with roads in a state of good repair. Safety statistics are closely tracked by DuDOT and serve as important indicators for how the transportation system is performing and where investment is needed. In addition, DuPage County, IDOT, and FHWA are working together to develop the County’s first Long Range Safety Plan. The plan will present the County’s safety mission and goals and how the County will approach all aspects of transportation system safety in the future. The plan is anticipated to be completed in 2021.

**Figure 1-9** presents severe crash statistics in DuPage County as a 3-year moving average for 2014 to 2018. Severe crashes are defined as crashes that involve a fatality and/or an incapacitating injury to at least one person. The chart shows severe crashes on DuDOT roadways and roadways managed by other agencies in DuPage County. Over the 7-year period, DuPage County averaged more than 15,800 crashes per year. Of those annual crashes, an average of 25 (0.2 percent) were fatal and over 420 (less than 3 percent) involved an incapacitating injury. Recent trends indicate a significant reduction in crashes resulting in fatal and severe injuries. Approximately two-thirds of all crashes occurred at intersections during this period.
Figure 1-8 Peak Hour Travel Time Indices, 2017-2019
DuPage County uses a traffic crash analytical tool to perform preliminary safety assessments. The County reviews crashes by both location and type, then employs this information to determine what solutions will most effectively reduce conflicts. The following sections provide a summary of 2009 to 2018 crashes by type and location in DuPage.

As shown in Figure 1-10, the most common crash type in DuPage County is a rear end collision, comprising 42 percent of the total crashes between 2009 and 2018. Rear end crashes are also the most common crash type nationwide and tend to occur in congested/stop and go travel conditions and at signalized intersections.

The second most common is turn/angle accidents, accounting for 28 percent of crashes. This crash type is more common at intersections and is most responsible for injuries or significant property damage. Correcting these types of collisions is one of the County’s primary goals.

The County is acutely aware and protective of its most vulnerable traveling populations—pedestrians and bicyclists—and places a high priority on their safety. Over the last 10 years, 59 bicyclists and pedestrians have been killed and 3,000 have been injured across DuPage County. One active effort in improving safety for these users is the investment in updating facilities to meet current Americans with Disabilities Act (ADA) standards. DuPage County completed its first Americans with Disabilities Act Transition Plan in early 2020. In this plan, the county outlines how it is committed to addressing obstacles to access throughout its pedestrian system.
To identify areas with the most immediate need for safety improvements, the County tracks and maps crashes by location. Figure 1-10 shows high severity crash locations on the DuPage County roadway network, across all jurisdictions, between 2016 and 2018. High crash rates are presented in two categories: crashes on roadway segments and crashes at intersections.

The County reviews all locations, examining each to determine causes and possible corrective actions that can be taken to reduce or eliminate the issues. The County employs a wide variety of solutions including signage, signal modifications, speed reduction, and engineered geometric solutions. For example, two locations—Diehl Road and County Farm Road—had significant run-off-the-road incidents with fatalities and severe injuries. DuPage County responded immediately by lowering speed limits, and installing rumble strips, high visibility curve warning signs, lighting, and flashers that alert drivers to the conditions.

1.5 Transit

As noted in the chapter Introduction, to adequately support the diverse needs of a growing and changing population in DuPage County, it is important to provide a range of mobility options. DuPage County residents and people who work in DuPage County do not always have the option to drive a personal vehicle for trips, and some prefer not to drive. For both transit-dependent and elective users of transit, it is vitally important to provide efficient transit services to meet their mobility needs. In addition, transit provides an alternative that reduces the number of overall vehicles on the road, helping to reduce both congestion and pollution.

Figure 1-10. Crashes by Type, All DuPage County Locations 2009-2018

Source: DuPage County DOT Crash data

Percentage of Crashes by Type
DuPage County 09-18

- Rear End
- Sideswipe
- Head On
- Turning
- Angle
- Fixed Object
- Pedestrian
- Parked Car
- Other

Rear End: 42%
Sideswipe: 9%
Head On: 19%
Turning: 10%
Angle: 19%
Fixed Object: 10%
Pedestrian: 1%
Parked Car: 2%
Other: 2%
Figure 1-11. Locations with Highest Crash Severity, 2016-2018

Source: DuPage County DOT crash data, 2016-2018
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DuPage County is served by daily fixed route, commuter shuttle and on demand transit services. There are three Metra commuter transit lines served by 60 fixed PACE bus routes that run through the County (Figure 1-12). In addition to the fixed route services, PACE bus partners with 14 local municipalities and townships to provide Dial-a-Ride services in DuPage County. These services are discussed in more detail in the following sections.

DuPage County adopted the DuPage Area Transit Plan in 2002 and again in 2011. This plan included eight short-term and six long-term recommendations for transit service and operations to connect DuPage County with the region. Four of the eight short-term recommendations are either operating or in process of completion. Long term recommendations have been affected by recession, ongoing state of good repair backlogs, and unfunded federal mandates – but some of these programs still hold promise in the future\textsuperscript{15}.

1.5.1 Transit Services

Commuter Rail Service

Metra provides rail services in DuPage County via the Milwaukee District West (MD-W), Union Pacific West (UP-W), and the Burlington Northern Santa Fe (BNSF) lines. This commuter rail service predominantly provides trips to and from downtown Chicago. These services are provided seven days a week with the most frequent options offered during the peak commute hours (weekday mornings and evenings). Approximately half of all trains operate in the peak periods.

The three lines through DuPage County carry approximately 114 in-bound and outbound trains with 111,500 trips on an average weekday. Despite significant growth in ridership over the last two decades, this ridership has decreased in recent years. Ridership on these three Metra lines has decreased by 7.2 percent between 2015 and 2019.\textsuperscript{16}

The nine Metra stations located in or on the border of DuPage County are the destination or origin for approximately 72,000 trips on an average weekday. On an average weekday, approximately 72,000 trips begin or end from one of the nine Metra stations located in DuPage County. More than half of these rides, 39,000, are made on the BNSF line. Another 21,000 trips to or from DuPage are made on the UP-W line and the remaining 12,000 occur on the MD-W line. The two busiest Metra stations, outside of Chicago, are located at the west end of the BNSF line in DuPage County – the Route 59 and Naperville stations. These two stations serve approximately 12,000 and 8,000 trips on an average weekday, respectively.\textsuperscript{17} There are presently almost 23,000 parking spots at the train stations that are typically permitted by the municipalities.

\textsuperscript{15} DuPage Area Transit Plan, DuPage County, September 2011. www.dupageco.org/EDP/Public_Transit/1343/.
\textsuperscript{16} Metra Division of Strategic Planning and Performance, Annual Report 2019.
\textsuperscript{17} Metra Division of Strategic Capital Planning, Commuter Rail System Station Boarding/Alighting County, Summary Results Fall 2018.
Figure 1-12. Transit Services in DuPage County

Source: DuPage County DOT
These commuter service trains share their rail lines with freight trains. Thus, Metra trains must coordinate and operate in parallel with freight train schedules. On an average day, 95 freight trains will run on the BNSF line, 101 on the UP-W line, and 86 on the MD-W line. Due to limited track availability, the BNSF line is the only one that can provide express Metra services to and from Chicago. This is because it is the only line with three parallel tracks. Whereas both the MD-W and UP-W lines have two tracks. However, a third track is currently under construction on the UP-W line and expected to be completed in 2021. This third track will provide the potential for express service to be offered on this line.

**Bus and Demand-Response Service**

Pace Bus services also play an important role in mobility in DuPage County, providing an estimated 18,000 rides each weekday. Pace services in DuPage County include fixed bus service, commuter services, On-Demand (formerly Call-N-Ride), and CTA connector (inter-county) services. Before COVID-19 restrictions, there were 60 DuPage County-based routes. Twenty-one of these routes, including the extremely popular I-55 Flyer Bus on Shoulder route, were fixed or inter-county CTA connector routes. These routes generally offer regular daily schedules. Forty of the routes were designated as commuter routes which operate on a fixed route and are linked to a specific Metra station. These routes usually only operate on weekdays in the peak morning and evening rush hours and their schedules are tied to Metra arrival and departure schedules. Three other routes are designated On-Demand that operate within specified areas of the county.

Pace also partners with DuPage municipalities and townships to provide On-Demand services in the County (i.e. reservation-based, shared-ride service in designated service areas). These services operate based on customer requests rather than a fixed route or schedule, offering connectivity to low density areas and providing mobility to low-income, disabled, and elderly residents. The agencies that partner with Pace to provide On-Demand services in DuPage County include Bloomington Township, Downers Grove Township, Wayne Township, DuPage Senior Services, Ride DuPage County Health Dept., VA Commission, Milton Township Partners, City of West Chicago, City of Elmhurst, Village of Bensenville, Naperville/Lisle Partners, City of Warrenville, and Winfield Township.

DuPage County’s Human Services department also provides subsidized taxi services and lift-equipped bus transportation for income-eligible DuPage County residents. This service is primarily used for visits to medical facilities and government offices within the County limits.

**1.5.2 Transit Access**

While the transit services noted above offer a nice range of mobility options throughout DuPage County, the County recognizes that not all areas are well served. Through tools, such as Chicago Metropolitan Agency for Planning (CMAP)’s access to transit index scores or the Center for Neighborhood’s “All Transit” tool, the County can maintain an understanding of how access to transit services is distributed and use that information to advocate for improvements in future transit investment decisions.

**Figure 1-13** presents CMAP’s access to transit index scores by CMAP subzone in DuPage County. These scores were developed for CMAP’s new comprehensive regional plan, ON TO 2050. The index assigns scores of 1 to 4 based on the average scoring of four factors: transit service...
Figure 1-13. CMAP Transit Availability Index in DuPage County ¹⁸

¹⁸ CMAP, Transit Availability Index. https://datahub.cmap.illinois.gov/dataset/access-to-transit-index
frequency, proximity of transit stops, pedestrian friendliness, and number of subzone connections.

As shown, most of the well served areas are located along one of the Metra lines. Of the areas with little to no transit services, most are low density industrial areas or large forest preserves. However, there are some areas with high residential and/or employment density with limited access to transit. These areas have been identified for improved last mile connectivity, and include portions of Wood Dale, Addison, Elmhurst, Oak Brook, Aurora, Naperville, and Lisle. In 2017, the Regional Transportation Authority (RTA) completed a study to identify ways to improve last mile transit connectivity in DuPage County. The RTA and DuPage County will continue to look for opportunities to create a more seamless experience.

### 1.5.3 Transit Planning Efforts

In 2011, the DuPage Area Transit Plan Update prioritized state of good repair for existing DuPage County transit service as well as near-term improvements such as upgrades to existing Metra rail lines, express bus, and Pace Pulse Arterial Rapid Transit service. DuPage County and its regional partners often collaborate to address challenges that cross borders and jurisdictions.

For example, the IDOT Smart Corridors Initiative includes the IL 64 and 22nd Street/IL 56 corridors, which extend from Chicago to the western suburbs through both Cook and DuPage counties. The Smart Corridors Initiative identifies opportunities to use Intelligent Transportation Systems (ITS) to improve traffic flow and address congestion across regional corridors. The project, now in design, includes upgrades to signal systems to allow transit pre-emption for improved mobility and on-time performance. DuPage County is participating in the Smart Corridor work by providing guidance on proposed improvements and offering cost participation.

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**Cook-DuPage Corridor**

The Cook-DuPage Corridor examines a broad range of transportation system improvements to address the mobility needs in the western suburbs of Chicago, an area that includes over 1 million residents and 750,000 jobs. It is recommended for multi-modal analysis in the 2030 Regional Transportation Plan with transit and highway proposals to address congestion and improve mobility in the western suburbs.

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19 DuPage County Transit Connectivity Study, RTA, August 2016.
1.6 Freight Movement in DuPage County

Freight movements are a major contributor to congestion and wear and tear on DuPage County roadways, but they are also an important part of the local and regional economy. The regional freight and logistics industry accounts for approximately 5 percent of private sector employment and $10 billion in personal income in the Chicago metropolitan area. In DuPage County, approximately 23,700 people work in transportation and warehousing jobs, and growth in the industrial market has been substantial both regionally and within the County.

Figure 1-14 presents the major freight facilities within and adjacent to DuPage County, including designated truck routes, railroads, intermodal facilities, and airports. Designated truck routes guide drivers to the safest routes for large trucks to travel and help avoid any travel conflict or impacts on more sensitive routes. The County’s truck routes include a combination of interstate highways, many of which are operated by the Illinois Tollway, state routes, and County routes. Most of the arterial routes that are designated truck routes within the County are maintained by IDOT.

Freight Facilities in DuPage County

With five major interstates, three Class I rail-lines (BNSF), Union Pacific (UP), and Canadian Pacific (CP), and direct connections to the fourth busiest cargo airport in the nation, DuPage County plays a key role in the regional and national freight markets. In 2012, 754 million tons of freight valued at over $1.1 trillion moved directly into and out of metropolitan Chicago. Due to its centralized location, DuPage County serves as a major through point for truck traffic headed to and from Chicago, O'Hare, and many of the warehousing and logistics spaces in Cook and Will County.

Much like the rest of the country, trucks are the predominant freight mode in DuPage County and the Chicago region. According for FHWA’s Freight Analysis Framework (FAF) data, trucks carried approximately 68 percent of freight moving in and out of the region by volume and 79 percent by value in 2012. That figure excludes through-movements which also account for a significant portion of freight traffic in the region. The interstates running through DuPage County carry some of the largest truck volumes in the region. Approximately 20,000 to 25,000 trucks per day travel along I-290 and I-294. Volumes of 10,000 to 15,000 trucks per day are carried by I-355 and I-88.

As shown in Figure 1-15, DuPage County is surrounded by regional freight clusters contributing to large volumes of freight movements throughout the County. Two major clusters of freight-supportive land use reside within the County to the northeast and west: O'Hare and the Fox River Valley. The map outlines these freight clusters based on warehouse, manufacturing, and distribution land uses. Two other freight clusters are located just outside DuPage County in Will County to the south and suburban Cook County and the City of Chicago to the east.

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22 Federal Highway Administration Freight Analysis Framework data, 2012
23 Illinois Department of Transportation data, 2015
24 Ibid
Figure 1-14. Freight Facilities in DuPage County
Figure 1-15. Freight-Supportive Land Use Clusters in the Chicago Region
While the only intermodal facility in DuPage County is the UP automotive facility south of the DuPage airport, there are several large intermodal facilities to the south in Will County and northeast of the County around O'Hare. DuPage County's location between these large intermodal facilities and home to large manufacturing and logistics clusters that generate trips to and from the intermodal facilities means there is a high volume of truck traffic around the intermodal facilities and increased rail traffic that could lead to conflicts with Metra service, which share the lines, and also increase grade crossing delays for motorist. Additionally, Canadian National Railway (CN) owns the EJ&E Beltline that moves north-south rail traffic in western DuPage County. Many of the County's industrial corridors are located along the rail lines which are operated by the Illinois Tollway, state routes, and County routes. Most of the arterial routes that are designated truck routes within the County are maintained by IDOT.

All of these factors impact the industrial land use market. The industrial market Rentable Building Area (RBA) grew by 12 percent from 2000 to 2016 in DuPage County, representing over 184 million square feet of RBA. Of the 6.5 million square feet of new construction starts planned in the Chicago Industrial Market in 2013, 10 percent were located in DuPage County.

**Grade Crossing Delay**

Grade crossings where trains cross over roadways can cause significant modal conflicts, especially when high traffic railroads cross over a busy roadway. There are about 1,500 grade crossings in the Chicago region, 139 of which are in DuPage County (Figure 1-14). Relatively few of the at-grade crossings are located on major arterials in DuPage County.

In DuPage County, the total hours of aggregate delay caused at open, public, at-grade highway crossings is about 614 hours per year. The top 10 grade crossings by hours delayed contribute to 34 percent of those hours delayed. Most of the crossings that contribute to significant delay issues are located in suburban downtown areas near a Metra station. Delay at these locations can be exacerbated when the location of the crossing is directly adjacent to the station, as vehicles and pedestrians cannot cross the tracks for the duration that the train is stopped. In these locations, individual delays may last more than 5 or 10 minutes.

Under the Chicago Region Environmental and Transportation Efficiency (CREATE) program, which is a public-private initiative to advance a set of rail improvements in the Chicago region, the region is slowly reducing freight delays by improving crossings. DuPage County has improved three grade crossings as part of this program. Projects in Cook County will have positive impacts on freight flow throughout the region and DuPage County remains supportive of those projects for federal and state funds which can accelerate completion.

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1.7 Airports

DuPage County has two airports located within or along the County border: O'Hare and DuPage Airport. While DuDOT does not have maintenance or operational responsibilities over these airports, airports are a major origin and destination for passenger and freight traffic.

Located along DuPage County’s northeastern border with Cook County, O’Hare is one of the busiest airports in the country. In 2015, O’Hare handled over 9 billion pounds of freight, making it the nation’s fourth busiest air cargo hub. O’Hare’s freight capacity supports one of the largest clusters of manufacturing, warehouse, and distribution centers in the region. Investments continue to be made to expand services and increase capacity. In 2013, construction began on a new 820,000 sq. ft. cargo facility just south of the airport. This project is anticipated to expand the airport’s cargo facility space by more than 50 percent. While many opportunities for growth exist, they are constrained by congestion, limited space for expansion and modernization of existing facilities, and limited access in and around O'Hare. To promote continued growth of this regional asset these constraints will need to be addressed.

Serving many of the commercial centers in the vicinity, DuPage Airport operates as a general aviation facility in West Chicago. DuPage Airport has the largest concentration of corporate aircraft in Illinois.

1.8 DuPage County Transportation Services

DuDOT provides a number of services to maintain its system of highways and trails. Figure 1-16 highlights some of the operations and maintenance services the County performs, including snow and ice removal, roadway maintenance, sign maintenance, and sidewalk and trail repair. Maintenance staff has also modernized its approach to citizen access. DuDOT hosts a citizen report application that receives complaints such as pot holes, damaged mail boxes, sign knockdowns, downed trees, path or sidewalk issues, and flooding or drainage problems. Maintenance staff are notified immediately through the app and then assess the issue and decide if it can be handled by repair crews or should be handled by an independent contractor. The free application can be accessed through the DOT website at www.dupageco.org/DOT.

The DOT maintains a fleet of vehicles and facilities to perform these operations – including repair garages, salt domes for storing de-icing materials in the winter, mowers for maintaining the grass along County highways, and many other necessary pieces of equipment. The maintenance and operations portion of DuDOT is a vital component of its operations, with 72 percent of DOT personnel devoted to these services.

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30 Source: DuPage Airport Authority at http://www.dupageairport.com/airport-info/
DuPage County Transportation Services

Below are the services that the Dupage County Division of Transportation provides.

**Operations**

- Number of Facilities: 2

**Functions**

- Roadway Maintenance
- Trail/Sidewalk Maintenance
- Snow + Ice Removal
- Mowing
- Signs
- Materials

**Personnel**

- Fleet Maintenance: 13%
- Professional/Technical/Engineering: 28%
- Highway Maintenance: 59%

**Fleet**

- Average Age of Equipment is 8.1 years
- 40 Plow Trucks
- 10 Snow Plow Routes
- 33 Mowers

**Repair**

Figure 1-16. DuPage County Transportation Services
Chapter 1 • Existing Conditions

Key Takeaways

**Growth and Land Use** – DuPage County population growth has slowed though development continues to create greater density in select areas and corridors. Commercial development over the last decade has also slowed with office and retail uses having nominal growth and industrial/warehousing uses trending up. DuPage County remains an employment hub for the region and almost 60 percent more commuters travel into DuPage County than leave for work. With more online shopping and demand for warehousing and distribution space, the transportation/land use interface will change, and the County and its communities must be prepared to respond to this evolutionary trend.

**Diversity** – DuPage County's population continues to become more diverse, including the immigration of minority persons. At the same time, the population is aging, and disabilities have become more prevalent. As such, mobility needs are changing and emphasis on complete streets, pedestrian safety, and flexible or micro-transit accommodations must become a bigger part of County planning.

**Assets and Condition** – Assets owned and maintained by the County are in generally good condition and are being monitored closely with the intent of allocating resources to maintain a state of good repair. However, as the system ages, the County must be prepared to expand and improve its inspection programs for timely repair and replacement activities.

**Transit and Mobility** – The County continues to expand its system of bicycle and pedestrian facilities and promote transit investments in its commitment to the Complete Streets and Healthy Roads Initiatives. The County is also committed to adhering to federal and state guidelines on sidewalk and pedestrian accessibility through the ADA Transition Plan.

**System** - The County views the entirety of the highway, transit, non-motorized, and freight networks as a dynamic system that, irrespective of jurisdictional responsibilities, acts in a complementary and reinforcing way. An example of this is the ongoing effort to integrate traffic signal systems and to bring system operations under a shared monitoring authority. Other assets such as the storm sewer and drainage network may be another system where agencies develop a cooperative monitoring arrangement. The County has also attempted to and will continue to promote shared services where practicable and where efficiencies can be gained.