Chicago Metropolitan Agency for Planning

# RETHINKING MOBILITY IN A POST-COVID CHICAGO REGION

## Task 3 COVID Induced Changes

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# 1.0 INTRODUCTION

As a triggering factor for a recession, COVID-19 has proven to be unique, with initial ripple effects which brought the entirety of the world economy to an effective standstill between March and April of 2020. And while the pace of recovery through 2021 was impressive, our experience reinforces the need to balance the following elements in fully evaluating the future impact of COVID in northeastern Illinois:

1. The extent to which pre-existing structural trends re-emerge and accelerate post-COVID; or
2. Whether short-term trends due to COVID strengthen and dictate different future trajectories.
3. This analysis is reflective of economic analysis and broader surveys undertaken incrementally between March of 2020 and October of 2021. Analytical work related to the assessment of employment and real estate was finalized during the summer and fall of 2021. Important caveats include:

- The analysis has not been updated to consider future economic consequences of the Russian invasion of Ukraine, which unfolded beginning on February 24, 2022. While it is too soon to fully calibrate resulting impacts, the war has likely expanded concern over the impact of inflation on the US economy, as evidenced by the acceleration of 30-year mortgage interest rates beyond 5%, according to the St. Louis Federal Reserve.
- US office markets remain in a state of flux as strategies to return to the office have been delayed due to COVID. As of March 2022, clarity regarding the real impact of hybrid work on office markets remains elusive.
- With new COVID variants expected to emerge in coming months, it would be premature to finalize perspectives with regards to impacts and implications.

## 1.1 Executive Summary

With the benefit of hindsight, the COVID-induced period of economic disruption is creating broader ripple effects that are both similar to past recessions, and also very unique. The following elements appear salient and relevant as CMAP considers rethinking mobility in a post-COVID Chicago region:

**Telework**

- While retail and hotel markets are recovering, a continued mismatch between low commercial office utilization and generally higher values and occupancies reinforces a lack of certainty about the real impact of hybrid work on office market performance.
- With general concern about growth in work from home impacting office market concentrations within Chicago as well as DuPage and Lake Counties, the analysis shows that a majority of jobs across the CMAP region are in sectors with lower probability of work from home and would benefit from improved transit accessibility.
- Trends regarding “Work from home” have been building gradually for 20 years, with the greatest growth in metro areas with longer commute times and limited transit service. For the CMAP region, while commuter rail service has encouraged workers to commute into downtown Chicago, this system is less well suited to suburb-to-suburb / reverse commutes in sectors where work from home is less likely (i.e., retail, entertainment, and wholesale / logistics).
- Transportation Network Companies (TNC) will face significantly higher costs post-COVID, altering the conversation about competition with traditional transit services. For the CMAP

region, this changing competitive environment will have different impacts on how trips unfold within downtown Chicago, in comparison to suburban journeys.

**Housing**

- The path forward for regional housing markets will need to be reflective of unfolding housing choices made by Baby Boomer and Millennial generations, the latter of which is actively shifting from renting to home ownership. While collar counties benefited from steady housing demand growth through 2008, trends since 2010 have favored housing locations closer to transit. Looking forward, AECOM expects that opportunities for housing reinvestment in inner-ring suburbs will likely emerge.
- In parallel with unfolding shifts in demand is a regional housing inventory which is creating affordability challenges and does not appear to be expanding at a rate which is supportive of regional growth.

**Employment**

- Although the region experienced significant losses in manufacturing employment through 2010, our analysis and insight point to recovery and growth for regional manufacturing post-COVID. Given that the CMAP region continues to serve as an essential logistics node for consequential and growing manufacturing and distribution activity across the Midwest, there are clear expectations for growth in jobs, output, and truck traffic. This prompts additional concerns as to how workers access generally lower paying jobs in warehouse districts which traditionally have not benefitted from consequential transit service.

**E-Commerce**

- E-commerce is creating consequential demand for new warehouses in both rural edge and urban areas, pulling jobs out of traditional retail nodes, and altering where sales tax revenues flow. The 2018 Quill v North Dakota Supreme Court ruling on e-commerce purchases ensures that a growing share of future sales taxes will flow to where the purchaser lives, rather than where the item was purchased, impacting municipal sales tax revenues (and RTA sales tax funding), as traditional retail destinations such as Schaumburg, Oak Park, and Northbrook lose sales to smaller communities.
- E-commerce growth has raised concerns about impacts to at-risk populations who live in proximity to urban e-commerce warehouses, as these are linked to increased truck traffic and negative impacts on air quality and human health outcomes.
- E-Commerce and warehouse demand has been steadily building since 2010, linked to the growth of Amazon and the gradual retreat of traditional retailers such as Sears / Kmart. While COVID has created a consequential short-term demand crunch for warehouse space, longer-term trends are favoring further shifts in retail spending toward warehouse space. For the CMAP region, continued warehouse growth in rural edge locations across Will and Lake Counties raises questions about transit access for future suburban employees as well as the capacity of local water, sewer, and road infrastructure to support new development.

## 1.2 Methodology and Sources

Unlike past recessions, where economic ripple effects took months or years to fully influence and alter regional trends, the impact of COVID has been profound, resulting in significant month-over month changes in economic activity, along with relevant economic “noise”. Examples of this dynamic include:

1. Numerous sources have acknowledged clear growth of self-employed and increasingly home-based workers since 2021, with the Wall Street Journal (11/29/21)[i] identifying a net increase of 500,000 self-employed workers since March of 2020 and 4.54 million new businesses formations since January of 2021. Growth in remote work adds a dimension to regional labor studies, as industry tools such as the Quarterly Census of Employment and Wages (QCEW) do not track self-employed workers[ii],
2. COVID created short-term challenges with economic data. With the onset of recession in the Spring of 2020, reporting of unemployment and jobs data was challenged by constrained reporting of data, changes in how data was captured, and concern over how seasonal adjustments were applied - factors which added “noise” to reported data[iii].

In response, the AECOM methodology for this section sought to track data sources which provide real-time insight regarding trends across the US economy, cutting across labor force, energy, employment, and the built environment. We also leveraged media reports from organizations such as the Journal of Commerce, the Economist, the Wall Street Journal, and the New York Times, to provide more clarity regarding month-over-month changes.

Section 2 summarizes our discussion of national trends, with broader narrative covering changes in passenger levels and energy prices in context with sector specific implications across manufacturing, health care, and office-using sectors. Section 3 focuses on more specific trends across the CMAP region, with emphasis on changes in employment by sector, and by probability for work from home. The analysis leveraged the following specific data sources:

- BLS – Bureau of Labor Statistics, covering labor force, unemployment trends, and cost of living
- TSA – Transportation Security Administration, covering passengers going through airport security
- EIA – Energy Information Administration
- Emsi – A proprietary source of industry employment and output data
- FRED - Federal Reserve Economic Data (FRED) is an online database of time series economic data from national, international, public, and private sources
- Census Transportation Products journey to work data for 2006-2016
- CoStar – Commercial real estate market data for industrial, office, retail, hotel, and apartment sectors
- Illinois Department of Revenue – Municipal sales tax data collection for 2010, 2019, and 2020

Specific sources are identified in the endnotes.

# 2.0 A DISTINCT AND PROFOUND MOMENT

The past two years have yielded a host of unique challenges across the US national labor force, employment, inflation, shortages, air travel, and other areas.

### Immediate Impact

As US unemployment expanded from roughly 4.5% in March of 2020 to 14.4% in April of 2020 as lockdowns unfolded, US government financial support, including legislative, Federal Reserve, & administrative actions to the economy expanded, with total appropriations in excess of $6 trillion during FY 2020, with roughly $850 billion in direct payments to taxpayers. By June 2021, the supply of US dollars in circulation (M2 definition) had expanded by about $5.3 trillion, and deposits in US banks expanded by about $4.4 trillion.

### Remote Work

Lockdowns forced companies into a dramatic experiment with remote work, and office utilization rapidly plunged below 30% across central business districts in particular. The path forward for office markets is complex, with a continued structural mismatch between generally higher real estate values and significantly lower actual levels of office space utilization.

### Labor Force

As lockdowns also closed local school districts, households confronted the challenge of working from home and providing childcare. For the majority of 2020, women left the labor force at a faster rate than men, with partial recovery by the summer of 2021 as public schools re-opened. Moving into 2021, analysis by BLS and other sources have started to argue that COVID has accelerated the departure of the Baby Boomer generation from the workforce.

**Figure 1. Unemployment Rate; BLS**

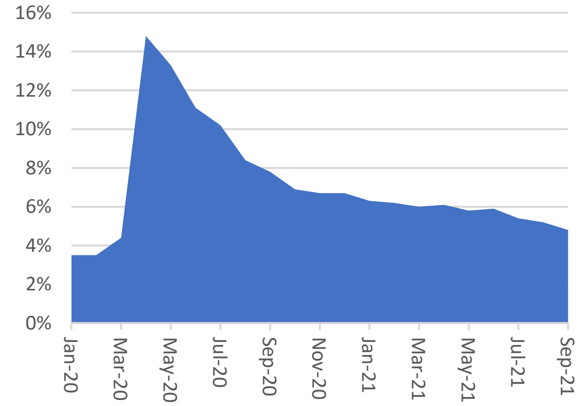



**Figure 2. Labor Force Participation, % Change from February, 2020**

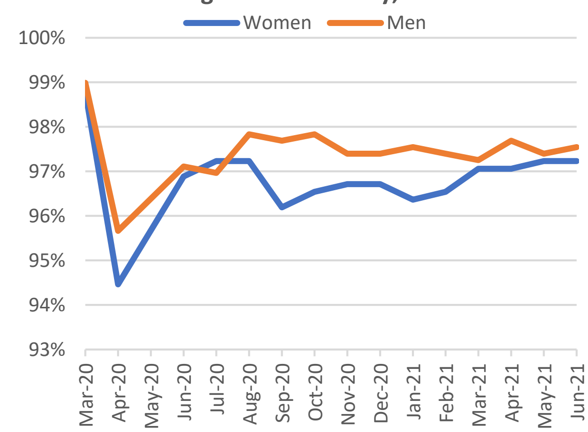
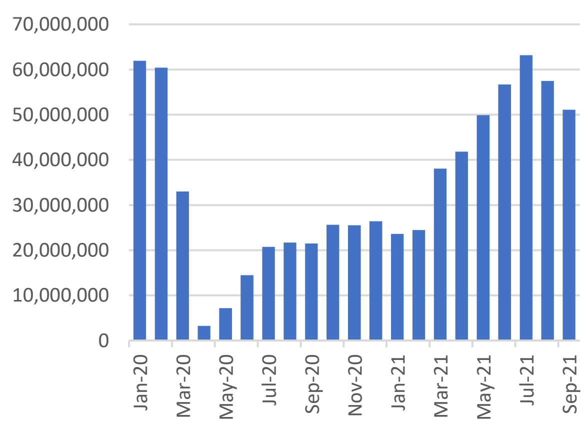


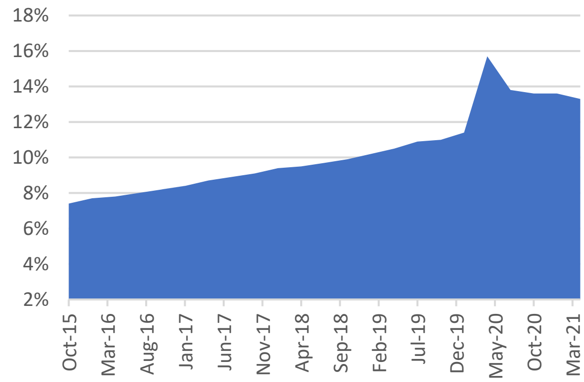

**Figure 3. TSA Passengers, US Airports; TSA**



## Urban / Rural Equity

Expansion of remote work both reinforced the limits of rural area broadband infrastructure and highlighted urban equity challenges linked to workers from communities of color who were more likely to be defined as "essential", hold jobs that require in-person-contact, be transit dependent, and impacted by recession induced job losses in hospitality, retail, and restaurants. These workers were also more at risk due to pre-existing health conditions which are otherwise exacerbated by COVID, including asthma and heart disease[iv].

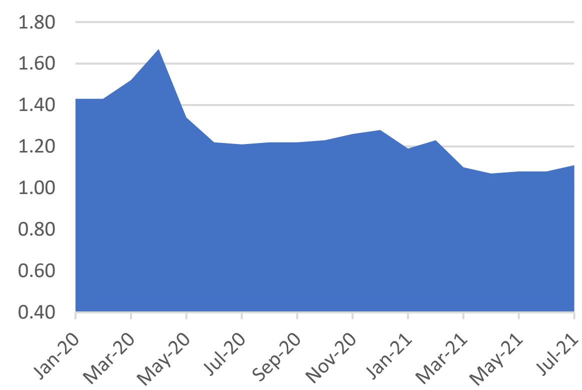
**Figure 4. E-commerce % of Retail Sales; FRED**




## E-Commerce

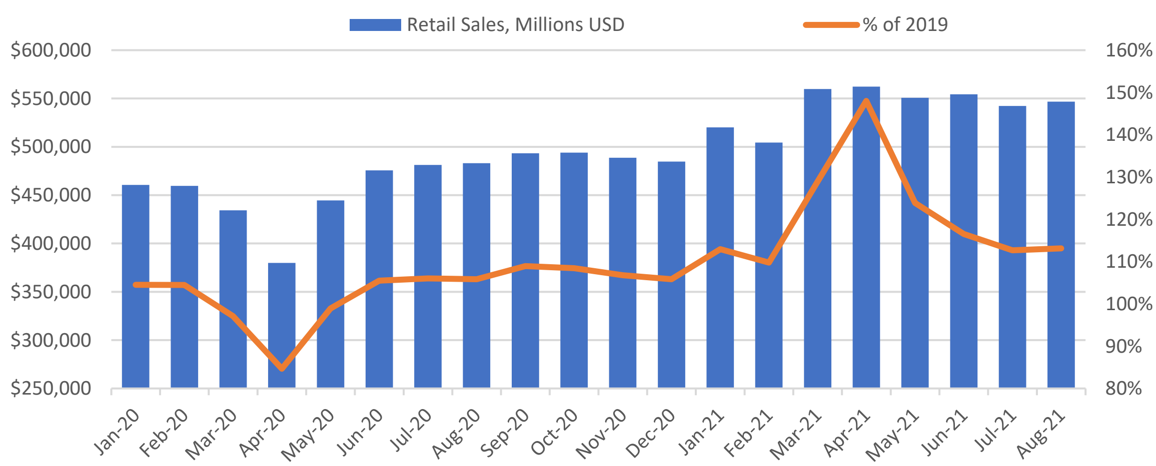
Retail was already under pressure before COVID due to growth of e-commerce and a general oversupply of retail space. However, expanded federal stimulus spending in response to COVID led to significant increases in retail spending. The share of e-commerce sales quickly accelerated past 15% by the spring of 2020. COVID only accelerated the downward spiral of department stores such as Sears / Kmart; the combined entity store count has decreased from a reported 426 stores in 2019 to roughly 100 in 2021[v].

**Figure 5. Inventory to Sales Ratio; FRED**




While growth of e-commerce did slow into 2021, total retail sales have continued to increase since June of 2020 at monthly rates that are nearly twice the monthly rate of growth in retail sales between 2015 and 2019. Sustained retail demand growth has been consequential. Global supply chains began to fall behind during the Spring 2020 and have not recovered into 2022, as evidenced by ratios of store sales to inventories which have only decreased over the last 16 months.

**Figure 6. Retail Sales, Millions of USD, Percent of 2019; FRED**



### TNCs

Given the outsized impacts of COVID on dense urban areas, impacts on transportation network companies (TNC) such as Uber and Lyft were significant. Both companies saw 70% decreases in ridership as lockdowns unfolded. While both companies absorbed significant financial losses since March of 2020, for Uber in particular, financial losses in 2019 (>$8 billion) greatly exceeded losses in 2020 ($4.8 billion). When placed in context, it is clear that rapid growth of TNC's such as Uber from 2015-2019 was largely subsidized by Wall Street investor capital to gain market share and jumpstart "network effects". According to The Economist, nine companies globally focused on delivery and transportation have lost a cumulative $11.5 billion in the last year on sales of $75 billion[vi]. Moving forward, TNC's such as Uber are expecting to incur increased costs linked to higher fuel and labor costs, which would imply lower growth rates.

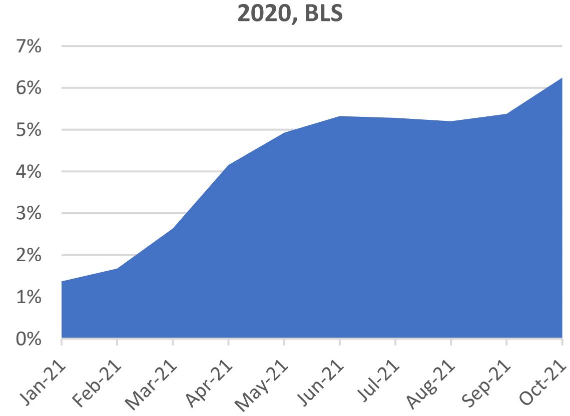
### Labor Force Trends

Accelerated economic activity into 2021 revealed consequential labor force constraints, with dramatic growth in new job postings and quits (people willingly leaving jobs), faster than the rate of new hires. As a result, while unemployment is approaching pre-recession levels (5.3% in August 2021 compared to 3.8% in February 2020) the economy is struggling with worker shortages. Still depressed workforce participation rates reinforce that roughly 1.75 million people had yet to return to the labor force, with roughly 4.4 million people unemployed as of August 2021. News sources also place labor shortages in context with the impact of more restrictive US immigration policies which have been in place since 2016, with additional challenges following Spring 2020 lockdowns. The total number of visas issued has fallen from roughly 617,750 in 2016 to 240,526 in 2020, according to the US Department of State[vii].

### Inflation

In spite of dramatic growth in federal support to the US Economy during 2020, inflation remained in check. By spring 2021, inflation pressures expanded at their fastest pace going back to 1989, linked to recovery in demand, worker shortages, and supply chain constraints. While some markets have adjusted (lumber), costs in other markets (trucking, used cars, energy, etc.) have continue to increase, culminating in an October 2021 increase in the Consumer Price Index (CPI) at a 6.1% annual rate, according to the Bureau of Labor Statistics.

Figure 7. Monthly Growth in CPI, 2021 vs 2020, BLS

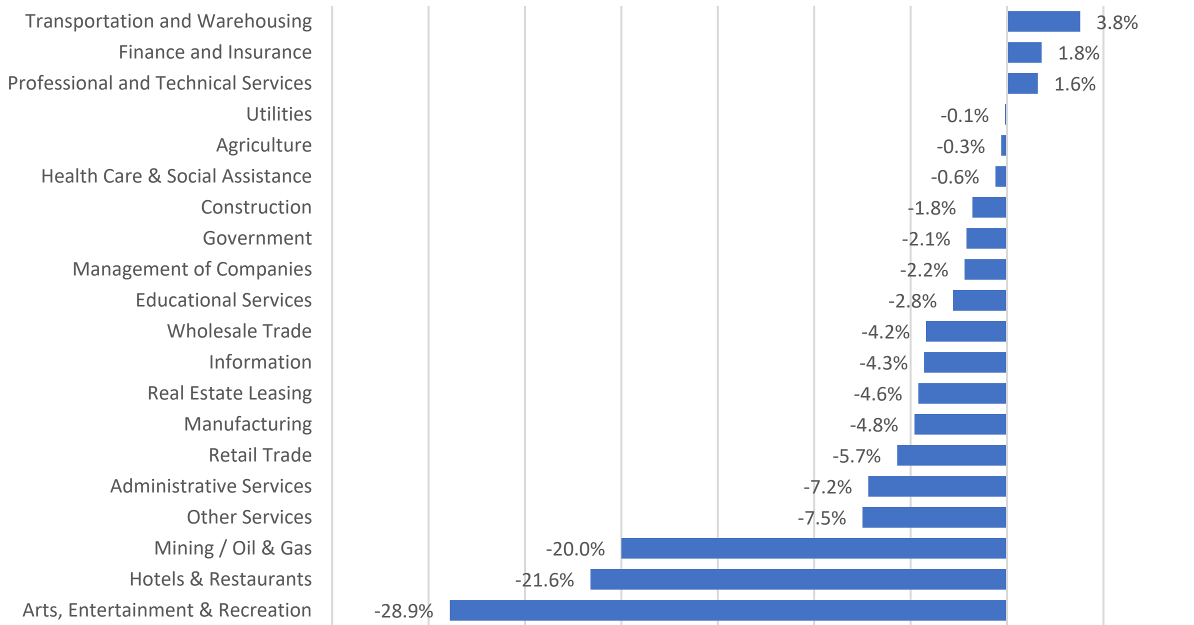



### Employment

COVID has heavily impacted employment in service sectors such as restaurants, hotels, and entertainment where more than 3.75 million jobs have been lost since spring of 2020. While domestic air travel is recovering (76% of 2019 levels), international air travel remains depressed, with corresponding impacts on hotels. COVID has encouraged people to "work remotely" for extended periods of time, with greater interest in outdoor activities, rather than dining, entertainment, and conventions, which have continued to struggle. Sectors such as mining and oil & gas struggled with COVID-linked reductions in demand in 2021 in context with structural changes in energy markets linked to expanded use of renewable energy sources.

As shown below, employment in sectors such as warehouse and transportation has increased strongly since 2019, reflective of growing e-commerce demand as well as strength in manufacturing. Losses in retail are reflective of both broader competitive forces (shift to e-commerce / department store closures) as well as COVID-linked changes in demand.

**Figure 8. % Change in Employment, 2019 to 2021, EMSI**




# 3.0 SECTOR TRENDS

Beyond the top-line challenges documented above, COVID has created unique challenges for specific industry sectors which will have bearing on the pace of recovery across Chicago and the larger CMAP region. The following narrative explores sector-specific trends in greater detail across manufacturing, freight, retail, health care, and housing, with implications for the CMAP region identified where appropriate.

## 3.1 Sectors

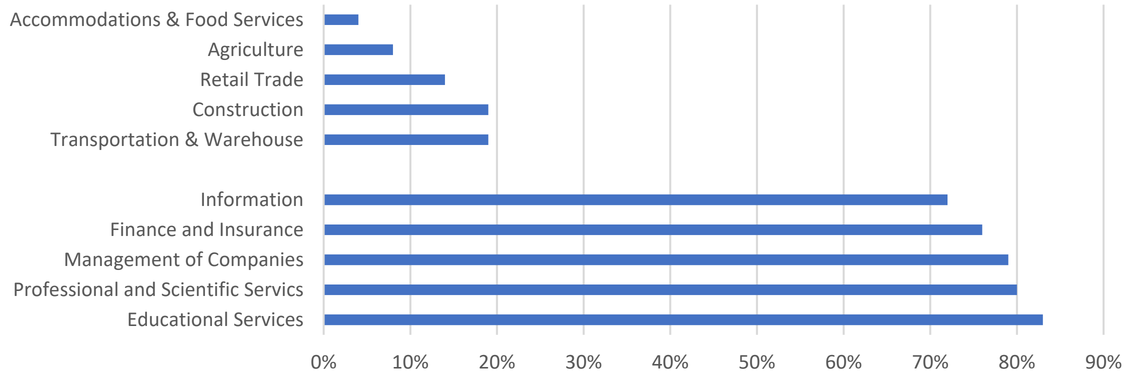
***Office / Return to Work***

Office markets have been impacted by COVID, as vacancies accelerated into 2021, with major markets seeing rates in excess of 20% according to JLL. Primary concerns include:

- Office space utilization remains very low, under 30% as return-to-work strategies have been delayed by onset of the new COVID variants, alongside challenges with reopening schools and childcare services.
- While 30+ year old office buildings with older ventilation systems are an emerging area of concern, office markets in general do not yet appear to be fully pricing in low utilization.
- In 2020, while high-cost markets (New York City and San Francisco in particular) initially dealt with significant worker out-migration, trends for 2021 point to recovery. Research by Brookings leveraging US Postal Service data argues that the vast majority of worker moves out of core cities were in fact shorter in distance, within a region rather than region to region[viii].

With significant conjecture about the share of the workforce that has permanently shifted to "work from home" recent research points to clarity regarding consequential differences in the extent to which specific industries are capable of supporting expanded work from home. Analysis completed by the University of Chicago by Dingel and Neiman reinforced clear differences in the percentages of jobs that have potential for work from home, as shown below[ix]. These differences have implications for growth in equity gaps which COVID has already reinforced, with lower wage service jobs remaining less likely to be done from home.

**Figure 9. Percentage of Jobs that Can be Done at Home, By Sector, 2020**




*Source: How many Jobs can be Done at Home, Dingel & Neiman, University of Chicago, April, 2020*

Industry research points toward expectations for growth of a hybrid model for post-COVID office work. Studies undertaken by the National Bureau of Economic Research (NBER) on "Why Working from Home Will Stick" highlights the following points:[x]:

- Pre-COVID, workers generally spent about 5% of full work-days at home.
- Beginning in the Spring of 2020, the percentage of work-days spent at home initially accelerated beyond 60%, before falling into a steady 40%-55% range.
- Working from home is not "free" and requires additional personal investments (furniture, IT, renovations) estimated at about $560 per worker, according to NBER research.
- Expectations point to a post-COVID hybrid world where about 20% of workdays are spent at home, with most workers opting for 3-4 days a week in the office.
- One consequence is that a share of downtown employee spending will shift, impacting downtown restaurant and retail spending and employment.

Other research on workers in information and IT services reinforced concern about how collaboration and productivity impacts related to the shift to virtual / remote work. Researchers leveraged expansive data (email, calendar, chat, IM) on roughly 61,000 Microsoft employees, and found that within the first 6 months of 2020, that worker networks became more siloed and static, with fewer bridges across the organization[xi]. The research concluded that these effects would make it more difficult for employees to acquire and share new information across the network.

AECOM research also reinforces the impact of pre-COVID trends and broader realities. For example, while companies have encouraged "work from home" as a tactical response to health concerns, insight suggests that inevitable strategic pressures to remain competitive suggest that policies which encourage "work from home" will be evaluated in context with business decisions regarding employee pay levels as well as decisions to automate, offshore, or outsource positions. Well before COVID, jobs in regional headquarters operations (finance and accounting in particular) were more likely to be "work from home", outsourced or sent off-shore.

AECOM research also suggests that pre-existing differences in mobility, population density, housing prices, and cost of living that were playing out across US metropolitan areas before COVID will also have direct bearing on employee motivation to "work from home":

- Metros with higher costs of living (e.g., NYC, Boston, and Chicago) had leveraged their robust legacy transit infrastructure to support job growth and high-density housing, with increased transit use and reductions in car mode share, and a slower rate of growth in working from home.
- Metros with limited transit infrastructure (e.g., Atlanta, Dallas/Fort Worth, and Houston) have seen both sustained growth in jobs and car mode share, with faster growth in working from home. Households in these metros spend a larger share of discretionary spending on transportation services.
- Post-COVID, local differences in transit infrastructure will, in part, influence access to job centers and level of interest in returning to physical workplaces. A majority of US urbanized regions simply do not have the magnitude of transit access to offset employees' motivations to work from home; some employees will commute to their physical workplace by SOV instead, but others will simply forego the trip altogether.
- The CMAP region, with its diversity of urbanization patterns, may exhibit characteristics of all the above. Workers based in the dense regional core, particularly the Central Area or CBD, will likely demonstrate different travel behaviors, propensity to use transit and inclination to work from home, as compared to workers residing or commuting to or within the more suburban or exurban areas with a weaker fixed transit network.

**Figure 10. Metro Area Comparisons, Journey to Work Data, Drive / Transit, 2000-2016**

| Metro Area | Transit Share 2016 | Change in Telecommute share 2000-2016 | 2016 Drive share | 2020 BLS Cost of Living | Cost of Living Difference to Chicago |
|---|---|---|---|---|---|
| NYC | 79.7% | -1.0% | 9.1% | 284.4 | 116.4% |
| Chicago | 55.9% | 6.0% | 33.4% | 244.2 | 100.0% |
| Boston | 53.5% | 3.9% | 35.6% | 284.6 | 116.5% |
| San Francisco | 52.2% | 2.6% | 32.2% | 302.9 | 124.0% |
| D.C. | 46.3% | 6.6% | 43.7% | 268.7 | 110.0% |
| Philadelphia | 45.5% | 3.8% | 40.2% | 260.0 | 106.5% |
| Seattle | 35.1% | 5.4% | 48.7% | 283.4 | 116.0% |
| Minneapolis | 24.8% | 6.2% | 64.8% | 255.4 | 104.6% |
| Denver | 22.4% | 11.8% | 66.3% | 272.2 | 111.3% |
| Los Angeles | 20.2% | 6.4% | 74.6% | 279.6 | 114.5% |
| Houston | 16.3% | 10.2% | 80.8% | 230.4 | 94.3% |
| Atlanta | 13.5% | 11.3% | 80.1% | 249.1 | 102.0% |
| Cleveland | 13.3% | 14.3% | 82.5% | 224.4 | 91.9% |
| Miami | 13.0% | 12.4% | 79.6% | 273.8 | 112.1% |
| Phoenix | 9.8% | 4.0% | 86.4% | 145.7 | 59.6% |
| San Diego | 9.6% | 9.7% | 80.1% | 303.9 | 125.4% |
| St. Louis | 8.1% | 10.6% | 87.8% | 234.9 | 96.2% |
| Dallas | 8.0% | 11.4% | 88.3% | 239.5 | 98.1% |
| Detroit | 4.9% | 2.2% | 90.7% | 239.1 | 97.9% |
| Tampa | 2.1% | 11.5% | 90.7% | 233.8 | 97.0% |

*Source: US Census Transportation Products*

*CMAP Regional Implications: While commuter rail service has been a crucial differentiator in encouraging workers to commute into areas such as downtown Chicago (rather than work from home), as the region begins to move beyond COVID, several things are clear:*

1. *For the Central Area[xii], current expectations anticipate a shift in commuting patterns favoring 3-4 days a week in the office, rather than five. This suggests a lower daytime population of downtown workers, with implications of potentially lower demand for transit service to downtown as well as for businesses supplying goods and services to these industries and employees.*

2. *About 60% of jobs in the CMAP region are in sectors where work from home is more difficult,. Even at this share, there will still be plenty of people traveling to work. Transit remains an important mode choice for these workers, and in suburban areas without frequent or fixed route transit, ability to mitigate congestion will be reduced.*
3. *Conversely, for workers who are able to work from home by choice, or are disincentivized from commuting because transit is not an efficient option or to avoid roadway congestion, new travel habits may become entrenched even as the region emerges from the pandemic, with long-term changes in land use and development patterns,*

***Housing***

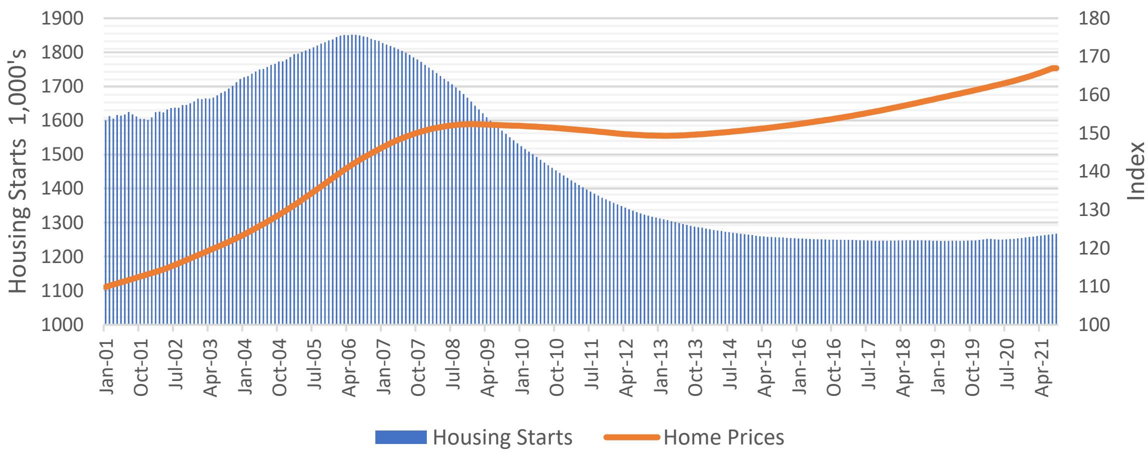
Conversations about housing begin with well-established, structural trends since 2010, in context with an extended period of economic growth:

- The pace of US housing unit construction has slowed from long-term averages
- Reinvesting in older (pre-1960) homes, which represent 28% of US inventory, and replacing lost inventory; the US Census estimates that about 350,000 housing units annually need to be built just to replace lost units.
- While US Census data suggests that aggregate residential construction cost have generally accelerated only in line with inflation since 2000, home values have grown at a faster pace. Drivers may relate to increasing land costs, changes to building codes, shortages of skilled trades labor, general contractors, and developers. Sources such as the Federal Housing Finance Agency have specifically identified higher land costs as a specific challenge in housing affordability[xiii].
- The Missing Middle: The unfolding impact of "missing middle" housing, i.e., housing units not built due to the advent of "single-family" zoning districts, which have over time encouraged either single family or multi-family housing, at the expense of townhome, rowhouse and duplex construction – a reduction in the diversity of housing form as well as price-points.
- According to Federal Housing Finance Agency research, underlying residential land values in larger metropolitan areas appreciated at a 7.6% annual rate between 2012 and 2019[xiv].

Data developed by the US Department of Housing and Urban Development were clear as to the basic challenge well before COVID:

> *"Families who pay more than 30% of their income for housing are considered cost burdened and may have difficulty affording necessities such as food, clothing, transportation and medical care. An estimated 12 million renter and homeowner households pay more than 50% of their annual incomes for housing. A family with one full-time worker earning the minimum wage cannot afford the local fair-market rent for a two-bedroom apartment anywhere in the United States."*

Figure 11. Cumulative Average, Housing Starts (1,000's) / Case Shiller Home Price Index; FRED




COVID initially reduced demand for urban / downtown apartments and encouraged a shift in demand toward suburban and second home / resort locations, and prices in these areas rose significantly by the end of 2020, largely because of limited inventory. By the summer of 2021, urban apartment markets were showing strong signs of recovery, with cities such as Chicago seeing significant improvement in occupancy (5,400 newly occupied apartments) according to CoStar. Ultimately, lack of supply and increasing demand are a perfect recipe for acceleration in home prices.

*CMAP Regional Implications: The path forward for regional housing markets will need to be reflective of housing choices made by Baby Boomer and Millennial generations, the latter of which is in the process of making a consequential pivot from renting into home ownership, in context with the influence of expanded work from home which could dictate changes in housing design (potentially toward larger and more expensive homes). While collar counties benefited from steady housing demand growth through 2008, trends since 2010 have favored housing locations closer to transit. Looking forward, AECOM expects that opportunities for housing reinvestment in inner-ring suburbs will likely emerge.*

***Retail***

With COVID, pressure on traditional retailers increased as the share of retail dollars spent online has accelerated from about 10% to about 15% of retail sales during the second quarter of 2020; by August of 2020, JCPenney, Neiman Marcus, J. Crew, Pier 1 Imports, and Stein Mart had filed for bankruptcy protection. By December of 2020, Macy's stock price being down by 30% and Home Depot's stock price up by 30% reinforced the reality of a work from home economy. Retail and restaurants have been particularly impacted, with employees becoming significantly less willing to work in related occupations where significant interpersonal contact is required. The path forward for retail is complex:

- Companies such as Nike are using DTC (direct to consumer) sales models, avoiding wholesalers and Amazon, leveraging technology to be more responsive to changes in consumer sentiment.
- Increased demand for meal delivery services jump-started interest in "ghost kitchens", facilities to prepare food exclusively for delivery. While concepts such as "Pizza Arbitrage" made news, it remains unclear whether food delivery services such as DoorDash and GrubHub can become reliably profitable[xv].

- Moving into the fall of 2021, companies such as Williams Sonoma have announced plans to pivot a majority of their square footage into warehouse space in support of expanded e-commerce. Similar pivots by other retailers are notable, in that while business models for pure e-commerce companies are defined by low fixed costs and high variable costs, traditional retailers face an opposite challenge, with high fixed costs and low variable costs; both formats are also struggling with an increasing volume of returned merchandise and fraud[xvi].
- An AECOM analysis suggested that for every $1,000 in retail sales which shift from brick and mortar to e-commerce, an additional 2.4 square feet of warehouse space is occupied at the expense of retail space. Over time, these shifts will impact local property taxes and transit services as traditional malls fail and a larger share of retail jobs shift into warehouse districts.
- Continued growth in e-commerce will accelerate the pace of change within domestic US financial services linked to financial technology and growth in mobile payment systems.

*CMAP Regional Implications: The 2018 Quill v North Dakota Supreme Court ruling on taxation of e-commerce purchases ensures that a growing share of future sales taxes will flow to where the purchaser of an item lives, rather than where the item was purchased, impacting municipal sales tax revenues (and RTA sales tax funding), as traditional retail destinations such as Schaumburg, Oak Park and Northbrook lose sales to smaller communities. At the same time, growth in e-commerce is also raising practical concern about impacts on at risk populations who live in proximity to urban e-commerce warehouses, or along commercial streets, with concerns linked to increased truck traffic and impacts on air quality and human health outcomes.*

***Manufacturing, Freight, and Logistics***

COVID highlighted consequential weaknesses in US manufacturing, including dependence on global supply chains for personal protective equipment, food supply chain sensitivity, and over-reliance on China as a source market for exports. Initial lockdowns revealed surprising connections across manufacturing sectors; for example, reduced gasoline demand impacted ethanol production, and because carbon dioxide is a by-product of ethanol, the beverage industry experienced increased costs and supply constraints. With demand recovery into 2021, US manufacturers have faced increasingly consequential supply chain challenges, starting with lumber and building materials in the spring of 2021, escalating to computer chips and a host of other products by summer.

Looking forward, sources such as the Journal of Commerce suggest that manufacturers will diversify source markets for imported components and accelerate manufacturing re-shoring back toward the US. According to WSJ, by May of 2020, nearly a quarter of companies told the Institute for Supply Management that they were planning or have begun to re-shore or “near-shore” some or most of their operations. That same month, 93% of executives told McKinsey & Co. they would explore a potential overhaul of their supply chains. Sources such as Colliers International identified an opportunity for between 750 million and 1 billion future square feet of industrial space, above current trends, linked to re-shoring.

The path forward for US manufacturing is complex, in that there are a host of sectors where domestic production capacity was lost more than 20 years ago. At the same time, with recovery and growth in domestic production since 2010, it is becoming clear that the word “industrial” increasingly fails to properly frame the evolving diversity of activities related to modern domestic industrial development, including:

- Artisanal / Craft Local Production: Food, beverage, and consumer goods
- Local Production – General: Larger scale, but locally owned companies involved in food production, as well as supporting industries (machine shops, metal coatings, etc.)

- Industrial Services & Repair: Broad set of support services including remediation, printing, laundry, automotive, etc.
- Export Oriented Manufacturing: Production of goods for national and global markets, from pharmaceuticals to aerospace parts, chemicals, packaging, etc.
- Wholesale / Distribution, Logistics and Transportation: E-commerce, as well as traditional warehouse and wholesale / distribution activities, including third party logistics providers.

Supply chains were immediately impacted as essentially simultaneous lockdowns unfolded around the globe. By April of 2020, domestic US intermodal traffic was down by 20% compared to the prior April, according to the Association of American Railroads. However, by May of 2021, intermodal traffic recovered at a dramatic 4.8% rate as demand recovered, and supply chains have been behind ever since. Multiple factors are in play:

- While the Ports of LA / Long Beach were losing market share in container lifts pre-COVID, since March of 2020, the number of container lifts at LA / Long Beach has grown from about 967,000 to 1.7 million in August of 2021: volume essentially doubling within 15 months; similar levels of port congestion have been playing out at other ports as well.
- Investments by shipping lines such as Maersk since 2010 in new container ships holding in excess of 20,000 containers have created an environment where the number of containers in transit across the Pacific can increase dramatically. Since 2015, warehouse space in New York and LA has become expensive, with rents in excess of $12/sf, versus $4-6/sf in central US inland ports, motivating developers to build larger multi-story warehouses. In Southern California, air quality concerns focused on trucks and inland warehouse districts are lending support to new regulations. In general, the private sector is reacting to higher costs across trucking with investments in innovation, including alternative fuels and autonomous vehicles.
- While Inland port capacity gaps are being influenced by trucking labor shortages and insufficient vacant warehouse space, the impact of operational choices made by logistics companies is coming into clearer focus. For example, Class 1 railroad pursuit of “precision scheduling” over the past several years has resulted in fewer yards and employees, and reduced railroad capacity to manage spikes in volume. Data from the American Association of Railroads suggests that weekly average carloads moved by rail peaked in 2014 at roughly 6.5 million; for 2020, about 5.69 million average weekly carloads were moved by rail. In September of 2021, the Surface Transportation Board chair made public concerns that US railroads were, “focusing too much on pleasing Wall Street at the expense of shippers and the general public, behavior that may prompt action from regulators”[xvii].

Numerous sources have noted that the entire logistics system is struggling with surging freight volumes. Capacity to unload and store containers is constrained, warehouses are full, there are insufficient truck drivers to deliver containers to customers, domestic exporters are struggling to access empty containers, and empty containers are not being returned to source markets to be reloaded. One net result of congestion is increasing costs; according to the Journal of Commerce, shipping rates for containers from China to the US have grown dramatically since March of 2021, from roughly $5,400 per container to about $21,000 per container on October 1.

*CMAP Regional Implications: Although the region experienced significant losses in manufacturing employment through 2010, recent trends point to recovery and growth for regional manufacturing, anchored by the suburban activity in Will and Lake Counties, and across 26 industrial corridors within the City of Chicago. It is equally clear that the Chicago region continues to serve as an* *essential logistics node for consequential and growing manufacturing activities unfolding across the Midwest. These trends point to expectations for growth in jobs, output and truck traffic, with concern as to how workers access generally lower paying jobs in warehouse districts which traditionally have not benefitted from comprehensive transit service.*

***Energy***

Domestic energy markets have been in transition and under pressure arguably since 2010, linked initially to expansion of domestic oil and natural gas production, dramatic reductions in domestic coal production (primarily between 2009 and 2015) and parallel growth in renewable energy (wind and solar) as an offset to growing climate volatility concerns. By 2018, in response to growth of the US as a "swing" oil producer, the governments of Saudi Arabia and Russia engaged in a battle over market share, and oil prices fell as a result.

As COVID-related lockdowns unfolded in the spring of 2020, dramatic reductions in oil demand forced entities such as the Texas Railroad Commission to consider oil price targets for the first time since the 1980's, and the extraction-related activities saw significant job losses. Sectors such as commercial aviation have been slow to recover to pre-COVID energy consumption thresholds. By Spring of 2021, a combination of robust economic recovery and reduced production of gasoline and natural gas has resulted in higher energy prices, adding to inflationary concerns. According to the Energy Information Administration, by November of 2021, the retail price of gasoline across the Midwest was $3.16/gallon, up from $1.53/gallon on May 4, 2020; the last time Midwestern gasoline prices were comparable was in 2014. Post COVID, there are emerging expectations that greater volatility in energy prices may add to inflationary influences on the US economy.

*CMAP Regional Implications: The CMAP region continues to benefit from access to an array of energy sources across nuclear, natural gas, wind, and solar, with aggregate retail energy prices that are generally competitive with adjacent states. At the same time, as the region becomes more reliant on renewable energy sources in response to climate change concerns in coming years, increasing price volatility will be a short-term challenge. From an economic development standpoint, strategies linked to electrification and alternative fuels for trucking and transportation need to be seen as part of broader energy diversification and de-carbonization strategies.*

***Health Care***

The health care industry was directly impacted by COVID, and as a result is facing different and unique challenges. Numerous sources reinforced the following implications:

- For most of 2020, many elective procedures and preventative maintenance appointments were cancelled, with sectors such as dental care seeing significant reductions in demand. Consequences of deferred / delayed treatment of chronic conditions and cancelled appointments remain unclear, along with broad angst regarding the true scale of mental health challenges.
- Uncertainly regarding the evolution of COVID beyond its current acute phase, and the incremental treatment cost of "long COVID".
- Hospitals are facing reduced capacity to manage (generally profitable) non-emergency outpatient procedures, increasing labor costs and labor shortages.
- Specific (and increasingly structural) challenges with rural health care service provision.
- Expectations for growth in telemedicine and expanded interest in home health care.

*CMAP Regional Implications: Unlike other sectors, health care has generally seen consistent regional growth in employment into 2021. Broader policy concern over growing health care costs* *will motivate industry and government to embrace new technologies such as telemedicine, which seems likely to support growth in the share of virtual health care employees.*

# 3.2 Implications

As the US economy moves into 2022, our analysis points to the following trends as salient in thinking about the future for the CMAP region:

***Summary of Pre-COVID Structural Trends***

- Rural & suburban housing supply / affordability challenges relate in part to a structural shortage of inventory: housing units not delivered from 2010 to 2014, combined with broader challenges linked with “Missing Middle” housing (defined above) and historical exclusionary zoning practices, in combination with acceleration in home prices faster than incomes. For the CMAP region, which is already struggling with modest population growth, a primary concern will be the extent to which an increasingly structural housing shortages become an additional constraint on growth.
- Shortages of truck drivers have been building since 2010 for many reasons. In response, several western states are actively encouraging research to expand autonomous trucking opportunities. Companies such as California-based Embark are already reportedly hauling freight between Phoenix and Los Angeles for Fortune 500 customers. While fully automated freight trucking is not yet commercially available, COVID is accelerating progress; highly advanced cruise control technology is already in use and offers attractive fuel savings (5% to 10%) according to numerous sources.
- E-Commerce and warehouse demand has been steadily building since 2010, linked with growth of Amazon and the gradual retreat of traditional retailers such as Sears / Kmart. While COVID has created a consequential short-term demand crunch for warehouse space, longer-term trends are favoring further shifts in retail spending toward warehouse space. For the CMAP region, continued growth of e-commerce warehouses in rural edge locations across Will and Lake Counties raises questions about transit access for future suburban employees as well as the capacity of local water, sewer, and road infrastructure to support new development.
- Trends regarding “work from home” have been building gradually for 20 years, primarily in metro areas with longer commute times and limited transit service. For the CMAP region, commuter rail service has been a crucial differentiator in encouraging workers to commute into areas such as downtown Chicago (a majority of US cities lack this scale of transit infrastructure). At the same time, limited suburb-to-suburb transit infrastructure is a constraint, forcing transit-dependent workers in location-dependent sectors such as retail, entertainment, and wholesale / logistics (which also happen to be lower-wage) to make long trips to work.

***New COVID Trends***

- Across US real estate markets, the continued mismatch between low commercial office utilization and generally higher values and occupancies remains a primary risk within commercial real estate. Older, pre-1980 office buildings are expected to struggle compared to new Class A developments. For the CMAP region, while areas such as Downtown Chicago will struggle with reuse plans for older office buildings, developers in suburban Cook, DuPage, and Lake Counties are clearly seeking to acquire old suburban office parks for redevelopment into e-commerce sites.
- Transportation Network Companies (TNC) will face higher costs post-COVID, altering the conversation and assumptions about competition with traditional transit services. For the CMAP

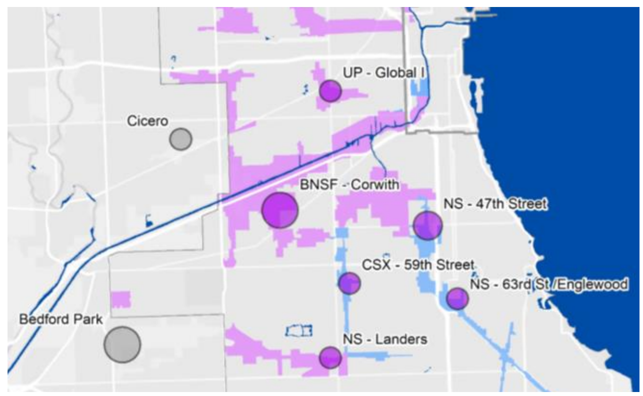
region, this changing competitive environment will have different impacts on how trips unfold within downtown Chicago, in comparison with suburban journeys.

- COVID has only reinforced equity challenges across lower-income populations and people of color who were more likely to be defined as “essential”, hold jobs that require in-person-contact, be transit dependent and impacted by recession-induced job losses in hospitality, retail, and restaurants, and be more at risk due to pre-existing health conditions which are otherwise exacerbated by COVID, including asthma and heart disease. For the CMAP region, COVID has brought a host of equity concerns into the forefront

***Post COVID Trends***

While trends related to climate change have been gradually building for years, awareness and concern over the impacts of climate volatility has moved center stage, with energy challenges in Texas during March of 2021 as a specific concern. While the country is seeing impressive growth in investments related to green jobs and renewable energy, strategies to expand electrification and fully integrate renewables into US energy supply at scale remain unclear.

**Figure 12. South Chicago Intermodal Yards**




With continued growth in e-commerce as well as recovery and growth in manufacturing expected post-COVID, northeastern Illinois is expected to experience sustained increases in demand for intermodal services and truck traffic connected to activity unfolding from southern Wisconsin into Indiana and Michigan. While Will County is rightly seen as the primary focus of regional intermodal logistics, it is important to see the yards owned by BNSF and UP south of Joliet in context with eight similar intermodal yards across Chicago’s South / Southwest side owned by CSX and NS (as well as UP and BNSF) which account for more than 50% of all intermodal lifts across Northeastern Illinois. Since 2000, these yards have seen annual growth of about 56,000 lifts per year. Our insights include:

- While intermodal assets in Will County are being leveraged to diversify employment from warehouse and logistics into higher-value manufacturing, similar intermodal assets in Chicago currently support modest levels of adjacent employment in manufacturing and distribution and could be better leveraged to support job creation.
- There is growing concern about the impact of increasing truck volumes across the region, with specific concern over drayage moves through residential neighborhoods on the south / southwest side of Chicago.
- Northeastern Illinois needs to consider a host of strategies to better manage what is otherwise going to be a continually growing set of challenges linked to regional goods movement. Strategies related to autonomous trucking, electrification, truck parking, and dedicated truck routes need to be evaluated, at minimum to reduce current pressure on adjacent residential areas, mitigate environmental impacts, and offset other structural equity concerns.

# 4.0 CMAP REGIONAL PERSPECTIVES

This section builds on research of national trends related to COVID to provide context as to how the CMAP region has been impacted economically by COVID, with insight as to future implications for economic growth. The analysis reinforces how the City of Chicago incurred a disproportionate set of fiscal and economic impacts relative to the State of Illinois, in part simply because the largest share of statewide transit, restaurant, hotel, and conventions are concentrated within in the City. Importantly, however, it is also clear that suburban concentrations of activity, particularly in places such as DuPage County, were also impacted.

## 4.1 Stakeholder Interviews

AECOM interviewed a set of developers, landowners, and other organizations in mid-2021 within the CMAP region to gain anecdotal commentary on trends in the local real estate and job markets and their relationship to transit and overall mobility. Key insights from these interviews include:

- During COVID, those moving into single-family homes have greater interest in living further away from their place of work. This is especially true among white-collar workers with young families, as employers are no longer requiring that employees be in the office five days a week.
- The development community saw a six-to-nine-month freeze in development when COVID initially hit. This was primarily due to the private sector's inability to capitalize projects. As such, there will likely be a year "gap" for the delivery of new product (multifamily and commercial especially) in 2022/2023. In addition, it is still hard to capitalize projects today within Chicago as investors "would rather be the 11th crane in markets like South Florida or Texas compared to the first crane in Illinois." (The statement alludes to the slower pace of growth in Chicago being less attractive for development.)
- The market is facing significant headwinds when trying to deliver affordable housing. Specifically, Chicago's 20% on-site affordable housing Affordable Requirements Ordinance (ARO) is viewed by developers as a "tax on the land;" however, sellers of land are still looking for top dollar which is resulting in inaction from the development community. In addition, suburban affordable housing must be surface parked, because delivering structured parking is too costly.
- Increasing construction costs (a result of supply chain disruptions and labor shortages) are being passed onto consumers. Low interest rates are allowing consumers to absorb added costs. This is most prevalent in single-family housing; however, there is concern that when rates rise, demand for housing may soften.
- Speculative commercial development has all but stalled with increased construction costs; however, built to suit industrial and commercial is still proceeding with the end user absorbing increased costs. This is because there is significant demand for industrial space with the re-shoring of manufacturing among increases demanded by omnichannel retail and drop shipping.
- The commercial office market is the biggest unknown to date as the sector was turned upside-down with COVID. Landlords are having trouble leasing space, especially in areas like the Loop that are competing with new construction in the West Loop. The biggest concerns are focused on owners/operators of Class B and A- space because as leases end, tenants are downsizing, cutting costs, and taking much higher quality office space with more amenities to entice workers back into the office. Transit adjacencies and other "value adds" may offset competitive challenges with older space.
- The sublease market in the region has ballooned to between five and six million square feet during the summer of 2020, according to interviewees. There is also anecdotal evidence of

companies putting their entire space up for sub-lease to gauge interest with a downstream intent to “figure it out later” should they find a suitor. The suburban market, which traditionally carries a higher vacancy than the urban market is reported to be 30% vacant.

- Interviews suggest that, across the CMAP region, much of the conversation around office will rely on decisions major corporations ponder as the impacts of COVID evolve. Interviews reinforced a generally increased appetite for flexible schedules, unassigned workspaces, three-days a week in the office, and a move toward increased office space per worker – a 180-degree-turn from where the market was headed prior to the pandemic.

# 4.2 Employment Trends

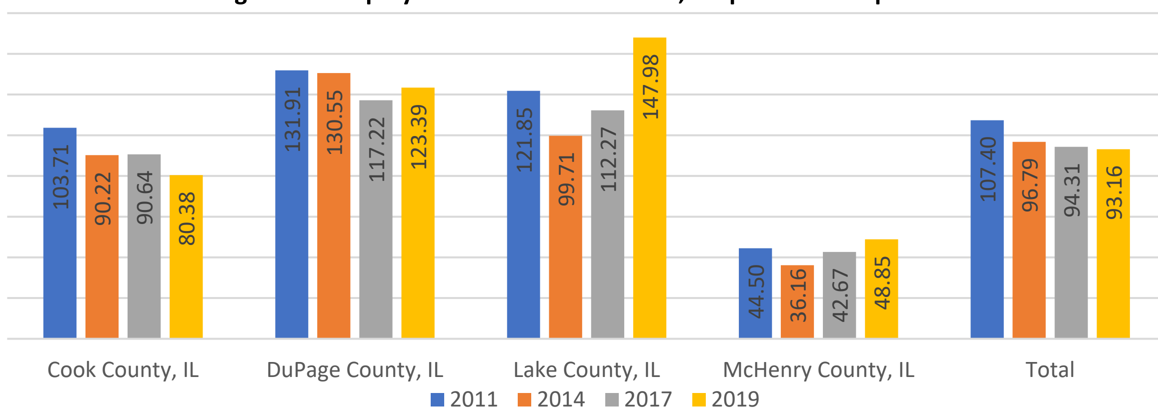
While the CMAP region experienced job growth at roughly 1.6% annually from 2010 to 2019, the region experienced a -1.6% decrease in annual job creation from 2019 to 2021, as shown in Figures 24-25 in the Appendix. Changes include:

- Retail, Hotel, Restaurant and Entertainment sectors have been uniquely hard hit. Between 2010 and 2019, these sectors added just over 100,000 jobs; since 2019, these sectors have lost roughly 75,700 jobs.
- While Cook and Will Counties have sustained a net increase in retail employment from 2010 to 2021, DuPage and Lake Counties have seen a net decrease in retail employment over the same period.
- The geographic size of Cook County (larger than DuPage and Lake combined) makes comparison of percentage shares of employment challenging. Roughly 95,000 office-using jobs were added in Cook County from 2010-2019; Cook County captured about 67% of this market in 2021 and has maintained its share of these jobs since 2010.
- Growth in the Will County Inland Port as a focal point for industrial development over the past 20 years only reinforces the extent to which the Will County economy remains over-weighted towards industrial activity; 40% of private employment in Will County is in goods producing sectors.
- Uniquely, Will County actually experienced a net increase in private jobs due to COVID. This was entirely due to growth in goods producing sectors linked to the Will County Inland Port.

Figure 25 summarizes trends regarding employment by industry segmented down into capacity for telework. The approach leverages research at the University of Chicago by Dingel and Neiman to segment employment by industry and geography to frame differences in propensity to prefer telework. For example, comparing trends for the Central Area of downtown Chicago to the heavily office and industrial districts around O’Hare international Airport (ORD) highlights basic differences in the mix of workers in these two areas. In the Central Area, a majority of workers fall in the 60% telework threshold (increasing from 301,766 in 2010 to 341,991 in 2021), with annual growth of 1.1%. Conversely for ORD, the vast majority of jobs fall in the 25% telework segment, increasing from 201,076 in 2010 to 215,578 in 2021, with annual growth of 0.7%. The table reinforces a basic point, that outside of the Central Area, as well as portions of DuPage and Lake Counties where professional services employment tends to concentrate, a majority jobs will tend to be in sectors where telework is more challenging. As important, while work in professional services across the Central Area is highly aligned with access to transit, other regional job centers (particularly industrial related jobs in Will and Lake Counties) have less transit accessibility.

While COVID has raised concern about increased working from home, data also reinforces how structural changes in office-using sectors such as corporate headquarters reinforce the importance of broader pressures for outsourcing and downsizing which have been in play since 2010. For example, while Chicago's Central area saw a significant increase in corporate headquarters relocations since 2010, the clear trend for Cook County points to a decrease in the number of workers per establishment, as areas such as human resources, IT, and accounting have been outsourced; this trend is also playing out across DuPage County.

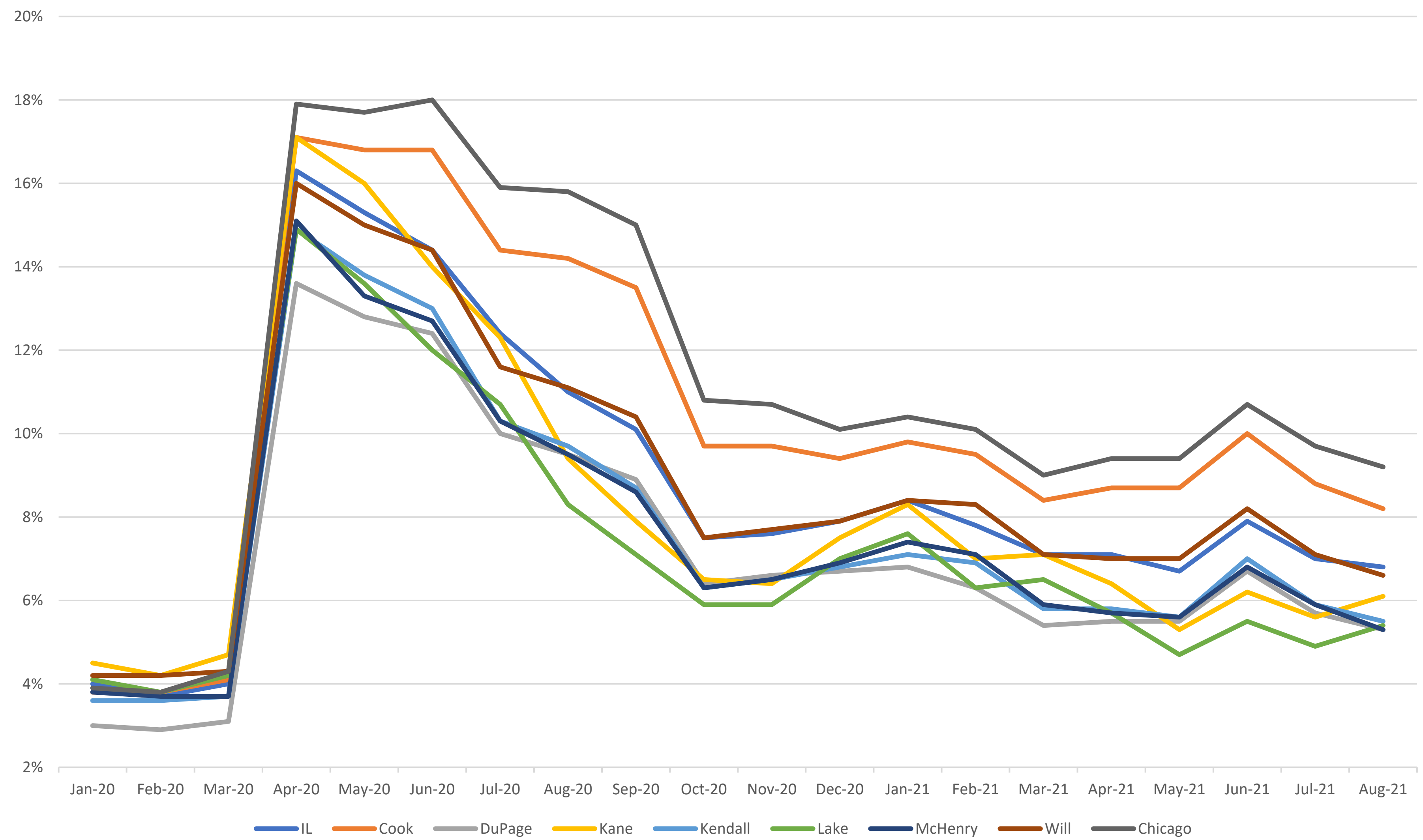
**Figure 13. Employment Per Establishment, Corporate Headquarters**




*Source: EMSI*

Suburban counties are showing a stronger pace of top-line recovery in unemployment thru August of 2021, led by Lake (5.4%) and DuPage (5.3%). Cook County and the City of Chicago in particular were hardest hit, with unemployment accelerating to 16.8% and 18%, respectively, by June of 2020, linked to the concentration of tourism focused sectors in the Central Area. Chicago's unemployment rate remains significantly higher than that of the suburban counties (9.2%, August of 2021).

**Figure 14. COVID Period Unemployment Rate Trends Chicago Area; BLS**




*Source: IL Bureau of Labor Statistics*

## 4.3 Retail Sales Trends

Analysis of municipal retail sales trends across northeastern Illinois since 2010 and through COVID reinforces local implications of already discussed national retail trends. In general, a majority of the regional shopping centers in Northeastern Illinois are under-going significant change, and retail sales captured in these communities have decreased as a result. In particular, spending across apparel and general merchandise peaked in many suburbs around 2015, and has been decreasing consistently into 2019, as evidenced by very modest annual growth in sales from 2010 to 2019 (0.3%, below). Across nine suburban communities historically anchored by larger malls (e.g., Oak Brook, Schaumburg, Vernon Hills, etc.), estimated retail sales decreased by $1.3 billion between 2019 and 2020, which represents a loss in support for roughly three million square feet of retail space based on industry averages. Insights include:

- Larger suburbs, including Vernon Hills, also benefited from growth in sales related to food, restaurants, and growth in non-retail businesses which generate sales taxes, which offset effective loss of their anchor regional shopping centers (Hawthorn, Northbrook Court, etc.).
- The analysis also noted how a sample of non-mall anchored suburbs experienced very different retail sales trends, both before and during COVID. As shown in Figure 21 below, these communities, ranging from Rolling Meadows and Crystal Lake to Darien and Homewood, all experienced increases in retail sales into 2020. The sample of communities saw a net gain of about $72 million in retail spending into 2020.

Figure 26 (see appendix) summarizes retail sales as reported by the Illinois Department of Revenue for 2010, 2019, and 2020 across general merchandise, apparel, furniture & household furnishings, lumber, building materials and hardware, and drugs & miscellaneous.

- While the City of Chicago sustained attractive growth in core retail spending through 2019 (3% annual growth), losses in spending reflect both impacts of e-commerce, but also lost visitor retail spending.
- Challenges with regional shopping centers have broader ripple effects on employment and transit. In most suburbs, regional malls are well served by CTA / Pace. While many malls will be redeveloped, the loss in employment density will be felt by transit agencies, although the degree of this will depend upon the scale and composition of redevelopments.

Figures 27, 28, and 29 present municipal Sales Tax (MT) data for suburban communities in northeastern Illinois in a different way, stratified by sales to population ratio; effectively a pull factor which compares each municipality's share of statewide population to its share of retail sales (municipalities with ratios greater than 1.0 are assumed to be importing retail sales from adjacent communities; their percentage of statewide sales is greater than their percentage of statewide population). This analysis revealed several trends:

- Municipalities with ratios less than 1.0 demonstrated stronger increases in retail sales between 2010 and 2020 across food (grocery and restaurants), with similarly strong growth across consumer goods (apparel, home furnishings, home improvement, and drugs / miscellaneous retail)
- Reflective of the impact of e-commerce, municipalities with ratios greater than 2.5 have seen net decreases in consumer goods sales since 2010, in context with municipalities.
- The analysis pointed to surprising strength across suburbs with ratios of 1.0 to 1.5, with strong growth in total sales taxes (4.2%, 2010 to 2019) and in grocery & restaurants (3.4%, 2010 to 2019).

- While there were losses in retail sales between 2019 and 2020 due to changes in purchasing patterns, the percentage changes were greatest in municipalities that previously had been large retail clusters such as regional shopping centers (higher ratios). This change will have impacts to the transit providers that serve such locations as employment in these developments contracts and jobs move elsewhere in the region.

# 4.4 Regional Real Estate Development Trends

Northeastern Illinois has seen significant shifts in the pace of new commercial construction, across retail, office, and industrial space. In simple terms, the region has seen a dramatic reduction in new retail space since 2010, at less than 50% of trends between 1985 and 2008, when the region delivered between 7 million and 10 million square feet per year. Office markets have exhibited a more gradual pace of new construction, with over 10 million square feet delivered until 1992. Since then, construction has slowed to around 4-5 million square feet per year. Industrial markets remain surprisingly robust, with steady delivery of new space, generally between 10-20 million square feet per year.

**Figure 15. Retail Space Construction (1982-2021)**

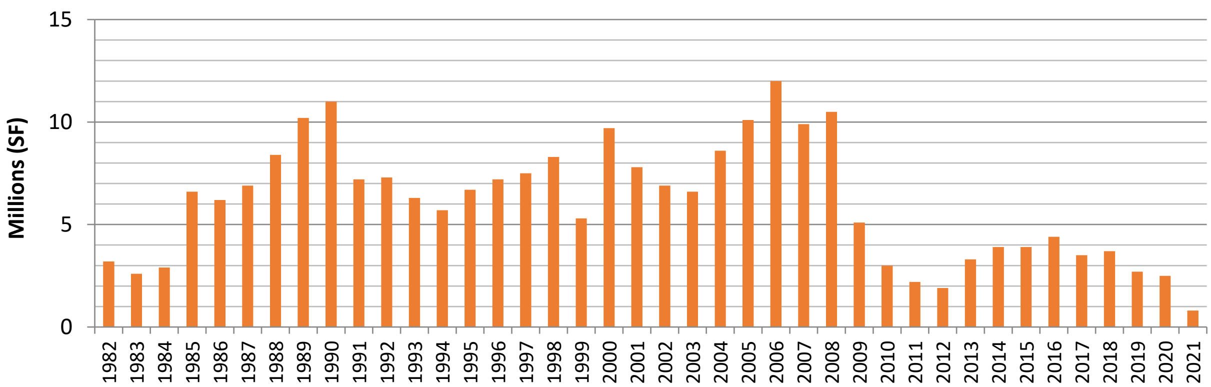
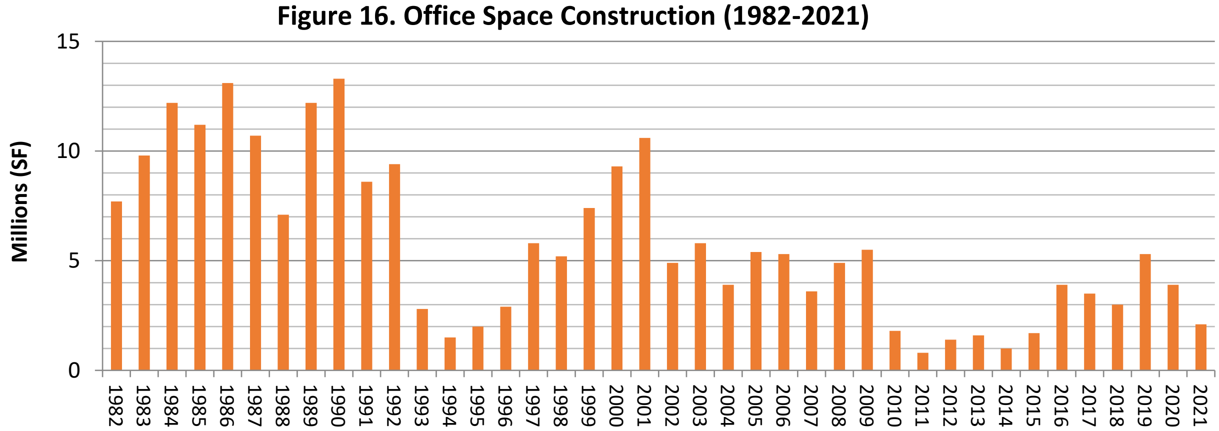
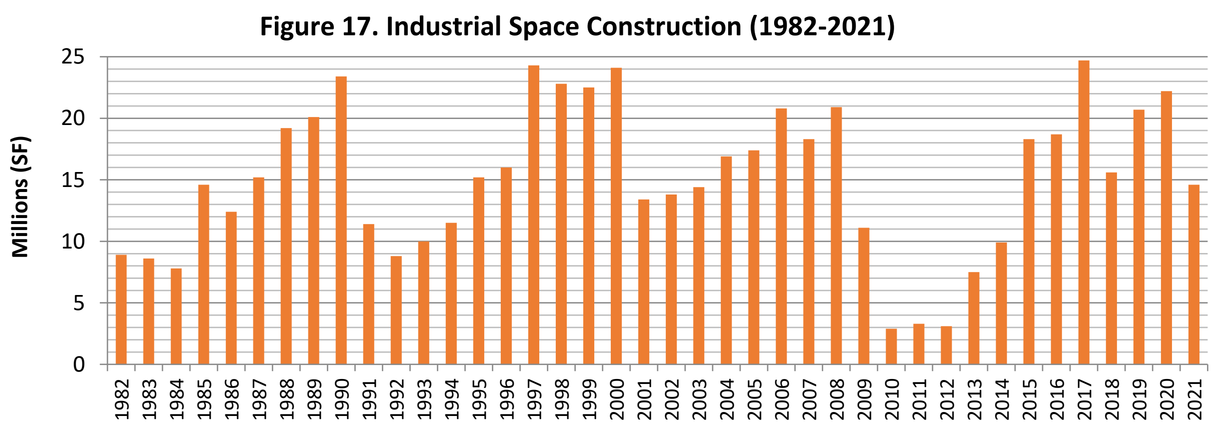



**Figure 16. Office Space Construction (1982-2021)**




One emerging impact from COVID concerns the occupancy status of older, pre-1960 office buildings. Across the Central Area of Chicago, two older office buildings have already been returned by ownership to their lenders, with a minimum of roughly 2.2 million additional square feet of office and hotel space in litigation or foreclosure proceedings, according to CoStar. Markets are also preparing for significant office vacancy along the LaSalle Street Corridor as Bank of America and Northern Trust complete their moves into new space beyond that corridor.




*Source: CoStar*

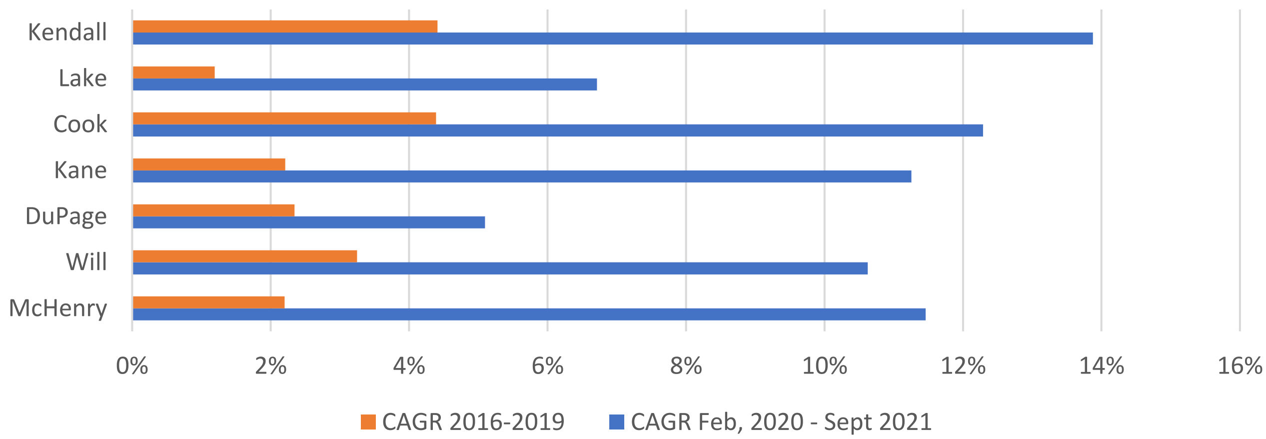
Continued demand for industrial space into 2021 raises important policy questions which are demonstrated by the November 29, 2021 announcement that Allstate plans to sell the majority of its Northbrook headquarters to a warehouse developer for a reported $232 million. Developers are responding to demand for same day delivery by targeting infill sites closer to resident markets, even acquiring sites where existing zoning would need to change. These shifts portend consequential shifts in local employment, sales tax and property tax, as well as increases in truck traffic. The following chart summarizes the clear implications of accelerated industrial development as a share of total regional development.

**Figure 18. Share of Space Built by Category, 2000-2020**


# 4.5 Regional Housing

Regional housing markets have been buffeted by the impact of COVID, with suburban counties experiencing rapid and sustained growth in residential home prices, according to Realtor.Com. As shown below, annualized growth in home values between February of 2020 and September 2021 accelerated significantly above pre-COVID thresholds. For example, in Will County, listing prices had increased by roughly 2.5% per year between 2016 and 2019. Between spring of 2020 and fall of 2021, listing prices increased to a roughly 11% annualized growth rate.

**Figure 19. Compound Annual Growth, Median Listing Price by County**




Source: https://www.realtor.com/research/market-trends/

Rapid growth in home values since March of 2020 is a reflection of dramatic growth in demand in concert with negligible increases in new housing unit construction. As shown below, the number of new home listings has dramatically decreased, by as much as 50% over 2020 levels in counties such as Lake, DuPage, and Will. Notably, with surging real estate values between January and June of 2021, the number of new listings started to increase as of July 2021, and home value growth slowed slightly. As housing construction has only begun to recover, this trend may reflect homeowner decisions to capture premium values and pivot into rental housing to wait for markets to recover toward longer-term trends.

**Figure 20. Average Listings by Year**

| Year | McHenry | Will | DuPage | Kane | Cook | Lake | Kendall |
|---|---|---|---|---|---|---|---|
| 2021* | 488 | 853 | 1,878 | 588 | 11,834 | 1,586 | 176 |
| 2020 | 1,017 | 1,692 | 3,085 | 1,321 | 14,856 | 2,961 | 373 |
| 2019 | 1,542 | 2,577 | 4,144 | 1,925 | 18,061 | 4,334 | 546 |
| 2018 | 1,523 | 2,427 | 3,801 | 1,866 | 17,296 | 4,257 | 440 |
| 2017 | 1,612 | 2,468 | 3,676 | 1,869 | 16,962 | 4,194 | 412 |

** partial year data*

Source: https://www.realtor.com/research/market-trends

For context regarding current trends, AECOM also evaluated historic household trends from 2000-2010 and from 2010-2020, stratified by regional density quintile, generally from 1 to 5, as shown in the following map and table. While higher density areas (5) shaded in orange are reflective of land use conditions associated with high rise development in the core of Chicago, the lowest density areas are shaded in dark blue and reflective of very low residential densities (less than 4 units per acre). As shown in the following table, while the least-dense suburban fringe areas enjoyed strong growth through 2010 (2% annual growth), patterns have shifted since 2010, with accelerated household growth in the higher-density core of Chicago. Partial explanations for this shift are apparent housing choices made by Millennial and Gen Z households since 2010, with greater emphasis on rental apartments in proximity to transit.

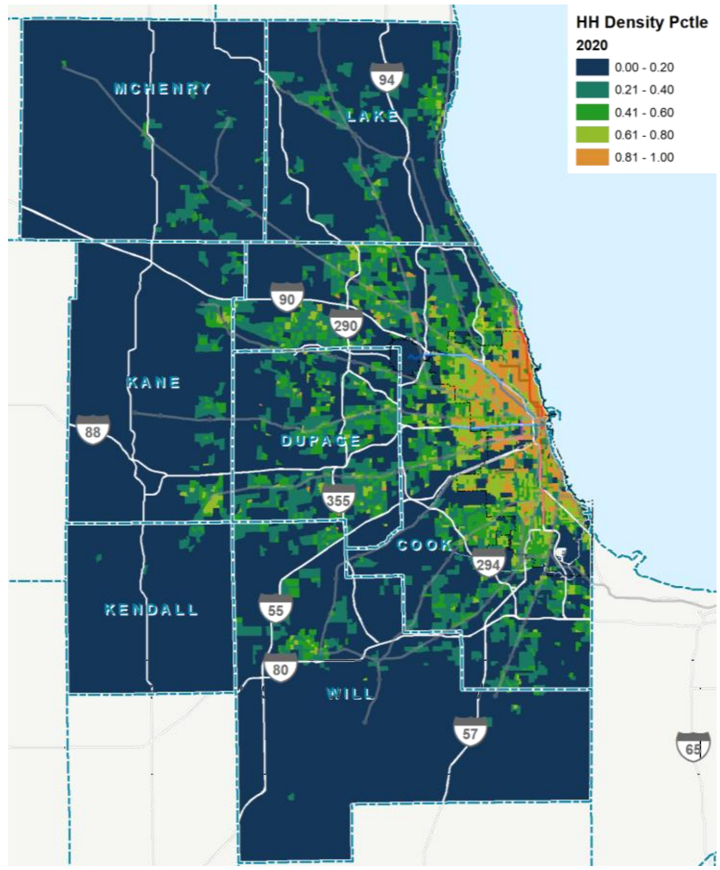



**Figure 21. Changes in Household Growth by Housing Density Quintile**

| Housing Density Quintile | Annualized Growth in Households | |
|---|---|---|
| | 2000-2010 | 2010-2020 |
| 1 (least dense) | 2.1% | 0.4% |
| 2 | 0.5% | 0.1% |
| 3 | 0.1% | -0.2% |
| 4 | -0.4% | 0.1% |
| 5 (most dense) | 0.2% | 0.6% |
| Overall | 0.5% | 0.2% |

Source: Esri Business Analyst / AECOM

Figure 22 places the absolute number of new households and new housing units between 2010 and 2020 side-by-side, illustrating that approximately 69,000 new households were formed and 73,000 new housing units were built. This slight excess inventory at the regional level masks the variations by location. An important finding is that inventory in the highest-density locations has not kept pace with household growth, falling short by over 20,000 units. As pressure for existing inventory continues to grow during the pandemic period, the residents in higher density locations are more likely “forced” to sprawl when they decide to move from their current dwelling. Adding fuel to this fire, the rate of household formation is comparatively more rapid in dense areas, as demonstrated by the average household size, which has shrunk nearly twice as fast in dense locations as in other areas between 2010 and 2020. This means even if the population does not grow, the number of housing units required for all the households does.

Having highlighted some of the supply/demand features that constrain dense infill residential development, the inducements for households to sprawl to less dense location become apparent. In less dense locations (quintiles 1-4), there were varying degrees of excess supply summing up to about 27,000 excess units between 2010 and 2020. Similar calculations for the 2000-2010 period revealed that areas of each density level had approximately 20,000 to 30,000 excess housing units built, or over 100,000 excess units in total.

**Figure 22. Change in Number of Households and Housing Units by Housing Density Quintile**

| Density Quintile | 2010-2020 HH | 2010-2020 HU | Mis-match |
|---|---|---|---|
| Least dense 1 | 30,900 | 33,100 | 2,200 |
| 2 | 5,700 | 12,200 | 6,500 |
| 3 | -11,700 | -800 | 10,900 |
| 4 | 3,100 | 10,300 | 7,200 |
| More dense 5 | 40,700 | 18,300 | -22,400 |
| Overall | 68,700 | 73,200 | 4,400 |

Source: Esri Business Analyst / AECOM

While COVID continues to influence regional housing markets, data from CoStar points to recovery in downtown populations, with recovery beginning in the spring of 2021, increasing from about 84% to about 93% by summer 2021. Effectively, 5,400 existing apartments were re-occupied and downtown rents have recovered.

Beyond 2022, the previous map and table point to emerging opportunities for absorbing housing growth among more mature, inner ring suburbs (shaded in lime green) generally parallel with I-294 where zoning codes tended to allow a greater diversity of housing options, and where significant transit infrastructure exists.

# 4.6 Regional Journey to Work Context

With local economic conditions beginning to solidify, our analysis also points to the following pre-COVID trends as important to keep in perspective as the region begins to move forward, with a parallel focus on trends across the Central Area in context with the larger CMAP region.

***CMAP Region***

AECOM evaluated Census Transportation Products Journey to Work data for the 2006-2016 time period to provide insight regarding changes in journey to work by county by industry sector. The analysis, presented in Figures 30-32 highlights the following elements:

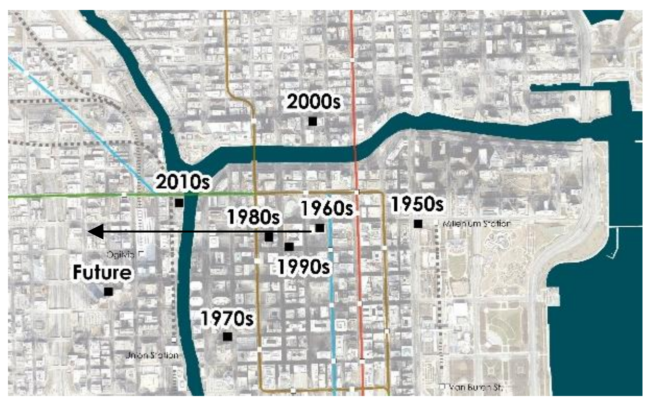
- Regarding **trips into Cook County** from all collar counties, inbound jobs in retail, wholesale, and warehouse declined at a -0.7% annual rate, and jobs in professional services declined at a -0.6% rate. The inbound growth rate would include trips into cities like Schaumburg, Evanston, and Oak Park, as well as Chicago.
- The decline in inbound commuters is at odds with the modest increase in the number of Cook County workers in these industries over a similar period (0.5% annual increase among retail, wholesale, and warehouse, and 0.01% increase among professional service and office jobs, according to Emsi data 2006-2016). This trend, whether reflective of increased telework or shifts of workplace locations to the suburbs, indicates the possibility that the City of Chicago, its CBD, and Cook County may no longer have as strong an employment pull as it did historically, with the durability of changes remaining to be seen. If this short-term trend solidifies into a more durable pattern, this suggests the possibility of reframing service on existing infrastructure

to serve intra-suburban trips or reverse commutes outward, to a greater extent than currently offered.

- Growth in **inter-collar county** job trips (excluding work trips into or out of Cook) showed the fastest overall growth rate (1.3% on average). Kendall (2.2%), Lake (1.7%) and McHenry (1.8%) saw the fastest growth rates in commuter job trips from adjacent collar counties. This trend suggests the importance in investing in suburb-to-suburb mobility solutions, whether fixed infrastructure, updated service patterns, more first/last mile solutions, as well as investing in complementary place-making investments to improve the vitality and quality of life around these transit nodes/corridors which may take on increasing importance.
- Notably, commuter job trips for manufacturing showed growth from 2006-2016 (1.4%) across all collar counties. Inbound manufacturing job trips into Cook decreased strongly over the same period (-2.0%).
- **Will County** saw the one of the fastest growth rates in trips for jobs held by residents (2.1%), with particular strength in health care, professional services, arts and entertainment, and trade and manufacturing. **Kendall County** experienced a faster growth rate, albeit from a smaller base (growing from 14,500 to 19,000, an increase of just under 5,000 commuters, versus nearly 18,000 new commuters in Will County over the same period). For both these areas as well as other farther-out collar counties, these trends speak to the importance of understanding the level of transit-dependency and trip origins among the workers making these work trips, to ensure that essential and low-income workers, as well as workers of color, have real mobility options.

***Central Area***

**Figure 23. Shift in Center of New Office Construction**




In 1950, the center of the Loop office market was more or less focused at the corner of Randolph & Michigan. Since then, following office projects such as the Sears Tower in the 1970s, projects along the Chicago river by 2010, and more recent development from 2015 to 2019 in Fulton Market, the center of new office development has inexorably shifted westward toward and beyond the Chicago River. The shift has also motivated Metra to consider expanded commuter rail service into the West Loop to serve new office tenants in Fulton Market. While this proposed Metra expansion would benefit suburban rail commuters from the north, west, and southwest suburbs, for south suburban and Indiana-based riders on Metra Electric and NICTD, however, this gradual shift in office development has pushed new employment opportunities beyond a 45-minute commute time. As a result, these suburban commuters have been more likely to drive into downtown than take Metra, as shown in the Appendix, Figure 30.

While the pace of Central Area development since 2000 has been remarkable, recent performance must be viewed in context with a broader 40-year trend of accelerated downtown re-urbanization and investment going back to 1980. From this larger perspective, factoring in multiple periods of economic expansion and recession, by 2020 the Central Area hosted in excess of 160,000 residents, 700,000 jobs, and more than 50 million tourist visits within roughly eight square miles. This is remarkable when viewed in context with the 2003 Central Area Plan, which proposed specific transportation infrastructure improvements to support anticipated growth through 2020. While 20-year growth targets identified in the 2003 document had largely been exceeded by 2018, transit investment priorities identified in 2003 to support anticipated growth were largely not made. Consequences of growth were acknowledged by CTA in their 2017 system wide rail capacity study which acknowledged the reality of capacity limits on inbound Red, Blue, and Brown lines into the Loop.[xviii]

While COVID has clearly led to dramatic short-term reductions in transit usage which has reduced pressure on these assets, as the region continues to recover economically, the path forward will be influenced by important factors:

- While the Central Area is already seeing recovery in domestic tourism and residential markets, international tourism and convention recovery will take time, into 2023-2024.
- Faster recovery in downtown resident population may build support for growth in demand for reverse commute opportunities
- While increased congestion linked to TNC activity across the Central Area was a growing concern into 2019, these operators are now functioning with significantly higher costs, which will alter market fundamentals in the future.

# 4.7 APPENDIX

**Figure 24. Changes in Employment by Industry, Chicago Metro Counties, 2010, 2019, 2021**

| Sector | County | 2010 | 2019 | 2021 | 2010-2019 | 2019-2021 |
|---|---|---|---|---|---|---|
| *Office Using / Professional Services* | Cook | 643,459 | 738,878 | 727,751 | 1.5% | -0.8% |
| | DuPage | 161,848 | 183,727 | 177,657 | 1.4% | -1.7% |
| | Kane | 37,796 | 41,283 | 39,708 | 1.0% | -1.9% |
| | Kendall | 2,078 | 3,362 | 3,328 | 5.5% | -0.5% |
| | Lake | 68,263 | 81,663 | 81,131 | 2.0% | -0.3% |
| | McHenry | 13,586 | 15,025 | 14,501 | 1.1% | -1.8% |
| | Will | 29,422 | 38,250 | 39,006 | 3.0% | 1.0% |
| | Total | 956,452 | 1,102,188 | 1,083,083 | 1.6% | -0.9% |
| *Goods Producing / Warehouse / Construction* | Cook | 465,491 | 508,582 | 494,221 | 1.0% | -1.4% |
| | DuPage | 139,685 | 164,686 | 161,476 | 1.8% | -1.0% |
| | Kane | 52,082 | 63,283 | 62,323 | 2.2% | -0.8% |
| | Kendall | 7,684 | 7,507 | 7,418 | -0.3% | -0.6% |
| | Lake | 85,372 | 97,249 | 96,144 | 1.5% | -0.6% |
| | McHenry | 28,318 | 28,480 | 28,057 | 0.1% | -0.7% |
| | Will | 52,985 | 80,838 | 84,583 | 4.8% | 2.3% |
| | Total | 831,617 | 950,625 | 934,221 | 1.5% | -0.9% |
| *Health Care and Higher Education* | Cook | 390,941 | 453,318 | 451,606 | 1.7% | -0.2% |
| | DuPage | 68,718 | 88,667 | 88,771 | 2.9% | 0.1% |
| | Kane | 26,133 | 27,285 | 26,649 | 0.5% | -1.2% |
| | Kendall | 1,506 | 2,158 | 2,105 | 4.1% | -1.2% |
| | Lake | 36,313 | 37,021 | 35,928 | 0.2% | -1.5% |
| | McHenry | 10,966 | 11,856 | 11,668 | 0.9% | -0.8% |
| | Will | 24,562 | 30,432 | 30,540 | 2.4% | 0.2% |
| | Total | 559,139 | 650,737 | 647,266 | 1.7% | -0.3% |
| *Retail, Restaurant, Hotel, Entertainment* | Cook | 445,535 | 518,937 | 468,467 | 1.7% | -5.0% |
| | DuPage | 105,387 | 111,693 | 101,378 | 0.6% | -4.7% |
| | Kane | 39,553 | 43,650 | 39,530 | 1.1% | -4.8% |
| | Kendall | 6,492 | 8,858 | 8,857 | 3.5% | 0.0% |
| | Lake | 68,517 | 74,578 | 68,308 | 0.9% | -4.3% |
| | McHenry | 21,980 | 24,277 | 22,904 | 1.1% | -2.9% |
| | Will | 47,075 | 56,699 | 53,539 | 2.1% | -2.8% |
| | Total | 734,540 | 838,692 | 762,983 | 1.5% | -4.6% |

*Source: EMSI*

**Figure 25. Total Employment Trend, Segmented by Telework Percentage, 2010-2021**

| County | Tele-work % | 2010 | 2019 | 2020 | 2021 | 10 to 19 | 19 to 21 | 10 to 21 |
|---|---|---|---|---|---|---|---|---|
| Cook | 15% | 449,323 | 522,483 | 444,436 | 434,759 | 1.7% | -8.8% | -0.3% |
| | 25% | 1,288,615 | 1,415,753 | 1,357,950 | 1,355,650 | 1.1% | -2.1% | 0.5% |
| | 60% | 580,324 | 648,389 | 637,435 | 639,486 | 1.2% | -0.7% | 0.9% |
| | Total | 2,318,262 | 2,586,625 | 2,439,821 | 2,429,895 | 1.2% | -3.1% | 0.4% |
| Central Area | 15% | 95,566 | 115,367 | 91,517 | 88,800 | 2.1% | -12.3% | -0.7% |
| | 25% | 201,076 | 225,758 | 215,314 | 215,578 | 1.3% | -2.3% | 0.6% |
| | 60% | 301,766 | 344,129 | 340,086 | 341,992 | 1.5% | -0.3% | 1.1% |
| | Total | 598,408 | 685,254 | 646,918 | 646,370 | 1.5% | -2.9% | 0.7% |
| ORD | 15% | 18,980 | 24,867 | 20,524 | 20,140 | 3.0% | -10.0% | 0.5% |
| | 25% | 125,657 | 142,524 | 135,869 | 135,451 | 1.4% | -2.5% | 0.7% |
| | 60% | 19,922 | 23,239 | 22,587 | 22,552 | 1.7% | -1.5% | 1.1% |
| | Total | 164,559 | 190,630 | 178,981 | 178,142 | 1.6% | -3.3% | 0.7% |
| DuPage | 15% | 106,278 | 112,458 | 99,035 | 97,028 | 0.6% | -7.1% | -0.8% |
| | 25% | 324,215 | 381,117 | 363,716 | 364,515 | 1.8% | -2.2% | 1.1% |
| | 60% | 131,823 | 145,607 | 140,520 | 139,834 | 1.1% | -2.0% | 0.5% |
| | Total | 562,316 | 639,182 | 603,271 | 601,377 | 1.4% | -3.0% | 0.6% |
| Kane | 15% | 39,904 | 43,957 | 38,565 | 38,022 | 1.1% | -7.0% | -0.4% |
| | 25% | 130,898 | 147,966 | 140,213 | 140,132 | 1.4% | -2.7% | 0.6% |
| | 60% | 25,921 | 27,395 | 26,665 | 27,141 | 0.6% | -0.5% | 0.4% |
| | Total | 196,723 | 219,318 | 205,443 | 205,296 | 1.2% | -3.2% | 0.4% |
| Kendall | 15% | 6,537 | 8,905 | 8,575 | 8,947 | 3.5% | 0.2% | 2.9% |
| | 25% | 16,316 | 18,815 | 17,672 | 18,001 | 1.6% | -2.2% | 0.9% |
| | 60% | 1,761 | 2,736 | 2,636 | 2,737 | 5.0% | 0.0% | 4.1% |
| | Total | 24,614 | 30,455 | 28,883 | 29,685 | 2.4% | -1.3% | 1.7% |
| Lake | 15% | 69,280 | 75,100 | 66,139 | 65,460 | 0.9% | -6.6% | -0.5% |
| | 25% | 212,100 | 227,890 | 220,071 | 219,689 | 0.8% | -1.8% | 0.3% |
| | 60% | 53,629 | 61,938 | 60,655 | 61,098 | 1.6% | -0.7% | 1.2% |
| | Total | 335,010 | 364,928 | 346,865 | 346,247 | 1.0% | -2.6% | 0.3% |
| McHenry | 15% | 22,161 | 24,431 | 22,504 | 22,510 | 1.1% | -4.0% | 0.1% |
| | 25% | 64,874 | 67,245 | 64,614 | 64,670 | 0.4% | -1.9% | 0.0% |
| | 60% | 9,016 | 9,341 | 8,744 | 8,725 | 0.4% | -3.4% | -0.3% |
| | Total | 96,052 | 101,017 | 95,861 | 95,905 | 0.6% | -2.6% | 0.0% |
| Will | 15% | 47,483 | 57,060 | 51,961 | 52,320 | 2.1% | -4.2% | 0.9% |
| | 25% | 130,691 | 174,720 | 173,581 | 178,011 | 3.3% | 0.9% | 2.8% |
| | 60% | 23,338 | 26,255 | 25,292 | 25,766 | 1.3% | -0.9% | 0.9% |
| | Total | 201,512 | 258,035 | 250,834 | 256,098 | 2.8% | -0.4% | 2.2% |
| Total Region | 15% | 740,967 | 844,394 | 731,215 | 719,046 | 1.5% | -7.7% | -0.3% |
| | 25% | 2,299,890 | 2,570,211 | 2,464,529 | 2,466,091 | 1.2% | -2.0% | 0.6% |
| | 60% | 825,812 | 921,662 | 901,947 | 904,787 | 1.2% | -0.9% | 0.8% |
| | Total | 3,866,669 | 4,336,267 | 4,097,691 | 4,089,924 | 1.3% | -2.9% | 0.5% |

*Source: EMSI / AECOM Analysis*

**Figure 26. Estimated Retail Sales, Core Retail Categories**

| City | 2010 | 2019 | 2020 | Change 19-20 | 2010-2019 | 2019-2020 |
|---|---|---|---|---|---|---|
| **Chicago** | **$8,269,194,100** | **$10,807,229,477** | **$9,025,625,847** | **-$1,781,603,630** | **3.0%** | **-16.5%** |
| Oak Brook | $721,713,266 | $722,286,742 | $576,677,920 | -$145,608,822 | 0.0% | -20.2% |
| Schaumburg | $1,274,211,762 | $1,240,173,809 | $947,444,575 | -$292,729,234 | -0.3% | -23.6% |
| Bolingbrook | $570,413,896 | $748,769,153 | $837,214,561 | $88,445,408 | 3.1% | 11.8% |
| Northbrook | $637,350,225 | $676,726,541 | $531,288,869 | -$145,437,672 | 0.7% | -21.5% |
| Lombard | $520,606,450 | $566,855,968 | $511,477,030 | -$55,378,938 | 1.0% | -9.8% |
| Vernon Hills | $862,237,590 | $802,643,313 | $451,055,377 | -$351,587,936 | -0.8% | -43.8% |
| Skokie | $671,757,397 | $789,261,389 | $584,209,763 | -$205,051,626 | 1.8% | -26.0% |
| Orland Park | $923,430,955 | $878,970,860 | $798,812,734 | -$80,158,126 | -0.5% | -9.1% |
| Gurnee | $668,402,243 | $601,874,583 | $540,199,028 | -$61,675,555 | -1.2% | -10.2% |
| Naperville | $930,455,676 | $1,028,832,916 | $982,530,635 | -$46,302,281 | 1.1% | -4.5% |
| **Sub-Total** | **$6,850,123,784** | **$7,027,562,358** | **$5,778,379,857** | **-$1,249,182,501** | **0.3%** | **-17.8%** |
| Downers Grove | $220,676,462 | $231,868,944 | $238,456,272 | $6,587,328 | 0.6% | 2.8% |
| Rolling Meadows | $88,200,117 | $148,469,155 | $160,194,425 | $11,725,270 | 6.0% | 7.9% |
| Park Ridge | $67,279,526 | $81,724,973 | $80,474,140 | -$1,250,833 | 2.2% | -1.5% |
| Lagrange | $34,598,414 | $38,167,860 | $40,674,910 | $2,507,050 | 1.1% | 6.6% |
| Palos Heights | $31,814,170 | $44,673,191 | $45,747,864 | $1,074,674 | 3.8% | 2.4% |
| Plainfield | $198,074,845 | $278,266,327 | $289,999,042 | $11,732,715 | 3.8% | 4.2% |
| Wilmette | $134,121,841 | $103,518,045 | $97,767,658 | -$5,750,387 | -2.8% | -5.6% |
| Homewood | $192,816,618 | $283,011,289 | $312,182,431 | $29,171,142 | 4.4% | 10.3% |
| New Lenox | $155,195,654 | $265,420,800 | $277,854,837 | $12,434,037 | 6.1% | 4.7% |
| Oak Lawn | $331,669,813 | $290,003,345 | $294,648,122 | $4,644,777 | -1.5% | 1.6% |
| Libertyville | $86,963,496 | $140,298,215 | $128,828,375 | -$11,469,840 | 5.5% | -8.2% |
| Carpentersville | $99,223,084 | $179,567,511 | $190,064,945 | $10,497,434 | 6.8% | 5.8% |
| Crystal Lake | $451,635,971 | $468,415,155 | $476,392,286 | $7,977,131 | 0.4% | 1.7% |
| Lisle | $78,577,628 | $101,922,660 | $107,340,583 | $5,417,923 | 2.9% | 5.3% |
| Darien | $138,579,062 | $171,169,721 | $173,740,007 | $2,570,286 | 2.4% | 1.5% |
| Oswego | $240,477,300 | $346,685,374 | $340,728,088 | -$5,957,286 | 4.1% | -1.7% |
| Carol Stream | $185,204,307 | $282,555,214 | $273,249,900 | -$9,305,314 | 4.8% | -3.3% |
| **Sub-Total** | **$2,735,108,308** | **$3,455,737,779** | **$3,528,343,885** | **$72,606,107** | **2.6%** | **2.1%** |
| **Grand Total** | **$17,854,426,192** | **$21,290,529,614** | **$18,332,349,589** | **-$2,958,180,024** | **2.0%** | **-13.9%** |

*Source: IL Dept of Revenue Sales Tax Data, Municipal Taxes*

**Figure 27. Growth Comparison without Chicago - Total MT**

| Sales to Pop % Ratio 2010 | Municipality Count | MT Collection 2010 | MT Collection 2015 | MT Collection 2019 | MT Collection 2020 | CAGR 10 - 19 | CAGR 19 - 20 |
|---|---|---|---|---|---|---|---|
| < 1 | 141 | $219,912,113 | $265,219,973 | $289,226,795 | $285,438,508 | 3.1% | -1.3% |
| 1 to 1.5 | 41 | $184,458,652 | $238,177,854 | $267,433,309 | $255,977,709 | 4.2% | -4.3% |
| 1.5 to 2 | 17 | $89,806,792 | $106,503,940 | $111,222,001 | $104,381,470 | 2.4% | -6.2% |
| 2 to 2.5 | 13 | $75,684,794 | $90,412,462 | $97,128,153 | $91,444,109 | 2.8% | -5.9% |
| 2.5 to 3 | 7 | $28,236,668 | $32,610,670 | $34,906,609 | $32,506,688 | 2.4% | -6.9% |
| >= 3 | 15 | $78,700,320 | $88,560,380 | $92,664,363 | $78,527,353 | 1.8% | -15.3% |

**Figure 28. Growth Comparison without Chicago - Consumer Goods**

| Sales to Pop % Ratio 2010 | Municipality Count | MT Collection 2010 | MT Collection 2015 | MT Collection 2019 | MT Collection 2020 | CAGR 10 - 19 | CAGR 19 - 20 |
|---|---|---|---|---|---|---|---|
| < 1 | 151 | $71,371,891 | $88,602,324 | $96,606,162 | $99,108,911 | 3.4% | 2.6% |
| 1 to 1.5 | 33 | $72,165,119 | $81,033,089 | $86,448,879 | $84,680,219 | 2.0% | -2.0% |
| 1.5 to 2 | 15 | $37,609,588 | $44,179,138 | $54,214,471 | $52,921,512 | 4.1% | -2.4% |
| 2 to 2.5 | 10 | $30,524,225 | $37,944,468 | $41,909,616 | $38,707,864 | 3.6% | -7.6% |
| 2.5 to 3 | 7 | $18,344,785 | $20,088,221 | $18,383,045 | $17,007,365 | 0.0% | -7.5% |
| >= 3 | 18 | $56,526,722 | $61,306,561 | $54,232,481 | $46,804,871 | -0.5% | -13.7% |

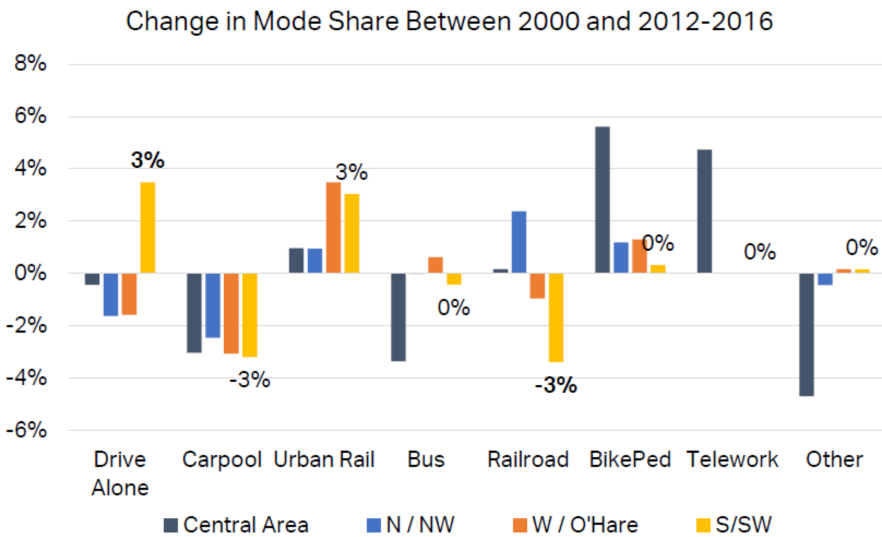
**Figure 29. Growth Comparison without Chicago - Food**

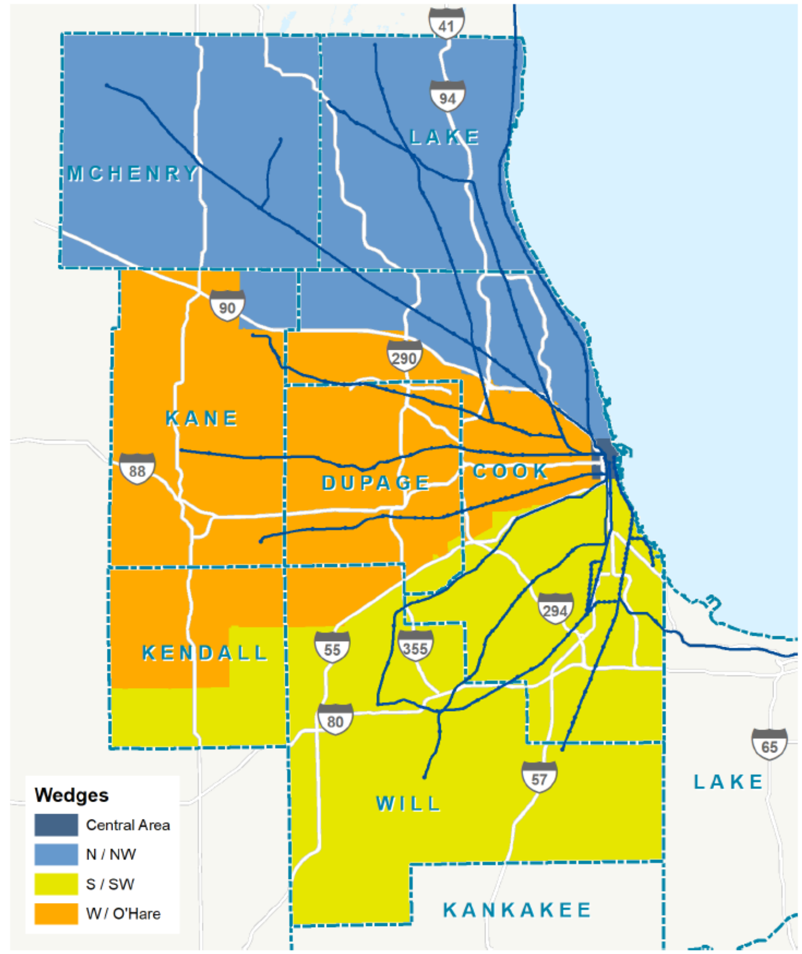
| Sales to Pop % Ratio 2010 | Municipality Count | MT Collection 2010 | MT Collection 2015 | MT Collection 2019 | MT Collection 2020 | CAGR 10 - 19 | CAGR 19 - 20 |
|---|---|---|---|---|---|---|---|
| < 1 | 146 | $60,037,125 | $71,481,410 | $88,233,107 | $85,622,658 | 4.4% | -3.0% |
| 1 to 1.5 | 47 | $51,761,307 | $63,049,103 | $74,643,630 | $72,111,732 | 4.2% | -3.4% |
| 1.5 to 2 | 21 | $22,515,425 | $27,438,953 | $31,955,494 | $30,278,143 | 4.0% | -5.2% |
| 2 to 2.5 | 9 | $4,372,952 | $5,225,930 | $4,992,487 | $4,042,907 | 1.5% | -19.0% |
| 2.5 to 3 | 2 | $3,597,742 | $4,137,323 | $4,165,322 | $4,323,083 | 1.6% | 3.8% |
| >= 3 | 9 | $6,503,163 | $8,839,691 | $10,195,555 | $6,921,942 | 5.1% | -32.1% |

**Figure 30 – Central Area Mode Share Comparisons**

# Mode Share Comparisons

- The South/Southwest (S/SW) wedge sees the highest rates of "Drive Alone" commuters – and is the only area to have a larger share of drive alone commuters in 2016 than in 2000.



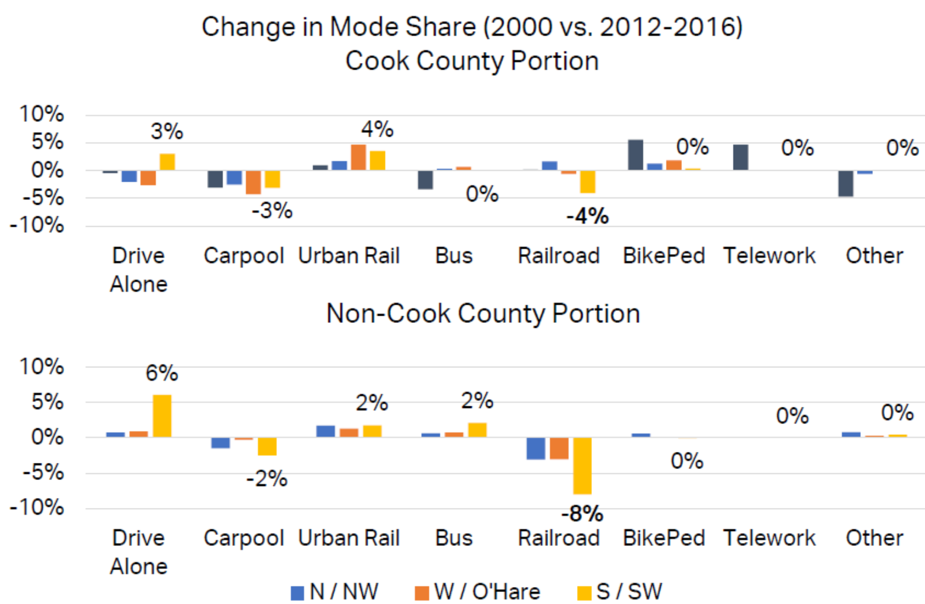



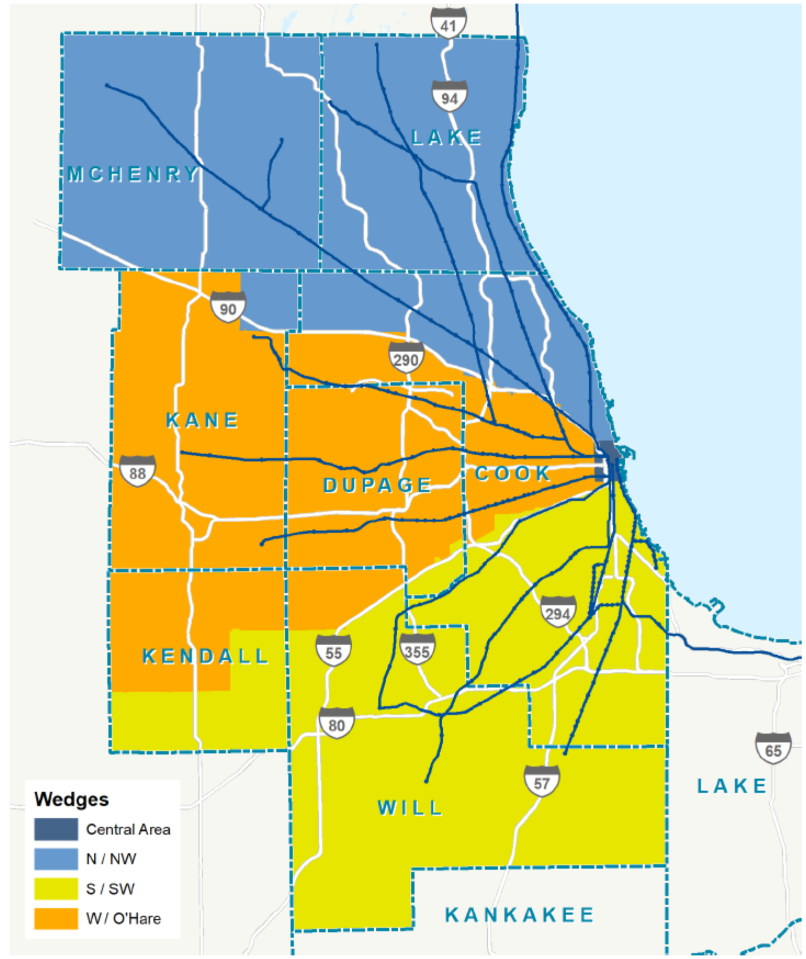

*Source: Census Transportation Planning Package, 2012-2016*

**Figure 31 – County Mode Share Comparisons**

# Mode Share Comparisons: Cook vs. Collar Counties

- The shift away from Metra and toward driving downtown is more pronounced in collar counties.




*Source: Census Transportation Planning Package, 2012-2016*

**Figure 32 – Regional Journey to Work Trends, CTTP 2006-2016**

| Destination | Residence | Total, all industries | Agriculture, forestry, mining; + Construction; + Armed Forces | Manufacturing; | Wholesale + Retail Trade; + Transportation, warehouse and utilities | Information, Finance, insurance, real estate & Professional Services | Educational, health and social services | Arts, entertainment, recreation, accommodation and food services | Other services + Public Administration |
|---|---|---|---|---|---|---|---|---|---|
| Within County | 17031 \| Cook County, Illinois | 0.3% | -2.2% | -2.0% | 0.8% | 0.3% | 1.3% | 1.5% | 0.0% |
| | 17043 \| DuPage County, Illinois | 0.9% | -2.7% | 1.0% | -0.3% | 1.2% | 2.1% | 2.1% | 1.5% |
| | 17089 \| Kane County, Illinois | 1.2% | -3.0% | 1.4% | 0.6% | 1.2% | 1.4% | 3.4% | 3.0% |
| | 17093 \| Kendall County, Illinois | 4.7% | -2.3% | -0.2% | 4.6% | 4.3% | 11.5% | 4.2% | 1.9% |
| | 17097 \| Lake County, Illinois | 0.6% | -1.2% | 0.5% | -0.5% | 1.5% | 1.5% | 2.7% | -0.5% |
| | 17111 \| McHenry County, Illinois | 0.2% | -1.2% | -1.3% | 0.8% | 1.3% | 0.9% | 0.0% | -0.5% |
| | 17197 \| Will County, Illinois | 1.9% | -2.3% | 1.5% | 2.5% | 2.5% | 2.5% | 3.1% | 0.8% |
| | Total | 0.6% | -2.1% | -1.0% | 0.7% | 0.6% | 1.5% | 1.8% | 0.2% |
| Outbound from Cook | 17031 \| Cook County, Illinois | 1.1% | -3.0% | 1.0% | 0.9% | 0.9% | 2.6% | 2.3% | 1.7% |
| Inbound to Cook | 17043 \| DuPage County, Illinois | -0.1% | -2.7% | -2.6% | 0.2% | -0.2% | 1.3% | 2.5% | 0.2% |
| | 17089 \| Kane County, Illinois | -0.2% | 1.0% | -2.6% | -0.2% | -1.2% | 1.0% | 4.1% | 1.8% |
| | 17093 \| Kendall County, Illinois | -2.8% | -5.1% | -4.0% | -3.2% | -0.4% | -5.9% | 3.2% | -2.6% |
| | 17097 \| Lake County, Illinois | -0.6% | -2.6% | -0.2% | -1.0% | -0.4% | 0.4% | -0.5% | -2.7% |
| | 17111 \| McHenry County, Illinois | -0.6% | 0.7% | -2.6% | -1.3% | -0.7% | -0.1% | 5.0% | 1.0% |
| | 17197 \| Will County, Illinois | -0.8% | -1.0% | -2.1% | -1.5% | -1.7% | 0.9% | 2.1% | 0.2% |
| | Total | -0.5% | -1.4% | -2.0% | -0.7% | -0.6% | 0.8% | 2.1% | -0.2% |
| Inter-Collar | 17031 \| Cook County, Illinois | | | | | | | | |
| | 17043 \| DuPage County, Illinois | 0.6% | -2.0% | 1.4% | -2.1% | -0.2% | 3.5% | 5.1% | -1.4% |
| | 17089 \| Kane County, Illinois | 1.4% | -3.2% | 1.2% | 0.7% | 1.6% | 3.4% | 5.1% | 0.4% |
| | 17093 \| Kendall County, Illinois | 2.2% | 1.0% | 3.5% | 2.5% | -1.4% | 3.4% | 3.2% | 5.9% |
| | 17097 \| Lake County, Illinois | 1.7% | -4.7% | 0.1% | 2.8% | 2.2% | 5.2% | 4.2% | 2.0% |
| | 17111 \| McHenry County, Illinois | 1.8% | -0.7% | 2.1% | 0.2% | 0.7% | 3.5% | 5.4% | 6.2% |
| | 17197 \| Will County, Illinois | 0.8% | 0.3% | 0.9% | -1.6% | -0.1% | 3.5% | 0.2% | 5.0% |
| | Total | 1.3% | -1.6% | 1.4% | 0.0% | 0.4% | 3.6% | 3.7% | 3.1% |

| Legend |
|---|
| E-commerce + Retail |
| Telework Friendly |
| Ed/Med/Gov |

# Endnotes

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