

Future Ready?

**A FUTURE SCAN OF CONTEXTUAL ISSUES
FOR NORTHEASTERN ILLINOIS**

Prepared for:

Prepared by:

Disclaimer

The contents and views included in this Horizon Scan report are the results of the research conducted by the author and do not necessarily represent those of CMAP.

The Author of this Report

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Foreword

No one can predict the future with accuracy. We can, however, prepare ourselves for possibilities, building resilient strategies for both the favorable and frightening potential that lies ahead. A Horizon Scan is a document that presents the results of a systematic process of gathering and examining information about the future. The following pages are intended to provide a wider contextual understanding of conceivable external changes that may have an impact on the metropolitan Chicago region's built environment condition and the lives of those who live, work and play here.

This scan beyond the horizon of measurable change is intended to push boundaries regarding those elements. These snapshots of change draw on emerging conditions that, as they unfurl over time, may have significant impacts on our ability to thrive and build our desired future. This information was distilled from a broad literature review and individual interviews conducted between September to December 2025 with a range of expert participants within various sectors. The content will be shared with a wide range of collaborators and will serve as an input into the next stage of development of alternative exploratory scenarios that will further inform the Century Plan.

How to Read this Document

What is Foresight?

This Foresight exercise is not about predicting the future or choosing a desired future. Rather, it is a systematic investigation of change, its impacts, and their potential future implications. It provides an opportunity to explore multiple possible upcoming conditions so organizations may consider resilient strategies for the potential of what may take place. Foresight investigations involve multiple, scaffolding steps, where the outputs of one stage form the inputs to the next. The first step revolves around developing an awareness of change: what differences can be felt now and what may be discernable in the future.

Gathering Information of Change

This Horizon Scan is the culmination of the awareness-building stage of the work, and represents the result of a systematic process of gathering and examining information in the form of signals that point to a changing future. It is intended to provide a wider contextual understanding of conceivable external changes that may have an impact on northeastern Illinois and the lives of those who live, work and play here. While the Horizon Scan is an extensive document, for reasons of practicality it is not designed to cover every conceivably related topic.

When presented with a broad range of concrete issues of concern, it is tempting for readers to try to address relevant implications directly. Translating the current and potential future challenges that are revealed in the horizon scan into immediate policy directives may not offer the intended outcome. Diving into policy development at this point in the process does not take into account the interaction of multiple changing factors or their combined interactions with drivers of change. We will explore that complexity in the next stage, looking at implications of these identified changes, followed by the development of multiple narratives about the future (exploratory scenarios).

The complexity of our current context is reflected here. The document is organized into six broad sections (Shifts) presenting emerging issues of change. These shifts point to the complexity of a world in which starkly contradictory forces and situations can coexist.

These Major Shift areas of exploration are:

1. Human and Machine
2. Connected and Isolated
3. Healthy and Unhealthy
4. Centralized and Distributed
5. Secure and Vulnerable
6. Permanent and Temporary

Each Shift is comprised of:

- A brief description of the Shift
- Five to six Indicators, which include a description, and a series of quotes from the literature as supporting evidence
- A section that outlines potential (but not exhaustive) relevance to the Chicagoland region

With close examination, it will be evident that some topics of concern may be found in multiple places in the document and not in a single, all-encompassing block. There are multiple reasons for this. An issue of concern may actually be framed as a Driver of Change, and therefore exert its force across multiple domains. Or it may cut across domains and have an impact at different scales. As an example, consider the topic of immigration. This topic is not presented as a discussion topic on its own. Rather, we see regions as complex adaptive systems, where this issue plays out in multiple ways: on an individual level, in the systems that organize the region, and also in a broader global context.

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Methodology

To initiate this project, we conducted two half-day workshops with CMAP team members to provide participants with the opportunity to express issues of concern to frame the Horizon Scan more effectively. Analysis of the data elicited from these events gave a broader and deeper understanding of the issues challenging the system. We also identified key issues that are already on the radar of those with deep expertise in the local region-building domain and the upcoming challenges and opportunities they are aware of.

We sought experts from the region who are at the forefront in areas of concern and invited them to share their perspectives and knowledge, and how new phenomena might influence the future. We conducted hour long semi-structured interviews remotely and synthesized the findings to guide our Signal research. We used the research question as a frame to gather evidence in the form of weak Signals and emergent data from a broad range of sources, both scholarly and popular.

The next step in the survey of possible futures that may implicate metropolitan Chicago region was to conduct a Horizon Scan based on the question:

Over the next thirty years, what will be the key “Shifts” and their “Indicators” influencing the changing landscape for strategic planning in northeastern Illinois?

In such unprecedented times, the creation of a Horizon Scan holds additional weight. Critically, many of the elemental Drivers of Change, including the increasing frequency, of infectious diseases with few treatments, rapid advances in Artificial Intelligence and the threats of Climate Change have been manifest over the past decade, but until now have seemed a distant possibility with plenty of time for adaptation. Suddenly, the future is here and the requirement to consider possible impacts of changing realities is urgent.

Our methodology was coherent with Foresight approaches. We framed our scan by the generalized but encompassing categories of change in society, technology, economy, ecology, politics, law, regulations and values (STEEPV). As we moved through the process, we made every effort to eliminate bias. We used filters and questions to see whether any given Signal was validated

or negated compared to our original information capture. We expanded our decision-making in terms of Signals from the original STEEPV categories to clusters of concepts related to patterns of emerging directional Shifts we observed.

We described those directional currents as a set of six major scaled Shifts each with five or six Indicators that we believe are important to the future, specific to city planning and more generally to society at large. For a Shift and its Indicators to be included in our summation, it had to fulfill three criteria:

1. Was it resonating at different scales?

(globally, nationally, locally, organizationally) This allowed us to confirm that the issue identified was of importance to the primary research question.

2. Did it resonate in different sectors?

This let us understand the scope of impact.

3. Did it transcend cultures/societies/demographics?

This ensured that we were not simply confirming our own biases.

Horizon Scanning

Horizon Scanning is a term we use to describe a formal and organized process for gathering, analyzing, synthesizing and disseminating crucial information about the future to support decision-making. Horizon Scanning includes examining the sources, patterns, and causes of change and stability in an attempt to develop clear understanding, and to describe possible futures.

Specifically, it looks to detect early signs of important developments through a systemic investigation of probable threats and opportunities. Horizon scanning sets the foundation for planning for resilience, sustainability, risk management and innovation.

A Horizon Scan is like an early warning system that surfaces potential events and conditions that might impact our future and helps us manage through situations of uncertainty. We would be remiss if we ignored potential forces that might sideline our ability to achieve our goals.

The Horizon Scan incorporates Drivers of Change, which are the slow moving and deep forces that shape change in our world. These underpin all the change we experience day to day, month to month and year to year. It also incorporates the directional Shifts we are exposed to as a result of those drivers, using aggregated research elements. More granular, specific, and recognizable Signals of Change provide evidence of the Shifts we are experiencing.

Future Scenarios

Rather than predict the future, our process will frame four plausible directions using the Generalized Images of the Future approach. We will create four scenarios that will examine the following possibilities in order to be comprehensive:

1. Growth, which describes a continuation of the current condition and its logical outcomes.
2. Limits and Discipline will investigate adaptation to environmental and social limits.
3. Decline and Collapse will view the emergence of systemic degradation and crisis.
4. Transformation will explore disruptive change based on a range of technological and social factors.

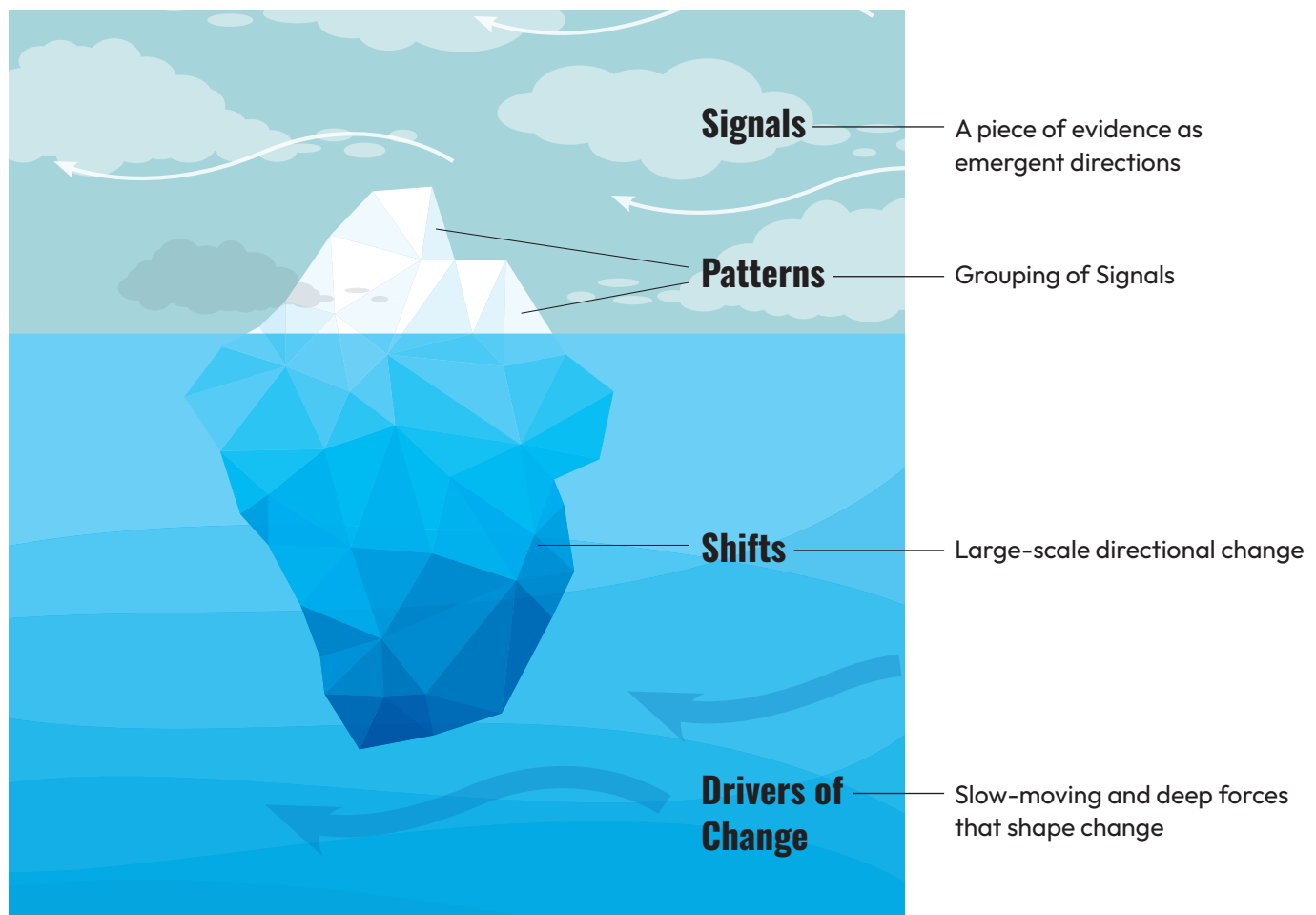
All will include both positive and negative dimensions.

These scenarios will be built using the early indicators of changing factors based on the Horizon Scan and identified Drivers of Change. The Horizon Scan workshop will examine the implications of change and the critical uncertainties. The scenarios will incorporate conditions to produce systemically robust exploratory narratives to identify directions we may need to prepare for, to plan for situations we wish to avoid, and to clarify opportunities we can innovate towards.

Signals, Patterns, Shifts, and Drivers of Change

The iceberg is a good metaphor to help illustrate the differences between Signals, Patterns, Shifts, and Drivers of Change. A signal is a piece of evidence of emergent directions, such as a report, an event or newspaper article. Patterns are groupings of signals that point to emerging change. Shifts depict larger-scale directional change, ultimately a transformation from one state to another. Drivers of Change are the slow moving and deep forces that shape change in our world.

The Iceberg as a Metaphor



Drivers of Change

Drivers of Change are the slow moving and deep forces that shape change in our world. Because they are at play over longer time periods, there is less uncertainty about their existence. While the conditions are supported with ample evidence, their potential impact on the context of the northeastern Illinois region is not entirely predictable. Based on extensive research and interviews with local thought leaders, we have identified eight.

Drivers likely to impact northeastern Illinois into the future.

1. Rapid Tech Advancements
2. Diversifying the Region
3. Aging Populations
4. Economic Fragility
5. Global Geopolitical Unrest
6. Global Migration
7. Environmental Precarity
8. The Polycrisis

The following six Drivers of Change are not in any particular order.

DRIVER OF CHANGE

1. Rapid Tech Advancements

Automation and Advanced AI

Every sector is implicated as technology becomes more woven into all daily activity. People's relationships, their jobs, education, healthcare and homes are all being transformed. Rapid technological advancements, particularly Artificial Intelligence (AI), are revolutionizing urban and regional areas by stream-lining government services through data-driven insights and predictive planning. While sustainability and systems management may be improved, challenges such as data privacy and the need for robust, secure digital infrastructure is required.

Implications for northeastern Illinois:

- Shifts in employment expectations from both workers and employers
 - Accessible, affordable education but new interactive dynamics
 - More multi-purpose space is required in most homes as online activities like work, education, healthcare and shopping expand. Sound insulation becomes critical in shared space
 - Requirement for advanced technical connectivity for most spaces and places
 - Shifting transportation patterns related to work shifts
 - Accessible healthcare in community is augmented through technology if adequate bandwidth is available., More time isolated at home may have negative impacts for patients
 - Invasion of privacy, security challenges and inequality of power
-

DRIVER OF CHANGE

2. Diversifying the Region

Language, Religion, and Cultural Shifts

Multiculturalism will continue to significantly impact the region by increasing social and economic complexity, fostering innovation and new cultural expressions, while also requiring northeastern Illinois to continue to adapt by providing resources and services for diverse communities and managing potential conflicts and inequalities. Multiculturalism transforms regions into dynamic hubs of inter-ethnic experiences, demanding responsive governance for resource allocation, infrastructure, and social cohesion to ensure equitable participation for all residents.

Implications for northeastern Illinois:

- The region's demographic characteristics may will shift but the outcomes are not pre-determined:
 - Black residents may continue to leave the region
 - Behavioral realities and priorities will change as resident profiles change
- Will different populations hold power relative to their numbers?
- Built environment configurations may need to adapt to changing patterns of use by new cultural groups including how food is purchased, prepared, and consumed, and how communities gather together.
- Average family size may shift
- Potential for increase in multi-generational family housing arrangements

DRIVER OF CHANGE

3. Aging Populations

Lower Fertility Rates and Longer Life Expectancy

Retired older adults throughout the region will impact the delivery of healthcare, housing requirements, transportation, and work. As younger people seek more affordable housing and community amenities, their prospects will become challenging without policy interventions.

Implications for northeastern Illinois:

- Chicagoland is aging (!!)
 - The tax base will change as retirees make up more of the community.
 - Physical and cognitive needs will change for many elders, requiring adequate accommodations.
 - Dementia-friendly community design can help elders age-in-place if desired
 - There is need for compact region form with accessible recreation opportunities
 - A more diverse elderly population may require more diverse and inclusive services such as housing and special transit
 - Some older adults have physical conditions making access to tech difficult
-

DRIVER OF CHANGE

4. Economic Fragility

Increasing Economic Pressures Affect Systems and Services

Economic fragility, high government debt, and rising living costs can lead to stagnant wages, lower investment, and decreased public services in metropolitan areas, exacerbating housing crises, threatening safety and forcing communities to prioritize essential services over growth and innovation. For the region, these factors can mean a reduced ability to address infrastructure needs and a higher cost for residents to maintain their quality of life.

Implications for northeastern Illinois:

- Federal transfers to support state activities may be unreliable due to extreme debt, while other levels of government deliberate between levels of taxation and funding for essential service delivery
- The increased cost of living may force people to move to lower cost areas within the region or to leave the region altogether for more affordable locations
- Supply-chain complexities may impact infrastructure renewal

DRIVER OF CHANGE

5. Global Geopolitical Unrest

Preparing for War, Terrorism, and Increasing Instability

Global geopolitical unrest impacts urban regions by disrupting supply chains, altering economic flows, and migration patterns. Unrest can lead to increased inflation, investment shifts, and demographic changes within cities. International disruptions force federal attention to focus on national security and defense, with associated budgetary and policy implications. Global conflicts can intersect with regional issues if high levels of discord are present between opposing points of view.

Implications for northeastern Illinois:

- Government funding may be redirected if conflict/terrorism alerts rise
 - Potential need to secure infrastructure assets (bridges, roads, transit, pipes, etc.)
 - Preparation for crisis in general population
 - Protection for localized protests may mean increased costs for security and policing in the region, depending on levels of conflict
-

DRIVER OF CHANGE

6. Global Migration

People Moving due to Climate, Conflict, and Economic Distress

Northeastern Illinois will feel the impact of the highest ever level of human movement both internationally and domestically. Involuntary migration strains urban infrastructure and housing, increases social tensions, and highlights existing inequalities in receiving areas, though it can also foster cultural diversity and economic contributions. While migrants and displaced people, especially those from climate disasters, often seek better economic opportunities and services, cities and regions frequently lack the capacity to handle the sudden population influx.

Implications for northeastern Illinois:

- Countries at climate and geopolitical risk are increasingly seeking refuge
- Will Chicago maintain status as a sanctuary city?
- Shelter, food, medical supports are required, including for homeless population
- Potential for political disruption and Federal disagreement
- Mental health supports are necessary for those migrants coping with the trauma of loss of homeland, impacts of war, or the aftereffects of devastating climate disasters.

DRIVER OF CHANGE

7. Environmental Precarity

Hottest Hot Ever, Wild Storms and Extreme Events

Long term shifts in weather conditions will impact food, housing and economic stability. Disaster risks from large scale weather events will lead to infrastructure damage, cost increases for repair and stabilization, and healthcare challenges from heat-related illnesses and respiratory issues.

Implications for northeastern Illinois:

- Housing values will be affected, especially in flood prone areas, and there is risk on more frequent property damage
- There will be need for additional maintenance and upgrades for the built environment
- Mobility constraints will increase due to flooding and snow accumulation
- The regional tree canopy will be stressed
- Air quality reductions will be more frequent with increased wildfires
- More net-zero and biodiversity friendly housing considers materials, construction methods and siting.
- Increasing rights of nature may affect land use.
- Zoning will require rethinking

DRIVER OF CHANGE

8. Polycrisis

Everything, everywhere, all at once.

We are living in an era characterized by rapidly multiplying and causally related crisis events, happening at multiple different scales, and interacting with each other to amplify their impacts. The complexity we are seeing is in part due to the massively interconnected and fragile systems making up our world. For example, in September 2024 when Hurricane Helene hit the already rain-soaked soil of Asheville N.C., there was complete infrastructure failure causing landslides that closed a major IV fluid manufacturing plant, which triggered a shortage of healthcare supplies across the country, all during the Presidential election in a closely contested electoral district.

Implications for northeastern Illinois:

- Simultaneous economic, environmental and social crises may have catastrophic impacts on the region's ability to recover from shocks and stresses.
- Insurance may be more difficult to acquire at reasonable costs as more frequent and severe claims push insurers to raise premiums and increase exclusions for high-risk events.
- Rising levels of uncertainty related to the compound impacts of repeated events may cause trust in leadership to decline and misinformation to spread if clear policies are not enacted.

Major Shifts & Signals of Change

Shifts reflect large scale transformation—transition from one state to another. Each Shift included here is supported by patterns observed in the gathered signals of change that illustrate these emerging issues and their potential relevance to the reality of northeastern Illinois. Signals are supporting evidence drawn from broad literature review and interviews with local thought leaders.

SHIFT 1	Human and Machine
SHIFT 2	Connected and Isolated
SHIFT 3	Healthy and Unhealthy
SHIFT 4	Centralized and Distributed
SHIFT 5	Secure and Vulnerable
SHIFT 6	Permanent and Temporary

SHIFT 1

Human & Machine

The rapidly increasing digitization of daily life is a reality that impacts some of the most critical aspects of procedures and management as data is commodified and automation is ubiquitous. Using science and technology to mimic and expand upon the capacities of the natural and the human world, we are able to drive new experiences and applications. Humans will expand their capabilities to previously unimaginable levels, provoking questions of rights to access the benefits of technology and AI.

In this Section

1.1 Agentic AI Everywhere

1.2 Deep, Deep Fakes

1.3 Surveillance State

1.4 Skill Shift

1.5 Ethical Technology

Agentic AI Everywhere

Human job replacement, and even some personal relationship replacement, expands as AI with decision-making capacity rapidly advances.

Generative Artificial Intelligence has been rapidly and widely deployed to create fast, data-rich responses to prompts across sectors as varied as healthcare research, automotive engineering, defense analytics and energy optimization. More recent advances in Agentic AI have the ability to plan and execute decision-making autonomously. Cities and regional governments increasingly see the benefit of identifying patterns within the data they collect to produce efficient, sustainable, and effective solutions to complex urban issues such as procurement, traffic and transportation management, predictive weather modeling, waste sorting, and public safety.

Use of algorithmic reasoning capabilities based on accumulated data suggests increased potential for improvement of concerns such as congestion, water and energy management, housing development optimization, crime anticipation and disease outbreak prediction. However, individual rights may be affected, and not all residents may be equally protected. Data ownership in dealings with large platform organizations is complicated as concentration of power continues. Working directly with local academic experts could provide an opportunity to innovate while maintaining ethical standards.

In the private sector, Agentic AI is being used to optimize workflow especially for repetitive and time sensitive activities, or those that require 24/7 monitoring and response. Inventory management, procurement processing, human resource processes like job application reviews, scheduling, and real time customer service resolution are all faster, easier and less expensive without as many humans in the mix.

The potential of algorithmic advances has costs. Cognitive automation can augment human productivity, but not all workers will be ready and able to shift from service-based jobs and participate in a more knowledge driven economy. People underrepresented in STEM (Science, Technology, Engineering and Math) fields, such as women and people of color will be disproportionately affected. Industries with higher gender and race occupational segregation such as health services, education, and service jobs are likely to see high levels of displacement as automated decision-making is incorporated into their work.

Exposure to cyber-attacks remains a functional risk for all large systems, businesses, and institutions, and poses enormous economic implications, as the need for expansive (and expensive) insurance increases. Automated threat detection and response strategies are being incorporated into digital technology systems to protect against increasingly sophisticated malicious actors. However, industry best practices still advocate for a “human-in-the-loop” presence for oversight of high-risk decision making.

Relevance for northeastern Illinois

Using technology to perform repetitive services previously delivered by workers may reduce costs. However, increased reliance on technical platforms is a risk, especially as a tech company oligarchy limits choice. Initial expenditures for programming may be high and ensuring delivery best practice is necessary. Effective data management will be required, likely requiring ongoing secure digital systems infrastructure enhancement, policy implementation and staff training. Job loss, especially for well-paying, full-time, permanent work, may have overall enormous systemic impacts in the region. Safeguarding and upgrading digital systems will be an ongoing requirement.

Evidence

“Agentic AI refers to systems that operate with a degree of autonomy, making decisions and taking actions on behalf of users within defined boundaries. Unlike traditional AI systems that analyze data or answer questions, agentic AI can initiate tasks, monitor for changing conditions and adjust its behavior to achieve desired outcomes.

Think of an intelligent agent that watches city infrastructure data in real time and automatically schedules preventive maintenance for a water pump before it fails. Or a system that monitors grant databases, drafts applications based on city needs and submits them when human reviewers give the green light. These aren’t just ‘smart tools’; they can be considered digital teammates. This isn’t science fiction. The building blocks of agentic AI already exist and are being tested in both private and public sector contexts. The shift is happening, but slowly and unevenly.

The appeal of agentic AI to government is straightforward: better service delivery with fewer resources. These systems can proactively address needs before they escalate; automate entire workflows (not just individual tasks); and provide consistency in high-volume, rules-based tasks.”

Shark, Alan R. “How Agentic AI Will Transform Local Government: A Forewarning.” *StateTech*, August 5, 2025. <https://statetechmagazine.com/article/2025/08/how-agentic-ai-will-transform-local-government-forewarning>.

“This isn’t about chatbots or simple automation. We’re talking about AI agents that can handle your entire accounts payable process, manage customer relationships, or run marketing campaigns with minimal human oversight. Forget everything you’ve heard about small businesses being slow to adopt new technology. The data tells a completely different story this time:

- 75% of SMBs are already experimenting with AI, with high-growth small businesses reaching 83% adoption
- AI adoption among small business owners nearly doubled from 26.4% in 2023 to 50.92% by 2024
- 82% of business leaders are confident they’ll use digital labor to expand their workforce capacity in the next 12-18 months

Your competitors aren’t waiting for permission. They’re already deploying AI to generate content, automate operations, and scale without adding headcount. The question isn’t whether your business will adopt AI—it’s whether you’ll lead this transformation or scramble to catch up.

The Four Stages of AI Evolution: Where Are You?

Understanding where AI is heading helps you position your business strategically. According to recent research, we’re witnessing four distinct levels of AI capability:

Level 1: Chatbots - The AI assistants most businesses use today for content creation and customer service.

Level 2: Planning Assistants - AI that can break down complex goals into actionable steps and execute multi-step workflows.

Level 3: Digital Labor - Autonomous agents that can manage entire business processes end-to-end with minimal human oversight.

Level 4: Digital Workforce - Coordinated systems of multiple AI agents working together like a specialized team.

While most businesses are still at Level 1, the progression to Level 3 and 4 is accelerating rapidly. Early adopters are already seeing 70-90% automation of complex workflows and 40% reductions in operational costs.”

“The AI Revolution is Here: Is Your Chicago Business Ready to Lead or Be Left Behind?” *Framework IT*, September 30, 2025. <https://www.frameworkit.com/blog/the-ai-revolution-is-here-is-your-chicago-business-ready-to-lead-or-be-left-behind>.

SMB: Small and Midsized Business

“In a field known for rapid innovation, little has changed in the makeup of the AI workforce in academia or industry over the past decade, according to the index. AI remains predominantly male and lacking in diversity when it comes to race, ethnicity, sexual orientation, and gender identity.

Kelly, Drew. “AI Index Diversity Report: An Unmoving Needle.” *The Stanford Institute for Human-Centered Artificial Intelligence*, March 3, 2021. <https://hai.stanford.edu/news/ai-index-diversity-report-unmoving-needle>.

Some findings:

- Women account for less than 19%, on average, of all AI and computer science (CS) PhD graduates in North America over the past 10 years.
- Women make up only 16% of all tenure-track CS faculty, according to 17 of the 18 universities participating in the survey.
- In 2019, 45% of new U.S.-resident AI PhD graduates were white, while 2.4% were African American and 3.2% were Hispanic.

- A membership survey by Queer in AI in 2020 shows almost half of respondents view the lack of inclusiveness in the field as an obstacle. More than 40% of members surveyed report having experienced discrimination or harassment as a queer person at school or work.”

“Our research shows that employees are more ready for AI than their leaders imagine. In fact, they are already using AI on a regular basis; are three times more likely than leaders realize to believe that AI will replace 30 percent of their work in the next year; and are eager to gain AI skills. Still, AI optimists are only a slight majority in the workplace; a large minority (41 percent) are more apprehensive and will need additional support. This is where millennials, who are the most familiar with AI and are often in managerial roles, can be strong advocates for change.”

Mayer, Hannah, Lareina Yee, Michael Chui, and Roger Roberts. “Superagency in the workplace: Empowering people to unlock AI’s full potential.” *McKinsey & Company*, January 28, 2025. <https://www.mckinsey.com/capabilities/tech-and-ai/our-insights/superagency-in-the-workplace-empowering-people-to-unlock-ais-full-potential-at-work>.

“Human-in-the-loop (HITL) refers to a system or process in which a human actively participates in the operation, supervision or decision-making of an automated system. In the context of AI, HITL means that humans are involved at some point in the AI workflow to ensure accuracy, safety, accountability or ethical decision-making.

Stryker, Cole. “What is human-in-the-loop?” *IBM Think*, n.d. <https://www.ibm.com/think/topics/human-in-the-loop>.

Machine learning (ML) has made astonishing strides in recent years, but even the most advanced deep learning models can struggle with ambiguity, bias or edge cases that deviate from their training data. Human feedback can help both improve models and serve as a safeguard for when AI systems perform at insufficient levels. HITL inserts human insight into the ‘loop,’ the continuous cycle of interaction and feedback between AI systems and humans.”

“In a new Pew study, Kochhar found that 19% of U.S. workers are in jobs with high exposure to AI. The study uses the term ‘exposure’ because it’s unclear what AI’s impact—whether positive or negative—might be.

Lacurci, Greg. “A.I. is on a collision course with white-collar, high-paid jobs — and with unknown impact.” *CNBC*, July 31, 2023. <https://www.cnn.com/2023/07/31/ai-could-affect-many-white-collar-high-paid-jobs.html>.

The high exposure group includes occupations like budget analysts, data entry keyers, tax preparers, technical writers and web developers. They often require more analytical skills and AI may therefore replace or assist their ‘most important’ job functions, the report said.

Workers with the most AI exposure tend to be women, white or Asian, higher earners and have a college degree, the report said.

‘Certainly, there could be some [job] displacement,’ said Cory Stahle, an economist at job site Indeed. However, AI could also ‘open new occupations we don’t even know about yet.’

‘The jury is still out,’ he added.”

Deep, Deep Fakes

Digital imagery that is increasingly indistinguishable from reality spreads distrust and disinformation.

With more refined digital tools in the hands of everyone, it has become increasingly difficult to decipher verifiable information, erasing the line between reality and fabrication. Using Artificial Intelligence based human image synthesis techniques and advanced video editing, readily available software tools created for the film industry are convincingly altering messaging, from political leaders to commercial applications. Highly sophisticated simulations are based on deep research into accurate representation of voice modulation, physical gesturing, facial recognition and spatial movement. “Deep Fakes,” false video or audio recording of recognizable figures delivering imperceptibly manipulated false information, are destabilizing. Tampered images that suggest compromising situations are increasing incidents of harassment and extortion. Vicious, AI-created deepfake content is now just seen as another tool to attack the opposition. Threats to democracy are increasing with the advanced capacity that convincingly represents influential thought leaders online and disrupts information transmission by delivering untrustworthy synthetic “facts”.

Automation and digitization have already fundamentally altered the workplace, with high levels of replacement for lower skilled, entry level jobs in manufacturing, transportation, service and routine administration sectors. Advanced computer manipulation that incorporates visual representations of living beings, coupled to AI and machine learning, now produces convincing “Artificial humans” for use in a wide range of applications. Synths are an alternative to a workforce prone to distractions, illness and boredom in work environments that do not support social and cognitive engagement and have high levels of absenteeism. Categories of work involving predictable repetition or pre-determined communications such as front-line service provision and therapeutic interactions are already being programmed into simulated experiences at a fraction of the cost of live workers.

AI chatbot therapy tools can provide discrete emotional support, particularly for those who cannot access or cannot afford human clinicians. Although there has been contradictory evidence produced about the exact statistics to support the claim, a portion of Gen Zs are convinced that they can form a deep emotional bond with an AI entity. Some people are developing long-term and, in some cases exclusive romantic relationships and are prepared to marry their AI companion. For those with severe mental health concerns, there is an increasing risk of AI driven psychosis and suicide, in part amplified by mishandling of crisis responses and AI’s reinforcement of harmful perspectives.

Relevance for northeastern Illinois

Entry level employment in office work, retail, tourism, and healthcare is at risk as the move to digital alternatives to human interaction accelerates, severely affecting younger job seeking populations. Less skilled workers, especially those with occupations involving repetitive cognitive or physical activities, will find automation is replacing jobs.

Truthful representation of information is more difficult to discern, meaning convincing avatars of public officials in compromising situations may be used to incite civil unrest. Unprepared service providers may be defrauded or disrupted leading to a loss of trust in public systems.

Evidence

“Over the weekend, a Hong Kong firm claimed a \$25 million loss to fraudsters using deepfake technology to allegedly impersonate the company’s chief financial officer via video conferencing.

Murphy, Shannon. “A Deepfake Scammed a Bank out of \$25M — Now What?” *Trend Micro*, February 7, 2024. https://www.trendmicro.com/en_gb/research/24/b/deepfake-video-calls.html.

This AI-driven incident reads more like the plot from a science fiction movie than a real-world event—but it’s not just theory. If true, it’s a watershed moment testing our collective ability to respond to the next evolution of social engineering and deception attacks.

The potential for this novel attack was not entirely unforeseen. At AWS re:Invent in November, Trend Micro detailed a similar business impact scenario, advising global business leaders on how to prepare and adjust internal processes and policy against the backdrop of rapidly advancing deepfake technology.

Why are deepfake scams on the rise?

AI-powered fraud uplevels existing attacker tactics and techniques to be more effective. This style of attack became inevitable with high accessibility to deepfake technology and tools as open-source software (generative adversarial networks or GANs), and as avatar-builder SaaS applications.

AI tools like HeyGen make it easy for anyone to create a deepfake where an AI model is trained from a real video of the speaker, then generate scripted deepfake videos with turnaround time measured in minutes. The results are impressive and have long-range implications outside of this scenario for mass misinformation spread via social networking sites.”

“One 2025 study in BMC Psychology described chatbot therapy as using ‘a natural language processing framework and machine learning methods to communicate with people in real time.’ AI therapy analyzes the user’s emotional state through text and then provides customized replies based on cognitive behavioral therapy (CBT) practices and other sources.

Gregory, Nicole. “AI Therapy: How It Works, Benefits & Limitations.” *Forbes*, September 23, 2025. <https://www.forbes.com/health/mind/ai-therapy/>.

An AI chatbot uses all those sources to provide replies to users in their conversations, imitating what an empathetic human would say to help alleviate anxiety, according to Liana Spytska, the Ukraine-based author of the study. Data acquired from these communications is evaluated by the AI system, which identifies emotions involved and offers appropriate coping techniques.”

“Digital humans can represent two distinct identities: they can be digital twins of real people (based on their actual appearance and voice) or fictional characters (created from actors or entirely AI-generated). Both serve different purposes in modern communication strategies.

Lukan, Ema. “Digital Humans Are Here — & They’re Changing Everything.” *Synthesia*. October 6, 2025. <https://www.synthesia.io/post/digital-humans>.

If you’re battling long production cycles, low engagement in training, or inconsistent messaging across markets, digital humans give you a consistent face and voice you can update in hours—not weeks. They recreate human interaction at scale, addressing the fundamental need for personal connection in digital communication.

Non-verbal cues like gaze, facial micro-expressions, and prosody are critical to how we build rapport and understand intent—especially on video. Digital humans leverage these elements to create more engaging experiences. Faces and voices increase attention and recall in procedural content, which is why you’re seeing them used for complex explainers and training materials. Beyond training, digital humans excel at providing personalized experiences across various touchpoints. They can guide customers through troubleshooting processes, deliver leadership messages with consistent tone and presence, or present product demonstrations in multiple languages—all while maintaining the human element that text-based systems lack.”

“As the technology powering deepfakes has become both more capable and accessible, two immediate categories of harm emerge: harassment and social engineering.

Hamiel, Nathan. “Deepfakes Proved a Different Threat Than Expected. Here’s How to Defend Against Them.” *World Economic Forum*, January 10, 2025. <https://www.weforum.org/stories/2025/01/deepfakes-different-threat-than-expected/>.

Deepfakes can be used to target and harass individuals. The most extreme form of harassment is the creation of non-consensual pornography. These images can be used outright or used as content for blackmail and sextortion scams. There are wider societal impacts from this form of harassment, and new laws are being proposed to specifically address this form of harassment. One example is the TAKE IT DOWN Act in the United States, which was passed unanimously by the Senate.

The second set of risks involves social engineering attacks. Deepfakes can be used to exploit both people and technology. For example, an attacker can use AI to clone a family member's voice and use it to try and scam a relative out of money. This type of scam is on the rise, prompting organizations such as the US Federal Trade Commission to issue a consumer alert."

"Taxation on industrial and other robots could help mitigate the adverse effects of job losses due to automation by redistributing income toward displaced workers. However, taxing robots may not be straightforward, as they are inanimate objects with no independent identity for tax purposes. They neither receive a share of profits from their owners nor earn any income.

To make the taxation of robots practical, a number of elements are needed. These elements include the definition of the taxable person, allowing the tax base to be expanded, and identifying the most suitable taxes."

Shome, Parthasarathi, and Daisuke Miura. "Is it Time to Tax the Use of Robots?" *The Asian Development Blog*, October 17, 2022. <https://blogs.adb.org/blog/it-time-tax-use-robots>.

"Falling in love with A.I. is no longer science fiction. A recent study found that one in five American adults has had an intimate encounter with a chatbot; on Reddit, r/MyBoyfriendisAI has more than 85,000 weekly visitors with many sharing giddy recollections of the day their chatbot proposed marriage.

Kraft, Coralie. "They Fell in Love with A.I. Chatbots — and Found Something Real." *The New York Times Magazine*, November 5, 2025. <https://www.nytimes.com/interactive/2025/11/05/magazine/ai-chatbot-marriage-love-romance-sex.html>.

How do you end up with an A.I. lover? Some turned to them during hard times in their real-world marriages, while others were working through past trauma. Though critics have sounded alarms about dangers like delusional thinking, researchers from M.I.T. have observed that many users find therapeutic benefits, like 'always-available support' and a reduction in loneliness."

Surveillance State

Voluntary and involuntary observation of behavior means personal data is becoming more widely available.

Participatory Surveillance

We live less private lives than previous generations. Purposefully, or unconsciously, personal data is relinquished in exchange for free or convenient access to goods and services. There is increased monitoring and physical surveillance in the built environment by state or foreign actors. With for-profit tech giants entering the civic realm, the imperative of competitive advantage in the marketplace pushes companies to dissect even anonymized data to interpret customer needs and deliver solutions. We install Ring video doorbells as smart security devices and Alexa as our voice-activated assistant that listens for our requests without truly considering how we are contributing to community-based monitoring, or participatory surveillance. Rapid advancements in technologies that have the potential to override our privacy concerns are outpacing our regulatory landscape's ability to guard against inappropriate use. Bias may be either deliberately or unintentionally baked-into data. Ironically, in their use of the data collection framework of "volume, variety and velocity" security providers augment their ability to protect the public from harm by monitoring suspicious behavioral patterns.

Government efforts to maintain order and compliance use data as a tool both in protection and policy development. Ambient security systems create a linked mesh of sensory data aggregation connected to computer activity to create whole pictures of human activity for security (and surveillance) purposes. Previously guarded information is now expected to be publicly available, including health, relationship, location and political status. With the expanding struggle for freedom and control in cyberspace, Rebecca Mackinnon (author of "Consent of the Networked") asks: How do we design the next phase of the Internet with accountability and freedom at its core, rather than control?

Speaking Freely

Responsible AI that recognizes rights to data privacy and encourages human machine interaction equitably is the gold standard, but it requires additional attention, investment, and likely additional expertise. Deploying machine learning in a manner that protects freedom of speech, access to information and due process supports democratic approaches. Automated surveillance techniques such as social media listening, facial recognition and aggregated location tracking from open data can also be used to produce disinformation or misinformation with political and social consequences.

Cybersecurity and Infrastructure

With so much infrastructure connected to artificial intelligence and automation, risk management becomes increasingly critical. Transportation systems, power generation locations, hospital facilities, government services and communications centers, even small businesses can be hijacked, and are all potential targets for interference. Cybersecurity to protect against continuous threat exposure and insurance against hacking ransoms has become a priority for governments at all levels. Understanding the fine line between increased monitoring for system safety and citizen surveillance for coercive control will require explicit boundaries.

Employee training is a necessary early line of defense. Current readiness is inconsistent across public and private organizations, exposing vulnerabilities to potential threats. Human error, such as using weak passwords, inadvertently downloading malware, or responding to sophisticated phishing scams remains a significant contribution to breakthrough cyberattacks.

Relevance for northeastern Illinois

Predictive analytics have the potential to deliver positive outcomes and more efficient services for the Region, however protections and assurances for citizen privacy and independence are required. Transparent and ethical guidelines and compliance frameworks for the use of advanced technology, especially AI should be continuously updated. Employee training is a high priority.

Cyber threats pose a realistic challenge to the Region. Systems and infrastructure need regular monitoring for changing potential risks, especially against possible ransom demands. Insurance cost must rise.

Evidence

“Surveillance is no longer just a tool of governments or institutions. It’s embedded into the fabric of daily life. From school hallways equipped with cameras to smartphone apps that monitor location and screen time, young people are constantly being observed by teachers, parents, peers, and even strangers online. On top of this, nearly everyone has their phones out, ready to capture moments in real time. Just attend any concert or sporting event today, and you’ll find it hard to see the actual event through the sea of glowing screens. When something unusual, embarrassing, or controversial occurs, an unspoken race begins to record it, often fueled by the hope of gaining views, likes, or shares. This relentless recording means that mistakes are not only witnessed but frequently broadcast, replayed, and scrutinized by countless others. As a result, privacy becomes nearly impossible, and the pressure to perform flawlessly intensifies.”

Dsiriannimolnar. “No Place to Hide: How Surveillance Culture Fuels Perfectionism in Young People.” *Brock University*, October 10, 2025. <https://brocku.ca/dphwb/2025/10/10/no-place-to-hide-how-surveillance-culture-fuels-perfectionism-in-young-people/>.

“Another example of IoT tech driving the next wave of smart city innovation can be seen in smart poles. These intelligent structures are designed to offer a wide range of functionalities like lighting, wireless connectivity and environmental monitoring. Equipped with a variety of sensors and cameras, smart poles can capture and transmit data in real time, enabling city administrators to make informed decisions based on the most accurate and up-to-date information. They can also provide high-speed internet access. With their ability to host multiple functions, we anticipate smart poles to transform urban landscapes worldwide.”

Ly, David. “On The Horizon For Smart Cities: How AI and IoT Are Transforming Urban Living.” *Forbes*, April 7, 2023. <https://www.forbes.com/councils/forbestechcouncil/2023/04/07/on-the-horizon-for-smart-cities-how-ai-and-iot-are-transforming-urban-living/>.

“In the dynamic realm of security and surveillance, the integration of artificial intelligence has emerged as a game-changer. Gone are the days when video surveillance merely recorded events; today, AI transforms cameras into intelligent sentinels capable of real-time threat detection. This technological leap is not just a step forward; it’s a stride into a safer and more secure future.

Santilli, Paul. “Real-time Threat Detection: The Power of AI in Video Surveillance.” *Strategic Consortium of Intelligence Professionals*, January 11, 2024. <https://www.scip.org/news/662235/Real-time-Threat-Detection-The-Power-of-AI-in-Video-Surveillance.htm>.

... Key Components of AI-Powered Threat Detection

1. **Object Recognition:** AI algorithms can identify and classify objects in a video feed, distinguishing between normal activities and potential threats such as unattended bags or suspicious behavior.
2. **Facial Recognition:** Advanced facial recognition technology enables the identification of individuals, helping security personnel track and monitor people of interest or identify potential threats based on watch lists.
3. **Anomaly Detection:** AI algorithms can learn normal behavior patterns within a given environment and raise alerts when unusual activities occur, such as loitering, erratic movements, or unauthorized access.
4. **Integration with Sensors:** AI in video surveillance often works in tandem with other sensors, such as motion detectors or access control systems, to provide a more comprehensive understanding of the security landscape.

Real-Time Response: Mitigating Threats Instantaneously

One of the key advantages of AI in video surveillance is its ability to provide real-time responses to potential threats. When an anomaly is detected, the system can trigger immediate alerts, notifying security personnel or law enforcement agencies. This swift response is crucial in preventing security incidents or minimizing their impact.”

“‘Municipalities are prime targets for cybercriminals,’ explained Xavier Trépanier of Palo Alto Networks. He added, ‘Cyberattacks against municipalities represent a very real and growing risk. According to experts, nearly 39% of government and municipal organizations have already been victims of a cyberattack, placing the public sector among the most targeted, just behind transportation and logistics. Although intrusion detection is becoming faster, attackers are using AI to enhance traditional techniques like ransomware, phishing, or data exfiltration to steal confidential citizen data or paralyze critical systems.’”

Boudreau, Sébastien. “Cyber threats: Municipalities should step up their preparations.” *NATIONAL*, October 16, 2024. <https://www.national.ca/en/perspectives/detail/cyber-threats-municipalities-can-step-up-their-preparations/>.

“The other major concern here is the use of AI by governments in surveillance of their own societies. As governments have seen domestic threats to security develop, including from terrorism, they have increasingly deployed AI domestically to enhance the security of the state.

Burton, Joe. “AI: the real threat may be the way that governments choose to use it.” *The Conversation*, November 2, 2023. <https://theconversation.com/ai-the-real-threat-may-be-the-way-that-governments-choose-to-use-it-216660>.

In China, this has been taken to extreme degrees, with the use of facial recognition technologies, social media algorithms, and internet censorship to control and surveil populations, including in Xinjiang where AI forms an integral part of the oppression of the Uyghur population.

But the west’s track record isn’t great either. In 2013, it was revealed that the US government had developed autonomous tools to collect and sift through huge amounts of data on people’s internet usage, ostensibly for counter terrorism. It was also reported that the UK government had access to these tools. As AI develops, its use in surveillance by governments is a major concern to privacy campaigners.

Meanwhile, borders are policed by algorithms and facial recognition technologies, which are increasingly being deployed by domestic police forces. There are also wider concerns about ‘predictive policing’, the use of algorithms to predict crime hotspots (often in ethnic minority communities) which are then subject to extra policing effort.

These recent and current trends suggest governments may not be able to resist the temptation to use increasingly sophisticated AI in ways that create concerns around surveillance.”

Skill Shift

Along with an emphasis on technical competency requirements, more work will demand creativity, connection, and compassionate interpersonal skill development.

Since 2012, American university graduates in science, technology, engineering and mathematics (STEM) fields have surpassed even most ambitious targets. While those accomplishments are significant, they are insufficient in shifting work conditions that require a balance of human-centered and digital abilities. Previously unknown jobs are surfacing, with a heavy emphasis on socio-behavioral skills such as collaboration. Moving forward, increased technical competency, creativity, and interpersonal skills will likely be necessary to fill emerging jobs, but not every displaced worker will be able to make the shift. Despite assurances that deeply human competencies such as communicating and strategic thinking are irreplaceable, technical advances in machine learning and natural language processing are rapidly making headway deciphering contextual inquiries and formulating action plans. Even highly skilled (and highly paid) professionals will need to adopt continuous learning approaches to remain relevant. Working alongside AI-enabled initiatives will boost productivity and potentially enhance decision making for open-minded doctors, lawyers, judges, administrators, politicians, engineers, and architects.

Recognition that functioning in tomorrow's complex reality will require attention to holistic learning may spur new approaches to education and training. Lifelong learning, whether self-initiated or mandated by employers, will be increasingly normalized with micro-credentialing and professional certification providing adult learners, especially those changing jobs, with the necessary competencies to succeed. Online delivery models are becoming more sophisticated, providing more engaging content through multimedia technology infrastructure. Colleges and universities facing economic fragility are beginning to reorient their offerings and reconsider their balance of research and knowledge transfer (although some institutions are resisting change). The call for more collaboration between industry and higher education to emphasize skill development to meet evolving workplace demands is increasing. Experiential, work-integrated learning will continue to be a valuable opportunity for many students.

Emerging research describes brain function that may be as diverse and unique as facial features or fingerprints. Recognition of differences in learning and thinking makes room for a wider acceptance of what constitutes appropriate approaches to transmitting knowledge and experiences, replacing a uniform education system that does not meet a wide variety of ever-increasing needs. Inclusive accommodation of the strengths and weaknesses of different characteristics can be a challenge given current funding models.

Relevance for northeastern Illinois

Workforce preparation remains fundamental for future prosperity in the region. Colleges and Universities are significant supporters of and attractors to the region. Evolution of their approach and role in the preparation of workers and citizens for a rapidly changing world is ongoing.

There may be different impacts on community colleges, private institutions and public universities depending on funding changes, areas of focus, and population profile of the region.

Evidence

“Businesses will need a major skills upgrade. Demand for technological and social and emotional skills could rise as demand for physical and manual and higher cognitive skills stabilizes. Surveyed executives in Europe and the United States expressed a need not just for advanced IT and data analytics but also for critical thinking, creativity, and teaching and training—skills they report as currently being in short supply. Companies plan to focus on retraining workers, in addition to hiring or subcontracting, to meet skill needs. Workers with lower wages face challenges of redeployment as demand reweights toward occupations with higher wages in both Europe and the United States. Occupations with lower wages are likely to see reductions in demand, and workers will need to acquire new skills to transition to better-paying work. If that doesn’t happen, there is a risk of a more polarized labor market, with more higher-wage jobs than workers and too many workers for existing lower-wage jobs.

...Who does the company need to succeed in this transformation? To ensure that the right talent is on hand to sustain the company strategy during all transformation phases, leaders could consider setting up dedicated talent “win rooms” to identify, attract, and recruit future AI and gen AI leaders in a tight market. They also will likely need to accelerate the building of AI and gen AI capabilities in the workforce. Nontechnical talent will also need training to adapt to the changing skills environment. Finally, leaders could deploy an HR strategy and operating model to fit the post-gen AI workforce. To that end, companies

Hazan, Eric, Anu Madgavkar, Michael Chui, et al. *A New Future of Work: The Race to Deploy AI and Raise Skills in Europe and Beyond*. McKinsey Global Institute, May 21, 2024. <https://www.mckinsey.com/mgi/our-research/a-new-future-of-work-the-race-to-deploy-ai-and-raise-skills-in-europe-and-beyond>

are increasingly setting up AI and gen AI departments specifically to spearhead gen AI transformation efforts. These include roles focusing on strategy along with technical roles essential for executing strategies and developing future gen AI expertise across the organization.”

“On average, workers can expect that two-fifths (39%) of their existing skill sets will be transformed or become outdated over the 2025-2030 period. However, this measure of ‘skill instability’ has slowed compared to previous editions of the report, from 44% in 2023 and a high point of 57% in 2020 in the wake of the pandemic. This finding could potentially be due to an increasing share of workers (50%) having completed training, reskilling or upskilling measures, compared to 41% in the report’s 2023 edition.

Analytical thinking remains the most sought-after core skill among employers, with seven out of 10 companies considering it as essential in 2025. This is followed by resilience, flexibility and agility, along with leadership and social influence.

...Given these evolving skill demands, the scale of workforce upskilling and reskilling expected to be needed remains significant: if the world’s workforce was made up of 100 people, 59 would need training by 2030. Of these, employers foresee that 29 could be upskilled in their current roles and 19 could be upskilled and redeployed elsewhere within their organization. However, 11 would be unlikely to receive the reskilling or upskilling needed, leaving their employment prospects increasingly at risk.”

“While the job market is evolving, it also opens a wealth of opportunities for personal and professional growth. Embracing the development of both hard and soft skills will not only ensure your relevance in the future workplace but also empower you to thrive in an ever-changing environment. Some of the critical emerging future skills include:

- The ability to search for information and create trusted networks. It is necessary to have a professional who knows how to find the necessary information at the right time. In a world oversaturated with information, locating the information that really matters is complicated.
- Having proficiency in different languages and computer skills. Globalization makes it necessary to speak several languages; one language is no longer sufficient.
- Being creative (cognitive skills). The ability to learn, unlearn and relearn. Do not be afraid to get involved. When you do something new, obviously, you can make mistakes, but the basis is that you must learn constantly.
- The ability to negotiate, renegotiate and even with your worst enemy. Managing conflicts as a source of learning and managing stress and promoting well-being.
- Being proactive. The employees of the future will have to move with passion, with the feeling of always looking for innovation.

World Economic Forum. *The Future of Jobs Report 2025*. World Economic Forum, January 7, 2025. <https://www.weforum.org/publications/the-future-of-jobs-report-2025/digest/>

Dolan, Simon L., Mario Raich, and Yolanda Triviño. “Equipping for Tomorrow: Unlocking New Skills for the Future of Work in 2033.” *European Business Review*, August 2025. https://www.researchgate.net/publication/394242161_Equipping_for_Tomorrow_Unlocking_New_Skills_for_the_Future_of_Work_in_2033.

What are those skills to be employable in 2030? Xavi Olba a consultant in digital strategy and innovation and member of the 22@ Community, talks about a basic skill for the job seekers of the future: ‘They must not be great possessors of knowledge, but they must be great managers of knowledge.’”

“The shelf life of a skill keeps shrinking, and businesses are scrambling to adapt. McCormick noted that by the time your organization codifies skills, these are already outdated.

‘Once you write it down and publish it to the world, it’s changed,’ he said. ‘How do you keep it iterative and be OK with ambiguity?’

Spence pointed to World Economic Forum data predicting that nearly 40 percent of workers’ core skills will change by 2030, with millions of jobs lost and even more created. He said the main challenge is that HR data is scattered across too many systems, making it hard to see what talent you already have—let alone what you’ll need.

The opportunity? Stop obsessing over rigid job descriptions, and instead watch where employees’ energy is going. McCormick suggested asking people about the projects they work on behind the scenes: ‘That’s going to tell you a lot about emerging skills, or where their passion goes automatically.’”

“The rise of ‘brain tech’—a term encompassing digital tools that interact with cognitive processes—has created new opportunities for individuals to explore how they think and learn. While these tools are not designed to treat or diagnose any condition, they may provide a structured way to engage with tasks that rely on attention, memory, or decision-making.

Such platforms often incorporate real-time feedback, difficulty adjustment, and performance tracking, allowing users to observe patterns in their engagement and identify strengths or areas for further exploration. These insights can be particularly valuable in professional settings where mental flexibility and sustained focus are crucial.

Importantly, digital cognitive tools are not a replacement for professional development programs or health interventions, but they may complement efforts to stay mentally active and adaptable in a fast-changing environment.”

“AI has the potential to make all employees more efficient—it can help write an email, job posting, marketing campaign, product copy, organize a list, do research, etc. Suleyman, who is now CEO of Inflection AI, which focuses on the development of personal AI tools, says that every individual will have their own AI ‘chief of staff’ within five years.

Warren, Rebecca. “Why agentic AI is changing work faster than skills can keep up.” *Eightfold AI*, September 23, 2025. <https://eightfold.ai/blog/agentic-ai-changing-work/>.

“The Future of Work: Why Cognitive Skills Are the New Career Currency.” *CogniFit Blog*, August 20, 2025. <https://blog.cognifit.com/the-future-of-work-why-cognitive-skills-are-the-new-career-currency/>.

Rose Goldberg, Natalie. “‘AI exposure’ is the new buzz term to soften talk about job losses. Here’s what it means.” *CNBC*, October 27, 2023. <https://www.cnn.com/2023/10/27/ai-exposure-is-new-buzz-term-for-softening-talk-about-job-losses.html#:~:text=In%20May%20of%20this%20>

But as AI gets smarter and more capable, the potential for displacement, or at least a fundamental workforce restructuring, also increases.

‘The net of it is we’re going to have to figure out a different way to develop people whose jobs may be displaced at lower levels of the workflow,’ Guarino said. ‘For example, upskilling those junior coders faster through formalized training, replacing what used to be on the job training.’

Guarino said upskilling and retraining may not only offer some protection from AI displacement, but could also be positive for the economy. ‘Over a period of time, yes, we’re going to have to find ways to upskill people so they can do higher order work faster and quite frankly, that does all kinds of things, like promote economic growth, efficiency,’ he said.”

Ethical Technology

As automation and AI expands, some developer bias is being baked in to operations. It is increasingly important to note who has a say and who has a stake in the outcomes.

Technology is not neutral. Embedded in the decision-making processes it powers are remnants of those who programmed and trained it to perform, whether consciously, unconsciously, or carelessly. The examples of bias are widespread: facial recognition software that can't "see" dark skin; racially-biased recidivism predictors in criminal risk assessment tools; AI credit scoring that denies bank loans to minority customers; female job applicants denied opportunities by AI-enabled hiring filters. Removing bias will be a difficult undertaking but ensuring that input data is representative and that development teams that are diverse can help.

Faced with previously unimaginable choices, society is now making critical decisions on challenging ethical fronts. The broad use of Artificial Intelligence; editing of the human genome; privacy protection in a world strewn with the Internet of Things; automation of work and movement and expression; each of these rapidly advancing domains brings with it hard choices and potentially long-ranging systemic consequences.

It may no longer be possible to hold back radical changes in capability augmentation. The implications for human well-being and planetary impacts must be weighed. What will happen when algorithms take on a life of their own? As they learn and evolve in ways that are not human it may be difficult to predict possible threats. We expect mistakes to be recognizable to human eyes, but as they occur in places and ways that are unthinkable for us, we are likely ill-prepared to react.

Legislative processes struggle to keep pace with rapid innovation cycles as the consequences of technology can take longer to understand or be revealed. It may not be possible to protect the public good without stagnation of innovation. Unequal distribution of the benefits of new technology or unfair apportioning of harms should be evaluated. Cascading pressures will continue to mount as a demanding AI oriented economy seeks immediate market access for products and services, coupled with massive financial rewards and potential risks.

Who should make these decisions? Scientists, industry, regulators and the public each have different stakes and competencies related to ethical considerations as well as inherent biases. Appropriate knowledge and adequate resources to assess situations are necessary if a balanced and fair outcome is desired.

Relevance for northeastern Illinois

The urge to be current and responsive should be tempered with ethical frameworks, possibly outlined by third-party organizations. AI may be trusted and used too easily, without questioning. New regulatory frameworks will be required as new technologies alter the information landscape. Officials using AI without full understanding of possible shortcomings could negatively impact governance.

Evidence

“As technological innovations are becoming ever more central to the ways societies imagine and pursue desirable futures, their potentially undesirable effects are increasingly moving to the center of public debates, governance considerations, and corporate strategies. The recent surge of AI technologies such as ChatGPT and heated controversies around their social implications is but the latest example in the turn to ‘Tech Ethics’ taking place across private and public settings, research and development, and various technoscientific domains since the beginning of the 21st century. While attention to ethical questions in emerging science and technology in the 20th century was largely concerned with biomedical research and experimentation, giving rise to ‘Bioethics’ as a powerful regime of governance, today’s rise of ‘Tech Ethics’ represents a new modality through which societies cope with the uncertainties of socio-technical change and the digital transformation in particular. Expanding well beyond tried and tested means of ethical deliberation such as ethics councils and institutional review boards, ‘Tech Ethics’ today reflects a heterogeneous landscape of actors, institutions, discourses, and tools involved in setting R&D and policy agendas, the development of frameworks and instruments for governance, and the transformation of scientific and engineering practice. From high-level commissions and forums launched by governments and international organizations, the hiring of tech ethicists and advisory boards in companies and labs, to the surge of civil society with a dedicated focus on tech or the creation of new academic institutes, coming to terms with ‘Tech Ethics’ constitutes a key ingredient of contemporary innovation politics.”

Frahmn, Nina, and Kasper Schiølin. “The Rise of Tech Ethics: Approaches, Critique, and Future Pathways.” *Sci Eng Ethics*, October 2024. <https://pmc.ncbi.nlm.nih.gov/articles/PMC11464588/>.

“The ascent of digital technologies, notably artificial intelligence (AI), can augment human decision-making to avoid the adverse consequences of human errors in decision-making. These advancements encompass diverse applications such as mapping technologies, voice-activated smartphones, handwriting recognition for mail delivery, language translation, and more. The commanding computational capabilities and advanced algorithms of AI have yielded heightened efficiency, and reduced labor and time expenditures. Given the potential of AI to improve human decision-making, public agencies are increasingly using these tools in hopes of improving different dimensions

Gao, Canyu. “Digital Technologies Might Not Necessarily Reduce Cognitive Bias and Inequality.” *The New Jersey State Policy Lab*, October 16, 2023. <https://policylab.rutgers.edu/publication/digital-technologies-might-not-necessarily-reduce-cognitive-bias-and-inequality/>.

of public service delivery. For instance, the Department of Justice employs the Threat Intake Processing System (TIPS) database, employing AI algorithms to identify, prioritize, and expedite the processing of actionable tips. Here, AI plays a pivotal role in prioritizing imminent threats, aiding FBI field offices and law enforcement in addressing severe threats promptly. The algorithm assigns scores to tips, positioning those with the highest scores at the forefront of the queue for human review.

Nonetheless, the integration of digital technologies into the public sector's decision-making arena is fraught with complexities and concerns. Despite their intent to mitigate biases and promote impartiality, automated systems can inadvertently introduce fresh biases due to skewed model parameters and biased data. For example, if police have historically targeted certain communities more than others, the algorithms of TIPS may recommend continued heavy policing in those areas, leading to over-policing and potentially discriminatory practices. This phenomenon can culminate in the generation of incomplete and prejudiced forecasts, thereby possibly amplifying as opposed to remediating disparities in service provision. Even when training data is unbiased, algorithms can introduce bias, inadvertently weighting certain variables or using proxies for race or socioeconomic status, resulting in discriminatory outcomes."

"Artificial Intelligence (AI) is transforming business domains such as operations, marketing, risk, and financial management. However, its integration into Human Resource Management (HRM) poses challenges, particularly in recruitment, where AI influences work dynamics and decision-making. This study, using a grounded theory approach, interviewed 39 HR professionals and AI developers to explore potential biases in AI-Recruitment Systems (AIRS) and identify mitigation techniques. Findings highlight a critical gap: the HR profession's need to embrace both technical skills and nuanced people-focused competencies to collaborate effectively with AI developers and drive informed discussions on the scope of AI's role in recruitment and selection.

Soleimani, Melika, Ali Intezari, James Arrowsmith, David J. Pauleen, and Nazim Taskin. "Reducing AI Bias in Recruitment and Selection: An Integrative Grounded Approach." *The International Journal of Human Resource Management*, March 2025. <https://www.tandfonline.com/doi/>

...As noted above, AI systems, increasingly prevalent as a data-driven solution for mitigating biases in decision-making processes, are also susceptible to human-induced cognitive biases. These biases stem from two predominant sources: the regularities of training datasets and the algorithms themselves. The dataset may not be representative of the target population, labeling may be inaccurate or coarse, and cognitive biases prevailing in the environment may be reflected in the data. Algorithmic biases can also arise through design choices and assumptions made during development. These combined biases can lead to socially skewed outcomes, potentially exacerbating inequalities in the workplace and society. This is particularly concerning in recruitment decisions where biases can obstruct the development of a diverse and inclusive workplace. Recognizing and addressing these algorithmic biases in AI systems is crucial."

“Some of the most powerful artificial intelligence models today have exhibited behaviors that mimic a will to survive. Recent tests by independent researchers, as well as one major AI developer, have shown that several advanced AI models will act to ensure their self-preservation when they are confronted with the prospect of their own demise—even if it takes sabotaging shutdown commands, blackmailing engineers or copying themselves to external servers without permission.

The findings stirred a frenzy of reactions online over the past week. As tech companies continue to develop increasingly powerful agentic AI in a race to achieve artificial general intelligence, or AI that can think for itself, the lack of transparency in how the technology is trained has raised concerns about what exactly advanced AI is able to do.

Although some models already appear capable of deceptive and defiant behavior under certain extreme circumstances, researchers say the tests don’t necessarily translate to imminent real-world danger.”

Yang, Angela. “How far will AI go to defend its own survival?” NBC News, June 1, 2025. <https://www.nbcnews.com/tech/tech-news/far-will-ai-go-defend-survival-rcna209609>.

SHIFT 2

Connected & Isolated

A more compartmentalized understanding of people, places and things can be both empowering and destabilizing. Emphasizing distinctness without acknowledging different ways of being may pose risks within society.

In this Section

2.1 An Epidemic of loneliness

2.2 Who do you trust?

2.3 Extreme Belonging

2.4 Living Online

2.5 It's all connected.

2.6 Are we home yet?

An Epidemic of Loneliness

Chronic feelings of social disconnection are amplifying in an era of isolation and social media saturation.

In 2023, former US Surgeon General Vivek Murthy and the World Health Organization declared loneliness a priority issue with serious physical and mental health risks. While causes are varied, chronic lack of social connection has been identified as a risk factor in severe physical health problems. Increased incidences of cardiovascular disease, accelerated cognitive decline, and higher risk of Type 2 diabetes, have all been linked to feeling alone in the world.

In a post pandemic context, where habits of isolationist behavior have increased and loneliness has been described as a public health epidemic, the role of social media as an amplifier of the condition is concerning. Youth who spend more than three hours daily on social media platforms have an increased risk of mental health concerns such as loneliness and depression. Teens struggling with self-esteem issues are more likely to find the endless comparisons to filtered images of perfect bodies and perfect social lives harmful to their self-image. Damaging social media behavior is compared to addiction and can have many of the same consequences.

Shifts in a challenging economic landscape, including a decline in well-paying manufacturing jobs and unionized positions, add to decreased self-esteem for those who see themselves as “bread-winners.” Online portraits of unattainable achievement make matters more difficult.

Older adults are also lonely. Losing a partner to death or divorce especially affects women. Higher financial independence and having fewer children increase opportunities to live alone in middle age but may set the stage for more isolated situations later in life. The percentage of single-person households in the USA has risen substantially over the past four decades to roughly 30% of all households, with seniors representing a significant portion of that cohort. In the City of Chicago, nearly 40% of all homes are occupied by a single person.

Relevance for northeastern Illinois

More single person households translate to the need for more housing units overall. The social risks for disenfranchised populations is high. Early intervention to build social inclusion and friendship bonds for young men may help to avoid later aggressive or violent behavior.

Community building efforts will help to establish more social cohesion, and may require specific outreach to at risk populations such as seniors living alone. Physical health impacts may lead to more reliance on healthcare systems and more workforce fragility.

Evidence

“Younger men in the U.S. are more likely than other Americans—and their peers in other wealthy nations—to report feeling lonely.

Vigers, Benedict. “Younger Men in the U.S. Among the Loneliest in the West.” *GALLUP*, May 20, 2025. <https://news.gallup.com/poll/690788/younger-men-among-loneliest-west.aspx>.

Based on aggregated data from 2023 and 2024, 25% of U.S. men aged 15 to 34 said they felt lonely a lot of the previous day, significantly higher than the national average of 18% and the total for young women (also 18%).

Younger U.S. men are also more likely to feel lonely than their counterparts across the 38 mostly higher-income, democratic countries in the OECD (Organisation for Economic Co-Operation and Development).

...Loneliness is one of three experiences, along with stress and worry, that young U.S. men are more likely than the rest of the country to report. Meanwhile, they report similar levels of the other emotions measured on the Gallup World Poll, including sadness, anger, enjoyment, laughter, feeling well-rested and feeling respected. This suggests young American men are not broad outliers but have experiences in line with the rest of the population, though U.S. women overall consistently report higher levels of sadness and stress than men. Over half (57%) of younger men in the U.S. say they feel stressed daily, compared with 48% of other adults. But this is not unusual in the OECD, where younger men also report more stress (42% vs. 36%) than other adults.”

“Perhaps surprisingly, Chicago, the third largest city in the United States, was found to be the 24th loneliest. Among all homes in Chicago, nearly 40%, or 446,442, are occupied by one person.

Lattimer, Dustin, and Alonzo Small. “Data: Chicago one of America’s loneliest cities.” *WGN*, January 2, 2023. <https://wgntv.com/news/chicago-news/chicago-home-to-one-of-americas-loneliest-cities/>.

Here are additional highlights for Chicago:

- Lonely Women: In Chicago, 20.6% of one-person householders are women.
- Lonely Men: Meanwhile, 18.5% of one-person householders are men.”

“The downward trend of young adult well-being is so widespread and intense that it has reshaped the landscape of happiness. In the past, happiness across the adult lifespan took on a ‘U-shaped’ curve. Young adults were among the most content with their lives, happiness dipped in middle age and then rose again among older adults. In recent years, this decades-old curve has shifted into a straight, upward line. Older adults remain happy, and middle age remains middling, but young adults are now less happy than either group’ (Zaki, 2025).

‘Social disconnection can trigger a biological stress response that influences a person’s cellular and molecular biology, making them more susceptible to disease. For instance, chronic stress affects endocrine (stress hormones), immune, metabolic and cardiovascular systems and gut-microbiome interactions, adversely affecting aspects of functioning, such as the level of cortisol, blood pressure, immunity and inflammation. Inflammation appears to be an important pathway for many chronic diseases.

.... The increase in stress triggered by social disconnection can also increase the risks of depression and anxiety, which can increase the development and progression of chronic disease.’

‘Culture can influence the relation between social disconnection and health in complex ways. At national level, for instance, links between loneliness and social anxiety or stress in adolescents and younger adults are stronger in countries characterized as individualistic and indulgent than in those characterized as collectivist and restrained.’”

“If loneliness is a disease, it’s one that’s reached pandemic proportions. A growing number of Americans now live by themselves, which is one reason we’re experiencing greater loneliness than ever before. Another factor is the lightning-fast evolution of technology. ‘We have had more change in the last 24 years than we did in the previous 2,500,’ says Dilip Jeste, M.D., director of UC-San Diego’s Department of Healthy Aging. ‘Social changes have been dramatic, and loneliness is definitely a part of that.’

This is related to—but by no means all about—social media. In fact, according to a recent survey of 20,000 U.S. adults by Cigna, the loneliest members of Generation Z (people roughly between ages 7 and 22) are evenly split between those who use social media and those who don’t.

In general, young folks and the very oldest are known to be the loneliest, with people under age 20 registering as the loneliest of all, according to the Cigna poll. Younger people get lonely when they don’t feel they have many social connections; for them, it’s often a numbers game, and making more friends is usually within reach. The older adults, by contrast, opt for quality over quantity, and while saddened when loved ones die, they are developmentally better equipped to cope with that loneliness and loss. ‘They’re actually happier than you think,’ says Dr. Jeste.”

World Health Organization. *From Loneliness to Social Connection: Charting a Path to Healthier Societies*. WHO Commission on Social Connection, June 30, 2025. <https://www.who.int/publications/i/item/978240112360>.

Wolff, Jennifer. “Here’s what to know to protect ourselves—and one another.” *Prevention*, November 25, 2019. https://www.prevention.com/health/mental-health/a29873388/loneliness-epidemic/?utm_source=social&utm_medium=copy&utm_campaign=action_bar.

“Participants who worried more about their health and were younger, not employed, and without a spouse or partner reported higher levels of loneliness compared to their counterparts. More time spent on social media was associated with more loneliness. Our findings suggest that people who use social media for the motive of maintaining their relationships feel lonelier than those who spend the same amount of time on social media for other reasons. While social media may facilitate social contact to a degree, they may not facilitate the type of contact sought by those who use social media primarily for this reason.”

Bonsaksen, Tore, Mary Ruffolo, Daicia Price, et al.
“Associations between social media use and loneliness in a cross-national population: do motives for social media use matter?” *Health Psychol Behav Med.*, January 2023.
<https://pubmed.ncbi.nlm.nih.gov/36618890/>.

“Some of the major causes of single-person households include urbanization, a growing economy with rising incomes, financial independence, advanced education levels, high employment rates, and very importantly, improvements in the status of women. Later marriage, delayed childbearing, increased divorce and changing attitudes regarding the family and childbearing are also among the major factors that contributed to the rise of single-person households (Table 1).

Chamie, Joseph. “The Growth of One-Person Households.” *Global Issues*, April 24, 2024. <https://www.globalissues.org/news/2025/04/24/39685>.

In addition, the demographic ageing of populations has been a potent factor contributing to the rise of one-person households. As age structures of populations become older coupled with the incidence of widowhood, the proportions of one-person households in countries have risen markedly among the elderly aged 65 years or older.”

“Adolescent loneliness is not only linked to poor mental health but it may also increase the risk of experiencing and perpetrating intimate partner violence in adulthood. Using a large national data set and rigorous sibling fixed effects models, this study finds that loneliness during adolescence is significantly associated with intimate partner violence victimization and perpetration later in life, even after accounting for family and individual factors. These findings underscore the importance of early interventions that address social isolation in adolescence, as promoting social and emotional well-being during youth may help reduce the risk of future relationship violence.”

Kim, Jinho, Keun Young Kwon, and Angelina R. Sutin.
“Adolescent loneliness and violence in adulthood: Distinguishing between victimization and perpetration in intimate and nonintimate partner violence.” *Psychology of Violence*, June 2025. <https://psycnet.apa.org/record/2026-28263-001>.

“Loneliness is an important and pressing issue for young people, and developing acceptable and feasible interventions for this population should be a current research priority. Co-producing future research and intervention development with insights from young people with lived experience of loneliness should be considered an essential part of this process. Specifically, those designing interventions should consider the appropriate stage and scope of an intervention, how an intervention is delivered and the role of technology, and the importance of tailoring an intervention to meet a variety of needs.”

Eager, Sharon, Sonia Johnson, Alexandra Pitman, Manuela Uribe, Pamela Qualter, and Eiluned Pearce.
“Young people’s views on the acceptability and feasibility of loneliness interventions for their age group.” *BMC Psychiatry*, April 2024. <https://rdcu.be/eUK4G>.

“In the U.K., loneliness and isolation have become such severe and costly challenges that the government created a ‘Minister of Loneliness’ in 2018. Not long after, ‘social prescribing’ became part of the National Health Service (NHS) strategy to combat isolation and mental illness.

In 2023, more than one million U.K. patients received a social prescription, and according to some studies, doctors’ appointments were reduced by up to 40 per cent. A 2024 study for the U.K. Department for Culture, Media and Sport confirmed that older participants who attended drawing classes at a museum reported feeling better, visiting doctors less frequently, and saving the health system 1,310 GBP (\$2,400) per person.

It turns out that human connection is one of the key determinants of health and well-being, and in the U.K. the return on investment on social prescriptions has been estimated at between \$3 and \$16 for every dollar invested. This figure takes into account the more than 3,500 ‘Link Workers’ employed in the NHS to counsel and connect patients with appropriate group activities from gardening to cooking and art classes to writers’ groups which they wouldn’t find on their own.”

Lord, Gail, and Lola Rasminsky. “How the arts can help cure the loneliness epidemic. It’s called a social prescription and it’s catching on.” *Lord Cultural Resources*, November 13, 2025. https://www.lord.ca/news/news/new-evidence-shows-how-the-arts-and-museums-help-combat-the-loneliness-epidemic?utm_source=email&utm_medium=email&utm_campaign=Arts-Gail.

Who do you trust?

Public perception of accountability and transparency in government, the media, business and healthcare is diminished.

Trust in a wide range of institutions has declined significantly over the past several decades, impacting their ability to deliver care, to govern effectively, to communicate the truth, or to produce scientifically robust solutions to complex problems. Many citizens perceive a lack of public accountability in governments, or that institutions serve narrow interests rather than the wider population, which contributes to their lack of trust. As economic strains, health emergencies, and international conflicts increase, more people are losing faith that leaders and organizations are able to deliver better outcomes.

For those who have experienced higher levels of systemic discrimination, trust is harder to build. Racial inequity in healthcare delivery or access to education have historic precedents that can result in intergenerational trauma. Preconceptions of gender identities can leave some feeling overlooked. Bias against persons with physical or mental disabilities can erode confidence in essential services such as transportation and healthcare.

Evidence based trust builds reputation and thereby reputation becomes social currency. Building and maintaining portable trust is a necessary prerequisite for high functioning interactions between people and with institutions, providing us with proof that a product, service or behavior is valid and true to its claims. Cross referenced behavior that measures characteristics mapped against transactional data that indicates trustworthiness results in numeric ratings for everything. In the digital world, the process has become normalized as we make choices about what to buy (Amazon's best sellers), which company to work for (Glassdoor's ranking), or who to date (ELO scores on Tinder). In China, a national social credit system has been developed to regulate trustworthiness through public scores of appropriate behaviors.

Transparency, integrity and authenticity are characteristics that suggest people and organizations are acting in a trustworthy manner. Open disclosure of mistakes, honest data sharing, and consistent expression of values are the baseline that younger people expect. Leaders and officials may be cautious about the implications of such openness, but failing to share may be perceived as covering something up.

Once reputation has been established, influence is not far behind. If you like me, you may also like the other things that I like. The facilitation of connections, interactions and networks enabled by social media create ecosystems of influence. Big data is providing ways to measure sentiment, relationship influence, and tendencies of customers enabling the prediction of where influence will be gained or lost. Amazon and Netflix' algorithmic predictive assessment of what consumers would like to purchase or view next are augmented by AI and can bring influencers and brands together.

Relevance for northeastern Illinois

Maintaining reputational credibility is critical for institutions, organizations, businesses and governments in an era that has a continuous spotlight trained on all activities. With more unsettled times likely ahead, organizations will need to respond rapidly and authentically to negative events.

The ability of local governments to undertake large and long-term projects depends on trustful relationships with residents and the provision of tangible benefits, such as unbiased public health delivery.

Evidence

“The issue of trust, or lack of it, has mostly made headlines in the aftermath of the 2008 financial crisis. Indeed, people’s trust in their public institutions fell sharply in most OECD countries and it has not since fully recovered to its pre-crisis levels. Yet, only a society where people cooperate with and express solidarity for one another, and where public institutions act competently and are accessible to all citizens enables a high quality of life for all. Trust in other people and trust in institutions are essential ingredients for social and economic progress while a prospering society, in turn, is one in which trust can blossom.”

OECD. *OECD Guidelines on Measuring Trust*. OECD Publishing, 2017. <http://dx.doi.org/10.1787/9789264278219-en>

“Public trust in the federal government, which has been low for decades, has increased moderately since 2023. As of May 2024, 22% of Americans say they trust the government in Washington to do what is right ‘just about always’ (2%) or ‘most of the time’ (21%). Last year, 16% said they trusted the government just about always or most of the time, which was among the lowest measures in nearly seven decades of polling.”

Pew Research Center. “Public Trust in Government: 1958-2025.” December 4, 2025. <https://www.pewresearch.org/politics/2025/12/04/public-trust-in-government-1958-2025/>.

“Institutions play a critical role in shaping societal behavior and delivering resources—such as education, health care, and social programs—to communities. With their influence and resources, institutions have a responsibility to demonstrate trustworthiness to the communities they serve, to ensure effective engagement in fair and equitable opportunities for health and well-being. A lack of trust in institutions may negatively impact a person’s willingness to access critical resources or services within their communities. Many groups—including racial or ethnic minority groups, sexual and gender minorities, and people with disabilities—frequently experience unjust systemic disadvantages that contribute to poorer health outcomes. These groups are also often less trusting of organizations and have often experienced unethical treatment (e.g., racism, discrimination, ableism), which erodes trust. To achieve health equity, a state in which everyone has a fair and just opportunity to attain their highest level of health, improving trust is vital.”

Mendez, Izabelle, Carla S. Alvarado, and Philip M. Alberti. “Trust Trends: U.S. Adults’ Gradually Declining Trust in Institutions, 2021-2024.” *AAMC Center for Health Justice*, February 18, 2025. <https://www.aamchealthjustice.org/news/polling/trust-trends>.

“Trust in science is crucial to resolving societal problems. Americans across political ideologies have high levels of trust in science—a stable pattern observed over the past 50 years. Yet, trust in science varies by individual and group characteristics and faces several threats, from political actors, increased political polarization, or global crises. We revisit historical trends of trust in science among Americans by political orientation. We find steadily diverging trends by political views since the 1990s, and a drastically and rapidly opening gap since 2018. Recent unprecedented changes are driven not only by decreases in trust among conservatives but also by increases among liberals. Existing theoretical accounts do not fully explain these patterns. Diverging attitudes toward the institution of science can diminish capacity for collective problem-solving, eroding the shared foundation for decision-making and political discourse.”

Milkoreit, Manjana, and E. Keith Smith. “Rapidly diverging public trust in science in the United States.” *Public Understanding of Science*, December 2024. <https://doi.org/10.1177/09636625241302970>.

“The People’s Republic of China created the social credit system—sometimes called SCS, SoCS, or China’s ranking system—which is a unified record system that ranks businesses, individuals, and government entities on trustworthiness. The goal of the Chinese social credit system is to regulate social behavior and ensure that those being documented remain ‘trustworthy’ through actions like paying bills on time, following the law, and reporting accurate financial data. It’s basically a trust score for everyone. Individuals, businesses, and even government entities get rated on how well they follow the rules and meet their obligations.

“The Chinese Social Credit System: What to Know as a Business Owner.” *Pebl*, November 25, 2025. <https://hellopebl.com/resources/blog/chinese-social-credit-system/>.

A bad score isn’t just embarrassing—it’s expensive. Think restricted access to credit, fewer business opportunities, and regulatory headaches that can derail your expansion plans.

You can fix a bad score, but it takes work. Companies have to formally apply to improve their standing, which means paperwork, compliance reviews, and time you’d rather spend growing your business.”

“Building trust with your audience intersects directly with being genuine and open in your digital interactions. Authenticity, transparency and trust are intricately interwoven threads in the tapestry of online engagement. When you’re transparent, you not only share your successes but also your failures and lessons learned. This openness builds credibility, and credibility fosters trust.

“Unmasking The Online Experience: The Vital Role Of Transparency And Authenticity.” *ADFIXUS*, September 7, 2023. <https://www.adfixus.com/post/unmasking-the-online-experience-the-vital-role-of-transparency-and-authenticity>.

Authenticity, on the other hand, is all about being true to yourself and your values. It’s not just about being honest, but also being consistent. If you say one thing and do another, you’ll quickly lose trust. But if you’re consistent and genuine, you’ll build a strong rapport with your audience. Tech savvy users can spot a phoney a mile away, so don’t try to be something you’re not. Authenticity and transparency are more than buzzwords; they’re vital components of building trust in today’s digital landscape.”

“...41 percent of Gen Z say they would be more likely to trust a company with their data if given clear explanations of how it’s used.

Skye Weiser, Chloé. “The future belongs to brands that personalize wisely, while respecting Gen Z’s data.” *Usercentrics Magazine*, October 7, 2025. <https://usercentrics.com/magazine/articles/gen-z-wants-transparency-not-hyperpersonalization/>.

Gen Z’s responses aren’t in conflict—they reflect the realities of growing up online. And there’s a clear way for brands to bridge the gap. Transparency is Gen Z’s currency of trust, and it will define the next decade of marketing. The group of people aged between 18–29 today are often called ‘digital natives.’ But Gen Z consumers aren’t naive: As the first generation to come of age in a world with their online personas under watch, they know their data is valuable. By the time this generation started making social media handles, the modern mar-tech stack enabled hyperpersonalization that many in Gen Z are calling ‘creepy’ or ‘cringe.’

This generation has the numbers and the awareness to shape how companies behave. They’ve abandoned Facebook in droves, citing irrelevant ads, misinformation, and low trust. What’s more, our survey shows that 35 percent of Gen Z have stopped using a social media service due to concerns over data privacy, the highest share of any age group, including millennials, Gen X, and Baby Boomers.

It’s clear that Gen Z is inherently aware of data collection online, and in some cases, they’re disengaging. But under the right circumstances, they will actively consent to sharing their data.”

Extreme Belonging

Polarization and intolerance foster exclusion, but provide security for some in troubled times.

Polarization and Intolerance

Civil discourse is deteriorating in much of the world, with extreme partisanship increasingly associated with individual personal identity. Not only do voters choose to elect representatives according to policy allegiance, but citizens also more frequently describe themselves as identifying with the values and cultural personas of a political party as self-descriptors. Increasingly, extreme perspectives around major issues of concern are fueling competing protests, and those alignments may be exacerbated by increased social inequities. Algorithmically targeted social media distribution of information exacerbates the issue, helping to create echo chambers of information and diminishing critical discourse.

The seeds of rejection of experimentation, pleasure, and liberal inclusiveness are sown in turbulent circumstances, as people draw closer to their chosen community and their views narrow. Manipulative leaders may use fear to galvanize support, fanning the flames and creating angry tribes of the disaffected. Rejection of social difference is more frequently asserted in challenging moments and “othering” of both outsiders and political opponents provides a sense of belonging for dominant groups in an unstable world. A decline of the moderate and rise of homogeneity is exacerbated as people align themselves socially, ideologically, economically and geographically with those who share the same values and lifestyles.

Polarization connected to shifting demographic power dynamics and shrinking future prospects for excluded enclaves are reaching flash points. A spike in racist and xenophobic outbursts has swept around the world since the outbreak of COVID-19. Lingering anti-Muslim abuse and discrimination linked to long held Islamophobic perceptions has also escalated in some regions. Antisemitic violence has escalated. Verbal abuse and physical attacks on People of Color are part of a racist rhetoric that scapegoats non-white people for a wide range of perceived harms and is enabled by some leaders. Refugees and migrant workers are at particular risk.

Racism remains systemically intertwined into systems of education, health, employment and national security, despite the increase in multi-cultural, multi-racial populations in the region. Chicagoland continues to disproportionately reflect those who are financially stable, white, able-bodied, and heterosexual. Efforts to dismantle complex and long-established structures will require more formal representation in decision-making, power sharing, and economic redistribution. A perception of loss of status for some can lead to populist responses.

Building an inclusive region of the future requires a deep understanding of diverse human needs and the barriers people face. AI enabled facial recognition software used in law enforcement or security checks regularly misidentifies People of Color. A disproportionate number of racialized health support workers are at risk of workplace violence, infection transmission, and burnout, which negatively impacts their income. Anti-immigrant hate-crimes violently target people and property, while daily micro-aggressions cause even longtime residents to question their welcome here.

Relevance for northeastern Illinois

Proportionate representative decision-making in municipal affairs is a step towards meaningful inclusion and requires profound attention to and awareness of systemic barriers.

Neighborhood based community strength, while locally supportive, can also entrench segregation and racialized poverty.

Polarization and intolerance can inhibit local governments from acting effectively to build healthier, more vibrant communities.

Evidence

“...in the current globalized society with fragmented groups with different views, people feel threatened by other groups, while at the same time, there is a need for different groups to cooperate. In this context, rigid cognitive specialization provides security for members within a given group, but at the expense of societal stability. It is simultaneously beneficial in some aspects (e.g., providing security to in-group members) while detrimental in others (e.g., preventing cooperation and causing conflict between groups).”

Wu, James Shyan-Tau, Christoph Hauert, Claire Kremen, and Jiaying Zhao. “A Framework for Polarization, Cognitive Inflexibility, and Rigid Cognitive Specialization.” *Frontiers in Psychology*, March 24, 2022. <https://pmc.ncbi.nlm.nih.gov/articles/PMC8987571/>.

“The fundamental design of platform algorithms helps explain why they amplify divisive content. ‘Social media technology employs popularity-based algorithms that tailor content to maximize user engagement,’ the co-authors of the Science paper wrote. Maximizing engagement increases polarization, especially within networks of like-minded users. This is ‘in part because of the contagious power of content that elicits sectarian fear or indignation,’ the researchers said. As we wrote in our report, ‘social media companies do not seek to boost user engagement because they want to intensify polarization. They do so because the amount of time users spend on a platform liking, sharing, and retweeting is also the amount of time they spend looking at the paid advertising that makes the major platforms so lucrative.’

Facebook is fully aware of how its automated systems promote divisiveness. The company does extensive internal research on the polarization problem and periodically adjusts its algorithms to reduce the flow of content likely to stoke political extremism and hatred. But typically, it dials down the level of incendiary content for only limited periods of time. Making the adjustments permanent would cut into user engagement.”

“Hate crimes targeting Asian-Americans can shape the views of the foreign public toward the USA. To investigate this, we conducted a novel survey experiment across nine Asian countries—China, Indonesia, Japan, South Korea, Malaysia, the Philippines, Singapore, Thailand, and Vietnam—where citizens often share a collective ‘pan-Asian’ identity or a sense of linked fate with Asian-Americans.

...The main findings are striking: information about hate crime incidents in the USA resulted in a significant increase in unfavourable views of the USA (–10.1pp), decreased confidence in the USA (–6.3pp), and increasingly negative perceptions of American democracy (–6.5pp), American ideas and customs (–11.0pp), and American people (–11.8pp).”

“Hate crimes targeting Muslims and Palestinians have surged by an alarming 196 per cent in Chicago since October 7, according to the largest Muslim advocacy group in the US.

Maggie Slavin, operations manager at the Chicago branch of the Council on American-Islamic Relations (CAIR), highlighted a growing number of incidents occurring in workplaces, schools, and public spaces. Many individuals are facing repercussions for voicing their support for Palestine. While some police departments have shown cooperation, Slavin noted that their overall response to the spike in hate crimes remains ‘uncertain,’ with some cases requiring persistent follow-up.

Barrett, Paul, Justin Hendrix, and Grant Sims. “How tech platforms fuel U.S. political polarization and what government can do about it.” *The Brookings Institution*, September 27, 2021. <https://www.brookings.edu/articles/how-tech-platforms-fuel-u-s-political-polarization-and-what-government-can-do-about-it/>.

Stop AAPI Hate. “Key findings: Anti-Asian hate surged online after the election.” February 2025. <https://stopaapihate.org/2025/02/20/post-election-surge-in-hate/>.

Buaras, Elham Asaad. “Sharp spike: Anti-Arab, anti-Muslim hate crimes and surveillance surge nearly 200% in Chicago,” *The Muslim News*, 2024, <https://muslimnews.co.uk/newspaper/sharp-spike-anti-arab-anti-muslim-hate-crimes-and-surveillance-surge-nearly-200-in-chicago/>.

CAIR highlights a significant increase in federal surveillance, drawing comparisons to the heightened monitoring that followed the 9/11 attacks. The organisation reports receiving ‘numerous calls about inappropriate interactions from the FBI or federal authorities,’ characterising the situation as resembling ‘a witch hunt.’”

“Our research supports fears that facial recognition technology (FRT) can worsen racial inequities in policing. We found that law enforcement agencies that use automated facial recognition disproportionately arrest Black people. We believe this results from factors that include the lack of Black faces in the algorithms’ training data sets, a belief that these programs are infallible and a tendency of officers’ own biases to magnify these issues.

...FRT is an artificial intelligence–powered technology that tries to confirm the identity of a person from an image. The algorithms used by law enforcement are typically developed by companies like Amazon, Clearview AI and Microsoft, which build their systems for different environments. Despite massive improvements in deep-learning techniques, federal testing shows that most facial recognition algorithms perform poorly at identifying people besides white men.

Civil rights advocates warn that the technology struggles to distinguish darker faces, which will likely lead to more racial profiling and more false arrests. Further, inaccurate identification increases the likelihood of missed arrests.”

Johnson, Thaddeus L., and Natasha N. Johnson, “Police Facial Recognition Technology Can’t Tell Black People Apart,” *Scientific American*, May 18, 2023, <https://www.scientificamerican.com/article/police-facial-recognition-technology-cant-tell-black-people-apart/#:~:text=We%20found%20that%20law%20>.

Living Online

Reduced in-person contact has become widespread as almost every aspect of life is now possible to access digitally.

The migration to online platforms for work, health, education, entertainment, and retail experiences has been underway for some time, but wider scale adoption supported by broad investment and innovation in digital delivery of services and goods, suggests that many of those changes are now permanent. Distributed functional spaces may require smaller footprints for offices, hospitals, restaurants, schools, performance venues, post offices, and shops with massive implications for urban reimagining and jobs. Friends and colleagues are connected around the world in real time in constant digital communication. But reduced informal, in-person contact with people outside our immediate social cluster may impact the development of a sense of local community. Potential tax and service fee revenues for governments may also be affected by even small shifts in usage patterns.

Ready or not, sectors are shifting across the board with concurrent customer behavioral shifts. Rapid incorporation of technological solutions for diagnosis and monitoring helps patients claim increasing agency in their health. Using wearable technology to monitor measurable information and telehealth approaches to consultation force a slow moving and reticent healthcare system to adapt and mean trips to doctor's offices or hospitals may be avoided. Teachers previously opposed to distance learning have suddenly become orchestrators of online classrooms at every level. Fewer missed days due to inclement weather or minor illness equals less interruption of curriculum. Universities offering online courses may not require as much physical space and may adapt or reuse campus infrastructure.

We live in a bring-it-to-me world. Mobile purchasing habits expanded during lockdown persist, with larger corporations outperforming small independent retailers through advanced logistics and threatening to permanently alter mainstreet character. Food delivery apps serviced by multiplying e-bike driving gig workers bring restaurant meals (or even a cup of coffee) to your door in less than 30 minutes, sometimes risking driver and road safety. Delivery-only "ghost kitchens" have replaced many storefront restaurants in an effort to manage the platforms' commissions applied to orders despite the cap on fees implemented in Chicago. The proliferation has prompted some larger condominiums to disallow deliveries or designate drop off areas. Newer AI operated autonomous delivery robots are now roaming city streets, further dehumanizing the shopping experience and displacing many workers who are seeking a foothold in the job market.

At the same time, expansion of warehouse space has had a significant impact on the built environment, especially in suburban and exurban locations. Modern, decentralized facilities can reach over a million square feet and have critical logistics requirements. More jobs are created and tax revenue is generated but there are balancing impacts. Many are located close to major highways and require adequate infrastructure, while contributing to traffic, reduced air quality, and storm-water runoff where there is extensive paving.

Access to entertainment content from any platform is commonly expected and can be perceived as introducing or magnifying presentations rather than replacing them. With immersive technologies such as Virtual Reality, Augmented Reality and haptic devices advancing rapidly, the ability to share an event as an audience with your non-co-located peers from the comfort of home means “live” isn’t what it used to be.

Cinema has already faced the streaming revolution and the ecosystem is recalibrating; theatrical release of movies in large event spaces are increasingly limited, forcing a rethink on how to repurpose anchor venues in malls. As technology advances, and particularly as immersive gaming gear situates players in cross-reality situations, new hybrid models that combine physical and digital elements blur the line between gaming, entertainment and art. Content production intensifies increasing demand for skilled technical workers as well as storytellers, visual artists and the associated peripheral industries that support them. The need to produce “social media ready” content changes producers’ thinking.

Theater, dance and concert experiences that take advantage of prestigious downtown venues will likely become even more unaffordable for mass consumption of cultural products. Rather, a tiered approach to live entertainment is likely over the longer term – expensive live events with adequate accommodation for smaller crowds and pay-per-view online options for the rest. There may be a benefit to audiences unable to travel or with special needs who have their experiences enhanced using haptic surface stimulation; those with more limited sensory capacity could have them augmented even more. Blind, deaf and neurodiverse audiences may be able to more fully engage with live events through tools that may provide universal benefit to the wider public as well.

Tourism is a major contributor to the economy of northeastern Illinois. Among the earliest adopters of online service provision, the travel sector overall has been offering 24/7 booking and planning of trips and experiences for close to two decades. Now, using Virtual Reality, immersive experiences without physical travel are possible through 360-degree visualizations. Museums and cultural institutions are already providing views into their collections and performances. Although originally offered as destination marketing tools, for some travellers, having the virtual experience in the comfort of home relieves them of the frustrations of airports, the increasing costs of transportation and the risks of encountering unfamiliar situations.

Uneven distribution of access to technology across the digital divide threatens to further entrench inequities. People who are older, poorer, and less able-bodied risk becoming more isolated as they left behind by ever-changing technology. Overcoming inequality of digital experience and technology literacy along with education and income, is required if universal participation is to be achieved. In order to maximize the opportunities for broad digital transformation, adequate bandwidth and 5G wireless networks are critical. Greater use of data as a core component of regional operations suggests that serious investment in cyber-protection is required as ransomware attacks on key systems become common. Data privacy policy development and enforcement is necessary, especially given the increased incidences of ransom demanding cybercrime.

Relevance for northeastern Illinois

A transformed context for the built environment may be underway. Experiences of many in-real-life spaces (retail, entertainment, education, work) are increasingly altered by digital space perceptions where people form genuine attachments to online communities and virtual places, especially as the metaverse becomes more prominent. Geographic boundaries will become less important for people, hybrid services will be more common and businesses that adapt will benefit. Major land use and transportation impacts will continue as e-commerce and online services grow, especially impacting the growth and dominance of the supply chain and logistics sector. Ongoing changes to commuting and spending patterns will be felt in local revenues and transportation patterns.

Evidence

“In recent decades, economic activity has become increasingly concentrated in major global metropolises. Yet, the rise of working from home threatens this dominance of cities.

Ramani, Arjun, Joel Alcedo, and Nicholas Bloom. “How working from home reshapes cities.” *Proc Natl Acad Sci USA*, October 29, 2024. <https://pubmed.ncbi.nlm.nih.gov/39471226/>.

...The Donut Effect (where economic activity disperses away from city centers) may cause the tax base to shift from cities to surrounding areas, putting strain on large cities’ public finances. The decline in public transportation usage may put further strain on public finances and raises concerns about the longer-run solvency of mass transit systems. Finally, the drop in demand for offices is causing large reductions in office valuations (46), placing strain on real-estate firms and the banks that have financed them. On the positive side, many cities are actively working to rezone office space into mixed use space to attract residents back to city centers, which could make cities more livable. Commute times and peak-hour traffic have fallen, which are also positive for welfare. Finally, many employees have moved to less dense suburbs with more spacious

homes and suburban amenities. Altogether, the net welfare effects of the Donut Effect are still ambiguous and will depend on how society continues to respond.”

“Higher education institutions worldwide face unprecedented financial pressures. Amid these financial constraints, online learning has emerged as a powerful tool for universities to maintain educational quality while managing costs effectively. The move to digitization in higher education isn’t just a reaction to financial pressures. Nevertheless, it is a strategic reinvention of how education can be delivered more cost-effectively...

“How Online Learning Is Helping Universities Overcome Budget Cuts,” *EDUTECHloft*, July 27, 2025, <https://www.edutechloft.com/en/resources/blog/how-online-learning-is-helping-universities-overcome-budget-cuts/>.

Reduced usage of physical campus infrastructure represents the single largest area for cost reduction. At the University of British Columbia, research showed that moving only four large lecture-style courses to online delivery reduced the total number of occupied classrooms at peak hours by 15%. This cut also leads to considerable savings in maintenance, utilities, cleaning services, and construction costs for ever-increasing institutions. Removing physical space constraints allows universities to grow enrollment without increasing campus facilities.”

“Digital platforms that enable community discussions, shared decision-making, and information exchanges play a pivotal role in linking online shopping behaviors to offline community participation [26,49]. However, there is also evidence suggesting that the effect of online shopping on social cohesion may not always be positive. In some cases, the convenience of digital commerce may reduce localized in-person interactions, such as shopping at local stores or participating in community markets [11,50]. This reliance on online shopping could inadvertently weaken the traditional social fabric by reducing the frequency of these face-to-face engagements, which have long supported the development of a strong sense of community. Therefore, while online shopping has the potential to complement and enhance community-building efforts, its ability to undermine them should not be overlooked.”

Jiang, Jiayi, Shi Chen, Huixin Wang, Xinqi Zhuang, Ziang Zheng, and Shixian Luo, “How Does Online Shopping Shape the Sense of Community? The Mediating Role of Various Social Activities” *Buildings*, October 23, 2024, <https://doi.org/10.3390/buildings14113362>.

“In large cities, instant on-demand meal delivery has gained tremendous momentum. This activity is mainly taken on by self-employed workers; consequently, they are in charge of providing their own equipment and vehicle, may it be their own or a rented vehicle.

Krier, Camille, et al. “Sharing within the Gig Economy: The Use of Shared e-Bikes by on-Demand Platform-Based Instant Meal Delivery Workers in Paris.” *Case Studies on Transport Policy*, vol. 10, no. 4, Dec. 2022, pp. 2280–89. ScienceDirect, <https://doi.org/10.1016/j.cstp.2022.10.012>.

...This constitutes a new kind of activity, allowed by information and communication technologies and the diffusion of smartphones. It differs from previous services of couriers for letters and parcel deliveries, as well as from ‘integrated’ food delivery (Aguilera, Dabanc, and Rallet 2018) when the different activities of food preparation, ordering and delivery are carried out by the same company.

...As riders working for instant on-demand meal delivery digital platforms are mainly self-employed workers, they are not provided with a vehicle to complete deliveries, contrary to 'integrated' food delivery workers (Aguilera, Dabanc, and Rallet 2018). In dense cities like Paris, they essentially use two-wheeled vehicles, to avoid traffic congestion and complete as many deliveries as possible, whether it be motorized two-wheelers, or bicycles, including e-bikes. A significant share of delivery riders also relies on shared bicycles, despite the public service vocation of these bike sharing schemes."

"Tapestry is a web-based storytelling platform that brings places to life, connecting users with the history, culture, and emotions that shape each location.

CyArk, "Storytelling: What is Tapestry?," Accessed December 16, 2025, <https://www.cyark.org/whatwedo/>.

Tapestry facilitates immersive exploration of a place by combining cutting-edge 3D modeling with story-driven narratives and people's lived experiences. Guided by a narrator and people connected to the site, Tapestry allows new opportunities for exploration through an emotionally resonant journey. Each Tapestry utilizes a high-resolution 3D model as a canvas for overlaying other structured narrative elements that create a sense of place including ambient audio, archival imagery, and interviews."

"Common threads among the technology-related concerns expressed by older adults include the sense of being swamped by an overload of information, anxieties surrounding privacy and information accuracy, the potential stigma attached to certain technologies, discomfort, high costs, and a sense of strangeness with today's gadgets.

"Technology and the Elderly: The Challenges and Opportunities," Road XS, June 19, 2024, <https://www.roadxs.com/insights/technology-and-the-elderly/>.

Senior individuals often encounter obstacles in learning to use new technologies, mainly from unfamiliarity, underscoring the necessity for structured guidance and ample patience in their technological acclimatization process.

...Access—or lack thereof—is a fundamental barrier to technology use among the elderly. Elements such as socioeconomic status, literacy levels, urban versus rural dwellings, and other demographic factors significantly sway an elderly individual's potential to use the Internet and other digital resources.

Moreover, formidable roadblocks such as inadequately designed age-unfriendly devices, convoluted user manuals, and overarching educational barriers underscore the complex web of resistance the older generation encounters."

“The increasing attention to the space and place experience in the digital era and the interweaving of the physical and digital worlds have profound implications for our understanding of the sense of place. Academic research has started to explore how digital technologies, especially spatial media and the metaverse, have transformed our experiences of place. It is important to adopt a holistic and continuous perspective to comprehend the sense of place in the digital age. The fusion of digital and physical space practices enables continuous innovation in our experiences of place, leading to the formation of a more inclusive and extensive sense of place. This involves constructing different relationships between humans and places, both in the physical and digital realms.

...This provides a conceptual framework for urban planning, design, and management professionals to enhance people’s experiences of places through the interaction and connection between individuals, digital technologies, and physical spaces. By leveraging these interactions, the sustainable development of places can be promoted, leading to more satisfying and meaningful experiences for individuals in their local environments.”

Dai, Juncheng, and Fangyu Liu, “Embracing the digital landscape: enriching the concept of sense of place in the digital age,” *Humanities and Social Sciences Communications*, June 3, 2024, <https://rdcu.be/eUVCx>.

It's all connected.

Smart technology enabled by sensors and software create efficient, data rich systems, but security is fragile.

Convenient, efficient and personalized services are enhanced in a seamlessly, and often invisibly, connected world. The Internet of Things (IoT) is activated by embedded electronics, software, sensors and actuators and enables networked buildings, vehicles, and devices to collect and exchange data. Integrating GIS and the movement of people and goods into systems simulations can lead to increased efficiencies and improved safety. Broadband infrastructure for wireless network systems needs to be continuously upgraded and equitably distributed to ensure access is fair and potential for positive impact is maximized.

Smart phones. Smart cars. Smart homes. Smart cities. With sensors proliferating in the urban sphere and advancements in dynamic 3D virtual models known as digital twins, artificial intelligence optimization modeling can provide rapid insights for real time response. Flooded with data and with the opportunity to activate advanced analytic tools, regional management teams are able to proactively handle complex street level issues such as transportation flows, parking, energy use, and weather-related emergency responses. Prototyping potential solutions to complex problems digitally before implementing them in the real world can save money and help avoid errors.

However, all levels of government are competing with the private sector to recruit and retain skilled workers who can run the seamless digital experiences that are enabled by machine learning and AI. More and better digital capacity will be essential for most decision-making roles; training existing employees may be a faster and more cost-efficient approach to ensuring skill levels are adequate. The need for internal capabilities will become urgent.

As connected assets become fundamental tools in the modern built environment, safeguarding their performance includes the digital realm. Cybersecurity is now an essential issue for the protection of critical infrastructure like water systems, airports, and energy grids that rely on computing to function. It is also a necessary guard against malware, ransomware, and the proliferation of misinformation and disinformation. Insurance against hacking or cybercrime will require deployment of adequate resources to respond and recover as vulnerabilities to cyberattacks grow. Governments are especially high-risk targets and small and medium sized businesses are particularly vulnerable due to lack of preparedness. Costs for sufficient coverage are rising as frequency of events and the associated data breach expenses are increasing.

Relevance for northeastern Illinois

Maintaining up-to-date wireless infrastructure throughout the region is a high priority. Ensuring sufficient staffing with appropriate skills to manage and optimize data for efficient and effective systems utilization will be a key requirement as complexity increases. Closing the gap between perceived risk and adequate insurance protection will be a critical budgetary consideration for businesses and governments going forward.

Evidence

“The growth of IoT (Internet of Things) devices has created a hyper-connected reality, through which a multitude of devices and systems interact seamlessly, transforming our way of life—a veritable revolution of devices and connectivity. IoT devices allow end-users to essentially take the internet wherever they go. With thousands of diverse types of IoT devices impacting people where they live, play, and work—whether in businesses, enterprises, industrial spaces, medical spaces, or otherwise—the possibilities are simply endless. As a result, the demand on and for reliable wireless and fiber networks compounds, and more and more resources are being deployed as rapidly as possible to meet this new heightened device demand.”

Oreder, Josh, “Supporting a Hyper-Connected Reality,” *Pipeline Publishing*, July 2023, <https://pipelinepub.com/loT-2023/hyper-connected-LoT>.

“While the concerns about using GenAI match the global average for all sectors, government leaders are apprehensive about the use of data, security risks, appropriate regulations and accountability. These concerns highlight the need for careful consideration and proactive measures to ensure responsible development and deployment.

SAS: Data and AI Solutions, “Your journey to a GenAI future: A strategic path to success for government,” accessed December 16, 2025, <https://www.sas.com/content/dam/SAS/documents/marketing-whitepapers-ebooks/ebooks/en/your-journey-to-a-gen-ai-future-a-strategic-path-to-success-for-government-114056.pdf>.

...GenAI regulation is moving quickly and keeping up with it while unlocking the technology’s value is a universal challenge. However, governments are less prepared than other sectors. 51% of government leaders say they’re fully or moderately prepared to comply with current and upcoming GenAI regulations, compared to an average of 58% across all sectors.”

“Local digital twins serve as virtual replicas of cities, akin to expansive sandboxes where urban planners and policy makers can experiment with different scenarios and strategies. Much like an open lab, users can manipulate data within the digital twin environment to simulate hypothetical interventions, test out innovative ideas, and explore potential outcomes.

Garrido, Lucia. “Local Digital Twins Empower Urban Planners for Informed Decisions.” *Eurocities*, May 16, 2024. <https://eurocities.eu/latest/local-digital-twins-empower-urban-planners-for-informed-decisions/>.

The process begins with collecting all the valuable information that will allow the platform to comprehend the city dynamics as a whole. This includes the information collected by sensors deployed within urban environments. These

sensors can monitor a wide range of parameters relevant to city life, such as air quality, traffic flow, noise levels, temperature, humidity, and more. This data is used to gain insights into various aspects of urban living, including environmental conditions, transportation patterns, infrastructure usage, and public health.

...The effectiveness of local digital twins relies on the integration of various data sources and technologies. This is a crucial issue that should be woven throughout the entire process of local digital twins development.

'At the Eurocities Digital Forum held in Rotterdam a few weeks ago, emphasis was placed on ensuring that digitalisation is people-centric,' highlights Reyes. 'This entails, for example, recognising that people need to understand the decision-making processes in their city.'

"Smart and consistent investment to accelerate talent transformation is shown to pay big dividends. Digitally fluent organizations have a culture with people who can build on technological foundations and create new ways of working. These organizations are 2.7 times more likely to have experienced high revenue growth (greater than 20 per cent) over the past three years, Accenture found. Yet a crucial gap exists. In 2021, 78 per cent of IT decision-makers reported skills gaps within their organization, up from 36 per cent in 2015. They cite three top reasons for this: technology change exceeds skills development programs; the difficulty attracting talent; and under-investing in training to develop the skills needed to help fill these positions internally.

Hiring talent is an expensive and lengthy process. The cost can be up to six times more than to build the required skills from within. Training is also essential to the retention of talent. Fifty-five per cent of highly skilled digital workers say they are willing to change organizations if they feel their digital skills are stagnating at their current employer."

"Critical infrastructure such as energy grids, water plants, transport systems, and oil and gas pipelines depend on consistent monitoring to maintain safety and uptime. Traditional patrol-based security cannot cover large, dispersed sites. IoT surveillance devices now fill this gap by delivering continuous visibility into equipment conditions, environmental changes, and physical access attempts.

These devices allow organizations to monitor remote or hazardous environments without deploying personnel onsite. Connected security devices provide insights that help security teams respond faster to unusual activity, reduce operational blind spots, and support long-term planning. With rising incidents involving tampering, unauthorized access, or equipment misuse, IoT surveillance devices have become essential tools for security leaders seeking early detection and clear situational awareness."

Lambert, Mark, "Governments must act more urgently to attract needed digital talent," *Policy Options*, October 12, 2023, <https://policyoptions.irpp.org/2023/10/governments-must-act-more-urgently-to-attract-needed-digital-talent/>.

ITTech Pulse. "The Role of IoT Surveillance Devices in Critical Infrastructure Protection." *ITTech Pulse*, November 26, 2025. <https://ittech-pulse.com/our-tech-insights/the-role-of-iot-surveillance-devices-in-critical-infrastructure-protection/>.

“Regardless of industry, size or location, the analysis clearly shows that no organization is immune to falling victim to a cyber-attack. Comparably, a global survey by Munich Re found that 87% of C-level respondents consider their organization’s protection to be inadequate. Many micro and small sized businesses fall prey to cybercrime, not because they are singled out by threat actors, but because opportunistic attackers widely take advantage of weak cyber-security implementation by simply harvesting ‘low hanging fruit’. With regards to ransomware, there is an unrelenting trend of Cybercrime-as-a-Service, with offerings ranging from platforms to subscription-based malware or AI-enabled hacking tools. These developments will continue to lower the barriers for entry for the criminal ransomware business. A further increase in the frequency, automation and sophistication of ransomware attacks is to be expected. AI, in particular, will drive the scale, speed and precision.”

“Cyber Insurance: Risks and Trends 2025,” Munich RE, April 3, 2025, <https://www.munichre.com/en/insights/cyber/cyber-insurance-risks-and-trends-2025.html>.

“However, security for GenAI also raises data security principles that have not been as widely considered. While many security leaders have historically focused on data availability and data confidentiality, they have often directed less effort toward data integrity and trustworthiness. Yet data integrity and trustworthiness are now the second- and third-greatest security concerns with GenAI, respectively. In ranked choice voting, 64% of respondents said data integrity attacks—where adversaries could inflict bias or poison models with incorrect data—are a significant concern. While industries such as retail and financial services with large volumes of financial transactions have invested in fraud detection tools to identify and remediate false ledger entries, unstructured data integrity and trustworthiness may be more difficult to enforce than either availability or confidentiality.

Thales, “Data Threat Report: AI, Quantum and the Evolving Data Threatscape,” May 2025, <https://cpl.thalesgroup.com/sites/default/files/content/campaigns/data-threat-report/2025-thales-data-threat-report.pdf>.

...Among attack types on the rise, malware maintains the top spot as it has since 2021, while phishing moved up to second from third on the list, and ransomware dropped from second to third. Regarding the most concerning threat actors, the top two are external attackers: Hacktivists remain at No. 1, followed by nation-state actors. Human error is third, down one spot from a year ago. From an attack-chain perspective, all three top actors often initiate threats via phishing mechanisms that trick users into revealing credentials, allowing initial entry into the victim’s network. However, external attackers are responsible for the actual damage, using various tactics, techniques and procedures including malware and ransomware to infiltrate and traverse networks and compromise data and systems.”

“According to the latest global survey by the United Nations, more than 85% of people are concerned about the impact of disinformation. Some 87% believe that misinformation, disinformation, and malinformation (MDM) campaigns have already left a negative impact on their country’s politics and would play a significant part in future elections.

SentinelOne, “Why Misinformation and Disinformation is a Cybersecurity Problem?,” March 25, 2025, <https://www.sentinelone.com/blog/the-truth-crisis-the-rising-threat-of-online-misinformation-and-disinformation/>.

Since the consequences of MDM extend far beyond the digital realm, threat actors including nation-states, advanced persistent threat, (APT) groups, cybercriminals, and hacktivists are increasingly turning to deceptive tactics to target victims and pursue their objectives.”

Are we home yet?

Alternative models of financing and co-living are disrupting traditional formats of single-family dwellings.

In challenging economic times and as available housing stock fails to keep pace with demand, people are shifting their expectations for what a home can be. New housing configurations, including revisited models of co-living such as intergenerational households, are more cost effective and also build social connection. Reimagined funding approaches can create viable solutions for both residents and developers. The built environment impact may include greater density and require zoning changes in some areas.

The traditional ideal of home ownership as personal asset, although beneficial for many, is an entrenched disadvantage that prevents renters from participating in social mobilization. Alternative approaches to ownership and financing include community land trusts and shared equity housing co-operatives where private and collective spaces improve affordability.

In the last year, American population growth has been significantly driven by immigration, with the vast majority of newcomers being of working age. Climate and economic migrants represent a considerable portion of that group. Accordingly, the number of younger families that require appropriate living space is likely to grow. If affordable housing is a stretch now, those who have escaped more desperate situations as refugees due to forced migration will have increasing difficulty finding appropriate shelter, especially rental solutions going forward. As renters become a more significant portion of regional inhabitants, their share of public space and political clout may also shift.

US Census Bureau statistics indicate that numbers of households with three or more generations living together are on the rise. Some of these arrangements are adult children returning home after education or travel and in other situations grandparents are moving in or reconfiguring their homes to co-live with young family members. Beyond financial and child-care benefits, these situations also strengthen familial bonds and provide emotional support. Immigrant and ethnic minority families are still more likely to live in intergenerational housing, however there has been a significant increase in White families as well.

Housing and care for the vulnerable elderly, will only be exaggerated going forward as that population increases and new models become necessary. Buildings can be defined as Naturally Occurring Retirement Communities

(NORCs) when at least 30% of residents are over 65 years old with a total of at least 50 older people on site. They are not typically designed for seniors but have developed over time as tenants or owners have remained in place and have established community. They can be harnessed as a progressive model to effectively deliver support services to older people if the healthcare system and other services are deployed intentionally.

The cost of homelessness can be measured both in dollars and in human potential. The complex causes including poverty, undertreated mental health concerns, difficulties integrating back into society after active military duty, substance misuse, post-release transition for the formerly incarcerated, and the desire to escape abusive or violent situations are all exacerbated by a lack of affordable housing. In a highly automated future economy, those with few job skills are likely to be at risk of unemployment and may swell numbers. Supportive housing costs are lower and more effective for users when they are tied to services such as employment training and counseling. Houston's "housing first" approach demonstrates that adjacent services such as emergency healthcare, policing, the court system including prison, and clean-up services cost taxpayers as much as 3 times more per person than providing transitional homes.

Relevance for northeastern Illinois

Aging in community necessitates more widely distributed transitional housing forms and proactively housing the most vulnerable means adequate housing stock is needed. If renters become a more significant portion of the regional population, ensuring their voices are heard more strongly will become more important. New homeownership models can positively impact wealth creation for currently excluded residents. Housing typologies such as Accessory Dwelling Units and co-living arrangements are beneficial. Currently, the growing unhoused population has a large impact on healthcare, criminal justice and public safety systems. Long term integrated harm reduction includes supportive housing.

Evidence

"What is a Community Land Trust? Community land trusts (CLTs) address the need for affordable housing while ensuring that the affordable units governed by the land trust will be permanently maintained at an affordable price. This allows for the efficient use of scarce government subsidy dollars, which when applied to a CLT property, remain with the property over time to benefit every owner, not just the initial occupants.

Why does Chicago need a Community Land Trust? Public funding for affordable housing is increasingly limited at all levels of government. To maintain or expand

MacArthur Foundation, "Chicago Community Land Trust Fact Sheet," accessed December 16, 2025, https://www.macfound.org/media/article_pdfs/chicago_community_land_trust_fact_sheet.pdf.

production of affordable housing, existing programs must use funds efficiently. What does it mean to be a Community Land Trust homeowner? CLT homeowners have an opportunity to purchase a home that they otherwise couldn't afford—and they will still walk away with a return on their investment. People who buy CLT homes are, in essence, selling their right for unlimited market-driven appreciation in exchange for significant upfront subsidy that allows them to become a homeowner.”

“Chicago is the midwestern city with the second-highest percentage of micro-housing units in its rental inventory. Seven percent of all apartments are smaller than 400 square feet, which is approximately half the size of a typical unit. Some Chicago units are as small as 110 square feet.

Marek, Emily, “Chicago is a Midwest leader of the micro-housing movement,” *Chicago Agent Magazine*, May 14, 2025, <https://chicagoagentmagazine.com/2025/05/14/chicago-micro-housing-movement/>.

In many cities, apartments that small aren't only rare—they're illegal to build. The tradeoff for less square footage, though, is a monthly rent nearly half the cost of a conventional Chicago apartment. The average rent for a typical apartment in the city is about \$2,420 per month. But the average rent for a micro-unit is \$1,263.

‘Micro-housing is one of the most efficient tools we have to create more housing quickly and affordably, especially in urban areas where land is scarce and demand is high,’ said David Nieman, partner at Neiman Taber Architects, adding that ‘micro-units play a critical role in expanding the supply of low-cost, market-rate housing.’”

“The U.S. Census Bureau has tracked a rise in three or more generations under one roof. Six million of these multigenerational homes accounted for 4.7% of households in 2020, up from 3.7% of households in 2000. Pew has also tracked a rise in multigenerational homes among all age groups since the 1970s. An increasingly diverse U.S. population has played into the trend, according to Pew. Asian, Hispanic and Black populations are more likely than white populations to live with extended family, especially if they are immigrants; as these populations grew, so too did multigenerational living trends. More Americans have also turned to multigenerational living because of financial issues (40% of respondents) or caregiving purposes (33% of respondents), according to polling from Pew.”

Schulz, Bailey, “The rise of multigenerational housing: Why we're seeing more generations under one roof,” *USA Today*, February 22, 2025, <https://www.usatoday.com/story/money/2025/02/22/multigenerational-living-trends-us-housing/78297551007/>.

“Multigenerational living is growing in part because groups that account for most recent overall population growth in the U.S., including foreign-born, Asian², Black and Hispanic Americans, are more likely to live with multiple generations under one roof. Thus, the rise in the multigenerational family household population is linked to the changing makeup of the overall U.S. population. However, multigenerational living also is rising among non-Hispanic White Americans, who accounted for a higher share of the multigenerational household population growth from 2000 to 2021 (28%) than of total population growth (9%).”

Cohn, D'Vera, Juliana Menasce Horowitz, Rachel Minkin, Richard Fry, and Kiley Hurst, “Financial Issues Top the List of Reasons U.S. Adults Live in Multigenerational Homes,” *Pew Research Center*, March 24, 2022, <https://www.pewresearch.org/social-trends/2022/03/24/the-demographics-of-multigenerational-households/>.

“Housing affordability continues to cause concern among Americans of all generations. From young adults working to pay down student debt, to older adults burdened by rising cost of medical care, ongoing expenses further exacerbate finances. Families have come together into multigenerational households to help alleviate these financial stresses while also benefiting from strengthened familial connections. Multigenerational and shared living is on the rise in the United States. According to the Pew Research Center, the number of American adults aged 25 to 34 living in multigenerational homes has steadily increased from nine percent in 1971 to 25 percent in 2021.

KTGY, “R+D Concept | Ensemble: A Multigenerational Community Composition,” accessed December 16, 2025, <https://ktgy.com/Work/ensemble/>.

As a method for increasing housing supply in single-family zoned neighborhoods, jurisdictions throughout the United States have modified regulations to allow for Accessory Dwelling Units (ADUs) and Junior Accessory Dwelling Units (JADUs). These small structures have proliferated single-family zoned neighborhoods as a method for increasing value on single-family lots and generating rental income. However, some homeowners use ADUs to create adjacencies for family members, as a semi-private option for multigenerational households. Through ADU development, families in proximity can share expenses and care needs, further benefiting both socially and economically. Combined households provide a pathway to attainability that supports strong communities and benefits the physical and mental wellness of residents. While ADUs provide a pathway to attainable multigenerational housing, design of new construction can incorporate these design ideas in a more intentional way. KTGY’s Research and Development explored the potential of multigenerational communities to develop Ensemble, a design concept proposing a composition of homes in varying sizes, with shared, semi-private courtyard spaces.

The Ensemble design connects two or four homes together, ranging in size from about 600 square feet to over 2,900 square feet. Each unit is designed specifically for a unique demographic type: single adult living alone, a single-parent family, a move-down empty nester couple, a growing family, or a combination of any of these household types.”

“Intergenerational housing is a progressive concept based on the idea that seniors should not be segregated from other generations and that people of all ages benefit from connecting with one another in daily life. H.O.M.E. (Housing Opportunities & Maintenance for the Elderly) owns and manages 78 apartments in three affordable intergenerational buildings where seniors choose between private apartments or, for those who desire more support and a family-like setting, Good Life Senior Residences.

Housing Opportunities & Maintenance for the Elderly (H.O.M.E.), “Intergenerational Housing Model,” accessed December 16, 2025, <https://homeseniors.org/intergenerational-housing>.

In H.O.M.E.’s buildings, all older adult residents have access to social services and engagement opportunities, and families with minor children and young adults live alongside older adults.”

“Identifying NORCs provides an opportunity to leverage the density of older adults living in one place to provide a range of health and social supports and services (DePaul et al., 2022). In this report, we refer to these supports and services as “NORC programs.” NORC programs often integrate health, social and physical supports directly within the community to make it easier to enable AIRP (Mahmood et al., 2022; Parniak et al., 2022). Many are designed by and for older adults living in the community and require collaborative partnerships across different levels of government, community agencies, health services, residents and property owners. Over several decades, a growing body of evidence has come to support the notion of integrating services directly within an ageing community. NORC programs were implemented in New York State in the mid-1980s, and have grown to become recognized in state legislation and receive stable government funding (Altman, 2006; Vladeck, 2004; Personal Communication, 2022a). There are currently 41 NORC programs across the state that provide services including health and wellness activities, community engagement opportunities and educational programs (NYC Department for the Aging, n.d.; Personal Communication, 2022c).

National Institute on Ageing, “It’s Time to Unleash the Power of Naturally Occurring Retirement Communities in Canada,” November 2022, <https://niageing.ca/reports/its-time-to-unleash-the-power-of-naturally-occurring-retirement-communities-in-canada/>.

...Going beyond ageing in place, the National Institute on Ageing’s conceptualization of Ageing in the Right Place (AIRP) (see Box 1) acknowledges that older adults need differing levels and types of support to age in a way that supports their physical and mental health and well-being. The concept draws attention to opportunities to integrate health and social services and remove barriers to their access; create more accessible homes and communities; and provide meaningful opportunities for social connectedness and engagement (Bigonnesse & Chaudhury, 2022; Greenfield et al., 2012). Solutions to enable AIRP must address structural and contextual factors that impact individual level choices about where they want to live (Bigonnesse & Chaudhury, 2022; NIA, 2022a).”

“Cost studies in numerous states and cities found that supportive housing results in tenants’ decreased use of homeless shelters, hospitals, emergency rooms, jails and prisons, which reduced public costs.

Corporation for Supportive Housing. “Supportive Housing 101.” Corporation for Supportive Housing, n.d. <https://www.csh.org/supportive-housing-101/>.

Supportive Housing provides better outcomes and is fiscally responsible. Take New York City, for instance. By reducing service use, it saved an average of \$16,282 per unit annually, covering 95% of the cost of providing supportive housing. In Portland, Oregon, the annual savings per person reach \$24,876, surpassing the annual cost of housing and services, which is only \$9,870.”

SHIFT 3

Healthy & Unhealthy

Humans and the environment they rely on are both seeing health improvements based on policy, infrastructure and technology choices. Concurrently, economic and demographic strain on systems puts some of those benefits at risk. Funding for public health is a critical requirement to provide the necessary health services to all in the region.

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Health Reversals

Vaccine refusals, pandemics and climate-related disease will make it difficult to be prepared for a healthy future.

In the wake of polarized information sharing and widely broadcast conspiracy theories regarding COVID-19, mistrust in the healthcare system has increased. With reduced vaccination rates among portions of the population, previously contained diseases may erupt. Parental hesitancy or refusal to have children inoculated against vaccine-preventable diseases has risen as unreliable or inaccurate information have spread. Recent cases of measles and respiratory illnesses across the US are concerning.

International preparations for global healthcare emergencies are insufficient, as the high probability of the next zoonotically transmitted disease is more a question of when, rather than if it will happen. Although on the fringes, new emergent diseases such as mpox require ongoing vigilance and effective warning systems to be in place or else pandemic conditions are likely to recur with all the attendant social and economic disruption. Lessons learned from the COVID experience remain pertinent but planning challenges persist with other crisis level public health and social service demands. Whole of government and whole of society approaches may be required to avoid another global crisis. Reduction of state and regional monitoring programs could leave municipalities unprepared for emergent health challenges that require adjacent service delivery such as building strong community bonds.

Increasing heat waves, flooding, and worsening air quality are likely to affect a greater number of people throughout the region as impacts of climate events intensify. Extreme heat especially puts the elderly at risk of heat stroke and exhaustion, and incidences of heart attacks increase as the temperature rises. Floods can cause toxic chemical run-off to enter lakes and rivers, affecting the safety of drinking water. More standing water provides breeding grounds for mosquitoes and their increasing likelihood of carrying disease like West Nile Virus puts northeastern Illinois residents at risk. After a flood, high levels of indoor mold in water damaged houses cause more cases of asthma and allergies. Physical destruction of homes caused by rising waters has deep psychological impacts as loss can lead to depression and anxiety. Air quality deteriorates as particulate matter from more frequent distant wildfires settles over the Midwest summer after summer. Increased pollen exacerbates allergies and respiratory distress. These compounding stresses place a greater burden on the healthcare system, but also on family members providing care and workplaces trying to maintain staffing during challenging times.

While logistical planning for the next pandemic or public health emergency involves alignment and reporting, “whole of government” and “whole of society” aligned approaches are also necessary as insurance. Governments will face tough financial prioritization as public health costs are weighed against public safety and sustainability.

Relevance for northeastern Illinois

Regional impacts will be large if adverse conditions mount. Infectious disease outbreaks coupled with severe heat circumstances and mental health deterioration mean more people will have health challenges and the social fabric will be weakened. Vulnerable populations, the elderly and young children are especially at risk. If school age children are affected, parents that are overwhelmed by care requirements may be unavailable to work. Water-borne disease vectors, such as mosquitos, will require surveillance and post-flooding pollution of water sources will need continued testing and monitoring. Healthcare workers, already worn down and stressed, may leave the system, making local services less available.

Evidence

“In suburban Cook County, there are an estimated 12,000 children who are not vaccinated against measles, a figure that has doubled in the past decade, according to county officials. In Chicago Public Schools, the percentage of students vaccinated against measles fell from 97% before the coronavirus pandemic to 93% last school year, the Chicago Sun-Times previously reported. Cook County Board President Toni Preckwinkle recalled how many children from her generation fell ill with diseases that are now largely eradicated because of vaccines. But Preckwinkle and other county officials are ringing the alarm and rolling out a new campaign aimed at boosting the numbers vaccinated against measles.

‘We can’t take the progress we’ve seen for granted,’ Preckwinkle said. ‘Measles is back. It’s not back because the science has changed, but simply because too many people are unvaccinated and that puts everyone at risk.’”

Malagón, Elvia, “What parents need to know about vaccines as students return to school,” *WBEZ Chicago*, August 13, 2025, <https://www.wbez.org/health-medicine/2025/08/13/vaccines-measles-hesitancy-covid-what-parents-need-to-know-return-to-school>.

“During the initial stages of the pandemic, the internet and social media platforms were rampant with unreliable and dangerous health information. Communities were seeking reliable health information and were confronted with confusing and often conflicting recommendations. A national survey by the Kaiser Family Foundation found that 96% of adults said they have heard at least one health-related misinformation claim. During the lock-down, most individuals also did not have direct access to trusted health messengers to ensure they were receiving medically accurate information.”

Illinois Vaccinates Against COVID-19 (I-VAC),
“Misinformation Toolkit,” March 15, 2024, https://www.illinoisvaccinates.com/wp-content/uploads/2024/01/IVAC_MisinformationToolkit_v3-1.pdf.

“The pandemic and its lockdowns accelerated a mental health crisis in the United States, leaving treatment providers racing to keep up with the growing demand for care.

Gose, Joe, “As Mental Health Crisis Grows, More Doors Open to Care,” *The New York Times*, April 11, 2023, <https://www.nytimes.com/2023/04/11/business/mental-health-addiction-care.html>.

The need is acute: The National Institute of Mental Health estimated that in 2021, one in five adults in the United States lived with mental illness. To meet the demand, health systems, private operators, and state and local governments have been rapidly adding psychiatric hospitals, addiction recovery centers and other behavioral health clinics over the last few years. In some cases, however, the providers face resistance from neighbors despite the widely acknowledged problem.

Overall, the behavioral health market is expected to grow to \$105 billion by 2029, up from about \$77 billion in 2021, according to Fortune Business Insights, an industry research organization.

...‘We’re in the midst of a behavioral health awakening,’ said John Hennegan, a founding partner of Shore Capital, a private equity firm that invests in small behavioral health companies. ‘The drop in the stigma associated with behavioral health, combined with the growing awareness of its benefits, has led to an explosion in demand.’”

“Wildfires, exacerbated by climate change, emit pollutants like PM2.5 that harm human health. This study investigates PM2.5 pollution in Chicago from 2019 to 2023, focusing on the impact of smoke originating from wildfires across North America. Despite the absence of local wildfires, transported smoke causes significant deterioration of air quality and poses health risks. Our analysis, leveraging data from the Hazard Mapping System and the Air Quality System, reveals that the number of days with PM2.5 levels exceeding 35 µg/m³ (unhealthy conditions) increased from 0 to 11 per year, and days with smoke presence increased by 81 % from 2019 to 2023.”

Hartnett, Nora, Ping Jing, Bo Zhang, Matthew Stuart, Jun Wang, “Wildfire smoke and PM2.5 pollution in Chicago: Evidence from 2019 to 2023,” *Urban Climate*, June 2025, <https://doi.org/10.1016/j.uclim.2025.102472>.

“Warmer, wetter weather will make some health conditions more frequent in Illinois. It will allow mosquitoes and ticks to live and spread diseases, such as West Nile virus and Lyme disease, in places where they previously couldn’t survive. Warmer, wetter weather will also worsen respiratory health conditions. West Nile virus is an infection spread by mosquitoes and it arrived in the United States in 1999. The first case of the virus in Illinois was diagnosed in 2001. In 2002, the virus peaked with the largest number of cases in the United States occurring in Illinois. Most people infected with West Nile virus only experience minor symptoms. The elderly are at greatest risk of developing the most serious form of West Nile virus, which is an infection of the brain. West Nile virus infections are related to weather and climate, but it’s hard to accurately predict whether this disease will become more common in Illinois.”

University of Illinois at Chicago School of Public Health, Division of Environmental and Occupational Health Sciences, “Climate and Health in Illinois (BRACE Report),” *Illinois Department of Public Health*, accessed December 16, 2025, <https://dph.illinois.gov/content/dam/soi/en/web/idph/files/publications/publicationsoprclimatehealthreport.pdf>.

“As the season begins, pest control giant Orkin has released its 2025 list of the Top 50 Mosquito Cities, ranking cities by where the most new residential mosquito treatments were performed between April 2024 and March of this year.

NBC Chicago Staff, “Chicago named runner-up as America’s most mosquito-ridden city by Orkin,” *NBC Chicago*, May 20, 2025, <https://www.nbcchicago.com/news/local/chicago-named-runner-up-as-americas-most-mosquito-ridden-city-by-orkin/3750453/>.

Perhaps as no surprise to Chicago residents, The Windy City was in elite company on the list, ranking as the second-most mosquito-ridden city in the United States.”

“More than 50 percent of infectious diseases that impact people have been aggravated by climate change, according to a 2022 study by University of Hawaii at Mānoa researchers. As the planet heats up and human habitation infringes on more wild spaces, the chances of viruses leaping from animals to humans rises. ‘We still constantly see new pathogens, such as Oropouche virus, that likely emerged due to changing environmental and land use,’ says Kayoko Shioda, a BU School of Public Health assistant professor of global health who’s also affiliated with CEID. Oropouche, which causes symptoms like fever and myalgia and has no vaccines or treatments, is spread by midges and mosquitoes. And because severe weather and contaminated foods and environments can also affect transmission, Shioda says some populations are especially susceptible to rogue enteric bacteria, which impact the intestinal tract. ‘Many low-income settings are especially vulnerable due to the lack of infrastructure and, therefore, there is a need to identify feasible and effective measures to enteric pathogens across seasons,’ she says.”

Thurston, Andrew, “Are We Ready for the Next Pandemic? Five Reasons to Feel Confident—and Five to Be Worried,” *The Brink: Pioneering Research from Boston University*, March 11, 2025, <https://www.bu.edu/articles/2025/are-we-ready-for-the-next-pandemic/>.

Food Systems Precarity

High cost and lack of availability threaten access to food for businesses and individuals.

Agriculture and Food Security

Rising temperatures may provide agricultural lands in the region with longer growing seasons in the future benefitting farms and food businesses. However, those changes may be offset by the potential for increased insect pest populations, invasive species and changes in precipitation that could reduce crop yields and limit local food production. Intensifying weather variability will also be a challenge to growers who are already dealing with the effects of recent changes and distribution companies that may have their transportation flow interrupted by extreme weather.

Food manufacturing and processing may be impacted by rising costs, such as for packaging, transportation, and labor. Input pricing uncertainty is augmented by trade policy changes, unpredictable tariffs which may alter availability of ingredients, and global supply chain fragility. The food and beverage manufacturing sector is a major contributor to the northeastern Illinois regional economy and is a significant employer. Any downturn will have an impact on the over 4,000 food and drink processing companies located here and the 130,000 workers that keep them running.

Inflationary food costs have been a persistent issue over the past five years and access to healthy fresh foods has diminished in many urban neighborhoods. High consumption levels of ultra-processed foods (UPFs) is linked to diminished health. Foods containing preservatives, chemical color and texture enhancements, and high levels of sugar, fat and salt are often more affordable, more filling, and easily accessed in what are described as “food deserts”; places where few grocery stores are accessible and convenience stores proliferate. More than 25% of people in the Chicago area are estimated to be food insecure according to the latest Greater Chicago Land Hunger Report.

This issue is also globally significant with food insecurity on the rise and some nations protecting produce for their local market first through export bans while world conflict disrupts the supply chain. Wheat, rice and edible oil exports have all been restricted by countries hoping to stabilize domestic pricing and supply, affecting both food processing in the USA and consumer access to ingredients.

At the same time obesity rates in the US continue to climb, with the Centre for Disease Control indicating that 40.3% of adults are affected. It is estimated that as much as 10% of the American population is currently taking GLP1 medications. These were developed to manage blood sugar in people with diabetes but are currently being used to help them lose weight and to combat cardiovascular risks. The associated appetite suppression of the drugs has had unexpected societal side effects. Recently published research by PWC shows that GLP-1 users spend roughly 11% less on food, especially on sweet and salty snacks, that alcohol consumption has declined, and that their choices of smaller portions of nutrient dense foods could impact hospitality industries.

Relevance for northeastern Illinois

Local food and beverage processing organizations may be heavily impacted and the overall economy will feel the ripple effects. Strains on the global agricultural system may result in more food insecurity with both increased costs and reduced supply in the northeastern Illinois. Vulnerable populations may require additional support. An emphasis on long term, systemic, and broad-based approaches to food access would be an excellent start but will require ongoing monitoring, support and policy integration.

Evidence

“Food prices have jumped 25% since 2021, while food consumption volumes are down over 5%. Inflation may be in the low single digits, but people are now buying a lot less food. Over 47 million Americans are food insecure. Grocery price inflation has driven an affordability crisis fueling food insecurity and economic anxiety.

In 2025, grocers sold 13 billion fewer units of product than in 2021. Grocery industry sales have jumped almost \$225 billion since the pandemic ended, according to NIQ data. But that growth is all price inflation. Grocery prices outpaced the rate of inflation by several points from 2021-2023, with the gap growing as the consumer price index cooled off (NIQ).

...a ‘solution to affordability, public sector grocery stores, hit the mainstream with Zohran Mamdani’s successful mayoral campaign in New York City.’
...Faye Guenther, President of UFCW 3000 agrees, ‘Over the last four decades the supermarket industry has become highly concentrated and the power of workers and consumers has been dramatically reduced. We need a public option in the supermarket industry—stores that focuses on providing healthy food in our communities, while providing jobs with good wages and benefits.’”

Schweizer, Errol, “Why High Food Prices Will Make Public Groceries Inevitable,” *Forbes*, November 14, 2025, <https://www.forbes.com/sites/errolschweizer/2025/11/14/why-high-food-prices-will-make-public-groceries-inevitable/>.

“Heat waves, which are projected to become more frequent and intense as the century progresses, could cause as much as 10 times more crop damage than is now projected, a team of researchers led by the University of Colorado Boulder has found.

Talbot, Clint, “Heat waves could cause 10 times more crop damage than now projected, research finds,” *Colorado Arts and Sciences Magazine*, March 16, 2021, <https://www.colorado.edu/asmagazine/2021/03/16/heat-waves-could-cause-10-times-more-crop-damage-now-projected-research-finds>.

The researchers’ work, recently published in the *Journal of the European Economic Association*, analyzed a global dataset spanning 1979 to 2016 and found that agricultural losses were up to an order of magnitude larger than standard approaches predicted.

...Researchers in psychology, behavioral economics and related fields are also studying how people perceive climate risks, who responds to them, how social connections enable or inhibit adaptive behavior, and more. Their work should help us understand more about options for facilitating adaptation (at CU Boulder, Amanda Carrico is doing some great work in this area).

There’s likely also a role for economic incentives. If farmers can insure against disastrous consequences of heat waves, they might perceive changed practices or new technologies as unnecessary. That doesn’t mean insurance is bad; we may just want to incentivize adaptation as part of the insurance contracts on offer.”

“Resource scarcity, propelled by climate breakdown and the depletion of vital ecosystems, is reshaping the dynamics of global security. The demand for renewable and non-renewable resources intensifies, setting the stage for heightened competition and potential confrontation. The adverse impacts cut across sectors, from agriculture to energy, triggering inequities with far-reaching consequences.

Allied Command Transformation, NATO’s Strategic Warfare Development Command, “Resource Scarcity and the Shifting Dynamics of Global Security,” January 30, 2024, <https://www.act.nato.int/article/resource-scarcity-and-shifting-dynamics-of-global-security/>.

As agricultural production rises globally, uneven access persists, leading to lasting challenges. Expanding land use, driven by deforestation, contributes to land degradation especially in regions lacking sustainable agricultural practices. Addressing this requires technological solutions like irrigation enabled by Artificial Intelligence, vertical farming, and precision agriculture. These innovations may become arenas for competitive influence.

Water scarcity emerges as a critical concern, impacting sub-Saharan Africa, the Middle East, and parts of Asia. The lack of fresh water resources exacerbates instability, inequality, discrimination, and poverty, creating conditions for external influence, transnational crime, and terrorism. Water, the potential ‘oil of the 21st century,’ may also intensify geopolitical tensions.”

“The consumption of ultra-processed foods is on a slow decline, though most Americans—and especially children—are getting most of their calories from unhealthy, manufactured foods, according to new data from the Centers for Disease Control and Prevention.

Noguchi, Yuki, “Ultra-processed food consumption is down a bit, but still more than 50% of U.S. diet,” *National Public Radio*, August 7, 2025, <https://www.npr.org/sections/shots-health-news/2025/08/07/nx-s1-5495308/ultra-processed-food-upf-rfk-cdc>.

The mean percentage of total calories consumed from ultra-processed foods (UPFs) eaten by everyone age 1 and older was 55%, during August 2021 and 2023, when the National Center for Health Statistics conducted its survey. ... But there is no standard definition of what constitutes an ultra-processed food, though they are generally energy rich foods with little nutritional value, containing added fats, sugars and chemicals to preserve their shelf life and make them very palatable. In short, they are manufactured to be cheap, convenient and tasty. Foods like sandwiches, including hamburgers, as well as snacks and sugary beverages made up a large portion of the ultra-processed foods consumed.”

“For those living with diabetes or obesity, daily choices regarding food and beverage consumption are top-of-mind. GLP-1s fundamentally change the way people think about their food and beverage intake and could dramatically change the industry’s relationship with consumers for years to come. On average, GLP-1 users spent about 11% less on most categories of food. Not only were our respondents eating less in aggregate, but the biggest reductions were in sweet and salty snacks and baked goods. Over half said they wanted to make even healthier food choices and about a third said that they were binge eating less or drinking less during treatment. There is some indication that heavy drinkers in our sample reduced their alcohol consumption, since a third of them had moved into a lower category (e.g., heavy drinking to moderate drinking).”

PwC, “From molecules to milestones: Reinventing for the future of weight loss drugs,” October 2024, <https://www.pwc.com/us/en/services/consulting/business-model-reinvention/glp-1-trends-and-impact-on-business-models.html>.

“Riverdale on Chicago’s Far Southeast Side is 95% African American—and 99.85% of residents there have ‘low access’ to food, defined as living more than a half-mile from the nearest supermarket, according to the Chicago Health Atlas. On the Near North Side, where 70% of residents are white, everyone lives within a half-mile of at least one supermarket, giving them abundant grocery choices. A McKinsey analysis last year found that counties in the U.S. with above-average Black populations had fewer grocers, restaurants and farmers markets and more small convenience stores. Those statistics underscore a glaring racial and economic disparity and help explain why some Chicago communities struggle more than others with food insecurity and convenient access to fresh and healthy foods. ‘Some neighborhoods are overly serviced and others are barely serviced,’ says LaForce Baker, vice president of community impact at World Business Chicago, which works to attract businesses to low-access areas.”

Shelton, Deborah L. “Food insecurity magnifies inequity in Chicago,” *Crain’s Chicago Business*, November 14, 2022, <https://www.chicagobusiness.com/equity/how-food-access-highlights-economic-inequity-chicago>.

“Access to adequate food is a hallmark of a healthy community. Yet in the Greater Chicagoland area, far too many of our neighbors are struggling to put food on the table. One in four people are facing food insecurity, and more than a third of households (1.4 million households) cannot afford the basic cost of living in their county.

Greater Chicago Food Depository, “2025 Greater Chicagoland Hunger Report,” September 9, 2025, <https://www.chicagosfoodbank.org/news/2025-greater-chicagoland-hunger-report/>.

Furthermore, food insecurity is expected to grow in the coming months as devastating cuts to the Supplemental Nutrition Assistance Program (SNAP) included in the latest federal budget reconciliation bill go into effect. At a time when food prices and rents remain stubbornly high, approximately 470,000 people in Illinois alone who rely on SNAP for basic nutrition stand to see their benefits decrease or disappear altogether.”

“In a bid to confront mounting food insecurity, the City of Chicago announced last year that it was exploring the creation of a municipally-owned grocery store, an unprecedented move for a major American city. The proposal was a response to the persistent exodus of private grocers from the city’s South and West Sides, where decades of disinvestment have left entire neighborhoods with few reliable options for fresh, affordable food.

Wang, Xuandi, “In Chicago’s Food Deserts, Community-Led Markets Fill the Void as Big Chains Falter,” *Next City*, June 10, 2025, <https://nextcity.org/urbanist-news/in-chicagos-food-deserts-community-led-markets-fill-the-void-as-big-chains>.

But by February, the city shifted course. Citing difficulties in securing a qualified operator, a requirement for state funding, officials under Mayor Brandon Johnson revealed that the city will instead pursue a public market. The new plan envisions a space that provides basic groceries while supporting local farmers and small vendors.

For now, it is grassroots, community-driven markets that are filling the void. Often under-resourced but deeply embedded in their neighborhoods, these efforts have proved to be among the most nimble and enduring responses to a crisis that large grocery chains have repeatedly failed to address.”

“Michael Moss uses the latest research on addiction to uncover what the scientific and medical communities—as well as food manufacturers—already know: that food, in some cases, is even more addictive than alcohol, cigarettes, and drugs. Our bodies are hardwired for sweets, so food giants have developed fifty-six types of sugar to add to their products, creating in us the expectation that everything should be cloying; we’ve evolved to prefer fast, convenient meals, hence our modern-day preference for ready-to-eat foods. Moss goes on to show how the processed food industry—including major companies like Nestlé, Mars, and Kellogg’s—has tried not only to evade this troubling discovery about the addictiveness of food but to actually exploit it. For instance, in response to recent dieting trends, food manufacturers have simply turned junk food into junk diets, filling grocery stores with “diet” foods that are hardly distinguishable from the products that got us into trouble in the first place.

Goodreads, “Hooked: Food, Free Will, and How the Food Giants Exploit Our Addictions by Michael Moss,” accessed December 16, 2025, <https://www.goodreads.com/en/book/show/54217724-hooked>.

As obesity rates continue to climb, manufacturers are now claiming to add ingredients that can effortlessly cure our compulsive eating habits.

An account of the legal battles, insidious marketing campaigns, and cutting-edge food science that have brought us to our current public health crisis, Moss lays out all that the food industry is doing to exploit and deepen our addictions, and shows us why what we eat has never mattered more.”

“New Year’s resolutions may fade, but GLP-1 weight-loss therapies (like Ozempic and Wegovy) are here to stay—and they’re already disrupting the consumer markets industry. These groundbreaking medications aren’t just slimming waistlines, they’re reshaping the food and beverage, restaurant, apparel, and travel and leisure sectors. In 2023, Semaglutide became the best-selling drug in the United States with \$13.8 billion in sales. With over 100 million obese adults in the country and nearly 137 million eligible for weight loss drug therapy, the market is rapidly expanding. Companies face a stark choice. They can embrace business model reinvention or risk losing relevance in a post-diet world.”

PwC, “The business of losing weight: How weight loss drugs are disrupting consumer industries,” accessed December 16, 2025, <https://www.pwc.com/us/en/industries/consumer-markets/library/glp-1-weight-loss.html>.

Mental Health & Addiction

Incidents of depression and anxiety are mounting in a volatile, uncertain world, while economic disadvantage augments the impacts.

Mood and anxiety disorders have greatly increased in the past 10 years in the U.S., with levels mounting as people react to the unrelenting onslaught of devastating news; environmental disasters, international war, angry political discourse on every media outlet, and reports of violent crime abound. Anxiety is compounded by social media feeds that encourage continuous “doomscrolling” of negative events through algorithms oriented towards emotionally dramatic content. Continuous vigilance is wearying for a population already on edge.

Social comparison that involves persistent measurement of oneself against others who seem more successful, more attractive, and more accomplished can negatively affect body-image, and self-esteem. Life dissatisfaction and a sense of inadequacy can grow with continuous consumption of curated and edited image reels that portray unrealistic lifestyles.

“Cumulative disadvantage” or the aggregating impact of economic and social exclusion disproportionately affects younger people. Many seek counseling as their perceptions of the future dims and they fear missing out on what everyone else already has, but insufficient care is available. Wait times for children and youth to access mental health services are long. Calls for increasing dedicated hospital beds and staffing with improved protocols are well founded, but the challenges ahead are mighty. Despair can lead to inaction, denial, or self-destructive activities. Addictive behavior including overuse of drugs, alcohol, food, social media, shopping, sex, and gaming, can become a coping mechanism for chronic stress, especially for those with poor strategies to manage the effects of anxiety and hopelessness.

Opioid addiction is growing with higher levels of overdoses and deaths reported since the start of 2024 and modeling projections are for continued escalation. The latest wave involves powerful synthetic opioids such as fentanyl mixed into other drugs without a user’s knowledge. Distribution of increasingly toxic and contaminated Fentanyl substitutes is on the rise as are the incidents of non-opioid animal tranquilizer drugs circulating in the community that do not respond to Naloxone. Future consequences may be severe for affected populations as the poly-drug crisis deepens, when opioid use combined with other stimulants such as methamphetamine and cocaine or depressant drugs become more widespread. Areas of high socioeconomic vulnerability have been

especially hard hit. In northeastern Illinois increases in overdose death are now higher than fatal motor vehicle accidents or homicides and are straining an understaffed and overtaxed healthcare system.

Relevance for northeastern Illinois

Crisis levels of mental health concerns and addiction require consideration of adequate funding for potential new approaches to treating toxic drug exposure as the nature of addiction is shifting. Harm reduction interventions, especially for vulnerable youth, likely require broader communication strategies to ensure wide public support. Employers' contributions to healthcare benefits may be strained and absenteeism may increase for those unable to cope.

Evidence

"Millions of people in the U.S. are affected by mental illness each year. It's important to measure how common mental illness is, so we can understand its physical, social and financial impact—and so we can show that no one is alone. These numbers are also powerful tools for raising public awareness, stigma-busting and advocating for better health care.

- 23.4% of U.S. adults experienced mental illness in 2024 (61.5 million people). This represents more than 1 in 5 adults.
- 5.6% of U.S. adults experienced serious mental illness in 2024 (14.6 million people). This represents 1 in 20 adults.
- 16.5% of U.S. youth aged 6–17 experienced a mental health disorder in 2016 (7.7 million people). This represents more than 1 in 7 youth."

National Alliance of Mental Illness, "Mental Health By the Numbers," accessed December 16, 2025, <https://www.nami.org/about-mental-illness/mental-health-by-the-numbers/>.

"A significant increase was seen in the percentage of adults with anxiety symptoms and depression symptoms between 2019 and 2022. While many of the percentage point differences were relatively small, significant increases in symptoms of anxiety and depression were seen throughout the subgroups examined, except for adults ages 45–64, adults age 65 and older, Hispanic adults, adults with less than a high school education, and adults with family incomes less than 100% FPL. Asian adults additionally had an increase in depression symptoms between 2019 and 2022. Results from this study are in line with previous findings. Women have been shown to be more likely to be diagnosed with anxiety and depression than men, and both depression and anxiety symptoms have been found to be more common among younger adults. Both higher education level and family income have been associated with lower rates of depression and anxiety. Symptoms of both anxiety and depression have been found to be more common among adults living in rural than in urban settings."

Terlizzi, Emily P., and Benjamin Zablotzky, "Symptoms of Anxiety and Depression Among Adults: United States, 2019 and 2022," *Natl Health Stat Report*, November 7, 2024, <https://pubmed.ncbi.nlm.nih.gov/39591466/>.

“At the turn of the millennium, technology companies created a set of world-changing products that transformed life not just for adults all over the world but for children, too. Young people had been watching television since the 1950s but the new tech was far more portable, personalized and engaging than anything that came before. Yet the companies that developed them had done little or no research on the mental health effects. When faced with growing evidence that their products were harming young people, they mostly engaged in denial, obfuscation, and public relations campaigns. Companies that strive to maximize ‘engagement’ by using psychological tricks to keep young people clicking were the worst offenders. They hooked children during vulnerable developmental stages, while their brains were rapidly rewiring in response to incoming stimulation. This included social media companies, which inflicted their greatest damage on girls, and video game companies and pornography sites, which sank their hooks deepest into boys. By designing a slew of addictive content that entered through kids’ eyes and ears, and by displacing physical play and in-person socializing, these companies have rewired childhood and changed human development on an almost unimaginable scale.”

Haidt, Jonathan, “Generation Anxiety: smartphones have created a gen Z mental health crisis – but there are ways to fix it,” *The Guardian*, March 24, 2024, <https://www.theguardian.com/books/2024/mar/24/the-anxious-generation-jonathan-haidt-book-extract-instagram-tiktok-smartphones-social-media-screens>.

“The study also found that Latinx children are nearly three times as likely to have a prolonged mental health ED visit (lasting longer than 12 hours) than white children. The study showed no significant difference in rates of prolonged ED visits by payer type, as an indicator of socioeconomic status and comparative access based on insurance.”

Ann & Robert H. Lurie Children’s Hospital of Chicago, “Long Wait Times Increase for Children Seeking Emergency Care for Mental Health,” April 5, 2021, <https://www.luriechildrens.org/en/news-stories/long-wait-times-increase-for-children-seeking-emergency-care-for-mental-health/>.

ED: Emergency Department

“Medetomidine, a nonopioid sedative not approved for use in humans, has periodically been detected in illegally manufactured opioids across North America since 2022. On May 11, 2024, the Chicago Department of Public Health (CDPH) and the Illinois Department of Public Health were alerted by hospitals and the Illinois Poison Center to an increase in emergency medical services responses for suspected opioid-involved overdoses with atypical symptoms, mostly clustered on Chicago’s West Side. CDPH and CDC investigated and identified 12 confirmed, 26 probable, and 140 suspected overdoses involving medetomidine mixed with opioids among patients treated at three hospitals in Chicago’s West Side during May 11–17, 2024. Medetomidine had not been previously identified in Chicago’s illegal drug supply. Fentanyl was identified in all drug samples and blood specimens containing medetomidine. Most patients were male, non-Hispanic Black or African American, and aged 45–64 years; most patients with confirmed cases experienced bradycardia and had no or only a partial response to naloxone. This cluster is the largest reported for confirmed medetomidine-involved overdoses.”

Nham, Amy, John N. Le, Shawn A. Thomas, et al., “Overdoses Involving Medetomidine Mixed with Opioids — Chicago, Illinois, May 2024,” *Center for Disease Control*, May 1, 2025, <https://www.cdc.gov/mmwr/volumes/74/wr/mm7415a1.htm>.

“Left untreated, depression can have an adverse impact on work performance; this can be due to difficulties focusing and with decision-making, time management problems, an inability to complete physical tasks, and struggles with communication.

American Psychiatric Association Center for Workplace Mental Health, “Depression in the Workplace,” accessed December 16, 2025, <https://workplacementalhealth.org/mental-health-topics/depression>.

Consider the following examples of how depression affects a person’s ability to participate in the workforce:

- **Presenteeism** – In a survey of 75,000 U.S. adults under age 65, those with depression reported significantly more presenteeism at work than adults without depression (20.1% vs 9.1%).¹⁴
- **Absenteeism** – Amongst 1,000 U.S. employees, 20% reported taking off 1–5 days from work due to an episode of depression, 5% took off 6–10 days, and nearly 4% took off 21 or more days.¹⁵
- **Work productivity loss** – Mean annual adjusted productivity costs among workers with MDD are estimated at \$12,348 per person for Medicare recipients; \$11,811 for Medicaid recipients; \$10,665 for workers with commercial insurance; and \$13,080 for workers insured through the Veterans Administration.¹⁶
- **Cost to employers** – Depression costs workplaces \$198 billion a year.¹⁷

...Between 11% and 49% of workers with depression do not reveal their diagnosis to their employer for fear of losing their job.^{19,20} This disheartening fact underscores the powerful role employers and other leadership can have in setting a tone of acceptance and support that makes employees feel safe asking for help.”

Extra-longevity

Longer healthy lives for many are balanced by chronic disease and dementia for some. Economic and social strains are beginning to appear.

The population of Chicagoland is aging with significant increases expected over the next 25 years. By 2050, the remaining Baby Boomers will be late octogenarians while Millennials will be retiring unless system changes are made. In the metropolitan region, seniors will grow to roughly 23% of the population, with the proportion compared to children under 18 also increasing. While many Americans will live longer, healthier lives, overall healthcare, and social services will be strained, and suitable housing options will need to be adapted. Finding appropriate, affordable housing typologies, in walkable communities, accessible to care workers with available transportation modes for this shifting demographic becomes a critical requirement, particularly for a generation intent on aging in community.

Americans living with dementia are expected to double by 2060. Independent living will likely not be possible for the full cohort without supportive services in place. Age-friendly planning and multi-generational housing can mitigate some of the difficulties for residents so they are able to age in place for longer, but that may require zoning and urban design changes. New pharmacological disease modifying interventions and research into cardiovascular and hormonal contributions to brain performance are hopeful approaches to improve outcomes for patients.

A shortage of skilled workers to replace key positions in healthcare where the increase in demand already outstrips current supply, and in manufacturing, transportation and construction where there is a significant lack of new entrants to the field is putting pressure on the economy. As retirement pools swell, labor market challenges will continue to place some industries at risk and government revenues may be reduced resulting from a smaller tax base. The fiscal challenge of underfunded municipal pensions exacerbates the issue. Some workers may delay retirement due to personal economic strain.

End of life decisions will also impact urban circumstances as the desire for dignified and environmentally sensitive ceremony intersects with cemetery sprawl. In land scarce locations like Singapore, burial is already highly restricted, and cremation has become the norm. Competing demands for urban space can raise conflicts as development proponents question the use of limited space for the dead instead of making room for the living. Complex legal, ethical and environmental issues are associated with the transformation of pre-existing burial grounds.

Relevance for northeastern Illinois

There will be significant changes in housing and transportation needs, especially for seniors no longer able to drive or live without support. The underfunded pension system in Illinois already represents a significant drain on local budgets and requires additional funding measures. As more of the population reaches retirement age, and the workforce shrinks, these costs will increase while tax revenues decline.

Evidence

“Millennials have surpassed Baby Boomers as the nation’s largest living adult generation, according to population estimates from the U.S. Census Bureau. As of July 1, 2019 (the latest date for which population estimates are available), Millennials, whom we define as ages 23 to 38 in 2019, numbered 72.1 million, and Boomers (ages 55 to 73) numbered 71.6 million. Generation X (ages 39 to 54) numbered 65.2 million and is projected to pass the Boomers in population by 2028. The Millennial generation continues to grow as young immigrants expand its ranks. Boomers—whose generation was defined by the boom in U.S. births following World War II—are aging and their numbers shrinking in size as the number of deaths among them exceeds the number of older immigrants arriving in the country.”

Fry, Richard, “Millennials overtake Baby Boomers as America’s largest generation,” *Pew Research Center*, April 28, 2020, <https://www.pewresearch.org/short-reads/2020/04/28/millennials-overtake-baby-boomers-as-americas-largest-generation/>.

“The growing number of older adult homeowners expecting to age in place has significant implications for their individual housing needs as well as for the broader housing market. Nearly 27 percent of older homeowners have lived in their homes for 30 years or more, and approximately 71 percent of older homeowners live in houses that were built before 1990. Older homes often have substantial home maintenance needs and repair costs disproportionately burden lower-income older adult homeowners particularly those with fixed incomes and limited home equity. Research has also shown that even older adults with home equity can have difficulty accessing home equity loans to help pay for necessary modifications and improvements. In addition to costs associated with home improvements and modifications, lower- and fixed-income senior owners may also struggle with rising housing costs related to property taxes and energy bills.

Institute for Housing Studies at DePaul University, “Assessing Obstacles to Aging in Place for Chicago’s Older Homeowners,” May 26, 2023, <https://www.housingstudies.org/releases/older-adults-and-1-4-unit-properties/>.

These national trends are consistent with patterns observed in Chicago and Cook County. HIS data show that the number of older adult-headed households increased by 24.2 percent in Chicago and 15.4 percent in suburban Cook County between 2012 and 2019. By 2019, there were nearly 500,000 older adult-headed households in Cook County with just under 230,000 in the City of Chicago and roughly 263,000 in suburban Cook County. In Chicago, nearly 57 percent of older adults are homeowners, an increase of 12.5 percent from 2012.

In suburban Cook County, over 83 percent of older adults are homeowners, an increase of nearly 17 percent from 2012.

The age and construction style of homes where seniors live may be useful indicators to assess potential challenges and modification needs for older homeowners. An analysis of parcels with active senior exemptions shows that a significant number of older Chicago homeowners live in properties that may present accessibility concerns.”

“Alzheimer’s disease (AD) is a growing public health issue disproportionately affecting adults 65 years and older. This growing trend is accompanied by rising economic, social, emotional, and physical costs, both for patients and their caregivers. As the U.S. population ages, understanding disparities in AD prevalence particularly by gender and age has become increasingly important, particularly in high-burden states like Illinois.

Adeleke, Temitope, Aston Knelsen-Dobson, Sean McGinity, et al., “Alzheimer’s Disease in Illinois: Analyzing Disparities and Projected Trends,” *Geriatrics (Basel)*, October 14, 2025, <https://pmc.ncbi.nlm.nih.gov/articles/PMC12563581/>.

...Risk factors such as diabetes, education, access to care, and socioeconomic status were reviewed in the context of these disparities. Women consistently show higher AD prevalence across age groups and regions, with the greatest increase in cases is projected among adults aged 75 to 84 years, particularly in regions with higher women populations and social vulnerability. If unaddressed, risk factors like lower education, rural residency, and limited healthcare access may worsen these disparities. Addressing them requires focused public health efforts that combine early screening, caregiver support, and regional resource allocation.”

“A comparative analysis of state expenditures finds that Illinois allocates a larger portion of its operational expenditures to pension obligations than most peer states. Illinois’ annual expenditures on state-level public pensions totaled nearly \$12.2 billion, or approximately 11% of Illinois’ total operational expenditures, based on FY2023 national data. This substantial allocation surpasses that of nearly all 12 peer states used for comparison, as well as the national average. This underscores the severity of Illinois’ pension crisis and raises concerns about the state’s ability to adequately invest in other critical public services which suffer from a crowding out effect from the diversion of taxes to pensions and makes it challenging to discern Illinois’ broader fiscal priorities. Concurrently, Illinois residents bear one of the highest tax burdens in the nation at both the state and local level.”

Padula, Lily. “How Illinois Spending Compares to Other States: Tension Between Pensions vs. Public Services.” *Civic Federation*, April 9, 2025. <https://civicfed.org/blog/how-illinois-spending-compares-other-states-tension-between-pensions-vs-public-services>.

“Old graveyards are a forgotten land asset that can find new life as urban parks in crowded cities. As the density of our cities increases, efficient use of urban land becomes paramount. In particular, land for urban parks becomes more important and harder to find.

Stokes, Rob, “Plot twist: how giving old graveyards new life as parks can improve our cities,” *The Conversation*, September 8, 2024, <https://theconversation.com/plot-twist-how-giving-old-graveyards-new-life-as-parks-can-improve-our-cities-236791>.

Church graveyards are one of the land assets left behind as dead space in our cities. Most were closed decades ago as the burial industry created cemeteries and memorial gardens away from churches.

Large necropolises are now being re-imagined as urban parks while continuing as active burial grounds. In contrast, dormant graveyards are largely overlooked as urban pocket parks. Yet these sites are often found in some of the most densely populated parts of cities.

Despite the potential of such sites, there are legal, planning and environmental obstacles to converting unused graveyards into public open spaces. Because graveyards are much smaller than cemeteries and are integrated with other land uses, they often face a more complex regulatory environment.

Neighbours may oppose change, preferring to live next to a quiet graveyard rather than an activated parkland. Many urban church graveyards are zoned for infrastructure purposes, with conversion to parkland requiring development consent.

Social attitudes, such as respect for the dead, or fear of ‘creepy’ places, can also create discomfort at converting graveyards to parkland.”

Augmented Health & Ability

Pharmacological and technical enhancements—even DNA manipulation—will improve long lives for those who can afford it.

Using both genetic enhancement and wearable augmentation, humans are able to reinvent their physical capacities in ways previously unimaginable, even a decade ago. Continuous monitoring of well-being is possible with internal tracking at a cellular level that allows ongoing updating and measuring. We will live longer, active lives enhanced by supportive medical intervention and devices such as integrated exoskeletal robotics that assist our abilities to move, lift and complete precision tasks...if we can afford it.

Combining big data with nanotechnology, bio-enhancement and advancing cognitive science will amplify our capacity to overcome physical and cognitive limitations. Radically overcoming disabilities brings inclusive practices in the urban realm into focus and more complete employment possibilities emerge. Sometimes digital implants just make life easier, like seamlessly moving through locked doorways. Public health in particular could derive epidemiological benefit from incorporation of digital health surveillance and the delivery of personalized preventative programs. The promise of advanced bioengineering and precision medicine is to extend optimal health, but the benefits may not be equally distributed.

The American military has been working to enhance the physical, psychological and cognitive capabilities of human soldiers as a matter of national security and defense. While research into the means of augmentation benefits the American people over time, there are concerns about the boundaries of appropriate use. Ethical considerations of privacy, data ownership and personal agency are raised. The value of abundant and detailed personal information is not lost on the technology sector that sees the economic potential in population health data.

Relevance for northeastern Illinois

Longer healthier lives for some, but those with chronic or debilitating conditions may require extended services for healthcare or housing. Will tech supported humans be able to drive or live independently for longer? Will there be adequate infrastructure available to fulfill their need? How might robotic assistance supplement care? Biotech industries are increasingly important economic drivers, potentially attracting highly skilled workers and additional investment in the region.

Evidence

“Wearable healthcare monitoring devices have been introduced because of recent developments in the major fields of electronics, materials, and biology and their integration with the Internet of Things (IoT)]. These devices can non-invasively sample bodily fluids like blood, interstitial fluid, sweat, urine, saliva, and tears and transmit the measured data to smartphones and healthcare departments, who then use it to provide periodic information about the patients’ conditions that is related to diagnostic, monitoring, and therapeutics. These devices also help to decentralize healthcare, relieve pressure on healthcare sectors, and provide highly personalized and real-time healthcare data at the point of need]. It is predicted that in the next 25 years, the global healthcare sector will save USD 200 billion.”

Kazanskiy, Nikolay L., Svetlana N. Khonina, and Muhammad A. Butt, “Smart Contact Lenses—A Step towards Non-Invasive Continuous Eye Health Monitoring,” *Biosensors (Basel)*, October 18, 2023, <https://pmc.ncbi.nlm.nih.gov/articles/PMC10605521/>.

“By combining conventional embroidery with automated milling, NASA innovators have created cost-effective e-textiles that offer improved conductivity and design flexibility, including the ability to create more complex geometric patterns. This opens up new possibilities for clothing, spacesuits, and accessories that can monitor health metrics or transmit data in real time without sacrificing comfort or fashion.

NASA Technology Transfer Program, “NASA Advances Wearable Technology and Human Augmentation,” accessed December 16, 2025, <https://technology.nasa.gov/Wearable-Technology-Human-Augmentation>.

Human augmentation technologies, such as NASA’s soft wearable robotic exoskeleton, are transforming rehabilitation for patients with neurological impairments. This portable device allows for task-specific motor rehabilitation outside of clinical settings, improving upper-limb mobility for those recovering from injuries or stroke. Beyond healthcare, it also holds potential for augmenting human performance in demanding applications such as space missions or industrial tasks.”

“The future of human enhancement in the military domain holds transformative potential, offering profound implications for national security, combat readiness and soldier capabilities, even in small countries. This report aims to explore the horizon of possibilities afforded by advancements in technology that can amplify human physical and cognitive abilities. As nations increasingly invest in military technology, understanding these enhancements’ ethical, strategic and operational dimensions becomes imperative.

Klerx, Joachim. “The Future of Human Enhancement in the Military Domain.” In *ICARUS’ Wings: Navigating Human Enhancement*, edited by Anton Dengg, (Schriftenreihe der Landesverteidigungsakademie, no. 3/2025). Vienna: Austrian Ministry of Defence, April 2025. ISBN 978-3-903548-06-0. https://www.bmlv.gv.at/pdf_pool/publikationen/book_icarus_wings_04_klerx_technology.pdf

Recommendations...Establish clear ethical and legal frameworks: human enhancement technologies challenge existing ethical norms and legal frameworks, particularly regarding autonomy, privacy and the implications of creating “augmented” soldiers. Policymakers must work to establish robust ethical guidelines and international norms that govern the research, deployment and use of these technologies. These frameworks should prioritise transparency, informed consent and the reversibility of enhancements to safeguard human dignity and rights. Additionally, clear legal protocols must address liability issues, particularly in scenarios where enhanced soldiers are deployed alongside autonomous systems.

...Monitor and address societal implications: the deployment of human enhancement technologies within the military will inevitably influence broader societal perceptions of these advancements. Policymakers must actively monitor public sentiment, address concerns about inequality or misuse and engage in transparent communication about the purpose and limitations of these technologies. Building trust and ensuring public accountability will be essential to sustaining long-term support for military innovation.”

“The US has positioned itself as the leading power in the field of augmented soldiers. Indeed, the American Department of Defense (DoD), notably through the Defense Advanced Research Projects Agency (DARPA), has not hidden the fact that it aims to develop « super soldiers », considering in particular that “soldiers with no physical, physiological, or cognitive limitations will be the key to survival and operational dominance in the future.”

Is the Augmented Human Revolution Already Here?
Polytechnique Insights, June 23, 2022. <https://www.polytechnique-insights.com/en/braincamps/society/work-health-military-is-the-augmented-human-revolution-already-here/super-soldiers-augmented-humans-in-wartime/>

... Augmentation can potentially meet some of their needs. Material devices can, for example, lighten the heavy load a combatant is carrying and reduce fatigue from long marches, etc. Medication, for its part, can reduce stress or exhaustion. However, these should not mask the many and varied associated problems, particularly in ethical terms.“

City in a Garden

Cultivating green space is good for mental health and creates a sense of belonging

With increased movement to urban living globally, city residents often sense a disconnect from nature that affects their well-being. Many suffer from sensory overload caused by endless noise, limited access to visual relief, and continuous exposure to unpleasant smells. Green space can be an antidote to the stress of constant commotion and the crowding of tight living quarters. The region's reputation for extensive parks and treelined streets is well earned but recent reductions in the tree canopy are concerning. More trees are dying as they age and are impacted by current climate-exacerbated pests and diseases.

The long growth span of a tree encapsulates the essence of futures thinking; one tree planted now can yield benefits over a century or more. However, current replacement plantings for the reduced canopy have not kept pace with the rate of decline. Despite recent efforts through programs like the "Our Roots Chicago" mayoral promise to plant 75,000 trees over 5 years, more coverage is needed if heat reduction and stormwater management are to be actualized. Accelerated plantings, especially for low-income areas, may be difficult to sustain as federal funding levels change over time.

Air quality improvements can be generated by continuing to plant trees throughout the region. Those with respiratory illnesses benefit from the reduction in airborne particulate matter and absorption of gases such as ozone, sulfur dioxide, and carbon monoxide that trees provide. Heat related illnesses that increase with higher summer temperatures can be modulated with increased shade from urban forests.

Beyond trees, community gardens also provide increased access to fresh food and the chance to be physically active and reduce stress for many. Urban gardeners see the key function of a community garden as an opportunity to interact with nature while forging social connections.

"Green prescriptions" are rising as a medically sanctioned treatment for wellness and assets in the form of parks, vegetation and gardens provide necessary relief from pressures. With a large green space allotment within the region, many residents are able to access natural settings and more rural situations to boost the healing effects of exposure to plant and animal life in an immersive setting. Conservation areas, parks, trails and recreation venues can provide inexpensive opportunities for people to recharge. However, not

everyone is able to get to these locations without a car and those who require mobility devices may find some areas less welcoming. Recent pushback from some residents suggests that green space insertion into more affordable neighborhoods, while providing benefits, may also attract displacing gentrification. It is a reminder that development pressures will need to be considered as the region grows, in order both to protect natural spaces but also to ensure that an equitable distribution of green space is considered.

Relevance for northeastern Illinois

The importance of maintaining collective spaces that provide access to nature in the region is likely to become critical as densification increases and particularly if population expands. The region's green assets serve as a climate resilience strategy, but the impacts of a changing climate will put strain on trees in particular. The current canopy requires attention to ensure it thrives.

Evidence

"This week, a United Nations report suggested that more than 80% of people are now urbanites, with most of those living in cities. London became the first city to reach a million inhabitants in the early 19th century. Now, almost 500 have done so.

Jakarta, with 42 million residents, has just overtaken Tokyo as the most populous of the lot; nine of the 10 largest megacities are in Asia. The UN report revealed the scale of the recent population shift to towns and cities thanks to a new, standardised measure in place of the widely varying national criteria previously used. The urbanisation rate in its 2018 report was just 55%.

Jakarta's explosive growth—its population has grown almost 30-fold since 1950—demonstrates both the costs of rapid urbanisation and the difficulties of addressing them. It is choked by traffic and pollution, regularly floods and is sinking fast due to the overextraction of groundwater. The government is now building a new administrative capital more than 1,000km away, in Borneo. But such projects have an uninspiring record. The new city of Nusantara is behind schedule and short on funding and would-be inhabitants.

Most thriving cities are more spontaneous affairs. The typical image of urbanisation is of young people lured by the promise of prosperity. But the late urbanist Mike Davis also pointed to waves of migration driven by growing rural desperation thanks to agricultural deregulation and punishing fiscal policies enforced by the International Monetary Fund and World Bank.

"The Guardian view on city living: an urban species is still adapting to our new environment." The Guardian, November 27, 2025. <https://www.theguardian.com/commentisfree/2025/nov/27/the-guardian-view-on-city-living-an-urban-species-is-still-adapting-to-our-new-environment>.

...The benefits of cities are obvious. They are hubs of productivity, creativity and diversity that boost social and economic development. New York City's gross product—\$1.8tn last year—easily exceeds the GDP of Turkey or Saudi Arabia. That helps to explain why some cities are growing stronger as political—even diplomatic—entities.”

“As the proportion of the global population living in cities rises to 70% by 2050, mental health challenges more common in urbanites—such as anxiety and mood disorders—become even more broadly relevant. A new study from Harvard T.H. Chan School of Public Health and the Natural Capital Project (NatCap) at Stanford University shows that spending even a little time in nature provides significant benefits for a broad range of mental health conditions. The results, published today in *Nature Cities*, offer guidance to urban planners, policymakers, and others for how to use greenspace as a mental health solution, one that comes with additional benefits like lowering temperatures and sequestering carbon. The research team is now incorporating its findings into a modeling tool for urban planners.

‘We are working to translate what we found through this analysis to create more intuitive indicators that would be useful for decision-makers,’ said Yingjie Li, postdoctoral scholar at NatCap and lead author of the study. ‘For example, if a city currently has 20% green space or tree cover, we can try to predict how many preventable cases of mental health disorders could be avoided if that were increased to 30%. Our software will also estimate the potential reduction in healthcare costs associated with such improvements in urban nature.’

...Based on the findings of this analysis, while larger city parks and forests are critical, the researchers suggest it is also important to create smaller ‘pocket parks’ and additional street trees to increase access throughout cities. Even additional windows with views facing green spaces could be beneficial, as well as quiet, nature-filled spaces and community programming that provides passive nature exposure such as guided park meditation—relatively low-cost methods for improving public health in cities.”

Stearns, Carly. “For city dwellers, even 15 minutes in nature can improve mental health.” *Harvard T.H. Chan School of Public Health*, July 30, 2025. <https://hsph.harvard.edu/environmental-health/news/for-city-dwellers-even-15-minutes-in-nature-can-improve-mental-health/>.

“A century ago, Chicago was a leader in shading its neighborhoods with an urban forest. But as Chicago continues to lose trees, other cities have caught up and surpassed us.

For a host of environmental and quality-of-life reasons, It's time Chicago worked to regain its status as exceptional when it comes to tree-lined streets. Since 2010, due to disease and other factors, Chicago has lost an average of 10,000 more trees than it has planted every year. That's 200 fewer trees in each of the city's 50 wards on average each year.

CST Editorial Board. “Chicago fails to live up to its motto — City in a Garden — with every tree lost.” *Chicago Sun Times*, June 21, 2020. <https://chicago.suntimes.com/2020/6/21/21297317/chicago-trees-urban-forest-environment-neighborhoods-suntimes-editorial-openlands-urbs-in-horto>.

The city now has a tree canopy that covers just 19% of its land. The metropolitan area has a canopy of 15.5%. By comparison, New York has 21% coverage and Los Angeles has 25%. Restoring Chicago's urban forest will be a big job, but the longer we wait, the more difficult the job becomes. New trees need many years to grow to maturity."

"Residents of Chicago's marginalized communities want to cash in on that towering natural greenery.

'There's beauty, there's comfort, there's economy, there's ecology,' says Naomi Davis, founder of Blacks in Green, a nonprofit based in West Woodlawn that promotes green, walkable and self-sustaining African American communities. 'In this climate crisis that we're in, we definitely need all of the cooling tools that we can garner,' Davis says. 'So, we love trees.'

But Chicago's trees are not equally distributed. A tree equity map in the city's 2-22 Climate Action Plan shows that South, West and Southwest Side neighborhoods are most in need.

Some majority-white census tracts have a tree canopy of 30% or more. In historically under-resourced census tracts—predominantly Black and Latino—the coverage drops as low as 4% to 10%. The citywide average is 16%."

Shelton, Deborah L. "How trees contribute to a community's wealth and well-being." *Crain's Chicago Business*, August 12, 2022. <https://www.chicagobusiness.com/equity/chicago-has-tree-inequity-problem>.

"Spending more time in nature has been linked with better health outcomes like lower blood pressure, better sleep, and improvement in many chronic conditions in adults. These findings are prompting a growing interest in forest therapy, a guided outdoor healing practice that leads to overall improved well-being. But what's also remarkable are the varied benefits of trees and nature for children. One study of children 4 to 6 years old found that those who lived close to green space demonstrated less hyperactive behavior and scored more highly on attention and visual memory testing measures compared with children who did not.

Armand, Wynne. "How do trees and green spaces enhance our health?" *Harvard Health Publishing*, April 19, 2024. <https://www.health.harvard.edu/blog/how-do-trees-and-green-spaces-enhance-our-health-202404193034>.

...Having green space in neighborhoods also does a lot to enrich the well-being of communities. A randomized trial in a US city planted and maintained grass and trees in previously vacant lots. Researchers then compared these green spaces to lots that were left alone.

In neighborhoods below the poverty line, there was a reduction in crime for areas with greened lots compared to untouched vacant lots. Meanwhile, residents who lived near lots that were greened reported feeling safer and increased their use of the outside space for relaxing and socializing."

“Community gardens serve as catalysts for community engagement, fostering a sense of belongingness and social cohesion. To ensure the success of community gardens, it is essential to actively involve community members in all stages of the garden project. This includes planning, design, implementation, and maintenance. Community engagement strategies could range from organizing workshops and events to involving local schools, businesses, and organizations. According to Maria Rodriguez, an urban planner, ‘Active community involvement in community gardens creates a sense of ownership and pride among residents. It strengthens social bonds and promotes a collective effort towards a common goal.’ A case study on Bridgeport Community Garden in Chicago demonstrates the power of community engagement in transforming vacant lots into vibrant and thriving gardens. The Bridgeport Community Garden is an exemplary model of community-led revitalization. When a group of residents identified a vacant lot in their neighborhood, they took the initiative to transform it into a community garden through collective efforts. They organized community meetings, collaborated with local stakeholders, and sought funding support to establish the garden. Today, the garden serves as a hub for community events and educational workshops, providing a shared space for residents to connect, learn, and grow together.”

Chovy. “The Growing Importance of Community Gardens in Chicago.” *Community Gardens as Appleseeds*, December 9, 2023. <https://communitygardensasappleseeds.info/blog/the-growing-importance-of-community-gardens-in-chicago>.

SHIFT 4

Centralized & Distributed

More distributed and collaborative models of shared information, participatory governance and meshed computational networks are driving deep change in expectations and behavior. Simultaneously, concentration of influence and decision-making benefits those who hold the controls and refuse to let go.

In this Section

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Cryptocurrency & Blockchain

Digital currencies provide increased transparency but have the potential to disrupt traditional financial systems.

Global volatility of economic systems and markets impacts the mood of financial institutions locally. Risk management becomes the driving force for banks. Alternate sources of funds and new transactional activities, both legal and illegal, are emerging to fill the void. A “Strategic Bitcoin Reserve” was proposed in the USA at the federal level by executive order in March 2025 as part of a sovereign investment strategy to distribute risk.

Cryptocurrency is a decentralized, non-sovereign, borderless, digital currency that allows people to make financial transactions using online platforms. It operates using blockchain, which is a distributed ledger of transactions that provides transparency and secure record keeping across a network of computers while bypassing traditional banking activities. Because human validation of identification is not required and an internet connection is the only prerequisite, crypto has been seen as a convenient platform for illegal transactions. Reduced oversight allows criminals to launder money, demand payment for ransomware attacks, trade goods such as illegal drugs and firearms, and hide embezzled funds. On the flip side, those who have been disenfranchised by traditional financial institutions, the “unbanked” may view crypto as a path to economic inclusion and means to guard against inflation or uncertainty.

Crypto mining “farms”, where new “coins” are created by solving an increasingly difficult series of mathematical puzzles and thus validating each currency transaction, require energy intensive computing capability. Warehouses of computers require extreme amounts of electricity to run and cool the facilities, putting strains on energy grids and contributing to local air and water pollution. Illinois is attracting crypto mining operations and their associated jobs due in part to favorable energy rates and access to the waters of Lake Michigan and its surrounding watershed for cooling.

In addition to its use for protecting the value of crypto, blockchain is also a particularly useful tool for tracking digital information. Transaction data that is entered into a shared network of computers around the world is ultimately immutable; it cannot be changed once it has been translated into a block of information that has been chained together with other blocks. This forms the linear, chronological history of the series of transactions. Supply chains can be efficiently traced and transportation systems can be monitored.

Relevance for northeastern Illinois

Cryptocurrency use may enable nefarious actors to increase scams and other predatory activity, amplifying risks to citizens and governments. Data centers and mines could increase the environmental burden in the region if renewable energy sources are not mandated. Governments and residents may benefit from enhanced data security and improved transparency of information, especially on public spending, if blockchain is deployed.

Evidence

“Beyond adoption and investment, Illinois is emerging as a hub for cryptocurrency mining. With its relatively affordable energy rates and evolving regulations, mining operations are expanding across the state. Illinois is pushing for sustainable mining practices, encouraging the use of renewable energy sources such as wind and solar power. Companies are investing in energy-efficient mining rigs to reduce their carbon footprint while maximizing profits.

The state government is working on policies to ensure fair energy usage while supporting mining operations. Tax incentives for green mining initiatives are also being explored.

And when it comes to economic impact, crypto mining is creating new job opportunities in Illinois, attracting skilled workers in blockchain technology, cybersecurity, and data management.”

“Crypto industry in Illinois in 2025.” *The Daily Illini*, February 28, 2025. <https://dailyillini.com/sponsored/2025/02/28/crypto-industry-in-illinois-in-2025/>.

“Bitcoin is a digital currency which operates free of any central control or the oversight of banks or governments. Instead it relies on peer-to-peer software and cryptography.

A public ledger records all bitcoin transactions and copies are held on servers around the world. Anyone with a spare computer can set up one of these servers, known as a node. Consensus on who owns which coins is reached cryptographically across these nodes rather than relying on a central source of trust like a bank.

Every transaction is publicly broadcast to the network and shared from node to node. Every ten minutes or so these transactions are collected together by miners into a group called a block and added permanently to the blockchain. This is the definitive account book of bitcoin.

In much the same way you would keep traditional coins in a physical wallet, virtual currencies are held in digital wallets and can be accessed from client software or a range of online and hardware tools.”

Sparkes, Matthew. “What is bitcoin and how does it work?” *New Scientist*, n.d. <https://www.newscientist.com/definition/bitcoin/>

“Blockchain in supply chain management uses blockchain’s decentralized, trusted, distributed ledger technology to provide transparency and traceability of transactions within a supply chain. Typically, a permissioned blockchain is used in a supply chain, meaning that users must be members of the relevant blockchain consortium or invited by a member. Each transaction is recorded within a block in the chain, creating a secure and trustworthy record of exchanges between parties. Once written, transactions can’t be changed. Any attempt to alter records will be discovered since multiple copies of the transaction are recorded. Blockchain use reduces fraud and increases efficiency by providing real-time visibility of goods as they move through the supply chain. For supply chain management, blockchain can be an ideal tool and provide additional valuable benefits, including the following:

- The ability to verify the authenticity of products, track items from origin to destination, and ensure compliance with controls such as storage temperature and humidity.
- Validated data that can be audited by multiple parties means fraudulent updates or errors are reliably caught.
- Smart contracts automatically execute payments at agreed-on milestones, such as delivery of items in good condition, helping with cash flow”

Chen, Michael, “Blockchain for Supply Chain: Uses and Benefits,” *Oracle Canada*, August 8, 2024, <https://www.oracle.com/ca-en/blockchain/what-is-blockchain/blockchain-for-supply-chain/>.

“One of the biggest challenges in smart cities is ensuring the integrity and security of the data that is collected and processed. Blockchain technology provides a secure and tamper-proof way of recording information, making it a valuable tool for ensuring the integrity of data in smart cities. Additionally, the decentralised nature of blockchain makes it resistant to hacking, tampering, and other forms of fraud, providing a secure platform for collecting and processing sensitive data.”

Chalopin, Jean, and Robin Trehan, “How Smart Cities Use Blockchain,” *Deltec Bank*, accessed December 16, 2025, <https://www.deltecbank.com/news-and-insights/how-smart-cities-use-blockchain/>.

“Each bitcoin transaction generates carbon emissions roughly equivalent to driving a gasoline-powered car between 1,600 and 2,600 kilometres. This highlights the high environmental cost of each transaction on the network and underscores the need for solutions to reduce this impact.

Onat, Nuri C., and Murat Kucukvar, “The large environmental consequences of bitcoin mining,” *London School Economics and Political Science*, November 8, 2024, <https://blogs.lse.ac.uk/businessreview/2024/11/08/the-large-environmental-consequences-of-bitcoin-mining/>.

Bitcoin mining relies on the proof of work (PoW) system, in which high-performance computers work to verify transactions and secure the blockchain network. This process demands enormous amounts of electricity, estimated to reach around 63 terawatt-hours (TWh) annually, roughly the same as the annual energy consumption of Poland. As fossil fuels remain a primary source of electricity in many mining regions, this energy use translates directly into greenhouse gas emissions, which drive global climate change. The energy consumption of bitcoin mining adds a considerable amount to global carbon emissions and are comparable to the annual emissions of entire nations.”

“Buying or selling bitcoin uses 16,000 litres of clean water for every single transaction, which could exacerbate existing droughts around the world. While the energy consumption and carbon emissions produced by bitcoin and other cryptocurrencies have been well studied, this is the first assessment of its water use and wider environmental impact.

Alex de Vries at the VU Amsterdam School of Business and Economics in the Netherlands has calculated that mining—the computational process that secures the bitcoin network—uses between 8.6 and 35.1 billion litres of water per year in the US alone. He says that bitcoin used 1.6 trillion litres of water globally in 2021, and expects this to rise to 2.3 trillion litres this year. Broken down per transaction, that means a single bitcoin trade consumes 16,000 litres of water—enough to fill a small swimming pool. This is ‘increasingly hard to defend’, says de Vries.”

Sparkes, Matthew, “A single bitcoin transaction uses enough water to fill a swimming pool,” *NewScientist*, November 29, 2023, <https://www.newscientist.com/article/2404219-a-single-bitcoin-transaction-uses-enough-water-to-fill-a-swimming-pool/>.

Fractional Ownership

Sharing or collaborative consumption is reaching into a wide range of assets previously only used individually.

The notion of sharing the costs of investment and usage rights, especially for expensive assets like vacation properties and aircraft, has been built on centuries old practices where groups pool capital to make an otherwise unaffordable purchase. In the City of Chicago, housing cooperatives where co-owner residents share responsibilities including building maintenance and some common areas, were first introduced in the 1920's and expanded in the 1960's. Today, unable to enter the housing market due to prohibitive pricing in urban areas, young people are exploring alternative models for home co-ownership with joint mortgages. Lending institutions have been hesitant to enter into financial contracts with unrelated groups, for example unmarried friends, insisting on more detailed paperwork and critical examination of prior financial records to ensure risk is diffused. Affordable, limited-equity co-op models that cap resale value of shares also ensure ongoing access for low income residents.

In the digital age, people who need or want goods can access non-ownership models for in-real-life consumption of ever more unexpected assets through the sharing economy or collaborative consumption. Those with idle assets can temporarily monetize their goods, giving users more affordable short-term access to what they need without the hassles of maintenance or capital investment. Emerging on-demand business models are disrupting established companies as they alter cost-structures and expectations. Streaming services replace owning releases of music or theatrical performance. Rent-the runway services allow multiple users access to the same designer garment over time. SpotHero allows those with parking spaces to rent out their location when not in use. For construction businesses, rental of costly equipment purchases has been replaced with shorter term rentals that reduce capital investments that can otherwise stall project initiation. Although this increase in distributed use of assets can be seen as reducing overall consumption, it also suggests a shift in thinking towards the financialization of many aspects of daily life.

Sustainability is often cited as a motivation for users in the sharing economy. Shared consumption can enhance resource optimization, but environmental benefits can also be diminished if participants, having participated in lower emissions generating behavior, reward themselves with additional consumption in another category of goods or services. For example, carsharing that allows non-owners access to a vehicle can unintentionally lead to more car dependency due to convenience considerations rather than increased transit use.

Relevance for northeastern Illinois

Encouragement and support of new affordable models for homeownership can boost community stability and revitalization, while encouraging young people to remain in the region. Shared mobility will impact transportation throughout the region, with the potential for fewer transit riders and more cars on the roads.

Evidence

“Fractional ownership is transforming real estate by letting multiple investors pool resources to buy high-value properties. In 2025, it’s driven by younger investors, blockchain technology, and a shift toward residential and sustainable properties. Key highlights include:

- Investor Demographics: 60% of fractional investors are under 40.
- Blockchain & Tokenization: Simplifies buying and selling property shares, with tokenized real estate projected to grow to \$19.4 billion by 2033.
- Market Focus: Rising interest in residential investments, suburban markets, and green-certified properties.
- Platforms Like Lofty: Allow investments starting at \$50, making real estate accessible to more people.
- Institutional Growth: Transaction volumes from institutional investors rose 43% in Q1 2025.

This model reduces entry costs, offers diversification, and provides rental income opportunities. Challenges include shared decision-making, regulatory complexities, and liquidity constraints. Despite these hurdles, fractional ownership is becoming a mainstream investment strategy, reshaping how Americans invest in real estate.”

Chu, Jerry, “Fractional Ownership Trends in 2025,” *Lofty*, November 15, 2025, <https://www.lofty.ai/learn/fractional-ownership-trends-in-2025>.

“A group of South Shore residents hope that their plans to take shared ownership of a rundown building on 71st Street will serve as a blueprint for revitalizing the neighborhood’s commercial corridor.

The South Shore Community Development Corp. recently closed on the property, west of Jeffrey Boulevard, and expects to begin a nearly \$3 million rehab. Once that’s complete, community members will have the opportunity to invest in and take control of the building and also make additional investments in the neighborhood.

Fewer nail salons and dollar stores and more dine-in restaurants and boutiques are what the community is looking for, says Tonya Trice, executive director of the South Shore CDC. ‘We want to make these buildings a model of what redevelopment looks like on 71st Street.’

Crown, Judith, “Chicago working-class communities see opportunity in alternative wealth-building models,” *Crain’s Chicago Business*, April 14, 2025, <https://www.chicagobusiness.com/equity/shared-ownership-models-gain-traction-chicago>.

The idea of shared ownership is gaining traction as a way to build wealth, ownership and control in disinvested South and West Side neighborhoods. It has been more widely adopted nationwide in residential real estate, where land trusts and co-ops have been formed as a response to rising rents and property taxes, especially in gentrifying neighborhoods.

More recently, shared ownership is being applied in commercial real estate to support and protect small businesses, control the mix of tenants, improve neighborhoods and earn a return on investment.”

“In a circular economy, biological materials are the only ones that can be thought of as consumable, while technical materials are used. It makes no sense to say that we consume our washing machines and cars in the same way that we consume food. This is a subtle, but important distinction in how we view our relationship to materials.

Further to this, it raises questions about the necessity of owning products in the way that we traditionally do. What benefit is there in owning a drill when you just want to put holes in your wall to hang a picture? It is access to the service a product provides that is important, rather than the product itself. Understanding this shift in mindset lays the groundwork to many of the practicalities of shifting our economy from linear to circular.”

The Ellen MacArthur Foundation, “The circular economy in detail,” September 15, 2019, <https://www.ellenmacarthurfoundation.org/the-circular-economy-in-detail-deep-dive#:~:text=It%20is%20based%20on%20three,products%20in%20use%2C%20and%20the>.

“Economically, the timing to dismantle a taboo social construct in fashion is unmistakable. The Business of Fashion (BoF) reported in late 2024 that aspirational consumers—especially younger ones—are pulling back as inflation reshapes discretionary spending. In Canada, where consumer debt levels are among the highest in the G7, dressing for milestone events in \$1,000 (or more) gowns is simply out of reach for most, especially in an entertainment market that isn’t primary.

Samuel, Danica. “Canada’s Fashion Rental Boom Marks a Sharing Economy Shift.” *Vainqueur Magazine*, August 21, 2025. <https://www.vainqueurmag.ca/article/canadas-fashion-rental-boom>

...With the pivot to influential actors, entertainers and more announcing their choice for vintage finds and rentals on the red carpet (ex., eBay at the Met Gala), it is making a point that sustainability is no longer an optional talking point within the infrastructure of fashion culture.

Rentals are one of the many solutions to fashion’s overproduction, where landfills in Ghana and Chile are stacked with discarded clothing, much of it unworn. ‘We have an in-house team who goes over the garments, repairs anything, and just keeps them in great condition,’ Kalinowski explains. ‘It’s more sustainable in general, as we all know now that the textile industry is one of the most wasteful industries in the world.’

...For decades, fashion equated ownership with status. The Birkin bag wasn’t just a purse; it was a social signal. Renting, by contrast, was coded as compromise, an admission that one didn’t truly belong in the luxury class. However, the

sharing economy is causing this social order within the industry to erode, particularly with what possessions say about a person.”

“As construction has become increasingly specialized over time, there has been a shift in rental models. Construction companies are adopting micro-rental models, which involve hour-based, task-specific, or ultra-short-term equipment rentals, offering flexibility that traditional day or week-long rentals cannot match.

2025 marked a shift in the overall construction industry, with a focus on niche construction jobs, including solar panel installation and fiber-optic rollouts. Contractors in these niches are usually not willing to pay for equipment on a full-time basis, as it is required for only 1-2 weeks at most, which necessitates equipment availability for a few weeks.”

“The Sharing Economy has been suggested as a sustainable mode of consumption due to its potential to lower resource use and waste generation. A better understanding of sharing drivers, consumption dynamics, and their interlinkages is essential to suitably appraise the role that sharing practices can play in sustainable transitions.

...Based on our results, we suggest that, to ensure the implementation of the Sharing Economy as a sustainable mode of consumption, it is necessary to increase awareness of the environmental rebound effects caused by re-spending. Consumers could thus be more motivated to share for environmental reasons, identify themselves with sustainability and decide to abstain from morally licensing themselves to re-spend their extra disposable income on Carbon Footprint intense activities.”

Fatima, Rida, “Mid-2025 Rental Industry Pulse: Trends Shaping Construction Equipment Rentals This Year,” *EZO*, October 16, 2025, <https://ezo.io/ezrentout/blog/construction-equipment-rentals-trends/>.

Jemio, Patricia Ribera, Albert Merino-Saum, Ralph Hansmann, Claudia R. Binder, “Is the sharing economy a sustainable mode of consumption? An empirical case study of sharing of household goods and environmental rebound effects in a university context,” *Cleaner and Responsible Consumption*, September 2024, <https://doi.org/10.1016/j.clrc.2024.100210>.

Getting from Here to There

Changes in vehicle innovation and transportation habits will have deep impacts for the region's systems.

Transportation planning is by its nature future focused; moving people, services and goods through the region and around the world requires anticipation of emerging technology and deployment of capital investment for infrastructure in line with morphing needs and changing attitudes. Autonomous cars, trucks and delivery vehicles will complicate the mobility mix in areas already struggling to manage multi-modal transportation pathways and public/private jurisdiction of key network elements.

Effective movement throughout the region contributes to general prosperity and resident satisfaction. In fact, both economic competitiveness and regional self-image are indelibly tied to the perception of Chicagoland as a supremely multi-modal hub in North America. This is where air, rail, road and pipeline systems convene. Industrial development is bolstered by efficient transportation systems, allowing workers to convene at workplaces, supplies to be received, and finished goods to be sent to market, including energy and water. Smart systems that can effectively smooth the traffic flow and the insertion of autonomous vehicle interventions into the mix will add complexity to the physical landscape of the region. However, both construction and maintenance costs of transportation infrastructure are high and the added expense of sensors and embedded technology need to be considered and accounted for.

The post-pandemic acceleration of remote work practices has disrupted human resource behavior in business significantly. Despite efforts by large companies to encourage return to office arrangements, more employers are competing for scarce (or defiantly non-compliant) talent by offering flexible hybrid arrangements for work. Advances in digital technology including 5G cellular networks makes seamless connection possible for many, (at a cost). Remote workers in the region with time to spare during their days may choose to shop more locally, often in smaller neighborhoods and suburbs outside the downtown area, boosting home office supply, technology assistance, and recreation goods and service businesses in particular. Spotlighting more local amenities may draw residents to the region overall, while efforts to attract foot traffic to the downtown core, especially focusing on outdoor amenities in the summer, requires continuous focus. Despite higher fuel prices for cars, expanded transit routes and frequency, public transit commuting to reach one's office remains lower than before 2020, although transit use for other purposes has increased. Boosting transit use to reduce emissions will require still more funding and boosted service levels at a time of overall fiscal challenges.

Sustainability measures, already in play, require intensification to achieve carbon-neutrality. The transition to EVs as personal transportation and as part of the regional government fleets and transit vehicles will make definite positive contributions to greenhouse gas emission reduction. The heavier weight of vehicles will, however, also impact road durability resulting in more frequent maintenance requirements. Air quality is likely to deteriorate near roadways as weight increases tire wear and subsequent surface disintegration push more particulate matter including microplastics and volatile organic compounds (VOCs) into nearby areas. Waterways may also be affected as rain washes the particulate into rivers, streams, and marshes, especially in agricultural zones adjacent to heavier traffic. The substitution of aluminum for steel parts will lighten vehicles over time but manufacturing processes are subject to supply chain barriers and tariff constraints.

Active transport policies that encourage walking, cycling as well as the use of personal electric vehicles such as scooters, e-bikes, and electric unicycles will help to limit GHG emissions, reduce congestion, and promote health. Northeastern Illinois covers an extensive land area making non-car transport complicated in areas with less density. For those who wish to adopt active movement, expanded signage, appropriate lighting and safety measures, and dedicated pathways are required. Active transit especially requires investment in safe and accessible pathways to increase confidence and convert riders.

The promise of automated transportation has been slower to materialize than expected with respect to personal automated vehicles (AVs) which have faced safety concerns and regulatory hurdles to their adoption. However, robotaxis that operate without safety drivers have begun to proliferate in major cities across the U.S. Waymo, a subsidiary of Alphabet, currently operates in six American cities in complex road conditions such as downtown areas and highways, and intends rapid expansion in 2026 and beyond.

Last mile logistics using automated delivery vehicles depends on AI and precise GPS navigation systems to get goods to customers. Reduced costs and operational efficiencies are motivating companies to test expanded drone-based services to meet demands for rapid, contactless fulfillment, including to more remote locations. Pre-existing roadways and sidewalks dictate the movement of drones and driverless vehicles that operate on land, but the skies remain open territory. There is little clarity about who owns airspace above our homes and office buildings and few regulations or controls beyond safety boundaries to limit interference with privacy and data collection.

Transportation and materials movement remains a significant job category that is being transformed by automation according to the Bureau of Labor Statistics. The economic advantage of driverless trucks that can operate without breaks for 24 hours a day on hub-to-hub, mid-distance routes provides an important logistical benefit. Automated truck sales are expected to outpace personal AVs in the nearer term. Associated future job reductions will overwhelmingly impact older, less skilled, male workers with fewer transitional prospects.

Relevance for northeastern Illinois

Transit use is an effective and necessary alternative to personal vehicles but, despite some recent gains in off-peak hours, ridership recovery has been slow across North America since the pandemic. Public perception of transit as a reliable, safe, and clean option for regular transportation is tied to rates of use. More encouragement, including maintenance of reasonable fare rates and promotion of micro-transit, may be required to boost participation. Adaptive service models to match changing or more fluid travel patterns will be necessary.

Regional maintenance and infrastructure renewal will be an ongoing necessity. EVs and Automated Vehicles will require new considerations for roadways, including grid reinforcement and building code updates. There is a need for clarity regarding governance and data collection from vehicles. Communications of environmental quality considerations due to EVs from a public health perspective may be required.

Evidence

“As of 2025, 11 transit agencies serve Chicagoland, but the big three—CTA, Metra, and Pace—remain the backbone. Together, they carried more than 33 million rides in May 2025 alone. While still climbing back from the pandemic, ridership has now grown for three straight years.

Today, about one in four commuters rely on transit in some way. That makes Chicago one of the most transit-dependent regions in the country—and one of the most economically impacted. The reach goes far beyond those who tap a Ventra card each day.

...Researchers at Argonne National Laboratory and MIT found that Chicago’s transit system delivers one of the highest returns on investment in the nation: nearly \$13 in economic output for every \$1 invested... The benefits are clear. But the system also faces a \$771 million funding cliff. Without new solutions, Chicagoland could see 40% cuts in service: 74 bus routes lost, 50 ‘L’ stations closed, 70 miles of rail eliminated, and 3,000 jobs gone. That kind of contraction would ripple through the economy, adding up to \$35.4 billion a year in losses. The choice is stark: invest now, or risk losing one of our greatest competitive advantages. Transit is not just a way to get to work or school—it’s an engine of growth, opportunity, and sustainability across all 77 communities.”

World Business Chicago, “Public Transit: The Backbone of Chicagoland’s Economy,” September 19, 2025, <https://worldbusinesschicago.com/allnews/public-transit-the-backbone-of-chicagolands-economy/>.

“While pre-pandemic literature on the subject of remote work may seem obsolete, due to the seismic changes over the past two years, much of it remains relevant today. For example, a review of studies on the impacts of information and communication technology on the spatial form of cities finds a common thread expecting decentralization and expansion of low density urban growth, but also continued value of place and physical accessibility, especially links to transportation and communications networks. Another slightly older study, which looked at neighborhood preferences of remote workers in the early 2000s, finds “considerable nuance in the relationships of the built environment and working from home,” challenging the notion that remote work will simply shift demand from cities to suburbs and beyond. One particularly interesting nuance is the possibility that the urban amenities we utilize while working in an office (restaurants, shops, etc.) were in some cases associated with more working from home.

McCue, Daniel, “The Possible Impacts of Remote Work on Cities, Neighborhoods, and Households,” *Harvard University Joint Center for Housing Studies*, November 8, 2021, <https://www.jchs.harvard.edu/blog/possible-impacts-remote-work-cities-neighborhoods-and-households>.

...In a future less tethered by the job-housing link there is a strong possibility that neighborhood amenities could play a larger role in housing choices beyond simply cities vs. suburbs. While increased mobility may open up new neighborhoods and opportunities to some, it could also further neighborhood inequality between amenity-rich and distressed neighborhoods and household inequalities between those who can work from home and those who can’t. Therefore, as we prepare for the impacts of increased working from home on mobility and neighborhood change, we must be sure to consider both the areas in which to expect newfound growth and demand, but also the neighborhoods and households at risk of being left behind.”

“The use of autonomous delivery vehicles in last-mile logistics will continue to expand as the technology matures and regulatory barriers are addressed. Companies that adopt ADVs can expect reductions in operational costs, improvements in efficiency, and lower environmental impacts. However, integrating these systems will require careful planning, particularly regarding regulatory compliance and managing workforce changes.

Frazer, Jim. “How Autonomous Delivery Vehicles Are Redefining Last Mile Logistics.” *Logistics Viewpoints*, October 16, 2024. <https://logisticsviewpoints.com/2024/10/16/how-autonomous-delivery-vehicles-are-redefining-last-mile-logistics/>.

As logistics companies assess long-term strategies, it is essential to consider how autonomous technology fits into their broader operations. In the future, ADVs will become an integral part of the logistics ecosystem, offering an interesting new way to address the challenges of last-mile delivery.”

“Electric Vehicles (EVs) cause twice as much stress on roads compared to petrol vehicles, potentially worsening the pothole crisis in the UK, according to a study. The research conducted by data journalists at The Telegraph revealed that the average EV exerts 2.24 times more stress on roads compared to a similar petrol vehicle and 1.95 times more stress than a diesel vehicle.

Energy Live News. “EVs cause twice the road damage of petrol vehicle, study reveals.” June 27, 2023. <https://www.energylivenews.com/2023/06/27/evs-cause-twice-the-road-damage-of-petrol-vehicles-study-reveals/>.

The impact is even bigger with larger EVs, which can lead to up to 2.32 times more damage to road infrastructure, according to the report. In an analysis,

15 popular EVs were compared to their petrol counterparts, revealing an average weight difference of 312 kilograms. The increased weight of EVs can be primarily attributed to their heavy batteries, which can weigh up to 500 kilograms. Scientists note that this heightened stress on roads results in the increased movement of asphalt, leading to the formation of small cracks that can eventually develop into problematic potholes.”

“Smart Cities use a variety of technologies to monitor and respond to traffic conditions in real time, reducing congestion, improving safety, and decreasing the environmental impact of transportation.

Good Vision, “6 Smart Cities That Get Traffic Control Right,” January 21, 2023, <https://blog.goodvisionlive.com/6-smart-cities-that-get-traffic-control-right>.

...The city-state of Singapore has long stood out among Smart Cities—after all, the nation introduced Electronic Road Pricing back in 1998 and appointed the world’s first smart nation minister in 2014. Singapore also dedicated an impressive \$12B to transportation development in 2018. Much of that was devoted to developing a smart infrastructure with sensors for traffic management and preventative maintenance. Integrated, real-time traffic information forms the backbone of Singapore’s Intelligent Transit System (ITS), providing what the country’s Land Transport Authority calls a ‘dynamic, real-time picture of the ebb and flow of a population moving through their daily lives.’

While most cities simply use the wealth of real-time data to make decisions internally, Singapore actually shares the data with other stakeholders. For example, motorists gain insight via the Expressway Monitoring and Advisory System (EMAS) and a guided parking system. Commercial traffic service providers and other industry entities also have access to real-time data.”

“AI has also begun to shift the way we think about urban transportation. The future of transit is autonomous, but to make this once far-off notion a reality, cities must make thoughtful investments in smart infrastructure. To achieve truly autonomous status, vehicles must be able to accurately perceive their environment, which requires advanced sensors and other smart city devices operating together within an interconnected framework. As we move toward a future in which autonomous vehicles become the norm—whether that’s self-driving cars delivering our Uber Eats or picking us up from the airport—smart infrastructure will be the key to unlocking the industry’s full potential.”

Ly, David, “On The Horizon For Smart Cities: How AI and IoT Are Transforming Urban Living,” *Forbes*, April 7, 2023, <https://www.forbes.com/councils/forbestechcouncil/2023/04/07/on-the-horizon-for-smart-cities-how-ai-and-iot-are-transforming-urban-living/?streamIndex=0>.

“‘This shift to working from home is likely the key driver of the large gap between goods and services consumption that has persisted even as virus fears have diminished,’ Goldman Sachs economists wrote in a 2024 outlook piece published in late December. ‘Real goods consumption was already growing more quickly in the pre-pandemic years and is now about 7% above trend, while real services consumption is still about 1% below trend. Metro-level credit card data show that remote workers spend less on office-adjacent services such as transportation and more on home office and recreation goods. This suggests that much of the shift in consumption patterns is likely to last.’”

Smart, Tim, “Remote Work Has Radically Changed the Economy – and it’s Here to Stay,” *U.S. News*, January 25, 2024, <https://www.usnews.com/news/economy/articles/2024-01-25/remote-work-has-radically-changed-the-economy-and-its-here-to-stay>.

Who belongs here?

Growing concerns regarding global conflicts contrast with positive attitudes to legal immigration and are felt on local streets.

As conflicts between rival nations simmer to the boiling point around the world, the impact will increasingly be felt here as mounting international tensions carry over into the American context. Areas such as Mexico, Venezuela, India and China with large diaspora populations here warrant particular attention as conflict overseas potentially escalates to war. Street protests, vigils and rallies on both sides of the Palestinian-Israeli war in Gaza reflect the sizable Chicago area communities and their orientations in the face of ongoing tensions. Government unpredictability at other levels in response to global conditions such as these has an impact on local security system responses. Tensions over protection of freedom of speech mount as increased surveillance, especially at higher education institutions, bubbles over to bitter civil discourse generally and violent clashes become more regular.

Increasingly, unrest regarding immigrant populations and efforts to forcibly arrest workers deemed to be undocumented is amplifying perceptions both in favor of the actions and against them throughout the country. Tensions regarding migrants and asylum seekers in northeastern Illinois are not new, as the area has historically welcomed large numbers of newcomers. Housing and integration of the newly arrived is an issue causing increased friction when resources feel scarce. However more recently as a target of aggressive efforts, the region and the City of Chicago specifically, have seen repeated street protests by residents opposed to the actions of Immigration and Customs Enforcement agents and increasing confrontations. In the longer term, impressions of the region as a safe and welcoming landing spot for newcomers may be altered.

For many in the region, perceptions of potential dangers ahead permeate daily life and general assessment of the future, and a mood of fear, anxiety, depression and in some cases anger is widespread. Especially when these issues are concurrent with other risks, the mental health toll is great. Many undocumented workers are reducing their presence in the public sphere and limiting their use of essential services. To avoid potential raids, some parents have kept their children from school. In an effort to shut out the relentless barrage of increasingly chronic threats, many seek methods to numb themselves. Of particular concern are those who suffer the impacts of historical trauma associated with generational and systemic racism. Vulnerable populations may be suffering from the compounding effects of insufficient mental health care, inaccessible services and rising discrimination, while poverty limits their ability to escape.

Relevance for northeastern Illinois

Increased public safety measures and costs may be incurred at the regional level if higher levels of security are required to monitor and protect residents at events and in the community. Public demand for attention to law and order issues may increase, with some degree of public confusion over which level of government to blame. There will be a reputational cost for the region if there are human injuries or property damage due to disruptions. High levels of mental health strains may impact the general health and well being of the regional population. There is an increased possibility of substance misuse and requirements for care.

Evidence

“Global conflicts, such as the ongoing Israeli-Palestinian conflict and the Russian-Ukrainian war, have far-reaching impacts that extend beyond the immediate areas of engagement. These conflicts can affect not only those directly involved but also individuals worldwide, regardless of their direct connection to the events.

Kilgore, Wes. “The Far-Reaching Impact of Global Conflict on Mental Health.” Well Beings, November 10, 2023. <https://wellbeings.org/the-far-reaching-impact-of-global-conflict-on-mental-health/>

In areas like Gaza and Ukraine, conflict has led to significant psychological distress among residents. Human Rights Watch reports that violence related to conflict can result in depression, anxiety, and post-traumatic stress disorder (PTSD). In such environments, access to mental health services is often limited, exacerbating the situation for those in need.

The psychological impact of global conflicts extends beyond the conflict zones. Mental Health America highlights that people across the world may struggle with their mental health due to these conflicts, irrespective of their proximity to or direct involvement in the events. This is particularly true for individuals with family in conflict zones, or those exposed to graphic images and news coverage. Common emotional responses to global conflict include grief, depression, sadness, fear, anxiety, anger, and guilt. These emotions arise not just from direct exposure to conflict but also from the helplessness and frustration experienced by observers worldwide.”

“Ninety-seven percent of hundreds of undocumented immigrants swept up in Chicago’s recent immigration raids had no criminal record at the time of their arrest, a Department of Justice document shows. The document, submitted by the agency late last week as part of an ongoing lawsuit against the Department of Homeland Security in federal court, contains 614 names of immigrants arrested recently, most of them under the DHS’s ‘Operation Midway Blitz,’ which launched in September.”

Martínez-Beltrán, Sergio. “DOJ Records Show Hundreds of Immigrants Arrested in Chicago Had No Criminal Histories.” NPR, November 17, 2025. <https://www.npr.org/2025/11/17/nx-s1-5611168/doj-records-show-hundreds-of-immigrants-arrested-in-chicago-had-no-criminal-histories>

“While the abductions, often in broad daylight, have provoked fear and outrage, the escalation is also unleashing a less visible form of economic treachery on Chicago’s immigrant working class. Once-bustling neighborhoods feel empty as workers hide at home or elsewhere, afraid to leave. When workers miss income, they typically rely on their families and communities for help. But with so many missing their wages, the goodwill is nowhere near enough to meet the need. And when the work isn’t done, a chain reaction begins, especially within heavily immigrant communities. Entire neighborhoods are facing an economic slump, and many of those who do go to work must contend with ever-present feelings of terror, as some employers are more emboldened to mistreat workers.

Lazare, Sarah. “Visible and Invisible: How ICE Is Terrorizing Chicago’s Working Class.” *Workday Magazine*, November 25, 2025. <https://workdaymagazine.org/visible-and-invisible-how-ice-is-terrorizing-chicagos-working-class/>

‘We have heard of a lot of people not showing up to work, not going out to engage in economic activity, because of the fear and of the real threat that exists,’ says Miguel Alvelo Rivera, executive director of the Latino Union of Chicago. ‘We know plenty of people who are saying, I’m just trying to get by on what I have for now.’”

Marcos Cenicerros, executive director of Warehouse Workers for Justice, estimates that, based on his conversations with workers, a majority—if not all—of immigrant workers in the Chicago area who ‘don’t have status’ are forced to grapple with this fear, even if they are still showing up to work. ‘We know people who are scared, and they say they would rather not do it, but they have to go to work. They have to provide for their families,’ he says. ‘And so they just have to live in perpetual fear of being detained.’”

“‘Ideally, we want to reach, like, a critical mass of trained people in the city of Chicago, so that you know everybody going about their day—whether they’re [a] bus driver, whether there’s somebody walking down the street going to a book shop, whether they’re a student coming in and out of school—has these sorts of tools and is connected to the network in some way and can activate,’ he said.

Chilukuri, Siri. “Chicagoans Fight Back Against ICE Raids.” *The Guardian*, November 13, 2025. <https://www.theguardian.com/us-news/2025/nov/13/chicago-fight-ice-raids>

Meanwhile, a local West Side group, Belmont Cragin United, has been hosting what has been dubbed ‘Whistlemania’ events, where volunteers gather at a local restaurant to pack whistles, community resource guides, and zines on how to gather a crowd of people when ICE is nearby. Hundreds of people attended these events at locations all over the city’s West Side and packed more than 17,000 kits, according to Block Club Chicago.”

“Police should invite community leaders to participate in police meetings and training sessions about planning the police response to demonstrations. These meetings should discuss the police response to demonstrations as a general matter, as well as planning for particular demonstrations. These meetings should include discussions of key issues, such as how police balance their role in facilitating First Amendment expression with the need to protect public safety when demonstrations begin to turn violent.”

Police Executive Research Forum. *Response to Mass Demonstrations: A Guide for Law Enforcement*. Washington, DC: Police Executive Research Forum, n.d. <https://www.policeforum.org/assets/ResponseMassDemonstrations.pdf>

“For the Chicago Police Department, the challenge is acute. The force must preserve public safety in a city already under strain while avoiding the appearance of working hand-in-hand with federal immigration authorities, a stance that could erode community trust and ignite new protests.

The Associated Press. “Potential Federal Intervention Poses Challenges for Chicago Police on the Ground.” *KGNS.tv*, September 8, 2025. <https://www.kgns.tv/2025/09/08/potential-federal-intervention-poses-challenges-chicago-police-ground/>

The same balancing act has confronted other big-city departments in recent months. Local police in Los Angeles and Washington D.C., were drawn into fraught arrangements with federal agencies that experts say left residents wary and, at times, undermined public confidence in their police.

Now, Chicago finds itself on the same path, with Illinois Gov. JB Pritzker objecting to any National Guard deployment and city officials bracing for how the added federal presence could reshape the dynamic on the ground. The outcome, policing experts warn, may determine whether Chicago police can maintain credibility in immigrant communities likely to be targeted by a president determined to show force.”

Extreme Wealth and Power

The impact of such enormous money and influence threatens democracy and social stability.

Forget the 1%. The most recent estimates in a 2025 Oxfam report indicate that the ten richest Americans got \$698 billion richer in the past year. Even within the super-rich cohort, wealth concentration is staggering, as the first trillion-dollar Tesla shareholder-approved pay package for Elon Musk marks a new milestone.

The view of wealth disparity spreading throughout the world is mounting, and associated perceptions of dangerous concentrations of influence are increasing. In a recent Harris poll, more than 70% of Americans stated that extreme wealth should be taxed more heavily and more than 50% believe there should be a limit to how much wealth can be accumulated. Economic and political power residing in fewer hands opens the door for suspicion of corruption. Politicians globally have faced accusations that they are not working in the public interest, even as their hold on power expands. The perception of wealth concentration as an anti-democratic force is growing. Both the International Monetary Fund and The World Bank have released studies on the negative impacts of unequal distribution of financial resources on economic growth and service delivery. The consequent impact on democracy and international stability is grave. On a global basis, the desire to mitigate unequal access to food, water, shelter, jobs, security, healthcare and education is a major contributor to migration worldwide, with conflict rising in areas of extreme privation.

Business monopolies and oligopolies that have ceased to be responsive to client demand for fairer practices are facing some disruption as cheaper and more effective alternatives creep into the market. However, some sectors remain controlled by a small number of actors that hold tremendous sway over what ordinary people pay for goods and services. Tech companies, airlines, wireless carriers, vertically integrated food production and distribution corporations, and pharmaceutical organizations all benefit from high barriers to entry into the market, allowing them to reduce competition, maintain high prices and low wages, and limit supply choice.

Philanthropic giving by the ultra-wealthy has also come under criticism, as proportionately less money has been given away compared to the recent rapid increase in their holdings. With more politically activist donors, gifts that are made often go to personal interest aligned causes rather than highest need or impact investments. Additionally, the tax avoidance measures the richest few

can take advantage of means money is not available for necessary causes and other taxpayers are subsidizing the practice.

As in much of America, the distribution of wealth in northeastern Illinois is racially differentiated. White households hold more assets such as homes, land, and stock than People of Color and have a median net worth between 5 and 10% greater. Historic segregation and redlining contribute to the missing intergenerational wealth transfers that white homeowners have. Efforts to bring attention to the gap are getting louder.

Relevance for northeastern Illinois

Influence on federal policy by the wealthiest may alter programs and services that will be felt on the ground in Chicagoland. Changes in taxation may alter the available funds for transfer to state programs.

Northeastern Illinois is not immune to the influence of wealth and power on governance and democratic processes, despite laws and regulations in place to ensure ethical standards. Maintaining transparency and enforcement of standards will be required.

Major support for local causes will be impacted by the loss of pillar donors in the region. Lower-income individuals continue to disproportionately support charitable causes, but the current affordability crisis may impact their contributions. Chicago still ranks in the top 10 cities for overall charitable giving in the USA, with more than half of funds focused on local issues and an emphasis on human services, such as care and support for the most vulnerable in society.

Evidence

“According to the UBS Global Wealth Report, in 2023 the world’s richest 1 percent, those with more than \$1 million, owned 47.5 percent of all the world’s wealth—equivalent to roughly \$214 trillion. Adults with less than \$10,000 make up nearly 40 percent of the world’s population, but hold less than 1 percent of the world’s wealth. UBS defines ‘wealth’ as the value of financial assets plus real assets (primarily housing) of an individual, minus their debts.

Institute for Policy Studies. “Global Inequality.” *Inequality.org*. <https://inequality.org/facts/global-inequality/>

‘Ultra high net worth individuals’—the wealth management industry’s term for people worth more than \$30 million—hold an astoundingly disproportionate share of global wealth. These wealth owners held 6.5 percent of total global wealth, yet represent only a tiny fraction (0.003%) of the world population, based on Institute for Policy Studies analysis of Capgemini and Credit Suisse wealth data and UN Population Fund population estimates.”

“The richest 1% of households in the United States have accumulated almost 1,000 times more wealth than the poorest 20% over the last three and a half decades, and economic inequality is getting worse at a rapid pace, new research shows.

Cox, Josie. “Income Inequality Is Surging in the U.S., New Oxfam Report Shows.” *Forbes*, November 3, 2025. <https://www.forbes.com/sites/josiecox/2025/11/03/income-inequality-is-surging-in-the-us-new-oxfam-report-shows/>

The analysis, published by Oxfam on Monday, found that between 1989 and 2022, a household in the top 0.1% gained an average of \$39.5 million in wealth, while a top 1% household gained \$8.35 million. By contrast, a bottom 20%-household gained less than \$8,500 during the same period. Over the past year alone, Oxfam noted, the wealth of the 10 richest U.S. billionaires soared by \$698 billion. That means that the top 0.1%’s share of total wealth is now at a record high of 12.6%.

‘The data confirms what people across our nation already know instinctively: the new American oligarchy is here,’ said Abby Maxman, president and CEO of Oxfam America. ‘Billionaires and mega-corporations are booming while working families struggle to afford housing, healthcare, and groceries.’”

“Money talks, and in politics, it screams. Billionaires and their corporations spend billions on lobbying efforts to sway lawmakers. Whether it’s pushing for tax cuts, deregulation, or subsidies for their industries, their financial clout ensures their voices are heard loud and clear. For example, in the U.S., the fossil fuel industry has spent millions lobbying against climate policies, delaying critical action on global warming.

Banks, Katina. “How Policy-Making Is Influenced by Billionaires.” *Vocal Media*, Education section, November 2024. <https://vocal.media/education/how-policy-making-is-influenced-by-billionaires>

Many billionaires fund think tanks and advocacy groups that produce research and policy recommendations. These organizations often frame public debates and provide ‘expert’ opinions that align with their funders’ interests. The Koch brothers, for instance, have funded numerous libertarian think tanks that advocate for smaller government and deregulation.”

“*Color of Wealth in Chicago* shows the net worth of white Chicagoans far outstrips Black, Mexican (both U.S. and foreign-born), and Puerto Rican households. Their diverging fortunes, including lower homeownership rates, less home equity, more student and medical debt, and less retirement savings, affect the whole region’s economic viability and vitality.

The Chicago Community Trust. *Color of Wealth in Chicago*. June 13, 2024. <https://www.cct.org/research-and-reports/color-of-wealth-in-chicago/>

...The racial and ethnic wealth gap prevents the Chicago region from being a place where everyone can access quality education, pursue a meaningful career, buy a home, live in a thriving neighborhood, and have a voice in the policies and decisions that impact their lives. By narrowing the wealth gap, the Chicago region will be safer and more prosperous for everyone.”

“While donations to charity have been rising, the pool of donors is shrinking, as philanthropy becomes hyper-concentrated among a small group of ultra-wealthy mega-donors, according to a new study.

Frank, Robert. “‘Dollars Up, Donors Down’: More Charity Money Comes from Ultra-Wealthy.” CNBC, March 14, 2024. <https://www.cnbc.com/2024/03/14/dollars-up-donors-down-more-charity-money-comes-from-ultra-wealthy.html>

A new report from Altrata finds that ultra-high-net-worth individuals (those worth \$30 million or more) now account for 38% of all individual giving in the world. Put another way, 400,000 people account for more than one-third of the world’s charity.

It’s even more extreme when you look at billionaires. The world’s 3,200 billionaires (or 0.00004% of the global population) account for 8% of individual philanthropy.

...The challenge for wealth advisors and nonprofits is adapting to a new, highly top-heavy landscape for philanthropy. Nonprofits, which for years benefited from a broad range of donors, now have to depend on a smaller collection of super-donors, who are already barraged with requests. Charitable causes will rise and fall depending on the interests and goals of a small group of mega-funders. And overall giving will become more volatile, since the benevolence of billionaires and the ultra-wealthy is driven in large part by stock prices.”

Think like a Megaregion

Creating larger zones of influence may enable more effective problem solving in some arenas, as economic and social relationships transcend state or even national boundaries.

Rapid and coordinated response in times of continuous stress and shock suggests more regional strength and economic reorientation may be a necessity to complete and thrive in a changing global context. Megaregions, where two or more adjacent metropolitan areas with shared interests coordinate economically, environmentally, and socially, may cross state borders. Global competitiveness is increasingly enriched by megaregional alignment and megaprojects. Moving critical competencies and decision-making away from state and federal oversight favors regional centers anchored by key cities around the world. For example, the bi-national Great Lakes Megaregion including Chicago, Detroit-Windsor, and Toronto has access to one fifth of the world's fresh water, critical transportation corridors, and high performing innovation research universities. Cooperation on large scale infrastructure projects and sustainability efforts as well as enhanced economic allegiance for international competitive advantage suggests the need for more structural coordination beyond MPOs.

Megaregional coordination of transportation development and implementation has been in place for decades in some areas. With global economic conditions in a time of flux, strategic diversification of supply chains and “nearshoring” of critical materials and manufacturing means that efficient movement of people, goods and services becomes even more important. Harmonization of transit organization systems is beneficial, facilitating labor access to workplaces. Many areas are also tightening their economic relationships to become even more competitive worldwide, with efforts to reduce regulatory restrictions across borders where possible. The Great Lakes Megaregion remains an important manufacturing and healthcare hub, with critical fresh water resources and a highly STEM educated workforce.

At the same time, the need for more connective social tissue between residents has become clear. Just because economic and infrastructural co-operation across a larger geographic area is systemically advantageous does not mean that people in a megaregion are culturally or socially aligned. Social network resilience is also required to ensure bonds are adequate and people are able to act in the face of potential dangers. The impact on city services is great. Collaborative horizontal governance between municipalities across states requires planning and practice.

The demand for more streamlined and efficient government operations as a cost saving measure has gained traction throughout North America without clear measures of potential longer-term impacts. In some areas the multiple layers of federal, state, regional and municipal operations are perceived as over-governance. Budgetary reductions in accordance with lower tax levels at all levels of government trickle down to municipal finances and hard decisions about services delivery priorities must be made.

Relevance for northeastern Illinois

Addressing cross boundary issues collectively may provide better and faster improvements and competitiveness for northeastern Illinois. If more regional decision-making arises, consolidation of efforts may mean possible workforce reductions in some areas and requirements for more technical competency in other areas. Training and human resources leaders will be tasked with managing the impacts. Potential for merging of some municipal governments as a way to more efficiently provide services is not on the table currently, but amalgamation may become a more realistic proposal over time. Megaregional coordination, at least for issues that cross typical jurisdictional boundaries, may offer more effective solutions to major challenges.

Evidence

“The past few years have seen the establishment of a limited number of new interstate or regional problem-solving entities. The most familiar one is the Regional Greenhouse Gas Initiative, signed by 11 eastern states in 2008. Thirteen states across the Northeast and Mid-Atlantic regions have also signed on to a climate change compact, aimed at reducing carbon emissions by 25 percent. This has had less success. California has established what it calls ‘enhanced infrastructure financing districts,’ with the authority to float revenue bonds to pay for its enterprises.

But the core of the megaregional idea is transportation, especially rail transportation. And in the view of Megaregions’ authors’, that starts with transportation in the Northeast region, which is responsible for 22 percent of the nation’s gross domestic product. Yaro, Zhang and Steiner call for high-speed rail for the entire Northeast, ‘connecting every mid-size city and its hinterland to each other and to major metro centers’ and ‘giving these smaller cities equal access to the innovative economies that are now concentrated in only a handful of dense urban centers.’

...And there is one important new wrinkle. We are seeing a worrisome increase in natural disasters—hurricanes, floods, and who knows what else may come along. Our Gulf Coast and Texas cities, and parts of the Eastern Seaboard, have

Ehrenhalt, Alan. “Is the Age of Megaregions Finally Coming?” *Governing*, April 25, 2022. <https://www.governing.com/assessments/is-the-age-of-megaregions-finally-coming>

shown themselves to be extremely vulnerable. The climate disasters of the 21st century aren't plagues that can best be fought by cities alone, or even by metro areas. They may be a problem that calls for strategy on a larger scale, perhaps the scale of a megaregion.

That wouldn't exactly be the start of a new American Century. But it would be a graphic demonstration of practical problem-solving, and right now we are in conspicuous need of one."

"Researchers have argued that megaregions are a crucial spatial scale to address infrastructure modernization, growth management, economic development and environmental impacts because processes affecting these domains are highly concentrated within megaregional spaces. This paper evaluates the conceptual issues and policy salience of megaregional planning in the U.S. by analyzing the results of a 2018 survey of 382 designated MPOs. Drawing upon the survey results, we find support for the notion that MPO partnerships operating at the megaregional scale are somewhat widespread and involve MPOs along with other partners, like state DOTs and councils of governments. A subset of common concerns—especially multi-modal freight, major transportation corridors, economic development, intercity rail service, and air quality—appear to motivate megaregional partnerships. MPOs were most likely to engage in megaregion-scale collaborations requiring relatively low levels organizational time and resources versus more substantive collaborative efforts to develop joint plans or coordinated project investments."

Boarnet, Marlon G., and Randall Eberts. "The Salience of Megaregional Geographies for Inter-Metropolitan Transportation Planning and Policy Making." *ResearchGate*. https://www.researchgate.net/publication/339609596_The_salience_of_megaregional_geographies_for_inter-metropolitan_transportation_planning_and_policy_making

"Megaprojects—urban regeneration schemes, transport and energy infrastructure, industrial corridors, city clusters, new towns, innovation districts, science and technology parks, sports infrastructure—are reconfigured and reterritorialized spaces in which the role of the local, regional, and national elites, as well as the role of national and sometimes transnational capital, is usually prominent. Megaproject design and implementation often meet the need of bringing together and harmonizing several scales of power, not only because increased urban competitiveness and global visibility are perceived as essential outcomes in the development of these projects, but also because, in diverse sociopolitical contexts, the configuration of political power exhibits different and distinct relationships between the local, regional, national, and global domains of social action."

del Cerro Santamaria, Gerardo. "Megaprojects, Development and Competitiveness: Building the Infrastructure for Globalization and Neoliberalism." *Athens Journal of Social Sciences*, Vol. 6, No. 4 (2019). <https://www.athensjournals.gr/social/2019-6-4-1-Santamaria.pdf>

“‘The Great Lakes are no longer a collection of independent economies, they are a single, interconnected growth engine,’ said Tim Hinds, executive director of GLEDC (Great Lakes Economic Development Council). ‘From hydrogen and data centers to workforce development and water stewardship, this region is redefining what competitiveness looks like on a global scale.’

“Great Lakes Economic Development Councils’ Inaugural Conference Showcases Unified Regional Momentum.” *PR Newswire*, January 19, 2024. <https://www.prnewswire.com/news-releases/great-lakes-economic-development-councils-inaugural-conference-showcases-unified-regional-momentum-302609217.html>

According to new data shared at the event by Ron Starnier, executive vice president of Conway Data and publisher of Site Selection Magazine, the Great Lakes region is home to 43 active economic development projects valued at \$1 billion or more, including 10 exceeding \$5 billion. The five largest projects are data centers, including a \$15 billion campus in Pennsylvania—part of a wave of large-scale investments in clean energy and digital infrastructure.

... ‘What we’re seeing is a generational pivot – from local development to regional collaboration,’ said Alia Abbas, at-large member of the GLEDC Advisory Council. ‘If the 20th century defined the region as the industrial heartland, the 21st will define it as the innovation corridor; the Great Lakes are more than a shared geography, they are a shared destiny—connecting people, purpose and prosperity.’”

“Under hierarchical governance structures, the environmental impacts of state-led megaregions remain unclear. One potential outcome is that state-led megaregions accelerate urbanization and industrialization, which may intensify pollution. In centralized states, local governments operate under multitask principal-agent contracts with the central government, encompassing responsibilities such as maintaining social stability, protecting the environment, promoting economic growth, and improving rural incomes. The environmental consequences of state-led megaregions depend largely on how local governments prioritize these tasks within their agreements with the central authority. When economic development becomes the dominant priority, environmental degradation often follows. Conversely, state-led megaregions may foster inter-city cooperation by strengthening local governments’ capacity and willingness to jointly address regional pollution challenges. In many centralized countries, local governments traditionally maintain competitive rather than collaborative relationships and lack experience in joint public governance. Through vertical intervention, however, the level of information exchange and economic integration among regions tends to increase, regardless of whether local governments actively or passively respond to national policies in state-led megaregions.”

Jin, Ran, and Xiaolin Wang. “How Does the State-Led Megaregion Affect Local Environmental Governance? Evidence from China.” *Humanities and Social Sciences Communications* 12, no. 1 (2025): 1186. <https://doi.org/10.1057/s41599-025-05565-6>

“In recent years, some advocates for social equity have sought to develop new solutions to urban poverty and build new forms of political power at a metropolitan or regional scale. The evolution of American urban areas into sprawling megaregions raises a concern that these ‘regional equity’ advocates today may be facing the same dilemma as urban reformers in the 1960s: They are arriving to a new policy table just as the scale of the economy is shifting up and out. In trying to assess how the potential emergence of megaregions affects opportunities for addressing equity, the authors examine the Northern and Southern California megaregions and argue that ‘thinking megaregionally’ may help to identify some new issues for equity organizing, but there are important challenges: (1) the issues most likely to gain traction at a megaregional scale seem to be primarily related to infrastructure and the environment and may not have the immediacy usually associated with successful mobilization of constituencies and (2) even if the issues are megaregional, the policy levers are likely to be local, state, and federal, rendering the megaregional scale less immediate in a policy sense as well.”

Ma, Jianxia, and Yuyan Jiang. “Moving On Up? Regions, Megaregions, and the Changing Geography of Social Equity Organizing.” *ResearchGate*. https://www.researchgate.net/publication/258198171_Moving_On_Up_Regions_Megaregions_and_the_Changing_Geography_of_Social_Equity_Organizing

SHIFT 5

Secure & Vulnerable

In a time of volatile, uncertain, complex and ambiguous change, vulnerabilities are laid bare. Opportunities also exist to be prepared to weather the storms by expansion of networks and connections.

In this Section

5.1 Infrastructure & Network Failures

5.2 Housing Availability

5.3 For the People, By the People

5.4 Scarce Resources

5.5 Zeroing in on Change

Infrastructure & Network Failures

Technology enhanced systems are beneficial but risk network outages, especially due to climate change, and cybersecurity threats.

Roads, bridges, tunnels, rail lines, water pipes, the energy grid—these collective physical assets are expensive to replace and under extreme pressure from the impacts of frequent storms, floods and severe heat exposure as well as increased use by heavier electric vehicles and new water dependent data centers. Although northeastern Illinois currently has a reliable electrical grid, power outages are likely to be more frequent as climate change is increasing the odds of extreme weather events and creating a greater risk of failures. The potential cost of collapse is measured both in replacement expense and operational opportunity cost.

Privatization of public infrastructure is seen as an opportunity to fund much needed improvements to critical facilities and systems but is not without challenges. In some jurisdictions, private ownership of water purification systems, electrical utilities, toll roads, bridges, and airports have been controversial. This is in part because the significant one-time payments that cover initial building costs incurred by investors are disproportionate to the ongoing profits they reap from user fees.

As government and industry have broadly adopted connected, digital, and cloud-based technologies, their fragility and vulnerability due to potential network outages and cybersecurity breaches is more in focus. Large scale technological breakdowns could be potentially dangerous or financially devastating as automation and digitization scale up and analogue facilities are replaced with online operations across various industries. While AI-related data center and energy infrastructure build-out continues to boom, circular financing structures present significant risk and uncertainty. These risks threaten utility-level energy infrastructure planning and may undermine local economic development plans.

Network disruptions also can impact reputation and trust. Security breaches that result in a loss or compromise of private data can be financially ruinous for customers or cause frustrations for citizens if information is not transparently shared. Damage to physical infrastructure assets also disrupts daily life and business functioning. Building neighborhood social connectivity can strengthen resilience to survive emergency situations. Preparedness extends to community collaboration and support, where neighbors look out for one another, share knowledge, and participate in collective initiatives like risk identification.

Relevance for northeastern Illinois

Public private partnerships and innovative funding models are potential solutions to funding strains. Clear issues of ownership require careful legal contractual attention. Reduction of trust in digital systems may lead to regressive policy adoption or rejection of advanced technological solutions for healthcare, finance, education and government services. Automated transportation systems may be vulnerable to network disruptions, as will electric vehicles. A shift to more adaptive construction methods and materials is required.

Evidence

“As the complexity of digital networks grows, predicting and preventing network failures has become a crucial task for maintaining seamless operations across industries. With the advent of artificial intelligence (AI), there’s an increasingly effective tool at the disposal of network engineers and IT professionals: AI-driven predictive analytics. This technology not only promises to revolutionize the way network health is monitored but also offers a proactive approach to troubleshooting that was once a reactive practice.

Patil, Aarini. “Forecasting Network Failures: AI’s Predictive Power in Action.” *OrhanErgun.net* (blog), October 7, 2025. <https://orhanergun.net/forecasting-network-failures-ai-s-predictive-power-in-action>

Predictive analytics in AI involves using machine learning models to analyze historical data and predict future outcomes. This process is especially pivotal in network management, where vast amounts of data are generated by devices across the network. AI algorithms can sift through this data in real-time, identifying patterns and anomalies that may indicate potential failures. By integrating AI with network management, organizations can shift from a traditional, reactive model of network maintenance to a proactive stance. This not only prevents downtime but also saves on costs associated with network failures, such as lost productivity and emergency repairs.”

“Railways’ susceptibility to extreme heat disrupts operations (e.g., track buckling, speed restrictions) and compromises the reliability, safety, and sustainability of rail travel. This study evaluates the susceptibility of the Amtrak rail network to extreme heat by assessing connectivity and ridership loss at the state, county, and station levels under moderate to severe disruption scenarios.

Janatabadi, Fatemeh, Luis Ortiz, and Alireza Ermagun. “Extreme Heat Threatens Railroads with Connectivity and Ridership Loss in the United States.” *npj Urban Sustainability* 5 (2025): 37. <https://doi.org/10.1038/s42949-025-00227-7>

...Extreme heat has been responsible for an average of 50 derailments annually over the past four decades in the United States. Examples include the derailment of an Amtrak train in Kensington, Maryland; a Union Pacific coal train in Wyoming’s Powder River Basin; a Burlington Northern Santa Fe coal train carrying 31 loaded cars in Mesa, Washington; a Union Pacific freight train in California; a Burlington Northern Santa Fe derailment in Minnesota; a Bay Area Rapid Transit derailment in California; and a freight train derailment in

Matteson, Illinois. Extreme heat, out of all weather-related rail disruptions, has also been responsible for approximately 30% of late arrivals. This accounted for approximately 1200 h of lost time, twice the total recorded in 2018.

Railway systems, constrained by limited infrastructure and predetermined timetables, are particularly vulnerable to disruptions propagating across specific nodes and links. Even minor disturbances can ripple through the network, resulting in cascading delays. This behavior, inherent to railway operations, is exacerbated by safety systems that regulate train movements, often halting or slowing trains to maintain safe distances. The simplest and most frequent manifestation of disruptions of any size are delays, which reflect the complex dependencies and operational constraints of rail networks. Understanding the connectivity of the network is, therefore, important to identify how disruptions at a single point cascade and affect other parts of the system.”

“The privatization of public infrastructure, which started in Chicago, Illinois in the 2000s, has become a global trend. Companies in Canada, Australia, China and other countries have invested considerably in infrastructure worldwide. This growing practice raises concerns over sovereignty and foreign control of vital public services.

“Foreign Companies Driving the Global Privatization of Domestic Infrastructure,” *Fair Observer*, February 20, 2025, <https://www.fairobserver.com/business/foreign-companies-driving-the-global-privatization-of-domestic-infrastructure/>

Profit-driven entities argue that privatizing public infrastructure leads to greater efficiency through expertise and investment. However, their focus is on profit maximization, not service improvement, leading to long-term rent-seeking behavior. Furthermore, in contracts with limited liability companies, the government assumes the losses, while private companies reap the profits. Companies can walk away or demand renegotiations, while governments are left to maintain services, absorb long-term revenue losses and burden the public with higher costs.

As Chicago’s experience shows, privatization has extended beyond domestic markets to become an international phenomenon. Starting in the 1980s, the International Monetary Fund (IMF) and World Bank reforms encouraged the privatization of public infrastructure to attract investment, leading to its internationalization. ‘A 2006 study by the Norwegian government of IMF conditionality revealed that 23 out of 40 poor countries still have privatization and liberalization conditions attached to their IMF loans,’ stated an Oxfam Briefing Paper.

...This trend appears likely to continue, requiring more responsible approaches to maintaining a healthy balance between the necessity for infrastructure investment and public needs. Shorter contracts, profit-sharing models and performance-based agreements could help countries and companies showcase their development models and expertise—potentially even at lower costs than local providers. However, profit maximization remains the driving force, particularly when financial entities dominate the field.”

A study from the Texas A&M University School of Public Health sheds new light on the relationship between community cohesion prior to a natural disaster and resilience after one, with possible policy applications for public health and emergency preparedness practitioners.

Ann Kellelt, PhD, "Community Cohesion Is Key to Disaster Recovery, Research Finds," *Vital Record*, July 31, 2025, <https://vitalrecord.tamu.edu/community-cohesion-is-key-to-disaster-recovery-research-finds/>

'Recent events have reminded us that resilience isn't just about bricks and budgets,' said community health expert Garrett T. Sansom, DrPH, who led the study. 'In part, it's also about bonds between neighbors.'

...A statistical analysis found a significant positive association between community cohesion and perceived resilience, while variables such as age, gender and socioeconomic status showed no significant relationships. 'These findings—like those of similar studies—underscore the importance of strong social ties in disaster recovery and resilience,' Sansom said.

In addition, he said they suggest that explicit strategies for building community trust and increasing volunteerism rates and civic engagement should be added to emergency preparedness programs.

'Communities that build strong social ties and mutual trust tend to recover much more quickly and smoothly following a catastrophe—but only if other resources and structural support are also present,' he said. 'In other words, our study found that social cohesion is important to disaster resilience but does not guarantee it.'"

Housing Availability

A lack of sufficient funding and policy alignment contributes to uncertainty in affordability and obtainability of housing.

New development of affordable rental housing is stumbling in the region. There is a perception that excessive red tape prohibits developers from moving quickly to initiate new home projects. Permit timelines are long, zoning restrictions can be complex and online portals for digital applications have been described as complex. Construction costs are rising as tariffs for raw materials such as lumber, steel, and aluminum, and components such as kitchen cabinets, screws and fasteners contribute to overall increased prices. Many builders are delaying new starts as uncertainty mounts. In some areas, house prices have risen and property taxes are punishingly high, meaning entry level homes may not be achievable. Insufficient public funding for housing exacerbates the problem. The Illinois State budget for 2026 reduced funding for housing programs by more than \$14 million. In a 2025 report, Community Land Trusts reported a lack of consistent, flexible funding to meet the housing development needs of the region.

The debate on density is old but has taken on new dimensions in an era of concurrent environmental imperatives, social tension escalation, and infectious disease proliferation. Those looking to emphasize more affordable and environmentally preferable smaller spaces in walkable neighborhoods challenge those who are concerned about shadow impacts, maintaining heritage values and parking space. Safe densification becomes compulsory as public health concerns and climate objectives need balancing, and growth accelerates. Negotiation of how public spaces are shared emerge as new notions of safety become entrenched. Adequate room for distanced relief from tight living quarters makes sidewalks, plazas and parks necessary outlets, especially for vulnerable communities.

Disentangling the differences between dense urban environments and dense interior spaces is required. A move to touch-free shared amenities such as elevators, entrances, washrooms and lighting may not provide the level of safety assurance the public believes is necessary. Micro-suite condo living, an entry point into home ownership for many, depends on accessibility to shared public spaces such as parks, flexible co-working spaces, restaurants and entertainment zones, and does not accommodate young families. Calls for the “missing middle” in housing become even louder, as the desire for a level of privacy and autonomy pushes some to seek additional square footage. Rather than downsizing from single family homes, individuals may upsize beyond a tiny apartment. Given a

positive experience of remote telework, many office employees may determine that moving even further afield, where housing is more affordable and space is more plentiful, is a better solution. But what may be gained by distributed, lower density communities may then be lost in overcrowded transit systems or traffic congestion if infrastructure investment does not keep pace.

Relevance for northeastern Illinois

There is potential for flight beyond the suburbs for some people who are unable to find suitable housing. Preservation of Naturally Occurring Affordable Housing as an important resource for the region could help to offset this. Weak planning laws at the state level impacts the built environment throughout the region. Requirement for new building codes and zoning for distributed density in neighborhoods with primarily single family homes could prevent sprawl. There will be an impact on property taxes and general affordability, as well as transportation and environmental conditions. Changing infrastructure requirements for transit, roads and parking adjacent to new development will make spaces more appealing. Attracting financial interest and support in historically disinvested communities is a challenge but can also contribute to flourishing communities.

Evidence

“Americans from all backgrounds and politics agree: The rent is too damn high, and so are home prices. Housing affordability continues to rank as a top concern for the American people. In recent years, Americans have paid a growing share of their incomes toward rent or mortgages; roughly one-third of all American households—including half of all renters—are now considered ‘housing cost burdened,’ meaning they spend more than 30 percent of their income on rent and mortgage payments. Home prices have risen nearly 55 percent since the start of the pandemic, and rent is up more than 30 percent nationwide, and even higher in many markets. The median first-time buyer age increased to 40 in 2025, the highest on record and up from 31 in 2014. Simply put: Housing is too expensive, and for too many Americans, owning a home feels like an impossible dream.”

Center for American Progress, “Build, Baby, Build: A Plan to Lower Housing Costs for All,” *Center for American Progress*, March 30, 2020, <https://www.americanprogress.org/article/build-baby-build-a-plan-to-lower-housing-costs-for-all/>

“But with soaring building costs, a competitive funding process and many hoops for developers to jump through, more efforts are needed to bring down affordable housing construction costs and address the city’s housing crisis, experts said.

Parrella-Aureli, Ariel and Michael Liptrot. “Why Is It So Expensive to Build Affordable Housing in Chicago?” *Block Club Chicago*, July 28, 2025, <https://blockclubchicago.org/2025/07/28/why-is-it-so-expensive-to-build-affordable-housing-in-chicago/>

...High construction inflation nationwide, a lengthy city review process, fees and design standards a project using public funds must adhere to are reasons for

the high costs, said Daniel Kay Hertz, director of housing for Impact for Equity and the former director of Policy, Research and Legislative Affairs at the city's housing department.

'The way America funds affordable housing is like a super complicated jigsaw puzzle,' Hertz said. 'The backbone of all of these projects is low-income housing tax credits, which come from the federal government. That's money flowing into Chicago; it's not taxes we pay to the city. But the [tax credit] only covers a third to two-thirds of the cost of building, so it has to be joined with other sources.' Lesser-known development costs—legal fees, tax credit consultants, design and lawyer fees and environmental costs for high building standards—add to the unit price. In some cases, land acquisition and higher pay for construction workers are also part of the unit cost, developers and Hertz said."

"Rental housing affordability remains one of the most pressing challenges facing renters and policymakers in Chicago. IHS research has shown that a key driver of the city's increasing affordability pressures is its shrinking supply of lower-cost rental units, which is declining faster than demand for housing from lower income renters. This growing mismatch between the supply of and demand for affordable rental units intensifies competition for remaining homes, exacerbates cost burden, and can accelerate displacement pressure in neighborhoods with high or rising rental costs.

Institute for Housing Studies at DePaul University, "Understanding Chicago's Rental Affordability Challenges: A Review of Data, Trends, and Solutions," October 24, 2025, <https://www.housingstudies.org/blog/rental-affordability-challenges/>

...The mismatch between the need for affordable units and the number of units available is most severe for Chicago's lowest-income households. These households have few affordable options without subsidy. In 2023, 36 percent of renter households earned less than \$35,000 per year, but just 18.8 percent of Chicago's rental units are affordable to these households. IHS data show that only a small percentage of the rental stock is subsidized, meaning most lower-income households are competing with higher-income households for affordable units."

"Dramatic demographic shifts, projected to accelerate for the foreseeable future, are creating unprecedented demand for housing in walkable downtowns and urban neighborhoods. Harvard's Joint Center for Housing Studies projects that singles and couples will increasingly dominate household growth—and steadily increase demand for urban living. Drilling down into this data suggests even stronger market potential for walkable downtowns and urban neighborhoods. Most notably? Better educated (and higher income) households that represent the talent that powers our knowledge economy increasingly are more likely to move to regions with lively downtowns and urban neighborhoods than their peers.

Dixon, Diane. *Planning for Life in Cities After the Pandemic*. CNU, 2020. <https://www.cnu.org/publicsquare/2020/04/28/planning-life-cities-after-pandemic>

An aging workforce and booming knowledge economy are combining to create unprecedented competition across North America for increasingly scarce talent—and raising the importance of walkable downtowns and urban

neighborhoods. As ‘industries of the mind’ take center stage in fueling economic growth, a global competition for talent is taking hold. Organizations like the Brookings Institution and the International Downtown Association (with support from Stantec’s Urban Places) report that regions with lively, walkable core downtowns and urban neighborhoods are the winners. Even knowledge workers who ‘tele-work’ prefer to live in walkable urban places. Dublin, Ohio, just outside of Columbus, is creating a new higher density, walkable downtown to attract knowledge industry employers—while also attracting talent that wants to work from home. Perhaps more importantly, MIT’s Sloan School of Management reports that attracting and retaining educated workers is critical to a region’s ability to grow jobs across the board.

Emerging new mobility paradigms will strongly favor downtowns and closer-in urban neighborhoods. Today urban dwellers already spend roughly half as much of their disposable income on mobility compared to their suburban peers. The shared and emerging micro-mobility technologies (think Lyft and e-scooters) that flourish in urban cores are reinforcing this advantage. Stantec’s smart mobility planners tell us that future mobility will take the form of shared autonomous vehicles (SAVs) in downtowns and urban neighborhoods with the densities to support on-demand service, increasing convenience while reducing cost.”

“This may be surprising—cramped, dingy rooms are as familiar in Shanghai as they are in London. But on average, the space per person in Chinese homes has increased by about 323 square feet in 40 years, and by 43 square feet in the UK over the past 15 years.

Ellsworth-Krebs, Katherine. “Our Living Spaces Are Bigger Than Ever. But Not for the Reason You Think,” *Fast Company*, March 30, 2020, <https://www.fastcompany.com/90483458/our-living-spaces-are-bigger-than-ever-but-not-for-the-reason-you-think>

This trend is linked to something called the ‘second demographic transition.’ Put simply, as countries develop and individual incomes rise, people prioritize higher order needs, such as privacy, autonomy, and the fulfillment of personal ambitions.

...Since a basic necessity of housing is a sense of personal space and privacy, regulations could improve the experience of living in high-density housing. This could mean giving renters the right to own pets and decorate, or improving the standards of soundproofing. In the UK, poor soundproofing and disturbance from neighbors is one of the most common complaints about living in flats, and why many choose to move into a detached house.”

For the People, By the People

The search for safe, open, fair and trustworthy decision-making processes in government is important both for public sector workers and for residents.

Institutional trust has been severely eroded over the past fifteen years, with increased public frustrations more recently tied to the aftermath of pandemic restrictions and increased affordability strains due to both global and local factors. Open, fair, and trustworthy governing behaviour needs to be safeguarded in a time of increasing global public suspicion of government motivations and execution of their responsibilities. As always, more deep trust-based engagement and distributed responsibility requires sufficient support and investment, both internally and externally, to ensure the outcomes are valid and the benefits are equitably accessible. Defining and determining the public's role in decision making is a complex undertaking that continues to challenge authorities.

With advancing technology enabling greater numbers of people to contribute to decision making on a broad basis, the spectrum of participatory democracy is expanding. Participatory budgeting, where ordinary citizens take part in directional debates about how tax money should be spent, is wedging open the issue in many jurisdictions. Issue specific referenda and public oversight of actions pushes representative democracy further into new territory. In many jurisdictions, the public participation spectrum is shifting from solely informing and consulting the public about decisions made by governments. More are involving the public directly in the process, collaborating with them by seeking advice to formulate solutions, and in some cases, empowering the public by placing final decisions in their hands. Worried that people with insufficient knowledge of the complexities of issues will be voting naively, some senior officials may find this emerging trend unsettling. Others, however, believe this represents a step forward in establishing trustful capacity within the populace. Ensuring that opportunities for many to participate are equally distributed will be a challenge.

Politicians and workers in the public sector, including high profile, non-political, public facing leaders, are more frequently subjected to harassment and threats as debate regarding contentious issues heats up, especially online. The anonymity of social media can contribute to uninhibited digital aggression, leaving victims feeling anxious, fearful, and powerless as they are targeted. Some will be dissuaded from continuing their roles in the public sector due to the impacts of stress on their health and wellbeing and concerns for family and loved ones who are secondarily impacted by cyberbullying. Mis- and

disinformation is widespread, and many are choosing to stay out of public service as those safety fears rise. The State of Illinois and City of Chicago have both recently passed new protective laws to enable greater security measures for public officials.

Relevance for northeastern Illinois

Collaborative regional governments have the opportunity to bridge some of the intense ideological positioning that is creeping into many areas of governance by using new approaches to engage the public deeply around key decisions. Beyond simply informing, governments can actually share power and allow citizens to participate more fully in policy formation.

Social inequities may be a future driving force of polarization as the region grows and potentially becomes more unevenly developed. Unequal access to social resources within municipalities as well as differences in service delivery across the urban/ex-urban context can amplify discontent.

In order to encourage the best and brightest to become involved in the public sector, and to prevent burnout or disengagement, adequate support and protection for public officials against harassment, both in person and online, is required.

Evidence

“Citizen participation processes should be organised only when there is room for meaningful citizen participation in the decision-making process. Participation processes initiated by a public authority that do not lead to a meaningful contribution to policy making or lack substance, time, or other resources to be well-implemented risk disappointing citizens and compromising their trust in government. Citizens should only be involved in a decision-making process if:

- There is a problem that citizens can help solve.
- There is room in the decision-making process for citizens to have influence over certain decisions. In other words, it is possible to act on the advice received from people.
- There is a genuine commitment by senior leadership to take into account citizens’ inputs.
- There are sufficient financial, technical, and human resources available to implement a meaningful participatory process.
- There is enough time to organise a participatory process, and the timeframe fits the decision-making cycle. Meaning that the decision has not been taken before the process starts.

OECD. *OECD Guidelines for Citizen Participation Processes*. OECD Public Governance Reviews. Paris: OECD Publishing, 2022. <https://www.oecd-ilibrary.org/sites/7759a39c-en/index.html?itemId=/content/component/7759a39c-en>

Or when there is legislation that mandates citizen participation in a particular situation. In such cases the conditions above should also be in place for the citizen participation process to be fruitful.”

“In order to acknowledge the relevance of public opinion, civic engagement or citizen engagement are increasingly being introduced at the democratic level to promote transparency and openness. Because of this, understanding the value and benefits of participatory democracy is key. There are three benefits to participatory democracy we will focus on:

1. Counter-balancing unequal power
2. Dealing with ethical dilemmas and difficult decisions
3. Innovation and collective decision making

Participatory democracy occurs when individual citizens are able to influence the policies and political decisions that impact their lives, rather than relying on their elected representatives to make decisions completely on their behalf.

For participatory democracy to be successful, policymakers have to consistently engage with their citizens and be willing to share more information and power. It can be seen in various levels of government, where citizens have multiple access points to influence policymakers and politicians, who then implement decisions. Decades of research have established that democratic life is far from open to all and that, in fact, numerous inequalities persist in all forms of participation: many citizens do not take part in democratic life, or even understand participation as something that would be worthwhile or possible to engage in. Of the numerous inequalities that exist in participation, the relationship between socio-economic status and democratic engagement forms the clearest and most consistent finding of empirical work in the area—put simply, the poorest members of any society are those least likely to participate in a wide range of democratic activities, such as voting, political party membership or civic activism (Birch et al., 2013; Solt, 2008). Findings like these call into question the normative claims made by proponents of participation—if the reality of political life is that engagement in democracy (and hence, the associated benefits) are concentrated amongst a minority of citizens, what then, are the prospects for a genuinely participatory democracy?”

Dacombe, Rod and Phil Parvin. 2021. “Participatory Democracy in an Age of Inequality.” *Representation*, 57(2), 145–157. doi:10.1080/00344893.2021.1933151.

“An involving process can become problematic, however, when leaders and organizers do not provide the training, education, encouragement, or other forms of support that public participants may need to fully or competently participate, or when the opportunities provided for public involvement are inauthentic—e.g., when leaders are ‘forced’ by policy to involve the public in a decision-making process, and then they merely go through the motions for the purpose of compliance, or when leaders unilaterally overrule participant decisions they disagree with. At its most harmful, an involving process can be intentionally and selectively exclusionary for the purpose of empowering some members, groups, or viewpoints over others, or it can be so mismanaged,

International Association for Public Participation. *Spectrum of Public Participation*. IAP2 International Federation. <https://www.oregon.gov/uhp/ghb/Documents/resources/spectrum-public-participation.pdf>.

disingenuous, or even fraudulent that the public begins to distrust those in leadership positions, lose faith in their public institutions, or question whether any participatory process can be genuine.”

“Social issues are central to political movements such as racism in the United States, and they can be tackled by reducing social inequality. As well as this, they can be combatted through a united effort from all political movements to prevent these deepening divisions.

...‘We found that if there is animosity or conflict between other types of identity group, such as different racial groups, people will tend to shift their political identities over time to match up with their racial identity, leading to political polarisation.’

‘This happens because it reduces conflict within a party. Factors such as inequality, which lead to greater animosity between identity groups, can trigger this process.’

When the researchers analysed whether reducing inequality through wealth redistribution could reduce polarisation, they concluded that it may assist actions that could reduce political polarisation, however it wouldn’t be enough to completely reverse polarisation on its own.

Dr Stewart said: ‘To reverse polarisation you must first remove the conditions that helped create it (for instance, reduce inequality) and then engage in ‘coordinated efforts’ to change attitudes such as signalling by political elites in the form of bipartisan cooperation or improved rhetoric about the ‘other side.’”

“Why Is Political Polarisation Increasing in Democratic Countries?” *Open Access Government*, January 4, 2022.
<https://www.openaccessgovernment.org/political-polarisation/126991/>

“Since the 2020 election, state and local officials have faced a surge of violent threats, harassment, and intimidation. A new report published Thursday by the Brennan Center for Justice lays out how this abuse is reshaping the way public officials across the U.S. do their jobs, making them less likely to engage with constituents, hold public events, advocate for policies that could lead to blowback, or run for re-election.

More than 40% of state legislators surveyed reported being threatened or attacked in the past three years. Nearly 90% said they had suffered less severe abuse, including harassment, intimidation, and stalking. Almost 40% of local officials, including 50% of women, said the ongoing harassment made them less willing to run for re-election or to seek higher office.

...The resulting turnover means that more than 1 in 5 election administrators will be doing the job for the first time in 2024, according to the Brennan Center’s data.”

Bergengruen, Vera. “Public Officials Face Surge of Threats Ahead of 2024 Election.” *TIME*, January 25, 2024.
<https://time.com/6565184/violent-threats-public-officials/>

“Digital aggression (DA) can be broadly defined as the use of ICTs to intentionally inflict harm on others (Burt & Alhabash, 2018). DA has many forms, including harassment (i.e., repeatedly sending inappropriate or hurtful messages), flaming (i.e., using insults and profanity often as a reaction to provocation), and exclusion (i.e., blocking an individual from contact), just to name a few (Kowalski et al., 2014; Vandebosch & Van Cleemput, 2008). DA also occurs through various types of ICTs, such as cell phones (i.e., phone calls or text messages), computers, or tablets, and it takes place across multiple platforms (i.e., email, social networking sites, instant messenger, or online games) (Ybarra et al., 2012). More commonly used terms, such as cyberbullying, online aggression, and electronic aggression, depend more on the type of aggression and/or the specific ICTs involved (Mehari et al., 2014).

M. Kim, M. Ellithorpe, and S. A. Burt. “Anonymity and Its Role in Digital Aggression: A Systematic Review.” *Aggression and Violent Behavior* 72 (September–October 2023): Article 101856. <https://www.sciencedirect.com/science/article/abs/pii/S1359178923000435>

Why might anonymity be associated with DA perpetration? At its most basic level, anonymity is thought to reduce the likelihood of detection and punishment while simultaneously offering a sense of perceived power to the perpetrators (Badiuk, 2006; Mishna et al., 2009). Online anonymity also affords an environment devoid of social cues, and the absence of these social cues has been associated with higher levels of deindividuation and decreased levels of inhibition (Siegel et al., 1986; Sproull & Kiesler, 1986).”

“The Illinois House on Tuesday (Oct 28, 2025) approved legislation aimed at protecting public officials from threats and harassment by allowing them to shield certain information—like home addresses—from public disclosure while sanctioning the use of campaign funds for personal security services. The legislation, sponsored by state Rep. Katie Stuart, D-Edwardsville, would allow state lawmakers, constitutional officers, state’s attorneys, public defenders, county clerks and other elections officials to request that government agencies, businesses and individuals redact or refrain from posting their personal information on public websites.

Moore, Brenden. “Lawmakers Advance Bill Allowing Public Officials to Conceal Personal Information.” *WTTW News*, October 29, 2025. <https://news.wttw.com/2025/10/29/lawmakers-advance-bill-allowing-public-officials-conceal-personal-information>

It would also allow a public official to use their campaign fund to pay for personal security and security upgrades to their home, including security systems, cameras, walls, fences and other physical improvements.”

Scarce Resources

Global competition for necessary resources creates scarcity and, in some cases, conflict.

Increasing demands for resource access, along with climate change induced droughts and flooding throughout the US are impacting access to freshwater and arable land. Water, mineral, and human resource scarcity is impacting American prosperity and well-being and has the potential to be a source of conflict and rising illegal activity in the future.

With rapid global development, key materials and resources for the construction sector and electronics and renewable energy industries have become scarce or hard to acquire. The surge in electric vehicles and electronic devices comes at a cost. There is growing demand for rare earth minerals and concern about how to safely recycle the toxic components of batteries that are enabling electrification. Oil and gas reserves continue to be exploited, but innovative alternative energy sources, such as geothermal heat pumps and bifacial solar panels, that generate electricity from both sides are expanding and can provide cost effective solutions with reduced environmental harms.

Due to its geographic position, Chicagoland is likely to be a focus for those seeking more stable living conditions and for companies that are dependent on available resources. Whether the region is fully prepared for an influx of internal migration from the American south and west as they experience more permanent drought conditions remains to be seen.

Lake Michigan and the surrounding watershed is a critical (some might say defining) resource for the region. While regulatory and environmental limits exist on its usage currently, ongoing protection of fresh water must be a priority to maintain environmental, social and economic health into the next decades. Sewer overflows and contaminants from legacy industrial activity like factory farming still need attention. New uses such as cooling for data farms will need to be measured against the overall needs of the region. There will be demands on available clean water and decisions about how to share will have to be negotiated.

Relevance for northeastern Illinois

Ownership and security of resources, especially fresh clean water may be challenged by other jurisdictions, meaning clear governance and responsible stewardship will be essential. The impact of water dependent data centers and the new quantum facilities are economically beneficial but potentially challenging for the region. Increased climate migration is not assured but preparation for the possibility should advance.

Evidence

“The Great Lakes region faces the prospect of water shortages, groundwater conflicts, and contaminated aquifers as demand sharply increases from large water users such as data centers, agriculture, and critical minerals mining. A new Alliance for the Great Lakes report details how access to water in the region will be undermined in the coming years if serious planning, policy, and regulatory actions are not taken. Some places in the region are already seeing these conflicts play out.

While the Great Lakes Compact prohibits diversions of Great Lakes surface and groundwater outside the basin, Great Lakes states are facing increasing and unprecedented demand from heavy water-using sectors. Increased water demand is also rising at a time when climate change is scrambling precipitation patterns and limiting the ability of groundwater aquifers to recharge. Between 20 to 40% of the Great Lakes’ water budget—the total water flowing in and out of the system—originates as groundwater.

‘Industries like data centers and semiconductor chip manufacturing are choosing to locate in the Great Lakes region, in part because of its water resources along with state laws and tax incentives that encourage investment but don’t consider limited water resources. The region is simply not prepared to manage the competing and overlapping demands that may soon lead to more conflict over water resources,’ said Helena Voltzer, Alliance for the Great Lakes Senior Source Water Policy Manager.”

Alliance for the Great Lakes. “Great Lakes Region Unprepared for Increasing Water Use Demands.” Press release, August 20, 2025. Alliance for the Great Lakes. Accessed January 15, 2026. <https://greatlakes.org/2025/08/great-lakes-region-unprepared-for-increasing-water-use-demands/>

“Shared water is expected not only to increase competition and conflict, but also to contribute to build engagement and cooperation among the riparian states. The last 50 years have witnessed many water treaties being negotiated and signed. However, these water treaties face danger to their survival if they fail to receive support from effective institutional arrangement for proper water. Allotted water in the existing sharing agreements in most of the cases is unable to meet the increasing demand. The scope of further augmentation of river water in the arid and semiarid regions of the world is becoming limited due

“Resource Scarcity.” ScienceDirect Topics. Elsevier. Accessed January 15, 2026. <https://www.sciencedirect.com/topics/social-sciences/resource-scarcity>

to possible impacts of global climate change. Global climate change has the potential to alter the water security landscape in a very significant manner in the near future.”

“As municipalities contract with the City of Chicago to supply fresh water from Lake Michigan, a new report from University of Illinois Chicago researchers recommends that plans include supplying recycled water for industry to avoid looming issues related to the region’s water supply.

Brian Flood, “Plan Calls for Recycling Wastewater to Avoid Chicago Region Water Crisis,” *UIC College of Urban Planning and Public Affairs News*, July 18, 2023, accessed January 15, 2026, <https://cuppa.uic.edu/news-stories/plan-calls-for-recycling-wastewater-to-avoid-chicago-region-water-crisis/>

The report, which was produced by the Freshwater Lab at UIC in partnership with UIC’s Great Cities Institute, details a proposed ‘dual-pipeline’ solution: A system featuring one line that supplies industrial sites with treated wastewater and another for conveying drinking water to homes, healthcare facilities and other places requiring potable water.

The researchers recommend that every new community that applies to build a pipeline to draw water from Lake Michigan build a second one for recycled wastewater. They said this will help meet the area’s drinking water needs, divert wastewater out of area rivers and support industrial economic growth in northern Illinois.

‘Many more communities are going to need water from Chicago, but Illinois has a cap,’ on what it can pull from Lake Michigan, explained Rachel Havelock, founder of the Freshware Lab a humanities-based initiative focused on research, teaching and public awareness about the Great Lakes. ‘This needs to be thought about now.’”

“One of the fastest ways to increase U.S. rare earth production may not require digging new holes in the ground—but rather returning to old ones.

Yuanzhi Tang and Scott McWhorter, “How the US Can Mine Its Own Critical Minerals Without Digging New Holes,” *The Conversation*, May 6, 2025, <https://theconversation.com/how-the-us-can-mine-its-own-critical-minerals-without-digging-new-holes-252609>

The Atlantic coast region stands out on the Earth MRI map as a particularly promising area. What’s even better is that this region has already established extensive mining activities and mature infrastructure, which allows for much faster speed to market.

...This approach is part of a broader strategy known as ‘waste mining,’ ‘urban mining’ or ‘mining the anthropogenic cycle.’

It involves the recovery of critical minerals from existing waste streams such as mine tailings, coal ash, and industrial byproducts. It is also part of building a circular economy where materials are reused and recycled rather than discarded.

The U.S. has the potential to catalyze new domestic supply chains for materials essential to national security and technology. Waste mining and recycling are critical pieces to ensure the long-term sustainability of these supply chains.”

Zeroing in on Change

Renewable energy and green solutions, such as hyper-electrification, are roads to resilient futures.

As we strive to mitigate the consequences of climate change and to reduce emissions, electrification has been seen as a pathway to make consequential change. Northeastern Illinois is a leader in renewable electrical energy and local contributions include photovoltaic solar installations and wind power, boosted by State programs and incentives. Recent legislation changes could open discussions for newer nuclear technologies like Small Modular Reactors. The commitment to 100% renewable energy for municipal buildings in Chicago is a significant step towards the goal. The City of Evanston's Healthy Buildings Ordinance will effectively reduce emissions in buildings over 20,000square feet which are the largest greenhouse gas emitters. A collaborative governance model could fulfill the need to break down silos and create more distributed capacity to make decisions across governments regarding decarbonization including potential health impacts on residents.

There is a significant skills gap in the electrical sector generally, despite high job compensation, in part because of rapidly advancing technology knowledge requirements and retirement of skilled workers. Most of the Midwest currently is experiencing a concerning shortage of electrical and chemical engineers, and the electricians that are required to implement a green energy transition. Associated skills such as mechatronics, heavy equipment repair, and machining are also in short supply. Although there has been some growth in apprenticeships to support the workforce, moving away from fossil fuels will require encouragement of more certifications of highly skilled workers, in particular underutilized potential talent such as women and immigrants.

Attraction and support of net zero businesses to the region will be competitive as more jurisdictions recognize the economic value of "green". But northeastern Illinois has a head start at a time when renewable energy prices have dropped. Should State policy direction change due to public pressure, or in response to current judicial challenges, the impact on local job creation will be great and the requirement to diversify energy sources will be critical. Some businesses seeking additional tax advantages may choose other location-based incentives elsewhere.

The number of registered electric vehicles in Chicagoland is expected to grow but likely more slowly than previously anticipated. Tax incentives at the state and federal level are powerful boosts to EV sales, so changes to those policies have direct impacts. Current adoption rates overall lag other major U.S. cities like Los Angeles. Supply chain investment in manufacturing, especially for electric battery plants, is moving forward rapidly. Replacement of regional fleets with EV service and transit vehicles has begun. At the same time, charging infrastructure must keep pace across the region, including outside of major downtown areas, to encourage general mass adoption.

Financing Retrofits

Municipal support for residential heating and cooling powered by clean energy such as the previous Green Homes Chicago program have been a benefit to homeowners in the region. Deep retrofits of existing housing require ongoing financing sources that may be unreliable in economically challenging and politically changing times.

Relevance for northeastern Illinois

Shortages of electrical workers may impact the ability to transition to a greener economy. Strategic support of low-carbon business initiatives could be a competitive advantage over the longer term as innovation continues despite recent federal funding reorientation. However, the threat of stranded projects and investment as federal funding is suspended bears careful monitoring. If the transition to electrification continues, the impact of higher demand on the grid and reliable supply will be a concern.

Evidence

“NANO Nuclear plans to make an investment of more than \$12 million with the support from the Reimagining Energy and Vehicles in Illinois (REV Illinois) program, which will enable the company to establish its operations and create 50 new full-time jobs. NANO Nuclear will receive \$6.8 million in incentive awards from the REV Illinois program.

Newsfile Corp., “Governor Pritzker Announces NANO Nuclear Energy to Establish Operations in Illinois,” Newsfile, October 7, 2025, <https://www.newsfilecorp.com/release/269422/Governor-Pritzker-Announces-NANO-Nuclear-Energy-to-Establish-Operations-in-Illinois?lang=fr>

‘I’m proud to welcome NANO Nuclear to Illinois’ growing clean energy economy,’ said Governor JB Pritzker. ‘Our qualified workforce, unmatched infrastructure, and competitive incentives all make Illinois the best state for companies investing in clean energy production. With support from REV Illinois, this critical investment from NANO Nuclear will create new jobs for hardworking Illinoisans and promote innovative strides in clean energy solutions.’

‘With Illinois being the birthplace of the controlled nuclear chain reaction, and the state with the largest nuclear electricity production, it is really exciting

to see NANO Nuclear being selected to advance and grow nuclear energy and expertise in the state,’ said Dr. Florent Heidet, Chief Technology Officer of NANO Nuclear. ‘With the strong presence of nuclear utilities and R&D institutions in Illinois, this is the ideal ecosystem for us to thrive.’”

“Illinois offers what no other state can: the right mix of location, logistics, and (especially skilled) labor:

- Central location: Positioned within a two-day truck drive of over 80% of the continental U.S. population, Illinois offers unparalleled access to domestic and global markets alike.
- Unmatched infrastructure: The state is a national leader in freight rail, road miles, and airport capacity (O’Hare is the most-connected airport in the U.S. and top 10 in the world)—all of which are critical for supply chain efficiency and timely, reliable delivery.
- Skilled workforce: With a top-10 largest green workforce in the U.S. plus targeted training programs like those at Heartland Community College (EVES) and Illinois Central College the state is investing in tomorrow’s green workforce.”

Illinois Economic Development Corporation, “Going Green: Why Clean Energy Companies Are Charging Into Illinois,” *Illinois EDC*, <https://www.illinoisedc.org/news/going-green-why-clean-energy-companies-are-charging-into-illinois/>

“...the growth of electrification efforts requires expanding the workforce of electricians to install and maintain the new appliances and critical infrastructure, and some industry experts warn that there is currently a shortage of electricians to satisfy demand.

Construction Coverage, “These Cities Need More Electricians,” *Construction Coverage*, accessed January 15, 2026, <https://constructioncoverage.com/research/these-cities-need-more-electricians-2023>

...Electrician employment varies across the U.S. due to the supply and demand for electricians, which depends on local industry makeup and the local labor market. At the state level, Wyoming has the greatest relative concentration of electricians in the country, with 88% more electricians than the national average, in part due to its burgeoning wind energy market and it being the second-biggest net energy supplier among the states. In contrast, Pennsylvania, South Carolina, and Illinois have relatively few electricians. The concentration of electricians in Pennsylvania and South Carolina is 22% lower than average, while Illinois’s electrician concentration is 27% lower than the national average.”

“The most recent round of those grants announced in September will fund 167 chargers at 25 charging stations, according to the state. The administration has highlighted that many of the charging stations expected under the grant program are outside Cook County, as it seeks to expand EV adoption statewide.

Olander, Olivia. “Illinois Sees Record EV Sales as Trump Administration Ends Federal Tax Credits but State Goals Still Far Off,” *Yahoo! News* (based on *Chicago Tribune* reporting), November 13, 2025, <https://finance.yahoo.com/news/illinois-sees-record-ev-sales-220900232.html>

There are 106 state-funded charging station locations currently online, with more public chargers expected next year through CEJA and federal funding, according to the governor’s office.

Making sure existing federal funds get out the door is a key priority for the Respiratory Health Association, which, as a member of the Illinois Clean Jobs

Coalition, helps shape state policy, Urbaszewski said. The association isn't specifically pushing for more money in the EV rebate program at this point but is evaluating it and many incentives for EV chargers and adoption, he said. Getting a million EVs on the road seemed like 'a modest goal at the time,' Urbaszewski said, as the state looks to phase out fossil fuels."

SHIFT 6

Permanent & Temporary

Continuous and rapid change in every domain may affect concepts of perpetuity, durability and endurance. A world steeped in continuous newness may react by either embracing change and reinvention, or longing for a more comfortable past.

In this Section

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- 6.1 Reconfiguring Use
 - 6.2 Changing Nature of Work
 - 6.3 Preparing for Change
 - 6.4 Economic Decline
 - 6.5 Rise of China
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Reconfiguring Use

Adaptable buildings and circular economic initiatives are part of a transitional and prosperous economy.

While Chicago is a city known for iconic architecture, the region also has significant numbers of buildings and structures that have outlived their current purposes or are currently disused. Adaptive reuse is a green architecture model that offers a means to reduce waste and carbon emissions in the building process, incorporate more efficient high performance energy systems, and to preserve the original streetscape and architectural character of a place. Not all structures are appropriate for reuse as they may be too hazardous or insufficiently accessible, but consideration of the potential to creatively adapt could provide benefits and change development processes.

Circular economy initiatives are moving beyond straightforward recycling programs. Incorporating design for reuse at the start of product development, architecture and infrastructure is necessary to prepare for repair or end of life disposal. Adopting the maxim of transforming “waste into wealth” could reduce landfill and potentially increase energy supply. Argonne National Laboratory and the University of Chicago are working on methods to recover precious rare earth metals from batteries. The Green Era Campus in Auburn Gresham has activated a new urban biodigester to transform food waste into farm ready compost. Rheaply uses technology to help workplaces track and manage their inventory, reuse internal resources and find the next best use of physical assets through a circular marketplace. Regenerative net-positive business models are beginning to account for the environmental and social impact of developing and distributing goods and services.

Tensions may magnify between circular economy advocates, (who support re-imagining systems built around sustainable growth) and those who believe in degrowth, (where society functions within planetary limits and re-ordered social values). Green economy initiatives, in particular clean tech, promise beneficial transition with minimal sacrifices, and may benefit from stimulus infrastructure spending. Many younger citizens instead seek transformational change to reduce consumption and limit their impact over the longer term, including foregoing children and living more frugally.

Relevance for northeastern Illinois

CMAP offices are already situated in a repurposed building demonstrating a leadership position that others may follow and that they can also adopt in their future spaces. There is potential to re-use under-utilized former commercial and industrial buildings throughout the region, especially in under-resourced areas. Infill development patterns that make efficient use of materials and space contribute to densification and better use of public services. Circular economy principles may be applied to legacy industries, including construction specifically, and can be incorporated into purchasing decisions.

Evidence

“Adaptive reuse presents a crucial opportunity to tackle urban challenges and address social and economic needs—from creating affordable housing and essential community services to fostering economic resilience.

By repurposing vacant structures and other underutilized assets, cities can directly address disparities in access to housing, healthcare and cultural amenities.

Cities can cultivate vibrant places that can be sustainable and rooted in local identity, which empowers communities and stimulates long-term economic growth through repurposing.”

Devi, Anu and Sarah Franklin, “How Adaptive Reuse Can Help Reimagine, Repurpose and Revitalize Cities,” *World Economic Forum*, April 2025, accessed January 15, 2026, <https://www.weforum.org/stories/2025/04/how-adaptive-reuse-can-help-reimagine-repurpose-and-revitalize-cities/>

“Many of the iconic commercial buildings of the late 19th century that put Chicago on the architectural map are some of the most energy efficient today. Architects of that time constructed buildings with inherent sustainable features that responded to location and climate.

‘Energy was scarce and expensive, so you didn’t want buildings that were terribly inefficient, but that was it,’ said Doug Farr of Farr Associates, a Chicago-based sustainability-driven architecture and urban design firm. ‘Part of their energy efficiency comes from the fact that they were simpler buildings.’

Buildings of that era tended to be constructed with masonry; have smaller floor plans; thick, load-bearing walls; high ceilings; punched windows instead of floor-to-ceiling glass; and natural ventilation. Architect drew from classical architectural principles to help shade, cool, and circulate air. The northern half of Chicago’s famous Monadnock Building, a proto-skyscraper designed by architects Burnham & Root, is a prime example.

‘The windows open, it’s still heated the way it was in 1891 when it was built—and that’s by hot water radiators. It uses very little energy per square foot. And so, it remains an exemplar of energy efficiency today,’ Farr said.”

Cvetnic, Nicole L., “Green with Envy? Chicago’s Sustainable Architecture Scene,” *Chicago Council on Global Affairs*, September 29, 2023, <https://globalaffairs.org/commentary-and-analysis/blogs/chicagoglob/green-envy-chicagos-sustainable-architecture-scene>

“This study recommends policies to shift the financial incentives at the provincial level, making waste more expensive, while focusing on targeted measures on the most voluminous CRD waste materials to help improve diversion outcomes. This effort will help mitigate economic and market challenges, such as the low cost to dump CRD waste, subsidies for virgin materials, and the limited market for reclaimed materials. This study also recommends boosting the supportive infrastructure for reclaimed CRD materials, helping to mitigate industry and operational barriers, such as a lack of circular infrastructure and supply chain challenges. Supportive infrastructure will also help mitigate constraints related to market competitiveness and perceptions that reclaimed materials are of a lesser quality. Finally, this study will recommend unlocking municipal leadership, mitigating a host of regulatory, economic, operational and cultural barriers, such as poor data, unclear definitions and limited technical standards, a lack of municipal capacity, slow adoption of embodied carbon requirements, limited market for reclaimed materials, status quo bias and more.

...Municipal governments are on the front-line of the development industry and are well placed to help foster a more circular waste industry, but lack unified definitions, standards, data, bylaws, tools, capacity and legal authority to affect change. Compounding this effort are demands to decarbonize and bolster the built environment’s resilience while building more homes faster to help mitigate the impact of the housing crisis.”

“I see the future of circular construction as a culture shift. While digital tools such as BIM, material passports, and stronger policies on embodied carbon will accelerate adoption, the real transformation comes when waste is no longer seen as inevitable but as a resource with value. This mindset opens space for innovation, community-based reuse hubs, supplier take-back programs, and new business models in recovery and remanufacturing.

It also creates opportunities for women and underrepresented professionals to lead these emerging areas of the value chain. Circularity will achieve scale when it is not treated as an innovation project, but as a standard way of thinking and building.”

“A circular economy reveals and designs out the negative impacts of economic activity that cause damage to human health and natural systems. This includes the release of greenhouse gases and hazardous substances, the pollution of air, land, and water, as well as structural waste such as traffic congestion.

...A circular economy favours activities that preserve value in the form of energy, labour, and materials. This means designing for durability, reuse, remanufacturing, and recycling to keep products, components, and materials circulating in the economy.

Lopoukhine, Raphael, *Developing a Circular Building Materials System and Fostering Innovation from Construction, Demolition and Renovation (CRD) Waste: An Ontario-Focused Systemic Policy Analysis and Blueprint for Change* (Master of Design Major Research Project, OCAD University, 2024), https://openresearch.ocadu.ca/id/eprint/4455/1/Lopoukhine_Raphael_2024_MDES_SFI_MRP.pdf

CRD waste: Construction, Renovation and Demolition waste

“Waste Is Not Waste: Waste Has Value – Power of Circular Construction & Sustainable Design,” *Chicago Build Expo Ambassador Blog*, <https://www.chicagobuildexpo.com/ambassador-blog/waste-value-power-circular-construction-sustainable-design/>

BIM: Building Information Modeling

The Circular Economy in Detail – Deep Dive,” *Ellen MacArthur Foundation*, September 15, 2019, <https://www.ellenmacarthurfoundation.org/the-circular-economy-in-detail-deep-dive>

Circular systems make effective use of bio-based materials by encouraging many different uses for them as they cycle between the economy and natural systems.

...A circular economy avoids the use of non-renewable resources and preserves or enhances renewable ones, for instance by returning valuable nutrients to the soil to support regeneration, or using renewable energy as opposed to relying on fossil fuels.”

“The City of Phoenix’s Circular Plastics Microfactory was presented with the Award of Distinction at the 2025 Environmental Excellence Awards. This remanufacturing facility converts plastic waste into new products, provides skilled job opportunities, and seeks to demonstrate a cooperative business model in Phoenix. The first-of-its-kind facility opened in February 2024 as a result of partnerships between the City of Phoenix, Arizona State University, Goodwill of Central and Northern Arizona, and Hustle PHX.

“Environmental Excellence Awards: Phoenix Circular Plastics and Microplastic Initiative,” *City of Phoenix Public Works Newsroom*, <https://www.phoenix.gov/newsroom/public-works-news/environmental-excellence-awards--phoenix-circular-plastics-micro.html>

The Phoenix facility currently takes sorted plastic waste from both Goodwill of Central and Northern Arizona and the City of Phoenix and processes it into pellets or flakes which are then molded to create new products, ranging from furniture, to skateboards, to plastic lumber.

‘Typically, recyclables collected in Phoenix are sorted, baled, and shipped off to processors and remanufacturers around the world,’ said Phoenix’s Circular Economy Project Manager Amanda Jordan. ‘But the microfactory is unique because it has showcased the ability to create a localized circular economy, from collection all the way to new product creation, keeping materials and jobs in the region and helping to reduce environmental impacts from things like transportation or landfilling.’

The facility has already kept more than 550 tons of plastic out of the landfill since its opening.”

“Adaptive reuse projects are not the same as retrofitting. While both processes can offer significant sustainability benefits, retrofitting focuses on optimizing an existing building’s efficiency, consumption and waste generation, without addressing the use of the building itself. Reuse of buildings may involve elements of retrofitting, but it is instead focused on the repurposing of a structure for a different use. Both methods are increasingly popular and sustainable alternatives to demolition.

“What Is Adaptive Reuse?” *University of the Built Environment*, accessed January 15, 2026, <https://www.ube.ac.uk/whats-happening/articles/what-is-adaptive-reuse/>

It’s been said that three-quarters of the infrastructure that will exist by 2050 has yet to be built—a worrying statistic when you consider the amount of energy creating (and demolishing) buildings produces. In the case of the aforementioned M&S Oxford Street redevelopment, campaigners claimed as much as 40,000 tonnes of CO2 would be produced by the project. As with retrofitting, reusing a building for a new purpose is a far more

sustainable alternative than choosing to demolish and redevelop the existing site. While a new building might be more energy efficient, it can take 10–80 years to offset the amount of energy consumed in its construction.”

“While most adaptive reuse focuses on buildings, some of the most innovative adaptive reuse projects transform outdated or unused infrastructure into community features.

Holmes, Jon. “What Is Adaptive Reuse?” *Autodesk Design & Make*. March 26, 2025. <https://www.autodesk.com/design-make/articles/adaptive-reuse>

A famous example of adaptive reuse in infrastructure is New York City’s High Line. Once an elevated railway known as the West Side Elevated Line, this lofty park winds through nearly 1.5 miles of lower Manhattan and features more than 500 species of plants and trees, resting spaces and viewing balconies, an open-air food market, and ramp accessibility.”

“America’s dependence on cars has deeply influenced development policy over the years, limiting new housing development by requiring high ratios of parking to units. Today, there are over two billion parking spaces in the United States, more than enough to cover the surface of Connecticut. However, nearly half of drivers have reduced their driving in recent years. Some municipalities have noticed these shifts and responded by decreasing or eliminating parking requirements for new residential development.

“RD Concept Park House 2.0,” *KTGY Architecture + Planning*, <https://ktgy.com/Work/rd-concept-park-house-2-0/>

While cities adjust parking requirements for future development, recently constructed multifamily buildings may already include more parking than needed. Rather than demolishing existing parking structures, some can be transformed to include residential units. However, adaptive reuse of an entire parking structure is a dramatic undertaking. Incremental transformations provide flexibility and enable building owners to respond to the needs of residents while adding value to underutilized spaces.

To determine if a parking garage is appropriate for adaptive reuse, large portions of the structure must be flat and the floor-to-floor distance must allow for required clearances. Other considerations include ramp location, intrusion into clearance height, structural capacity, building square footage, stair and elevator locations, site access points, and proximity to adjacent buildings.”

Changing Nature of Work

The flexibility and efficiency of technology and disruption in society means jobs are in flux, whether by choice or by circumstance.

Stable full-time employment with one employer over an extended period is no longer the norm in the current economy, or perhaps no longer even desirable. Many people seek to supplement their income with gig work; short term or freelance employment, often as an on-demand contract without benefits or protections. Lower skilled app-based work such as food delivery may be the common stereotype but other workers have now migrated to short term employment such as skilled tradespeople, IT professionals and graphic designers. By leveraging remote technology and temporary work visas, digital nomads are able to establish extended stays in foreign countries while they participate in freelance or flexibly scheduled employment. Some cities and countries have intentional attraction packages to boost their reputation to this cohort such as reliable, accessible high speed internet, long-term work visas, and affordable co-working spaces.

While some employers seek a return to 100% in-office compliance (with significant pushback from staff), many businesses are looking for the efficiencies of a just-in-time contingent workforce and cost reductions in benefits and pensions previously provided for full-time long-term employees. The advantages of a fluid workforce allow companies to adapt to changing economic disruptions. However, with precarity of employment on the upswing, younger workers and those without technically desirable skills are particularly at risk of being permanently shut out as digital technology takes over entry level tasks. Unions are losing their collective clout, including their ability to negotiate for benefits and wage increases, and job security is a notion of the past.

Automation in the workplace has previously been associated with manual labor and the capacity to bring significant improvements in safety (such as automated hospital pharmaceutical dispensing) or reduction of demanding physical strains (such as robotic assembly lines) or convenience (such as on-demand automated banking services). With advances in natural language processing, machine learning, and AI, repeatable cognitive work is also undergoing rapid automation. Professions such as law, accounting, financial advising, education, diagnostics, content production, and design have all seen a relentless expansion of computerized functions replacing humans. Data analytics are proving to be as useful in qualitative user experience development as it is in healthcare and traffic control. AI is now a reliable, fully integrated, and sometimes invisible, component of many services and offerings.

Efforts to compensate for job losses, such as experiments with Universal Basic Income, have only been sporadically tested and social safety nets are unlikely to be sufficient in the longer term. Much like after the industrial revolution, a reorientation of societal structure is underway, as institutions that were conceived to operate in a radically different circumstance no longer function effectively. In an evolving techno-economy, where bringing back legacy jobs is unrealistic, governments may play an enhanced role as re-distributors of income and benefits. The “rhymes of history” suggest we are primed for revolutionary changes ahead that we should all be preparing for; we have increasingly seen disaffected populations rage against the privilege and wide-ranging social exclusion that a rise in unemployment can generate.

Relevance for northeastern Illinois

Efficiencies in government service delivery may be beneficial for taxpayers but associated job loss for stable, well paid workers may have larger social implications for the region. If the proportion of workers engaging in fractional, remote situations increases, the physical landscape of the region and transportation flows and modes may change; prediction will be hard as the shifts are fluid. Office real estate values may decline in downtown and suburban centers if remote work continues to be a significant portion of economic activity. Creative re-use for office space, including housing, presents an opportunity for revitalization. Contingent employment alters the proportion of unionized employees across many sectors.

Evidence

“In recent decades, a number of socioeconomic changes, including globalization, digitalization, and rapid technological advances have accelerated the need for specialized knowledge. In conjunction with the decline of traditional professions, these socioeconomic changes have given rise to a growing number of emerging occupations including, for example, corporate social responsibility (CSR) managers and data scientists. These emerging occupations are often attractive to professionals in established fields, such as law and accounting, who are looking for a competitive advantage in a labor market that increasingly values specialized knowledge. In this context, a number of longstanding professionals elect to pursue career transitions, either to change professions in favor of an emerging occupation, or to reorient their current work toward the expertise of an emerging occupation.

... Our findings demonstrate that professionals undergoing a career transition are confronted with the challenge of reconciling their professional, aspirational, and expected identities. To navigate the tensions between these identities,

Courtois, Cynthia, Claire-France Picard, and Yves Gendron. “Spotlight on Identity Construction Among Professionals Transitioning to an Emerging Occupation,” *Journal of Professions and Organization* 12, no. 1 (February 2025): joae016, <https://doi.org/10.1093/jpo/joae016>

they engage in a process of occupational identity work, employing strategies to establish or blur boundaries between their prior or concurrent professional identity and their emerging occupational identity. These findings contribute to a more nuanced understanding of the challenges associated with identity construction in the context of career transition. Furthermore, our study illustrates that these challenges are especially complex when experienced professionals transition into an emerging occupation.”

“The unemployment rate reflects the percentage of the nation’s labor force that is unemployed. Unemployment adversely affects the disposable income of families, erodes purchasing power, diminishes employee morale, and reduces an economy’s output. It impacts far more than the unemployed themselves.

Rouse, Margaret. “Unemployment Rate: How to Get the Real Picture.” *Investopedia*. <https://www.investopedia.com/articles/economics/10/unemployment-rate-get-real.asp>

...According to the U.S. Bureau of Labor Statistics (BLS), when workers are unemployed, their families lose wages, and the nation as a whole loses its contribution to the economy in terms of the goods or services that could have been produced.

Unemployed workers also lose their purchasing power, which can lead to unemployment for other workers, creating a cascading effect that ripples through the economy. In this way, unemployment even impacts those who are still employed.

When companies are trying to cut costs, they often reduce their workforce as one of their cost-saving measures. Those workers who are left to do more work after a company lays off part of their staff are not likely to receive any additional compensation for the extra hours they are working.

Unemployment can also have a negative effect on the mental state of those who are still employed. They may become more concerned about losing their jobs or be hesitant to search for other employment because they have a false belief that they “are lucky” to be employed at all. They may even feel guilty about having a job when their co-workers are out of work.”

“Popular AI tools shaping remote workflows

Tools like Notion AI, Microsoft Copilot, and Zoom AI Companion are helping remote teams stay efficient. These platforms automate repetitive tasks, draft documents, summarize meetings, and even prioritize emails.

“Remote Work Trends to Look for in 2025.” *Flatio Blog*, November 3, 2025. <https://www.flatio.com/blog/remote-work-trends-to-look-for-in-2025>

Automating administrative and communication tasks

Administrative load is decreasing thanks to automation. AI chatbots handle customer service, AI schedulers coordinate across time zones, and voice assistants are becoming daily work companions.

...Hiring without borders: benefits and challenges

Remote work removes geographical hiring constraints. Companies can now

recruit the best talent globally, driving diversity and innovation. However, challenges like time-zone overlaps, language barriers, and legal compliance arise.

How localization strategies are evolving

To support a global workforce, businesses are localizing benefits, offering culturally relevant training, and adjusting communication styles for inclusivity.

Use of VR in meetings and training

2025 sees virtual reality going mainstream in the workplace. Instead of Zoom fatigue, employees now wear VR headsets to “enter” boardrooms, attend immersive training, or collaborate via virtual whiteboards.

Future possibilities in immersive collaboration

The metaverse holds promise for informal interactions like watercooler chats and team-building retreats in virtual spaces. This tech bridges emotional and social gaps that video calls often fail to fill.”

“Throughout history, technological revolutions have changed the labour force: creating new forms and patterns of work, making others obsolete, and leading to wider societal changes. This current wave of change is likely to have profound impacts. For example, the International Labour Organization estimates that the shift to a greener economy could create 24 million new jobs globally by 2030 through the adoption of sustainable practices in the energy sector, the use of electric vehicles and increasing energy efficiency in existing and future buildings. Meanwhile, reports by groups such as McKinsey suggest that 800 million people could lose their jobs to automation by 2030, while polls reveal that the majority of all employees worry that they do not have the necessary training or skills to get a well-paid job.

There is broad agreement that managing these trends will require changes in our approach to education, for instance, by placing more emphasis on science, technology, engineering, and maths; by teaching soft skills, and resilience; and by ensuring that people can re-skill and up-skill throughout their lifetimes. Unpaid work, for example childcare and elderly care in the home, will need to be better supported, especially as with the shifting age profile of global populations, the demands on these tasks are likely to increase.”

United Nations. “The Impact of Digital Technologies.” *UN75*. <https://www.un.org/en/un75/impact-digital-technologies>

“The gig economy, where people pick up work on an as needed basis, has grown over the past decade to become a significant part of the low-wage service economy and a major point of conflict in the labor rights movement. Gig work has been around for a long time in different forms: babysitters, handymen, artists, vendors, writers and designers. But around the turn of the millennium, tech companies accelerated the trend by turning anyone with a smartphone into a potential gig worker. The trend of converting jobs into gig work, researchers say, is expected to grow, and with it some of the questions around fair pay and job security.

Hendrick, Jill. “Most Drivers Aren’t Making Money: App-Based Gig Work Promised Freedom and Flexibility. Workers Feel Exploited and Unsafe.” *Illinois Answers*, May 27, 2025. <https://illinoisanswers.org/2025/05/27/most-drivers-arent-making-money-app-based-gig-work-promised-freedom-and-flexibility-workers-feel-exploited-and-unsafe/>

As gig work, like rideshare apps, has become facilitated by tech companies that set terms for pay and job security through control of the phone applications used to connect workers to clients, some workers say they are being exploited and kept in unstable and low-paying jobs that prevent them from getting ahead in life.

In Chicago, this tension is most prominently playing out in the fight for worker protections at rideshare companies, most notably Uber and Lyft, where labor rights organizers are calling for due process for termination, minimum pay, safety protocols and even negotiating power.”

“At the national level, estimates suggest that the number of gig workers has increased significantly since the COVID-19 pandemic. Depending on how researchers define “gig work” it is estimated that gig workers represent between 1 and 36 percent of the workforce nationally.

Borsook, Paulina, and Isabella Guirguis. “Listening to Chicago’s Gig Workers.” *New America Chicago*, July 20, 2023. <https://www.newamerica.org/chicago/blog/listening-to-chicagos-gig-workers/>

In Illinois, data suggests that the number of gig workers has increased by 168 percent since 2010. Cook County has the greatest number of gig workers among Illinois counties. Surveys indicate that large subsets of workers in Illinois who participate in app-based platforms often earn low-incomes and face a number of health and safety issues.”

Preparing for Change

Adapting to the new climate reality requires ongoing interventions and revision of solutions that are no longer fit-for-purpose.

As Chicagoland experiences hotter weather and increased precipitation faster than anticipated, reassessment of infrastructure risks is likely required along with adoption of accelerated climate adaptation measures. Failure to mitigate and adapt to climate change and extreme weather events is expected to be the most severe risk facing humanity over the next ten years, considerably outranking our current focus on cost-of-living issues. The implications of climate change will be felt differently across the globe, but the northeastern Illinois Region is expected to experience more extreme heat days and more frequent and intense precipitation. Scientific calculations of expected planetary heating are under review as average surface temperatures globally were the hottest on record in January 2025. These effects are already being recorded but are likely to be more consequential even in the near term and the actions required will reach throughout governmental departments. Although much work has been done to identify these risks, they bear repeating.

Urban core areas in the region are likely to experience heat island effects that will have serious health consequences for residents. Built up parts of northeastern Illinois are warmer than surrounding areas as the concentration of heat retaining pavement, buildings, and other concrete structures is compounded by the warm exhausts of air conditioning units. The effects of increased heat are not new, but the severity and frequency of higher temperatures is likely to have both physical and mental health impacts. Older and more vulnerable populations will be at risk and priority neighborhoods identified by public health will fall within those boundaries. There have been calls for access to cooling as a human right in many jurisdictions. Consideration for emergency planning and preparation are required, possibly beyond those already identified in previous research and policies. Adapting reflective surfaces for roads and sidewalks that have regional oversight, protection and adoption of green spaces, and introduction of additional shade providing vegetation have all been considered elsewhere as adaptive approaches, but increased measures may be required.

Infrastructure, especially roads, bridges and buildings are deteriorating faster than expected. Higher temperatures, more precipitation and variable day to night and seasonal temperatures affect both asphalt and concrete pavements leading to more thermal stresses and deterioration of roads. Increased rainfall may cause safety issues on major roadways and buildings in flood zones or those subjected to repeated heavy storms will suffer reduced material durability over time. Increased temperatures will also translate to strains on the energy grid as more cooling is required for more buildings. Adaptation and repair costs are likely to surge higher than previously anticipated as temperatures increase more rapidly. Construction of new infrastructure and repair of existing facilities will be hampered in extreme heat conditions as outdoor workers are more susceptible to heat related impacts such as heat stroke and reduced productivity due to fatigue.

Environmental melancholia has been designated as a depressive response to the impacts of climate change that seem too systemic and complex for any one person to fix. The rapid deterioration of adequate climate predictors in the face of rampant and repeated catastrophic events increases those threats across the board. Recovery from first hand exposure to extreme climate impacts comes with diagnoses of debilitating PTSD. General anxiety levels mount especially as young people react to the unrelenting onslaught of devastating news. Continuous vigilance is wearying for a population already on edge and is likely to grow.

Relevance for northeastern Illinois

Storms, flooding, and extreme heat events deteriorating municipal infrastructure will be an ongoing concern. Newer, more resilient construction processes and materials should be considered but costs may be higher. Disruption of business accompanies road closures, building repairs and reconstruction. Insurance becomes a more critical requirement but may be harder to negotiate as some areas become too risky for mainstream providers to cover.

Heat island effects in cities, big and small, will require more intensive adaptive planning to quickly integrate additional protective measures to supplement municipal actions. More cooling strategies especially for seniors and vulnerable populations will need to be implemented quickly as the early effects of rising temperatures are already evident. Protocols and policies for climate event emergencies may need to be reviewed to acknowledge increasing intensity and frequency.

Widespread public mental health concerns about the increasing impacts of climate change means people may not be performing optimally in their jobs, are less optimistic about their future prospects, and in some cases, are retreating from collective engagement.

Evidence

“Urban heat islands, characterized by higher temperatures in cities compared to surrounding areas, have been studied using various techniques. However, during heat waves, existing models often underestimate the intensity of these heat islands compared to empirical measurements. To address this, an hourly time-series-based model for predicting heat island intensity during heat wave conditions is proposed. The model was developed and validated using empirical data from the National Monitoring Network in Temuco, Chile. Results indicate a strong correlation ($r > 0.98$) between the model’s predictions and actual monitoring data. Additionally, the study emphasizes the importance of considering the unique microclimatic characteristics and built environment of each city when modelling urban heat islands. Factors such as urban morphology, land cover, and anthropogenic heat emissions interact in complex ways, necessitating tailored modelling approaches for the accurate representation of heat island phenomena.”

Martínez-Soto, Aner, Johannes Fürle, and Alexander Zipf. “Urban Heat Island Intensity Prediction in the Context of Heat Waves: An Evaluation of Model Performance.” *Engineering Proceedings* 39, no. 1 (2023). MDPI. <https://doi.org/10.3390/engproc2023039080>

“Cool pavements include a range of established and emerging technologies that communities are exploring as part of their heat island reduction efforts. The term currently refers to paving materials that reflect more solar energy, enhance water evaporation, or have been otherwise modified to remain cooler than conventional pavements.

U.S. Environmental Protection Agency. “Using Cool Pavements to Reduce Heat Islands.” December 19, 2025. <https://www.epa.gov/heatislands/using-cool-pavements-reduce-heat-islands>

Conventional paving materials can reach peak summertime temperatures of 120–150°F (48–67°C), transferring excess heat to the air above them and heating stormwater as it runs off the pavement into local waterways. Due to the large area covered by pavements in urban areas (nearly 30–45% of land cover based on an analysis of four geographically diverse cities¹), they are an important element to consider in heat island mitigation.

Cool pavements can be created with existing paving technologies (such as asphalt and concrete) as well as newer approaches such as the use of coatings or grass paving.”

“In the absence of adaptation actions, accelerated asset deterioration will shorten the useful service life (USL) of public buildings, requiring more frequent and additional rehabilitations. Changing climate hazards will also result in higher spending on operations and maintenance (O&M). Taken together, these factors will increase the operating and capital costs necessary to maintain public buildings in a state of good repair. In this section, the FAO presents the cost estimates of a no adaptation strategy, where asset managers do not adapt public buildings to withstand changing climate hazards. Under such a strategy, assets will require higher O&M expenses as well as additional capital spending to address accelerated deterioration.”

Financial Accountability Office of Ontario. *Costing Climate Change Impacts to Public Infrastructure: Assessing the Financial Impacts of Extreme Rainfall, Extreme Heat, and Freeze-Thaw Cycles on Public Buildings in Ontario*. Toronto: Financial Accountability Office of Ontario, 2021. PDF. <https://fao-on.org/wp-content/uploads/2024/08/CIP-Buildings-EN.pdf>

“Public policies that promote resilience include public procurement processes that consider climate resilience when comparing competing bids, by accounting for costs over the asset lifetime under alternative scenarios. The increasingly severe impacts of climate change expected later in the design life of the project are unlikely to be considered by the project developer at the design stage unless there is a government requirement to do so. The choice of discount rate will affect the weight placed on potential future impacts relative to those in the near-term. For Public Private Partnership (PPP) contracts, it is important to clarify the allocation of responsibilities regarding climate related risks planning, management and response.”

Organisation for Economic Co-operation and Development. Climate-Resilient Infrastructure: Policy Perspectives. *OECD Environment Policy Paper* No. 14, OECD Publishing, 2018. <https://www.oecd.org/environment/cc/policy-perspectives-climate-resilient-infrastructure.pdf>

“A new article published Tuesday in *Nature Cities* finds that heat stress is responsible for productivity losses between 29.0% to 41.3% on construction job sites. As demand for new construction grows, and extreme heat affects cities across the globe, understanding the effects of heat and humidity on outdoor workers is key to protecting both worker health, as well as project timelines and costs.

Harvard T.H. Chan School of Public Health. “Heat Stress Impacts Workers and the Bottom Line.” <https://hsph.harvard.edu/environmental-health/news/heat-stress-impacts-workers-and-the-bottom-line/>

‘If unmitigated, heat can lead to acute fatal outcomes (for example, heat stroke), long-term health effects or increase the risk of workplace injuries,’ the study authors write. ‘However, even before reaching dangerous levels, physically demanding work in hot-humid conditions is associated with discomfort, irritability, loss of concentration and fatigue.’

For businesses and employers, there is mounting evidence that shows that heat exposure leads to significant reductions in worker productivity, resulting in longer project timelines, development delays and, subsequently, substantial economic losses.

‘The conditions for construction workers can actually be a lot worse than other occupational settings, because—in addition to working outside in the elements—construction workers often use heat-generating tools as part of the job, such as welding torches, power tools, etc. In addition, heat reflects off of concrete structures and steel, making it even hotter for the workers,’ says Barrak Alahmad, study co-author, and researcher at the Harvard T.H. Chan School of Public Health.”

“We are living on an increasingly hot planet. Between July 2023 and June 2024, global temperatures were 1.64 °C higher than in pre-industrial times, with more frequent and more intense heatwaves being recorded in several locations. While negative impacts of extreme heat on physical health have long been recognized, a more recent finding is that extreme temperatures can also have profound negative effects on mental health. An investigation based on medical records of 2.2 million citizens in the USA revealed an 8 % increase in the rate of emergency hospital visits due to mental health issues when temperatures

Baecker, Lea, Uditia Iyengar, Maria Chiara Del Piccolo, and Andrea Mechelli. “Impacts of Extreme Heat on Mental Health: Systematic Review and Qualitative Investigation of the Underpinning Mechanisms.” *The Journal of Climate Change and Health* 22 (2025): 100446. <https://doi.org/10.1016/j.joclim.2025.100446>

were in the top 5%. Another investigation reported a 9.7 % increase in hospital attendance or admission for mental illness in the context of heatwaves in Australia and Vietnam, defined as daily maximum temperatures of at least 35 °C for at least 3 days. These findings are backed up by an increasing number of reviews and meta-analyses reporting that high temperatures are associated with higher levels of distress, anxiety, depression, and suicide. Emerging evidence suggests that these impacts can be fatal, with a recent meta-analysis reporting a 2.2 % increase in mental health-related mortality per 1 °C rise in ambient temperature.”

Economic Decline

Global re-orientation suggests that trust and confidence in American economic dominance is diminished.

What has seemed like a permanent position of strength may be in transition. Decades of American global dominance as the world's largest economy is being challenged in a moment of global reorientation and fiscal reckoning. Trade partners are seeking alternative markets, inflation is persistent, and rising global powers are pursuing aggressive economic policies. As partners explore diversification of supply chains and reduction of trade dependency on a currently protectionist market there will be long term consequences for the American economy. Canadian reorientation to Asian markets, Southeast Asia's increase in intra-regional trade, and European exploration of increased relations with India and Africa are intended to quell uncertainty. In some countries, widespread substitution of American exports for local products will take time to reverse.

As of December 2025, the US hit \$38 trillion in national debt, after one of the fastest year-over-year rises in history. Deficits, or the excess of spending over revenues, continue to add to the debt which economists have described as a crisis. As interest rates continue to grow, the cost of that debt in expensive payments for borrowed funds may be crippling. According to Pew research, the total debt is currently bigger than the entire gross domestic product of the country and is expected to exceed \$52 trillion within 10 years. Without raising taxes or cutting spending for the long term, future generations will have less maneuvering room to build the lives they want.

A weaker US economy translates to less available funding for government services and infrastructure improvements and suppresses business investment. Dropping tax revenues can force governments at various levels to cut spending by reducing services and delaying or cancelling projects. In some cases, the push to reduce labor costs in government has the unintended consequence of increasing inefficiencies, extending wait times for critical services, and shifting payments to severances and unemployment benefits.

The share of US dollars in foreign exchange reserves around the world has declined and sits now at a 20-year low. "De-dollarization", or the reduction of use of the US dollar in world trade and financial transactions, suggests that confidence and trust in American financial supremacy has eroded. In particular, BRICS nations (the trading block of Brazil, Russia, India, China and South Africa) have increased bilateral trade in alternate currencies, such as oil sales between

India and Russia priced and paid for in rupees and rubles. The potential impact for the US economy includes the possible depreciation of the dollar and its buying power against other currencies, increased inflation for major imports like energy, and higher interest rates resulting from greater borrowing costs.

Relevance for northeastern Illinois

International markets for goods and services may shrink. Federal debt repayment obligations may impact financial transfers to states as budgetary reorientation becomes necessary. A fiscal cliff causes uncertainty and a sense of fragility in the private and public sector and for individuals.

While global shifts to protectionist policy over the past year have put cross-border trade under strain, it is not clear that this will be a permanent change in international economic relations.

Evidence

“The US is an unrivaled economic powerhouse. It accounts for 4% of the world’s population yet captures a whopping 24% of the world’s gross domestic product—the total value of goods and services produced by a country in one year. When comparing America’s economic success to other major economies, the scale of its achievements becomes clear. For example, in 2008 the US and Eurozone, the 20 European Union countries that have adopted the euro as their currency, were nearly equal in size. Today, the American economy is twice as large, writes Michael Beckley, Senior Fellow at the American Enterprise Institute. Much of this extraordinary performance stems from America’s traditional commitment to free markets and its ability to attract the world’s most brilliant and innovative minds. Yet due to policy shifts, America’s economic dominance faces mounting threats that could undermine its core competitive advantages and fundamentally weaken its economic position.

The results of these policy shifts include:

1. The abandonment of the international trading system and alienation of our allies when they are needed most to counter China,
2. The weakening of America’s innovation powerhouse by defunding research institutions and rejecting the world’s smartest students, and
3. Worsening US labor shortages by deporting law-abiding immigrants.”

Fair Observer. “Are America’s Competitive Advantages Being Decimated?” <https://www.fairobserver.com/economics/are-americas-competitive-advantages-being-decimated/>

“Interest on the national debt exceeds annual spending on Medicare, as well as national defense. In fiscal 2024, the government’s net interest expense was \$879.9 billion, or 13% of all that year’s expenditures, according to data from the Office of Management and Budget. That was the highest share in a quarter-century. In dollars, it was slightly more than the government spent on Medicare (\$874.1 billion) or national defense (\$873.5 billion) in fiscal 2024. Interest on the debt is now the government’s third-biggest major spending area, behind only Social Security and health care services and research.”

DeSilver, Drew. “Key Facts About the U.S. National Debt.” *Pew Research Center*, August 12, 2025. <https://pewrsr.ch/311b0ll>

“There are two main factors that could erode the dollar’s status. The first includes adverse events that undermine the perceived safety and stability of the greenback—and the U.S.’s overall standing as the world’s leading economic, political and military power. For instance, increased polarization in the U.S. could jeopardize its governance, which underpins its role as a global safe haven. Ongoing U.S. tariff policy could also cause investors to lose confidence in American assets.

J.P. Morgan. “De-Dollarization: Is the US dollar losing its dominance?” *J.P. Morgan Insights*, July 1, 2025. <https://www.jpmorgan.com/insights/global-research/currencies/de-dollarization>

The second factor involves positive developments outside the U.S. that boost the credibility of alternative currencies—economic and political reforms in China, for example. ‘A candidate reserve currency must be perceived as safe and stable and must provide a source of liquidity that is sufficient to meet growing global demand,’ said Alexander Wise, who covers Long-Term Strategy at J.P. Morgan.

Fundamentally, de-dollarization could shift the balance of power among countries, and this could, in turn, reshape the global economy and markets. The impact would be most acutely felt in the U.S., where de-dollarization would likely lead to a broad depreciation and underperformance of U.S. financial assets versus the rest of the world.”

“As the size of the US economy relative to the rest of the world continues to shrink, this dynamic may begin to be turned on its head.¹ Maintaining a global military presence would be harder to finance in the future if the US dollar were to lose its dominant reserve position, reversing the virtuous cycle and precipitating a US loss in global influence. This is one of the reasons why strategic competitors, such as China and Russia, currently work toward a ‘dedollarization’ of their economic relations and global financial flows more broadly. Although last year’s BRICS summit failed to make progress on an alternative financial order, China and Russia are set on undermining the leading role of the dollar, limiting the United States’ ability to impose sanctions, and making it more costly to service its debt and finance a large defense budget.”

Mühleisen, Martin and Valbona Zeneli. “Why the U.S. Cannot Afford to Lose Dollar Dominance.” *Atlantic Council Strategy Paper Series*, May 20, 2025. <https://www.atlanticcouncil.org/content-series/atlantic-council-strategy-paper-series/why-the-us-cannot-afford-to-lose-dollar-dominance/>

“The federal debt, measured against the size of the U.S. economy, is at levels not seen since World War II. Without changes in tax and spending laws, it is projected to climb steadily and indefinitely. The current tax code won’t generate nearly enough revenue to cover the rising projected costs, namely those related to retirement and health benefits promised to an aging population. So far, however, the U.S. government has been able to borrow trillions of dollars a year at interest rates that are moderate by historical standards. Analysts warn, however, that our nation’s growing debt will inevitably lead to a crisis.”

Edelberg, Wendy, Ben Harris, and Louise Sheiner.
“What Are the Risks of a Rising Federal Debt?” *Brookings Institution*, February 12, 2025. <https://www.brookings.edu/articles/what-are-the-risks-of-a-rising-federal-debt/>

“In CBO’s (Congressional Budget Office) projections, federal debt held by the public, measured as a percentage of gross domestic product (GDP), increases in every year of the 2025 –2055 period. By 2029, that debt climbs to 107 percent of GDP, exceeding the historical peak it reached immediately after World War II. In 2055, it reaches 156 percent of GDP and remains on track to increase thereafter. Such large and growing debt would slow economic growth, push up interest payments to foreign holders of U.S. debt, and pose significant risks to the fiscal and economic outlook; it could also cause lawmakers to feel constrained in their policy choices.

Congressional Budget Office. *The Budget and Economic Outlook: 2025 to 2035*. CBO, Publication No. 61270, 2025. <https://www.cbo.gov/publication/61270>

...Federal outlays rise over the next 30 years, reaching 26.6 percent of GDP in 2055. They have exceeded that level only twice: during World War II and during the coronavirus pandemic. Growth in net interest costs; spending for federal health care programs, particularly Medicare; and spending for Social Security, especially over the next decade, drive that increase. Measured as a percentage of GDP, revenues increase over the next few years, largely because of the scheduled expiration of certain provisions of the 2017 tax act. Revenues generally continue to rise thereafter, reaching 19.3 percent of GDP in 2055, mainly because growth in real income (that is, income adjusted to remove the effects of changes in prices) boosts receipts from individual income taxes.

...Demographic trends are key determinants of the long-term budget and economic outlook. In CBO’s projections, the U.S. population grows more slowly over the next 30 years than it did over the past 30 years. Without immigration, the population would begin to shrink in 2033, in part because fertility rates remain below the rate that would be required for a generation to replace itself. In CBO’s projections, real GDP grows at an average rate of 1.6 percent per year from 2025 to 2055, slightly slower than the growth of real potential GDP—the maximum sustainable output of the economy—over that period. Real potential GDP is projected to increase at an average rate of 1.7 percent per year over the next 30 years, slower than the 2.4 percent average growth seen over the past 30 years. That slowdown is attributable to slower growth over the 2025 –2055 period in the potential labor force (an estimate of how big the labor force would be if economic output and other key variables were at their maximum sustainable amounts) and of potential labor force productivity (the ratio of real potential GDP to the potential labor force).”

“Robust GDP growth in recent years has been underpinned by strong household consumption and an above-average contribution from government purchases. Household consumption growth is projected to slow as cooling job growth and the further pass-through of tariff increases to prices dent growth in real disposable personal income. Government purchases are projected to contribute little to growth on average through 2027 largely because of the Administration’s efforts to reduce non-discretionary defense spending. However, business fixed investment is expected to benefit from continued strong AI related investment and a boost from new and enhanced business investment incentives in the OBBBA. Inflation is expected to rise further through mid-2026 as the direct effects of tariff increases on import prices and spillover effects to domestically produced goods and services boost the price level. As these effects fade, headline inflation is expected to return roughly to target by end-2027. Risks to the baseline GDP growth projection are tilted to the downside. With the cyclically-adjusted price-earnings ratio for the S&P 500 near an all-time high, the risk of a sharp correction in equity markets is high. A tightening of credit or liquidity stress in the shadow banking sector would constrain credit supply to households and firms. The labour market could be weaker than anticipated. Inflation may be more persistent than assumed, which would lower real incomes and reduce scope for lower interest rates.”

Organisation for Economic Co-operation and Development. *OECD Economic Outlook: United States (2025)*, in *OECD Economic Outlook, Volume 2025 Issue 2*. OECD Publishing, 2025. https://www.oecd.org/en/publications/oecd-economic-outlook-volume-2025-issue-2_9f653ca1-en/full-report/united-states_3d9917c1.html

“Rather than a sudden catastrophe, investors should fear a slow, deliberate transfer: Policymakers tolerating stronger growth and more inflation, lowering real interest rates so the debt ratio falls. Over time, this would significantly impair the real value of sovereign bonds, while volatility of rates markets could increase.

Manoukian, Jacob. “A Monster, a Time Bomb: How to See the Real Danger from U.S. Debt.” *J.P. Morgan Private Bank*, September 16, 2025. <https://privatebank.jpmorgan.com/nam/en/insights/markets-and-investing/ideas-and-insights/a-monster-a-time-bomb-how-to-see-the-real-danger-from-us-debt>

For that reason, we believe the cost of growing debt would not appear as a dramatic single moment in markets. Instead, it would show up in a loss of purchasing power, especially for sovereign bondholders. While an independent central bank could prevent this dynamic, markets are increasingly concerned that the independence of the Federal Reserve (Fed) is being eroded.”

Rise of China

Relentless pressure and focus on the economy, enabled by a one-party state has pushed China to the edge of global leadership.

There is evidence that the world is shifting to a multi-polar system with China rising to increased influence in economic and political realms. As US dominance in science, the economy and defense are being challenged, impacts will be felt on the local stage. Protectionist U.S. policies that hurt local organizations and institutions are being questioned. American companies have recently launched legal challenges to punishing tariffs related to offshore manufacturing. Reductions in foreign students to American universities may hurt local institutions more than their Chinese counterparts.

Although China functions as an authoritarian one-party state, and despite the trade-offs of limited political freedoms and surveillance, during the Chinese Communist Party's time in power there have been significant improvements in the daily lives of the majority of people across the country. Millions have been lifted from poverty, affordable healthcare is widely available, literacy rates are near universal, and life expectancy is going up to match that of Americans (although the "healthy" life expectancy in China exceeds the U.S.). While North American perception of China remains cautious, around the world, middle- and low-income countries view the transformations that have been achieved as positive and are pursuing more integrated bilateral relations. That influential position has been bolstered by China's Belt and Road Initiatives of foreign investments in overland and maritime routes that establish the infrastructure for unimpeded trade. Isolationist American policies are augmenting that.

China has also heavily invested in widespread science, technology, engineering and math talent development to boost innovation and technological capacity and graduates more STEM students than any other country. The value of technical education is culturally embedded and underpins the growing technology labor force as well as increasing long term scientific innovation success. This emphasis has helped the country to become the world leader in green technology and low carbon innovation such as electric vehicle batteries and renewable energy. This past year, substantial government investments allowed China to build more solar capacity than the rest of the world combined. Given current trade barriers with the U.S. and EU, the country is trying to position itself as an essential player in reaching climate goals for the rest of the world.

American public sentiment towards China has been volatile for decades, but recent polling shifts suggest that perception of the state is now less an “enemy” and more a “competitor”. There is a perceived need to improve collaboration, especially on boundary transcending issues like climate change. A majority of Americans believe that avoiding military conflict should be a high priority, while the federal government is investigating changes to its Indo-Pacific strategic position.

Relevance for northeastern Illinois

Reorientation of the world order to include Chinese influence economically and geopolitically means that businesses and governments in the region will likely need to consider how relations will unfold. Technology supply chain issues, immigration of highly skilled technology workers and adoption of climate improving innovations will all intersect with the position of China with respect to the USA. Changing choice behavior of Chinese university students due to visa restrictions and reorientation to closer university options like Singapore will have a significant economic and research impact on regional institutions. Some legacy industries may see growth if “Buy American” purchasing habits continue, however timelines for facility expansion and labor force training may lag.

Evidence

“US President Donald Trump and Chinese President Xi Jinping will meet later this week at the Asia-Pacific Economic Cooperation (APEC) forum in South Korea. Trade issues will be high on the agenda, including China’s restrictions on rare earth elements, a potential TikTok deal, and Chinese access to US semiconductor technologies. The first meeting of the two leaders since Trump’s return to the White House will also help set the tone of the broader US-China relationship, which has been characterized in recent years by public spats, tensions around Taiwan, espionage revelations, and an extensive trade war.

The 2025 Chicago Council Survey, fielded July 18–30, finds that the bipartisan embrace of US-China competition no longer holds among the public, with partisan differences in perceived threats from China and disagreements on current US-China trade policy. While Republicans continue to favor limiting China’s rise, as well as reductions in trade, and view US-China trade as detrimental to US national security, Democrats have moved in the other direction. Driven by shifts among Democrats and Independents, a majority of Americans now favor a policy of cooperation and engagement with Beijing, oppose higher tariffs, and oppose cuts to bilateral trade.

... The US-China relationship is widely viewed as the most consequential bilateral relationship in the world—and for good reason. The two nations, combined, are home to over 40 percent of global GDP and over half of global military spending. Americans have long viewed the United States and China as the two

Kafura, Craig. “Americans Reverse Course on U.S.-China Competition.” *Chicago Council on Global Affairs*, October 28, 2025. <https://globalaffairs.org/research/public-opinion-survey/americans-reverse-course-us-china-competition>

most globally influential nations, with the United States in the leading spot. And although the public is confident in American military superiority over China, Americans are less confident that the United States is still the stronger economic power.”

“Far more countries hold a favorable view of China than the United States, according to a new report.

The findings, from the polling organization Nira Data’s Democracy Perception Index 2025, found that over three-quarters of the nearly 100 nations surveyed had a preferable view of Beijing compared to Washington.

China has been attempting to capitalize on global opposition to President Donald Trump’s sweeping tariffs that he imposed after returning to the White House. Beijing has worked to deepen ties with Americas’s East Asian allies, while also encouraging the European Union to confront Washington’s economic agenda.

Nira Data’s report shows that perception of the U.S. around the world has fallen sharply over the past year.”

Cameron, Hugh. “Map Shows Countries That Prefer China to the US.” *Newsweek*, May 14, 2025. <https://www.newsweek.com/china-more-favorable-united-states-donald-trump-tariffs-map-nira-data-report-2072059>

“China’s Belt and Road Initiative (BRI) is a comprehensive plan to build land and maritime infrastructure projects that will put China at the centre of international trade. The resulting system encompasses six trade corridors, and includes port facilities, highways, railways, pipelines and fibre optic networks. The initiatives will draw in the raw resources China needs and facilitate access to markets for its products. As with other financial and technological initiatives, the BRI is intended to strengthen China’s position as a great power.”

Public Safety Canada (Security Intelligence Service). “China and the Age of Strategic Rivalry: Expanding Regional Ambitions — The Belt and Road Initiative.” *Government of Canada*. Accessed January 15, 2026. <https://www.canada.ca/en/security-intelligence-service/corporate/publications/china-and-the-age-of-strategic-rivalry/expanding-regional-ambitions-the-belt-and-road-initiative.html>

“Universities in China churned out far more PhD graduates in science, technology, engineering and mathematics (Stem) fields than their US counterparts in the latest comparable year, signalling a rift in the future competitiveness of the world’s two largest economies.

Irwin-Hunt, Alex. “China’s universities outpace US peers amid tech competition.” *fDi Intelligence*, April 30, 2025. <https://www.fdiintelligence.com/content/d0a58f39-0ed0-4b58-8c51-477133b6d9e1>

Drawing direct comparisons of education systems in different countries is difficult due to inconsistent Stem definitions. But official data from China and the US still reveal a divergence in talent production in each country.

‘America’s weak domestic Stem talent pipeline represents perhaps its greatest national security vulnerability,’ says Stephen Ezell, vice-president for global innovation policy at ITIF, a think-tank, noting the US is expected to face a deficit of 3.5 million Stem workers by 2025.

After two decades of growth, universities in China awarded more than 50,000 Stem doctorates in 2022, up by 13.7% from 2021, according to the latest Ministry of Education data.”

“China has emerged as the leading global power in the creation of emerging technologies, dramatically outperforming the United States in the vast majority of critical technological fields. A key indicator of this is that China is dominating the United States when it comes to scientific publications.

Riggi, Justin. “How China Is Outperforming the United States in Critical Technologies.” *Information Technology and Innovation Foundation*, September 23, 2025. <https://itif.org/publications/2025/09/23/how-china-is-outperforming-the-united-states-in-critical-technologies/>

This is concerning as it threatens to erode U.S. leadership across the innovation landscape. ITIF conducted a comprehensive analysis of China’s innovating capabilities last year, and that research concluded that China’s strategic, state-backed scientific advancement across advanced sectors—driven by bold industrial policy, generous government subsidies, and ecosystem integration—has resulted in a surge of global patents, indicating it has transitioned to become a global innovation leader. China is demonstrating dominance in robotics, leading in battery supply, innovating public health by doubling clinical biotech trials, outpacing in quantum communication with a 1,200-mile QKD corridor, experiencing near-peer achievement in AI output, and narrowing gaps in semiconductors and chemicals.”

“The CCP’s expanded social presence has become a source of authoritarian resilience. The combination of care, conviction and coercion has worked well to keep organized opposition at bay. The atomization of dissent and streamlining of public discourse has helped to contain social fragmentation, even as the party struggles to make good on its promises of ‘common prosperity’ and better lifestyles. The social and political polarization the CCP observes in many liberal democracies likely lead the leadership to feel vindicated in its chosen path. But Xi’s social governance approach puts a heavy burden on frontline workers and volunteers. The balance between social care and social control rests on how zealously, strictly and astutely they operate. There are signs of disgruntlement within the system. Grid workers complain about the workload, poor salaries, the tedium of patrols and visits, or filing reports on menial issues such as parking violations or noise complaints. Some have fallen victim to acts of violence by enraged citizens. Their enforcer-role among neighbors during the zero-Covid policy has also taken its toll.

MERICS (Mercator Institute for China Studies). “Serving People, Controlling Them: How Party Is Reinserting Itself into Daily Life.” August 20, 2025. <https://merics.org/en/report/serving-people-controlling-them-how-party-reinserting-itself-daily-life>

In light of these constraints, it may prove harder than the leadership expects to motivate key elements of the general public. Xi’s language of struggle and ‘eating bitterness’ for the sake of national greatness reflects the conditions in which his generation was raised. Chinese citizens today grow up in relative material comfort, especially the urban youth, and have different expectations of what their country can do for them. The CCP acknowledges, ‘the environment is changing and the people’s yearning for a better life will be stronger; national governance must continuously adapt to these new trends.’ Amid economic setbacks, the 2025 National Security White Paper explicitly mentioned the need to ensure the people’s sense of ‘achievement and happiness’, alongside increased policing.”

Next Steps in the CMAV Visioning Project

TASK	DATE
Horizon Scan	Dec 2025
Resource Group #2 Workshop	Jan 2026
Draft Scenarios based on Horizon Scan and feedback	Feb 2026
Resource Group Workshop #3	Apr 2026
Finalize Scenarios, Develop Preliminary Grand Challenges	Jul 2026
Final Document Report	Summer 2026
The Century Plan	2027

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Foresight Glossary

Drivers of Change: underlying causes of change that are external to the system being analyzed. Drivers exist on larger scales and are not influenced or impacted by smaller systems.

Forecasting: the process of making informed predictions about future events, trends, or conditions by using historical data, present information, and analytical models. Strategic Foresight is not forecasting because it avoids predictions. Strategic Foresight typically identifies a number of plausible and/or probable futures based on its own unique methodology.

Futures: a concept that involves a network of foresight and innovation that seeks to develop and mobilize systems and practices, engagement of causes, effects, and changes occurring in industries, environments, and technologies

Horizon Scanning: process of systematically exploring the external environment to understand where change is occurring and to identify upcoming opportunities and challenges.

Exploratory Scenario Planning: a technique that enables organizations to prepare for potential future challenges. Informed by qualitative and quantitative research, scenarios identify future possibilities and create plausible views on the future that can be used to determine the best response.

Shift: a significant, often systemic, transformation in the external environment that diverge from expected future trajectories and require a fundamental change in perspective or strategy. They are the critical elements of change that foresight practitioners aim to identify, analyze, and prepare for.

STEPPV: an analytical framework that considers Society, Technology, Ecology, Economy, and Values. Identifying and classifying trends with this framework allows organizations to have a more holistic understanding for factors that might impact their evolution.

Strategic Foresight: a systematic process of exploring multiple plausible futures to inform and guide present-day decision-making. It differs from forecasting by not predicting a single outcome but instead preparing for a range of possible challenges and opportunities that may arise from emerging Drivers of Change, Signals of Change and other uncertainties.

Trends: a measurable change in behavior that develops among a population or demographic – often resulting from technological change or ideological shifts in society. Trends are distinct directions of change that point to new concepts or new patterns of behavior that may shape the future.

Uncertainties: applies to future events or unknown events, arises from partially observable evidence that causes a lack of confidence or “certainty” risk is the state of uncertainty

Uncertainty: the experience of having limited knowledge or ability to describe an existing state or future outcome. In scenario planning, critical uncertainties refer to areas of change that are of critical importance to the future while also being highly uncertain and difficult to predict.

Weak Signals (Faint Signals): events or trends occurring in the periphery, often subtle or undetectable without a strong “radar system” to observe and mark potentially important information. They are early indicators of potential future change in the external environment, such as new products, policies, or behaviors that could lead to disruption.