

Livable Communities

Creating a Sense of Place

This theme addresses diverse factors that together shape quality of life in terms of “livability” — what attracts people to a particular community. The chapter on Livable Communities includes four sections of recommended actions:

1. Achieve Greater Livability through Land Use and Housing	60
2. Manage and Conserve Water and Energy Resources	82
3. Expand and Improve Parks and Open Space	116
4. Promote Sustainable Local Food	141

One of the central goals of GO TO 2040 is to make our region a better place to live. The Regional Vision describes a future quality of life based on “attractive, interdependent communities” that offer a “range of housing options,” “diverse... transportation and recreation choices,” and access to “employment, education, health care, and other regional assets [such as] an abundance of art forms.” To achieve this, GO TO 2040 seeks to direct investment toward strengthening existing communities and finding opportunities to encourage new development and redevelopment in livable communities that are denser and designed for mixed uses.





RECOMMENDATION

1 Achieve greater livability through land use and housing



One of the GO TO 2040 plan's central goals is to create livable communities. Livability is primarily created at the local level, through planning and development decisions made by communities, developers, and individuals. While CMAP can help local governments address issues of livability in their communities, development decisions will continue to be made locally.

Yet because those actions can have significant cumulative effects on overall regional livability and economic prosperity, it is also important for local decision makers to consider the regional implications of their choices.

Therefore, the purpose of this recommendation area is to help and encourage local governments to apply principles of livability when they make development decisions in their communities. GO TO 2040 supports reinvesting in existing communities, pursuing opportunities for more compact, walkable, and mixed-use development, and providing a range of housing options. The implementation of these principles will vary across the region, requiring sensitivity to the unique context of each community. This section refers to principles of livability frequently; this term is explained in the Challenges and Opportunities chapter on page 37.

The building blocks of local planning are comprehensive plans, consistent ordinances and other regulations, and trained decision-makers. To strengthen those areas, this section of the GO TO 2040 plan includes the following recommendations:

Funding from several existing sources should be targeted to support local planning by communities, with particular emphasis on updating ordinances and other development regulations, and on incorporating transportation, land use, and housing. A new, dedicated source of funding that can be used for infrastructure investments that help to implement local plans should also be created, building on models from other parts of the country.

CMAP and its partners should offer technical assistance — such as researching regulatory mechanisms or helping to identify appropriate housing strategies — to communities that seek to implement principles of livability.

Communities should collaborate with one another to build on lessons learned and to develop solutions for common problems. Counties and Councils of Governments (COGs) should play a significant role in encouraging and facilitating collaboration between municipalities.

Local land use decisions should focus on the interrelationship of transportation, land use, and housing, with an emphasis on development patterns that support the use of public transit.

Among the many benefits of pursuing livable communities, compact development can significantly reduce the cost of local roads and other infrastructure. Growth that emphasizes access to transit and other transportation alternatives can reduce reliance on automobiles, helping to reduce congestion and household transportation costs. Regionally balanced housing options can help residents to live near where they work, which also reduces travel costs and congestion.

Improved livability also helps the region to compete economically with other global centers for businesses and workers. And environmental benefits include increased preservation of agriculturally productive and undeveloped land, less degradation of streams and wetlands, reduced water and energy consumption, improved air quality, and decreased greenhouse gas emissions. But beyond these, improved quality of life is the overriding benefit of implementing these recommendations. Some of the most important benefits are not easily quantified, including the resulting sense of community that leads to civic involvement and unites communities to care for their most vulnerable members.

The goal of GO TO 2040 is not to increase density for its own sake, and the plan does not seek to have all future development occur only in high-density areas. Rather, its overall intent is to create communities that are livable, and increasing densities even moderately is a means to this end. CMAP recommends that land use decisions continue to be a local prerogative. With local authority comes the responsibility to carefully assess broader impacts on neighboring communities and on the region as a whole. Implementing the GO TO 2040 recommendations for achieving greater livability will help to balance the need for local autonomy and the benefits of regional cooperation.

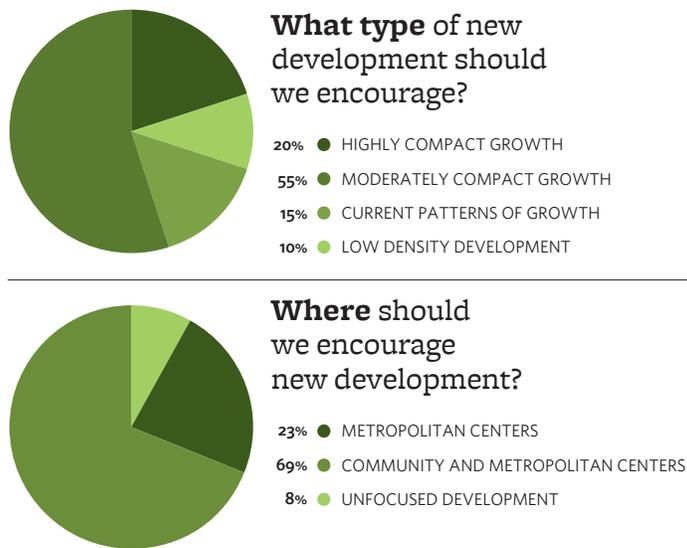
This section describes the benefits of planning locally for livability, current conditions, indicators, and recommendations, with tables describing specific implementation areas and the organizations responsible for implementation.

1.1 Benefits

The GO TO 2040 Regional Vision states that the region should “maximize the competitive advantage of existing physical infrastructure by encouraging reinvestment in our communities through mixed-use, compact development and redevelopment” and also should support “a range of housing options, broadly distributed throughout the region.”

After a brief summary of related public opinion, this subsection describes numerous benefits that result from development that supports livability.

Figure 9. Preferences of type and location of development



Source: CMAP GO TO 2040 “Invent the Future” participants, 2009

An important question concerning denser, mixed-use communities is whether people actually want to live in these kinds of places. The clear answer is that some do, and some do not. In support of low-density environments, some people, for example, point to decades of rapid growth in low-density communities, coupled with population declines in urban centers (though recent years have seen some reversal of this trend).¹ On the other hand, advocates of denser development point to such things as higher sale prices of comparable homes in denser areas to demonstrate that people are willing to pay a premium for the benefits that density provides, and point out that homes in neighborhoods that are walkable and well-designed sell for more than similar homes in neighborhoods without these characteristics.²

Affordable housing can also be a contentious issue. Many residents oppose it in their communities due to concerns about lowered property values, crime, and other real or perceived drawbacks. But much of this is based on perceptions of affordable housing as extremely dense concentrations of poverty — perceptions that are far removed from current realities. If affordable housing is designed well and placed in mixed-income communities, it can be indistinguishable from market-rate housing. Studies have found that proximity to affordable housing does not have a negative effect on property values, as long as the affordable housing is well-designed and planned in context with the surrounding community.³

During the GO TO 2040 “Invent the Future” workshops held in the summer of 2009, CMAP directly asked participants about density preferences. As seen in **Figure 9**, three-quarters of the participants felt our region needs to increase density in order to meet other regional goals, and most favored modest increases in density. Of the participants, 92 percent believed new growth should be targeted to community and metropolitan centers overall. Indeed, many participants noted that changing the overall pattern of development was one of the most important actions that our region could take.

1 Development, Community, and Environment Division of the U.S. Environmental Protection Agency, “Residential Construction Trends in America’s Metropolitan Regions,” January, 2010. See <http://tinyurl.com/ykwwq6z>.

2 Joe Cortright, Imprensa, Inc., “Walking the Walk: How Walkability Raises Home Values in U.S. Cities,” for CEOs for Cities, August 2009. See <http://tinyurl.com/1546rk>.

3 Stephen Green et al., “Low Income Housing Tax Credit Housing Developments and Property Values,” for the Center for Urban Land Economics Research at the University of Wisconsin, 2002. A wide variety of other studies on this issue are available at <http://www.realtor.org/library/library/fg504>.

Household and Public Cost Savings

What is perceived as cheaper “greenfield” development is, in the long run, more costly by many measures. Infrastructure costs increase as new roads, sewer, water, and utilities must cross significant distances to accommodate spread-out development. National and regional research shows that compact development patterns can significantly reduce the cost of local roads and other infrastructure, with the cost savings accruing to local governments and developers.⁴ The cost of providing services such as fire and police protection or garbage pickup is also generally lower in a denser area.⁵

Developing in ways that support livability reduces costs not only for the public sector, but also for individual households. An important feature of livability is its support for alternative transportation that helps reduce reliance on driving. Access to transit options can decrease what households must spend on transportation because traveling by transit is much cheaper than owning, maintaining, and driving a car. Other types of cost savings, such as reductions in health care costs, have been found to be associated with investments in more active forms of transportation like bicycling and walking.⁶ Livability principles, particularly supporting denser development and providing a range of housing options, are particularly beneficial around transit stations, as increased development in these areas can dramatically increase access to public transit. Supporting alternative transportation and shortening trips also reduce congestion, with benefits for all users of the transportation system — even those who continue to drive.

A regionally balanced range of housing can also reduce the need for long-distance travel, as it gives residents more options to live near where they work. Currently, housing is limited near many of the region’s job centers, forcing lower-income workers to make long commutes from more-affordable residential areas. While many residents may still choose to make long commutes due to lifestyle or occupation choices, GO TO 2040 seeks to make this decision a choice, rather than a necessity.

The full household cost savings of creating livable communities are best understood by including transportation costs along with housing costs when determining standards of affordability. The Housing + Transportation (H+T) index, recently developed by the Center for Neighborhood Technology (CNT), provides a means to do this.⁷ As a next step, energy and other utility costs — which also tend to be lower in livable communities, all else being equal — may be considered as a part of housing costs as well.

4 Additional discussion on infrastructures costs can be found in GO TO 2040 subsection 1.6 “Costs and Financing.”

5 Mark Muro and Robert Puentes, “Investing in a Better Future: A Review of the Fiscal and Competitive Advantages of Smarter Growth Development Patterns,” Brookings Institution Center on Urban and Metropolitan Policy, 2004.

6 Thomas Gotschi, PhD, “Cost-effectiveness of Bicycle Infrastructure and Promotion to Increase Physical Activity.” See <http://tinyurl.com/37no2sv/>.

7 Center for Neighborhood Technology, “Housing + Transportation Affordability Index.” See <http://htaindex.org/>.

Economic

The quality of the region's workforce is a primary driver of future prosperity, and research has shown that the single best predictor of a region's economic growth is the educational achievement of its residents.⁸ Part of the solution is to improve education and workforce development systems, and this is a high-priority recommendation of GO TO 2040. But workers and jobs are increasingly mobile, with the ability to relocate quickly from region to region. Therefore it is important for the region to attract and retain skilled workers, in competition with other major regions across the nation and world.

To successfully compete, the region needs to be viewed as an attractive, desirable place to live and work, and livability is being increasingly recognized as a contributor to economic growth.⁹ Some researchers believe that attracting the highly educated and skilled workers who drive economic growth is key, and that denser urban places will do best in this regard.¹⁰ Others doubt that all skilled workers want to live in cities, but that they will be attracted to places with good schools, low crime, and short commutes.¹¹

The assumption of GO TO 2040 is that the region will need to attract a variety of skilled, talented people to be economically successful, so the region will need a variety of community types — but all communities should be designed with consideration of whether they will support a high quality of life.

8 Based on a review of the following studies: C. Simon, "Human Capital and Metropolitan Employment Growth," *Journal of Urban Economics* 43 (1998): 223-243. E. Glaeser et al., "Economic Growth in a Cross-Section of Cities," *Journal of Monetary Economics* 36 (1995): 117-43. E. Glaeser and J. Shapiro, "Urban Growth in the 1990s: Is City Living Back," *Journal of Regional Science* 43 (2003): 139-65. J. Pack, *Growth and Convergence in Metropolitan America* (Washington, D.C.: Brookings Institution, 2002). E. Glaeser and A. Saiz, "The Rise of the Skilled City," *Brookings-Wharton Papers on Urban Affairs* 5 (2004): 47-94. R. Green, "Airports and Economic Development," *Real Estate Economics* 35 (2007): 91-112. P. Blumenthal et al., "Understanding the Economic Performance of Metropolitan Areas in the United States," *Urban Studies* 46 (2009): 605-27. M. Greenstone and E. Moretti, "Bidding

for Industrial Plants: Does Winning a Million Dollar Plant Increase Welfare?" NBER Working Paper 9844 (2003). See <http://www.nber.org/papers/w9844>. Z. Acs and C. Armington, "Employment Growth and Entrepreneurial Activity in Cities," *Regional Studies* 388 (2004): 911-927.

9 CEOs for Cities, "The Changing Dynamics of Urban America," 2004.

10 Richard Florida, *The Rise of the Creative Class*, 2002.

11 Edward Glaeser, Review of Richard Florida's *The Rise of the Creative Class*. See <http://tinyurl.com/22vyydz>.

Environmental

Environmental impacts of continued development in rural areas include the loss of agriculturally productive land, missed conservation opportunities, degradation of streams and wetlands due to encroaching development and stormwater runoff, and increased pollutants and emissions from travel across a more-dispersed development pattern. An approach to livability that includes a denser development pattern that focuses on reinvestment within existing communities reduces the pressure for consumption of undeveloped land.

Developing more densely also reduces consumption of water and energy, all else being equal. Shorter pipe lengths in denser areas mean less wasted water, and smaller yards require less watering.¹² Energy savings in denser areas, and corresponding decreases in greenhouse gas emissions, occur primarily because of the reductions in driving described above. Impervious cover is also reduced, on a regional scale, by higher densities, particularly if growth occurs as redevelopment in places that already have impervious surface cover.

While these positive environmental impacts are regional in nature, dense development and reinvestment in existing communities may cause localized problems. While denser development does lower the region's total acreage of impervious surfaces, for example, it also concentrates these into a smaller area, which can worsen flooding. Denser development can also create heat islands in areas without sufficient open space, or pockets of poor air quality caused by concentrating many motor vehicles and other pollutant emitters into a small area.

Many of these challenges can be solved or mitigated by applying green development techniques or conservation design, which is an element of GO TO 2040's definition of livability. By incorporating open space, carefully designing buildings and landscapes, and using small-scale green infrastructure features, the localized negative impacts of density can be avoided.¹³

Quality of Life

By definition, livable communities are intended to improve quality of life. The measures above — concerning household costs, economic growth, and environmental protection — are all ways to measure elements of quality of life, but there are other impacts that are difficult or impossible to quantify. A sense of community is one of the most important elements of livability, but defining or assessing this concept is impossibly complex. At its best, a strong sense of community can increase civic involvement, as residents feel commitment to improving their community; lower crime, as neighbors watch out for each other and for suspicious activity; and even improve disaster recovery, as stronger communities are better able to come together to care for their most vulnerable members.

Recent research also illustrates links between livable communities and both physical and mental health.¹⁴ Some benefits can be linked to physical design features such as access to parks and open space, and available bicycle and pedestrian facilities. Other benefits relate more to the sense of community described above. In particular, designing for livability can allow older residents to “age in place” within their homes or communities, with demonstrable positive physical and mental health outcomes. Because the population of the region is aging, with the number of residents over 65 projected to more than double by 2040, this issue is increasingly important.¹⁵ Overall, while the positive impacts of livable communities have not all been isolated and statistically proven by research, there is plenty of quantitative and anecdotal evidence to argue for pursuing livability in development decisions.

12 Chicago Metropolitan Agency for Planning, “Water 2050: Northeastern Illinois Regional Water Supply/Demand Plan,” 2010. See <http://www.cmap.illinois.gov/waterplan>.

13 These techniques are described at greater length in the GO TO 2040 sections titled “Manage and Conserve Water and Energy Resources” and “Expand and Improve Parks and Open Space.”

14 GO TO 2040 Health Strategy Paper, 2009. See <http://www.goto2040.org/health/>.

15 Demographic trends projected by CMAP; see GO TO 2040 chapter titled “Challenges and Opportunities” for more detail.

1.2 Current Conditions

The Problem with Current Land Use Patterns

The region's development over the last several decades has resulted in a pattern of land use that is not sustainable. Development in the last half of the 20th Century has overall been a story of outward expansion, consuming vast amounts of land and requiring huge investments in water, wastewater, and transportation infrastructure.

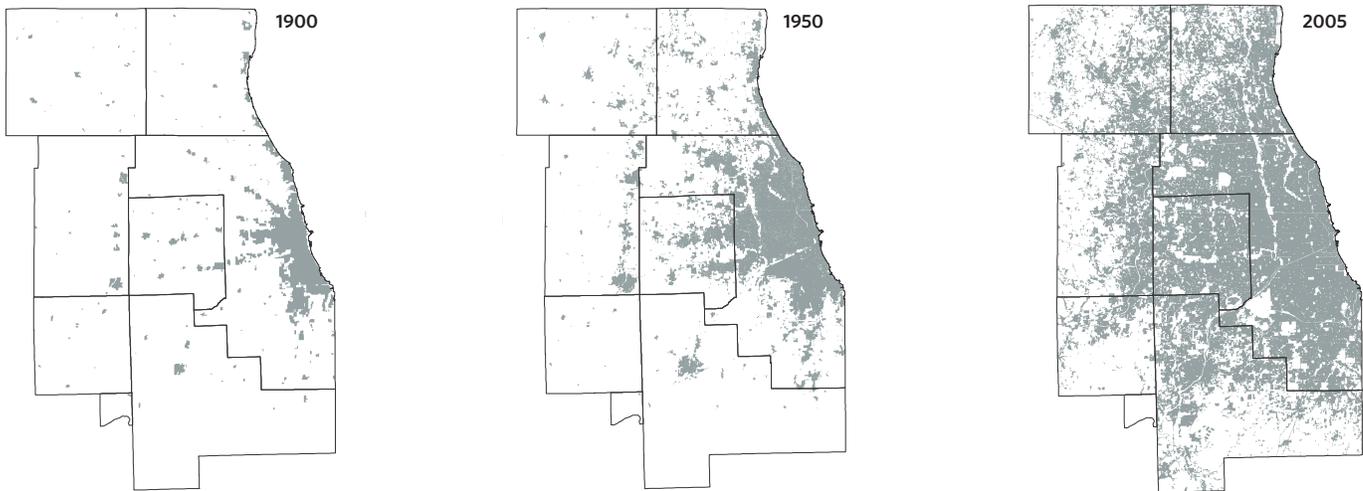
Figure 10 shows how the region's developed area has changed over the past century.

During this time, much development occurred unevenly, resulting in an imbalance between where jobs are located and where people live. As population expanded, many people moved to low-density, solely residential neighborhoods accessible only by car. At the same time, jobs shifted from major concentrations in the region's industrial hubs to dispersed and less accessible employment centers across

the region. These changes were driven by diverse factors, including infrastructure investment decisions, tax policies, resident preferences for larger homes and lots, and movement toward areas with lower crime and better schools, to name a few.

The relative importance of these factors has been debated for decades and will not be solved by GO TO 2040. But whatever the reasons, the result of these major shifts is a disparity in where people work and where people live, and more particularly where affordable housing is located in relation to job centers.¹⁶ Further, this imbalance has hindered access to transit, increased energy use and household costs related to transportation, and helped to fuel the region's increasing traffic congestion. The environmental impacts of rapid growth in undeveloped areas are also severe, and the region has lost much of its former open space and agricultural land. Recognizing these issues, CMAP concludes that the region should alter the trend of land use that emerged over the past several decades, in favor of a development pattern that promotes livability.

Figure 10. Regional development, 1900-2005



16 CMAP Infill Snapshot. See <http://www.cmap.illinois.gov/snapshot.aspx#Infill>.

Figure 10 Source: U.S. Environmental Protection Agency, Chicago Area Urban Development, 2008 (1900-1990 images); CMAP land use inventory (2005 image)

Impediments to Planning for Livable Communities

While there are many good local examples of planning for livable communities, overall regional trends have not been positive. Recent development patterns resulted from various factors that remain in place today, and significant obstacles face communities or developers pursuing projects that involve reinvestment, compact or mixed-use development, or affordable housing components.

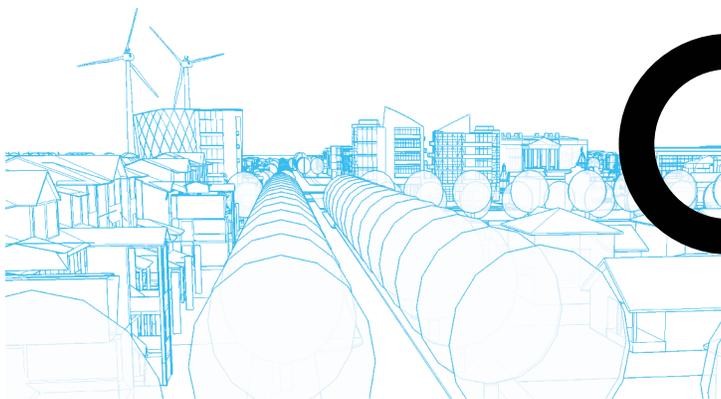
On the regulatory side, ordinances, codes, and other regulations often make it more difficult to build compact, mixed-use development instead of single-use subdivisions. Projects involving reinvestment in existing communities face particular challenges. Often, development requirements also affect the cost of housing construction or rehabilitation, inhibiting efforts to preserve housing; these can include aesthetic touches like requirements for brick facades, which can be important for community acceptance but can also make affordability a challenge. Land assembly can be extremely difficult in established downtown areas that have seen decades of fragmented ownership. Some development regulations like minimum parking provisions can add challenges to redevelopment of sites in denser areas. Further, well-intentioned planning policies can sometimes come into conflict with each other. For example, regulations meant to help manage stormwater in urban communities can make it difficult to pursue reinvestment projects in these areas.

Significant non-regulatory impediments also exist. Public opinions about perceived negative effects of dense or affordable housing — often based on past examples of large blocks of multi-family housing — can impede efforts to establish a range of housing

opportunities in revitalized community cores. “Density” is often perceived as a negative term, although the primary challenge in developing more compactly often has more to do with issues of community fit than with density itself. And well-intentioned plans and policies that try to mix land uses do not always align with market conditions, creating retail vacancies that can detract from communities.

Although some of these impediments cannot be solved directly by local government actions, all can be addressed in some way. The public sector cannot create a market for redevelopment where none exists, but it can invest in infrastructure that makes redevelopment projects more viable. Similarly, most housing is constructed by the private sector, but local governments permit what types of housing can be built. Changing existing perceptions about affordable housing may seem impossible, but over time, proactive education and well-designed affordable housing developments can make a difference. And some of our challenges are also opportunities; there are significant opportunities to accommodate future growth by reinvesting within the borders of our municipalities, as **Figure 11** demonstrates. This map shows parts of the region with significant vacant land, or with industrial or commercial parcels that are defined as “underutilized” (meaning that the value of the actual land is greater than the value of the improvement on the land).¹⁷

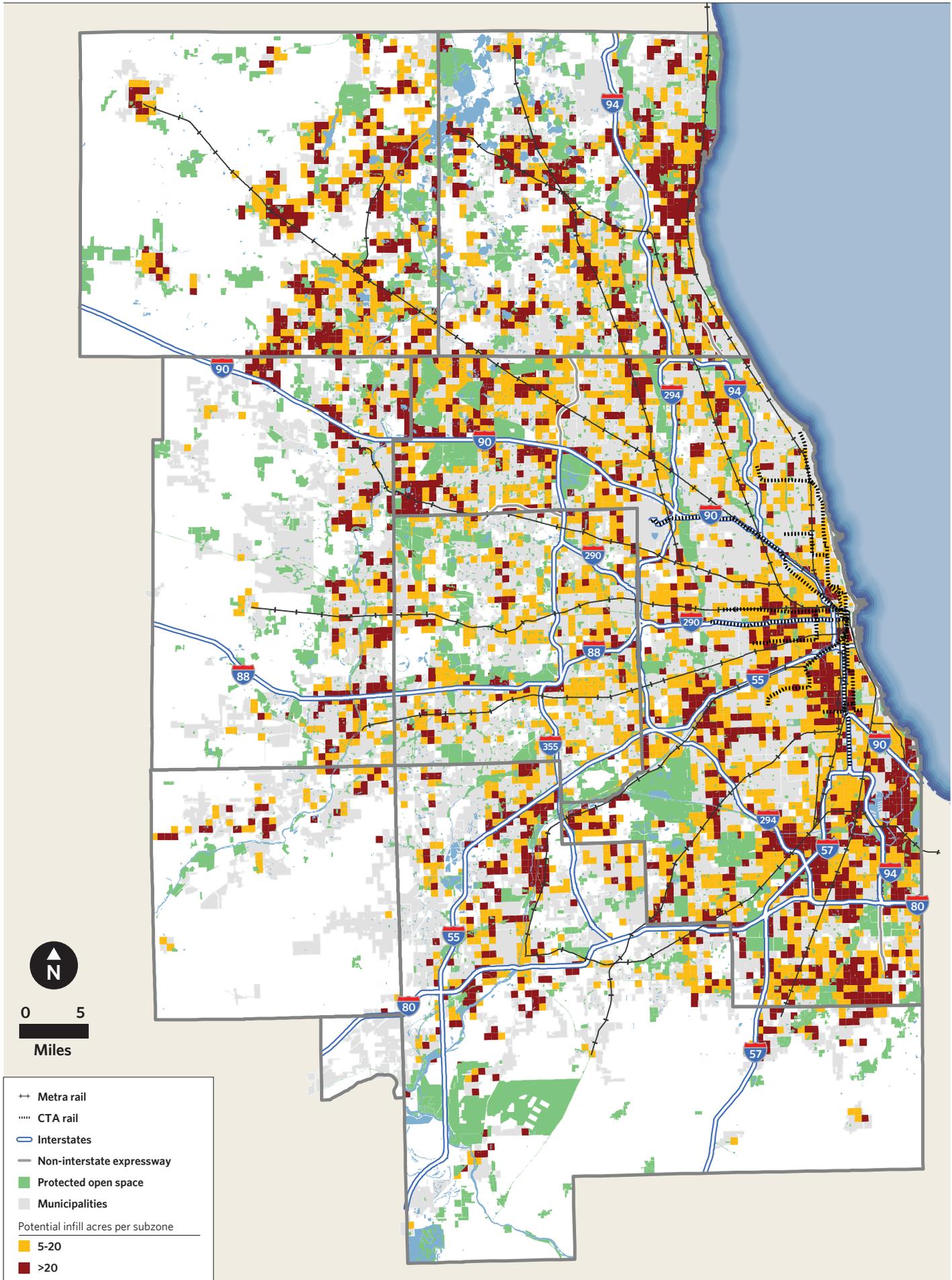
While CMAP recognizes that the obstacles to building livable communities are significant and complex, GO TO 2040’s recommendations concerning land use and housing are built on the belief that proactive planning by local governments can make a major positive difference.



¹⁷ CMAP Jobs-Housing Snapshot. See <http://www.cmap.illinois.gov/documents/20583/9cdd51bf-4184-415a-a6af-7403ea0a6d6e>.

Within existing municipal boundaries, there are more than 100,000 acres of vacant or under-used land. GO TO 2040 promotes the redevelopment of this land with a mix of residential and non-residential uses, accommodating half of the region’s growth – about 1.2 million people.

Figure 11. Opportunities for reinvestment



Source: Chicago Metropolitan Agency for Planning, 2010

1.3 Indicators and Targets

The recommendations described in this section seek to support local governments as they plan for livable communities, and to achieve a regionally balanced supply of housing of all types and costs. GO TO 2040 proposes tracking progress toward these goals through two indicators: the amount of reinvestment within existing communities; and percentage of income spent by low-income households on housing and transportation costs.

Reinvestment

A critical element of GO TO 2040 is encouraging development in existing communities, where infrastructure to support it is already available. According to analysis of infill opportunities,¹⁸ there are over 100,000 acres of land within existing municipal boundaries that are available for redevelopment. These are parcels that are vacant, or are “underutilized” commercial and industrial properties (see **Figure 9**). By 2040, GO TO 2040 seeks to redevelop this land with a mix of residential and non-residential uses, and projects that it could accommodate around half of the region’s growth — or 1.2 million people.

REDEVELOPMENT OF UNDERUTILIZED ACRES

20,000 acres by 2015

100,000 acres by 2040

Housing Affordability

CNT has developed a new measure of housing affordability that includes transportation costs. Called the H+T index,¹⁹ this is a fuller measure of the true cost of housing, recognizing that while housing prices may fall in lower-density areas that are far from transit, the transportation costs of living in these areas are considerably higher.²⁰ According to this report, moderate-income and low-income residents of the region spend an average of 55 percent of their incomes on housing and transportation. By 2040, GO TO 2040 seeks to reduce this number to 45 percent.

PERCENTAGE OF INCOME SPENT ON HOUSING AND TRANSPORTATION BY MODERATE-INCOME AND LOW-INCOME RESIDENTS

53% by 2015

45% by 2040

18 CMAP Infill Snapshot. See <http://www.cmap.illinois.gov/snapshot.aspx#Infill>.

19 Center for Neighborhood Technology, “Housing + Transportation Affordability Index.” See <http://htaindex.org/>.

20 Center for Neighborhood Technology, “Housing + Transportation Affordability Index.” See <http://htaindex.org/>.

1.4 Recommendations

As described in the preferred Regional Scenario, GO TO 2040’s approach to land use and housing is to “support the efforts of local governments to improve livability within their communities and to encourage a future pattern of more compact, mixed-use development that focuses growth where infrastructure already exists,” and to seek “an adequate and regionally balanced supply of affordable housing.”²¹

The recommendations described below focus on the ways that elements of livability can be applied and implemented in northeastern Illinois.

Many elements of livability can be supported through planning for land use and housing, including: support for transportation options including walking, bicycling, and transit; a range of housing options; environmental protection; a focus on reinvestment; denser, mixed-use development; design and aesthetics; and the context or “fit” of development with the local community.²² The importance of local implementation of these overall principles is critical, and must be emphasized. For example, appropriate densities and ways to address mixed-use development will vary between and even within communities. Strategies to address housing must also be carefully customized and may include housing preservation, incentive-based inclusionary zoning, removal of regulatory barriers, creation of community land trusts, strategies



to address foreclosures, or planning for supportive land uses near housing, based on a community’s unique needs. And while GO TO 2040 supports reinvestment in existing communities, it recognizes that reinvestment projects must be implemented in ways that respect local character, historic context, and other local priorities such as increasing access to green space; it also recognizes that not all development will occur within existing communities, but even new “greenfield” development can and should include features that support livability. Overall, these observations lead to the conclusion that there is no “one size fits all” for the implementation of livability principles, and reinforce the importance of local planning.

The building blocks of local planning for livable communities are high-quality plans, ordinances and other regulations that are consistent with adopted plans, and trained and educated decision-makers (plan commissioners, zoning board members, and elected officials). GO TO 2040 recommends addressing each of these building blocks through a combination of funding and financial incentives, technical assistance, and collaboration.

Comprehensive plans

Comprehensive plans provide opportunities to plan proactively for a community’s future and also address its context within the region. While many communities have adopted recent comprehensive plans that address issues of livability, there are many others whose plans are outdated, have been made irrelevant through zoning decisions (which often reflects a disconnect between the adopted plan and the realities of community development issues), or simply have never had a comprehensive plan. Even among those communities with current comprehensive plans, many do not include components such as housing affordability.

²¹ See the “Quality of Life” section of the “Challenges and Opportunities” chapter of GO TO 2040, which explains this term more fully.

²² For more information on these topics, see the CMAP Snapshot Reports (<http://www.goto2040.org/snapshot.aspx>) and strategy papers (<http://www.goto2040.org/strategy-papers.aspx>) on infill, urban design, housing preservation, inclusionary zoning, regulatory barriers, conservation design, bicycling, and public transit.

Ordinances

Many of the comprehensive plans adopted throughout the region contain well-conceived development goals that are entirely consistent with GO TO 2040's recommendations, but zoning ordinances in the region are largely antiquated, hobbled by years of "band-aid" modifications that often have resulted in internal inconsistency. Although zoning ordinances constitute the legal tool by which a local government can carry out the comprehensive plan, these ordinances commonly have not been updated to reflect and carry out the exemplary policies a community may have adopted in its comprehensive plan. Many times, such incongruence in zoning regulations prevents a suitable mix of housing types or limits opportunities for mixed-use development, for example.

To actually implement the comprehensive plans of the region's local governments, fundamental regulating mechanisms need to be in sync with their current development goals.

Trained decision-makers

Even with up-to-date plans and ordinances, there is still a critical role for local decision-makers, particularly plan commissioners and local elected officials, to implement GO TO 2040. Many development proposals require discretionary review, and judgment calls on the part of decision-makers are needed constantly. It is important for these decision-makers to be aware of the regional as well as local consequences of their decisions, and to consider these as they review development proposals.

GO TO 2040 recommends that land use continue to be decided at the local level. With decision-making authority comes responsibility, and the communities making land use decisions should also be aware that their individual decisions, taken together, have regional impacts. Even seemingly small land use decisions should not be taken lightly, and each of the region's local governments should commit to a proactive and comprehensive approach to planning.

Through the following recommendations, GO TO 2040 seeks to support local governments in their planning for livable communities, and strives for a positive dynamic that balances the need for local autonomy and regional cooperation.

Funding and Financial Incentives

The need to provide a funding source for local plan and ordinance updates has been recognized for a long time. For years, CMAP and other groups have recommended that the state allocate funding to the Local Planning Technical Assistance Act, which promised grants to develop local comprehensive plans but was never actually funded. GO TO 2040 supports continued efforts to fund the Act, and recognizes that the state has funded local planning activities (through grants administered by the Illinois Department of Commerce and Economic Opportunity [DCEO], for example), but it does not rely on this as the sole source of planning funding in the near term. Instead, the plan focuses on alternative funding sources that can be used for similar purposes; it specifically identifies several funding sources linked to transportation planning but also recommends that non-transportation funds be used as well.

Three transportation funding sources have been identified as reasonable replacements for the lack of dedicated state funding. First, the Regional Transportation Authority's (RTA) Community and Subregional Planning Programs have provided millions of dollars as well as technical assistance to local governments over the past decade to pursue transit oriented development (TOD) plans or similar studies focused on transit and land use. Nearly 80 of these grants have been issued, and they have been successful in linking land use and transportation planning. A second source is the Illinois Department of Transportation's (IDOT) Statewide Planning and Research funds, which have been used for projects that link land use and transportation in the past and were the source of the Illinois Tomorrow planning grants. The third and final source is Unified Work Program (UWP) funds, federal planning funds, which are administered by CMAP. These have been used in the past to fund RTA's planning grants.

GO TO 2040 recommends coordinating these three funding sources to more effectively provide funding and technical assistance for studies and implementation projects that link transportation, land use, and housing, in support of GO TO 2040. This may ultimately result in a single, streamlined program, with funding decisions jointly agreed upon by CMAP, RTA, and IDOT, but in the short term should at least include coordination in terms of application materials and timing. While each funding source has various restrictions concerning how it can be spent, activities that include transportation components, such as land use planning that supports transit, bicycling, and walking, would generally be eligible. The funding program should be further supplemented by funds from federal and state economic development, environmental or housing agencies, such as DCEO and the Illinois Housing

Development Authority (IHDA), or from philanthropic groups interested in supporting planning. This program should be designed to lead to implementation. For example, many plans recommend changes to zoning ordinances or parking regulations, but some municipalities lack the staff or funding needed to implement these regulatory changes; this program should be linked with technical assistance from CMAP, RTA, and others to address this gap. Further, GO TO 2040 recommends prioritizing planning grants based on the degree to which each grant application can increase collaboration among neighboring communities, encompass related topics such as energy, or increase livability in other ways.

Federal programs may also provide new funding sources for planning and implementation. Recent collaborations between several federal agencies have indicated the federal government's interest in promoting livability, and these should be expanded and strengthened. In particular, while funding for planning is helpful, funding for implementation is even more critical. The Sustainable Communities Initiative, a new partnership between the U.S. Department of Housing and Urban Development (HUD), the U.S. Department of Transportation (U.S. DOT), and the U.S. Environmental Protection Agency (U.S. EPA) appears to provide initial steps in this direction, and the federal government should commit sufficient funds to this or similar programs to support plan development and implementation.

Opportunities for tying implementation funds to planning can even be pursued without new funding sources by reconsidering how existing investment decisions are made. Recognizing the interplay between infrastructure investments and land use, the region should use transportation funding strategically to support projects that help to implement GO TO 2040. Two examples from other regions, the Atlanta Regional Commission's Livable Communities Initiative (LCI) and the San Francisco Bay Area Metropolitan Transportation Commission's Transportation for Livable Communities (TLC) program, use a combination of state and federal funds for this purpose. The following examples are described.

Since 1999, the Atlanta Regional Commission's LCI program has funded planning studies in 80 communities, at a cost of slightly over \$10 million. Almost all of these communities have incorporated the results of these studies into their comprehensive plans, and most have adopted zoning ordinances or other policies to implement the studies. The LCI program has directed nearly \$130 million in infrastructure improvements to these communities, using Surface Transportation Program (STP) funds, and has documented measurable results in terms of new development in communities where these investments were made.²³

The San Francisco Bay Area Metropolitan Transportation Commission's TLC program funded 70 planning projects between 1998 and 2006, totaling about \$2.7 million in cost, and directed \$84 million in capital improvements over the same period. The capital improvements are funded with Congestion Mitigation and Air Quality Improvement (CMAQ) and STP funds, and funding for the planning studies comes from a mixture of federal and state funds. The TLC program has a special focus on promoting high-density and mixed-use developments with affordable housing components near transit stops. Expansion of the program is currently being considered.²⁴

A similar program should be created in the metropolitan Chicago region. Currently, STP funds spent in the region are split between the state and local governments (with the local portion being further split between Chicago and the eleven Councils of Mayors), and CMAQ funds are programmed and administered by CMAP. It is recommended that a combination of state STP and CMAQ funds be used to create a separate funding source to be used for infrastructure investments that support livability. The infrastructure investments should be focused specifically on implementing projects that spring from the recommendations of local comprehensive planning efforts. Local STP should remain programmed by the Councils of Mayors and City of Chicago, but CMAP encourages local programmers to consider incorporating support for livable communities into their funding decisions.

23 For more information on the Atlanta Regional Commission's Livable Centers Initiative program, see <http://tinyurl.com/35etrj3>.

24 For more information on the San Francisco Bay Area Metropolitan Transportation Commission's Transportation for Livable Communities program, see <http://www.tinyurl.com/3423ycb>.

Technical Assistance

The broad term of “technical assistance” is used here to mean direct, non-financial assistance provided to communities by CMAP staff, other state or regional agencies, counties, or nongovernmental groups. Other technical assistance providers can take leadership or supporting roles in many technical assistance activities; the experience of the development community should also not be overlooked, and organizations that represent the private sector are also relevant partners for technical assistance. CMAP should help to coordinate these assistance efforts to avoid duplication.

Technical assistance activities provided by CMAP will vary over time and will be detailed in each year’s work plan. It is intended to be a proactive, rather than reactive, activity — in other words, CMAP will identify priorities and then work collaboratively with communities to accomplish them, but the agency will also need to react to changing conditions. Possible opportunities for assistance will be evaluated based on how well they match CMAP’s priorities, support the principles of GO TO 2040 in general, leverage other technical assistance activities being pursued by other organizations, or relate to short-term crises or opportunities.

A first step in designing an annual technical assistance program is to determine what is most needed and most helpful. The Compendium of Plans, a review and summary of the comprehensive plans of all of the region’s municipalities compiled by CMAP, should be updated every two years.

This can be used to target technical assistance by providing an assessment of the current state of local comprehensive planning, and also to identify commonly missing or underemphasized elements of comprehensive plans. When assisting with comprehensive plan preparation, technical assistance providers should seek to make them truly comprehensive, addressing issues beyond land use and housing such as energy conservation, arts and culture, public health, and others.

Technical assistance activities will often take the form of creating model ordinances or codes for municipal consideration, often on topics like water conservation that may be outside of usual comprehensive planning practice. CMAP will also research and explore innovative regulatory mechanisms such as the SmartCode and form-based coding (FBC), which may be more appropriate to mixing land use and preserving affordability than conventional zoning. These mechanisms help to focus development discussions on how appropriate context, form, and even aesthetic concerns can counteract the negative perceptions about density, affordability, and compactness. Also, CMAP will help communities with forecasting and visualizing the long-term, actual effects of current ordinances that may unintentionally be stymieing desired development goals (with affordability and mixed-use being primary examples). Sharing of best practices for ordinances as well as other regulatory methods like impact fees should also be part of the technical assistance approach. Other software like the Centers Toolkit, the Return on Investment (ROI) tool, and the MetroQuest software used during CMAP’s Invent the Future workshops can all be relevant for communities at different stages in their planning processes.

Where possible, technical assistance should build local capacity, rather than resulting in plans or ordinance updates that are prepared by external groups and then handed over to a local government. Developing plans and ordinances is a central responsibility of local governments to regulate land use, and every community should ideally have the capacity to review ordinances and development proposals without relying on external assistance.

A particular focus of technical assistance activities will involve housing, which is one of the most challenging components of livability to address; according to CMAP's recent survey of comprehensive plans, only 23 percent include an emphasis on affordable housing. While recognizing that local governments will take varying approaches to address the overall goal of a regionally balanced supply of housing, CMAP encourages every community to proactively address the issue. Beginning with an assessment of housing supply and future demand (e.g., the "Homes for a Changing Region" report series) can inform further discussion of the issue, and these reports should be continued and expanded to cover additional communities.

A variety of housing policy options are appropriate in different types of communities. Housing preservation, incentive-based inclusionary zoning, employer assisted housing, community land trusts, removal of regulatory barriers, furthering fair housing goals, or foreclosure prevention programs — just to name a few — can be solutions in communities facing different housing challenges. CMAP and other technical assistance providers can play a role in helping communities to sort through the various housing programs that can be adopted on the local level, finding those that fit best in a particular situation, and integrating them into a comprehensive planning approach. This is a role already played by a variety of regional and local nonprofit organizations and their useful work should continue. The development community should be actively engaged in these discussions as well.

Intergovernmental Collaboration

GO TO 2040 strongly supports coordination between communities. Intergovernmental approaches are often the best way to solve planning problems in housing, transit, economic development, and other areas, and CMAP encourages the formation of these groups and offers technical support for their work. These can often be formalized as collaborative planning groups that are organized around a transportation corridor (such as the Cook-DuPage Corridor) or an area with specific economic development needs (such as the Southland Economic Development Corporation), or within watersheds around shared environmental issues such as water supply. Interjurisdictional housing groups (such as the South Suburban Housing Collaborative) are active or emerging in many parts of the region, and building capacity at these organizations should be supported by CMAP and other technical assistance providers. State and federal agencies (such as the IHDA, IDOT, and DCEO at the state level, and HUD, U.S. DOT, and U.S. EPA at the federal level) should prioritize funding in areas that enter into intergovernmental agreements.

At a less formal level, coordination between municipalities is beneficial for information-sharing among planning professionals and officials. In addition to encouraging intergovernmental cooperation among neighboring communities, CMAP should also bring together communities that face similar challenges across the region, fostering networked collaboration to share ideas and strategies. For example, communities that have faced challenges in incorporating a range of housing options, or those that have applied particular housing solutions, can serve as useful case studies for other communities considering similar techniques, and there is no substitute for direct communication between them.

In all of these collaborative efforts there is a strong and significant role for counties and COGs. These groups are encouraged to take the lead to create and staff formal collaborative groups, or to convene local planners and planning officials in less formal ways. GO TO 2040 recommends a supporting role for CMAP in these efforts.

Link Transit, Housing, and Land Use

Linking transit, housing, and land use is less a separate recommendation than a focused way to apply the recommendations in the other implementation areas. TOD represents one of the principal linkages between the issue areas addressed by CMAP, and is a particular focus of GO TO 2040. The higher value of land near transit services often makes it more difficult to plan for affordable housing in these locations, so affordability needs to be addressed specifically.

The number of TOD studies completed within the last decade means that many of the most promising TOD locations have had plans prepared for them, but often implementation has been lacking. Ordinances and other regulations have not always been updated to match the recommendations of the plans, and there has also been no concerted effort to focus infrastructure investments to implement these plans. As described earlier in this section, GO TO 2040 recommends increasing the amount of funding for planning, and allocating a significant portion of this to update ordinances; it also recommends creating a special funding source for infrastructure improvements that support the implementation of these plans.

It is also important to plan jointly for land use and transit in areas that may be outside of traditional TODs. Frequently, opportunities for transit-supportive land use planning will be in areas served by bus, or slightly outside the “walkable” range of a train station — and therefore outside the definition of a traditional TOD. CMAP should work closely with its partners, including RTA and the transit service boards, local governments, and regional civic organizations, to identify additional opportunities to support transit-supportive land use. This could include areas near train stations where site assembly has proven difficult, or where past projects have faced implementation challenges.

Improving transit is a high-priority recommendation of GO TO 2040, and requires supportive land use to succeed. GO TO 2040 recommends that transit expansion be accompanied by land use planning that seeks to create an affordable, transit-friendly environment, with investments in sidewalks, bus shelters, bicycle accommodations, and other infrastructure; transit decision makers should prioritize investments in places where supportive land use planning is occurring.²⁵

Preserving affordability or creating new affordable options near transit is often difficult because high demand to live near transit increases the cost of housing.

Local governments should plan for mixed income transit oriented development, by ensuring that housing near transit includes affordable housing provisions and that affordability is maintained in the long-term. CMAP will work with partners including IHDA to assure that applicants are rewarded when developing housing near transit. Additionally, CMAP will work with preservation collaborations to encourage affordable housing preservation strategies focused on areas around transit and employment.

²⁵ The GO TO 2040 section titled “Increase Commitment to Public Transit” contains further discussion of the importance of this linkage.

1.5 Implementation Action Areas

The following tables are a guide to specific actions that need to be taken to implement GO TO 2040. The plan focuses on four implementation areas for achieving greater livability through land use and housing:

- Provide Funding and Financial Incentives**
- Provide Technical Assistance and Build Local Capacity**
- Support Intergovernmental Collaboration**
- Link Transit, Land Use, and Housing**

Implementation Action Area #1: Provide Funding and Financial Incentives

<p>Align funding for planning and ordinance updates</p> <p>LEAD IMPLEMENTERS: State (IDOT, DCEO, IHDA), RTA, CMAP, counties, municipalities, philanthropic</p>	<p>CMAP, IDOT, and RTA should coordinate funding programs to fund local plans and ordinance updates. Use funds to create new streamlined grant program for transportation, land use, and housing which assists local governments to create plans or ordinance updates that are consistent with GO TO 2040. This program should be able to fund ordinance changes, updates to local programs or policies, or similar activities, as well as plan preparation. Supplement these funding sources with philanthropic or other public and private sources as appropriate. In particular, funding from housing and economic development sources should also be included within this streamlined program.</p>
<p>Implement and expand the Sustainable Communities Initiative program</p> <p>LEAD IMPLEMENTERS: Federal (HUD, U.S. DOT, U.S. EPA, DOE, EDA)</p>	<p>The federal government should apply the principles of the Sustainable Communities Initiative across other federal programs as well. Its administering departments (HUD, U.S. DOT, and U.S. EPA) should also commit sufficient funds in future years to make it a significant funding source for plan implementation, not just plan development. Federal agencies should also align federally-required planning efforts, such as HUD Consolidated plans, with GO TO 2040 priorities, and federal investment should be geared to implement planning efforts that are consistent with the principles of the Sustainable Communities Initiative.</p>
<p>Develop regional infrastructure funding programs for plan implementation</p> <p>LEAD IMPLEMENTERS: State (IDOT), RTA, CMAP, counties, COGs</p>	<p>Create a pilot program meant to focus infrastructure funds to implement local comprehensive plans, modeled on programs in the Atlanta and San Francisco regions. Allocate a portion of funds currently programmed by the state (STP) and by CMAP (CMAQ) for this purpose. Retain the current programming of local STP funds, but encourage programmers to consider livability in their funding decisions.</p>

Implementation Action Area #2: Provide Technical Assistance and Build Local Capacity

<p>Continually review status of local plans</p> <p>LEAD IMPLEMENTERS: RTA, CMAP, counties, municipalities</p>	<p>Update the Compendium of Plans every two years. Use its findings to target planning technical assistance. This could include comprehensive planning assistance to communities that do not have current plans, and assistance with implementation to those that do. Also use results to identify missing or underemphasized elements of local comprehensive plans, such as housing affordability or water conservation. Include review of plan implementation status for plans funded through RTA grants.</p>
<p>Create model ordinances and codes</p> <p>LEAD IMPLEMENTERS: CMAP, counties, municipalities</p>	<p>Develop sample ordinances or codes in areas relevant to GO TO 2040 that can be adapted by local governments. Examples include water conservation ordinances, housing rehabilitation codes, and parking regulations. At the same time that model ordinances are under development, work with a few case study communities to ensure that they can be adapted to work locally. CMAP should also promote best planning practices through publications highlighting local approaches to these issues.</p>
<p>Research and explore alternative land use regulation systems</p> <p>LEAD IMPLEMENTERS: CMAP, counties, municipalities, nonprofits</p>	<p>Research alternative systems such as SmartCode and FBC that address structure, form and placement over conventional use-based, Euclidean zoning approaches. Coordinate with communities that have adopted alternative land use regulatory systems, assess performance, and provide resources and training for other communities interested in these methods.</p>
<p>Analyze ordinance outcomes</p> <p>LEAD IMPLEMENTERS: CMAP, counties, municipalities, nonprofits</p>	<p>In partnership with interested communities, CMAP should review existing ordinances to quantitatively analyze their impacts (in terms of stormwater runoff, local fiscal impacts, resulting housing cost, contributions to greenhouse gas emissions, and others). Also create visualizations that improve understanding of the outcomes of current ordinances.</p>
<p>Provide assistance in planning for affordable housing needs</p> <p>LEAD IMPLEMENTERS: CMAP, counties, municipalities, nonprofits</p>	<p>In partnership with interested communities, research local housing supply and demand and identify appropriate housing strategies. Provide direct technical assistance, in collaboration with other regional civic organizations, to communities seeking to develop a balanced supply of housing through locally-appropriate strategies such as community land trusts, land banking, housing preservation, employer assisted housing, inclusionary zoning, removal of regulatory barriers, strategies for vacant or foreclosed properties, furthering fair housing goals, or community acceptance strategies. Support local work through regionally-sponsored research such as the “Homes for a Changing Region” reports, the “Home Grown” best practices summary, or similar efforts.</p>
<p>Use and enhance existing technical assistance software tools</p> <p>LEAD IMPLEMENTERS: CMAP, counties, municipalities, nonprofits</p>	<p>Strategically deploy CMAP’s Centers Toolkit, ROI tool, MetroQuest software, and the Metropolitan Planning Council’s (MPC) Placemaking program. Develop an online “library” of best planning practices by local governments, to be continually updated and improved as technical assistance activities continue.</p>
<p>Target technical assistance to communities demonstrating interest in furthering GO TO 2040</p> <p>LEAD IMPLEMENTERS: CMAP, RTA, counties, municipalities, nonprofits</p>	<p>Create menu of assistance “offerings” consistent with GO TO 2040, and clearly evaluate requests for assistance based upon conformance with these plan objectives. Proactively identify opportunities to provide community assistance.</p>
<p>Sponsor Planning Commissioner workshops</p> <p>LEAD IMPLEMENTERS: CMAP, counties, municipalities, nonprofits</p>	<p>Provide a cycle of Planning Commissioner Workshops throughout the region every two years. Workshops will cover such issues as the importance of updating comprehensive plans, consistency of local ordinances with comprehensive planning policy, making defensible land use decisions, roles of planning commissions and zoning boards of appeals, and placing local land use decisions within a regional context. These also can include special sessions on topics of interest, such as transit-supportive land use, energy conservation, or parking regulation, to name a few.</p>

Implementation Action Area #3: Support Intergovernmental Collaboration

<p>Encourage formation of formal collaborative planning efforts</p> <p>LEAD IMPLEMENTERS: CMAP, RTA, counties, COGs, municipalities</p>	<p>Encourage COGs and counties to lead formation of issue-specific collaborative planning groups to address issues such as housing, transportation, economic development, land use, water and related environmental issues, or others. Provide technical assistance to existing collaborative groups in research and mapping, developing model ordinances and overlay districts, seeking funding, interacting with state and federal agencies, and entering into intergovernmental agreements.</p>
<p>Form collaborative groups to address affordable housing across communities</p> <p>LEAD IMPLEMENTERS: Counties, COGs, municipalities, nonprofits, developers, other housing stakeholders</p>	<p>Encourage the formation of collaborative groups to address affordable housing across communities. These can be broad (such as the South Suburban Housing Collaborative) or specifically targeted to a specific housing issue (such as the Preservation Compact and the Lake County Preservation Initiative). These groups should include a broad array of housing industry stakeholders and should explore various funding mechanisms to produce strategies that are nimble and specific to the current housing market.</p>
<p>Prioritize funding to communities engaging in intergovernmental planning</p> <p>LEAD IMPLEMENTERS: Federal (HUD, U.S. DOT, U.S. EPA), state (IHDA, IDOT, DCEO)</p>	<p>Provide financial incentives for involvement in collaborative groups by prioritizing funding to communities that apply for funding jointly and develop programs across municipal borders. Selection criteria in funding programs should recognize and reward intergovernmental applicants.</p>
<p>Facilitate communication between communities facing similar challenges</p> <p>LEAD IMPLEMENTERS: CMAP, counties, COGs, municipalities</p>	<p>Support initiatives by COGs or counties that bring municipalities together in coordinated planning activities and information-sharing. CMAP should work with staff of the counties and COGs to help coordinate these efforts. CMAP should also identify communities sharing similar features facing similar planning challenges, and provide a facilitated environment to bring them together to work on solutions and share ideas collaboratively.</p>

Implementation Action Area #4: Link Transit, Land Use, and Housing

<p>Identify and exploit additional opportunities for transit oriented development</p> <p>LEAD IMPLEMENTERS: CMAP, RTA, CTA, Metra, Pace, counties, municipalities, nonprofits</p>	<p>Many communities have embraced TOD as a strategy to revitalize their downtowns, and plans for many of the most obvious locations for TOD have already been prepared. CMAP and other regional organizations should identify other potential opportunities for application of TOD strategies and initiate pilot TOD projects in areas where TOD is more difficult (i.e., locations with difficult land assembly, bus-based TOD, etc.).</p>
<p>Use livability principles to plan for land use in development near transit</p> <p>LEAD IMPLEMENTERS: Counties, municipalities</p>	<p>Counties and municipalities should pursue opportunities for more dense development which mixes uses and housing types within “location efficient” areas near transit services. Counties and municipalities can increase density by providing density bonuses (in exchange for affordable units), creating transit overlay districts, or using form-based codes to address community fit. This can occur both for existing transit services and areas where transit expansion is planned, and applies to both rail and bus service.</p>
<p>Promote housing affordability near transit</p> <p>LEAD IMPLEMENTERS: Counties, municipalities</p>	<p>Proximity to transit services often increases land value, making it more difficult to provide a range of housing. Counties and municipalities should analyze housing needs near transit services, and can provide a variety of incentives to developers to bring down development costs in exchange for affordable units. These tools include land donations, density bonuses, permit fee waivers, land trusts and expedited permitting processes. These should be explored, considered, and adapted to specific local situations.</p>
<p>Target housing programs to rehabilitation in areas with transit access</p> <p>LEAD IMPLEMENTERS: Federal (HUD), state (IHDA), counties, municipalities</p>	<p>Affordable housing grant programs should give high priority to preserving the existing affordable housing stock, particularly in TODs.</p>
<p>Require supportive land use planning before new transit investment is made</p> <p>LEAD IMPLEMENTERS: RTA, CTA, Metra, Pace</p>	<p>Consider supportive land use when making investment and programming decisions. The service boards should prioritize investments (new service in particular) in areas that have or are planning for land use and local infrastructure that supports transit.</p>
<p>Update guidelines for transit-supportive land use</p> <p>LEAD IMPLEMENTERS: RTA, CTA, Metra, Pace</p>	<p>Update materials produced by the transit service boards concerning land use planning and small-scale infrastructure investments that support transit. These materials should include additional topics such as housing affordability that go beyond the density and design issues which are currently included.</p>

1.6 Costs and Financing

Cost Savings from Compact Reinvestment

Many studies over the past several decades have suggested that the cost per household of providing public infrastructure decreases as development becomes more compact.²⁶

This can also be the case with public services, such as schools and fire protection, but the relationship is not as clear for these services as it is with physical infrastructure. Intuitively, the length and therefore the cost of water mains, roads, and so forth should be less if homes and businesses are located closer together, and national studies and CMAP's own research have shown that this is in fact the case.

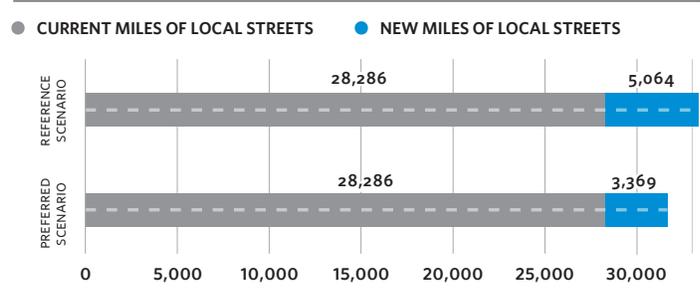
Within the region, the number of new miles of local streets needed can be reduced by as much as one-third if a more compact, reinvestment-focused development pattern is pursued (see **Figure 12**). Savings would be expected both in initial construction and in maintenance because, for instance, each mile of roadway not built is a mile of roadway that does not need to be swept, plowed, re-striped, and eventually resurfaced and reconstructed.

This provides savings to both developers, who often build the roads, and local governments, who later maintain them. Maintenance savings alone from the local street reductions described above would total in the range of \$1.5 billion over the plan's time frame, mostly accruing to local governments in high-growth areas. In other words, the local governments that have the best opportunity to implement livability principles in their planning — those in high-growth areas — are also those that have the most to gain from cost savings. The transportation infrastructure cost savings can be used as an indication of other infrastructure costs too, but these savings have not been calculated.

Financing of Local Planning

Planning on the local level is funded primarily through general revenue sources of municipalities and counties (and, in some cases, townships). Local governments face many demands for their resources and attention, and it can be a challenge for communities to prioritize comprehensive planning or ordinance review, particularly in difficult economic and fiscal times. However, land use planning is a fundamental responsibility of local governments, and one that must be taken seriously for the region to prosper in the long run. The remainder of this section identifies funding options beyond local sources, but it must be emphasized that local governments are responsible for planning proactively regardless of external funding availability.

Figure 12. Infrastructure cost, miles of local streets



Source: Chicago Metropolitan Agency for Planning, 2010

26 For an example, see Mark Muro and Robert Puentes, "Investing in a Better Future: A Review of the Fiscal and Competitive Advantages of Smarter Growth Development Patterns," Brookings Institute Center on Urban and Metropolitan Policy, 2004; Burchell et al., "Costs of Sprawl — Revisited," *Transportation Research Board* (National Academy Press, 1998) or Burchell et al., "Costs of Sprawl 2000," TCRP Report 39. Note that while the majority of the planning literature indicates that compact development decreases infrastructure cost, there is some scholarly disagreement about the extent and importance of the effect, which often comes down to the methods used to measure or project it.

The Puget Sound Regional Council has even-handedly summarized this literature at <http://www.psrc.org/assets/2032/applF14-sprawl.pdf>.

External grants for specialized planning activities are sometimes available to local governments, but outside funding for general comprehensive planning activities has been elusive. Some of the planning grant programs in the region include:

The RTA has made funding and planning assistance available for station area planning through its Community Planning Program (providing funding for such activities as station area TOD plans and guidelines) and the Subregional Planning Program (providing funding for such activities as transit and land use improvement studies, and TOD studies at the county, subregional, or corridor level), formerly termed the Regional Technical Assistance Program (RTAP). Over the past 12 years, nearly 100 plans have been funded through these sources, totaling over \$15 million in grants including local matches.

The Local Planning Technical Assistance Act (20 ILCS 662) was enacted in 2002. In the absence of state-mandated planning, it has served to identify through state legislation components that should be included in comprehensive plans, and, in theory, provided an incentive to adopt certain comprehensive plan elements in order to receive funds for comprehensive planning through DCEO. This provision, however, has never actually been provided with funding from the state, meaning that this promised incentive has never actually come to fruition.

The 1985 Local Land Resource Management Planning Act (50 ILCS 805) is used frequently as the foundation for county-level planning activities. It encourages counties to plan comprehensively to protect natural resources while furthering social and economic goals through developing land resource management plans. The act allowed for funding through DCEO but was never funded; despite this, it did give counties broad authority for long-range planning, which many have acted on.

The Federal Highway Administration (FHWA) allocates Statewide Planning & Research Funds to IDOT. These funds may be used for a variety of purposes such as planning, technical studies and assistance, demonstrations, management training, and cooperative research, and they were the source for Illinois Tomorrow grants, which have been used to fund planning activities in the past.

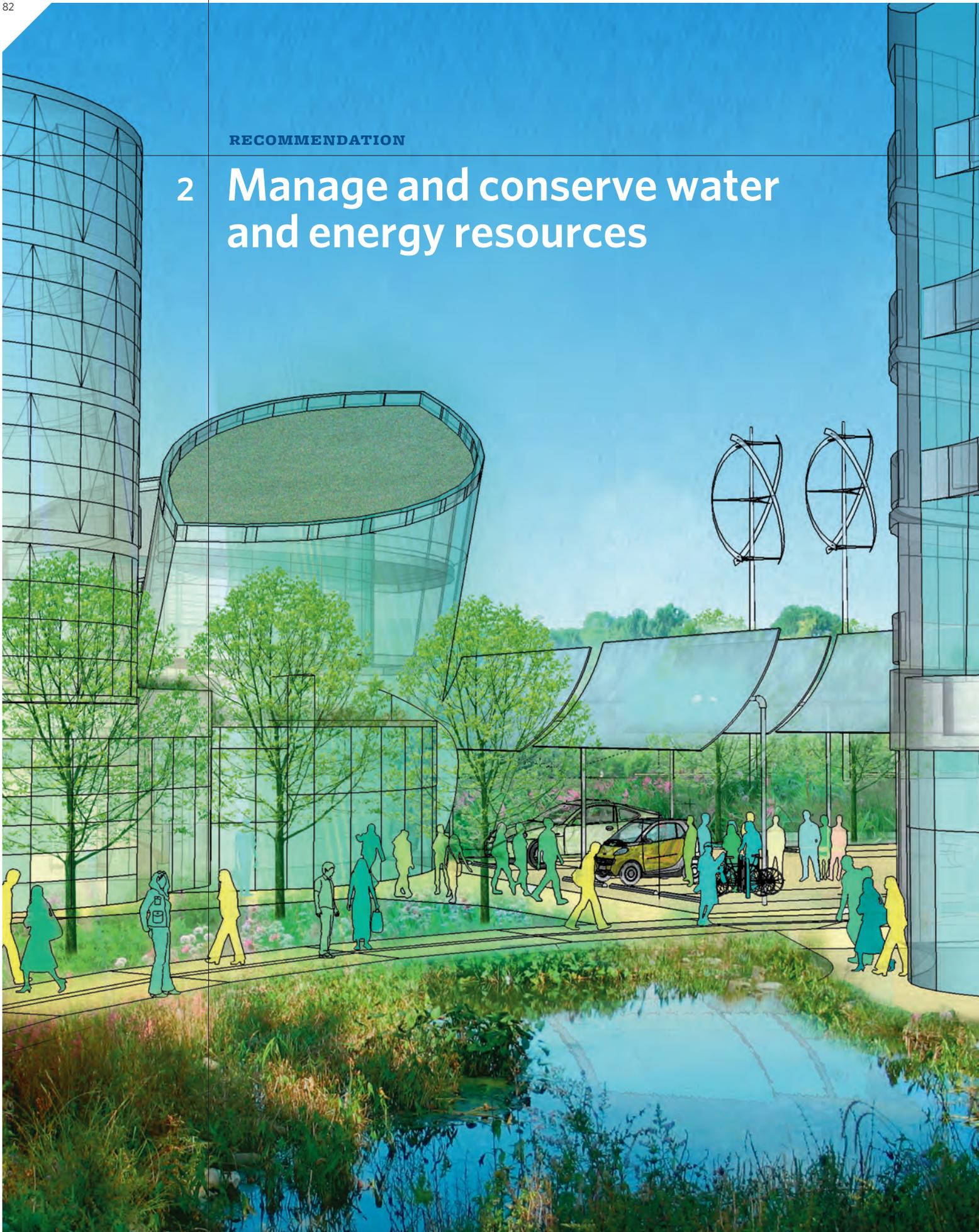
Most of the above funding sources are directed to comprehensive or small-area planning activities. Updates to ordinances or other development regulations are not generally funded through any of these sources, though the RTA's grant programs have been used for this purpose in recent years.

Promising federal funding sources for comprehensive planning and implementation are currently under development.²⁷ If sufficiently funded, these could provide a significant boost to the implementation of all of the actions described in this recommendation.

²⁷ Promising federal funding sources for comprehensive planning are further discussed in GO TO 2040 subsection 1.4 "Funding and Financial Incentives."

RECOMMENDATION

2 Manage and conserve water and energy resources



Water and energy resources play an obvious, yet often overlooked, role in sustaining economic prosperity and environmental health in our seven-county region. Though Lake Michigan provides clean, inexpensive water, the lake's capacity to serve the region's need is not limitless due to legal constraints on its use that precludes placing ever-increasing demands on this resource.

Furthermore, the infrastructure used to distribute drinking water has seen long-term underinvestment in many places, leading to significant waste of water through leakage. Other parts of the region face increasing expenses and environmental side effects due to their dependence on groundwater. Likewise, conventional energy resources are mostly non-renewable and therefore finite, and their use plays a significant role in climate change.

The conservation of energy and water is a top priority for GO TO 2040. Over the next 30 years, these resources will likely become more constrained, affecting businesses, local governments, and residents alike. By taking a proactive approach to resource conservation, the region can avoid price shocks farther down the road, while saving money in the medium term. Water and energy conservation brings economic and environmental benefits, and steps can be taken now to give northeastern Illinois opportunities to prosper in a new, greener economy. Because of the energy-water nexus — electricity is needed to treat and distribute water, and water is used in the process of generating electricity — there is a double benefit to energy and water conservation. The region needs to use resources sustainably so that economic development can continue while per-capita energy and water use taper off. While conserving water and energy has many monetary benefits, it will also help the region reduce emissions of greenhouse gases, which contribute to climate change. Finally, although the main energy priority in GO TO 2040 is meeting energy service needs through demand reduction, the region must also map out a shift to increased use of renewable energy.

CMAP recommends the following actions to manage water resources sustainably:

Support water use conservation efforts.

Conservation measures can promote efficient use while reducing or deferring the need for a utility to increase its capacity. Examples include retrofitting water fixtures with higher efficiency models or the adoption of sensible water conservation ordinances by local governments. Calculating the total volume of water consumed by an individual, community, or business, otherwise known as a “water footprint,” can be a useful audit method for large-scale projects and is helpful in identifying ways to reduce water consumption. Current rate structures for water often do not reflect the entire cost of supplying water, providing consumers little incentive to conserve. Full-cost pricing is recommended to encourage conservation and to provide fully adequate revenues for water utilities.

Integrate land use policies and site planning with water resources.

Land use policies that promote compact development will reduce residential water use and reduce both capital and operating costs for water utilities. Green infrastructure, like rain gardens and permeable pavement, should be integrated more fully into site planning. Using green infrastructure to manage stormwater has many benefits and can be more cost effective when compared with gray infrastructure.

Encourage watershed planning and stormwater infrastructure retrofits.

There is a widespread need to implement projects in already developed areas to address flooding, water quality, and other objectives. One of the best ways to determine the kinds of stormwater infrastructure retrofits needed is through watershed planning. Watershed plans should identify the most significant water resource problems and evaluate projects and policies to address them, whether the problem is flooding, poor water quality, or loss of habitat.

Optimize water and energy sources and scale of operation.

Shallow and deep bedrock aquifers are currently being pumped at rates that exceed the rate of recharge; communities that are dependent on groundwater should consider accessing water from the Fox and Kankakee Rivers. Furthermore, there may be opportunities to coordinate or consolidate service by water utilities. Over 300 water supply utilities provide water for the region; many of these utilities can be consolidated based on water source to achieve cost efficiencies and to improve operations.

CMAP recommends the following actions to encourage energy conservation:

Link transit, housing, and energy use through livable communities.

GO TO 2040's emphasis on establishing compact, mixed use, walkable developments served by transit will improve the region's energy efficiency. Energy savings in new buildings can be significant when local and state codes, ordinances, plans, and programs support green development and practices. Zoning codes and permitting policies should also allow and promote renewable energy generation from businesses, institutions, and residences. Livable communities also promote lower-energy modes of travel, such as transit, walking, and biking.

Promote retrofit programs.

Retrofit programs provide assistance to property owners to install energy conservation measures in existing buildings, and exist at the local, state, and federal levels already. The CMAP-led Chicago Region Retrofit Ramp-up Program will be an important first step in streamlining access to information, financing mechanisms, and skilled labor to transform the retrofit market.

Foster sustainable practices and renewable energy generation.

Communities should take the opportunity to pilot their own projects to promote small-scale renewable energy generation, which could include wind and solar power as well as strategies like combined heat and power generation. A commitment to planting trees in urban areas could also help reduce cooling demand by controlling the heat island effect — the phenomenon in which built-up areas tend to retain heat to a greater degree than less built-up areas — because reduced cooling demand will decrease greenhouse emissions. Because carbon is sequestered in plant biomass (tree trunks, root systems, etc.), open space preservation and restoration will help mitigate climate change.

GO TO 2040 also recommends actions to manage the nexus between water and energy and to encourage solutions that address energy, water, and climate. Opportunities should be sought to integrate energy and water efficiency programs where advantages are to be gained by doing so. As another aspect of the water-energy nexus, energy efficiency measures and renewable electricity generation should also be considered by water utilities.

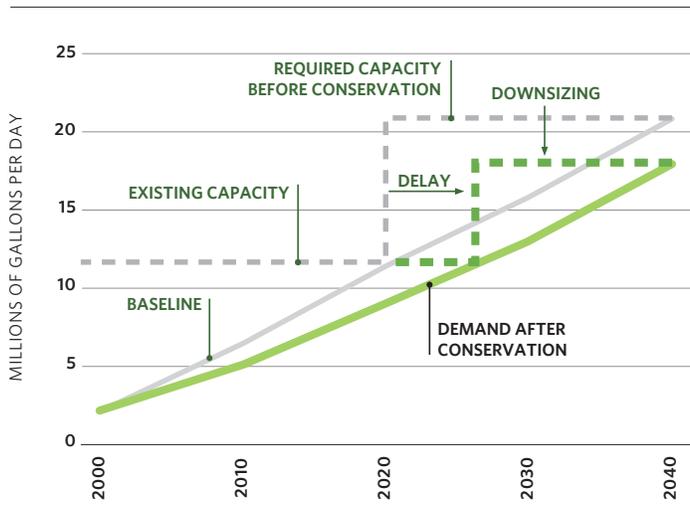
The organization of this section is slightly different from other parts of GO TO 2040; it focuses first on water and then on energy, explaining the importance of conservation actions, describing current conditions, and detailing recommended actions for each, before laying out implementation steps that bring the two together. The overall desired outcome is for the region to reap environmental and economic benefits from increased conservation, contributing to the overall livability of the seven counties and their communities.

2.1 Benefits: Water

The Regional Vision sets a goal for the region to be known for its high quality of water and establishes that planning for water resources must be a high regional priority.

Furthermore, the three-year stakeholder-led process culminating in the new *Water 2050* Northeastern Illinois regional water supply/demand plan for the region emphasized the benefits of water conservation.

Figure 13. Example of delaying or downsizing a capital facility, 2000-2040



Peak demand/capacity, measured in millions of gallons per day
Source: American Water Works Association, 2006. *Water Conservation Programs — A Planning Manual*. AWWA Manual M52, First Edition, 75.

Household and Public Cost Savings

For municipal water utilities, water conservation can reduce or delay the need to expand capacity, presenting major capital savings. In the example of the water utility shown in **Figure 13**, treatment plant capacity would be reached in 2020 if demand grows according to baseline. If water conservation is practiced instead, demand could be reduced so that expansion is not needed until after 2025. In this example, furthermore, the ultimate size (and therefore cost) of the plant after expansion can also be reduced, again because growth in demand will be limited with water conservation measures in place. Besides this, conservation programs are less expensive than developing new water supplies. They typically cost \$0.46 to \$1.40 per 1,000 gallons conserved, while the cost to develop new supplies would be well above the high end of this range.¹ Finally, although utilities sometimes fear they will lose revenue if they begin a conservation program, it is readily possible to make conservation revenue neutral by redesigning rates at the same time.² In addition to these cost savings, it has been estimated that every \$1 million of investment in water conservation programs directly and indirectly creates 15 to 22 jobs.³

1 Mary Ann Dickinson, "Water Conservation: How to Make It Happen!," presentation to East Central Regional Water Supply Planning Committee in Bloomington, IL, February 27, 2009.

2 Chicago Metropolitan Agency for Planning, "Water 2050: Northeastern Illinois Regional Water Supply/Demand Plan," 2010, 124. See <http://www.cmap.illinois.gov/waterplan>.

3 Alliance for Water Efficiency, "Transforming Water: Water Efficiency as Stimulus and Long Term Investment," December 4, 2008.

Environmental Benefits

Rising demand for drinking water would have a number of negative consequences over the long term; the use of water conservation measures helps limit those effects. For example, withdrawals from shallow wells are known to be reducing groundwater discharge to streams, so that as pumping from shallow wells increases, water levels in some streams decrease. This is a threat to the fish, aquatic insects, and plants in those streams. Increased groundwater pumping has also led to changes in water quality, causing increased concentrations of arsenic, barium, radium, and salinity, requiring more expensive treatment to meet drinking water standards. After these chemicals are removed from drinking water at the treatment plant, they may have to be treated as hazardous waste, dramatically increasing the cost of disposal and therefore the overall cost of treatment. A number of communities in the region are already affected by barium and radium contamination, which is expected to worsen as pumping increases. Recent evidence also shows that chloride contamination has increased dramatically over the past half-century in both shallow and deep wells around the region.

Impervious surfaces are parts of the landscape, like streets or roofs, that cause runoff rather than allowing rainfall to infiltrate. The amount of imperviousness in a watershed is strongly and negatively linked to the biological health of streams and lakes.⁴ A distinction can be drawn between impervious areas that drain to surface waters (such as most conventionally designed urban streets) and those that do not (such as roof downspouts running out into a lawn). Impervious areas that drain to surface waters are associated with increased runoff volumes and water quality declines in streams.

The use of green infrastructure as recommended in GO TO 2040 can significantly reduce impervious area, and specifically hydraulically connected impervious area.

Green infrastructure tends to preserve, restore, or mimic natural hydrology, and it includes methods of using vegetation to promote infiltration of stormwater, uptake by plants, and other techniques to retain a portion of runoff onsite rather than discharging it.

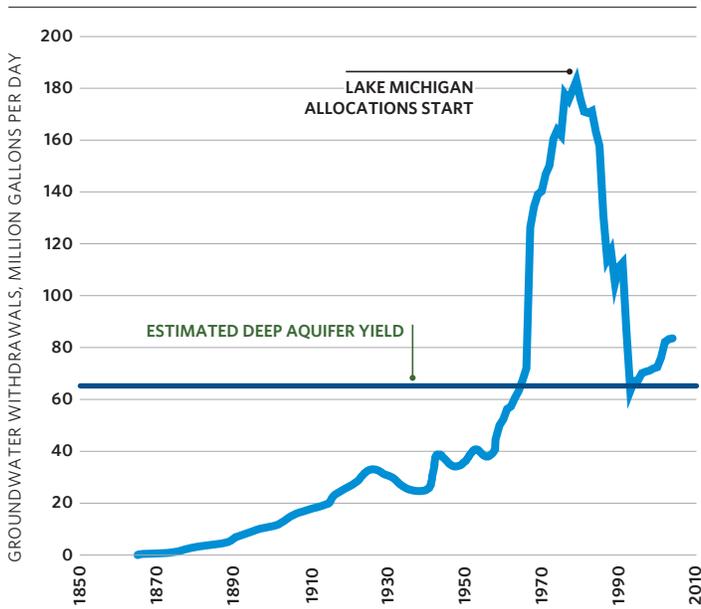
4 Center for Watershed Protection, "Impacts of Impervious Cover on Aquatic Systems," 2003. See http://www.cwp.org/documents/cat_view/78-other-center-publications.html.

2.2 Current Conditions: Water

Historically the region has been considered water rich, and scarcity has been a minor issue. The region is bordered by Lake Michigan, one of the largest reservoirs of fresh water in the world, from which almost four-fifths of the people in the Chicago area receive their drinking water.

Yet water supplies are not unlimited, and significant demand for drinking water has been placed on sources that may be unable to sustain it in the long term. CMAP recently completed the *Water 2050* Northeastern Illinois regional water supply/demand plan. This three-year effort, led by a diverse group of stakeholders, resulted in a highly specific plan intended to ensure a balance of water demand and supplies through 2050. The discussion below draws widely from the findings of the study.

Figure 14. Withdrawals from deep bedrock aquifer in northeastern Illinois, 1850-2010



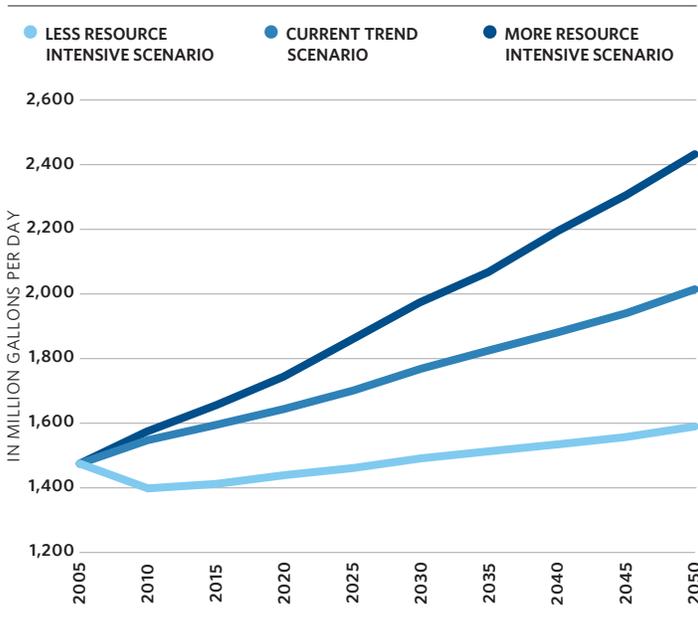
Source: Illinois State Water Survey

Much of the region's drinking water is withdrawn from Lake Michigan and treated by the City of Chicago, then either sold at retail to city customers or sold wholesale to other communities. A smaller amount of water is withdrawn from the lake and treated by other systems. The region's use of Lake Michigan is constrained by a Supreme Court decree: users in Illinois are allowed to divert no more than about 2.1 billion gallons per day from Lake Michigan. This limit was set following litigation with other Great Lakes states over the reversal of the Chicago River to drain into the Des Plaines River and away from Lake Michigan. Lake Michigan water is allocated to individual communities through a permit program administered by the Illinois Department of Natural Resources (IDNR). Outlying areas of the region do not use Lake Michigan, relying instead on groundwater or the Fox and Kankakee Rivers. Here water is much less abundant, and deeper wells are "mining" groundwater, meaning that withdrawal rates exceed natural recharge rates. Although the region was able to control this trend in the 1980s and 1990s because many communities switched to Lake Michigan water, groundwater availability is continually declining because its use is now increasing again, as shown in **Figure 14**. The Fox and Kankakee Rivers supply water for approximately five percent of the population in the region. According to the Illinois State Water Survey (ISWS), flow in the Fox River will continue to increase as a result of population growth and the associated wastewater discharge.⁵ As a result, the Fox River has the potential to supply significant new water demands.

While electricity and natural gas are provided by the private sector under state regulation, drinking water in the region is provided almost exclusively by public utilities, which usually are municipally owned and operated. Providing water to residents is largely in the hands of local governments; their individual and collective actions in the upcoming years will determine how adequately the region confronts increasing demand. *Water 2050* projects that while total population will increase by 38 percent through 2050, water demand could increase by 64 percent or even decrease by 7 percent compared to 2005, depending on the region's policy choices (see **Figure 15**).

⁵ Some of this flow may be incrementally reduced by communities switching from groundwater to the Fox River, as wastewater discharge will not then be causing a net increase in flow. In addition, the City of Waukesha, WI, may switch to Lake Michigan water, which would have to be returned to the Great Lakes Basin; in that case, Waukesha would no longer contribute wastewater discharge to the Fox River, lowering the flow available to Illinois communities. While there are complications, then, it still appears that additional water will be available in the Fox River to support the use of the river rather than groundwater.

Figure 15. Demand scenario water withdrawals, 2005-2050



Source: Dziegielewski and Chowdhury, 2008

A major conclusion of *Water 2050* is that the region needs to pursue water demand management and seek to achieve that lower figure. Often the concern is too much water, however, not too little. Because of its broad floodplains and typically clayey soils, northeastern Illinois is flood prone. The increased runoff from impervious areas like roofs, streets, and parking lots compared to farm fields or woodlands means that flooding will be worse, since more rainfall will be converted to runoff. As a result, one of the most significant water resource problems in the region is flooding. Many areas — especially the watersheds of the Des Plaines and Little Calumet Rivers, but others as well — are threatened by flooding, which is exacerbated by historic development within floodplains and lack of detention storage (see **Figure 16**). Extensive expenditures have been made on flood control projects, but flooding problems remain, creating great hardships for residents and businesses.

Local government stormwater management requirements grew out of a need to reduce flood damage. The first objective of most stormwater management ordinances, therefore, is to limit the rate of peak runoff from a developed site, which is accomplished mainly through detention storage. Traditionally, detention basins have been constructed to hold a specified amount of runoff as determined by ordinances, the size of the project, and a number of other factors.

The detention basins are then equipped with a flow restrictor to discharge at a specified release rate.

Most communities in the region have ordinance requirements for detention. Adoption of these standards has been facilitated by northeastern Illinois' unique and very successful countywide stormwater management structure. State law authorizes counties in northeastern Illinois to create "Stormwater Management Planning Committees" with balanced county and municipal representation to prepare a stormwater management plan, to implement the plan through a countywide ordinance, and to fund stormwater management projects and other activities through a property tax levy.⁶ The ordinances are adopted by the County Board and provide minimum standards for all municipalities and unincorporated areas within the county, although a municipality may then create stricter criteria if it chooses to do so. In Cook County, this authority was given to the Metropolitan Water Reclamation District. Kendall County has not yet developed a countywide stormwater ordinance.

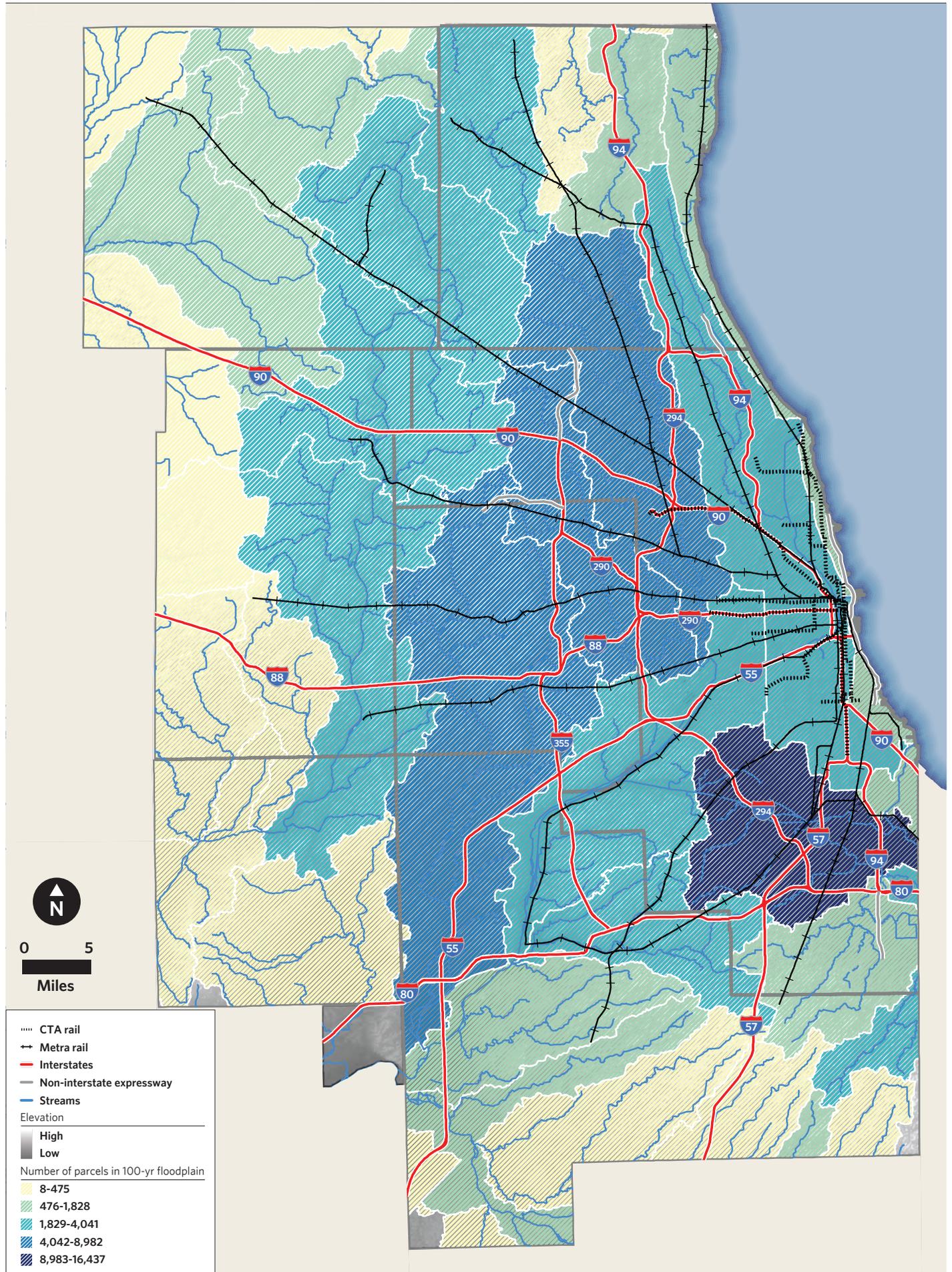
Detention remains an incomplete solution, however. It delays the discharge of stormwater from a site but does not reduce the actual volume being released.⁷ In a large watershed, the cumulative effect of developed sites discharging at the allowable release rate can still result in flooding.⁸ Furthermore, urban runoff contains contaminants that are harmful to aquatic life, but detention generally does little to control this. The county stormwater committees and the municipalities have, to varying degrees, incorporated into their ordinances requirements to address water quality and runoff volume, but challenges remain. A potential solution to these problems is to adopt more thoroughly a "green infrastructure" approach to stormwater management, which tends to preserve, restore, or mimic natural hydrology. Green infrastructure could supplement detention through methods of using soil and vegetation to promote infiltration of stormwater, uptake by plants, and other techniques to retain a portion of runoff onsite rather than discharging it. Green infrastructure practices may also reduce stormwater flow to combined sewer systems (in which stormwater discharge is combined with wastewater), which could result in significant cost and energy savings to wastewater treatment plants.

6 These counties were DuPage, Kane, Lake, McHenry, and Will, and each has passed a countywide ordinance. In P.A. 94-675 (55 ILCS 5/5-1062.2) the authority was extended to Kendall and another five counties. Kendall has not yet adopted an ordinance. P.A. 93-1049 (55 ILCS 5/5-1062.1) gave the Metropolitan Water Reclamation District of Greater Chicago the authority to develop a countywide stormwater management program for Cook County.

7 Engineering Resource Associates, Inc., "WMO Regulatory Requirement Recommendation: Volume Control Provisions," prepared for Metropolitan Water Reclamation District of Greater Chicago, 2008.

8 J. Navota and D. Dreher, "Protecting Nature in Your Community," Northeastern Illinois Planning Commission and Chicago Wilderness, 2000.

Figure 16. Parcels in Federal Emergency Management Agency 100-year floodplain



Source: Chicago Metropolitan Agency for Planning, 2010. Note that only non-agricultural, non-vacant parcels are included in this analysis.

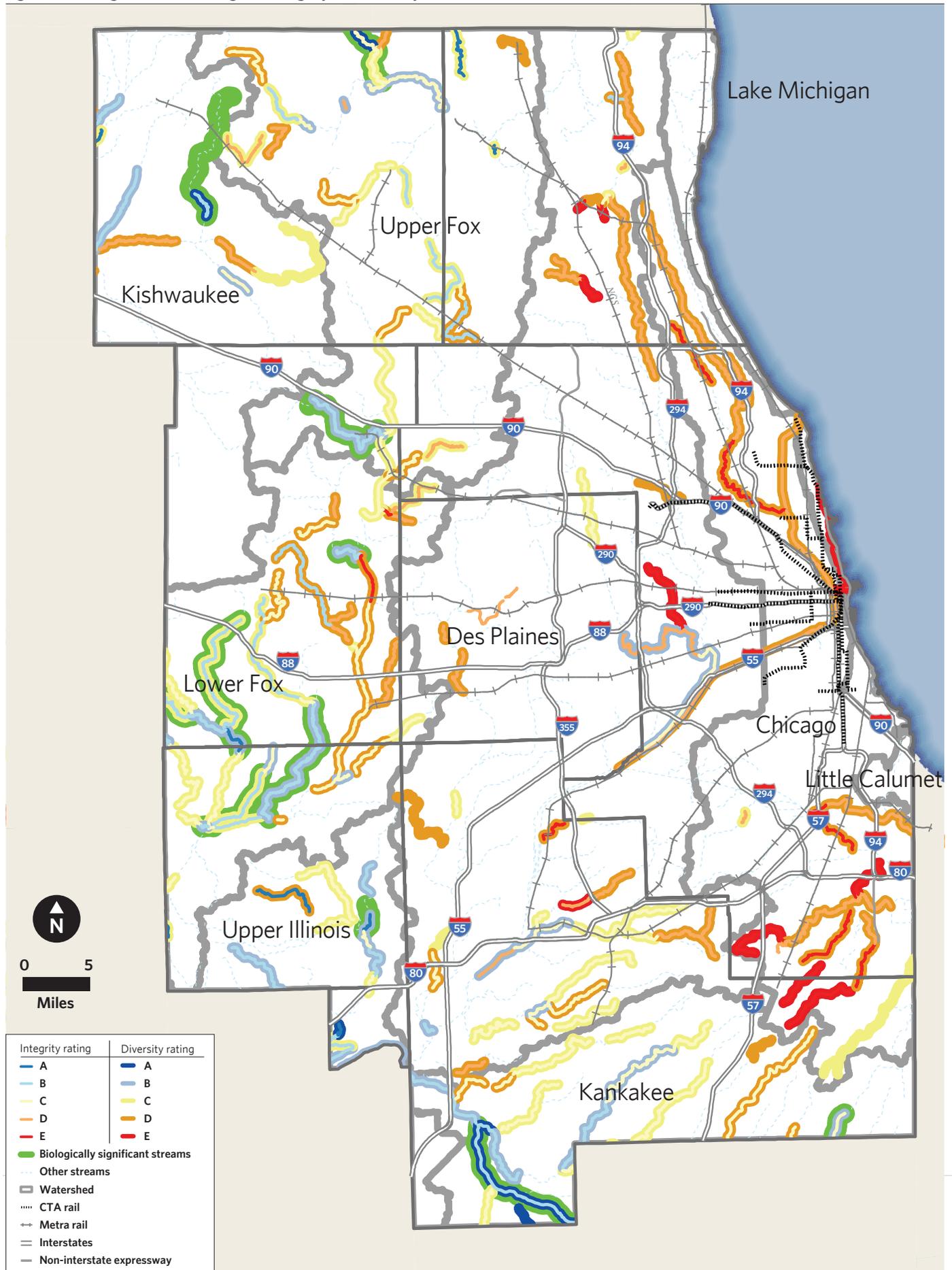
There are many neighborhoods in the region that were built before detention or any other stormwater management requirements were in place. Even after they were required, early detention basins and other stormwater management infrastructure were built with little regard for controlling runoff volume or improving water quality. As a result of urban runoff and other factors, the waterways in more urban areas of the region (within and east of the Des Plaines basin) are mostly in poor condition, while most — but not all — streams in the less-developed Fox, Kankakee, and Kishwaukee basins are in moderate to good condition (see **Figure 17**). While this discussion has focused on urban runoff as a threat to streams and lakes, it is not the only danger. Besides combined sewer overflows, some streams and lakes have been impaired by wastewater and industrial discharges, while others have been badly altered by farm drainage practices and ongoing agricultural runoff.

Because of these water resource problems, there is a need to undertake special projects in the region's watersheds to determine the best ways to control flooding, reduce runoff volume, improve water quality, and so forth.

A simple example would be to construct small bioretention areas in existing parking lots to capture runoff. Retrofits using green infrastructure generally mean “disconnecting” existing impervious surfaces, so that they no longer produce runoff that is discharged off-site. Other examples would include building additional flood storage or increasing channel conveyance capacity. Perhaps the largest current program of this sort is that of the Metropolitan Water Reclamation District, which has been studying the watersheds of Cook County to identify projects with multiple benefits (flood control, water quality, habitat, etc.) to undertake in its capital improvement program.

Also, aging sewer infrastructure is often in poor condition. Compared to the funds now available for energy retrofits, however, the funding sources are limited for stormwater retrofits. Projects to retrofit stormwater infrastructure for water quality purposes often rely on grants available through Section 319 of the Clean Water Act, which is an important but very small source of funding. Lake County offers a small grant program to leverage other sources like Section 319, as does DuPage County.

Figure 17. Biological stream ratings for integrity and diversity



The Biologically Significant Streams ratings are a 2008 update to the stream characterization ratings that have been in use in Illinois since the 1980s. Produced by scientists with the Illinois Department of Natural Resources, the rating scale runs from A to E, with A being the highest quality streams. Diversity measures the number of different species present in a stream from various groups of organisms (taxa). Integrity measures the biological intactness of a stream relative to an undisturbed or less disturbed reference site. Biologically Significant Streams are that have a high rating based on data from at least two taxonomic groups. It can be achieved by obtaining an A rating either for diversity or for integrity that is based on data from two or more taxonomic groups.

2.3 Indicators and Targets: Water

The region’s success in managing and conserving water can be measured by two indicators: water use and impervious surface.

In the following, these indicators are compared between targets for GO TO 2040 and their expected value if future conditions follow current trends.

Water Demand

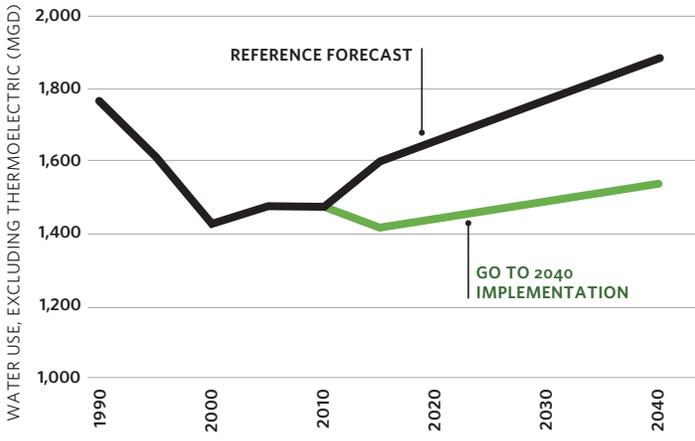
The *Water 2050* plan provides demand projections to 2040 (as an interim year) based on three potential demand scenarios. GO TO 2040 recommends a target that follows the less resource intensive (LRI) scenario (see **Figure 18**), which is predicated on the region choosing policies to reduce future demand. These include an increased commitment to water efficiency, using water rates to encourage conservation, and development patterns that decrease irrigation needs. In 2005, water demand was 1,480 million gallons per day (MGD) as “normalized” to control for drought that year. The year 2010 value was developed as a forecast.

WATER DEMAND PROJECTIONS

1,416 million gallons per day by 2015

1,539 million gallons per day by 2040

Figure 18. Water demand targets under the less resource intensive scenario, 1990-2040



Sources: Chicago Metropolitan Agency for Planning, 2010; Dziegielewski and Chowdhury, 2008

Connected Impervious Area

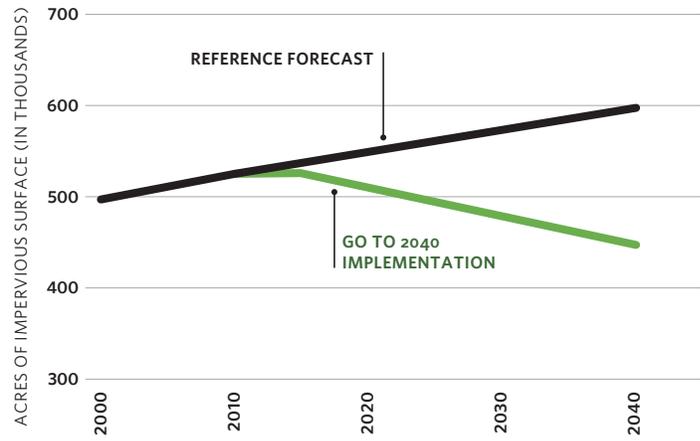
The total area of impervious surface in the region in 2010 is approximately 525,000 acres. With a commitment to green infrastructure and more compact development patterns in newly developing areas, it should be possible to reduce the creation of new connected impervious surface area (see **Figure 19**). More than this, redevelopment is also an opportunity to reduce connected imperviousness. Green infrastructure retrofit projects identified in watershed plans can also “disconnect” existing impervious areas and infiltrate the runoff from them, thus actually reducing the negative impact of imperviousness of already developed areas. While it may appear optimistic to expect reductions in existing imperviousness, removing existing imperviousness is necessary to improve water resource conditions, and redevelopment along with watershed retrofits can help accomplish this.

ACRES OF CONNECTED IMPERVIOUS AREA

525,000 acres by 2015

450,000 acres by 2040

Figure 19. Effective impervious area targets, 2000-2040



Source: Chicago Metropolitan Agency for Planning, 2010

2.4 Recommendations: Water

GO TO 2040 supports an integrated approach to water resources planning. This involves actions that protect and enhance water quality and quantity at all parts of the water cycle.

The main theme for these actions is source protection through water use conservation, volume reduction of wastewater effluent, and stormwater management. The following section outlines these actions while supporting the recommendations developed for *Water 2050*.

Table 1. Potential water savings associated with conservation measures at two tiers of implementation

CONSERVATION MEASURES	LOW CONSERVATION (MGD)	HIGH CONSERVATION (MGD)
High Efficiency Toilets [†]	15.0	74.8
Water Waste Prohibition [†]	12.1	60.3
Metering [*]	30.3	31.5
Leaks and Audit Repair [*]	5.9	29.7
Residential Plumbing Retrofits [‡]	5.2	26.0
Commercial/Industrial [‡]	5.0	25.2
High-Efficiency Clothes Washers [†]	3.2	16.1
Large Landscape [*]	1.0	5.1
Residential Water Survey [†]	0.1	0.7
All Measures — Total	77.8	269.4

* Low conservation applies to 10% of demand; high conservation applies to 50% of demand.

† Low conservation applies to 10% of eligible households; high conservation applies to 50% of eligible households.

‡ Low conservation applies to 10% of employees; high conservation applies to 50% of employees. Employee estimates only include public supplied commercial and industrial establishments.

Source: Chicago Metropolitan Agency for Planning, 2010

Support Water Use Conservation Efforts

Water 2050 identified thirteen conservation measures that promote efficiency and can reduce or defer the need for a utility to increase its capacity. A subset of these is shown in **Table 1**. The measures include retrofitting water fixtures to higher efficiency models, programs that conserve water on “large landscapes” (irrigated areas that are greater than two acres), and leak detection⁹, among others. One of the most important ways local governments can do this is to adopt sensible water conservation ordinances, as these can result in an average of 20 percent savings in water use.¹⁰ In March 2010, CMAP released its updated Model Water Use Conservation Ordinance to serve as a tool to help communities achieve efficiencies in water consumption while deferring the need for infrastructure expansion. As with energy, retrofits with more efficient appliances and plumbing fixtures can result in significant savings in water use. Retrofit programs should be aligned with the WaterSense label, which is assigned by the U.S. Environmental Protection Agency (U.S. EPA) to the most efficient water-using appliances, plumbing fixtures and fittings. The model ordinance, which drew widely from existing regulations and literature review, outlines mechanisms by which local governments can assure the installation of WaterSense devices. However, because many areas were developed well before national standards for plumbing fixture efficiency went into effect, there is still a need to directly retrofit buildings, or for municipalities to encourage retrofits as part of providing water service or as a condition of a property transaction.¹¹ Water conservation programs through municipal utilities should be combined with energy retrofit programs to increase the dividend.

9 Leak detection is undertaken by water utilities to ensure that system inefficiencies are addressed through system water audits. The City of Chicago pursues system leak detection by inspecting each water main every four years and the critical main every year. See p. 100 of “Water 2050”, <http://tinyurl.com/26vcwca>.

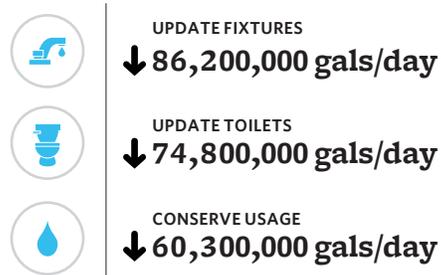
10 U.S. Environmental Protection Agency, WaterSense Program. See <http://www.epa.gov/watersense/>.

11 The Chicago Metropolitan Agency for Planning Model Water Use Conservation Ordinance, 2010, contains additional information and resources on retrofitting. See <http://tinyurl.com/2wln57f>.

Funding for the measures above can be linked to the State Revolving Loan Funds that are administered by the Illinois Environmental Protection Agency (IEPA). The Public Water Supply Loan Program (PWSLP) and the Water Pollution Control Loan Program (WPCLP) provide loans with low or zero interest rates to fund the construction, expansion and upgrade of water supply and wastewater treatment facilities respectively. Under ARRA requirements, states must allocate 20 percent of the loan funds for eligible projects under the Green Project Reserve program. Funding eligibility falls under four categories: water efficiency, energy efficiency, green infrastructure, and environmentally innovative projects. IEPA should review criteria for funding to ensure that resource efficiency goals are met.

Figure 20. Projected water savings from conservation measures

If 50% of our region put these three water conservation measures into place, we could reduce our per capita daily water consumption by almost 20 gallons per person.



An increased commitment to conservation can be achieved in the Lake Michigan Service Region, which refers to the communities that draw water supplies from Lake Michigan. These communities report their water use to the Lake Michigan Management Section of IDNR. The process by which IDNR tracks water usage and ensures compliance with the permit conditions is currently conducted at a basic level and does not capture all the information that could potentially be used to promote regional conservation initiatives. By expanding this process to collect data on existing permit requirements and additional conservation efforts, IDNR can more closely track permit compliance while developing additional regional water supply data. Furthermore, IDNR should make water usage data available online for use by others including the academic community, state surveys, water utilities, and area planners to allow broad access to this valuable information and to benefit regional and local water supply planning. It is important to note that increased water use conservation in the Lake Michigan area has regional implications as the lake may provide an option to communities that can no longer rely on groundwater for long term supplies.

Communities should use water “footprinting” as a standard audit method for large-scale projects in conjunction with conservation plans that aim to reduce annual consumption. Water footprint is the total volume of water consumed by an individual, community, or business.¹² In the context of this document, water footprinting refers to water consumption onsite. Water footprinting is useful when applied to large scale projects where the estimated water demand could have a significant impact on the long term plans of a water supply utility. Water footprinting should be used to identify ways to reduce water consumption onsite or to help make compensating reductions in demand elsewhere in the system. For example, Nestle was able to reduce its water withdrawal by 28 percent (alongside 76 percent revenue growth) through the use of a business Water Footprint Accounting method, which was used to identify measures to offset the impact on various water supply resources of the total volume of water the company used.¹³ While the concept of water footprinting is still fairly new in the U.S., there is an opportunity for northeastern Illinois to be a regional leader in promoting the technique. Water neutrality, full water recycling, or total water use reduction present an opportunity to move beyond management practices that facilitate water conservation to a more holistic approach for water use reduction.

The cost a utility incurs to supply water to its customers includes a number of components, such as the cost of obtaining raw water from ground or surface supplies, treatment to make the water potable, and distribution to users. But there are more than simply the variable costs of operating wells and machinery. Water production is a very capital intensive enterprise, and the physical plant of the utility needs substantial ongoing maintenance. Yet, current municipal water rates often do not reflect the entire cost of supplying water to the end user. For example, the real cost of maintenance, or even the cost of new infrastructure, may not be completely accounted for in the rate, so that the rate is artificially low. Because of this, consumers have little incentive to conserve water, while municipally-owned utilities are rendered dependent on general revenues or taxes to subsidize development of additional water supplies to meet growing demand.

Municipal utilities should shift toward full cost pricing for drinking water. This can be done in such a way that it encourages conservation and protects water utility revenue; it can also be implemented in such a way that overall municipal revenues are unchanged.¹⁴ This is an area of interest to many communities, but there is a need for more information to help attain the conservation goals in GO TO 2040 while ensuring predictable revenue streams for utility operations. It is important that such actions be accompanied

12 Water Footprint Network. See <http://www.waterfootprint.org/?page=files/home>.

13 H. Lopez, “The Corporate Water Footprint: What Can We Do to Decrease It?” presented at World Water Week, Stockholm, Sweden, 2008. Among the various methods that Nestle employed to offset the impact of their water consumption was the formation of partnerships to deliver clean water where needed and provide technical expertise in water management practices to communities that hosted their facilities.

14 More analysis on this subject is available in Chicago Metropolitan Agency for Planning, Water 2050: Northeastern Illinois Regional Water Supply/Demand Plan, 2010. See <http://www.cmap.illinois.gov/waterplan>.

by public information campaigns as well as proper bill design that facilitate better comprehension of this measure and allow customers to respond accordingly. Communities should ensure that such pricing policies do not result in inequities nor adversely impact low-income residents. Options such as targeted retrofits/rebate programs, assistance with bill payment, and increased awareness activities should be linked with the above policies.

Integrate Land Use Policies and Site Planning with Water Resources

Land use policies that encourage compact development should be promoted at the regional and local levels, as compact development is known to reduce residential water use and to reduce capital and operating costs for water utilities.¹⁵ This should be coupled with the identification of sensitive aquifer recharge areas (SARAs) and their protection from potential contamination, which will help ensure the security of water supplies for future generations. Carefully planned development decisions that incorporate the protection of SARAs are essential steps for the integration of water supply and land use planning.¹⁶

Developers, local governments, and county stormwater committees in the region should make a commitment to using green infrastructure to manage stormwater. The use of green infrastructure for infiltration, evapotranspiration, and reuse has many benefits, and studies have shown that it is often less expensive to implement compared to traditional gray infrastructure. Furthermore, green infrastructure practices, such as rain gardens, wetlands, bioswales, permeable pavers, and rainwater harvesting for non-potable indoor uses, among others, are adaptable and can be used in settings ranging from urban to semi-rural, both in new development and in redevelopment.

Green infrastructure practices emphasize the importance of rainwater as a natural resource that can replenish aquifers and provide baseflow for streams in addition to being reused for other purposes such as irrigation.

Although several communities in the region have recently, or are currently, updating stormwater management regulations to allow the use of green infrastructure for stormwater management, few have established mechanisms for the long term maintenance and funding of these practices. The conventional approach of leaving maintenance of on-site stormwater infrastructure in the hands of private owners often leads to poor upkeep and performance.

While many area stormwater management agencies appreciate the benefits of green infrastructure practices, there is still a certain level of discomfort with using them because of lack of regional performance data, complicating the shift from tried-and-true conventional methods. Thus, perhaps the most important recommendations for green infrastructure implementation are to develop sustainable sources of financing and to provide performance data to stormwater managers. In addition to implementing pilot projects utilizing green infrastructure practices, local governments should explore the feasibility of establishing a fee for long term maintenance of stormwater infrastructure to be charged along with user fees for services such as water provision and wastewater collection.¹⁷ The purpose of the fee is to provide a dependable, dedicated source of funding for stormwater management that is directly related to the runoff produced by a property. The fee can be designed to be revenue-neutral so that the overall municipal levy does not increase.

15 Cameron Speir and Kurt Stephenson, "Does Sprawl Cost Us All: Isolating the Effects of Housing Patterns on Public Water and Sewer Costs," *Journal of the American Planning Association* 68 (2002): 1, 56-70.

16 McHenry County Water Resources Department developed a Groundwater Protection Action Plan based on the identification of the Sensitive Aquifer Recharge Areas in the county. See <http://tinyurl.com/38kb2jf>.

17 The Village of Streamwood, IL uses Special Service Areas, a taxing system to certain parts of a community, to maintain existing wetlands and upgrade existing stormwater infrastructure. The City of Rolling Meadows, IL charges a stormwater utility fee of \$1.65 per 3,604 square feet of impervious area per month.

Encourage Watershed Planning and Stormwater Infrastructure Retrofits

Stormwater ordinances only apply to new development and redevelopment, but there is a widespread need to implement projects in already developed areas to address flooding, water quality, and other objectives. A major type of project is a stormwater infrastructure retrofit, implementing green infrastructure practices to capture, treat, and potentially infiltrate stormwater that otherwise might be routed to a stream with little or no treatment or even detention. Other projects may be measures meant primarily to address flooding. One of the best ways to determine the kinds of projects needed is through watershed planning. Many of these plans have been developed in the region, yet there are numerous watersheds where they have not.

Watershed plans should identify water resource problems and evaluate retrofit projects to address them, whether the problem is flooding or poor water quality or loss of habitat.

Ideally a watershed plan will consider multi-objective projects that address several problems simultaneously. Frequently a watershed will need a mix of different kinds of projects and policies to address the problems identified there. The northeastern Illinois region should ultimately have an overlay of watershed plans that cover all watersheds, promoting water use conservation and evaluating projects to reduce point and non-point source pollution, improve aquatic habitat, and control flooding.

IEPA currently funds watershed planning through Sections 319 and 604(b) of the Clean Water Act, but these sources are limited and focused on water quality. There is a need for an increased commitment from county stormwater management and planning committees to support watershed-based plans using funds allocated for stormwater management, whether from general revenues or from stormwater utility fees. Additionally, in terms of capital improvements for stormwater retrofits, there are also limited funding sources from state or federal sources to construct improvements. In addition to exploring other funding opportunities, local governments with stormwater management responsibilities should consider charging dedicated user fees to cover the costs of maintaining stormwater infrastructure.

One of the main benefits of green infrastructure is a reduction in impervious surface. With a commitment to green infrastructure and more compact development patterns in newly developing areas, it should be possible to reduce the creation of new effective impervious surface area. In redevelopment projects, green roofs, rain gardens, or other techniques can also be used to decrease runoff volumes from a site below what they were prior to redevelopment. Finally, the retrofits recommended in GO TO 2040 will make it possible to “disconnect” existing impervious areas and infiltrate the runoff from them, thus actually reducing the effective imperviousness of already developed areas. CMAP will continue to take a leadership role in addressing flooding issues throughout the region through various implementation measures, including utilizing its committee structure to continue an ongoing dialog to remedy these issues.

Optimize Water and Energy Sources to Scale of Operation

Communities that are currently on groundwater but could potentially access water supplies from the Fox and Kankakee Rivers should explore shifting to those sources. This recommendation is supported by findings from studies by the ISWS showing that the Fox River has the potential to supply significant amounts of drinking water for future growth. Meanwhile, the shallow and deep bedrock aquifers that supply water to nearby communities are being pumped at rates that exceed the rate of recharge.¹⁸ If communities in the Fox River corridor tap into surface waters for their supplies, they may not only gain resource security but also achieve considerable energy savings of up to a 30 percent reduction in electricity usage.¹⁹ This is primarily because more energy will be expended in pumping from wells in which the water level is increasingly lower.

CMAP is well placed to coordinate with the municipalities identified by ISWS to be at risk of water shortages, and with IDNR, to explore the feasibility of shifting from groundwater resources to the Fox River. There is an opportunity for Councils of Governments (COGs) or other collaborations to explore shifting to surface supplies and to adopt a coordinated approach to achieving sustainable water supplies.²⁰ Communities along the Kankakee River could make a similar shift, but it has not been studied to the extent that the Fox has been. CMAP should collaborate with the communities that could potentially benefit from the Kankakee River to facilitate studies and modeling by the ISWS.

Over 300 water supply utilities currently provide water for the region from three sources; Lake Michigan, groundwater, and inland surface water (see **Figure 21**). Communities dependent on Lake Michigan are mostly served by water that has been treated and processed by the Chicago Water Management Department. Thus, it is particularly relevant for communities that draw from surface water supplies and groundwater to explore consolidation of water service to attain economies of scale. Instead of a number of small utilities, a major supplier may perform the same tasks with higher cost effectiveness, energy efficiency, and better compliance with drinking water regulations.²¹ Operation at a larger scale may result in pooling of risks and increased utilization of expertise and technology. This same model can be replicated for communities that receive Fox River water and, potentially, Kankakee River water. Using the same principle, smaller communities should consider consolidating wastewater systems, which could encourage the utilization of capacity in existing plants instead of the construction of new ones.²² There are many details to weigh in assessing the value of consolidation. It may mean the formation of a new district or commission to replace several municipal utilities, or it could simply involve a service agreement between municipalities; it could mean shared facilities, shared billing systems, or other efficiencies. Several communities around the region are studying various governance structures to ensure fair representation, equity of cost allocation, and long term reliability of operating systems.²³

18 Chicago Metropolitan Agency for Planning, "Water 2050: Northeastern Illinois Regional Water Supply/Demand Plan," 2010, 40-43.

19 Bevan Griffiths-Sattenspiel and Wendy Wilson, "The Carbon Footprint of Water," a River Network Report, 2009, 41.

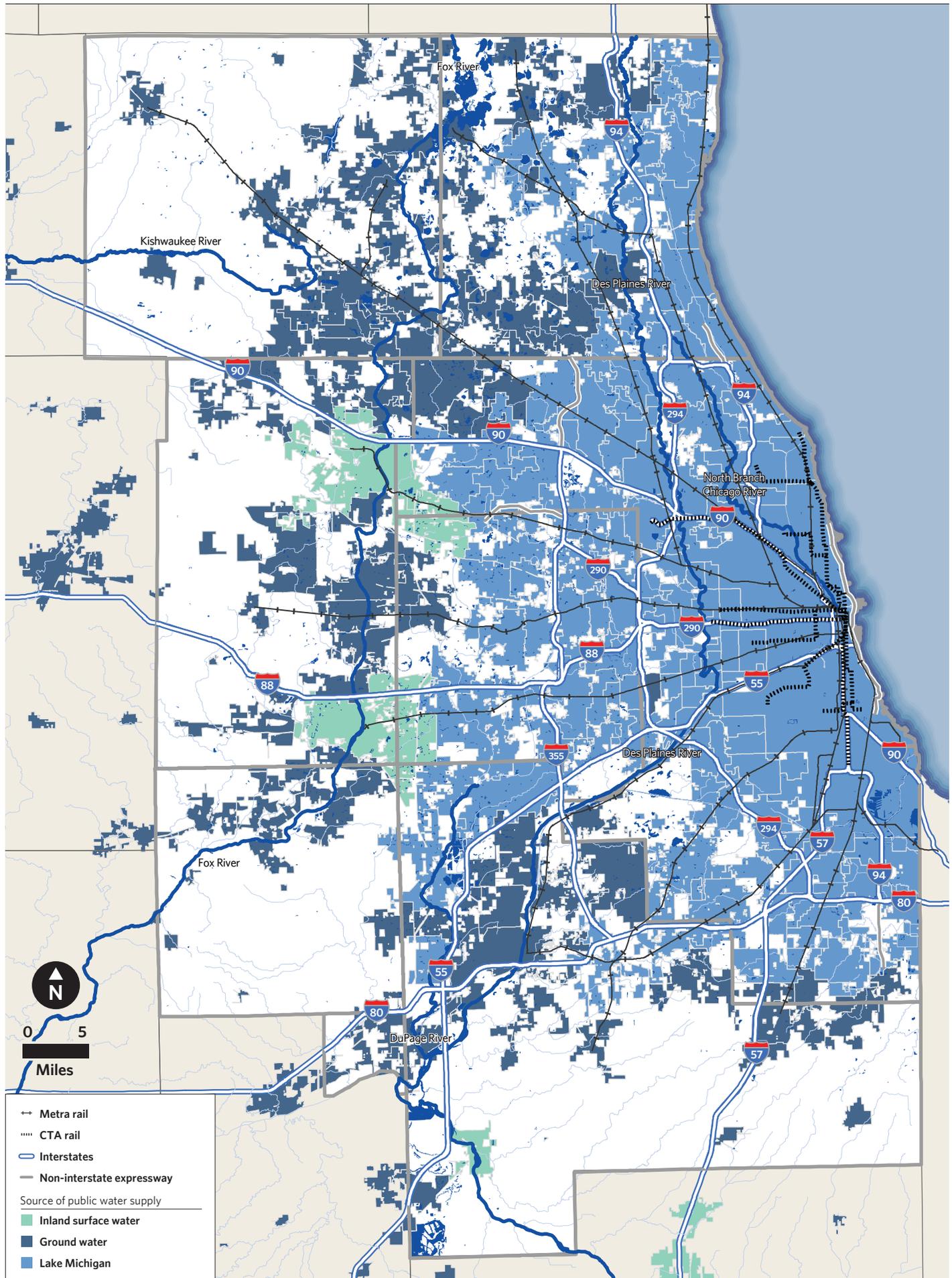
20 The southwest suburbs of Orland Park, Mokena, Oak Forest, and others are in discussions with Oak Lawn, the water provider, regarding forthcoming infrastructure improvements. Several of the northwest suburbs in Lake County are exploring the formation of a water commission to provide service for their communities.

21 J. Cromwell and S. Rubin, "Estimating Benefits of Regional Solutions for Water and Wastewater Service," American Water Works Association Research Foundation, 2008.

22 Data from U.S. Environmental Protection Agency, 2006-2007. Permit Compliance System shows that in the seven-county region, wastewater flows were 1,750 million gallons per day (MGD), while total capacity was 2,501 MGD.

23 This and other forms of local government service coordination are discussed more fully in the GO TO 2040 plan's "Pursue Coordinated Investments" section.

Figure 21. Source of public water supply by municipality



Source: Chicago Metropolitan Agency for Planning, 2010

2.5 Benefits: Energy

The Regional Vision states that the region should be a leader in green building techniques, the production of green energy, and in providing energy-efficient transportation options.

Additionally, during the “Invent the Future” phase of public engagement for GO TO 2040, participants identified energy reduction as one of the four most important indicators to track progress toward achieving the Regional Vision, along with regional economy, transportation choice, and land consumption. Energy conservation is also part of many other strategies in GO TO 2040, ranging from the mixed-use reinvestment that is part of promoting livable communities to the provision of a balanced supply of housing and jobs.

Household and Public Cost Savings

While energy conservation measures generally entail an upfront cost, the stream of avoided costs continues long after the initial investment is repaid. Furthermore, many state and federal programs are available to assist with the initial costs to help encourage energy conservation by local governments, residents, and businesses. Based on 2005 prices, the region’s average household could save \$550 per year in natural gas and electricity following a retrofit, while savings for a typical commercial account would be \$6,400.²⁴ A particular energy conservation measure may not make sense in every case, but in general conservation pays dividends to the user. There is a clear financial motive for conservation.

24 GO TO 2040 Regional Energy Strategy Report, 2009.
See <http://www.goto2040.org/energy/>.

Economic

Increasing reliance on efficiency to meet energy service needs also has a broader economic payoff, in that it directly and indirectly creates “green jobs” and induces job creation elsewhere in the economy. In fact, most of the green jobs expected to emerge in the seven-county region over the next decade are linked to energy use and conservation.²⁵ While estimates of direct job creation vary, it is likely that each \$1 million investment in energy efficiency could create eight to 10 full-time jobs,²⁶ primarily in the skilled trades needed to conduct energy audits and install energy efficiency measures. Indeed, taking full advantage of the opportunity will require parallel investments in workforce training to establish a labor pool sufficient to, for example, undertake a large-scale energy retrofit program. The products and services needed from manufacturers and other vendors (e.g., compact fluorescent light bulbs, energy efficient windows, etc.) would account for indirect job creation on top of this.

Job creation induced by efficiency gains is expected to be substantial as well. Induced jobs are those created elsewhere in the economy, not immediately related to water and energy efficiency. California, for example, has managed to hold its per-capita household energy consumption nearly constant since state energy efficiency policies began to go into effect in the 1970s, while average U.S. consumption has continued to increase, so that per-capita California consumption is now more than a third below the national average. At least 1.5 million net new jobs in the State of California over the period 1972-2006 could be attributed to the diffuse, economy-wide effects of those household energy efficiency gains, primarily because households were able to spend money on other goods besides energy.²⁷ Although job losses occurred in some parts of the energy sector, they were far outweighed by gains elsewhere. The non-renewable energy supply chain is generally less job-intensive than other areas of the economy, so being able to shift spending to other areas will, on balance, stimulate the creation of more jobs.

The benefits are wider when a shift to renewable energy is also considered. Manufacturers in the region have major opportunities for growth in emerging green industries (e.g., manufacturing components for wind turbines or solar panels), while headquarters and white collar jobs in renewable energy industries have a location advantage in the seven-county region as well.²⁸ A recent study revealed that 1,200 companies in our region were in industries producing one or more of the parts needed in wind turbines, while 680 companies were in industries manufacturing at least one part for solar panels.²⁹ Thus, while these companies may not currently manufacture parts for renewable energy generation, they are well-positioned to branch into that market in response to demand. Likewise, the emergence of wind farms in or near metropolitan Chicago has been dramatic in the past few years following state and federal policies promoting wind power production. Construction, installation, and maintenance jobs on wind farms in or near the region could become promising careers in the near term.

25 GO TO 2040 Green Jobs Strategy Report, 2009. See http://www.goto2040.org/green_jobs/.

26 Chicago Metropolitan Agency for Planning, Chicago Region Retrofit Ramp-up Proposal, 2009; Energy Future Coalition, “Rebuilding America: A National Policy Framework for Investment in Energy Efficiency Retrofits,” 2009.

27 David Roland-Holst, “Energy Efficiency, Innovation, and Job Creation in California,” from Center for Energy, Resources, and Economic Sustainability at the University of California at Berkeley, prepared for Next 10, 2008.

See http://www.next10.org/next10/publications/research_eeijc.html.

28 GO TO 2040 Green Jobs Strategy Report, 2009. See http://www.goto2040.org/green_jobs/.

29 GO TO 2040 Green Jobs Strategy Report, 2009, Appendix A. See http://www.goto2040.org/green_jobs/. Data used from Renewable Energy Policy Project, “Component Manufacturing: Illinois’ Future in the Renewable Energy Industry,” June 2006. The study was conducted at the six-digit NAICS level.

Environmental

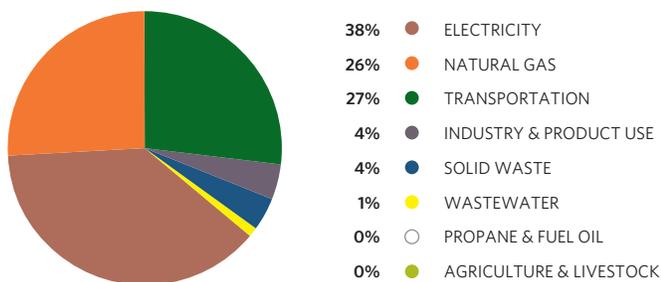
Energy use is tightly linked with the greenhouse gas emissions that cause climate change. For example, keeping a 100-watt (W) incandescent light bulb on for ten hours is associated with the release of about 1.5 pounds of carbon dioxide into the atmosphere.³⁰ The average household releases about nine pounds of carbon dioxide through heating and cooking.³¹ Electricity and natural gas usage, which are mostly associated with energy use in buildings, like heating and cooling, appliances, etc., make up almost two-thirds of the greenhouse gas emissions in the region, as seen in **Figure 22**. Thus, efforts to improve energy efficiency in buildings will also pay dividends in greenhouse gas reductions, helping to reduce the severity of climate change.

While the main thrust of this section is actions that can be taken to directly reduce energy and mitigate climate change, there are a number of actions recommended elsewhere in the plan that have the co-benefit of mitigating our influence on the climate. The transportation sector is the second-largest contributor of greenhouse gas emissions in the region, after energy use in buildings. Most of the transportation emissions are from on-road sources, with most of that from passenger vehicles or light-duty trucks.³² Since the use of transit is associated with lower emissions per passenger mile than automobiles,³³ and biking and walking generate no additional carbon dioxide, promoting alternative modes of transportation as recommended in GO TO 2040 also tends to mitigate climate change. Because residents in communities with compact, mixed-use development make fewer automobile trips, making communities more livable tends to reduce greenhouse gas emissions as well.³⁴ Similarly, because carbon is stored in

plant biomass (tree trunks, root systems, etc.), the open space preservation and restoration recommended elsewhere in the plan will also help mitigate climate change.

There has been great interest, but little progress, in establishing national greenhouse gas reduction targets. CMAP firmly believes that this is necessary. The energy efficiency measures, the shift toward renewable energy, and other GO TO 2040 recommendations will go part of the way toward meeting widely accepted targets (described in subsection 2.7, “Indicators and Targets: Energy”), but federal action is needed to reach them. At the same time, most atmospheric science researchers agree that some climate change effects will occur even if private parties and governments at all levels commit to reductions in greenhouse gas emissions. These effects include increased risks of flooding, mortality associated with summer heat waves, and the spread of invasive species. Climate change also threatens to intensify the demand for water while availability decreases. Increased average summer temperatures will make the energy efficiency of buildings even more important and financially attractive.

Figure 22. Regional emissions profile without aviation, total million metric tons CO₂e: 127.8



Source: Center for Neighborhood Technology

30 GO TO 2040 Greenhouse Gas Inventory Strategy Paper, 2009. See <http://tinyurl.com/3xju9cw>. U.S. Energy Information Administration, Voluntary Greenhouse Gas Reporting Program: Emission Factors and Global Warming Potentials. See http://www.eia.doe.gov/oiaf/1605/emission_factors.html.

31 GO TO 2040 Greenhouse Gas Inventory Strategy Paper, 2009. See <http://tinyurl.com/3xju9cw>. U.S. Energy Information Administration, Voluntary Greenhouse Gas Reporting Program: Emission Factors and Global Warming Potentials. See http://www.eia.doe.gov/oiaf/1605/emission_factors.html.

32 GO TO 2040 Greenhouse Gas Inventory Strategy Paper, 2009. See <http://tinyurl.com/3xju9cw>.

33 Booz Allen Hamilton, “Regional Green Transit Plan Carbon Displacement Analysis: Impact of RTA and Its Service Boards’ Operations on Greenhouse Gas Emissions in the Chicago Region,” draft, prepared for Regional Transportation Authority, 2010.

34 Reid Ewing, Keith Bartholomew, Steve Winkelman, Jerry Walters, and Don Chen. “Growing Cooler: The Evidence on Urban Development and Climate Change,” for the Urban Land Institute, 2007.

2.6 Current Conditions: Energy

In Illinois, electricity is largely generated from coal-fired and nuclear plants, with a small amount from renewable sources. Natural gas is used to generate additional electricity during periods of peak demand.

However, much of the region's electricity is actually sourced from a wider electric power market covering parts of the Midwest and mid-Atlantic that relies more heavily on coal.³⁵ Electricity is delivered to customers through a distribution system owned by ComEd (aside from a small portion of Kendall County outside ComEd's service territory³⁶ and a handful of municipalities³⁷ that own the distribution network), although because of deregulation customers may now choose to purchase electricity from so-called "alternative retail electric suppliers."

While electricity used in the region is often generated hundreds of miles away, a small amount is also generated by much smaller power plants closer to where it is consumed. This is called "distributed generation," and can be deployed by large industrial or commercial users, large institutions, or a district of smaller users. The higher efficiencies — and therefore lower variable costs — of these systems are a reason to try to expand their use, and they represent a significant opportunity for the region. Through "net metering," individual households can also generate some of their electricity through renewable sources, typically wind or solar, and obtain a credit on their utility bills in proportion to what they generate.³⁸ Illinois also has a Renewable Energy Portfolio Standard, which mandates that an increasing proportion of electricity sold in Illinois each year is generated from renewable sources, topping out at 25 percent in compliance year 2024-2025.³⁹ Most of this would be from wind generation, although a small amount would be from solar.

Natural gas is delivered to customers in the Chicago region by one of three investor-owned utilities, although following deregulation there are also requirements to permit customer choice in natural gas suppliers. Very little of the natural gas used in Illinois is produced here, although the state is a major hub in the cross-country transport of natural gas via pipelines.⁴⁰ In the residential sector, natural gas is used primarily for space heating, but it also powers appliances like hot water heaters, clothes dryers, and kitchen stoves. Natural gas consumption by residential consumers in the Chicago region is slightly higher than that of commercial and industrial accounts, with 57 percent of the region's consumption attributed to the residential sector.

Electricity in the residential sector is primarily used for air conditioning, lighting, and a wide variety of appliances. Unlike natural gas, however, households are not the dominant consumers of electricity. They account for only 31 percent of electricity consumption; the remainder is used in the commercial and industrial sectors to power manufacturing equipment. Although natural gas consumption varies with the weather, in the residential sector consumption per household has been decreasing slightly over time as home insulation, windows, and heating systems become more efficient. On the other hand, electricity consumption per capita has been rising steadily, resulting mainly from the increasing size of homes, which adds to the space requiring cooling and lighting, and the profusion of electronic appliances.⁴¹ **Figure 23** shows the change in residential electricity and natural gas consumption in Illinois over the past two decades.

35 The wider wholesale power market is the PJM Interconnection. See <http://tinyurl.com/24j8sx7> and <http://www.pjm.com/about-pjm.aspx>.

36 ComEd, Delivering safe, reliable electricity in northern Illinois, see <http://tinyurl.com/2d6dwfj>.

37 Naperville, Batavia, St. Charles, and Winnetka are known to have municipal electric utilities.

38 Illinois Attorney General Lisa Madigan, "Using Renewable Energy to Lower Your Electric Bill." See <http://www.illinoisattorneygeneral.gov/environment/netmetering.html>.

39 Illinois Power Agency Act, Public Act 095-0481, see <http://tinyurl.com/232ek7k>. For additional summary, Database of State Incentives for Renewables & Efficiency, see <http://tinyurl.com/2fq3axc>.

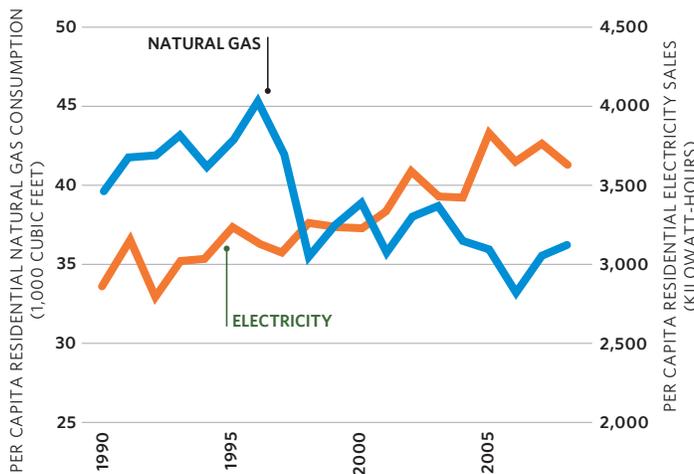
40 U.S. Energy Information Administration, "State Energy Profile: Illinois, 2010." See <http://tinyurl.com/2ew9rnp>.

41 Information in this section relies primarily on GO TO 2040 Regional Energy Strategy Report, 2009. See <http://www.goto2040.org/energy/>.

While the region has begun to make strides toward energy efficiency in residential and commercial buildings, both the suburbs and the city are ripe for many more such improvements. This is partly because of age: 21 percent of the region's housing units were built before 1939, and over half were built before 1970, well before energy codes went into effect. But more than age is at work. It has been noted that "even in comparison to other Midwest cities, Chicago is dramatically less efficient: a typical Chicago building uses twice the energy of a comparable building in the Midwest."⁴² In response, retrofit programs aimed at lower-income residents as well as some market programs have emerged in recent years through the State of Illinois, nonprofits, and utilities. Besides those funded through the American Recovery and Reinvestment Act of 2009 (ARRA), the biggest of these is likely the Energy Efficiency Portfolio Standard (EEPS), enacted by the Illinois General Assembly, which calls for a reduction in electricity demand of 2 percent by 2015 and each year afterward. Gas utilities also must meet a portfolio standard,⁴³ starting at 0.2 percent in 2011 and rising to 8.6 percent in 2020, with increases of 1.5 percent each year after that. These programs are spurring investor-owned utilities to fund programs aimed at reducing demand for gas and electricity.

Market-rate energy efficiency programs generally provide upfront financing for improvements that repay the investment through energy savings over time, and funding capacity remains low relative to the need. For example, consultants for the City of Chicago projected being short of the Climate Action Plan's retrofit goal for 2020 by more than one-third, even under optimistic assumptions, if further resources are not developed.⁴⁴ Furthermore, the numerous funding programs are fragmented and difficult to negotiate for households, businesses, and local governments. Thus, some financing programs, such as the funding available from the EEPS, are not being accessed to the degree that they could.

Figure 23. Annual residential energy consumption in Illinois per capita, 1990-2008



Sources: Energy Information Administration and Census Bureau

42 Center for Neighborhood Technology, "Creating a Chicago Regional Building Energy Efficiency System," 2009, 3.

43 Illinois Power Agency Act amendment, Public Act 96-033, Section 8-104. See <http://tinyurl.com/mcahko>.

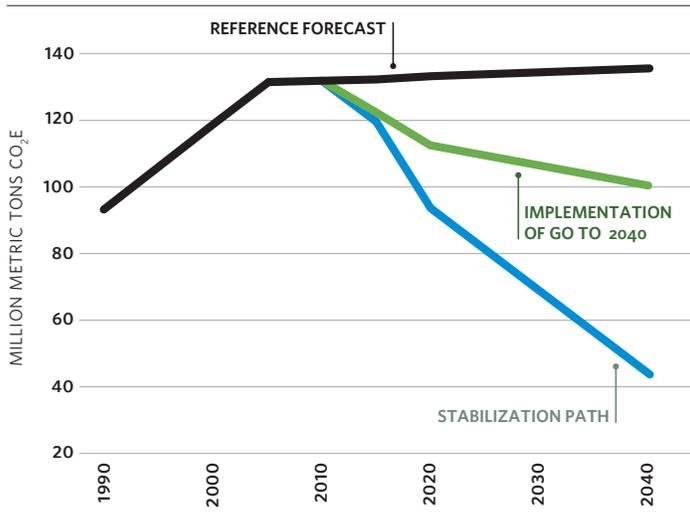
44 Katzenbach Partners, "Chicago Retrofit Strategy Final Report," 2009. See <http://tinyurl.com/2dm94jv>.

2.7 Indicators and Targets: Energy

The region’s success in conserving energy can be measured using the broader metric of greenhouse gas emissions as a proxy. Although greenhouse gas emissions do not perfectly track energy use, they are very closely related, in that progress in reducing greenhouse gases also means progress in reducing energy demand.

This indicator is compared between targets for GO TO 2040 and their expected values if future conditions follow current trends.

Figure 24. Greenhouse gas emissions targets, 1990-2040



Sources: Chicago Metropolitan Agency for Planning and the Center for Neighborhood Technology. 2010

The current level of greenhouse gas emissions is 132 million metric tons of carbon dioxide equivalent (MMTCO₂e) per year, the “equivalent” being a convention to express the relative effect of other greenhouse gases in terms of the global warming potential of carbon dioxide. A continuation of current trends would likely lead to emissions of 135 MMTCO₂e in 2040 (see **Figure 24**). With a commitment to reduce carbon emissions, and with strong action by local governments, developers, and individuals in the region, it would be possible to reduce regional emissions to 101 MMTCO₂e by 2040, or about 10 percent above 1990 levels. Emissions reductions are based on the energy retrofits, transit investments, and emphasis on compact development recommended in GO TO 2040, which represent an optimistic but achievable level of voluntary greenhouse gas emissions reductions for the region that concentrate on transportation and energy use in buildings, as they are two areas which can be positively influenced by GO TO 2040.

More significant emissions reductions than this will ultimately be needed, on the order of 80 percent below 1990 levels by 2050, which will require federal action to address emissions economy-wide. Emissions reductions of this magnitude would place the region on a “stabilization path,” the approximate emissions trajectory needed to stabilize temperatures at a global mean increase of two degrees Celsius. Further reduction requires federal action to address the carbon content of fuels, industrial emissions, emissions from electricity generation, and so forth. In **Figure 11**, the area between the line representing implementation of GO TO 2040 and the stabilization path is the emissions reduction that requires federal action to achieve.

GREENHOUSE GAS EMISSIONS REDUCTION PER YEAR

119 MMTCO₂e by 2015

47 MMTCO₂e by 2040

2.8 Recommendations: Energy

The following sections describe the actions recommended by CMAP to increase energy efficiency. CMAP will work in partnership with local governments to investigate the most effective means of implementing the recommendations.

Adopting a resource conservation strategy is best achieved at the community level by governing bodies and the following recommendations are aimed for local governmental action.

Link Transit, Housing, and Energy Use Through Livable Communities

Responding to a more resource-constrained world means pursuing more efficient growth and travel patterns. A major recommendation of GO TO 2040 is the promotion of livable communities, or compact, mixed use, walkable and bicycle-friendly developments served by transit. Besides their quality-of-life benefits, they also improve energy efficiency through increased use of lower-energy modes of travel (transit, walking, and biking) over automobiles. Measures to reduce congestion are important as well, because congestion corresponds to wasted fuel.⁴⁵

Whereas retrofit programs address existing buildings, energy codes and green building programs improve the energy efficiency of new construction and substantial remodeling. Energy codes are legal requirements that govern the design and construction of buildings by setting minimum standards for energy performance. State law requires newly constructed and renovated residential and commercial buildings to meet the standards set forth in the 2009 version of the International Energy Conservation Code (IECC), a model energy code developed by the International Code Council.⁴⁶ It is estimated to result in 12- to 15-percent energy savings over the 2006 IECC.⁴⁷ In the short term, however, there is a need to train local government building inspectors to implement the code requirements.

While they can do so for commercial buildings, local units of government, with the exception of the City of Chicago, may not establish residential building code requirements that are more stringent than the 2009 IECC. Energy savings beyond the code may still be encouraged at the local level. For example, an expedited permitting program could be established to lower fees or give review priority to green buildings (defined potentially as achieving a certain rating in the Leadership in Energy and Environmental Design [LEED] program) or green building practices could be made a condition of receiving development assistance. Zoning and permitting processes should allow and promote renewable energy generation from businesses, institutions, and residences. Local governments should encourage developers to undertake a leadership role in the planning, design, and construction of buildings to the highest standards in energy efficiency.

⁴⁵ This recommendation is addressed in more detail in the GO TO 2040 sections "Achieve Greater Livability through Land Use and Housing" and "Increase Commitment to Public Transit."

⁴⁶ Energy Efficient Building Act, 20 ILCS 3125/45.

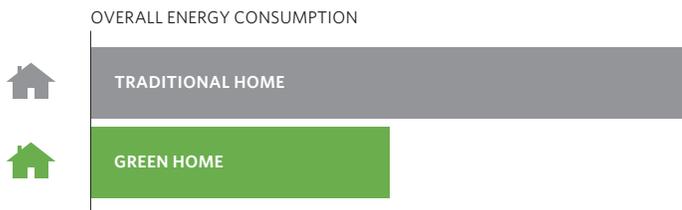
⁴⁷ Energy Efficient Codes Coalition, "Energy & Cost Savings Analysis of 2009 IECC Efficiency Improvements," 2008. See <http://tinyurl.com/27d7pht>.

Promote Retrofit Programs

Retrofit programs provide assistance to property owners to install energy conservation measures in existing buildings. Because existing buildings, especially in the residential sector, may be in use for decades, improving their energy efficiency is a crucial part of achieving conservation goals. The most effective programs combine information as well as technical and financial assistance to help property owners make the best choices and provide them with access to capital in order to achieve the highest energy savings for their investment. Typical energy conservation measures improve the heating and cooling systems, hot water heaters, lighting, appliances, or the building envelope itself (insulation, windows, etc.). A national evaluation has shown that household energy consumption can be reduced by an average of 30 percent if comprehensive energy retrofits using existing technologies are implemented,⁴⁸ which can result in significant savings on utility bills. There is much that can be done in commercial buildings as well. Tools such as the Energy Star Portfolio Manager or other energy performance indicators can be used to assess resource consumption in buildings and to help identify retrofit needs. Finally, opportunities to pursue water efficiency as part of an energy retrofit are worth considering as well.

Figure 25. Energy consumption for traditional vs. green homes

Whether in new or existing homes, the use of efficient appliances, better insulation and windows, and programmable thermostats can cut energy consumption in half.



Source: Center for Neighborhood Technology

The Chicago Climate Action Plan (CCAP) recognized the significance of this strategy in energy savings and set retrofit targets of 400,000 buildings by 2020. Similarly, the Evanston Climate Action Plan identified the building sector as the one that offers the greatest potential for direct decreases in greenhouse gas emissions through energy use reductions, while the Aurora Sustainability Plan calls for technical assistance and incentives to encourage early adoption of energy efficiency measures among both residential and commercial property owners.

Local governments should take a more prominent role in retrofit programs, both working with their residents and businesses and retrofitting municipal buildings. GO TO 2040 recommends that municipalities work to develop retrofit targets to which they can commit. At the same time, increased regional coordination is necessary. While a number of programs at the federal, state, and utility levels are intended to improve energy efficiency, the difficulty of accessing information on numerous disconnected programs has resulted in limited participation by those who could benefit. This barrier needs to be attacked by establishing a regional information clearinghouse for retrofit programs. However, the major, multi-year task of retrofitting existing building stock also requires additional financing as well as a trained workforce to carry out the retrofits. The Chicago Region Retrofit Ramp-up (CR₃) Program, led by CMAP, is a major step toward providing an information clearinghouse and linking financing for retrofits to workforce training. Key to a large scale retrofit program is a market transformation whereby access to information, finance, and skilled labor is supported by a regulatory environment that promotes retrofit programs.

Because a number of retrofit programs were funded under ARRA, it is prudent for the region to consider sustaining these programs via local financing so that retrofit efforts continue beyond the short term. Continued funding should be sought at the federal and state levels, but there are also several local financing options. For instance, local revolving funds can provide loans for efficiency measures, with loan payments replenishing the revolving fund over time so that it can be used to finance other efficiency measures. The original capitalization can be accomplished through a number of means, including local funds, private lenders, or grants. Another approach is *property assessed clean energy* (PACE), a mechanism through which loans provided to property owners to retrofit buildings are repaid through their tax bills. Not only does this provide upfront financing and a straightforward means of repayment, the obligation to repay the investment stays with the property and passes to the next owner when the property is sold. While PACE has encountered some hurdles, it remains an important potential mechanism for financing retrofits and should be supported.⁴⁹ Energy performance contracting — in which energy service companies (ESCO) provide guarantees that savings produced are sufficient to fund project costs — is an increasingly popular financing mechanism as it reduces risks to homeowners and lending institutions. Communities should encourage utilities to partner with ESCOs for customer retrofits that may be payable over time through the utility bills. Energy consumption savings should offset the loan payback portion of the bill, thus resulting in a relatively stable utility bill.

48 Martin Schweitzer, "Estimating the National Effects of the U.S. Department of Energy's Weatherization Assistance Program with State-Level Data: A Meta Evaluation Using Studies from 1993 to 2005," Oak Ridge National Laboratory. See <http://www.osti.gov/bridge>.

49 Legislation authorizing PACE was considered in the Illinois legislature in 2010, but did not pass. At the federal level, Fannie Mae and Freddie Mac, which guarantee a large fraction of the mortgages in the U.S., have resisted PACE out of a concern that energy efficiency loans made through that mechanism would be senior to mortgage debt.

Foster Sustainable Practices and Renewable Energy Generation

It is important for communities to develop energy efficiency and conservation strategies to help make informed decisions. This would involve an analysis of baseline energy use, a broad identification of potential energy conservation and other conservation measures, and an analysis of their feasibility for implementation.⁵⁰ The CCAP, as well as the sustainability and climate plans of several other municipalities, have employed such an approach. Communities across the region should develop strategies to determine the best measures to implement locally. Most crucially, these should be integrated into comprehensive planning at the local level.

It is important for communities to focus on conservation activities that move beyond the installation of energy efficient devices, and rather include a continuous review of processes and exploration of means to reduce energy demand.

Furthermore, local governments can encourage individual conservation actions through public education utilizing their channels of communication with residents. These simple actions to promote sustainability could include making modest changes in thermostat settings, remembering to turn off the lights, and unplugging electronics or using a power strip to reduce electricity used in standby mode.

Additionally, local governments should ensure that conservation goals are met in applicable franchise agreements with utilities. Under these agreements, ComEd provides electric service in exchange for the use of municipal rights-of-way for the company's electricity distribution infrastructure. The utility then recovers the cost of the municipal service through a charge on the bills of customers in that municipality.⁵¹ Thus, franchise agreements shift the cost of service from residents' general taxes to their utility bills. While the arrangement looks positive to municipal officials from a budgetary standpoint, it is also an impediment to conservation, since it provides little incentive for municipalities to conserve electricity. Many municipalities in the region have these agreements with ComEd,⁵² and there are similar agreements with natural gas service companies.⁵³ Instead of simply providing "free" service to municipalities, these agreements could be restructured so that they fund energy efficiency improvements, either on municipal property or for residents. With energy conservation, the cost of the "free" service to municipal residents could be reduced over the life of the agreement. Although doing so may create budget difficulties in the short term, municipalities are encouraged to pursue this when their franchise agreements come up for renewal.

Although the main energy priority in GO TO 2040 is meeting energy service needs through demand reduction, the region must also map out a shift to renewable energy. Significant progress has been made in certain areas, such as the state's renewable energy portfolio standard. Moving toward increased use of renewable energy is a complex and evolving enterprise, involving questions of market potential, state and federal policy, and technological readiness. On the supply side, for example, considerable improvements to electricity transmission and distribution systems may be needed to integrate renewable energy. Unlike conventional sources, renewable sources may only produce electricity at certain times (e.g., when the wind blows or the sun shines), rather than continuously as a base load power plant would, which may strain the ability to "balance" power demand across the grid.⁵⁴ On the demand side, there is a need to deploy technology that allows customers to see their energy consumption on a minute-to-minute basis and respond to price signals.⁵⁵ These kinds of improvements are part of what is often called the "smart grid," which would use better information and improved technology to manage demand by consumers and gain operational efficiencies for utilities. The state, utilities, researchers, policy advocates, CMAP, and others should continue to push toward using renewable sources for a significant fraction of our energy needs, which may involve policy changes, new technology investments, and other measures.

50 The Center for Neighborhood Technology created a model strategy, "Chicago's Guide to Completing an Energy Efficiency & Conservation Strategy," February 2009. See <http://tinyurl.com/ccmodelstrategy>.

51 ComEd, Rider FCA Franchise Cost Additions. See <http://tinyurl.com/2asxl43>.

52 ComEd, Franchise Cost Percentages. See <http://tinyurl.com/3733kam>.

53 Nicor Gas Company, Franchise Cost Adjustment. See <http://tinyurl.com/37d4jwm>.

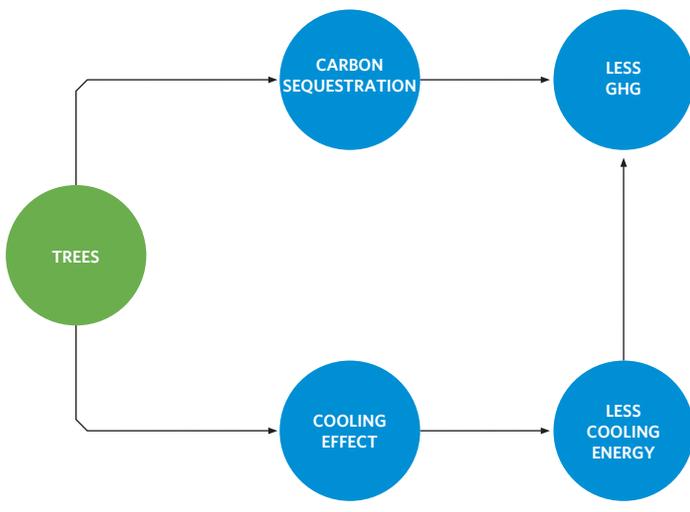
54 B. Kirby and M. Milligan, "Facilitating Wind Development: The Importance of Electric Industry Structure," National Renewable Energy Laboratory, 2008. See <http://www.nrel.gov/docs/fy08osti/43251.pdf>.

55 Center for Neighborhood Technology, "Empowering Consumers Through a Modern Electric Grid," summary report for the Illinois Smart Grid Initiative, 2009. See <http://www.cnt.org/repository/ISGI.SummaryReport.pdf>.

At the local level, communities should use their own facilities as demonstration and pilot projects for promoting small-scale renewable generation, which could involve wind, geothermal, and solar power as well as other strategies such as combined heat and power for public buildings. They should review their zoning ordinances to make sure they incorporate best practices for siting renewable energy facilities, such as wind turbines; more research may be needed at the regional level to support actions by local governments. Local governments should also make a commitment to using alternative fuels in their fleets and public works equipment. At least one municipality in the region has considered using biodiesel generated from locally-gathered waste vegetable oil.⁵⁶ Indeed, communities could undertake a multitude of actions to “lead by example,” including the review of procurement processes to ensure the inclusion of green materials for governmental equipment (e.g., increased use of recycled materials in construction activities), a higher commitment to waste reduction and recycling, and so forth.

Other approaches are less obvious, such as urban forestry. Apart from the quality of life benefit that mature trees yield, they also provide shade and encourage evaporative cooling, which together help mitigate urban heat island effects (see **Figure 26**), thereby reducing demand for electricity to power air conditioning. They also absorb carbon dioxide while growing. It has been estimated that a large scale tree-planting program in the Chicago region could cool air temperature by up to 2.5 degrees F in summer, leading to significant savings in air conditioning costs.⁵⁷ At the same time, urban trees provide significant stormwater management benefits, in that, for instance, their leaves intercept rainfall.⁵⁸ Urban forest and tree programs should be implemented at the local level to mitigate the urban heat island effect and provide other important benefits. In addition, the restoration of lands recommended for preservation by GO TO 2040 would provide a significant amount of carbon sequestration.⁵⁹ However, it should be noted that preserved lands may themselves require attention and changed management strategies in the face of climate change, as described in the Chicago Wilderness *Climate Action Plan for Nature*.

Figure 26. Effect of trees on greenhouse gas emissions



Source: Chicago Metropolitan Agency for Planning, 2010

56 The Village of Algonquin is studying the use of vegetable oil for municipal fleets and equipment. Algonquin Environmental Action Plan, 2009.

57 Gregory E. McPherson, David J. Nowak, and Rowan A. Rowntree eds., “Chicago’s Urban Forest Ecosystem: Results of the Chicago Urban Forest Climate Project,” Gen. Tech. Rep. NE-186 (Radnor, PA: U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station, 1994).

58 Jennifer Seitz and Francisco Escobedo. n.d. “Urban Forests in Florida: Trees Control Stormwater Runoff and Improve Water Quality.” University of Florida Extension. <http://edis.ifas.ufl.edu/fr239>.

59 See the GO TO 2040 section titled “Expand and Improve Parks and Open Space.”

2.9 Energy-Water Nexus

Recognizing the nexus between energy and water, GO TO 2040 encourages solutions that address energy, water, and climate together. To further this, the plan recommends policies that will lead to energy use reductions in water and wastewater utilities.

At the local government level, energy use is tightly linked with water treatment and distribution. Electricity constitutes 24 to 40 percent of a typical wastewater treatment plant's budget and 80 percent of the cost of treating and distributing drinking water.⁶⁰ Depending on the treatment processes and source of water, it can require 2,700 to 3,700 kWh of electricity per million gallons to withdraw raw water, treat it to drinking water standards, and distribute it to households, then collect and treat the resulting wastewater.⁶¹ When demand for water is reduced, water utilities should see energy savings because of the reduced need for water treatment and conveyance. At the same time, reduced water use results in less wastewater being produced, which in turn can save energy used in treatment. These energy savings are closely tied to reduced greenhouse gas emissions. Options such as waterless urinals and composting toilets, among others, should be further studied as means to further reduce effluent volumes.

While water production clearly requires energy, the reverse is also true: energy production requires significant water supplies. Thermoelectric power generation uses far more water than any other use sector, at least by total withdrawals.⁶² To some extent, energy efficiency measures and a shift to renewable sources would help temper withdrawals for power generation. Therefore, water utilities should address reductions in energy consumption, and potentially costs, through renewable generation. Increased utilization of solar and wind energy may lower utility energy bills, afford power security, and improve air quality. Furthermore, utilities should include energy consumption and costs when conducting studies for plant and service expansion. Energy and water are inextricably linked because of the energy required to treat and distribute drinking water, and because of the water required in thermoelectric generation.

There are many other ways of gaining water and energy efficiencies simultaneously. Simply reducing water demand is expected to reduce energy demand and vice versa, but the two could be better integrated at the program level. For instance, energy retrofit or appliance rebate programs could also consider replacement of water fixtures with better water efficiency or appliances with reduced water use; in most cases they will also be more energy efficient.

60 Bevan Griffiths-Sattenspiel and Wendy Wilson, "The Carbon Footprint of Water," a River Network Report, 2009. At the Metropolitan Water Reclamation District of Greater Chicago, 24 percent of the Maintenance and Operations Department budget is allocated for electricity and natural gas for plant and pumping station operation.

61 Bevan Griffiths-Sattenspiel and Wendy Wilson, "The Carbon Footprint of Water," a River Network Report, 2009, 44. The lower figure is for surface water and wastewater treatment with activated sludge; the higher figure is for groundwater withdrawal followed by advanced treatment.

62 B. Dziegielewski and F.J. Chowdhury, "Regional Water Demand Scenarios for Northeastern Illinois: 2005-2050," Southern Illinois University at Carbondale, 2008. See <http://tinyurl.com/294pv8q>.

2.10 Implementation Action Areas

The following tables are a guide to specific actions that need to be taken to implement GO TO 2040. The plan focuses on five implementation areas for managing and conserving water and energy resources:

- Implementing Energy and Water Retrofit Programs**
- Integrating Land Use Planning and Resource Conservation**
- Pricing**
- Funding**
- Local Governments as Early Adopters of Sustainable Practices**

Implementation Action Area #1: Implementing Energy and Water Retrofit Programs

<p>Develop a framework for retrofit program administration</p> <p>LEAD IMPLEMENTERS: CMAP, City of Chicago, City of Rockford</p>	<p>Implement the Chicago Region Retrofit Ramp-Up program, which was funded in April 2010 at a level of \$25 million by the U.S. Department of Energy (DOE).</p>
<p>Provide a financial framework for retrofit programs</p> <p>LEAD IMPLEMENTERS: State (DCEO), municipalities, utilities, lending institutions</p>	<p>Support the development and delivery of financing products targeted across retrofit customer segments. Help support a market transformation to broaden retrofit demand and to give private lenders the confidence to lend to customers for energy efficiency measures. Provide case study data that shows that energy savings are an effective and dependable cash flow stream that can be used to secure loans. Utilities and municipalities should emulate programs as the ones the Illinois Department of Commerce and Economic Opportunity (DCEO) is currently administering for financing energy and water efficiencies by partnering with retailers to conduct rebate programs to replace appliances/fittings with more efficient models.</p>
<p>Increase access to a trained workforce</p> <p>LEAD IMPLEMENTERS: State, trade associations, community colleges, Workforce Investment Boards</p>	<p>Develop a regional training center for certified efficiency work. Establish consistent standards and certifications for workers and contractors and create a network to match building owners with certified contractors. Create a “central broker” to match trained job-seekers to businesses seeking certified workers.</p>
<p>Increase access to information concerning retrofits</p> <p>LEAD IMPLEMENTERS: Chicago Regional Retrofit Steering Committee (DCEO, CMAP, City of Chicago, utilities, nonprofits)</p>	<p>Develop a regional information center for connecting building owners to qualified contractors and financial products, conduct outreach via community-based/ trade associations and Chambers of Commerce, use energy audits and web-based applications to provide information to building owners, and introduce marketing and branding strategies for retrofits. Expand the use of financing that is already available, such as the funding from the EEPS.</p>

Implementation Action Area #2: Integrating Land Use Planning and Resource Conservation

<p>Create model codes/ordinances</p> <p>LEAD IMPLEMENTERS: CMAP</p>	<p>Assist communities in amending or adopting codes for water conservation by providing ordinance language and related resources. Assist implementation by making available guidance for model review processes.</p>
<p>Accelerate use of efficient appliances/ fixtures through green code adoption</p> <p>LEAD IMPLEMENTERS: Counties, Municipalities</p>	<p>Amend ordinances to reflect requirements of the Illinois Energy Efficiency Building Act and expand on it to include items such as appliances and fixtures. Utilize EnergyStar Portfolio Manager/Energy Performance Indicator or other performance indicators for energy efficiency review in commercial and residential buildings. Also amend ordinances to encourage water conservation, including use of plumbing fixtures and fittings that conform to WaterSense standards.⁶³</p>
<p>Provide technical assistance to local governments</p> <p>LEAD IMPLEMENTERS: State (DCEO), CMAP</p>	<p>Encourage incorporation of sustainability plans or codes in local planning practices during energy-related grant award processes by prioritizing funding to communities that have taken these initiatives. Allocate funding for the development of green codes. CMAP should offer conservation coordination assistance to communities that wish to employ water conservation practices.</p>
<p>Promote rainwater harvesting for non-potable indoor uses</p> <p>LEAD IMPLEMENTERS: State, counties, municipalities, nonprofits</p>	<p>Local governments should ensure that existing regulations do not prohibit the indoor handling of rainwater. Collaborate in executing informational/demonstrational efforts for the implementation of rainwater harvesting. Amend ordinances and codes accordingly.</p>
<p>Increase commitment to conservation in the Lake Michigan Service Region</p> <p>LEAD IMPLEMENTERS: State (IDNR), CMAP</p>	<p>Encourage Lake Michigan Service Region permittees to develop conservation plans and set conservation targets that can be reported to IDNR. Encourage annual water audit reports that follow the International Water Association and American Water Works Association standard water balance protocol while eliminating the maximum unavoidable loss allowance. Conserving Lake Michigan water by individual permittees is in the interest of the region because it would potentially make Lake Michigan water available to more communities. Permittees should make information available online to encourage increased engagement in conservation activities. CMAP should use its relationships and access to communities to assist IDNR with outreach efforts to achieve these recommendations. CMAP should develop a reporting framework/ template for communities to demonstrate water management activities to the Lake Michigan Management Section. CMAP should encourage communities to publicize their water conservation milestones.</p>
<p>Identify and protect sensitive recharge areas</p> <p>LEAD IMPLEMENTERS: State (ISWS, ISGS), CMAP, counties, municipalities</p>	<p>CMAP should lead a collaboration to identify SARAs, prioritize those most important for protection, and develop and disseminate model ordinances to ensure their preservation.</p>
<p>Encourage the integration of resource conservation in land use planning</p> <p>LEAD IMPLEMENTERS: State (DCEO), CMAP</p>	<p>Use planning grant programs to assist communities in incorporating resource conservation in local comprehensive planning. Encourage communities to indicate available future water supplies for projected population growth in comprehensive plans.</p>
<p>Adopt policies to encourage attainment of zero water footprints/water neutrality for large scale projects</p> <p>LEAD IMPLEMENTERS: Municipalities, water utilities</p>	<p>Water utilities should require large-scale projects to seek water neutrality. Project sponsors should work with utilities to set an annual water budget following an audit that identifies water saving mechanisms. Project operators should then adhere to the water budget. If the budget is exceeded, as determined by water billing triggers, operators would contribute to local conservation efforts to offset that amount elsewhere in the system.</p>

63 Chicago Metropolitan Agency for Planning Model Water Conservation Ordinance, 2010.
See <http://tinyurl.com/2wln57f>.

Implementation Action Area #2: Integrating Land Use Planning and Resource Conservation (continued)

<p>Implement urban and community forestry programs</p> <p>LEAD IMPLEMENTERS: Counties, municipalities, park districts</p>	<p>Adopt minimum standards for tree coverage in development projects along with tree preservation and maintenance regulations. Undertake these programs through park districts in public sites. Incentives should be provided for residents to plant trees, such as discounted sales and/or planting assistance.</p>
<p>Use green infrastructure practices to manage stormwater in new development and redevelopment</p> <p>LEAD IMPLEMENTERS: Counties, municipalities</p>	<p>Ensure that stormwater management using green infrastructure is integrated in the planning and design phase of development projects. Use infill or redevelopment as opportunities to promote retrofits with green infrastructure in developed areas. Require maintenance plans in the stormwater management permitting process that specify maintenance activities and indicate responsible parties. These plans should be transferrable with property deeds.</p>
<p>Implement green infrastructure retrofits</p> <p>LEAD IMPLEMENTERS: Counties, municipalities</p>	<p>Watershed plans for developed areas should identify potential green infrastructure retrofits, such as rain gardens, green streets, parking lot bioretention, and so forth. These plans should be used to help secure capital funding for retrofits.</p>

Implementation Action Area #3: Pricing

<p>Utilize full cost pricing to incentivize more efficient water use and to fund conservation programs</p> <p>LEAD IMPLEMENTERS: Illinois Commerce Commission, CMAP, municipalities, utilities</p>	<p>Municipalities should decouple water utility budgets from the municipal general revenue fund and ensure that revenues collected from water billing meet capital and operations and maintenance (O & M) budgets. Utilities should implement metering and appropriate bill designs. Utilities should ensure that bills reflect the full cost of treatment and delivery of water. CMAP should offer technical assistance on conservation pricing and rate-setting.</p>
<p>Institute stormwater utility fees</p> <p>LEAD IMPLEMENTERS: Counties, municipalities</p>	<p>Local governments with stormwater management responsibilities should charge dedicated user fees to property owners to cover the costs of maintaining stormwater infrastructure. Such fees should be directly linked to the amount of impervious area on a site. With these revenues in hand, local governments should consider taking maintenance responsibility for stormwater infrastructure on private property, as property owners may not be willing or able to do so.</p>

Implementation Action Area #4: Funding

<p>Use State Revolving Funds as mechanism for implementing water conservation measures</p> <p>LEAD IMPLEMENTERS: State (IEPA)</p>	<p>Develop criteria that prioritize PWSLP to utilities that adopt full-supply cost pricing structures in their water billing. Require that water supply utilities develop conservation plans that set annual water use targets to be reported to IEPA as a condition for granting loans.</p>
<p>Use the Green Project Reserve for energy and water efficiencies</p> <p>LEAD IMPLEMENTERS: State (IEPA)</p>	<p>Utilize the 20 percent of the State Revolving Funds for water and energy efficiency projects, such as retrofits to pumps and treatment processes, irrigation equipment, reuse of rainwater/stormwater, leak detection equipment, and on-site clean power production.</p>
<p>Implement Energy Performance Contracting</p> <p>LEAD IMPLEMENTERS: Counties, municipalities, utilities</p>	<p>Contract with private ESCOs to identify energy savings potential. Offer cost sharing or loans for property owners for improvements to be paid by consequent cost savings resulting from the installation of energy efficient equipment and fixtures. ESCOs provide guarantees that cost savings will be attained; if not, they pay the difference.</p>

Implementation Action Area #4: Funding (continued)

<p>Pursue innovative financing mechanisms for retrofits</p> <p>LEAD IMPLEMENTERS: State (General Assembly, IFA), counties, municipalities, utilities, lenders</p>	<p>Explore the use of PACE financing, Green Loan Programs, New Market Tax Credits, Energy Efficiency Ratings Incentives, revolving loan funds and loan pools, etc. for funding energy and water efficiency programs. Form partnerships required to implement these programs with utilities, lending institutions and contractors.</p>
<p>Establish comprehensive energy and climate change policy</p> <p>LEAD IMPLEMENTERS: Federal (Congress)</p>	<p>Address greenhouse gas emissions economy-wide by such actions as improving the carbon content of fuels, reducing industrial emissions, and limiting emissions from electricity generation, as well as establishing policies to promote energy conservation and renewable energy. The federal government should have a strong role in this area.</p>

Implementation Action Area #5: Local Governments as Early Adopters of Sustainable Practices

<p>Implement green infrastructure demonstration projects</p> <p>LEAD IMPLEMENTERS: Counties, forest preserve and conservation districts, municipalities, park districts</p>	<p>Local governments in the region should implement green infrastructure demonstration projects with regular performance monitoring to further evaluate the applicability of such measures to local conditions. They should utilize available staff and technical expertise/resources to construct and maintain green infrastructure facilities and perform seasonal monitoring, modifying designs to adapt to local conditions as necessary. Local governments should partner with developers in establishing demonstration projects by offering financial assistance/cost share with construction costs.</p>
<p>Utilize green infrastructure practices in all public improvement projects</p> <p>LEAD IMPLEMENTERS: State (IDOT, IDNR), counties, forest preserve and conservation districts, municipalities, school and park districts</p>	<p>All governmental bodies that undertake construction activities should implement policies that require the use of site-appropriate green infrastructure practices for stormwater management.</p>
<p>Consolidate water supply and wastewater treatment services to achieve energy efficiencies and economies of scale</p> <p>LEAD IMPLEMENTERS: COGs</p>	<p>Local governments should investigate coordinating or consolidating water utilities to enhance cost-effectiveness and lower financial risks. The expansion of existing water supply plants should be emphasized over the development of smaller plants for individual utilities. A common funding stream for plant expansion could be obtained by tapping into collective resources.</p>
<p>Consider devoting the cost of power under franchise agreements to retrofit and rebate programs instead</p> <p>LEAD IMPLEMENTERS: Municipalities</p>	<p>Municipalities often receive free electric service by utilities as compensation for granting the franchise privilege of using the municipality's public rights of way for the delivery of electricity.⁶⁴ Discussion should be initiated to use the funds instead for retrofit and rebate programs.</p>
<p>Utilize renewable energy generation in water utilities</p> <p>LEAD IMPLEMENTERS: Municipalities, utilities</p>	<p>Municipal utilities should seek to employ solar and wind energy to generate all or part of the power required for utility operations. Unused power can be sold back to the grid.</p>
<p>Develop energy and water efficiency and conservation strategies</p> <p>LEAD IMPLEMENTERS: Municipalities</p>	<p>Communities should develop a baseline analysis of energy and water use, broadly identify potential efficiency and conservation measures, and analyze the feasibility of implementing them, including the availability of financing. This strategy should be used as an input to local comprehensive planning and as a guide to implementation.</p>

64 ComEd. Rate information available through tariff documents, under "Rider FCA—Franchise Cost Additions," see <http://tinyurl.com/2eqkzkw>.

2.11 Costs and Financing

This section discusses financing for the energy efficiency, water conservation, and stormwater management recommendations in GO TO 2040, focusing on local units of government.

All of the resource conservation recommendations are expected to provide net savings for local governments and taxpayers over the medium to long-term, although upfront investment is necessary.

Water Use

The water conservation measures recommended in GO TO 2040 and *Water 2050* are expected to reduce the capital costs growing communities face to expand their water systems. In both growing and built-out communities, water rates can be redesigned so that conservation does not decrease revenue for the utility. Conservation measures can be funded through a range of mechanisms, including loans from the State Revolving Fund, but most conservation is financed locally. Two of these local financing approaches are as follows. First, the use of full-cost pricing, as GO TO 2040 advocates, will tend to reduce water use by customers, and it will also provide funding that is adequate for a utility to address the system water loss (e.g., through leaking water mains) that acts as a drag on utility budgets. Second, user fees can be charged to customers to fund water conservation, much like the electric and gas utilities' small charge to pay for efficiency programs. This fee can be as much or as little as appropriate, and much of it can be returned to customers through water savings or appliance rebates. Conservation finance is outlined in much more detail in *Water 2050*,⁶⁵ but it is worth noting here that strong local leadership and effective education are crucial prerequisites for funding conservation locally.

Stormwater Management

According to case studies in the Midwest, the use of green infrastructure can reduce site development and long-term maintenance costs by eliminating the need for gray infrastructure.⁶⁶ This is not always the case, however; savings depend on site conditions and the specific green infrastructure techniques used. The Center for Neighborhood Technology (CNT) has developed a useful online calculator⁶⁷ that estimates the costs associated with using conventional and green infrastructure techniques for a chosen soil type, lot size, and slope, etc. Costs and cost savings are divided helpfully into private (developers and building owners) and public (mainly municipalities). It is important to note that local government permitting plays a significant role in the cost-effectiveness of green infrastructure. Frequently the implementation of stormwater ordinances will take a “both-and” approach where many kinds of gray infrastructure are still required even if green infrastructure is used on site, eliminating the potential for cost savings. To save on development and maintenance costs, it will be necessary to reduce the requirements for other infrastructure. A common way of doing this in other states — but not the only way — is to provide a detention volume credit for the use of green infrastructure that reduces the volume of detention storage required, thus saving space on site and decreasing installation costs. However, local government engineering staff may have concerns that not enough data are available to show that green infrastructure performs well enough to give such credits. CMAP, the state, and regional partners should continue to provide information on performance to support a shift to green infrastructure.

Provision must be made for maintaining any stormwater management practice, and green infrastructure is no different. In older areas of the region, stormwater infrastructure (like regional detention basins and storm sewers) is often owned and maintained by local governments, most frequently by municipalities but sometimes by park districts. General revenue is typically used for maintenance. In newer areas, by contrast, stormwater management practices such as detention basins and buffer areas remain on private property and subject to private maintenance. The detention basins in subdivisions, for instance, will generally be maintained by homeowners' associations. Some jurisdictions require a Special

65 Chicago Metropolitan Agency for Planning, “Water 2050: Northeastern Illinois Regional Water Supply/Demand Plan,” 2010, 117 and following. See <http://www.cmap.illinois.gov/waterplan>.

66 Conservation Research Institute, “Changing Cost Perceptions: An Analysis of Conservation Development,” 2005. See <http://tinyurl.com/2g6xmrr>.

67 Center for Neighborhood Technology, Green Values Stormwater Toolbox. See <http://greenvalues.cnt.org/>.

Service Area (SSA) as a backup to fund maintenance if it is not performed by the homeowners' association, but local governments are often reluctant to activate the SSA and assess property owners for maintenance.

Like any form of infrastructure, the effectiveness of green infrastructure will decline without maintenance, and maintenance depends on funding. It is crucial to establish a dedicated revenue stream to maintain stormwater management infrastructure. An important technique for local governments to consider is the stormwater utility fee, which is typically charged to property owners in proportion to the amount of runoff from their property (typically proxied by the amount of impervious surface on site). It replaces the general revenues that currently support local government stormwater programs with an enterprise fund, and can be designed to be revenue neutral. The amount of the fee must bear a reasonable relationship to the cost of service, so the charge for a stormwater fee depends on the need for stormwater infrastructure maintenance. It is arguably more equitable than funding stormwater programs out of general revenue since those who "use" the service more (i.e., place more demands on the stormwater management system) will pay more.⁶⁸

Energy Conservation

The many local units of government in northeastern Illinois own a significant number of buildings, from village halls to libraries to police stations to schools, and there are many opportunities to retrofit them to improve their energy performance. It is crucial for local government to lead residents and businesses by example, and a number of programs are available to provide partial financing. One of the most significant, and underutilized, sources of finance that can be accessed by public sector entities is the EEPS funding, which provides incentives for certain kinds of efficiency improvements. The program will be funded at \$150 million statewide in 2010 through system benefit charges on ComEd and Ameren customers' bills. DCEO administers the EEPS for public sector clients, which can include a variety of local government units and special districts, public schools, etc.⁶⁹ The standard set of improvements includes lighting, refrigeration, heating, ventilating, and air conditioning (HVAC) equipment, as well as other improvements to municipal operations like the use of light-emitting diodes (LEDs) in traffic signals, but a customized set of improvements can also be funded. EEPS will also fund energy efficiency beyond code in new public

buildings. Restructuring of municipal franchise agreements — described further in the recommendations section of this chapter — can also help to provide financial resources for energy efficiency improvements.

ARRA provided significant funding to the Energy Efficiency and Conservation Block Grant (EECBG) program, a sizeable portion of which went to local governments through direct grants from DOE. Those communities which were not eligible for direct grants in the region are eligible for funds from DCEO and administered by the Metropolitan Mayors Caucus (MMC). While these funds have helped local governments make inroads into the need for energy conservation, more can be done. In addition to making their own operations more efficient, municipalities can try to build energy efficiency into their approaches to issues that are more squarely in their traditional domains of concern, such as economic development and commercial revitalization. For instance, typical façade improvement financing could include updating windows for improved energy efficiency, or assistance with energy audits could be provided for downtown businesses to help them cut operating costs and improve their financial positions. Local governments can also help property owners by setting up PACE programs (or Energy Financing Districts, as they are sometimes called). These allow local governments to raise money by issuing bonds to fund energy conservation projects in buildings or to serve a district, and the debt is serviced over a set number of years through a special assessment on the property owners who choose to participate in the program.⁷⁰ Authorizing legislation is required to make PACE available.

68 L. Wilson and G. Lindsey, "Authority for Local Stormwater User Fees in Indiana," Indiana University Center for Urban Policy and the Environment, 1995. See <http://stormwaterfinance.urbancenter.iupui.edu/PDFs/Indiana.pdf>.

69 Illinois Department of Commerce and Economic Opportunity, "Energy Efficiency." See <http://tinyurl.com/38gh7wh>.

70 Merrian C. Fuller, Cathy Kunkel, and Daniel M. Kammen, "Guide to Energy Efficiency and Renewable Energy Financing Districts for Local Governments," Renewable and Appropriate Energy Laboratory (RAEL), University of California, Berkeley, 2009. See <http://www.tinyurl.com/2ectd8m>.

RECOMMENDATION

3 Expand and improve parks and open space



The parks and natural areas of northeastern Illinois are among the region's greatest assets, offering an enhanced quality of life, protecting environmental quality, and contributing significantly to the region's identity.

A recommended network of parks connected by open space corridors was central to Daniel Burnham's and Edward Bennett's 1909 *Plan of Chicago*, meant at that time to bring refreshment to a newly urban citizenry. This objective is just as important a century later, and Burnham's network remains a work in progress. Less than half of the region's residents currently live in places with adequate access to nearby parks or open space, and much of the unique natural heritage of the region remains unprotected and unmanaged. As the region has expanded beyond the urban footprint in Burnham's time, the corridors of open space Burnham envisioned must expand as well. Our knowledge of open space's benefits has also progressed, so that we now understand its crucial role in flood protection, the promotion of public health, and potentially even adaptation to climate change.

Our network of parks and natural areas is considered part of our region's "green" infrastructure because of its similarity to the "gray" infrastructure networks that are likewise central to prosperity and livability. Like other forms of infrastructure, it can be managed, restored, and expanded.

A top GO TO 2040 priority is to expand the green infrastructure network. To do so, CMAP recommends making significant, criteria-based investments in parks and open space. Major benefits will follow from this, including enhanced quality of life and property values, improved public health through the promotion of active lifestyles, and the protection of ecosystem services like water supply, flood storage, and water purification. In brief, CMAP recommends the following actions:

Provide more parks in developed areas to increase park accessibility

The region should work to provide all residents with at least a minimum standard of park access by 2040. The total acreage required for new parks is not extremely high, but it is challenging to provide land in already developed places where it is needed most. Local governments should collaborate to provide additional parks in the areas least served by them, and municipalities in particular should look on redevelopment as an opportunity to provide additional park space even in the context of moderate residential density increases. Such parks can become important public spaces that contribute to the overall livability of a community.

Preserve the most important natural areas in the region

Across the seven counties, an additional 150,000 acres of land should be preserved over the next 30 years through a collaborative, multi-organizational, public-private approach. Most of this should be sought with the goal of conserving and improving a network of land and water — the green

infrastructure network — that follows waterway corridors, expands existing preserves, and creates new preserves in the region. Coordinated investment in land protection and a commitment to the restoration and management of preserved lands will be necessary to achieve this. Forest preserve and conservation districts, the state, private funders, and others should all prioritize land preservation within the green infrastructure network. This will mean reexamining funding criteria and grant scoring systems so that they align with the overarching goal of a connected green infrastructure network.

Provide functional connections between parks and preserves, using the green infrastructure network as a design concept

Another way of establishing connections between parks and preserves is a greenway trail, and the network of such trails identified in the Northeastern Illinois Regional Greenways and Trails Plan should continue to be expanded. The region has been very successful in developing off-street trails over the past two decades, and GO TO 2040 envisions organizations in the region continuing to use the Greenways and Trails Plan to establish potential connections between preserves and parks, as well as to support walking and biking as an alternative mode choice. The region's objective should be to double existing greenway trail mileage by 2040.

Municipalities, the seven counties, and the state should harmonize policies with the natural resource protection recommendations in GO TO 2040, reducing land consumption and thereby helping protect green infrastructure. At the local level, this means increased attention to networks of open space and important natural areas during municipal comprehensive planning, followed by zoning changes to reinforce that policy direction. Establishing livable communities — compact, mixed-use places with amenities and transit nearby — will also reduce land consumption on a regional level. Where growth is expected within the green infrastructure network, local governments should encourage the use of conservation design. At the state and regional level, efforts should be made to ensure that policies do not inadvertently contribute to the loss of important natural areas.

In summary, the region should, by 2040, be substantially closer to having a fully connected network of protected land and water along waterway corridors. Park access for all residents of the region should meet at least a minimum standard, and the network of greenway trails should be at least doubled.

3.1 Benefits

Open space was noted as a high priority in the GO TO 2040 Regional Vision, which states: “The region’s nationally-recognized system of open space — including forest preserves, conservation districts, and parks — will continue to shape regional identity and contribute to the health of our communities.

Especially along sensitive waterways, open space will be preserved and expanded, creating green infrastructure networks that enhance people’s connection with nature and serve as habitat corridors.”

During the 2009 “Invent the Future” phase of GO TO 2040 public engagement, open space came up in almost every workshop. Participants felt that preserving our natural environment was imperative to promote the health of residents and create more livable communities. Participants were also asked to prioritize what outcomes were most important. Land consumption was one of the top four indicators chosen, along with regional economy, transportation choice, and energy reduction. Reducing the loss of open space is clearly a significant concern among residents of the region.

The following subsections describe some primary benefits of parks and open space.



Quality of Life

Parks and preserves are much coveted amenities that have been shown over and over to be among the top priorities in quality-of-life surveys. According to a 2002 poll by the Illinois Association of Park Districts, more than 80 percent of residents in Chicago and collar counties said that they visited a park in the past year, averaging more than a dozen visits.¹ Open space is a primary contributor to overall environmental quality, which is desirable in itself, but it also makes the region more attractive to people and businesses considering locating in northeastern Illinois. Its importance can also be seen in its popularity: for example, the county forest preserve and conservation districts have been able to raise about \$1.2 billion in current dollars for land acquisition since 1999 through voter referenda on bond issuance.² People also vote with their feet, as research indicates that people prefer to live near parks and protected natural areas if the opportunity is available, which translates into property value increases near parks and protected lands.³

Parks and preserves have a number of documented public health benefits.⁴ While establishing additional parks only provides an opportunity to engage in recreational activities and does not assure a positive health outcome, parks are indeed associated with improved public health. One study examining total park area within a community found the percentage of total park area within neighborhoods was a significant predictor of increased physical activity levels among children, amounting to a 1.4-percent increase in physical activity levels for each one percent increase in park acreage.⁵ In another study, subjects who regularly used their local parks were about three times more likely to achieve recommended levels of daily activity.⁶ Parks also improve the equity of public health by providing exercise facilities to low-income residents who may find gym fees prohibitive.⁷ Providing nearby opportunities for outdoor recreation also guards against what is figuratively called “nature deficit disorder.”⁸

In short, parks and open space have measurable positive impacts on health and well-being.

Finally, parks benefit quality of life by supporting social connections — they can help build community. Recreational activities at parks, especially those involving children, undoubtedly bring neighbors together. Furthermore, parks provide a place for people to gather simply because they are public spaces. Thus they can serve as a stitch in the social fabric apart from any special recreational programming, but attention must be paid to their placement and design to make them desirable places to be.⁹ Parks also help build community if neighbors are involved in the management and even the maintenance of parks through local park councils or conservancies; this can also help spare park districts some expenses associated with park administration.

1 Illinois Environmental Council Education Fund, “Illinois State Land Conservation Funding,” developed in partnership with the Trust for Public Land and The Nature Conservancy, 2007.

2 Data from referenda results tracked by Illinois Association of Park Districts. See http://www.ilparks.org/?page=referendum_results.

3 Economic Research Associates, “Real Estate Impact Review of Parks and Recreation,” 2005. See http://www.ilparks.org/resource/resmgr/research_documents/research_era_real_estate.pdf.

4 Summarized in “Parks, Playgrounds, and Active Living” Research Synthesis (Robert Wood Johnson Foundation, February 2010). See http://www.activelivingresearch.org/files/Synthesis_Mowen_Feb2010.pdf.

5 J. Roemmich, L. Epstein, S. Raja, et al, “Association of Access to Parks and Recreational Facilities with the Physical Activity of Young Children.” *Preventive Medicine*, 43(6; 2006): 437-441.

6 B. Giles-Corti, M. H. Broomhall, M. Knuiman, C. Collins, K. Douglas, K. Ng, A. Lange, R. J. Donovan, “Increasing Walking: How Important Is Distance To, Attractiveness, and Size of Public Open Space?” *American Journal of Preventive Medicine* 28(2S2; 2005):169-176.

7 Erica Gies, “The Health Benefits of Parks: How Parks Help Keep Americans and Their Communities Fit and Healthy,” The Trust for Public Land, 2006.

8 Richard Louv, *Last Child in the Woods*, Algonquin Paperbacks, 2005.

9 The classic study on this aspect of parks and plazas is William H. Whyte, *The Social Life of Small Urban Places* (1980).

Environmental

One of the most important benefits of protecting land is that it also protects water. Open space helps ensure the replenishment of aquifers with uncontaminated water, which benefits communities that use groundwater as a source of drinking water as well as protecting plants and animals in groundwater-fed wetlands. Furthermore, floodplains and wetlands play a significant role in flood reduction. The Illinois State Water Survey (ISWS) found that for every one percent increase in the amount of wetland area in a watershed, peak flood flows could decrease by up to eight percent.¹⁰ Because climate change may result in increased flooding, it is especially important to preserve floodplains and wetlands in a protected corridor along streams. In another example, wetlands tend to act as “sinks” for nutrients, in most cases removing nutrients from the water flowing through them. These often-irreplaceable natural functions that support human activity are called “ecosystem services,” and land protection can help preserve them.¹¹

Wildlife benefits from land preservation as well. Protecting large “hubs” of open space connected by corridors ensures species can migrate with relative ease between large blocks of habitat. This is important because, aside from habitat destruction itself, habitat fragmentation is one of the biggest threats to biodiversity in the region. Conservation biologists also suspect that some species will try to migrate northward as climate change progresses, and a north-south network of protected open space may facilitate this movement. Furthermore, wildlife watching has become a popular form of outdoor recreation in Illinois and nationwide. The U.S. Department of Commerce reports that in 2006, the most recent year for which data are available, more than two million Illinois residents together spent more than \$1 billion to watch wildlife in Illinois.¹²

10 M. Demissie and A. Khan, “Influence of Wetlands on Streamflow in Illinois,” ISWS Contract Report 561, 1993, 26 Table 3. See <http://www.sws.uiuc.edu/pubdoc/CR/ISWSCR-561.pdf>.

11 Robert Costanza et al., “The Value of the World’s Ecosystem Services and Natural Capital,” *Nature* 387 (1997): 253-260.

12 U.S. Department of the Interior, Fish and Wildlife Service, U.S. Department of Commerce, U.S. Census Bureau, “National Survey of Fishing, Hunting, and Wildlife-Associated Recreation,” 2006.

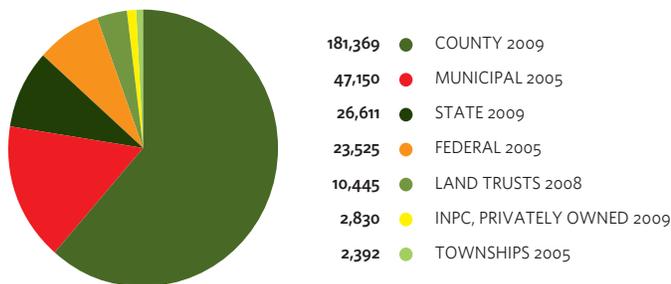
3.2 Current Conditions

The region now has approximately 300,000 acres in municipal parks, private conservation easements, private nature preserves, county preserves, township parks, and state and federal holdings (see **Figure 27**).

Open space can be categorized as conservation-oriented (“preserves” or “natural areas”) or recreation-oriented (“parks”), although the distinction is by no means cut and dried. For instance, a number of park districts, which have traditionally focused on recreation, hold natural areas and have conservation programming. The region has about 50,000 acres of recreational open space or parks and about 250,000 acres of conservation open space. There is a third type to consider: connections or corridors between two or more parks and preserves. Often known as “greenways,” these may also simply be a trail or another type of recreational or cultural amenity. CMAP recommends protection and expansion of all three aspects of the regional green infrastructure network.

In terms of acreage, the county forest preserve and conservation districts have the most open space in the region. As distinct units of government, the six forest preserve districts (Cook, DuPage, Kane, Kendall, Lake, and Will Counties) and the conservation district (McHenry County) own or manage over 180,000 acres of public preserves.¹³ Much of the land is conservation open space, but 3,500 acres of golf courses and some additional recreational and farm facilities are also included. Together, these agencies are responsible for the majority of protected conservation open space in the region. The forest preserve and conservation districts protect land through many approaches, including using grant funds for acquisition, accepting donations, and agreeing to manage privately held land under conservation easements. But their main approach is to issue bonds to purchase land, the debt service on the bonds generally being paid through county property taxes. The locations of the forest preserves and other conservation open space are shown in **Figure 28**.

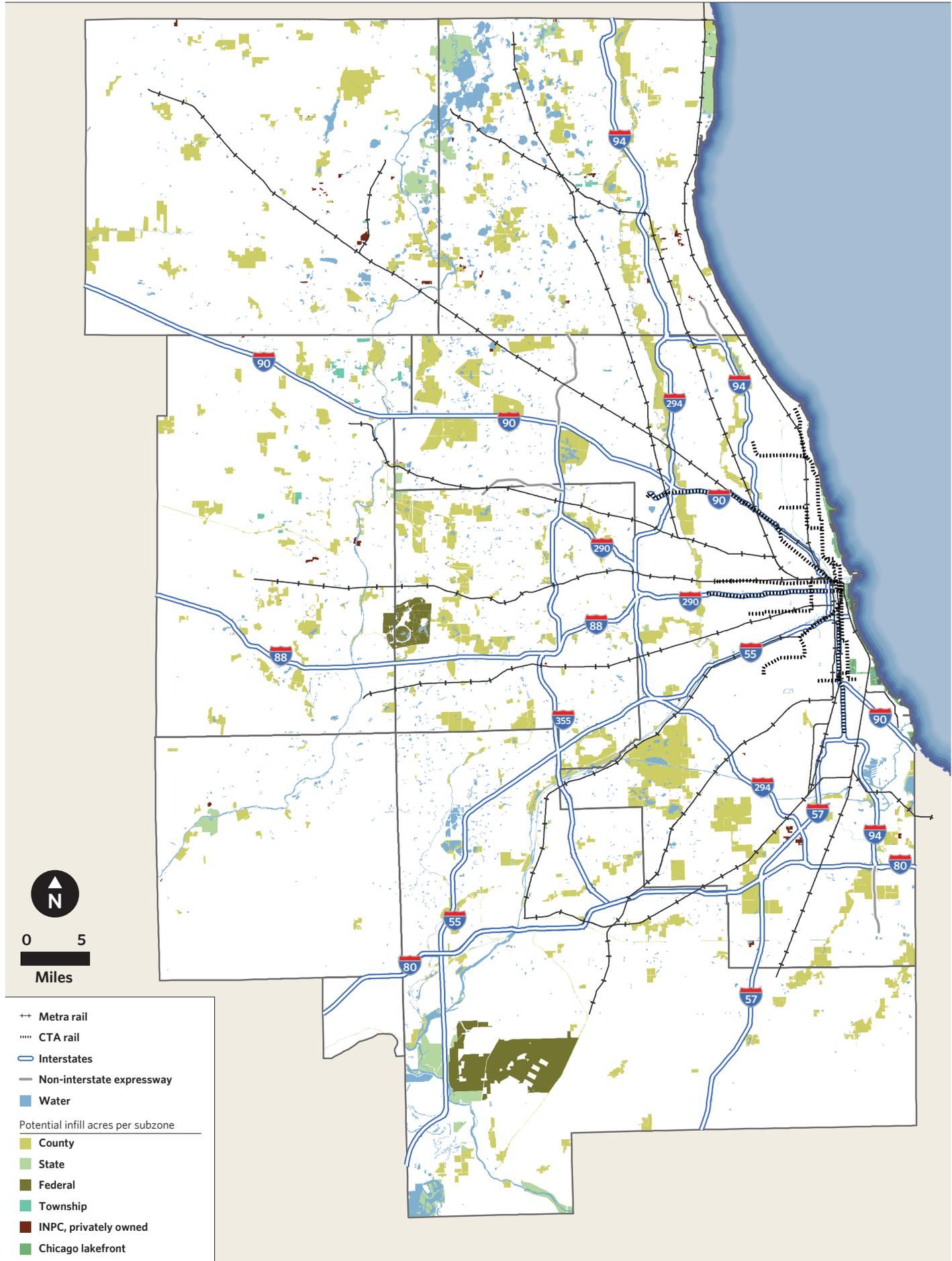
Figure 27. Total parks and open space holdings, in acres



Source: County Forest Preserve and Conservation District Geospatial Data; CMAP 2005 Land Use Inventory; Illinois Nature Preserves Commission (INPC) Geospatial Data; Grand Victoria Foundation

¹³ Summarized from 2009 geospatial data provided by forest preserve and conservation districts. See Figure 28.

Figure 28. Regional conservation open space



Color shadings represent the body that owns and operates the conservation open space. Municipal parks are not shown, except for protected land along the lakefront.
 Sources: County Forest Preserve and Conservation District Geospatial Data; CMAP 2005 Land Use Inventory; Illinois Nature Preserves Commission Geospatial Data; Grand Victoria Foundation.

The Illinois Department of Natural Resources (IDNR) owns about 26,600 acres of public land in the Chicago region. This includes state parks, fish and wildlife areas, natural areas, one state museum property, and several other types of holdings. In addition, IDNR administers several funding programs that local government units can tap for parks and open space. Through the Illinois Nature Preserves Commission (INPC), the State of Illinois also provides support to landowners who wish to dedicate qualifying land as a Nature Preserve or as a Land and Water Reserve. Often nature preserves are owned by a public agency, but sometimes they are not; about 2,800 acres in northeastern Illinois are privately owned Nature Preserves or Land and Water Reserves.

Parks are generally owned and operated by park districts or by the park departments of the region's municipalities. Together they hold approximately 47,000 acres that provide a variety of recreational opportunities from tennis to basketball to cross-country skiing. The townships also own a small amount of land that is usually conservation open space, though it may have a recreational aspect.

To date, the federal role in open space protection in the Chicago region has been fairly minor in terms of acreage, but it has resulted in the largest single preserve in the region. The U.S. Forest Service owns and operates the Midewin National Tallgrass Prairie, which contains more than 18,000 acres of preserved land in Will County. Most of the land at the Fermi National Accelerator Laboratory in western DuPage County, about 5,400 acres, is also effectively protected open space.

Finally, the private sector's role has been expanding over time. Increasingly, nonprofit land conservation organizations ("land trusts") own or hold easements on land in northeastern Illinois, and the number of active land trusts has been growing rapidly.¹⁴ Though the total acreage they conserve is not tracked in a central location, these organizations are estimated to have bought, accepted donations for, or taken easements on at least 10,500 acres in northeastern Illinois¹⁵ in less than 10 years, or about 1,200 acres per year. In many instances, nonprofit land conservation organizations work with landowners who wish to take advantage of tax benefits offered to those who forgo development rights on their property. They also accept voluntary donations of conservation easements from those who wish to permanently preserve their land. In some cases these organizations may also purchase conservation land outright from willing sellers.

14 2005 National Land Trust Census.
See <http://www.landtrustalliance.org/about-us/land-trust-census/census>.

15 From data on easements and holdings of nine land trusts over ten years provided by Grand Victoria Foundation, February 19, 2010.

3.3 Indicators and Targets

The current amount of conservation open space in the region is approximately 250,000 acres. By 2040, an additional 150,000 new acres should be protected for 400,000 total acres (see **Figure 29**).

The interim target for 2015 should be 25,000 new acres, or 275,000 total acres, which is one-sixth of the 2040 target. While this may seem high given fiscal conditions, it is worth pointing out that there is still public appetite for preservation of open space despite the present recession.¹⁶ It is also likely that falling land prices will make acquisition at current rates more affordable than when the real estate sector rebounds. Options available today will be lost with the passage of time and a return to a more robust economy.

ACRES OF CONSERVATION OPEN SPACE

275,000 acres by 2015

400,000 acres by 2040

Currently, only 49 percent of people in the region have adequate access to parks, as defined by a standard of 10 acres per 1,000 people. This will not be appropriate for the densest areas of the region, however, which should use a level of service of at least 4 acres per 1,000 people (see **Figure 30**). Meeting the park accessibility targets will require approximately 5,200 acres of new parks.

REGIONAL ACCESS TO PARKS PER PERSON IN ACRES

72% at a level of four acres per 1,000 people; 52% at a level of 10 acres per 1,000 people by 2015

All people at a level of four acres per 1,000 people; 70% at a level of 10 acres per 1,000 people by 2040

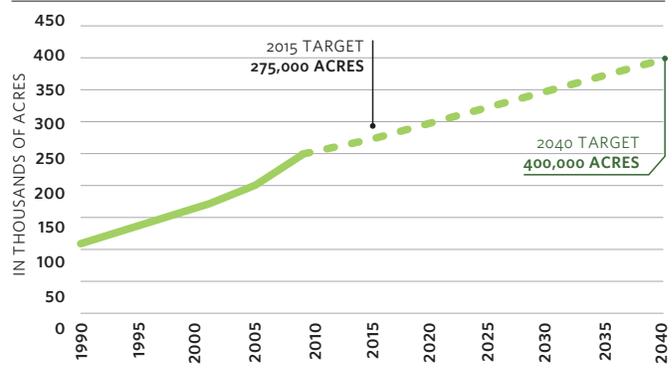
The region now has 700 miles of trail greenways. The region should approximately double the mileage of trail greenways between now and 2040, for a total of 1,348 miles of trail greenway (see **Figure 31**). An interim target for 2015 is to establish one-sixth of the total recommended new greenway mileage.

NEW GREENWAY MILEAGE

808 total miles by 2015

1,348 total miles by 2040

Figure 29. Conservation of open space targets, 1990-2040



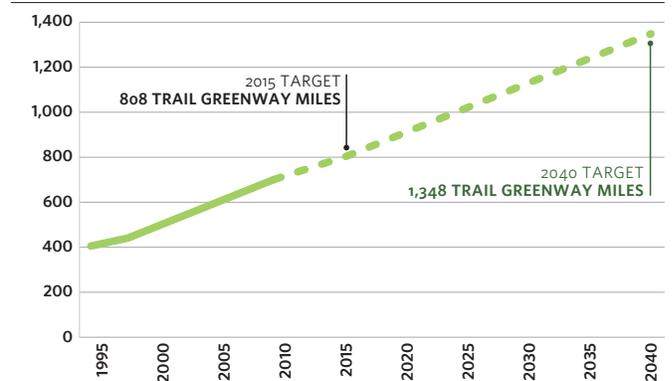
Source: Chicago Metropolitan Agency for Planning, 2010

Figure 30. Access to parks targets, percent of regional population, 2010-2040



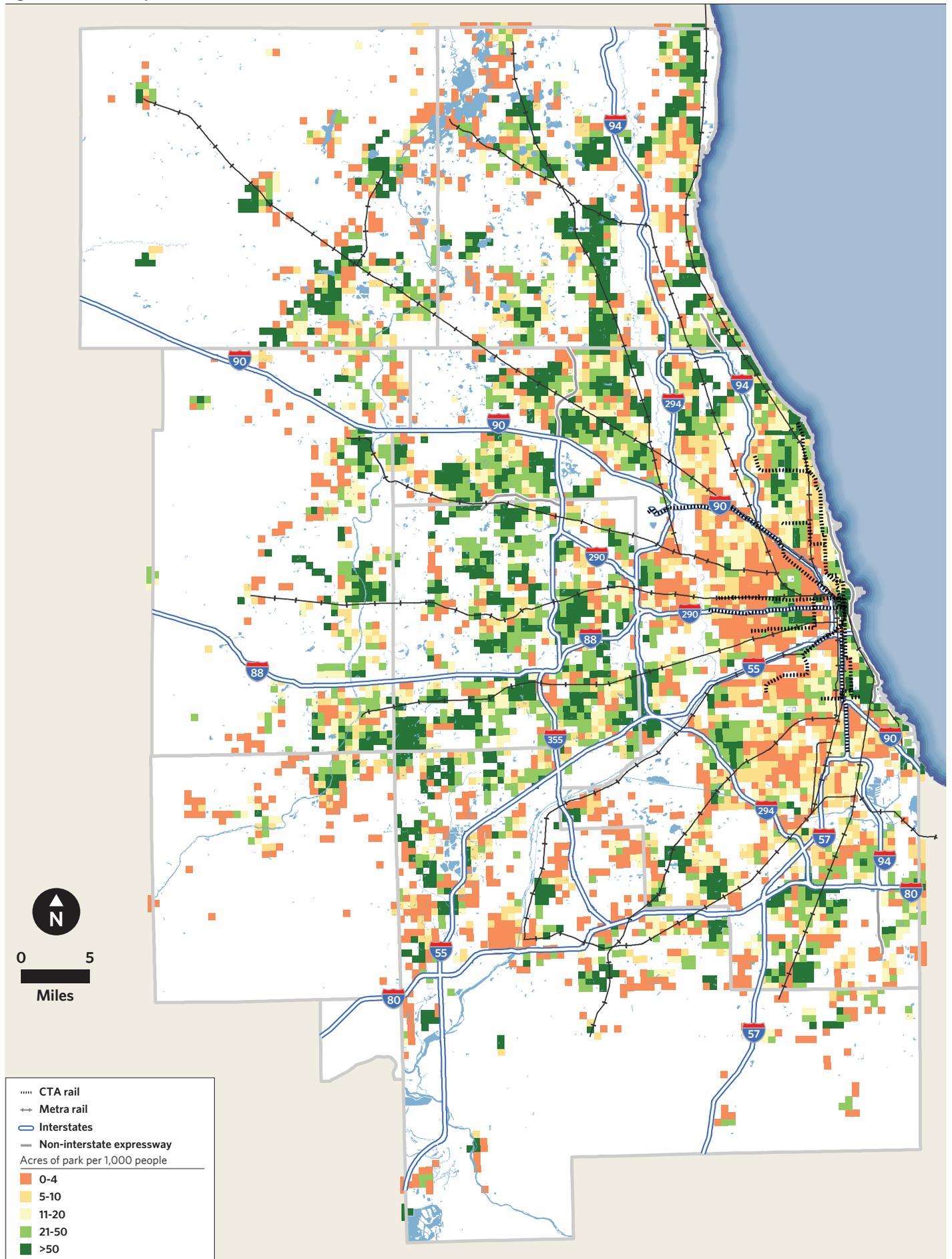
Source: Chicago Metropolitan Agency for Planning, 2010

Figure 31. Miles of trail greenway targets, 1995-2040



Source: Chicago Metropolitan Agency for Planning, 2010

¹⁶ Fairbank, Maslin, Maullin & Associates and Public Opinion Strategies, "Key Findings from National Voter Survey on Conservation," September 25, 2009.



This map shows the accessible park acreage per 1,000 people. Orange areas have less than 10 acres of parks per 1,000 people and pink areas have less than four acres of parks. Areas in white were not analyzed because they have less than the Census-defined "urban" density of 1,000 people per square mile. Source: Chicago Metropolitan Agency for Planning, 2010

3.4 Recommendations

The following sections describe in detail the actions recommended by CMAP to establish parks, preserve open space, and establish connections within the green infrastructure network.

Parks Recommendations

The region needs additional parks to provide recreation and open space access to as many people in the region as possible. The total acreage required for new parks is not exceedingly high, but it is challenging to provide land in already developed places where it is needed most. Local governments should collaborate to provide additional parks in the areas least served by them, and municipalities in particular should look at redevelopment as an opportunity to provide additional park space even within the context of moderate residential density increases. Such parks can become an important public space that contributes to the overall livability of a community.

To evaluate the need for urban open space, CMAP evaluated existing parks against standards for park accessibility from the National Recreation and Park Association (NRPA).¹⁷ The park types considered are community and neighborhood parks under NRPA's definitions, rather than regional parks or regional reserves, which correspond to the forest preserves here in Illinois. Based on the NRPA standard of 10 acres per 1,000 people, it was found that only about 49 percent of people in the region have adequate access to park space (see **Figure 32**). Areas with the lowest accessibility are often older and denser, but there are many places in growing areas that do not meet the NRPA standard.

Because opportunities are scarce to provide additional parks in some places, however, it probably would not be possible to achieve 10 acres per 1,000 people across the region. In denser areas, this goal is too rigorous. The Chicago Park District and City of Chicago use instead a long-term goal of four to five acres per 1,000 people,¹⁸ which is likely an adequate value for the under-parked places within inner-ring suburban areas as well. Still, only 66 percent of people in the region have even this level of service. GO TO 2040 proposes establishing more parks so that an increasing number of people in the region have adequate park access.

In newly growing areas, park districts acquire the majority of their holdings through donations as stipulated in local land-cash ordinances, which require developers to reserve land for parks or donate the equivalent in cash. Yet the park accessibility analysis indicates that there are still shortfalls in parks even in developing areas. This seems to suggest that some growing communities may need to adopt best practices in requirements for developer donations.¹⁹ In already developed communities, by contrast, redevelopment over the next 30 years could provide many opportunities to increase open space. One means for this is the use of open space impact fees that apply during redevelopment, though these should be carefully tailored so that they do not discourage development. Park districts would then use the funding to increase open space access in the area; cash can be especially attractive because it can be used for park development capital projects and as a match for state and federal grants.

17 Derived from Roger A. Lancaster ed, "Recreation, Park, and Open Space Standards and Guidelines," National Recreation and Park Association, 1983. See <http://tinyurl.com/2cd9xar>. Park accessibility is a distance-based standard, where a 0.5-mile radius service area was assumed for neighborhood parks, and a one-mile radius service area was used for community parks.

18 CitySpace: an Open Space Plan for Chicago, 1998, p. iii. See <http://tinyurl.com/24qg9qd>.

19 Although land-cash donation requirements have not been catalogued for northeastern Illinois, a statewide survey by the Illinois Association of Park Districts suggested that 30 percent of municipalities (working with park districts) require a donation or cash equivalent of 5.5 acres per 1,000 people, 27 percent require 10 acres per 1,000, and 5 percent required 15 acres per 1,000 people. See http://www.ilparks.org/resource/resmgr/research_documents/land_cash_donation_survey.pdf.

Since imposing a fee does not solve the problem of the availability of land, a better long-term solution is to require building public open space into site plans during redevelopment, at least in larger projects. This is an especially strong possibility in places undergoing the moderate density increases envisioned in the GO TO 2040 plan. As in conservation design, it is crucial that the resulting open space be publicly accessible. Note, too, that in some places, a park component could be a critical part of a project's success. A riverfront revitalization project with public open space would be one example. The success of Millennium Park in downtown Chicago suggests that well-conceived park developments can have powerful catalytic effects and support nearby real estate development. More broadly, there are many possibilities for gleaning economic development opportunities from parks projects, such as greenway trails that lead bicyclists near historic business districts for shopping and dining opportunities.

Even after leveraging private investment through redevelopment, however, local governments will still need to find creative, low-capital ways to provide parks directly. There are many potential ways to do this, such as using school grounds for community recreation purposes, considering capped landfills for open space use, and closing low-traffic local streets or removing parking lots to convert them to parks, among others.²⁰ Some possibilities may have potential locally, while others will be inappropriate. It should be noted that adding park uses will increase management costs to some extent, even with low-capital approaches to park development. Management costs are estimated in the following Costs and Financing subsection. It will be important to ensure that park districts and other government units providing and managing parks have access to adequate funding for their operations.

Preserves Recommendations

CMAP recommends that the region preserve an additional 150,000 acres of land over the next 30 years through a collaborative, multi-organizational, public-private approach. More than this, it is crucial that the preserves function as a connected network of green infrastructure. Therefore at least two-thirds of the total should be targeted to conserve a network of land and water that follows river corridors and connects major existing and new preserves in the region. Coordinated investment in land protection will be necessary to achieve this. Forest preserve and conservation districts, the state, and private funders should all prioritize land preservation within the green infrastructure network. Municipalities and the state should harmonize policies to promote the preservation of green infrastructure. In 2040, the region should be substantially closer to having a fully connected network of protected land and water along river corridors, a considerable portion of which has been restored to natural conditions.

Engagement with stakeholders in the conservation community indicated that the Chicago Wilderness (CW) Green Infrastructure Vision²¹ (GIV) should be the primary conservation basis of the GO TO 2040 Plan. **Figure 33** shows the boundaries of the GIV within northeastern Illinois and the broader CW area. Developed in 2002-2004 by the Northeastern Illinois Planning Commission (NIPC) and CW members, including forest preserve and conservation district professional staff, the GIV is a broad identification of the places in the region ("Resource Protection Areas") considered most significant from a conservation perspective. The GIV Resource Protection Areas identify large preserves or "hubs" linked with a set of open space corridors that generally follow rivers and streams. In other words, rivers and streams provide the basic organization for the network of open space corridors, showing the importance of protecting the land along streams and investing in the protection of the waterways themselves. In a generalized way, the Resource Protection Areas indicate where it is most important to protect undeveloped land, restore degraded ecosystems through increased management, provide buffers for protected natural areas, and provide functional connections between protected natural areas. For each of the Resource Protection Areas, the GIV includes a short synopsis of its conservation values, threats to the resources, and the amount of land that could reasonably be protected.

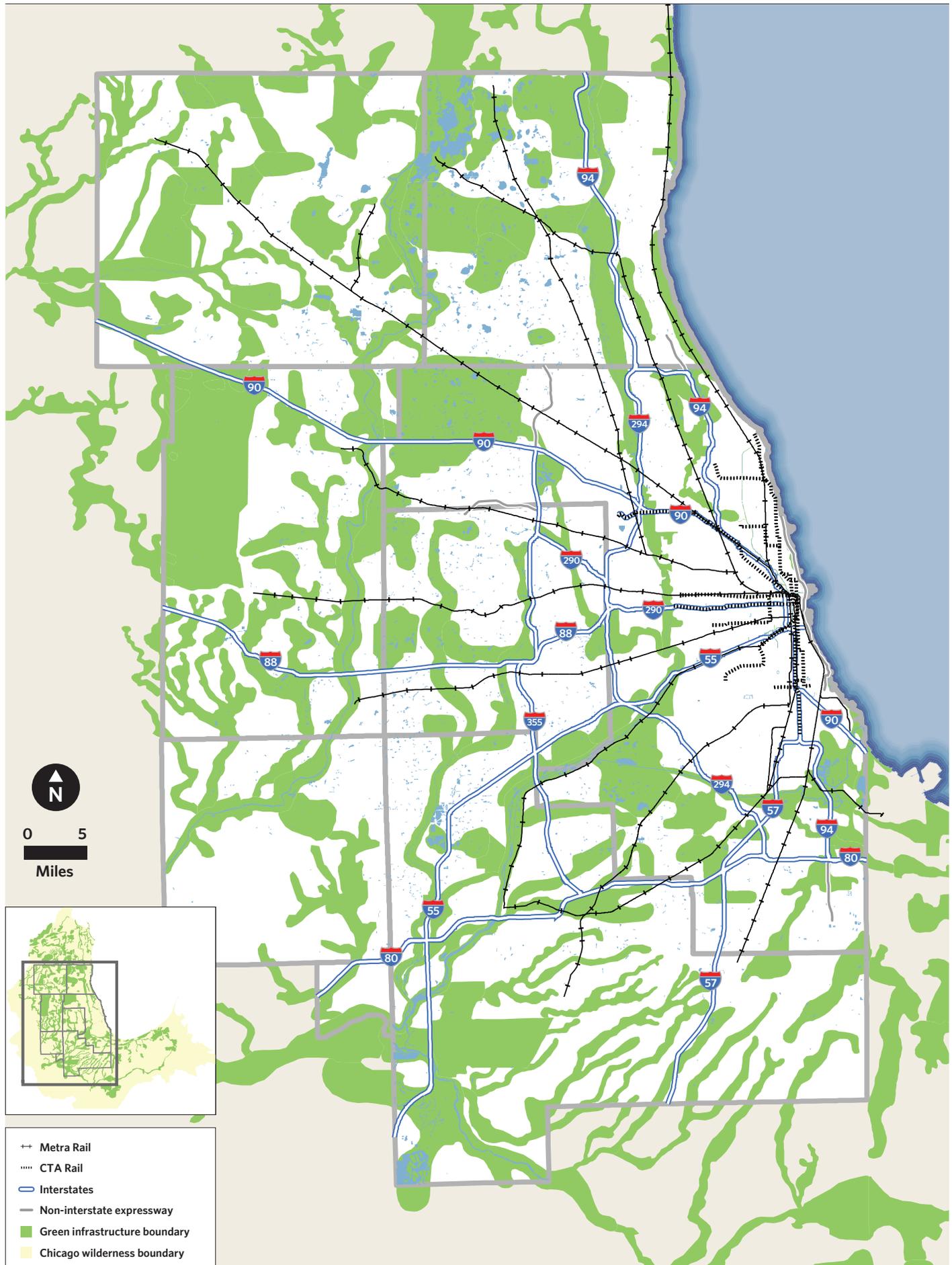
In 2008 and 2009, CW refined needs estimates for additional land protection within the GIV.²² These estimates, which come to approximately 100,000 acres in total, reflect best professional judgment of the areas that would be suitable for new preserves or

20 A recent book covers many of these opportunities in more detail — see Peter Harnik, *Urban Green: Innovative Parks for Resurgent Cities* (Island Press, 2010).

21 For more information on the Chicago Wilderness Green Infrastructure Vision, see <http://tinyurl.com/2ekr5yv>.

22 Chicago Wilderness Grant #TR0710, "Integrating the Green Infrastructure Vision into the CMAP Regional Comprehensive Plan," 2008.

Figure 33. Green Infrastructure Vision



This map shows the Resource Protection Areas in the Green Infrastructure Vision for northeastern Illinois. The inset map shows the full extent of the Chicago Wilderness GIV that extends outside the CMAP region. Sources: Chicago Wilderness and Northeastern Illinois Planning Commission

buffers to existing preserves.²³ Protecting this amount of land would bring the region substantially closer to a connected network of green infrastructure by 2040, tending to preserve the most important natural areas in the region. However, these areas within the GIV have not been ranked either for their value in preserving connectivity or for their quality and rarity. Thus, there is still a need to prioritize protection of the most important natural areas within the GIV.

While most of the land historically protected in northeastern Illinois is within the GIV, and the GO TO 2040 plan recommends continuing this trend, there will be additional opportunities to protect land outside it. In addition, the level of importance the public attaches to preserving the landscape, as indicated by CMAP's public engagement efforts as well as by the success of open space referenda, suggests that the overall target for the region should be more ambitious. Over the past 20 years, the forest preserve and conservation districts and the state have acquired or taken management responsibilities for an average of 4,400 acres per year.²⁴ Thus, the GO TO 2040 plan recommends an aggressive but achievable target of 5,000 acres per year on average, or 150,000 acres in total. This is consistent with Chicago area residents' estimated willingness to pay for natural area acquisition or improvement based on survey research and economic analysis.²⁵ Two-thirds of the target (or 100,000 acres) should be sought within the GIV Resource Protection Areas. Some of the additional acreage could be protected through state or federal acquisitions and municipal or township park districts. Recent survey research shows considerable interest by state voters in land protection, even given recession conditions.²⁶ Additional acreage could be provided through conservation easements, including easements established as part of a conservation development. Furthermore, the holdings of private land conservation organizations ("land trusts") have been expanding rapidly. It is certain that the private and nonprofit sectors must be called upon to play a growing role in land preservation in northeastern Illinois.

The emphasis of GO TO 2040 is on establishing livable communities — compact, mixed-use places with amenities and transit nearby, especially reinvesting in existing communities.

Establishing livable communities will also reduce land consumption on a regional level. Where growth is expected within the green infrastructure network, local governments should encourage the use of conservation design. Local governments permitting conservation developments should encourage the resulting open space to be legally accessible to the general public and linked through greenways and trails to other publicly held natural areas. At the state and regional level, efforts should be made to ensure that policies do not inadvertently contribute to the loss of important natural areas.

There have been a number of regional and statewide open space and natural area protection planning efforts in recent years. These include the Illinois Wildlife Action Plan (IDNR), the Sustainable Natural Areas Plan (IDNR and Illinois Natural History Survey), the Grand Victoria Foundation's Vital Lands Illinois (which provides land acquisition capital primarily to nonprofit conservation organizations), as well as the GIV and the Biodiversity Recovery Plan. Important subregional planning efforts are also taking place, like the Open Space Vision developed by a consortium of organizations working in Lake County. All recognize the importance of preserving land in a connected network and largely follow the pattern in the GIV. What remains now is to move beyond planning and to make sure funding programs and preservation activities are aligned with the plans so that all organizations are seeking to protect the most important natural areas and ensure functional linkages between them as part of a green infrastructure network. For example, Grand Victoria Foundation requires land acquisition projects it supports to further the goals of the Illinois Wildlife Action Plan and contribute to a connected system of natural lands, criteria well aligned with the GIV.

As with new parks, the establishment of new preserves carries with it the need to manage protected lands appropriately. In some cases land management agencies have been able to acquire or otherwise protect land but have not been able to manage it adequately at a basic level. Funding for major restoration work — such as the removal of invasive species, disabling field drainage, etc. — may be in even shorter supply. Thus it is crucial to develop stable sources of funding for restoration and ongoing management of conserved lands, and to make sure that authorizing statutes are not unduly limiting the ability of land management agencies to raise revenue. As with parks, volunteer efforts are an important piece of restoration and management, and volunteer involvement should be encouraged further.

23 Note that the GIV boundaries include 1.8 million acres within the Chicago Wilderness area, including parts of Wisconsin and Indiana as well as northeastern Illinois. Some of this is already protected, while some of it is already urbanized. It is important not to confuse the targets for land protection in northeastern Illinois with the much larger expanse of land that the GIV encompasses within the three-state Chicago Wilderness area. Besides the map shown in Figure 5, the GIV also includes a set of concepts that later became the Sustainable Development Principles for Protecting Nature in the Chicago Wilderness Region, which are generally consistent with the policy context recommendations in the GO TO 2040 Plan.

24 Calculated from 2009 shapefiles from county conservation and forest preserve districts, Chicago Metropolitan Agency for Planning 2001 Land Use Inventory (version 2 DRAFT), 2005 Land Use Inventory (version 1 DRAFT), and Northeastern Illinois Planning Commission 1990 Land Use Inventory (version 4).

25 R. F. Kosobud, "Urban Deconcentration and Biodiversity Valuation in the Chicago Region," report to the Chicago Wilderness Project Coalition, 1998.

26 Trust for Public Land and the Nature Conservancy, "Illinois Voters Strongly Support Land Protection," press release, May 26, 2009.

Finally, implementing organizations are also encouraged to look on agricultural preservation as one of the purposes of the GIV and land protection in general. While farmland preservation has its own merits in many areas — especially as smaller-scale, near-market farms are a crucial part of local food systems — farming also preserves more environmental benefits than most alternative uses and can be an interim link in the green infrastructure network. For instance, farming newly preserved open space will tend to limit the spread of noxious weeds relative to leaving it in an unmanaged fallow state. However, the primary long-term goal of the GIV should be seen as the protection and proper management of natural communities.²⁷

Connections Recommendations

The *Northeastern Illinois Regional Greenways and Trails Plan*²⁸ has helped guide recreational trail and greenway development for almost 20 years. The *Greenways and Trails Plan* is a long-range, multi-jurisdictional plan for mostly off-street trails that complements county and other local bikeway plans. Work undertaken for the 2009 update revealed that trail mileage had doubled since 1997, when the *Greenways and Trails Plan* was last updated. Approximately 500 miles of trails were established in that time period; this is significant progress. GO TO 2040 envisions organizations in the region continuing to use the *Greenways and Trails Plan* to support walking and biking as an alternative mode choice, as well as a way of delineating potential connections between preserves and parks. Only some trails are associated with greenways, however. Of the 1,700 miles of new trail facilities proposed in the *Greenways and Trails Plan*, almost 650 have a greenways component and could serve as a means of connecting parks and preserves.

Other kinds of open space connections should not be overlooked. In particular, the Green Legacy projects developed for the Burnham Centennial identified 20 catalytic open space projects within northeastern Illinois²⁹ that are worthy of pursuit, one of the most important being the *Last Four Miles Plan*³⁰ to complete the park system along the Lake Michigan shoreline. A fully public and accessible lakefront was part of Burnham's vision for the region, and the *Last Four Miles Plan* lays out a modernized approach to complete the lakefront park system. Because it calls for lakefill in certain places to construct additional open space, the *Last Four Miles Plan* would also result in better park accessibility in some of the most underserved areas of the region.

Waterways are a crucial link connecting the network of open space in the region. Protecting streams and the stream corridor, as called for under the GIV, has many environmental benefits, but it can also be accompanied by recreational programming to create “blueways.” Considerable work has been done in the region and in neighboring regions to support the development of such water trails, which generally includes the installation of boat launches, the development of interpretive signage, and so forth. Openlands, along with several other organizations, has developed the *Northeastern Illinois Regional Water Trails Plan*³¹ as well as a *Greenways and Blueways*³² plan for northwest Indiana. Besides the need for boating infrastructure, there is also a great need along many waterways to improve shoreline and buffer conditions. In many places, erosion (among other problems) has taken a toll on water quality, while a lack of vegetated buffers between the waterway and other uses has compromised habitat and aesthetics. A robust approach to blueway development will require addressing these conditions in and around the waterway.

Figure 34. Green infrastructure network of northeastern Illinois

GO TO 2040 proposes a green infrastructure network that follows waterway corridors, expands existing preserves, and creates new preserves in the region.



27 These are the first two key recommendations of the Chicago Wilderness Biodiversity Recovery Plan, 1999.

28 Chicago Metropolitan Agency for Planning, *Northeastern Illinois Regional Greenways and Trails Plan*. See <http://www.cmap.illinois.gov/bike-ped/greenways-and-trails>.

29 The Burnham Plan Centennial, *Green Legacy Projects*, 2009. See <http://tinyurl.com/c7jfuc>.

30 Friends of the Parks, *The Last Four Miles: Completing Chicago's Lakefront Paths*. See <http://tinyurl.com/2ewjkmp>.

31 Openlands, *Northeastern Illinois Regional Water Trails*. See <http://openlands.org/Greenways/Projects/northeastern-illinois-water-trails.html>.

32 *Greenways & Blueways: Northwest Indiana Regional Plan*. See <http://tinyurl.com/2f88uv8>.

3.5 Implementation Action Areas

The following tables are a guide to specific actions that need to be taken to implement GO TO 2040.

The plan focuses on five implementation areas for expanding and improving parks and open space:

Coordinate Open Space Investment to Create a Connected Regional Green Infrastructure Network

Invest in the Establishment of New Parks in Developed Areas

Harmonize Actions by State and Local Government with Natural Resource Protection

Increase Funding to Achieve the Level of Park Provision and Land Conservation

Treat Management Needs as an Important Part of Landscape Preservation

Implementation Action Area #1: Coordinate Open Space Investment to Create a Connected Regional Green Infrastructure Network

<p>Prioritize direct land protection within the green infrastructure network</p> <p>LEAD IMPLEMENTERS: Federal government, state (IDNR), county forest preserve and conservation districts, land trusts</p>	<p>The forest preserve and conservation districts should adopt and periodically update acquisition plans. These acquisition plans should set targets that are consistent with the overall objective of preserving 150,000 acres of land, two-thirds of it within the green infrastructure network. The plans should be oriented toward protecting the areas most important from a natural resources perspective. Other things being equal, a parcel within the GIV boundaries should have substantially higher priority for protection or restoration than a parcel outside it. Furthermore, direct state acquisitions should take into account whether an acquisition opportunity is within the green infrastructure network.</p>
<p>Include green infrastructure connectivity in open space grant programs</p> <p>LEAD IMPLEMENTERS: State (IDNR), philanthropic</p>	<p>A replenished Open Land Trust program should have a specific set-aside, or at least a set number of points in a score-based system, to help fill out the green infrastructure network. Natural Areas Acquisition Fund (NAAF) should continue to be used as it is to acquire the most important natural areas. Almost all of the candidate properties for the NAAF are likely within the GIV, but location within the GIV per se should not be a criterion. Open Space Lands Acquisition and Development (OSLAD) criteria should be revised to assign points for connectivity with other parks and protected open space. Private foundations that fund open space preservation should make preservation of the green infrastructure network part of their prioritization metrics.</p>
<p>Prioritize development of greenway trails with Transportation Enhancement funds</p> <p>LEAD IMPLEMENTERS: State (IDOT), counties, municipalities</p>	<p>Multimodal design (“complete streets”) should be the rule, not an exception funded as an add-on through the Transportation Enhancement (TE) program. TE can be used for 12 eligible activities including providing bicycle and pedestrian facilities. The development of multiuse, off-street greenway trails identified in the 2009 Greenways and Trails Plan should be considered an important use of the TE funds as long as they last.</p>

Implementation Action Area #1: Coordinate Open Space Investment to Create a Connected Regional Green Infrastructure Network (continued)

<p>Refine the Green Infrastructure Vision further</p> <p>LEAD IMPLEMENTERS: State (IDNR, INHS), CMAP, CW</p>	<p>The GIV provides a broad, qualitative identification of the lands that are most important to protect and restore. A number of scientific issues remain, however. One is whether it is more important to concentrate on expanding hubs or on linking the hubs with corridors. Another is the actual “least-cost paths” for species migration, as could be determined by quantitative analysis. In short, the revised GIV should help inform scientific preserve design. Furthermore, groundwater recharge and surface water protection should be included more robustly. Additional emphasis should be placed on already developed areas of the region, including the City of Chicago, and on the potential contributions of urban forestry. Finally, it is of the utmost importance that corridors be identified at a finer scale in the next version so that it can guide local development and infrastructure planning.</p>
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Implementation Action Area #2: Invest in the Establishment of New Parks in Developed Areas

<p>Foster cooperation between park districts and school districts in dense areas to share use of open space</p> <p>LEAD IMPLEMENTERS: Municipalities, park districts, school districts</p>	<p>Develop inter-local agreement between the districts, followed by a planning study to determine land and facilities that could be used jointly to meet education and recreational needs, and then by specific improvements to meet identified needs.</p>
<p>Use innovative financing and delivery mechanisms to meet the need for more park space</p> <p>LEAD IMPLEMENTERS: Counties, municipalities, park districts</p>	<p>Redevelopment can be a major opportunity to provide more park space for a community. Codes can be altered to incentivize developers to provide open space during redevelopment by providing density bonuses, making reinvestment in existing communities more attractive. Furthermore, local governments can ask developers to provide connections to greenways or even trail segments as part of redevelopment. When appropriate, they could also fund park improvements through tax increment financing, considering that parks are known to have a positive effect on the value of nearby properties.</p>
<p>Review land-cash donation ordinances</p> <p>LEAD IMPLEMENTERS: Counties, municipalities, park districts</p>	<p>Older communities should review their subdivision codes or land-cash donation ordinances to make sure open space donation requirements or in-lieu fees apply during redevelopment, that they are at least 10 acres per 1,000 people (or at least 4 acres per 1,000 in dense areas), and that in-lieu fee values reflect current land values. Municipalities should work closely with park districts in this regard; higher donation requirements coupled with higher allowable densities will tend to encourage compact development. Communities expecting new growth should review their ordinances to ensure they provide rules on land donation to ensure land is well-located. It is also in the public interest to allow developers to donate land in the floodplain; park districts should strongly consider accepting these lands as part of the donation and manage them as passive recreational open space.</p>
<p>Encourage volunteerism and non-traditional staffing</p> <p>LEAD IMPLEMENTERS: Forest preserve and conservation districts, park districts</p>	<p>Park and forest preserve districts should actively encourage the creation of conservancies and partner with them to reduce the cost burden of maintenance and park programming while giving more “ownership” to users.</p>
<p>Make Open Space Land Acquisition and Development match requirements more equitable</p> <p>LEAD IMPLEMENTERS: State (IDNR)</p>	<p>Local governments in the most “under-parked” areas will frequently find it most challenging to provide the 50 percent match required for OSLAD. The state should decrease the match required in communities with lower fiscal capacity, as measured (for example) by equalized assessed value per capita.</p>
<p>Identify and protect sensitive recharge areas</p> <p>LEAD IMPLEMENTERS: State (ISWS, ISGS), CMAP, counties, municipalities</p>	<p>CMAP should lead a collaboration to identify SARAs, prioritize those most important for protection, and develop and disseminate model ordinances to ensure their preservation.</p>

Implementation Action Area #2: Invest in the Establishment of New Parks in Developed Areas (continued)

<p>Encourage the integration of resource conservation in land use planning</p> <p>LEAD IMPLEMENTERS: State (DCEO), CMAP</p>	<p>Use planning grant programs to assist communities in incorporating resource conservation in local comprehensive planning.</p>
<p>Implement “urban greening” projects</p> <p>LEAD IMPLEMENTERS: Counties, municipalities, park districts</p>	<p>Although it does not provide recreational opportunities for the most part, providing more extensive landscaping, tree cover, etc. does make developed areas more attractive and hence more livable. It can help increase access to open space and connect people with nature. Municipalities should build such practices into local infrastructure projects they undertake, such as street and sidewalk reconstruction. They should also review the potential to include requirements for them in new development through local ordinances.</p>
<p>Implement urban farms and community gardens</p> <p>LEAD IMPLEMENTERS: Municipalities, park districts</p>	<p>In some cases, it will be more appropriate to utilize available urban land for farming³³ rather than for recreational parks. This will depend on local interests and the current availability of either type of land. Urban farming and community gardening have become increasingly important, as they satisfy a consumer preference for locally grown food, reduce food transportation costs, and provide a number of other benefits.</p>

Implementation Action Area #3: Harmonize Actions by State and Local Government with Natural Resource Protection

<p>Adopt progressive conservation design ordinances</p> <p>LEAD IMPLEMENTERS: Counties, municipalities</p>	<p>The most important thing a local government can do to protect open space is to plan for livability.³⁴ This will reduce overall land consumption. Some development will continue to occur within the green infrastructure network, however. In this case, local governments should require or at least encourage conservation design, resulting in the legal protection of a significant portion of the site through a conservation easement. The protected areas should be fully accessible to the public and linked to any offsite trails. Conservation design should produce site yields equal to or greater than allowable with the underlying zoning, so that gross density does not change. Local governments should adopt a conservation design ordinance based from the <i>Conservation Design Resource Manual</i>³⁵ to make it a by-right form of development. Some consideration should be given to having conservation design requirements apply automatically on sites containing important natural resources, as identified in a local comprehensive plan. A funding source and requirements for the management of common open space must be part of the development approval process.</p>
<p>Emphasize the protection of the green infrastructure network in local comprehensive plans</p> <p>LEAD IMPLEMENTERS: Counties, municipalities</p>	<p>As part of its comprehensive plan, a municipality should (in collaboration with the park district) specifically identify areas preferred to serve as parks, greenways, and natural areas. These areas should be zoned as such in accordance with the municipality's comprehensive plan.</p>

33 See the GO TO 2040 section titled Promote Sustainable Local Food.

34 See the GO TO 2040 section titled “Achieve Greater Livability through Land Use and Housing.”

35 Northeastern Illinois Planning Commission and Chicago Wilderness, Conservation Design Resource Manual: Language and Guidelines for Updating Local Ordinances, 2003. See <http://www.nipc.org/environment/sustainable/content.htm#Conservation%20Design%20Resource%20Manual>.

Implementation Action Area #3: Harmonize Actions by State and Local Government with Natural Resource Protection (continued)

<p>Protect natural resources in transportation corridors and focus compensatory mitigation into the green infrastructure network</p> <p>LEAD IMPLEMENTERS: Federal (U.S. ACE), state (IDOT, Tollway), CMAP, forest preserve and conservation districts</p>	<p>One way of maximizing resources for preservation and restoration within the green infrastructure network is to stipulate that compensatory wetland mitigation required under federal or local ordinances occur within that network, but still focused within the watershed where the impact occurred. Requiring mitigation in this predefined area could help resolve the problem that entities required to do mitigation are often pressed to find a land management agency willing to take ownership and management responsibilities for the wetlands. It remains important to adhere to a sequence of avoiding and minimizing wetland impacts before utilizing compensatory mitigation. Furthermore, transportation agencies should use advanced design techniques to protect resources in project corridors, such as those spelled out in the I-LAST (Illinois — Livable and Sustainable Transportation) manual developed by IDOT.</p>
<p>Limit urban infrastructure expansion within the green infrastructure network</p> <p>LEAD IMPLEMENTERS: State (IEPA), CMAP, municipalities</p>	<p>Sewer service should not be permitted in especially sensitive areas of the green infrastructure network. These especially sensitive areas should be precisely defined and identified in a refined version of the GIV, after which they should be specifically excluded from the incremental new area added to expanding facility planning areas.</p>

Implementation Action Area #4: Increase Funding to Achieve the Level of Park Provision and Land Conservation

<p>Secure additional dedicated state open space funding</p> <p>LEAD IMPLEMENTERS: State (IDNR), nonprofits</p>	<p>State funding for land acquisition, recreational facility development, and state park operations have declined significantly in the past few years. While a state capital bill was passed in 2009, more significant and stable funding is needed to replenish the state’s Open Land Trust account. A set-aside specifically for acquisitions within the GIV and for parks programming in northeastern Illinois would be ideal.</p>
<p>Stop diverting revenue from Illinois Department of Natural Resources programs</p> <p>LEAD IMPLEMENTERS: State (General Assembly, IDNR)</p>	<p>Despite the dedicated revenue stream, OSLAD and NAAF have been significantly underfunded in recent years. In some years, IDNR has spent less than half of OSLAD and NAAF funds, with the remainder raided for other state budgetary priorities.³⁶ IDNR had \$60 million less in funding in 2006 compared to four years earlier. Diverting Illinois Real Estate Transfer Tax (RETT) funds and raiding the IDNR budget for other state priorities must cease.</p>
<p>Increase involvement by private landowners in conservation activities</p> <p>LEAD IMPLEMENTERS: State (General Assembly), federal (Congress)</p>	<p>Private land conservation activities must play an increasingly important role in northeastern Illinois, but the state should provide incentives to encourage this, such as a state income tax credit for the donation of a conservation easement.³⁷ Federal tax incentives should be strengthened and extended. These actions could help encourage people to donate easements. In some cases, landowners may wish to provide public access to certain portions of their property for recreation or volunteer restoration work. However, landowners are inadequately protected from liability at present. The state should seek to offer liability protection to landowners who wish to allow these uses.</p>
<p>Build capacity in private conservation organizations</p> <p>LEAD IMPLEMENTERS: Land Trust Alliance, CW, Openlands, and others</p>	<p>To help them fulfill their important role in regional conservation, additional technical and administrative capacity needs to be built up at land trusts. This could entail training in real estate instruments, finance, and land management, among other areas.</p>

36 Illinois Environmental Council Education Fund, Illinois State Land Conservation Funding, 2007. See http://img.ilenviro.org/attachments/2007ISLCF_report.pdf.

37 As an example, the state currently reduces real estate taxes on qualifying land enrolled in an Illinois Nature Preserves Commission program.

Implementation Action Area #4: Increase Funding to Achieve the Level of Park Provision and Land Conservation (continued)

<p>Support direct federal investment in open space</p> <p>LEAD IMPLEMENTERS: Federal (Congress, U.S. FS)</p>	<p>Some of the biggest hubs or “macrosites” in the region are based on land protected by the federal government. Direct federal investment in open space in the region is an important form of funding that could be expanded; the federal government should take on a more significant role in open space protection in the region. This could happen through the formation of national wildlife refuges and the transfer of appropriate surplus federal property for open space uses, as happened at Midewin National Tallgrass Prairie and Fort Sheridan. Organizations in the region should support these opportunities as they arise.</p>
<p>Increase funding for federal open space grant programs</p> <p>LEAD IMPLEMENTERS: Federal (Congress)</p>	<p>The federal Urban Park and Recreation Recovery (UPARR) program has not been funded since 2002. It is the only federal program specifically for constructing and rehabilitating local parks, and has been in place for more than three decades. The state portion of the Land and Water Conservation Fund has seen very limited budgetary authorization in recent years.</p>

Implementation Action Area #5: Treat Management Needs as an Important Part of Landscape Preservation

<p>Restore open space within the green infrastructure network to natural land cover and hydrology and commit to long-term management</p> <p>LEAD IMPLEMENTERS: Forest preserve and conservation districts, land trusts, state (IDNR), utilities</p>	<p>From an environmental viewpoint, the central purposes of protecting the green infrastructure network are to protect water resources and to preserve biodiversity within the region. Ecosystem restoration, which often depends on at least partial reversal of hydrologic modifications, must be a major activity within the green infrastructure network. Local park sites are successfully being redesigned to include smaller green infrastructure practices for stormwater management; this is an important role they can play in the future in addition to providing recreation opportunities. Lands that are not protected open space per se are also candidates for management as green infrastructure. For instance, utility companies should make additional effort to put right-of-way into natural land cover.</p>
<p>Devise and commit to a system to prioritize restoration needs based on regional criteria</p> <p>LEAD IMPLEMENTERS: State (INHS, IDNR), CMAP, forest preserve and conservation districts, nonprofits</p>	<p>It is not yet clear which areas are most important for restoration from a regionwide standpoint. CW or other partners, such as the Illinois Natural History Survey (INHS), should develop or simply adapt a system to rank natural areas by the viability and importance of restoring them. Restoration projects by organizations in the region should then be based on these priorities, as should external funding for restoration projects. Standardization of collection and sharing of data on restoration success should be encouraged as part of this system.</p>
<p>Consider purchase of agricultural land as an interim link in the green infrastructure network</p> <p>LEAD IMPLEMENTERS: Forest preserve and conservation districts, counties</p>	<p>Although the long-term goal is to restore land within the green infrastructure network to natural land cover, it is important to acquire farmland as an interim link. This can be licensed to producers to continue farming, which should be done in accordance with a conservation plan approved by the forest preserve or conservation district. Provision should be made to offset lost tax revenue for other taxing bodies in rural areas.</p>
<p>Support efforts to provide adequate operating budgets for implementing agencies</p> <p>LEAD IMPLEMENTERS: State (General Assembly), CMAP, nonprofits</p>	<p>Reevaluate statutory restrictions on the ability of park districts and forest preserve and conservation districts to raise property taxes to manage lands they acquire. Consider inclusion of funds for management in open space referenda. Estimate financial needs for restoration work in the region.</p>

3.6 Costs and Financing

Most of the recommendations in the GO TO 2040 plan involve reallocating existing funds or they simply save money over current practice. The protection of natural areas and the provision of parks, however, is an area where it is important for the region to make an investment in a public good.

Federal transportation planning regulations require long-range transportation plans to be constrained to the projected availability of funds. While this is not required for other topic areas, it is sensible in the case of open space. This section therefore provides a conceptual budget with the sources and uses of projected funds.

The preservation target of 150,000 acres is within reach if a number of conditions are met. First, the forest preserve and conservation districts would need to continue to play the primary role in preserving land in northeastern Illinois. Second, private land trusts would need to play a growing role, second only to the forest preserves and conservation districts. In many cases now they work together collaboratively; these partnerships would need to expand even further. Third, conservation design will need to play a significant role, with some conditions attached. Fourth, additional investment by the federal government and by the state beyond existing grant programs will be needed.

About 5,200 acres would be required to meet the targets for park access in already developed areas. This is likewise possible if several conditions are met. First, local governments would need to employ density bonuses or other techniques to encourage the provision of publicly accessible urban open space as part of larger redevelopment projects. Second, park districts would need to continue to employ their bonding authority as they have in the past. Solutions that do not require additional funding, such as sharing open space with school districts, must be part of the approach as well.

Forest Preserve and Conservation Districts

Based on their expertise, the portfolio of properties they maintain, and their continued success with open space referenda, the county forest preserve and conservation districts would be the chief implementers of the regional targets for open space. Over the period 1999-2009, the county forest preserve and conservation districts issued bonds of \$1.2 billion in current dollars, or \$124 million per year on an annualized basis.³⁸ Note that these funding estimates are based on historical revenue covering more than one economic cycle. If the districts are able to maintain this revenue stream, it would provide approximately \$3.7 billion in 2010 dollars. Voters have reliably supported open space bonds.

Not all of this could be used for acquisition, however. Some would be used for other capital programming, such as trails and other facilities, but also major ecosystem restoration projects. If 75 percent on average were used for acquisitions, then approximately \$2.8 billion would be available for filling out the green infrastructure network and protecting other important lands. One long-term difficulty for the forest preserve and conservation districts, however, is the strain additional land protection places on operating budgets, which are generally derived from property taxes. This will be especially true given the increased restoration of land proposed in GO TO 2040. It has proven harder to get voter approval for increases in forest preserve and conservation district tax rates than for bond issues to buy open space, the latter having never failed in the past 10 years. Furthermore, limits on tax rates established by statute may affect the long-term ability to manage protected lands.³⁹

38 From Openlands, "Forest Preserve and Conservation Districts in Northeastern Illinois: Meeting the Challenges of the 21st Century," 2006; and from referenda results tracked by Illinois Association of Park Districts. This value includes \$100 million in bonding authority given to the Forest Preserve District of Cook County by the General Assembly in 2004.

39 See 70 ILCS 805/13.1 for tax rate limits for forest preserve districts outside Cook County.

Park Districts

Park districts would be the chief implementers of the recommendation to increase the acreage of parks in developed areas. There are sources of grant financing, such as the OSLAD Program from IDNR as well as the federal UPARR program, which has not received funding appropriations in recent years. Park districts retain the ability to raise their own revenue, however. They issued bonds to buy recreation-oriented open space at a rate of \$15.2 million per year between 2000 and 2009.⁴⁰ If these rates were to continue, it would provide about \$457 million by 2040.

Conservation Design

The GO TO 2040 plan supports the use of conservation design in the region. This term has come to mean many things to many people, but in this context it means the protection of sensitive natural features on a development site (amounting to 40-50 percent of the site preserved) and placing them under an easement. While CMAP emphasizes compact development and moderate density increases in the region, some growth is still expected within the GIV boundaries. If conservation design that averaged 40 percent protection of the site were pursued in those areas, approximately 28,000 protected acres would result. Local governments permitting conservation developments should stipulate that the resulting open space is accessible to the general public and linked through greenways and trails to other publicly or privately held natural areas. Redevelopment projects in developed areas can also be encouraged to provide parks to meet park accessibility needs.

It is estimated that if density bonuses of 10 percent were given to encourage the provision of open space as part of redevelopment projects, it could provide 2,500 acres of urban open space.

State Parks and Open Space Funding

The State of Illinois could contribute to the conservation target for northeastern Illinois in several ways. Existing open space grant programs can provide some resources, but the larger opportunities are likely through direct state acquisition or through a sustained funding mechanism that would replenish the Open Land Trust account. The main existing grant programs are the NAAF, which is meant to provide funds primarily for land acquisition, and the OSLAD program, which provides funds primarily for park development. Both are paid from Illinois RETT revenue as required by state statute, although in fact these funds have been diverted extensively in recent years and used for other purposes.

The average total statewide revenue from the RETT was \$85.5 million per year over 1996-2008 in 2010 dollars. The NAAF is funded by a 15-percent set-aside from the RETT, and OSLAD is funded by a 35-percent set-aside from the RETT. Currently, RETT revenue is very low because of the slack housing market. As the housing market picks up, however, RETT revenues should as well. If average RETT collections to 2040 remain the same (even if they are low in the early years), it would translate into \$39 million per year for OSLAD and \$13 million for NAAF. Historically, 44 percent of NAAF has been spent in northeastern Illinois.⁴¹ This fund is supposed to be used exclusively for acquisition, and would provide \$169 million over thirty years to protect the most important natural areas in the region, but it must not be diverted and used for other purposes.

About 69 percent of OSLAD funding has gone to northeastern Illinois historically, and 13 percent of that has gone to the county forest preserve and conservation districts.⁴² If these trends continue, OSLAD would provide about \$80 million by 2040 for preserves in northeastern Illinois. Most OSLAD funding, however, goes to park districts and municipalities. Approximately 25 percent of OSLAD funding has been used for park land acquisition historically. Assuming that none of the RETT funds are diverted for other purposes, then, OSLAD would provide \$135 million for park land acquisition. Note that OSLAD requires a 50 percent match; IDNR should consider a sliding scale for disadvantaged urban communities seeking to remedy park access deficits.

There is also the potential for the state to acquire land directly and operate it as a state park, state conservation area or similar public preserve. Most importantly, however, the state could fund the Open Land Trust (OLT) program as it did from 1999 to 2003. The OLT provided \$63.6 million for local agencies for the acquisition of 8,735 acres statewide. A small amount of funding was provided to the state for open space acquisition in the 2009 capital bill, but most of

40 Calculated from referenda results tracked by Illinois Association of Park Districts. See http://www.ilparks.org/?page=referendum_results. The referenda questions were examined to determine whether they were primarily for acquisition of recreational land.

41 Based on list of Natural Areas Acquisition Fund acquisitions from 1991 to 2008 provided by the Illinois Department of Natural Resources.

42 Based on list of Open Space Land Acquisition and Development grants made from 1999 to 2009 provided by Illinois Department of Natural Resources.

that funding has not materialized. The best new means of financing the OLT program is not clear,⁴³ but a number of groups have been investigating potential revenue streams.⁴⁴ Because the amount the OLT or direct acquisition could fund is unknown, only a small amount of preservation (5,000 acres) is projected for the budget.

Private Land Trusts

Nonprofit conservation organizations have become a major force in conservation across the country, and they own or manage a number of important natural areas in the region. Continuing their present annual rate of land preservation — about 1,200 acres per year on average — would amount to 36,000 acres by 2040. A number of foundations also provide funding for land acquisition, including Illinois Clean Energy Community Foundation, Donnelly Foundation, and Grand Victoria Foundation. GO TO 2040 also recommends establishing additional incentives for private conservation, such as state income tax credits, to help stimulate preservation activity by land trusts.

Conceptual Budget

Table 2 shows the projected sources of funding⁴⁵ for the preservation of important natural areas in the region. The recommended target, again, is 150,000 acres, about two-thirds of which would be devoted to completing the regional green infrastructure network. The budget shows an “equivalent value” for lands preserved. This represents the approximate cost for fee simple acquisition of the land, even though 42 percent of the land under the GO TO 2040 recommendations would be preserved less expensively by taking out conservation easements.

Table 3 shows the projected sources of funding for parks in already developed areas of the region. The “equivalent value” again represents the approximate cost for fee simple acquisition of the land, even though almost half would be provided through redevelopment. Similarly, the cumulative operating cost represents what would be expected for recreational land owned by a park district. This cost can be reduced by the use of volunteer staffing and encouraging conservancies or neighborhood groups to perform park maintenance.

Table 2. Projected sources of funding for preservation of important natural areas

SOURCES	ACRES	EQUIVALENT VALUE	CUMULATIVE OPERATING COST
County bonds	62,144	\$2,782,657,095	\$818,743,270
OSLAD	2,523	\$80,485,373	\$33,241,214
OSLAD local match	2,523	\$80,485,373	\$33,241,214
LWCF	461	\$14,695,717	\$6,069,469
NAAF	5,304	\$169,200,019	\$69,881,195
Conservation design	28,000	\$893,200,047	\$368,900,000
Land trusts (acquisition, donations, private grants, etc.)	36,000	\$1,148,400,061	\$474,300,000
Federal (wildlife refuge, etc.)	8,000	\$255,200,013	\$105,400,000
Direct state investment or Open Land Trust	5,000	\$159,500,008	\$65,875,000
GO TO 2040 natural area preservation target	150,000	\$5,649,046,088	—
Estimate of reasonably expected funds	149,955	\$5,583,823,705	—

Note: Equivalent value is based on acquisition costs from 2006-2008 average prices paid by each forest preserve or conservation district. Operating costs were assumed to be \$850 per acre for each district based on an average taken from the most recent available district budget. Cost estimates based on information from the forest preserve and conservation districts were assumed to be fairly representative of costs for other organizations.

43 The Illinois Open Land Trust Act (525 ILCS 33) does not specify a source of financing for the Open Lands Loan Fund (which can also be used for grants). It previously was funded through state bonds in the Illinois FIRST capital program.

44 Illinois Environmental Council Education Fund, “Illinois State Land Conservation Funding,” 2007. See http://img.ilenviro.org/attachments/2007ISLCF_report.pdf.

45 Note that there are other sources of funding which are considered minor in northeastern Illinois or available only episodically, such as Illinois Department of Natural Resources’ hunting-related programs, occasional donations of corporate property as part of settlements for environmental violations, and the Partners in Conservation (Conservation 2000) program, the funding of which has been sporadic and little used for acquisition. These are not included.

Table 3. Projected sources of funding for parks in already developed areas

SOURCES	ACRES	EQUIVALENT VALUE	CUMULATIVE OPERATING COST
Park district bonds	1,720	\$457,173,739	\$799,771,962
OSLAD	507	\$134,658,219	\$235,568,798
OSLAD match	507	\$134,658,219	\$235,568,798
Parks in redevelopment	2,500	\$664,520,010	\$1,140,645,000
GO TO 2040 park provision target	5,200	\$1,366,993,331	—
Estimate of reasonably expected funds	5,233	\$1,391,010,188	—

Note: Equivalent value is estimated from the 25th percentile of land values in the quarter section where the park would be located. The use of the 25th percentile is meant to account for park districts seeking to purchase less expensive land within their jurisdictions. Operating costs were estimated to be \$30,000 per acre, based from FY 2006 revenues and expenditures in a sample of 31 metropolitan Chicago area park districts in the U.S. Census of Governments.

Tax Impacts

There is the potential for open space acquisition to reduce the fiscal capacity of taxing districts in the region. In other words, if the state or a county forest preserve or conservation district acquires property, a municipality, township, school district, etc., would forgo the ability to site a taxable use on the property. However, there are several reasons to believe that this effect will be limited. First, many studies suggest that residential land uses, in comparison to commercial, industrial, open space, and agriculture, generate less in local tax revenue than they require in local services.⁴⁶ The specific ratio of revenues to costs varies considerably depending on the details of the case, but in general residential land does not “pay its own way.” Open space held by a public agency generates no tax revenue, and private land assessed at open space rates⁴⁷ generates very little, but these lands also require fewer public services (fire, schools, snow plowing, street lighting, etc.) than residential uses. On balance, the net fiscal impact of open space preservation on municipalities, townships, school districts, and fire districts tends to be more positive than with residential development.

By acreage, most of the new development in the region will be residential. Hence residential development would be the most likely alternative use for the majority of the open space recommended for protection in GO TO 2040, suggesting that the net fiscal impact from residential development under a trend growth scenario would be negative. Industrial and commercial uses, on the other hand, have

a strongly positive net fiscal impact.⁴⁸ However, these uses tend to cluster along major roads; commercial uses especially tend to locate at the intersections of arterials. Such locations are not generally desirable for preserves, except in the atypical case where there are very important, rare, or high-quality natural communities on site. Thus, while the most common alternative use would be residential, the fiscal impact of residential use will generally be negative; on the other hand, the land uses with the most positive net fiscal impact, commercial and industrial uses, tend not to conflict with open space preservation, some counterexamples aside.

The situation is somewhat different with agricultural uses. Agriculture generates local tax revenue and its service costs are very low, so its net fiscal impact is positive, although not very high. More than just a loss of the opportunity to site a higher-value land use, other taxing districts will face loss of current revenue if agricultural land is purchased by a public agency. In those areas where it is a high priority to preserve agricultural land, one remedy is for land trusts or other organizations to purchase or accept donations of agricultural conservation easements rather than to pursue fee simple acquisition by a public agency, thus preserving the taxable use. Acquisition by a public agency may still be the best land protection approach for the circumstances, e.g., if it is unlikely that there will be ongoing demand for agricultural use of the property. In that case, the agency will likely license the land to a producer to continue farming.

46 See, for instance, M.J. Kotchen and S.L. Schulte, “A Meta-Analysis of Cost of Community Service Studies,” 2008. See http://www.farmlandinfo.org/documents/37969/Meta-analysis_COCS.pdf. This meta-analysis compared the findings of 125 cost of services studies.

48 Estimates of net revenue per acre in CMAP State and Local Taxation, 2009. See <http://www.cmap.illinois.gov/snapshot.aspx#Tax>.

47 See Property Tax Code 35 ILCS 200/10-155 and 35 ILCS 200/10-400.

A second major reason why fiscal capacity is likely to be maintained even with open space acquisition has to do with the recommended development pattern itself. GO TO 2040 recommends moderate residential density increases, the appropriate level of increase being a matter for local decision. For the same number of projected households, a denser development pattern will tend to limit land consumption. Density also has effects on the ratio between revenue and service cost. For one, the assessed value of an acre of land will tend to go up the more densely it can be developed. For the same tax rate, then, revenue should increase as well. Density also decreases the cost of providing services on a per-household or per-employee basis, at least for physical infrastructure, an effect which is well-established in the literature.⁴⁹ Working together, these two effects will tend to offset the reduction in taxable land.

Finally, a third reason why local fiscal capacity would generally be protected even with aggressive land preservation is that open space drives up the assessed value of property nearby. Extensive research has been conducted to validate this effect, which has been known for more than a century.⁵⁰ It is not merely the presence of any open space nearby (i.e., developable farm land, forest, etc.), but specifically protected open space.⁵¹ The effect is strongest for community parks, but it also applies to “greenbelts,” another name for a connected network of green infrastructure. One researcher has put the premium at 20 percent as a general value for lots abutting or fronting a passive park area; some level of increase can often be detected up to 2,500 feet away.⁵² Premiums more or less than this can be expected depending on the circumstances and especially the level of maintenance of the park, with poorly maintained parks or those with security concerns actually being detrimental to property values. This need for maintenance to protect property values is one reason why it is especially important to ensure that park districts are able to raise revenue for operating costs.

On the whole, then, the program of open space preservation and park establishment recommended in GO TO 2040 would not tend to reduce the fiscal capacity of other local taxing bodies, while offering many benefits to quality of life, public health, and the environment.

49 Reviewed in Mark Muro and Robert Puentes, “Investing in a Better Future: A Review of the Fiscal and Competitive Advantages of Smarter Growth Development Patterns,” Brookings Institution Center on Urban and Metropolitan Policy, 2004.

50 Reviewed in Economic Research Associates, “Real Estate Impact Review of Parks and Recreation,” 2005. See http://www.ilparks.org/resource/resmgr/research_documents/research_era_real_estate.pdf. Also summarized in GO TO 2040 Preservation of Parks and Open Space Strategy Paper, 2009. See http://www.goto2040.org/open_space/.

51 J. Geoghegan, “The Value of Open Spaces in Residential Land Use,” *Land Use Policy* 19 (2002):91-98.

52 Economic Research Associates, “Real Estate Impact Review of Parks and Recreation,” 2005. See http://www.ilparks.org/resource/resmgr/research_documents/research_era_real_estate.pdf.

RECOMMENDATION

4 Promote sustainable local food



Food — like air, water, and shelter — is a basic human need. In addition to sustaining life and influencing health, food and the act of eating are part of our culture and everyday existence. Three times per day, we decide *what* to eat, often without consideration of *how* that food was produced or *where* it comes from. These daily decisions have consequences whether or not we are aware of them, and they directly shape the food industry that feeds us.

There is growing concern about the environmental impacts, safety, and quality of our food. Also gaining widespread attention are the disparities of access to fresh, nutritious, and affordable foods and the health implications of “food deserts” (areas without nearby retail outlets that have fresh, nutritious, and affordable food). How residents and institutions in our region get their food may seem like an issue best left up to individual lifestyle choices and private business decisions. However, food systems are already highly influenced by public policies related to land use, transportation, and many other issues addressed in the GO TO 2040 plan. In turn, food directly influences the economy, environment, public health, equity, and overall quality of life.

This chapter addresses local food in two separate but related categories: (1) **production** of food in the region, and (2) people’s ability to **access** affordable, nutritious, fresh food. Issues of local food production and access are not mutually exclusive. For example, some particularly effective policies, such as urban agriculture projects in food deserts, can address both production and access. But often these two categories require different policy solutions, as demonstrated by the fact that people need access to fresh, nutritious, affordable food no matter where it is produced.

“Local foods” are products available for direct human consumption that are grown, processed, packaged, and distributed within our seven counties and adjacent regions. A local food system can include a variety of production options, from backyard and community gardens to commercial farms and combinations in between.

“Sustainable” is defined as meeting the needs of the present without compromising the future. Sustainability should be essential to

all aspects of any local food system, from farming practices to food product distribution to waste disposal. Therefore, the term “sustainable local food” combines these two definitions.

The region should strengthen the sustainability of its local food system by:

Facilitating sustainable local food production and processing in our region by supporting urban agriculture and farmland protection and helping to develop a market for local foods, and increasing the profitability of all kinds of agricultural enterprises.

Increasing access to safe, fresh, nutritious, and affordable foods, especially for those residents in food deserts, and linking anti-hunger programs to local food production.

Raising awareness by providing data, research, training, and information for public officials, planners and residents, and increasing data and research efforts to understand and support investments in sustainable local food.

A local food system is part of a larger diverse farm economy, which includes commodity crops as well as agritourism, and CMAP recognizes the robust role that agriculture has in our region. The following section describes current conditions, explains the importance of sustainable local food, and provides details about the recommended actions.¹

¹ This section of GO TO 2040 has been informed by GO TO 2040 Food Systems Strategy Report, 2009. See <http://www.goto2040.org/foodsystems/>.

4.1 Benefits

During CMAP's GO TO 2040 "Invent the Future" phase of public engagement, issues surrounding local foods such as food access and the environmental impacts of food choices were raised frequently by residents.

Significant public interest in sustainable local food was also uncovered during research conducted for the food systems report funded by the Chicago Community Trust.

Recent federal and state legislation demonstrates support for public sector involvement in local food. The 2008 Farm Bill includes \$1.3 billion in new funding over a 10-year period for specialty crops (vegetables, fruits, etc.) through programs that support local food production and expand distribution of local, healthy food.² At the state level, the 2009 Illinois Local Food, Farms, and Jobs Act (Public Act 96-0579) set procurement goals for purchase of local food by state and state-funded agencies. The Act also created the Local Food, Farms, and Jobs Council to address local food issues such as infrastructure, training and interagency coordination.³ These recent efforts show growing recognition of the positive benefits of local foods.

Quality of Life

More than 61 percent of people in the region are overweight or obese, but not necessarily well nourished.⁴ Poor diets can result from insufficient access to high-quality produce and in part contribute to childhood obesity, diabetes, and other nutrition-related disease. One in three Americans born in 2000 are estimated to develop Type 2 diabetes (previously known as adult-onset diabetes) in their lifetimes, and the estimates are even higher for African Americans and Latinos.⁵ Strategies to increase access to fresh food combined with nutritional education can help to overcome these problems and are already highlighted at federal, state, and local levels.⁶

While reporting that 23.5 million Americans do not have access to a nearby supermarket, a recent study noted that access to healthy food decreases the risk of obesity and other diet-related chronic diseases.⁷ Research also has shown that, when new grocery stores with fresh food are introduced in food-deficient areas, nearby residents' consumption of fruits and vegetables will increase, especially in the lowest income families.⁸ Additionally, a 2009 report on food access in Chicago found that distance to the nearest grocer (compared to fringe food outlets like convenience stores) correlated to increases in cancer, cardiovascular disease, diabetes, and liver disease, especially in African American communities.⁹

Linking local food policy with hunger assistance programs can positively affect both efforts. Expanding the types of food retail outlets that accept hunger assistance benefits (to include farmers' markets, community supported agriculture, or other grocery delivery services) would make fresh food more accessible to low-income people, and arrangements between local food producers and food banks would have a similar effect.

The production and consumption of local foods can create a thriving culture, regional identity, and sense of community heritage. Regional and local relationships between residents, businesses, and farms can be fostered by better integrating local food into the community. For example, a Saturday farmers' market is more than just a retail outlet to buy food. It also provides a social gathering spot for the community and allows people to meet the farmers who grow their food.

2 American Farmland Trust, "A Rightful Place at the Table for Local and Healthy Foods," analysis of the 2008 Farm Bill, 2010. See <http://www.farmland.org/programs/farm-bill/analysis/localfoodpolicy.asp>.

3 Illinois Local and Organic Food and Farm Task Force, "Local Food, Farms, & Jobs: Growing the Illinois Economy," report to the Illinois General Assembly, March 2009. See <http://www.foodfarmsjobs.org/>.

4 National Center for Chronic Disease Prevention and Health Promotion of the Centers for Disease Control, Behavioral Risk Factor Surveillance System, selected Metropolitan/Metropolitan Area Risk Trends used for comparison of Health Risk Data for the Chicago-Naperville-Joliet, IL-IN-WI Metropolitan Statistical Area from 2002, 2003, 2004, 2005, 2006, 2007.

5 Center for Disease Control, "Learn Your Risk for Diabetes and Take Steps to Protect Your Health," updated March 2010. See <http://www.test.cdc.gov/Features/DiabetesAlert/>.

6 Let's Move! Campaign, 2010. See <http://www.letsmove.gov/>. Consortium to Lower Obesity in Chicago's Children (CLOCC). See <http://www.clocc.net/>.

7 Policy Link and The Food Trust, "The Grocery Gap, Who Has Access to Healthy Food and Why It Matters Report," 2010. See http://www.policylink.org/site/c.lkIXLbMNJrE/b.5860321/k.A5BD/The_Grocery_Gap.htm.

8 Neil Wrigley, Daniel Warm, Barrie Margetts, and Amanda Whelan, "Assessing the Impact of Improved Retail Access on Diet in a 'Food Desert': A Preliminary Report," *Urban Studies*, October 2002, 2074-2075.

9 Mari Gallagher Research & Consulting Group, "The Chicago Food Desert Progress Report," June 2009. See <http://tinyurl.com/22whbv5>.

Economic

Food production and processing have become increasingly efficient over the course of human history. Yields have improved dramatically, particularly in the last century, due to technological advances, modern production systems, machinery, and increased use of fertilizers and pesticides. Local foods are currently not a major part of the agricultural economy. But when barriers — such as existing regulations and business practices, or artificial price structures — are removed and markets are allowed to function, local food systems can become economically self-sustaining.

Increasing the production, distribution, and purchase of local foods will strengthen our regional economy. Illinois residents spend \$48 billion annually on food, nearly all of which (an estimated \$46 billion) is spent on imported food that sends our food dollars out of state.¹⁰ Purchasing food that is grown locally captures and retains those dollars for continued use within our region, supporting local businesses and jobs. Based on estimates for other regions, a 20-percent increase in local food production and purchasing would generate approximately \$2.5 billion in economic activity within the region.¹¹ Estimates from the March 2009 report, *Local Food, Farms & Jobs: Growing the Illinois Economy*, are even larger, at \$20 billion to \$30 billion for the entire state. Similarly, a report released by the Leopold Center for Sustainable Agriculture in March of 2010 found that increased production of fruits and vegetables for local consumption would have positive economic impacts for Illinois and the entire upper Midwest.¹²

Improving food access could also have positive economic impacts. A full-service urban grocery store typically provides jobs for 150 to 200 employees and generates weekly sales of \$200,000 to \$300,000.¹³ While some neighborhoods may initially need public financing to attract a grocery, “food desert” residents’ demand for healthier food will reward both public and private investments. Additionally, the health impacts described above have positive economic impacts, as good health is an important precondition for individuals to succeed in the education system and in the workforce.

Strengthening a local food system can make preservation of existing farmland more economically viable. Over the past several decades, the region has lost around 16,000 acres of farmland per year and currently has about 800,000 acres remaining; as development has occurred, it has become more difficult to assemble large sites that are appropriate for production of commodity crops or livestock.¹⁴ Increasing demand for local foods like vegetables, which can more easily be produced on small or scattered sites, provides aspiring farmers with more production options. Farmland preservation, in addition to maintaining an economic asset, also helps to preserve the rural character of much of our region and keep agriculture as a thriving economic activity.

Local food production can also improve land value and be used as a neighborhood revitalization tool in some communities. Vacant, unused parcels of land (particularly brownfields) are deleterious to the surrounding neighborhood, and putting this land to productive use can have positive impacts on nearby property values — by as much as 30 percent, according to one study of an urban neighborhood in Philadelphia.¹⁵

10 U.S. Department of Agriculture’s National Agricultural Statistics Service, “Annual Bulletin,” Census of Agriculture data, 2007, 93.

11 Viki Sonntag, “Why Local Linkages Matter: Findings from the Local Food Economy Study,” report for Sustainable Seattle, 2008.

12 Dave Swenson, “Selected Measures of the Economic Values of Increased Fruit and Vegetable Production and Consumption in the Upper Midwest,” Department of Economics, Iowa State University, Leopold Center for Sustainable Agriculture, March 2010. See http://www.leopold.iastate.edu/research/marketing_files/midwest.html.

13 Pennsylvania Fresh Food Financing Initiative — The Reinvestment Fund, 2010. See <http://tinyurl.com/26bzvkc>.

14 U.S. Department of Agriculture, National Agriculture Statistic Services Fact Finders for Agriculture, 2002 Census of Agriculture, State Profile for Illinois. See <http://www.nass.usda.gov/>.

15 Susan Wachter, “The Determinants of Neighborhood Transformations in Philadelphia — Identification and Analysis: The New Kensington Pilot Study,” from the University of Pennsylvania’s Wharton School, July 12, 2004. See http://www.nkcdc.org/controlpanel/images/nkcdc/Wharton_Study.pdf.

Environmental

A sustainable local food system has many environmental and conservation benefits. First, sustainable local food systems can be a strategy to mitigate climate change. Food production, including inputs such as farm machinery, fertilizers and pesticides, is by far the most energy-intensive component of the food system,¹⁶ but sustainable farming practices could reduce that footprint. Sustainable farming can also provide direct environmental benefits associated with green space such as stormwater management, water quality improvements, and reduction of urban heat islands.¹⁷ Water demand and availability must also be considered.

The distance food travels from farm to plate — referred to as “food miles” — is also of concern. The average food item travels 1,500 miles, compared to the average locally produced item that travels only 56 miles.¹⁸ Although food miles account for only 11 percent of the food system’s greenhouse gas emissions, a reduction of food miles also reduces the impact that rising fuel costs have on food prices. If the cost of gasoline continues to rise as it has over the last two decades, the global food system may no longer be as economical as it has been in the past.

A food system can also be a waste management technique and energy producer. By promoting a “closed loop” food system, in which every stage of the food system is used as a resource, the region can divert food waste from our landfills. An estimated 41 percent of U.S. food waste goes to landfills, where it takes up space, loses its nutrients, and releases methane.¹⁹ However, the nutrients can be retained by composting food scraps for use in local food production, home gardens, or landscaping; this can reduce or eliminate the need for fertilizers and thereby improve water quality.²⁰ Additionally, food wastes can be integrated into animal feed or converted into renewable energy and fuel.²¹

Furthermore, the production of local food will contribute to biodiversity and the implementation of the Green Infrastructure Vision (GIV) by providing habitat, protecting valuable green space, and creating opportunities for green infrastructure connections in our region.²²

16 Christopher L. Weber and H. Scott Matthews, “Food-Miles and the Relative Climate Impacts of Food Choices in the United States,” Department of Civil and Environmental Engineering and Department of Engineering and Public Policy, Carnegie Mellon University, November 28, 2007. Revised manuscript received March 4, 2008. Accepted March 14, 2008. See http://psufoodscience.typepad.com/psu_food_science/files/es702969f.pdf.

17 U.S. Environmental Protection Agency, Heat Island Effect, April 15, 2010. See <http://www.epa.gov/hiri/>.

18 Rich Pirog and Andrew Benjamin, “Checking the Food Odometer: Comparing Food Miles for Local Versus Conventional Produce Sales to Iowa Institutions,” July 2003. See <http://tinyurl.com/dcyr2c>.

19 Dr. Carol Diggelmann and Dr. Robert K. Ham, “Life-Cycle Comparison of Five Engineered Systems for Managing Food Waste,” Department of Civil and Environmental Engineering at the University of Wisconsin, January 1998. See <http://www.insinkerator.com/pdf/uwstudy.pdf>.

20 U. S. Environmental Protection Agency, Wastes — Resource Conservation — Reduce, Reuse, Recycle — Composting, updated March 11, 2010. See <http://www.epa.gov/osw/conserves/rrr/composting/basic.htm>.

21 University of California Davis, Biogas Energy Project, March 2008. See <http://frontiers.ucdavis.edu/9a.html>.

22 Chicago Wilderness, “Green Infrastructure Vision Final Report,” March 2004. See <http://tinyurl.com/35lckn4>.

4.2 Current Conditions

Local Food Production

The region has served as a focal point for the production, processing, and trading of food for many decades. But currently, most of what is grown doesn't directly feed humans, partly as a result of federal policies that subsidize high-volume crops like grains but not specialty crops like fruits and vegetables.

Our region primarily grows corn, soybeans, and forage crops.²³ This reflects the historical shift away from local food production to a global system, aided by government policies, competitive advantages (including location, water availability, climate, soil, infrastructure, and marketing), and technology investment designed to build economies of scale and efficiency in agriculture.²⁴ Today fewer farms produce greater amounts of food: While the number of farms declined from 6.8 million in 1935 to 2.1 million in 2005, U.S. farm output grew by 152 percent over the same approximate period.²⁵ However, these long-term trends of consolidation, specialization, and mechanization of agriculture have also had repercussions that include negative environmental externalities.

Partially in response to these issues and a growing consumer demand for local food, alternative methods of farming and food distribution are attracting interest and investment. While only eight percent of the region's 3,748 farms produced food directly for human consumption in 2007, the number has been rising due to an increase in organic farms, urban agriculture, food cooperatives, community supported agriculture (CSA), and farmers' markets.²⁶ Increased demand for local and sustainably grown foods can be seen in the growth of local food distribution outlets; between 1999 and 2008, the number of farmers' markets and CSAs statewide increased dramatically.²⁷ The fastest growing sector of the food industry has been organic food, reaching almost 20-percent annual growth in recent years. However, this has increased imports of organic products because U.S. producers could not meet demand.²⁸ This rising demand presents an opportunity for local food production in the region.

Consistent with national trends, the number of small farms in the region increased by seven percent from 2002-07, with more diversity of both crops and farmers.²⁹ This has occurred despite continued loss of agricultural land. See **Figure 35** for two charts describing the number of farms and their sizes by county throughout the region. Every county in the region has lost farmland over the past several decades, despite the efforts of many counties to preserve this important part of their heritage.³⁰

23 National Agricultural Statistics Service of the U.S. Department of Agriculture, Census of Agriculture 2007, County summaries for Cook, DuPage, Kane, Kendall, Lake, McHenry, and Will Counties, 2.

24 U.S. Department of Agriculture and Economic Research Service, "Milestones in U.S. Farming and Farm Policy," *Amber Waves*, June 2005. See <http://www.ers.usda.gov/Amberwaves/June05/DataFeature/>.

25 David E. Banker and Robert A. Hoppe, "Structure and Finances of U.S. Farms: 2005 Family Farm Report," Economic Research Service, U.S. Department of Agriculture, May 2006. See <http://www.tinyurl.com/3749pd7>.

26 National Agricultural Statistics Service of the U.S. Department of Agriculture, Census of Agriculture 2007, County Level Data, Table 30.

27 Robert Schirmer (Maywood, IL) database; Indiana Department of Agriculture as referenced in "Local Food, Farms, & Jobs: Growing the Illinois Economy," March 2009, 9.

28 Illinois Local and Organic Food and Farm Task Force, "Local Food, Farms, & Jobs: Growing the Illinois Economy," March 2009, 8. See <http://www.foodfarmsjobs.org/>.

29 National Agricultural Statistics Service of the U.S. Department of Agriculture, Census of Agriculture 2002 and 2007, County Level Data, Table 2. Small farm as defined by USDA is a farm with a market value of less than \$250,000.

30 National Agricultural Statistics Service of the U.S. Department of Agriculture, Census of Agriculture 1997, 2002 and 2007, County Level Data, Table 1.

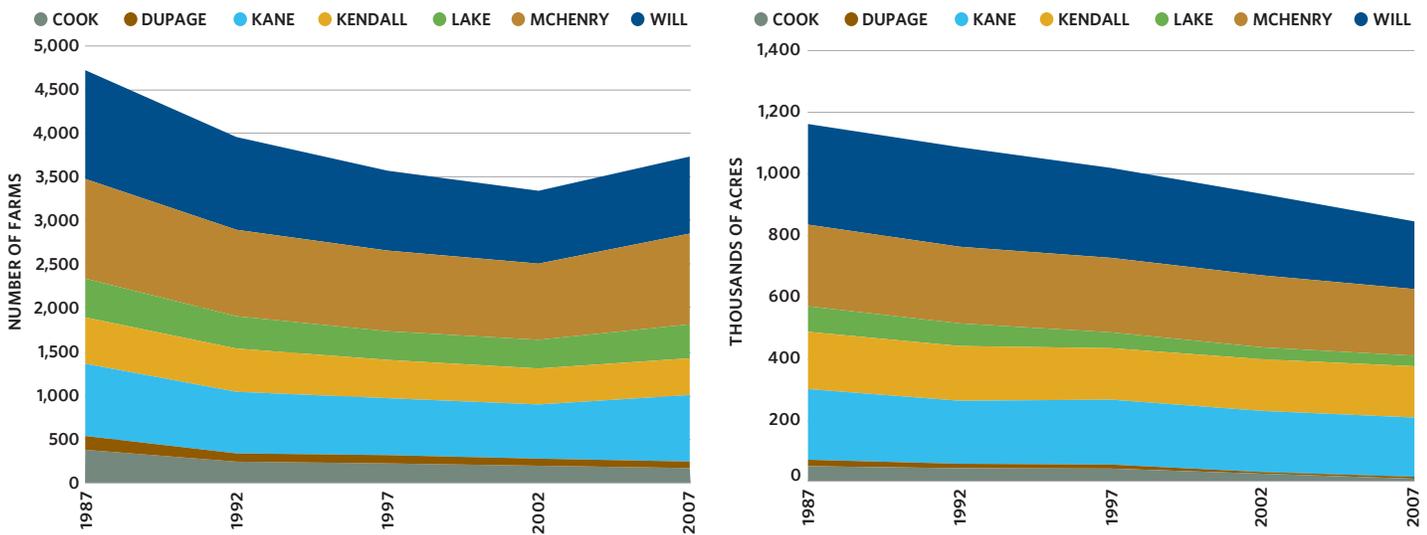
Another important input for food production is workforce: farmers and laborers. Of the 76,000 farmers in Illinois, only several hundred produce food for local markets.³¹ Furthermore the average age of the principal farm operator in our region was 56 in 2007 and is increasing, meaning that agriculture needs to attract younger workers.³² These statistics reveal that expanding the workforce is needed to maintain a sustainable local food production system. Despite some promising trends, significant economic and policy impediments combine to keep the market for local food small. Differences in local regulations, past economic practices, and infrastructure requirements (distribution, storage, processing facilities, etc.) all combine to limit growth of local food production and drive up the price of locally produced food. CMAP does not anticipate that the region, even in conjunction with surrounding regions, will ever produce all of the food that its residents require. The global food system will continue to serve the region, partly because some types of foods are impractical to produce in the Midwest. Still, production of food in the region can certainly be increased beyond its current levels.

Food Access

Localizing food production is only one side of the story. Fresh, nutritious, and affordable food must also be accessible to all residents. More than nine percent (730,866) of our region’s population is located in “food deserts” that lack access to nearby stores with fresh, nutritious food. Most often, food deserts exist in low-income, minority urban, and suburban neighborhoods. **Figure 36** displays the location of low-access areas, which are equivalent to food deserts. This analysis is normalized for urban, suburban, and rural areas because the definition of acceptable distance to a large supermarket varies based on population density, and it also excludes areas with incomes above the regional average.

While hunger is a symptom of poverty that is not necessarily related to local food, it is still useful to consider in the context of food systems. The U.S. Department of Agriculture (USDA) estimates that 9.5 percent of Illinois households between 2005 and 2007 lacked access to enough food to fully meet basic needs due to inadequate financial resources, which is termed “food insecurity.” The system of food banks and programs that provide hunger assistance is hard to navigate, and participation in food assistance programs is relatively low compared to need. Food banks depend on donated food and may lack an adequate supply of nutritious or fresh food.

Figure 35. Number and size of farms in region, 1987-2007

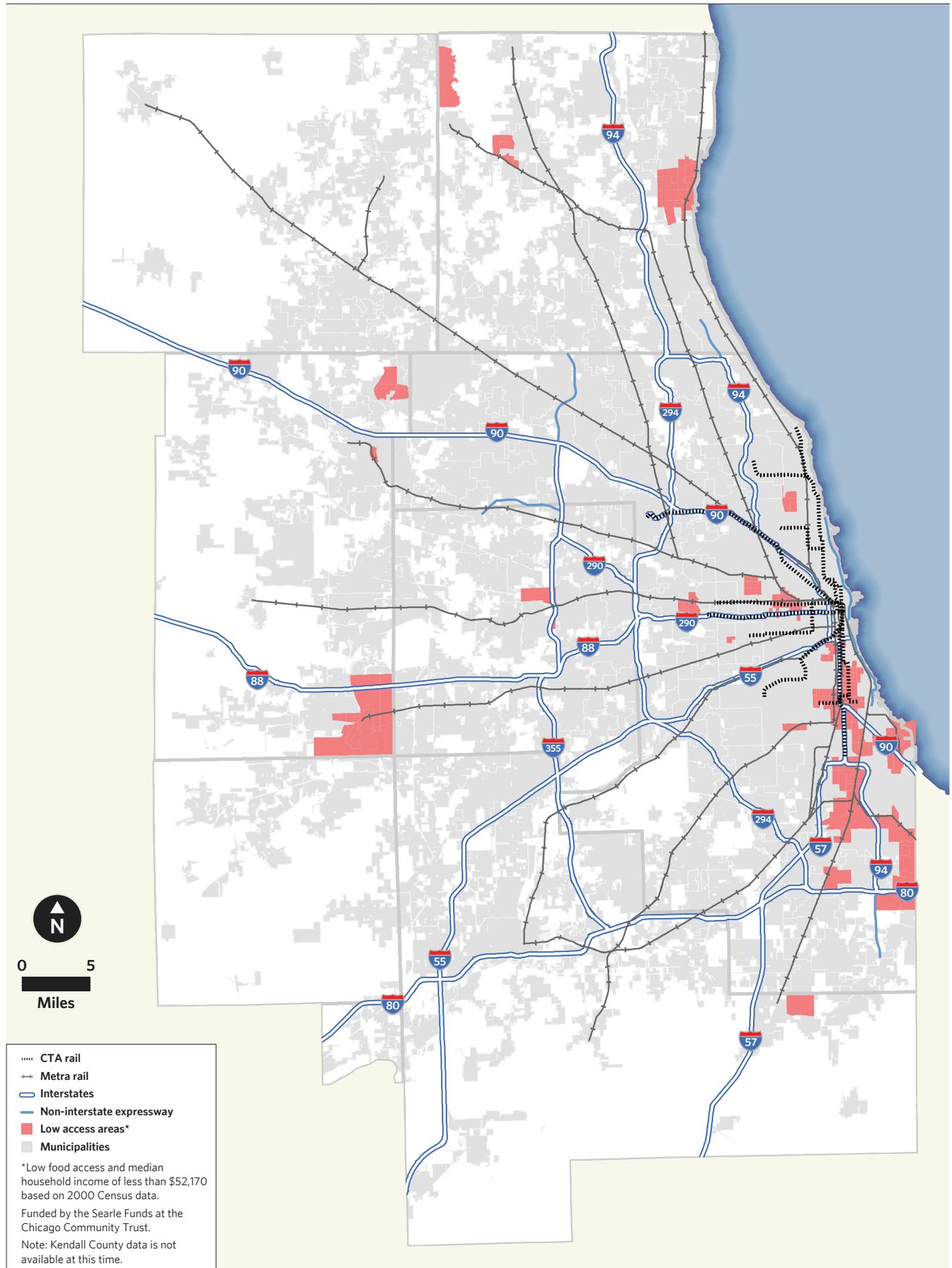


Source: U.S. Department of Agriculture, National Agricultural Statistics Services, Census of Agriculture, County Profile, 1987, 1992, 1997, 2002, 2007.

31 Illinois Local and Organic Food and Farm Task Force, “Local Food, Farms, & Jobs: Growing the Illinois Economy,” report to the Illinois General Assembly, March 2009, data from 2007. See <http://www.foodfarmsjobs.org/>.

32 National Agricultural Statistics Service of the U.S. Department of Agriculture, Census of Agriculture, County Profiles, 2007.

Figure 36. Areas with low access to large supermarkets



4.3 Indicators and Targets

GO TO 2040 proposes to measure the region's progress towards a sustainable local food system using two indicators: production is measured using acres of land in the region harvesting food for human consumption, and access is measured using the percent of the region's population who live in a "food desert."

Food Production

Food production will be measured by two indicators derived from USDA data. The first will track the acreage of land in the region that is being used to harvest food for human consumption. Currently, the region has approximately 5,518 acres harvested for direct consumption,³³ representing 0.71 percent of the total harvested acres (772,308) in the region as of 2007.³⁴ Acres harvested for direct consumption has steadily decreased over the last decade, from 10,989 in 1997 to 8,389 in 2002, finally to its most recent 2007 acreage listed above. The goal is to increase the regional acreage dedicated to local food over time. This increased acreage is expected to be reached through a variety of strategies, including urban agriculture in denser environments on vacant and underutilized land, as well as existing farmland where the market and farmers support its adoption. Pilot programs in which local food varieties are introduced into existing crop rotations are one mechanism to consider in achieving this regional goal.

The second will track the value of agricultural products sold directly to individuals for human consumption in the region. This value has been steadily increasing over the last decade, from \$2,482,000 in 1997 to \$4,661,000 in 2002, and finally \$6,484,000 in 2007.

For both of these indicators, quantitative targets for 2040 have not been set. Further research and analysis are needed to determine what a reasonable target would be. Improving data on local foods is one of the key recommendations of GO TO 2040 on this topic.

Food Deserts

Along with production, food access must also be measured. Food deserts and food access are inversely related. As food deserts are eliminated, food access is increased. Currently nine percent of our region's population (excluding Kendall County, for which data has not yet been collected) is located in a food desert or a low-access area relative to a large supermarket that is below the weighted average median income level (\$52,170) for the seven counties. Food deserts in the region are shown in **Figure 2**. The goal is to eliminate food deserts in the region by 2040.

PERCENTAGE OF POPULATION LIVING IN FOOD DESERTS IN THE REGION

7% by 2015

0% by 2040

³³ Direct consumption as defined by the USDA for the 2002 Census of Agriculture includes orchards, peanuts, potatoes, sweet potatoes, and vegetables.

³⁴ National Agricultural Statistics Service of the U.S. Department of Agriculture, Census of Agriculture, Desktop Data Query Tool, 2007.

4.4 Recommendations

GO TO 2040 recommendations for sustainable local food cover three areas: food production, food access, and overarching needs such as raising awareness and improving available data and research.

The purpose of these recommendations is to move local food from a “niche” market to a self-sustaining, thriving system. More detail of these and other recommendations can be found in a report on local food prepared by the Chicago Community Trust, Chicago Food Policy Advisory Council (CFPAC), and the City of Chicago in partnership with CMAP.³⁵

Facilitate Sustainable Local Food Production and Processing

An important requirement for food production is land availability. Two distinct approaches are to promote urban agriculture within already developed areas and to pursue agricultural preservation in areas that are currently farmed or preserved as open space. Urban agriculture provides opportunities to convert land and space to local food production and includes backyard gardens, community gardens, allotment gardens, greenhouses, green roofs, aquaponics, and small scale commercial sites in more dense locations. In addition to producing food, urban agriculture increases open space and community vitality, adds value to underutilized land, increases economic activity, and can provide on-site job training. The process of acquiring and converting vacant or underutilized lots and rooftops into agricultural uses needs to be streamlined and simplified. Site maintenance including landscaping, stormwater and fencing requirements should be compatible with local food practices. As soil condition is a major concern for urban agriculture, standards need to be established for acceptable soil conditions and procedures to achieve those standards to ensure the land is safe for food production.³⁶ Often soil testing and remediation costs can be high, but there are alternatives such as capping the lot and growing in raised beds.

Protecting and adding value to existing agricultural land also supports local food production. Agricultural preservation programs typically facilitate the purchase or donation of development rights of current farmland, which restricts development on the site but allows farming to continue. Kane County’s Farmland Protection Program is based on this concept and to date has preserved 39 farms totaling over 5,000 acres of farmland, with numerous properties on a waiting list for future funding. Since 2001, Kane County has invested almost \$20 million from gaming and riverboat revenue in the program, supplemented by \$12.6 million in federal funding from the Farm and Ranch Lands Protection Program. Although currently none of the properties in the program are used for local food production, they may be in the future because land in this program will remain in agricultural use in perpetuity.

McHenry and Kendall Counties also have similar farmland protection programs in place, but all three programs would benefit from a more permanent funding source, which would increase the amount of land protected. GO TO 2040 supports these programs and recommends that they continue and be strengthened. The plan also supports state legislation that would permit counties to hold referenda to raise funds for agricultural protection. Furthermore, innovative developments can also support local food production; for example, Prairie Crossing in Lake County permits residential and commercial development while preserving agricultural land and operating an on-site farm.³⁷ Where land ownership by local food producers is not an option, leasing farmland can provide an alternative.

Federal farm policies, such as the Federal Farm Bill, should promote viable local food systems through incentives and funding that encourage resource conservation, minimize the distance food travels, mitigate environmental degradation, and promote techniques that assure food safety and the production of nutrition-rich healthy foods. Furthermore federal production and processing standards should reflect the need of small scale operations to process food locally while still ensuring food safety. Assets such as certified kitchens and mobile processing units can increase the economic opportunities for local food production by providing value-added products and in-region processing capacity.

35 GO TO 2040 has been informed by GO TO 2040 Food Systems Strategy Report, 2009. See <http://www.goto2040.org/foodsystems/>.

36 U.S. Environmental Protection Agency, “How Does your Garden Grow? Brownfields Redevelopment and Local Agriculture,” March 2009. See http://www.epa.gov/brownfields/success/local_ag.pdf.

37 Prairie Crossing website. See <http://www.prairiecrossing.com>.

Once certain regulatory barriers are removed, widespread wholesale institutional procurement of local food products will give farmers confidence in future demand and may entice new farmers to enter the farming profession and the emerging marketplace.³⁸ The 2009 Local Food, Farms and Jobs Act established a 20-percent institutional procurement goal for state agencies and a 10 percent goal for state funded institutions such as schools by 2020. Additionally, the Act gives preference and incentive for local food by permitting agencies and institutions to pay a 10-percent premium for contract bids that include a local farm or local food products over similar non-local food bids. Federal and state governments should work with school districts and other institutions to link nutrition assistance programs with local food production through school, afterschool, summer, and weekend nutrition sites. “Farm to School” programs are gaining momentum, and several successful models already exist in school districts in Chicago, Grayslake, and Palatine.³⁹

Increase Access to Fresh, Nutritious, and Affordable Foods

GO TO 2040 seeks to eliminate food deserts, meaning that every resident in the region should have access to fresh, nutritious, and affordable food within a reasonable distance and accessible by multiple transportation modes. Various local food strategies such as community gardens, farmers’ markets, and alternative food retail outlets can be used for this purpose and could serve as demonstration programs to expand the diversity of retail options.

Fresh food financing, an emerging strategy, both supports local food production and provides greater access to fresh food. Pennsylvania has developed a model that other states, like Illinois, are considering. In 2004, the Pennsylvania Food Financing Initiative began as a public, private, and nonprofit collaboration. With an initial state investment of \$30 million, the program leveraged an additional \$165 million dollars in private investment to fund supermarket and fresh food outlet projects in underserved areas. This resulted in access to nutritious food for 400,000 people and created or retained 5,000 jobs.⁴⁰



38 For more information, see <http://www.familyfarmed.org>.

39 Illinois Farm to School Programs, 2010. See <http://www.farmtoschool.org/IL/programs.htm>.

40 Policy Link, The Food Trust, and The Reinvestment Fund, “A National Fresh Food Financing Initiative: An Innovative Approach to Improve Health and Spark Economic Development,” 2010. See http://www.thefoodtrust.org/catalog/download.php?product_id=168.

Similarly, Illinois has recently created (but has not yet funded) a \$10 million Fresh Food Fund to increase fresh food access and stimulate supermarket and grocery store development in underserved areas by assisting with land acquisition, equipment purchases and infrastructure, and an additional \$20 million is being sought from philanthropic groups to enhance the program.⁴¹ The proposed 2011 federal budget includes a \$345 million Healthy Food Financing Initiative, a program also modeled after the Pennsylvania program that provides financing for local grocers.⁴² GO TO 2040 recommends continuing and strengthening these fresh food financing initiatives. Similar innovative programs are already happening in our region. For example, the City of Chicago provided \$5.5 million dollars in assistance by selling city-owned land, appraised for \$6.5 million, for \$1 million to Pete's Fresh Market to open a 55,170 square foot full service grocery store on the near west side. Set to open in 2011, the new store will provide 120 full-time and 30 part-time jobs.

Linking local food policy with anti-hunger strategies can provide mutual support to both systems. Every year nearly 700,000 people in the region rely on food banks and other anti-hunger programs for basic food needs.⁴³ Programs and policies should link local food production programs with those that address food access issues, particularly for residents who live in hunger. For example, linking urban agriculture programs with food pantries could combine solutions to workforce development, nutritional education, and hunger. Similar programs can already be found in our region. Ginkgo Organic Gardens in Chicago donates all vegetables, herbs, fruit, and flowers, approximately 1,500 pounds a year, to Uptown-area nonprofit organizations such as the Vital Bridges' GroceryLand, a food pantry dedicated to serving low-income residents living with AIDS.⁴⁴ Furthermore, the USDA, state and local governments, and farmers' markets should permit and encourage the use of public assistance (Link benefits) at farmers' markets and other outlets for local, fresh products. Additional benefits such as "double voucher" programs may be needed to increase the affordability of local food at these locations.⁴⁵ Nutrition and anti-hunger programs should be coupled in a streamlined, seamless fashion, regardless of whether they are federal, state, municipal or private in nature. Further recommendations concerning hunger are contained in the 2009 Hunger Strategy Report, prepared by the Greater Chicago Food Depository and the Northern Illinois Food Bank, and are supported by GO TO 2040.⁴⁶

Raise Awareness by Providing Data, Research, Training, and Information to Support Local Food Systems

A regional food system policy organization should be established to position the region as a leader in regional food systems and allow rapid response to national and state initiatives. The goal of such an organization should be to build capacity of other local food policy councils and nonprofits, increase economic activity, utilize and protect the region's assets, promote entrepreneurship and innovations, and foster a healthier region through better access to local foods and nutrition education. To achieve this goal, the regional food organization should support policy development, identify training and technical assistance needs, and work to identify initiatives that support the marketability of locally grown food to meet business needs. The organization should have comprehensive representation of the types of organizations involved in sustainable local foods, and is likely to require a combination of private, public, and philanthropic support.

Through the Regional Indicators Project,⁴⁷ CMAP should be the central repository for local food data. A variety of local food data should be collected, standardized, and analyzed to provide policy makers, farmers, businesses, retailers, and residents with the tools to make responsible and realistic funding and policy decisions. Beyond simple collection of data, research is needed to understand how local food can best be supported and operate within the larger agricultural economy. While some resources already exist such as the Illinois Council on Food and Agricultural Research, further study, research, and analysis is necessary to address the complexities of local food systems, the associated market, and its relationship to existing policies.⁴⁸

Food systems require production, transportation and distribution infrastructure, and new forms of infrastructure may be needed to support local foods. While currently the global food market involves high volumes of food being transported, stored, and distributed, local food systems are typically lower volume and will need to consolidate and coordinate distribution strategies. The travel patterns of food within our region are another important part of the puzzle. In the Philadelphia area, the regional planning agency (Delaware Valley Regional Planning Commission, or DVRPC) analyzed food freight to understand how far food typically travels from producer to consumer. The study showed that 99 percent of food tonnage is moved by trucks through the region, and the movement of food accounted for 13 percent of total freight movements for the region in 2002, with significant future increases

41 The Robert Wood Johnson Foundation, "Illinois Approves Spending for Fresh Food Fund," 2010.

42 Policy Link, The Food Trust, and The Reinvestment Fund, "A National Fresh Food Financing Initiative: An Innovative Approach to Improve Health and Spark Economic Development," 2010. See http://www.thefoodtrust.org/catalog/download.php?product_id=168.

43 GO TO 2040 Hunger Strategy Report, 2009. See <http://goto2040.org/hunger/>.

44 Ginkgo Organic Gardens, 2010. See <http://www.ginkgogardens.org>.

45 August Schumacher, Rachel Winch, and Angel Park, "Fresh, Local, Affordable: Nutrition Incentives at Farmers' Markets 2009 Update," Wholesome Wave Foundation, November, 2009. See <http://wholesomewave.org/wp-content/uploads/winch-full.pdf>.

46 For further recommendations concerning hunger — going beyond its relationship with local food — see GO TO 2040 Hunger Strategy Report, 2009, at <http://www.goto2040.org/hunger/>.

47 Described further in the GO TO 2040 section Access to Information.

48 Illinois Council for Food and Agricultural Research, 2010. See <http://www.ilcfar.org/>.

49 Delaware Valley Regional Planning Commission, "Greater Pennsylvania Food Study," January 2010, 73 and 76. See <http://www.dvrpc.org/reports/09066A.pdf>.

projected.⁴⁹ CMAP and its transportation partners should conduct a similar study for our region, which is particularly relevant due to the region's status as the nation's freight hub.

As local food production is still an emerging industry, workforce training, technical assistance, and information sharing will be needed in the near future. Initiatives at the local level through academic institutions such as University of Illinois Extension and other agriculture workforce training programs should connect farmers to available resources and provide the education (including local food related business and legal practices) necessary to create viable economic models for local food production. Information sharing between farmers, particularly those involved in sustainable farming practices, urban agriculture, or other non-traditional practices, is especially valuable. Developing information resources to connect farmers, distributors, and retailers would help local foods to grow as a stand-alone economic sector; this should be a responsibility of the regional food policy organization described above. Finally, integrating local food topics into university and community college programs will raise awareness about food systems and potential job opportunities in this field.

GO TO 2040 supports including local food components in local plans, ordinances, and planning decisions. In CMAP's role as a technical assistance provider, the agency should assist with the incorporation of local food components into county and municipal comprehensive plans and ordinances.

This should build on existing work and best practices; Kane County will be including a local food system component in their upcoming comprehensive plan. Other resources for planners include the American Planning Association (APA) *Policy Guide on Community and Regional Food Planning*, which gives direction on how to incorporate food systems in communities and *A Planners Guide to Community and Regional Planning: Transforming Food Environments, Facilitating Healthy Eating*.⁵⁰

In other regions, regional agencies (such as DVRPC) have integrated local food system planning as part of their land use planning and as a part of envisioning a sustainable future for their residents. Municipalities such as Seattle, Detroit, Madison, and Kansas City are including local food in comprehensive plans, adopting zoning regulations and districts that permit urban gardens and composting, and removing policy barriers to farmers' markets. Within the urban garden district in Cleveland, community and market gardens are permitted as well as greenhouses, hoop houses, chicken coops, beehives, compost bins and seasonal farm stands. Locally, farmers' markets are located in a variety of municipalities in all parts of the region. Furthermore, Chicago is looking at municipal codes and standards to allow for the commercial growing of local foods in the urban landscape. The region's local governments should continue these efforts.

Finally, providing information to the general public about sustainable local food systems is important and should be a responsibility of the proposed regional food policy organization. Although public awareness is increasing, ambiguity still exists about where our food comes from, as well as who raises it, processes it, and makes policy decisions about it. This lack of awareness is a formidable barrier to creating a more sustainable system. Education begins at the consumer level through school and community gardens, farmers' markets, and agricultural endeavors close to where consumers live. While such ventures provide a limited proportion of the food consumed in the region, they reconnect individuals to how food is grown and produced, and they prepare the region's consumers to become active participants in decisions about the food system. The economic viability of a sustainable local food system depends on a strong market for its products. Local governments, business organizations, philanthropic groups, and advocacy groups can build demand for sustainable local food through public education campaigns that promote the benefits of local and healthy eating to all citizens.

50 American Planning Association, *Policy Guide on Community and Regional Food Planning*, 2007. See <http://www.planning.org/policy/guides/adopted/food.htm>; American Planning Association, *A Planners Guide to Community and Regional Planning: Transforming Food Environments, Facilitating Healthy Eating*, 2009. See <http://www.planning.org/apastore/search/Default.aspx?p=3886>.

4.5 Implementation Action Areas

The following tables are a guide to specific actions that need to be taken to implement GO TO 2040. The plan focuses on three implementation areas for promoting sustainable local food:

- Facilitate Sustainable Local Food Production**
- Increase Access to Safe, Fresh, Affordable, and Healthy Foods**
- Increase Data, Research, Training, and Information Sharing**

Implementation Action Area #1: Facilitate Sustainable Local Food Production

<p>Support urban agriculture as a source of local food</p> <p>LEAD IMPLEMENTERS: Federal (USDA, U.S. EPA), state (Dept. of Agriculture, IDPH, IEPA), counties, municipalities, nonprofits</p>	<p>Urban agriculture can be a productive use of vacant or underutilized urban land. Local governments should simplify and incentivize the conversion of vacant and underutilized lots, spaces, and rooftops into agricultural uses. Research groups should support this by developing an inventory of underutilized publicly owned land that could be appropriate for urban agriculture. Brownfield remediation funding can and should be used to support community gardens and farmers’ markets.</p>
<p>Continue and expand farmland protection programs</p> <p>LEAD IMPLEMENTERS: Counties, forest preserve districts and conservation districts, municipalities, park districts, land trusts</p>	<p>The region’s local governments should maintain and improve their current farmland protection programs and develop new programs where needed. Kane County’s Farmland Protection Program can serve as a model for the region. Focused on the goal of preserving land, their program provides equal opportunity to applicants regardless of crop selection. Counties and municipalities should work together to remove barriers to local food production on their respective lands and encourage inter-jurisdictional business opportunities. Where appropriate, agriculture should be supported as part of preserved open space such as forest preserves, park districts, or land trusts. The state should also permit counties to hold referenda to raise revenue for agricultural preservation.</p>
<p>Encourage revisions of federal policy to promote local food</p> <p>LEAD IMPLEMENTERS: Federal (USDA)</p>	<p>Farm and food policies and food regulations at the federal level should be reassessed to accommodate local and small farm operations. Most federal incentives have been geared to encourage large industrial farming practices, and current regulations can inhibit local and small farm production and infrastructure development. Recent federal policy changes to recognize the importance of local food should continue and be strengthened.</p>
<p>Support local food production through other institutional support and procurement processes</p> <p>LEAD IMPLEMENTERS: State agencies and institutions, wholesale farmers, University of Illinois Extension</p>	<p>In line with the 2009 Local Food, Farms and Jobs Act, a procurement process for state institutions that favors local foods (such as schools, hospitals, and other government facilities) could bolster the local foods economy by creating a stable demand for local food. Sharing of best practice information between participating institutions is also recommended.</p>

Implementation Action Area #2: Increase Access to Safe, Fresh, Affordable and Healthy Foods

<p>Increase community access to fresh food through demonstration programs</p> <p>LEAD IMPLEMENTERS: Federal (USDA), state (DCEO), counties, municipalities, philanthropic, private investors, banking institutions</p>	<p>Support and expand various demonstration programs for providing better food access in food deserts, such as farmers' markets, farm carts and stands, fresh food delivery trucks, food cooperatives, on-site school programs, and other alternative retail options and direct sales from community vegetable gardens. On-site school farms could also be used to increase access and develop a local food curriculum. Funding should be identified to implement these programs. These programs also can be supported by examining health and licensing regulations to ensure that they do not create barriers to local access to fresh food.</p>
<p>Implement fresh food financing initiatives</p> <p>LEAD IMPLEMENTERS: Federal, state, counties, municipalities, Illinois Food Marketing Task Force, philanthropic, private investors, traditional lending institutions</p>	<p>Illinois should replicate the Pennsylvania Fresh Food Financing Initiative, which used state funding to spur private investment in supermarket and fresh food outlet projects in underserved areas. The recently created Illinois Fresh Food Fund could provide a similar opportunity for Illinois; however, sufficient funding is required. The federal government should also continue and strengthen its efforts to fund similar programs.</p>
<p>Link hunger assistance programs to local foods</p> <p>LEAD IMPLEMENTERS: Federal (USDA), state (Dept. of Agriculture), public health organizations, food pantries, individual farmers' markets</p>	<p>A partnership between hunger assistance and local food production can benefit both parties. Food pantries can work with local food producers to increase their quantities of fresh food. Additionally farmers' markets and other alternative local food outlets should accept Supplemental Nutrition Assistance Program (SNAP) benefits and conduct outreach to SNAP recipients to utilize these locations to purchase food. To support this effort, Illinois passed the Farmers' Market Technology Improvement Program Act in 2010, which establishes a fund to provide financial assistance for equipment (such as electronic benefit transfer [EBT] card readers) and transaction fees to facilitate the use of SNAP benefits at farmers' markets and other alternative retail locations. Resources such as grants and loans should be provided to support the fund and the other efforts listed above.</p>

Implementation Action Area #3: Increase Data, Research, Training, and Information Sharing

<p>Build regional nonprofit capacity for local foods systems</p> <p>LEAD IMPLEMENTERS: Nonprofits, philanthropic</p>	<p>Identify and support a regional food entity (nonprofit). The entity should be represented by a variety of members (economic, environmental, transportation, agricultural, public health, etc.) to analyze and support food policy issues from a comprehensive perspective and coordinate federal grant and loan programs. This entity should coordinate with the activities of the Illinois Food, Farms, and Jobs Council. It should also host summits and informative meetings for local officials and policymakers, including health departments, community organizations, and environmental groups.</p>
<p>Improve data collection and research on local food production, distribution, and other needs</p> <p>LEAD IMPLEMENTERS: State, CMAP, counties, nonprofits, universities, philanthropic</p>	<p>The region needs improved data on the production and distribution of local food and specialty crops. Also, infrastructure needs for the transportation, storage, and distribution of food (such as regional distribution hubs or refrigerated storage facilities, for example) should be identified and analyzed. CMAP should work with neighboring metropolitan planning organizations like the Northwest Indiana Regional Planning Commission and the Southwest Michigan Regional Planning Council to accelerate effective planning, and regional food systems development.</p>
<p>Provide training and information sharing</p> <p>LEAD IMPLEMENTERS: Universities, community colleges, other education and training providers, philanthropic, local businesses and restaurants</p>	<p>Local food training and technical assistance programs for farmers and laborers should be provided to assist in the transition to local food production. These should be linked with workforce development programs. Sustainable and conservation oriented farming techniques should be particular focuses. Also, information sharing between practitioners on a variety of local food topics, including food waste reduction, processing, and reuse, should be encouraged. Develop comprehensive information resources to develop and connect the value chain between farmers, distributors, retailers, producers, and consumers, such as the University of Illinois MarketMaker website.⁵¹ Universities and community colleges should offer food related courses to cover a variety of topics from nutrition to distribution. Businesses and restaurants can also support local food by purchasing from local food farms/vendors and providing information to customers about food origin (such as menu and product labeling).</p>
<p>Provide technical assistance to incorporate local food systems in comprehensive plans and ordinances</p> <p>LEAD IMPLEMENTERS: CMAP, counties, municipalities, nonprofits</p>	<p>Assist government officials and planners to incorporate local foods and agricultural protection into comprehensive plans and ordinances. Local food could also be integrated into economic development plans. Technical assistance should accommodate the full spectrum of local food production from community gardens to commercial farm operations, and could include activities such as removing barriers to local food distribution or designating certain zones for permitted small-scale food production. Additionally, CMAP and other technical assistance providers should produce local food model ordinances for consideration by local governments.</p>

51 University of Illinois MarketMaker website, 2010. See <http://www.marketmaker.uiuc.edu/>.

4.6 Costs and Financing

Supporting the development of sustainable local food systems is not free, and some of the recommendations contained on the previous pages would involve costs to the public sector which, though small, are not negligible.

However, this needs to be placed in context. The U.S. already spends a significant amount of money on agriculture production through the Farm Bill, legislation passed every five years to guide national agricultural policy. The most recent Farm Bill (the Food, Conservation and Energy Act of 2008) has a cost of \$307 billion dollars between 2008 and 2012.⁵² While the majority of this funding, \$209 billion, is directed toward nutrition programs like food stamps under the Supplemental Nutrition Assistance Program (SNAP), nearly \$35 billion over the next few years will be spent on direct payment subsidies, or about \$5.2 billion annually.⁵³

Federal policy is shifting toward supporting local food, as seen in modest monetary gains found in the 2008 Farm Bill for both production and access of local food. Supportive programs such as the Farmers' Market Promotion Program or the USDA "Food Desert" Study have either been expanded or created to elevate local food as a viable agricultural use. But this transition will require further investment. Commodity and local food farming require different machinery, tools, maintenance, training, labor, packaging, marketing, and transport. Our region's food infrastructure is currently set up to produce and export commodity crops such as corn, soybeans and alfalfa. While there will be a cost associated with transitioning to local food production, much of this would likely be borne by the private sector, without public sector cost, if the playing field for local food was leveled.

Furthermore, as a result of the 2009 Illinois Local Food, Farms and Jobs Act, publicly funded or owned institutions are encouraged to buy local food, and can pay a 10-percent premium for locally grown produce. In the past these institutions were required to choose the lowest reasonable bid. This increase in spending is voluntary, and depends on the budget situations of these institutions, but creating demand for local food among large food producers could support the emergence of local food as a viable economic sector.

The preservation of farmland or conversion of vacant lots to urban agriculture can have positive financial impacts for the public sector. Although the initial land purchase may be costly, agriculture generates local tax revenue and has very low service costs, meaning that it generally has more favorable fiscal impacts than residential development. Municipal-owned vacant lots that are converted to local food production provide another opportunity to add local tax revenue, so initial investments in urban agriculture by local governments can pay off over time.

Improving food access also has associated costs, but initial, small-scale investments by the public sector can leverage larger private sector investments. In the Pennsylvania Food Financing Initiative, private investors matched public funds at a ratio of 5.5:1. Overall, public investments and financing in the short term can create a local food system (including both production and access) that will sustain itself in the long term.

⁵² Congressional Budget Office, May 13, 2008. See <http://www.cbo.gov/ftpdocs/92xx/doc9230/hr2419conf.pdf>.

⁵³ Congressional Budget Office, May 13, 2008. See <http://www.cbo.gov/ftpdocs/92xx/doc9230/hr2419conf.pdf>.

