

Lake County Sustainability Chapter
Amendment to Lake County Regional Framework Plan

Lake County, IL
October 7, 2014

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A. Introduction

Intent

The *Lake County Regional Framework Plan* provides a mechanism to address, promote, and coordinate, between governmental jurisdictions, the needs and effects of development upon the economic, manmade, and natural environments within the county and the region. The *Regional Framework Plan* is intended to be updated periodically. The development of this Sustainability Chapter serves as an update and as a vehicle for carrying out the *Strategic Plan* goal of the Lake County Board to promote a sustainable environment.

Based on the *Lake County Strategic Plan* (2009, 2013), sustainability fits with Lake County's vision to be "known for its safe and livable communities, thriving local economy, healthy natural environment, high quality educational opportunities, and public services." It also fits Lake County's values of fiscal responsibility, exceptional customer service, and leadership.

Structure of the Chapter

The Sustainability Chapter is divided into seven sections, which represent topic areas that are key to the County's sustainability:

1. Land Use and Development
2. Transportation and Mobility
3. Open Space
4. Energy
5. Waste
6. Water
7. Economy

The Sustainability Chapter addendum is closely modeled after the other Chapters of the *Regional Framework Plan*. Each section is organized into the following sub-sections:

- Significance
- Issues and Opportunities
- Analysis (of existing conditions)
- Goals, Policies, and Indicators
- Implementation Approach
- Sources (references and resources)

Each Goal, Policy, Action, and Indicator contained in this Chapter is intended to be phased in and evaluated on an annual basis to monitor progress. Each Section has a Goal that is thematic and broad. Policies break each Goal into meaningful pieces, with Action steps to address each Policy, and Target Indicators to measure progress.

There are two types of indicators: Lake County Indicators and Countywide Indicators. Lake County Indicators describe actions and measures within the realm of what the county government can do or control. Countywide Indicators demonstrate the impacts of human action on the environment, the local economy, or our quality of life. While indicators are intended to be evaluated on an annual basis, they should be re-evaluated every five years for appropriateness and to measure progress.

Introduction to Sustainability Planning

What is sustainability?

Numerous planning efforts in Lake County in recent years have supported the County Board's *Strategic Plan* (2009, 2013) Goal of promoting a sustainable environment. Lake County has developed several key planning documents in support of this goal, such as the *Strategy for a Sustainable Lake County* (2009), the Non-Motorized Travel Policy (2010), the 60% Recycling Task Force Report (2011), the *Sustainable Building and Development Practices* report (2011), the Community Health Status Assessment (2012), and the Comprehensive Economic Development Strategy (draft).

In adopting the *Strategy for a Sustainable Lake County* document, the County Board endorsed a broad definition of sustainability, similar to the widely accepted definition first endorsed by the United Nations' World Commission on Environment and Development in 1987:

Being 'sustainable' means the County is achieving economic prosperity while protecting the planet's natural systems; and meeting the needs of the present generation without compromising the ability of future generations to meet their own needs.

This "triple-bottom-line" approach promotes a healthy environment, a vigorous economy, and a vibrant community together. The components of the triple bottom line may be visualized as a three-legged stool where one leg cannot stand on its own; rather, all three legs work together to create a sustainable future.

How do you plan for sustainability?

Planning for sustainability is a relatively new concept resulting from an increased interest in and concern for time-sensitive environmental issues. Sustainability plans differ from traditional planning documents in that they focus on the environmental impacts of policy decisions; emphasize the use of quantitative data and indicators to measure progress; and feature implementation with regular monitoring and reporting of progress back to the community to improve accountability and transparency. Indicators have been established for each of the Sustainability Chapter's sections. Baseline indicators represent quantitative measures of existing conditions, while target indicators are corollary quantitative measures that relate to the Chapter's goals.

What is the "Sustainability Chapter"?

This Chapter will serve as a sustainability plan for Lake County that builds off of and updates the *Regional Framework Plan*. The *Regional Framework Plan*, adopted in 2004, is the County's primary policy guiding document. The *Regional Framework Plan* contains many goals and policy statements pertinent to a variety of different topics, including economic development, natural resources, community revitalization, infrastructure and services, transportation, housing, land use, community character, and intergovernmental coordination. This Chapter updates the existing conditions and renews the goals and policies of the *Regional Framework Plan*, specifically with regard to the environment and sustainability. It paraphrases and references existing policy documents issued by the Lake County Board and its departments and agencies, as needed, to create a cohesive document. The overarching goal of the Sustainability Chapter is to provide a road map for decision-making to achieve a sustainable future.

Why does Lake County need a Sustainability Chapter?

Pursuant to the *Strategic Plan* goal of promoting a sustainable environment, Lake County has been actively pursuing sustainable practices, from identifying and protecting natural resources to developing model ordinances for renewable energy and striving to increase recycling rates. The County's existing commitment to sustainability can be strengthened by developing a cohesive strategy for moving forward that builds upon previous efforts. The Sustainability Chapter will serve to:

1. Provide a foundation for sustainable County decision-making
2. Consolidate and build upon previous related goals, policy statements, and initiatives
3. Provide a model for sustainability planning at the municipal level
4. Help make a compelling case for future grants, awards, and other assistance
5. Raise awareness about sustainability among County officials and staff, constituent municipalities, residents, and other stakeholders

Planning Process

The planning process to create this Sustainability Chapter amendment included several key phases. Phases I and II established the sustainability vision and set the Chapter direction. Input received from the Regional Planning Commission, the public kick-off meeting, and municipal representatives helped to inform the project team's understanding of existing conditions and overarching goals related to sustainability in Lake County. Phase III of the project revolved around drafting policy statements, action items, indicators, and an implementation strategy to help achieve the established goals. The planning process and outreach strategy were created with assistance from County staff to involve diverse stakeholders and create a document that will be useful to a variety of audiences. Phase IV involved the review and adoption of the Sustainability Chapter.

Community Outreach

A primary goal of this planning process is to involve many audiences, which will help to create a *Regional Framework Plan* Chapter that represents the interests, needs, and vision of the community as a whole. These audiences each have unique perspectives on what environmental issues are most important to address and how the County might achieve a sustainable future. The public outreach strategy emphasizes broad-based participation to create a cohesive vision for moving forward. This strategy includes close coordination with County staff and elected officials, regular interaction with a steering committee, technical interviews, and public meetings at key points in the planning process.

Steering Committee Meetings

The Regional Planning Commission (RPC) served as the steering committee during the development of the Sustainability Chapter. The RPC was tasked with providing input on issues and opportunities, developing overarching Chapter goals, and providing input on the draft existing conditions report and Chapter recommendations.

Six steering committee meetings have been held to date. The first meeting served to introduce the project to the RPC and define the steering committee's role in the planning process. The second meeting focused on brainstorming initial goals related to the Chapter's seven topic areas, and the third meeting firmed up the goals and identified major areas of focus for the document's potential policy statements. The last three meetings served to review the existing conditions report, preliminary ideas for recommendations, and draft Sustainability Chapter. The input gathered from the RPC has been invaluable in shaping the goals and recommendations of the Chapter.

Public Kick-off Meeting

The public kick-off meeting for this project, which had over 30 attendees, was held on June 13, 2012 at the County's Central Permit Facility in Libertyville. The meeting included an overview of the project, review of existing conditions findings related to the seven key topic areas, and group discussions at small tables. The discussions were oriented around identifying the strengths, issues, and opportunities that exist in the County related to sustainability. Several comments from the meeting include:

- Development may negatively affect the amount of agricultural land that remains in the County.
- More public transit, cycling, and walking options are needed.
- The Lake County Forest Preserve District (LCFPD) and non-profit conservation organizations are strong and effective entities for open space protection.
- There is an opportunity to promote new agricultural uses and urban agriculture.
- Providing information and incentive programs related to energy audits and weatherization of homes would help to reduce energy consumption.
- Solid Waste Agency of Lake County (SWALCO) addresses waste management well in the County through a variety of programs.
- The County has perceived difficulty in attracting new businesses, and there is a mismatch between where people live and where jobs are available.

Municipal Representatives Meeting

To ensure that the Sustainability Chapter represents not only the needs of the County but its member municipalities as well, the County held a meeting with representatives from municipalities on June 13, 2012 at the County's Central Permit Facility in Libertyville. The meeting included a short presentation which provided an overview of the project and review of existing conditions findings. Then a structured group discussion was held related to three major questions:

1. What is your community doing to be sustainable?
2. How can the County help you with your sustainability goals?
3. How should the County implement sustainability?

Lake County municipalities are currently implementing a range of programs to advance sustainability, from implementing composting programs in Highland Park and Deerfield to encouraging green buildings. Many representatives noted the helpfulness of the County with regard to these issues, particularly in developing model renewable energy ordinances and otherwise leading by example. There was shared sentiment that this Chapter would serve as another tool for Lake County communities to use to advance sustainability.

Draft Review Meetings

Residents and stakeholders had the opportunity to review the draft Sustainability Chapter with the County government prior to the formal approval process. Two review meetings were held on June 12, 2014 – one for municipal representatives and one for the general public. During the municipal representatives meeting, the goals, policies, and indicators of the Sustainability Chapter were presented and attendees' questions were answered. Representatives expressed interest in adapting some of the County policies, such as encouraging non-motorized travel and increasing access to parks and open space, to suit their communities at the local level. The public open house meeting was designed for interested parties to drop in at their convenience and learn about the draft Sustainability Chapter by

reading display boards and other materials. Staff members were on hand to talk with meeting attendees and answer questions ranging from water quality to recycling to green jobs.

Demographic Profile

Lake County regularly examines demographic trends occurring within its boundaries to gain insight changes that may impact its communities. Data discussed in this section comes from the 2000 U.S. Census, 2010 U.S. Census (when available), and the 2010 American Community Survey 1-Year Estimates, all collected by the U.S. Census Bureau. Lake County may be characterized as a growing area with significant ethnic and racial shifts taking place and with residents who earn more, on average, than other residents in the region. Lake County's demographic trends are compared with those of the seven-county region at large, yielding the following major findings.

Lake County's population grew 9.2 percent in the last decade. Between 2000-10, Lake County's population increased from 644,354 residents to 703,462 residents. This growth rate is almost three times higher than the growth rate for the region, which increased by 3.5 percent in the last ten years.

The County has experienced significant ethnic and racial demographic shifts. Although white residents continue to make up over 65 percent of its population, the County saw significant increases in Hispanic/Latino and Asian residents in the last decade. The Hispanic/Latino population had the highest increase of any ethnic group, growing by 51 percent from 2000-10 (47,270 people). The Asian population grew by 19,088 people, representing a 76.8 percent increase. These changes were much higher than the regional trends for Hispanic/Latino and Asian population growth. The Black/African American population in Lake County increased about 7.8 percent, while the regional Black/African American population decreased by 4.7 percent. The white population, the only racial group in the County to lose population, saw a slight decrease of three percent.

Lake County's residents earn more income on average than other residents of the region. In 2010, 49.9 percent of Lake County residents reported earning \$75,000, while the regional average share earning the same amount was nine percent less (40.9 percent). In addition, 14.2 percent of Lake County residents were in the lowest income bracket (earning \$25,000 or less), while the regional average was five percent higher (at 19.5 percent).

Table A-1. Population, Households, and Household Size, 2010

	Lake County	Region
Population	703,462	8,431,386
Households	241,712	3,088,156
Persons per household	2.82	2.73

Source: 2010 Census

Table A-2. Population and Change in Population, 2000 and 2010

	Lake County	Region
Population, 2000	644,356	8,146,264
Population, 2010	703,462	8,431,386
Change, 2000-10	59,106	285,122
Change as %, 2000-10	9.2%	3.5%

Source: 2000 and 2010 Census

Table A-3. Household Income, 2010

	Lake County		Region	
	Count	Percent	Count	Percent
Less than \$25,000	33,868	14.2%	594,251	19.5%
\$25,000 to \$49,999	48,172	20.2%	650,102	21.4%
\$50,000 to \$74,999	37,376	15.7%	553,681	18.2%
\$75,000 to \$99,999	33,509	14.1%	414,960	13.6%
\$100,000 to \$149,000	43,085	18.1%	460,697	15.1%
\$150,000 and over	42,053	17.7%	370,397	12.2%
Median Income	\$74,705	100.0%	N/A	100.0%

Source: 2010 ACS 1-year estimates

Table A-4. Race and Ethnicity, 2010

	Lake County		Region	
	Count	Percent	Count	Percent
White	458,701	65.2%	4,486,557	53.2%
Hispanic or Latino*	139,987	19.9%	1,823,609	21.6%
Black or African American	46,989	6.7%	1,465,417	17.4%
Asian	43,954	6.2%	513,694	6.1%
Other**	13,831	2.0%	142,109	1.7%

Source: 2010 Census

* includes Hispanic or Latino residents of any race

** includes American Indian/Alaska Native, Native Hawaiian/Other Pacific Islander, Some Other Race, & Two or More Races

Table A-5. Change in Race and Ethnicity, 2000-2010

	Lake County		Region	
	Change in Population	Percent Change	Change in Population	Percent Change
White	-14,267	-3.0%	-200,702	-4.3%
Hispanic or Latino*	47,271	51.0%	414,407	29.4%
Black or African American	3,409	7.8%	-72,117	-4.7%
Asian	19,088	76.8%	137,701	36.6%
Other**	3,605	35.3%	5,833	4.3%

Source: 2000 and 2010 Census

* includes Hispanic or Latino residents of any race

** includes American Indian/Alaska Native, Native Hawaiian/Other Pacific Islander, Some Other Race, & Two or More Races

Table A-6. Age Cohorts and Median Age, 2010

	Lake County		Region	
	Count	Percent	Count	Percent
Under 19 years	213,592	30.4%	2,346,937	27.8%
20 to 34 years	123,295	17.5%	1,790,049	21.2%
35 to 49 years	158,286	22.5%	1,807,886	21.4%
50 to 64 years	135,196	19.2%	1,534,488	18.2%
65 to 79 years	52,856	7.5%	679,470	8.1%
80 years and over	20,237	2.9%	272,556	3.2%
Median Age (2010)	36.7		N/A	

Source: 2010 Census

Table A-7. Education Levels, 2010

	Lake County		Region	
	Count	Percent	Count	Percent
Population, 25 years and over	449,399	100.0%	5,450,630	100.0%
High school diploma or higher	400,533	89.1%	4,661,868	85.5%
Bachelor's degree or higher	186,696	41.5%	1,899,328	34.8%

Source: 2010 ACS 1-year estimates

Table A-8. Employment Status, 2010

	Lake County		Region	
	Count	Percent	Count	Percent
In labor force	378,680	70.6%	4,429,414	68.3%
Employed	335,244	88.5%	4,034,022	91.1%
Unemployed	43,436	11.5%	395,392	8.9%
Not in labor force	157,848	29.4%	2,051,894	31.7%

Source: 2010 ACS 1-year estimates

B. Land Use and Development

The content of the Land Use and Development section of the Sustainability Chapter is most closely related to the Regional Framework Plan's Chapter 8: Housing, Chapter 9: Land Use, and Chapter 10: Community Character.

Significance

The built environment has a broad impact on the County's overall sustainability. Energy consumption within buildings (i.e. electricity and natural gas use) was responsible for 68.8 percent of the County's greenhouse gas emissions in 2007.¹ Buildings that incorporate green features typically consume less energy, water, and material resources; are increasingly marketable in today's economy, and improve the overall health of inhabitants and the natural environment.

The spatial relationship of buildings and land uses (development patterns) in a community has a profound impact on its livability (ability to attract and retain residents). Development patterns particularly influence transportation options, as the viability of public transit and a walkable environment are dependent upon minimum supportive densities and proximity of land uses. The presence of quality transportation options is critical to livability and is often a determining factor when people choose where to live. Many communities are beginning to stress the importance of compact, walkable, and mixed-use development that supports public transit to improve transportation options and quality of life. Lake County encourages mixed-use development through employment and transit center designations on the Future Land Use Map and through the Planned Unit Development (PUD) process.

Municipalities and the County should encourage compact and walkable development in areas served by infrastructure and services while keeping a focus on preservation of natural resources and agricultural uses where appropriate, particularly in unincorporated areas. This land use strategy is supported by the *Promoting Sustainable Building and Development Regulations* report (2011) and *Regional Framework Plan*², which emphasize that, when possible, future development should occur in areas that are service and infrastructure ready. In their land use decisions, County municipalities have the potential to greatly impact overall sustainability. In addition, Lake County promotes efficient land use with conservation design and low impact development for subdivisions to preserve natural resources for residential development in its unincorporated areas.

Issues & Opportunities

The following key issues and opportunities related to land use and development have been identified through the existing conditions analysis:

- Lake County has jurisdiction over land use and development for unincorporated areas, while municipalities retain control over development that occurs within their boundaries. Since 65 percent of the County is incorporated, development decisions made by municipal governments will continue to broadly impact County sustainability.
- Agricultural uses in the County experienced a decline of 20.7 percent from 2000 to 2007 and are expected to continue to decrease (although the number of small farms is increasing – see Open Space section). At the same time, single family residential uses have increased and are projected

¹ CNT Municipal Energy Profile Project, 2011

² Pol. 4.1.5, Pol. 8.1.1, Pol. 8.6.1, Pol. 9.4.1, Pol. 9.4.2, Pol. 10.2.6, Goal 8.3, Goal 8.4, Goal 8.6, Goal 9.4

to continue to comprise the majority of new development. They are a likely contributor to at least some of the agricultural land consumption.

- Lake County has adopted conservation residential development regulations to provide a way for residential development to occur while still preserving critical natural resources.
- The *Promoting Sustainable Building and Development Practices in Lake County* report presents an opportunity for the County to update various regulations to promote and/or enable sustainable development techniques. Lake County is already home to 67 LEED-registered projects, 29 of which have completed certification.
- Mixed-use, walkable areas in the County are most appropriate in key context areas, such as downtowns, transit areas, and employment centers. The County may wish to revisit the PUD process or create a mixed-use zoning district that further facilitates this type of development in unincorporated areas where appropriate.
- Residential densities appear to support commuter rail in the County, but may not be high enough to make other fixed-route public transportation options (such as frequent bus service, light rail, or rapid transit) feasible in many locations.
- Lake County's share of housing units with two bedrooms or fewer is significantly lower than the regional average. In addition, according to the Center for Neighborhood Technology (CDNT) Housing and Transportation (H+T) Index, Lake County's housing costs are ten percent higher than the regional average. These two figures may point toward an opportunity to encourage smaller footprint housing and affordable housing.

Analysis

Land Use

The most recent countywide land use inventory, performed in 2005, shows that single family residential uses, at 25.5 percent of total land, and public and private open space uses, at 19.2 percent of total land, are the two most prominent land uses in the County (see Table B-1. 2005 Land Use and 2005 Land Use Map). Agricultural uses are also prevalent, at 11.6 percent of total land, although the County experienced a 20.7 percent decrease in agriculturally designated land between 2000 and 2007. Most of this decrease may be attributed to development although some of the land has been protected for conservation and consequently coded as public and private open space despite it still being used for agricultural purposes.³

As noted in Chapter 9, the County is projected to gain 142,122 residents by 2020, resulting in a need for an additional 23,911 acres of residential space.⁴ It should be noted that this projection was based on the economy and data available in 2004 and may not reflect current economic realities. The County's projections for future land use show significant gains in office/research, multifamily residential, retail/commercial, industrial, and single family uses (see 2005 Land Use Map and Future Land Use Map).⁵ Conversely, agricultural uses are expected to decrease almost 44 percent as land turns over for development; utilities, water, and transportation uses are also projected to decrease.

The nearly 130 percent projected increase in multifamily uses should be noted as particularly significant, as this is currently the smallest land use by area in the County. Despite the increase, multifamily housing

³ Caliper, 2005 Land Use Inventory and *Regional Framework Plan* Implementation Report

⁴ RFP, P. 2-14, 9-9

⁵ When applicable, Lake County shows the most intensive future land use from municipal land use plans. As such, many potential land use changes in the RFP may be attributed to municipal planning.

is forecasted to comprise just 3.5 percent of residential uses. Single family residential land area is expected to increase about 52 percent and will continue to be the predominant form of residential development in the County (see Table B-3. Future Residential Uses by Density).

Table B-1. 2005 Land Use

Land Use Category	2005 Land Use	
	Acres	Percent
Single Family Residential	76,882.6	25.5%
Public & Private Open Space	57,668.8	19.2%
Agricultural	35,021.6	11.6%
Transportation	31,945.9	10.6%
Forest & Grassland*	27,956.3	9.3%
Water	21,032.5	7.0%
Wetlands*	16,436.0	5.5%
Government/Institutional	7,930.6	2.6%
Industrial	6,874.2	2.3%
Retail/Commercial	6,317.5	2.1%
Disturbed Land*	4,937.9	1.6%
Utilities/Waste Facilities	4,298.3	1.4%
Office/Research	2,046.2	0.7%
Multifamily Residential	1,865.1	0.6%
Total**	301,233.5	100.0%

*Forest & Grassland, Wetlands, and Disturbed Land were not designated on the Future Land Use Map. All wetlands are protected through the development review process and are either shown as dedicated open space or other land uses. The Forest & Grassland category is designated for future land use primarily as agricultural, open space, or single family uses; resources will be preserved through acquisition or the development review process (UDO 4.2.9 Woodlands & Significant Trees)

**Total acreage for 2005 and future land use are different per the RFP & Caliper reports

Source: Caliper report

Table B-2. Future Land Use (2020)

Land Use Category	Future Land Use		Percent Change from 2005
	Acres	Percent	
Single Family Residential	116,940	38.8%	52.1%
Public & Private Open Space	61,282	20.3%	6.2%
Agricultural	19,695	6.5%	-43.8%
Transportation	31,008	10.8%	-2.9%
Water	18,819	6.2%	-10.5%
Government/Institutional	9,282	3.1%	17.0%
Industrial	11,070	3.7%	61.0%
Retail/Commercial	13,209	4.4%	109.1%
Utilities/Waste Facilities	3,838	1.3%	-10.7%
Office/Research	7,505	2.5%	266.8%
Multifamily Residential	4,285	1.4%	129.7%
Mixed Use	2,438	0.8%	0.8%
Heartland Agreement	1,773	0.6%	0.6%
Total	301,233.5	100.0%	n/a

Source: Regional Framework Plan

Table B-3. Future Residential Uses by Density

Land Use Category	Future Land Use	
	Acres	Percent of Total
Single Family Residential	116,940	96.5%
Single Family Large Lot (>3 acres)	16,286	13.9%
Single Family Medium Lot (1-3 acres)	49,690	42.5%
Single Family Residential (0.25-1 acre)	34,361	29.4%
Single Family Small Lot (<0.25 acre)	16,603	14.2%
Multifamily Residential	4,285	3.5%
Total	121,225	100.0%

Source: Regional Framework Plan

Table B-4. Minimum Residential Densities to Support Transit

Mode	Frequency	Minimum Density (dwelling units/acre)
Local Bus	Demand-response	3.5-6
Local Bus	1 bus / 30 minutes	7
Local Bus	1 bus / 10 minutes	15
Express Bus	1 bus / 20-30 minutes	15
Rapid Transit	Every 5 min. during peak periods	12
Light Rail	Every 5 min. during peak periods	9
Commuter Rail	20 trains / day	1-2

Sources: Pushkarev and Zupan (1977). *Public Transportation and Land Use Policy*. Indiana University Press, Bloomington, IN. and Victoria Transport Policy Institute (2011), *Transit Oriented Development: Using Public Transit to Create More Accessible and Livable Neighborhoods*, accessed at <http://www.vtpi.org/tdm/tdm45.htm>

Supportive Land Uses for Transit

Residential densities play an important role in determining the feasibility of various types of public transportation. Most fixed-route modes of transit⁶ require supportive residential density of greater than seven dwelling units per acre (see Table B-4. Minimum Residential Densities to Support Transit), with the exception of commuter rail, which has a minimum supportive density of one to two dwelling units per acre. Much of the County's residential development patterns meet the minimum density to support commuter rail. However, at a density of one to two dwelling units per acre, user dependence on driving for transportation to the station, as well as the large amount of associated surface parking needed, still pose issues for walkability (see the Transportation and Mobility section for further discussion on mode of access).

With regard to other fixed-route modes of transportation, about 14.2 percent of the County's future single family residential uses are expected to be denser than four dwelling units per acre, with an additional 3.5 percent of development expected for multifamily uses (see Table B-3). This indicates that while most existing and proposed residential densities are sufficient to support commuter rail, other modes of transit may be unfeasible in many places in Lake County.

Per the Future Land Use Map, unincorporated areas in the County are planned for a wide range of land uses, including medium or large lot residential, commercial, office, or industrial. Much of the development in unincorporated areas will occur on farmland that is not well-suited to agricultural uses in the long-term or open space containing natural resources that are of lower priority for preservation.⁷

Conservation Residential Development

To guide the development of its unincorporated areas, the County has adopted provisions in its Unified Development Ordinance (UDO) for conservation residential developments. Conservation developments preserve open space and natural resources, and subsequently are able to retain much of a site's character. The UDO permits conservation development on parcels over five acres in most residential zoning districts. As part of the subdivision process, the County mandates the identification of natural

⁶ Fixed-route service includes all transit modes except demand-response service

⁷ RFP p.9-11 to 9-12, Policy 4.1.5

resources requiring protection and determination of the residential density permitted in the underlying zoning district. Depending on the zoning classification, the availability of sanitary sewer and the mandatory amount of open space, the UDO provides for flexibility in a variety of housing types to achieve the appropriate density. This style of development has been successfully utilized in several places in the County, including The Legacy in Cuba Township, Newport Cove in Antioch Township, Deerpath Farm in Mettawa,⁸ and Prairie Crossing in Grayslake.⁹

Walkability

Walkability refers to the ability to get to destinations on foot. Fostering mixed use, compact, and walkable development increases access to goods, services, and jobs, benefiting both consumers and local businesses; improves public health and encourages social interaction; and helps to lessen dependence on private automobile use, which in turn reduces fuel consumption and pollution. On a countywide scale, walkability may be most prominent within key context areas, such as municipal downtowns and unincorporated hamlets, Metra station areas, and campus style developments. Policy 7.3.5 of this *Plan* emphasizes that future mixed-use development and higher density housing should be located near transportation and employment hubs. It also recommends the development of transit-oriented development (TOD) and employer-oriented development (EOD) plans to guide the revitalization of those areas.

Lake County enables mixed-use development through the PUD process, as outlined in the UDO, which offers opportunities for flexibility in development standards. Facilitating mixed-use development through this process rather than allowing it “by-right” may present a more time-intensive and less predictable environment for developers, which could unintentionally inhibit this type of development. The County’s existing commercial zoning districts (Limited Commercial (LC), Recreational Commercial (RC), General Commercial (GC), and General Office (GO) districts) technically permit “mixed-use” buildings (attached dwellings in conjunction with a nonresidential use). However, the development standards associated with these districts, such as floor area factor and minimum setbacks (see Table B-5. UDO Nonresidential District Density & Dimensional Standards), do not permit compact development located along the sidewalk, which is a key characteristic of walkable areas. The floor area factor for the most intensive commercial district, the Limited Commercial district, results in an effective maximum lot coverage of just 50 percent.¹⁰ To facilitate mixed-use development, it may be appropriate to streamline the PUD process for such development in particular or consider the creation of a new mixed-use zoning district. Another effective County approach may be to continue to focus on walkable zones in incorporated areas and encourage municipalities to develop TOD and EOD plans.

⁸ “Deerpath Farm News.” Deerpath Farm, LLC. Retrieved 6/9/12 from <http://www.deerpathfarm.com/news.html>

⁹ “Prairie Crossing.” Prairie Crossing. Retrieved 6/9/12 from <http://www.prairiecrossing.com/>

¹⁰ The floor area factor is the amount of total developable floor area allowed per acre of site area

Table B-5. Unified Development Ordinance Nonresidential District Density & Dimensional Standards

Zoning District	Floor Area Factor	Minimum Size		Minimum Setbacks[4][5] (feet) (§§7.7.3)			Max. ISR (each lot) (§§7.7.4)	Max Height (feet) (§§7.7.5)
		Area (sq. ft.) (§§7.7.1)	Width (ft.) (§§7.7.2)	Street	Side (min/ total)	Rear		
GO	0.45	40,000	130	50	12	12	0.50	50 [1]
LC [3]	0.50	10,000	50	30	12 [2]	12	0.75	35
RC	0.20	20,000	100	50	10 [2]	10	0.75	35
GC	0.30	10,000	50	30	12 [2]	12	0.70 [6]	35
LI	0.45	40,000	130	50	20	20	0.60 [6]	50 [1]
II	0.45	40,000	130	50	20	20	0.60 [6]	50 [1]
OS	0.07	200,000	300	30	30	30	0.15	35

Source: *Unified Development Ordinance, Table 7.1-4*

Sustainable Development Regulations

In December 2011, the County Board adopted the *Promoting Sustainable Building and Development Practices in Lake County* report, which proposed a variety of ways that the County could incorporate sustainability into its UDO and other ordinances. The report covered many topics, including energy, land use, transportation, green buildings, open space, natural resources, water, and food supply. As related to land use and site development, the report emphasizes mixed-use development in denser and transit-served locations; innovative and alternative parking strategies; sustainable subdivision development; improved street connectivity; and a variety of green building techniques (see Table B-6. Sustainable Practices Report: Land Use & Development Recommendations). The report identifies which specific County regulations either promote or discourage various sustainability-related building and development practices, making it an invaluable guide for measures that the County may take toward greening its regulations.

Table B-6. Sustainable Practices Report: Land Use & Development Recommendations

Recommendation	Pg. #
Incentivize or require mixed-use development in denser and transit-served locations and as part of large PUD & as-of-right projects	17
Consider decreasing the minimum lot area requirement for lots containing an accessory dwelling unit	19
Consider creating a sustainability relief procedure that would allow modification of certain UDO requirements that inhibit infill or redevelopment projects	20
Amend the UDO to provide density incentives and/or design standards for existing/planned transit-served locations	22
Reduce parking requirements for nonresidential developments that use Travel Demand Management strategies	22
Add requirements for stub streets or connectivity index, or encourage connectivity through green subdivision incentive program	25
Require sidewalks and mid-block ped crossings, restrict cul-de-sacs and dead ends, establish shorter block and cul-de-sac length standards, implement traffic calming and complete streets	26
Require connections via streets/paths from residential areas to nearby schools	28
Add bicycle parking requirements or incentivize bicycle parking through offsets in vehicle parking requirements	29
Offer parking incentives for developments that provide priority parking for low-emission and/or fuel-efficient vehicles	30
Expressly allow electric vehicle charging stations in all zoning districts	32
Establish lower minimum ratios for some land uses and lower minimums (or maximums) for uses close to transit	55
Consider incentives to encourage remediation and redevelopment of brownfield sites	61
Revise parking regulations to accommodate reuse and expansion of existing buildings (exemptions for special circumstances)	62

Source: *Sustainable Building and Development Practices Report (2011)*

Housing

Providing a variety of housing options enhances sustainability and livability for several reasons. Having a broad array of housing choices widens the spectrum of potential residents who could choose to locate in the County, thus enhancing diversity and fostering economic development. Providing more compact and smaller housing, such as condos, apartments, and townhomes, opens the door to young families, those of modest means, and seniors hoping to age in place. In addition, smaller footprint housing consumes less energy and fewer resources and helps to support alternative transportation modes and commercial uses.

The *Regional Framework Plan* acknowledges that, at the time that the plan was written, there was a shortage of housing for every price cohort, except the highest end.¹¹ The median housing value increased 39.9 percent from 2000 to the 2010 estimate, from \$191,600 to \$268,000. In addition, 2010 estimate data shows that the County's housing stock is comprised of just 9.8 percent 0-1 bedroom housing units, compared with a regional average of 16.3 percent, and 23.3 percent 2 bedroom housing units, compared with a regional average of 29.0 percent (see Table B-7. Housing Size). Lake County has also seen a trend over the past 30 years of increasing single family housing stock and decreasing multifamily units (see Table B-8. Housing Type). From 1980 to the 2010 estimate, single family units in the County increased by six percent, while the total number of multifamily units decreased by six percent. This information, along with very low vacancy rates, points toward a potential need for affordable and smaller footprint housing types in the County.

Table B-7. Housing Size, 2010 estimate

	0-1 Bedroom		2 Bedrooms		3 Bedrooms	
	Count	Percent	Count	Percent	Count	Percent
Lake County	25,558	9.80%	60,674	23.30%	87,942	33.80%
Chicago region	550,697	16.30%	977,035	29.00%	1,137,893	33.70%
	4 Bedrooms		5 Bedrooms			
	Count	Percent	Count	Percent		
Lake County	69,672	26.80%	16,517	6.30%		
Chicago region	553,450	16.40%	153,430	4.50%		

Source: 2010 American Community Survey 1-Year Estimates, U.S. Census Bureau

¹¹ RFP, p. 8-1

Table B-8. Housing Type (units), 1980-2010 estimate

Housing Types*	1980		1990	
	Count	Percent	Count	Percent
Single Family Total	108,334	74.30%	136,767	76.60%
1-unit, detached	102,585	70.40%	123,630	69.20%
1-unit, attached	5,749	3.90%	13,137	7.40%
Multifamily Total	37,474	25.70%	41,790	23.40%
2 units	9,125	6.30%	7,726	4.30%
3 or 4 units	7,274	5.00%	7,061	4.00%
5+ units	21,075	14.50%	27,003	15.10%
Total	145,808	100.00%	178,557	100.00%
Housing Types*	2000		2010 Estimate	
	Count	Percent	Count	Percent
Single Family Total	175,765	79.30%	204,218	78.40%
1-unit, detached	155,336	70.10%	175,111	67.30%
1-unit, attached	20,429	9.20%	29,107	11.20%
Multifamily Total	45,789	20.70%	51,009	19.60%
2 units	7,268	3.30%	7,520	2.90%
3 or 4 units	7,645	3.50%	7,250	2.80%
5+ units	30,876	13.90%	36,239	13.90%
Total	221,554	100.00%	260,363	100.00%

*Excludes mobile home, trailer, boat, RV, van, etc.

Source: Regional Framework Plan; 2010 American Community Survey 1-Year Estimates, U.S. Census Bureau

Table B-9. Average Housing & Transportation Costs as a Percentage of Income

County	Transportation Cost	Housing Cost	Housing & Transportation Cost
Cook	17.7%	26.1%	43.8%
DuPage	20.5%	34.5%	55.0%
Kane	22.0%	30.4%	52.4%
Lake	21.7%	38.0%	59.7%
McHenry	22.9%	32.9%	55.8%
Will	22.4%	30.3%	52.7%
Chicago region	19.1%	28.4%	47.5%

Source: Center for Neighborhood Technology, 2011

CNT developed the H+ T Index to evaluate community affordability by considering both housing and transportation costs. The H+T Index rates an area as affordable if the area's combined average housing and transportation costs comprise less than 45 percent of household income (HHI). Of the 45 percent total, housing costs that comprise 30 percent or less of HHI and transportation costs that comprise 15 percent or less are considered affordable. According to the H+T Index, the cost of transportation for the average Lake County household comprises 21.7 percent of the region's median HHI, while housing costs are responsible for around 38 percent (see Table B-9. Average Housing & Transportation Costs as a Percentage of Income). The County's H+T Index indicates that housing and transportation costs in Lake County comprise over six percentage points more of median HHI than the regional average. Most of the difference can be attributed to the County's housing costs, which comprise ten percentage points more of the median HHI in Lake County than the average for the Chicago region.

However, housing value, stock, and affordability vary greatly from one community to another in the County. In general, the southern third of the County has the highest housing values for single-family units, while the northeastern lakefront communities have the lowest housing values (with another low value area near the intersection of IL-120 and IL-83) (see *Regional Framework Plan*, Figure 8.6). The County has recognized the need for more affordable housing, and many municipalities have taken steps toward providing more options as well. In 2004, the Illinois Affordable Housing Planning and Appeal Act went into effect, and required counties and municipalities to adopt affordable housing plans if ten percent or less of the housing was classified as un-affordable. While Lake County at large is exempt because it meets the threshold of affordable units, 20 County municipalities were considered non-exempt as of 2011. The majority of these municipalities have adopted affordable housing plans,¹² which include identification of properties appropriate for affordable housing; incentives to attract affordable housing to their jurisdictions; and a goal for a minimum of 15 percent of all new development or redevelopment to qualify as affordable, or a minimum increase of three percentage points in the municipality's affordable units, or a minimum of ten percent of all units classified as affordable.¹³

Brownfields

The federal government identifies highly contaminated properties that have large cleanup costs associated with them as "Superfund sites," while less contaminated properties are known as "brownfields."¹⁴ These sites pose potential barriers to redevelopment due to environmental and/or financial concerns associated with cleaning up the sites. There are a number of contaminated commercial and industrial sites in the County, and five identified Superfund sites, which include: the H.O.D. Landfill (near Antioch); Yeoman Creek Landfill (Waukegan); Johns-Manville site (Waukegan); Outboard Marine Corporation property (Waukegan); and Wauconda Sand and Gravel site (Wauconda). These five sites have all undergone partial or complete remediation.¹⁵

Brownfield sites are broadly defined as sites with either the presence or potential presence of a hazardous substance, pollutant, or contaminant and, as such, are much more numerous.¹⁶ Such sites are not formally inventoried but do require cleanup prior to redevelopment. The extent of cleanup may be

¹² "Affordable Housing Planning and Appeal Act (AHPAA)." Illinois Housing Development Authority. Retrieved 6/8/12 from <http://www.ihda.org/government/AHPAA.htm>

¹³ RFP, p. 8-18.

¹⁴ RFP, p. 6-15.

¹⁵ U.S. Environmental Protection Agency. "Region 5 Superfund: NPL Fact Sheets for Illinois." Accessed 4/19/12. See: <http://www.epa.gov/region5/superfund/npl/illinois/index.html>

¹⁶ RFP, p.6-17.

contingent upon the proposed new use(s) of the property in question. There are many federal, state, and local sources of funding to perform remediation activities. From 2000 to 2010, Lake County had an active brownfield fund, which had a limited effectiveness.

Green Building

A “green building,” also known as a sustainable or high performance building, is built to be environmentally responsible and resource efficient throughout its life-cycle, including siting, design, construction, operations, maintenance, renovations, and deconstruction.¹⁷ Lake County has worked to promote the goals of sustainable building and development through its *Strategic Plan* and, subsequently, the *Strategy for a Sustainable Lake County*¹⁸ and *Promoting Sustainable Building and Development Practices in Lake County*¹⁹ documents. In particular, *Sustainable Building and Development Practices* contains detailed guidance to remove regulatory barriers, provide incentives, and encourage various sustainable practices, and offers a number of sample ordinances to guide regulatory revisions. Table B-10 shows potential incentives for several green development practices that may be appropriate opportunities to consider.

The *Sustainable Building and Development Practices* report identifies numerous strategies to increase building performance through retrofits and renovations, including:

- Renewable energy: solar collectors and panels, wind energy, and geothermal energy
- Building orientation: passive solar through building orientation, solar shading and light shelves
- Urban heat island solutions: cool roofs and pavement and green roofs
- Energy efficiency measures: exterior insulation, energy-efficient outdoor lighting

The Alternative Energy Task Force (AETF) of Lake County Communities researched and reported on the potential for permitting solar, wind and geothermal energy systems in the County and created model renewable energy ordinances. As a result of their these ordinances have been adopted by a number of County municipalities (see Energy & Waste section for more information).

¹⁷ U.S. Environmental Protection Agency. “Definition of Green Building.” Accessed 6/10/2012. See: <http://www.epa.gov/greenbuilding/pubs/about.htm>

¹⁸ Lake County Board, *Strategy for a Sustainable Lake County*, 2009

¹⁹ Lake County Board, *Promoting Sustainable Building and Development Practices in Lake County*, December, 2011

Table B-10. Potential Incentives for Green Development Practices

Development Practice	Increased Density/Floor Area	Reduced Building Setbacks	Increased Building Height	Reduced Parking Ratios	Expedited Review Fees	Expedited Approval/Processing
Cool Roofs and Pavements (p. 12)	✓		✓	✓	✓	✓
Infill Development (p. 20)				✓	✓	✓
Transit-Oriented Development (p.21)	✓	✓	✓	✓	✓	✓
Travel Demand Management (p. 22)				✓	✓	✓
Transit-Supportive Development (p.23)		✓		✓	✓	✓
Connectivity (p. 24)		✓			✓	✓
Walkability (p.26)		✓			✓	✓
Tree Planting and Preservation (p. 37)		✓		✓	✓	✓
Conservation Subdivisions (p.38)					✓	✓
Low Water Use Landscaping (p. 43)					✓	✓
Efficient Irrigation Systems (p. 44)					✓	✓
Turf Area Management (p. 46)					✓	✓
Bioretention (p. 51)					✓	✓
Green Roofs (p. 53)	✓	✓	✓		✓	✓
Brownfield Sites (p. 61)	✓	✓	✓	✓	✓	✓
Building Reuse (p. 62)	✓			✓	✓	✓

Source: *Promoting Sustainable Building and Development Practices in Lake County (December 2011)*, p. 91

In 2010, Lake County opened its new Central Permit Facility in Libertyville, a green building with several innovative features. The building has a high efficiency HVAC system for heating and cooling, vegetated green roof, and demonstration rain gardens and bioswales, and uses renewable materials with low volatile organic compounds (VOC) in its interiors. The Central Permit Facility serves as an example of Lake County's commitment to green building and sustainable practices and also as a demonstration project for developers who visit to apply for building and development permits.

The U.S. Green Building Council's LEED (Leadership in Energy and Environmental Design) rating systems provide a series of criteria for assessing building performance. LEED certification provides third-party verification and can be performed on a wide array of building types. Lake County is home to 67 LEED-registered projects, 29 of which have completed certification.²⁰ LEED-certified projects in Lake County include (see appendix for full list):

- Great Lakes Camp Porter Barracks (LEED for New Construction, Silver)
- Lake Bluff Elementary School (LEED for Schools, Silver)
- Abbott Laboratories (LEED for Existing Buildings, Operations and Maintenance, Gold)
- Grainger Headquarters (LEED for Existing Buildings, Operations and Maintenance, Gold)
- Lincolnshire Office Center (LEED for Core and Shell, Gold)

Adaptive Reuse and Historic Preservation

²⁰ U.S. Green Building Council. "LEED Projects & Case Studies Directory." Available from: <http://www.usgbc.org/LEED/Project/RegisteredProjectList.aspx> Accessed 6/10/2012.

Although many green building guides focus on the techniques and technologies that can be implemented in new high performance buildings, adaptive reuse presents an opportunity to preserve existing buildings while retaining greenfields and open spaces. Existing development has inherent “embodied energy” in the form of infrastructure and building materials. The *Sustainable Building and Development Practices* report supports adaptive reuse and suggests the revision of parking requirements to accommodate the innovative reuse of existing buildings. The report also notes that existing nonconformity regulations allow a fair amount of flexibility with regard to reuse, rehabilitation, and expansion of nonconforming structures.²¹

Often, strategic reuse and redevelopment have the dual benefit of preserving historic sites and places. According to the National Park Service’s National Register of Historic Places, there are currently 90 historic places in Lake County, including 21 historic districts.^{22,23} Many of the historic districts are clustered within lakefront communities. As noted in the *Regional Framework Plan*, many incentive programs exist at the state and federal levels to encourage historic preservation.²⁴ For example, the Illinois Historic Preservation Agency is offering a property tax freeze to owner-occupants of historic residences who rehabilitate their homes.²⁵

Goal and Policies

Goal: Promote sustainable buildings and development.

Policy 1: Continue to assess and revise development regulations to protect natural resources and encourage sustainable development.

[Ref.: Goal 9.1, Pol. 6.2.2, Pol. 10.2.4, Pol. 4.10.1, Pol. 10.2.7, Pol. 10.3.1, Pol. 7.2.1]

Action 1: Update the County’s development regulations per the recommendations made in this and other *Plan* chapters, the *Promoting Sustainable Building and Development Practices* report, and other County documents.

Action 2: Continue to regularly evaluate and amend County regulations to promote sustainable practices in the future.

Policy 2: Incentivize high impact green building practices.

[Ref.: *Promoting Sustainable Building and Development Practices* report]

Action 1: Using the “*Promoting Sustainable Building and Development Practices*” report as a guide, develop incentives for high impact green building techniques. This action step should be pursued in conjunction with the update of the County’s development regulations (see Policy 1 above).

²¹ *Promoting Sustainable Building and Development Practices* report, p. 62

²² U.S. Dept of the Interior National Parks Service, “National Register of Historic Places Download Center.” Accessed 6/10/2012 from <http://nrhp.focus.nps.gov/natreg/docs/Download.html#simplified/>

²³ “Historic Architectural Resources Geographic Information System.” Illinois Historic Preservation Agency. Retrieved 7/18/12 from <http://gis.hpa.state.il.us/hargis/>

²⁴ RFP, p.10-4

²⁵ <http://www.lakecountyil.gov/Assessor/PreferentialAssessments/Pages/CertificateofRehabilitation.aspx>

Policy 3: When possible, future development, especially higher-intensity development or Transit-Oriented Development (TOD), should occur in areas that have existing or planned services and infrastructure.

[Ref.: Pol. 4.1.5, Pol. 7.1.2, Pol. 8.1.1, Pol. 8.6.1, Pol. 9.4.1, Pol. 9.4.2, Pol. 10.2.6, Pol. 10.5.4, Goal 8.3, Goal 8.4, Goal 8.6, Goal 9.4]

Action 1: Review zoning maps to determine where higher-intensity uses are currently permitted and review potential areas where such uses should be expanded, such as in transit and employment centers or along regional transportation corridors. Ensure that mixed-use development and a variety of housing types may be built within those areas.

Action 2: Streamline the County's PUD process for TOD and/or explore creating a distinct TOD/mixed-use zoning district to be applied within identified transit and employment centers.

Action 3: Support municipal efforts to undertake TOD planning and implementation as needed.

Action 4: Encourage municipalities to create mixed-use zoning districts when applicable.

Policy 4: Continue to explore additional incentives for the use of conservation residential development standards, especially in areas that have significant natural resources or a need for additional open space.

[Ref.: Pol. 4.2.4, Pol. 5.3.2, Pol. 8.6.4, Pol. 9.2.4, Pol. 10.3.4]

Action 1: Determine areas of need for additional open space in the unincorporated County (see Open Space section of this Chapter).

Action 2: During the initial stages of the development review process, promote the use of conservation residential development techniques in unincorporated areas, where natural resources are located or a need for additional open space exists.

Action 3: Work with the developer community to identify and assess additional incentives for the use of conservation design.

Policy 5: Study and consider adoption of standards and incentives for non-residential conservation development best practices.

[Ref.: Pol. 4.2.4, Pol. 5.3.2, Pol. 9.2.4, Pol. 10.3.4]

Action 1: Identify economically feasible standards and best practices for conservation non-residential development.

Action 2: Identify incentives to promote the use of conservation non-residential development best practices during the development review process.

Policy 6: Encourage the rehabilitation and redevelopment of brownfields to create environmentally and economically viable areas.

[Ref.: Goal 6.5, Pol. 6.5.1, Pol. 6.5.2, Pol. 6.5.4]

Action 1: Refer municipalities, developers, and property owners to informational resources and encourage them to apply for [grants](#) related to the assessment and rehabilitation of brownfields.

Action 2: Review the zoning districts and associated permitted uses for known brownfields areas to ensure that economically viable uses are allowed.

Policy 7: Encourage the preservation and/or adaptive reuse of existing buildings, especially those that are culturally or historically significant.

[Ref.: Goal 6.7, Policy 6.3.1, Policy 6.7.1]

Action 1: Refer local governments, property owners, and investors to historic preservation programs and grants.

Action 2: Review development regulations to ensure adequate flexibility in permitted uses and parking requirements that will accommodate reuse and expansion of existing buildings.

Indicators

While the policies in this Chapter will be implemented on an ongoing basis, each indicator will be monitored on an annual basis and evaluated every five years. “Lake County Indicators” include indicators that are within the County government’s purview, while “Community Indicators” relate to activities within the County at large.

Lake County Indicators:

Indicator 1: Lake County development regulations will be revised to include sustainable provisions per the recommendations of all pertinent existing County documents by 2016. (PBD)

Community Indicators:

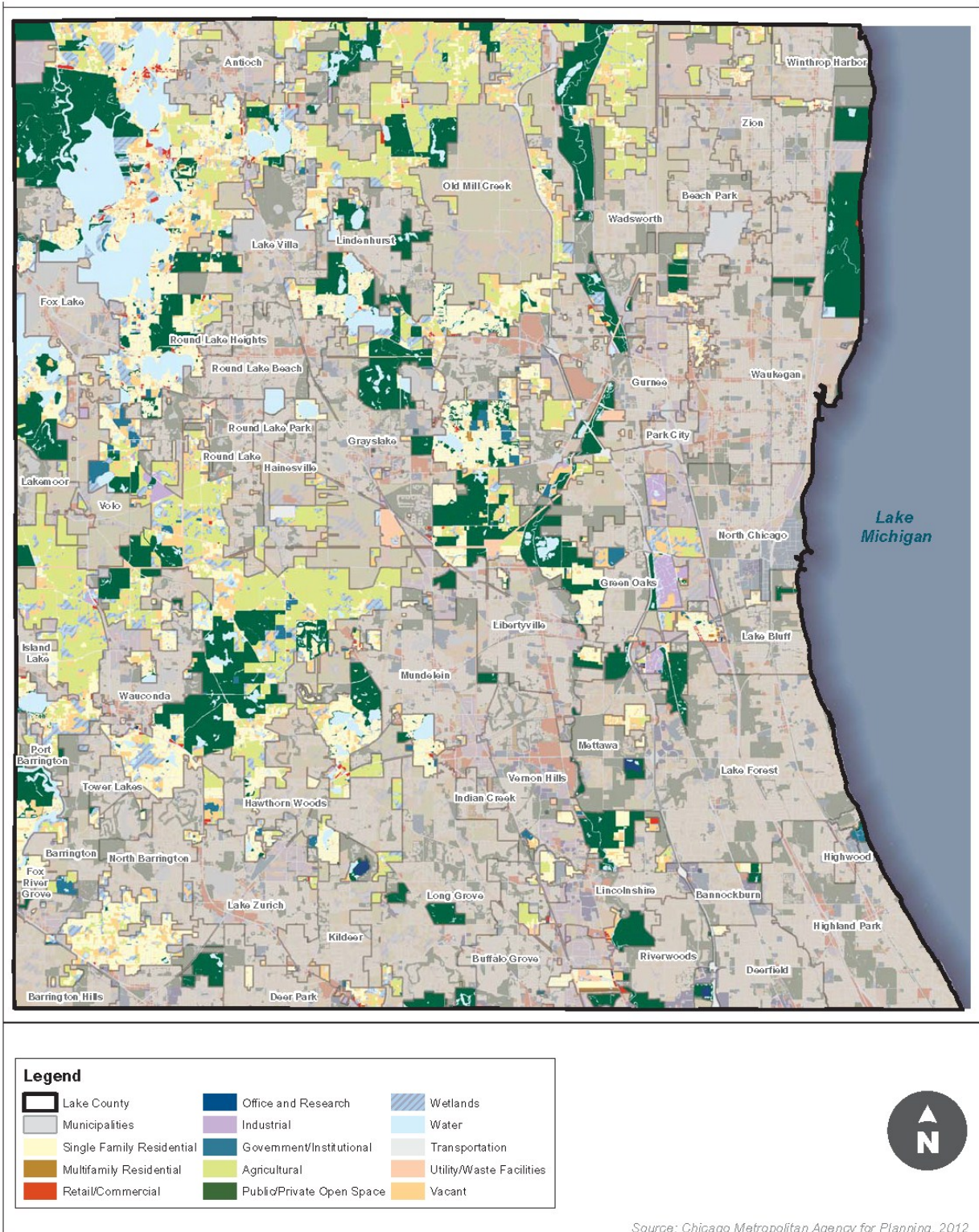
Indicator 1: The number of new residential developments utilizing conservation design principles in areas with significant natural resources will increase by 2018. (PBD)

Indicator 2: The annual number of green building applications will increase by 2018. (PBD)

Implementation Approach

Policy	Inter-governmental	County Departments and Agencies	Non-County Agencies
1 Continue to assess and revise development regulations to protect natural resources and encourage sustainable development.		PB&D, SMC, LCHD, LCPW, LCDOT	
2 Incentivize high impact green building practices.		PB&D	
3 When possible, future development, especially higher-intensity development or Transit-Oriented Development (TOD), will occur in areas that have existing or planned services and infrastructure.		PB&D, LCDOT	RTA, Metra
4 Continue to explore additional incentives for the use of conservation residential development standards, especially in areas that have significant natural resources or a need for additional open space.		PB&D	
5 Study and consider adoption of standards and incentives for non-residential conservation development best practices.		PB&D	
6 Encourage the rehabilitation and redevelopment of brownfields to create environmentally and economically viable areas.		PB&D	
7 Encourage the preservation and/or adaptive reuse of existing buildings, especially those that are culturally or historically significant.		PB&D	

Existing Land Use (2005, RFP)



Future Land Use (2005, RFP)

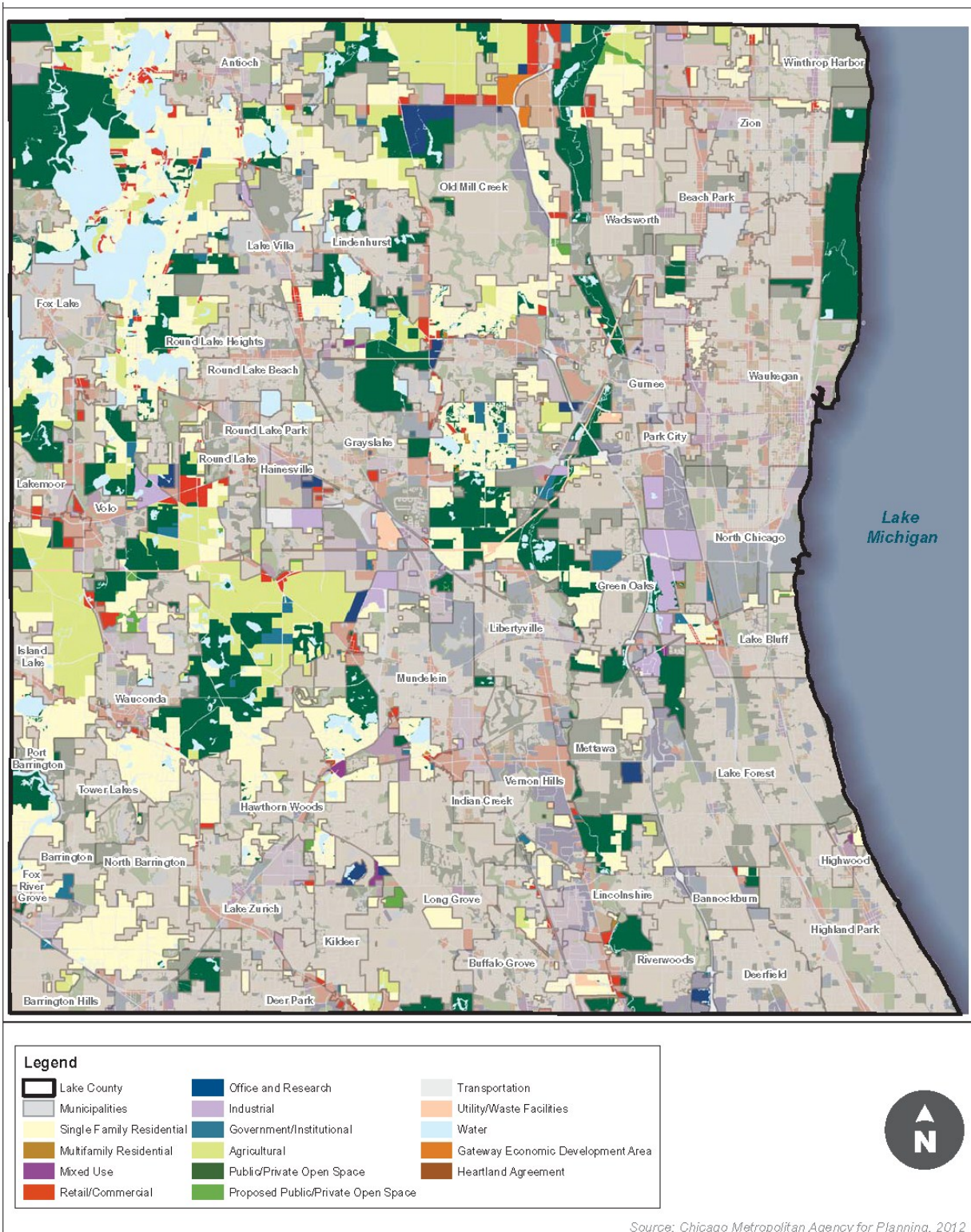
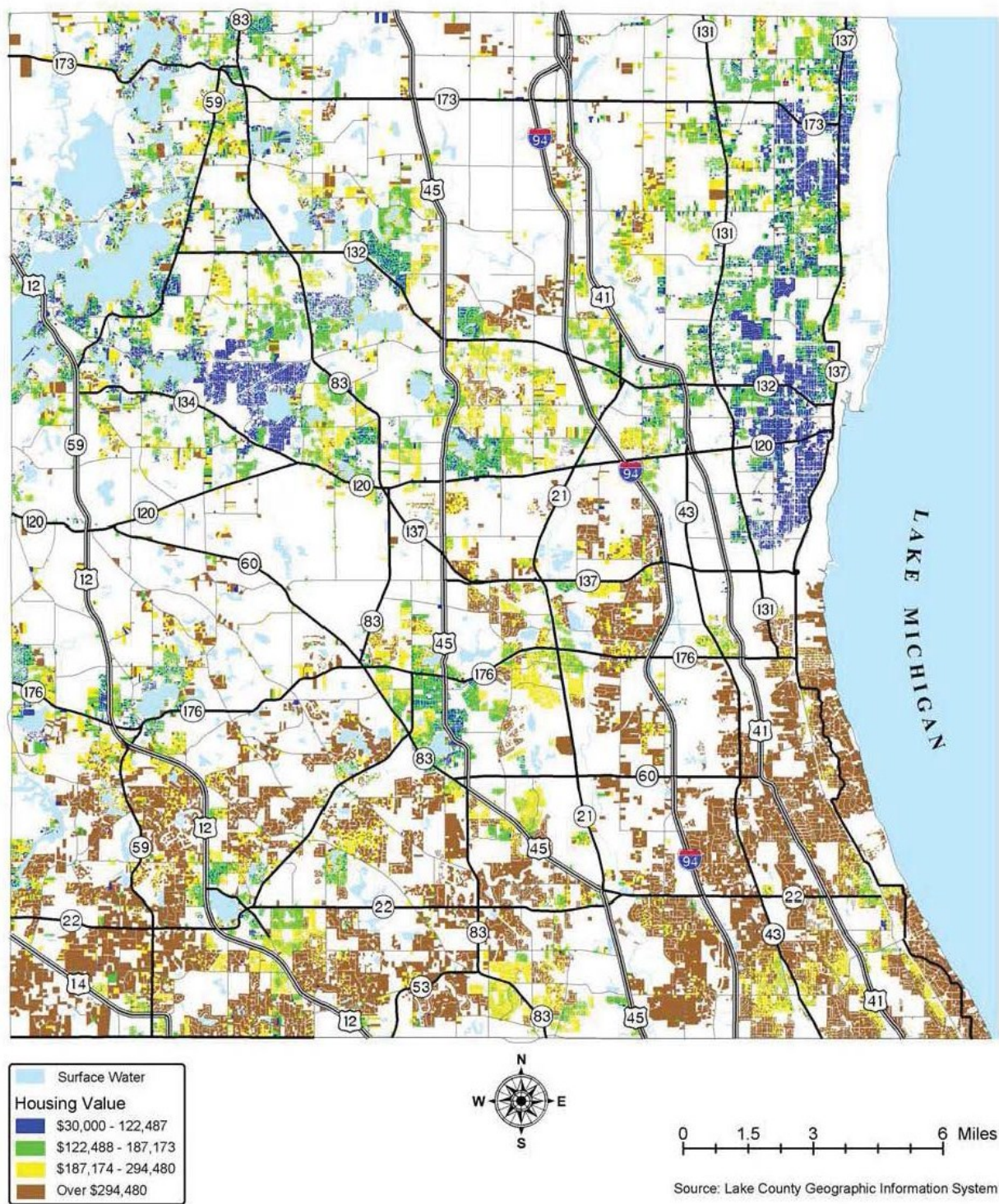


Figure 8.6 (from RFP). Housing Value for Single-Family Units (2001 EAV)



C. Transportation & Mobility

The content of the Transportation and Mobility section of the Sustainability Chapter is most closely related to Regional Framework Plan Chapter 7: Transportation.

Significance

Lake County's transportation system is vital to its sustainability and continued economic prosperity. The transportation network in the County is comprised of its roads, sidewalks, trails, railways, bikeways, and public transportation amenities. While the County has many transportation assets, issues such as traffic congestion, pollution and emissions associated with the use of private automobiles and freight, and rising transportation costs pose potential obstacles to a sustainable and economically competitive future.

Data shows that County residents are driving more than the region's average resident. The average County household drove almost 61 miles per day in 2007 while the average household in the region drove approximately 13 miles less on a daily basis.²⁶ Private vehicle travel has a corollary impact on the greenhouse gas emissions produced by the transportation sector. In 2007, the transportation sector was responsible for over a quarter of the County's emissions. In addition, residents in Lake County spend, on average, about 21.7 percent of their income on transportation, while the regional average is 19.1 percent. According to CNT's H+T Index, transportation costs should represent about 15 percent of household income in an affordable community.²⁷ Much of this increased travel time and cost is likely associated with County residents' accessibility to jobs in the region (see Table C-1. Accessibility to Regional Jobs). Just over seven percent of the region's jobs are accessible within a 45-minute drive, compared with an average for the Chicago region of almost 16 percent; about 9.5 percent of the region's jobs are accessible by transit within a 75-minute commute, compared with a regional average of almost 21 percent. Since Lake County has a somewhat limited ability to improve residents' access to regional jobs, reducing private vehicle use by providing a variety of viable transportation options is an even more critical component of a livable and sustainable County.

Table C-1. Accessibility to Regional Jobs

	Cook County	DuPage County	Kane County	Kendall County	Lake County	McHenry County	Will County	Chicago Region
Regional Jobs Accessible by Automobile (commute time of 45 minutes or less)	37.10%	31.30%	8.30%	4.10%	8.80%	3.90%	9.40%	29.10%
Regional Jobs Accessible by Transit (commute time of 75 minutes or less)	38.10%	26.40%	10.70%	9.30%	12.10%	5.20%	9.50%	29.70%

Source: Chicago Metropolitan Agency for Planning, weighted travel model for roadway and public transportation

²⁶ CNT MEPP

²⁷ CNT H+T Index

Lake County is in a unique position to effect change related to transportation issues, as the Lake County Division of Transportation (LCDOT) has jurisdiction over nearly 300 miles of roads within County boundaries. In 2010, LCDOT adopted its *Policy on Infrastructure Guidelines for Non-Motorized Travel Investments* (“Non-Motorized Travel Policy”), which sets forth a standard for County roadway improvements “to provide appropriate accommodation for vehicles, pedestrians, bicyclists, transit users, and persons of all abilities.”²⁸ The Policy embodies a sustainable approach to transportation known as “Complete Streets,” which focuses on the needs of all users – pedestrians, bicyclists, transit users, and automobile drivers – in designing transportation facilities.

Issues & Opportunities

The following key issues and opportunities related to transportation and mobility have been identified through the existing conditions analysis:

- The Lake County Division of Transportation (LCDOT) manages and maintains almost 300 miles of road infrastructure, and the recent adoption of its Non-Motorized Travel Policy presents an opportunity to implement Complete Streets in the County.
- Municipalities manage almost 60 percent of the County’s road infrastructure and have great potential to impact the availability of alternative and non-motorized transportation modes.
- The IL 53/120 Tollway project has the potential to alleviate congestion and improve accessibility in the County but the mitigation of negative environmental impacts and implications for greenfield development in the western County should continue to be carefully assessed.
- Private automobile use remains the primary mode of transportation for residents of Lake County. In 2007, the average Lake County household drove about 60.8 miles per day versus a regional average of around 47.8 miles per day.
- County residents use public transportation at a slightly lower rate than the collar-county average (3.8 percent versus 4.4 percent of work trips). In addition, the number of residents who walk to work is higher than the collar-county average (2.8 percent versus 1.7 percent).
- The three Metra lines that serve Lake County have generally seen slow but steady ridership increases over the past three decades, and ridership has recently been climbing on two of Metra’s three lines that service Lake County (North Central Service and Milwaukee District North lines).
- One-third of the County’s Metra station areas either are currently undertaking or have already completed TOD plans. The two Metra station areas in unincorporated County (Long Lake and Prairie View) present opportunities for transit-oriented development through the PUD process or a new mixed-use zoning district.
- Within Metra station areas, multifamily uses are expected to see an increase of 126 percent, per future land use projections, indicating a shift toward supportive residential densities adjacent to station areas. However, retail/commercial and office/research uses are projected to decrease.
- In the past five years, Pace ridership on routes that serve the County has increased about 9.4 percent, with 18 of the County’s 29 routes seeing increases in ridership. The Transportation Management Association of Lake Cook, in conjunction with Pace and Metra, has implemented 12 shuttle bugs (10 of which run in Lake County) that transport employees from the Metra to their place of employment. However, half of these shuttle bug routes saw ridership declines from 2007-2012.

²⁸ *Policy on Infrastructure Guidelines for Non-Motorized Travel Investments*. Lake County Division of Transportation, 2010. Retrieved 6/29/12 from <http://www.lakecountyil.gov/Transportation/Publications/Documents/Nonmotorized%20Policy%20Guidelines.pdf>

- Pace-supported Dial-a-Ride and local jurisdiction/non-profit transportation provide additional services for residents in need.
- The County is well served by almost 500 miles of bikeways, including 130 miles of trails managed by the Forest Preserve District and over 50 miles managed by LCDOT.
- On-road bicycling facilities, such as designated bike lanes and bicycle-friendly paved shoulders, are gaining in popularity but are not as prevalent as off-road facilities within the County. However, a lack of complete sidewalk and bikeway amenities creates unsafe pedestrian conditions and leads to additional unnecessary automobile trips.

Analysis

Road Infrastructure

Lake County's road infrastructure spans nearly 2,700 miles and is managed at the state, county, township, and municipal levels (see Figure C-1. Transportation Facilities). The Illinois Department of Transportation (IDOT) oversees 330 miles of state highways in Lake County.²⁹ The Tri-State Tollway, or I-94, is the County's only interstate highway and is managed by the Illinois Tollway, which constructs, maintains, and operates all tollways in northern Illinois.³⁰ The Lake County Division of Transportation (LCDOT) manages the County highway system, which is comprised of about 300 miles of arterial and collector roads, 162 signalized intersections, and 35 bridges. There are also over 430 miles of township roads and streets, managed by elected township highway commissioners.

While the State, County, and townships play a critical role in Lake County's road infrastructure, almost 60 percent of County road mileage is constructed, maintained, and managed by its municipalities.³¹ Municipal streets are located within the boundaries of a municipality and provide access to community attractions, shopping areas, employment centers, neighborhoods, and subdivisions. In their management and design of roadways, municipalities have a significant impact on the extent to which Complete Streets exist in the County.

Major Capital Projects

Several capital projects related to transportation are currently underway in Lake County. In 2009, an intergovernmental group, including Lake County and 11 municipalities, developed the Unified Vision for the Route 120 Bypass. The project would involve the creation of a new tollway facility through central Lake County via an extension of IL Route 53 and bypass of Route 120. This proposed project – called the IL 53/120 Tollway project – would extend north for 12.5 miles from the terminus of IL-53 at Lake Cook Road to just south of IL-120, with a combination of a new Route 120 bypass and improvements to the existing Route 120 between US-41 on the east and US-12 on the west.

Although the project in varying forms has been under consideration in the County since the 1960s, renewed interest in the project was spurred by support voiced in GO TO 2040, the region's long-range comprehensive plan. The Corridor is one of only five new major capital projects included in the GO TO 2040 plan and was supported due to its potential to improve mobility and accessibility in highly congested portions of the County. GO TO 2040 emphasized that the project should be designed to minimize negative impacts on natural resources and preserve the character of adjacent communities.

²⁹ "Illinois Highway and Street Mileage Statistics 2011." Illinois Department of Transportation. Retrieved 7/20/12 from http://www.dot.state.il.us/travelstats/2011_ILHS.pdf

³⁰ (LCDOT, 2012)

³¹ (LCDOT, 2012)

A Blue Ribbon Advisory Council was formed by the Tollway in 2011 to develop a consensus on whether the facility should move forward, as well as the configuration, design, and financing of the project. In May 2012, the Council approved a resolution in support of a four-lane, limited access tolled parkway with a 45 mile-per-hour speed limit. In addition to this small footprint and moderate speed boulevard, the plan includes numerous innovative features to preserve community character and support environmental mitigation, such as depressed sections or earthen berms, stormwater treatment features, and ongoing lighting, deicing, and maintenance standards.³²

Lake County PASSAGE

The application of Intelligent Transportation System (ITS) technology offers a complimentary approach to system expansion to help alleviate congestion and reduce the environmental impacts of travel. The Lake County Division of Transportation has pursued this strategy and developed the Lake County PASSAGE system which offers a variety of information tools and operational improvements to the traveling public and makes the existing travel network in Lake County operate more efficiently. This has the intended effect of reducing travel delays for motorists and helps to reduce the associated negative environmental impacts of traffic congestion including degraded air quality and increased carbon emissions.

Complete Streets

The State of Illinois passed Complete Streets legislation in 2007, which requires bicycle and pedestrian facilities to receive full consideration in the planning and development of state transportation facilities.³³ Complete Streets strive to address the needs of all users – motorists, cyclists, transit users, and pedestrians – in designing and constructing roadways. IDOT followed this legislation in June 2010 with a memorandum that sets specific criteria for considering bicycle and pedestrian accommodations, which must be used for all state roadway improvement projects.³⁴ In December 2010, LCDOT adopted its *Policy on Infrastructure Guidelines for Non-Motorized Travel Investments* (“Non-Motorized Travel Policy”), which sets forth a Complete Streets mandate for County roadway improvements “to provide appropriate accommodation for vehicles, pedestrians, bicyclists, transit users, and persons of all abilities.”³⁵ This is particularly important in encouraging the use of alternative forms of transportation which are less energy-intensive, produce fewer emissions, and add to quality of life and livability.

Private Vehicular Transportation

In the Chicago region, private automobile use remains the predominant transportation choice for the majority of trips. Lake County is no exception; in 2010, over 83 percent of residents drove alone for their work commutes, compared with a regional average of 69.4 percent (see Table C-2. Mode Share).³⁶ In addition, County residents utilized transit for 3.8 percent of work trips, compared with an average of 4.4 percent across the region’s collar counties. While dependence on private vehicle use is linked with suburban and rural land use patterns, this travel mode has several negative environmental impacts.

³² <http://www.illinoistollway.com/construction-and-planning/community-outreach/illinois-route-53-120-blue-ribbon-advisory-council/>

³³ “Policy on Infrastructure Guidelines for Non-motorized Travel Investments.”

³⁴ (LCDOT, 2010)

³⁵ *Policy on Infrastructure Guidelines for Non-Motorized Travel Investments*. Lake County Division of Transportation, 2010. Retrieved 6/29/12 from <http://www.lakecountyl.gov/Transportation/Publications/Documents/Nonmotorized%20Policy%20Guidlines.pdf>

³⁶ 2010 American Community Survey 1-Year Estimates, U.S. Census Bureau.

Combustion of fuel in vehicles leads to depletion of petroleum resources, degraded air quality, and increased carbon emissions. In 2007, the transportation sector was responsible for over a quarter of Lake County's greenhouse gas emissions, making it the second largest contributor to emissions in the County, behind electricity usage (see Table C-3. Greenhouse Gas Emissions by Sector). In addition, the cost of gas has been rising rapidly in recent years, making driving an increasingly costly venture. One study estimates the annual savings of commuting by public transportation instead of by car at over \$11,000 for the Chicago region.³⁷

Looking at a community's annual vehicle miles traveled (VMT) provides a metric to assess how much its residents are traveling via private vehicle. In 2007, the County's total household VMT was 5,223,678,753 miles. The average Lake County household drove approximately 22,197 miles – about 60.8 miles per day – via private vehicle, while the average household in the region drove about 17,443 miles (or around 47.8 miles) per day.³⁸ This indicates that households in Lake County are spending more time traveling via private vehicle than households in many other parts of the region.

Table C-2. Mode Share (percent of work trips), 2010 estimates

Mode*	Lake County	Lake County, Percent	Chicago region	Chicago region, Percent
Drive alone	257,313	83.4%	2,667,539	69.4%
Carpool	27,051	8.8%	333,479	8.7%
Transit	13,196	4.3%	470,499	12.2%
Walk	5,608	1.8%	123,590	3.2%
Other	5,278	1.7%	66,507	1.7%
Total workers	308,446	100.0%	3,661,614	100.0%

*Note: data excludes those who worked from home

Source: 2010 American Community Survey 1-year estimates, U.S. Census Bureau

Table C-3. Greenhouse Gas Emissions by Sector (percent of total emissions), 2007

Sector	Cook	DuPage	Kane	Kendall	Lake	McHenry	Will	Region
Electricity	45.2%	50.8%	46.5%	43.1%	47.2%	45.7%	44.5%	46.1%
Natural Gas	24.6%	18.7%	22.5%	19.2%	21.6%	21.7%	24.6%	23.3%
Transportation	21.0%	26.2%	24.5%	30.0%	25.4%	25.1%	25.5%	23.0%
Solid Waste	4.7%	0.7%	2.1%	3.1%	1.7%	2.7%	1.4%	3.4%
Waste Water	0.9%	0.7%	0.8%	0.8%	0.9%	0.9%	0.8%	0.8%
Product Use	3.6%	3.0%	3.5%	3.8%	3.3%	3.8%	3.2%	3.4%

Source: Center for Neighborhood Technology Municipal Energy Profile Project

Public Transportation

One of Lake County's transportation goals is to provide transportation options that respond to the needs of all residents. Public transportation provides an affordable and environmentally friendly alternative to private vehicle use, and caters specifically to the numerous County residents who cannot or choose not to drive, including youths, senior citizens, people with disabilities, and low-income residents. Public

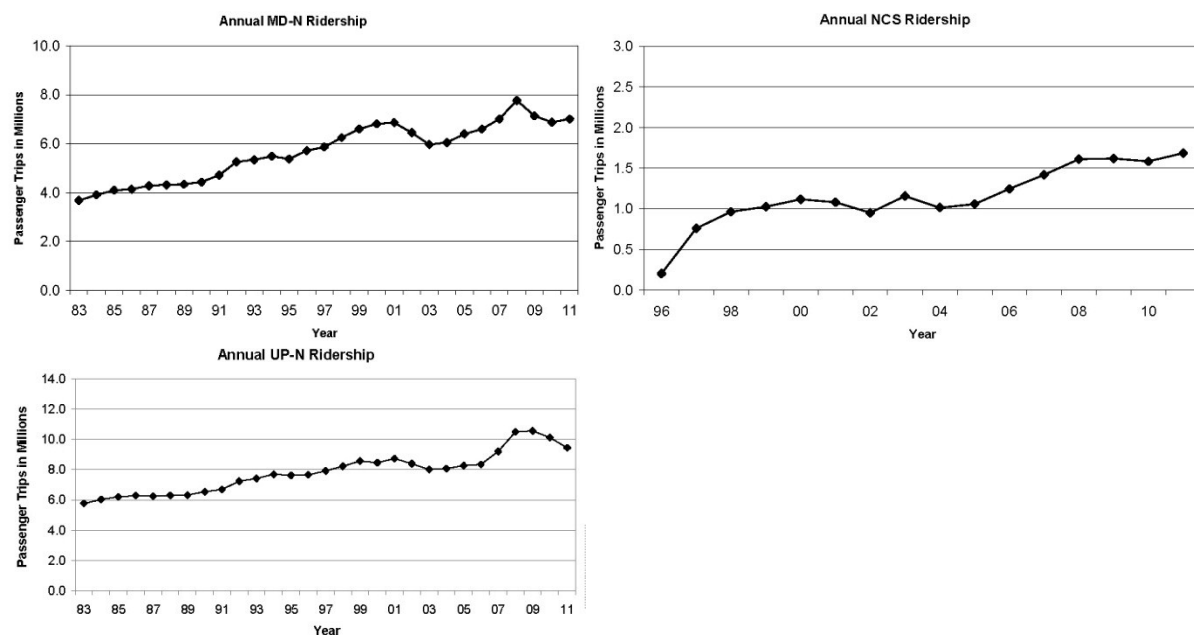
³⁷ American Public Transportation Administration. "Transit Savings Report." Retrieved 8/2/12 from <http://www.publictransportation.org/tools/transitsavings/Pages/default.aspx>

³⁸ CNT Municipal Energy Profile Project.

transportation is also a critical component of sustainable development that encourages land, resource, and fuel efficiency by grouping trips and destinations closer together.

Lake County's primary public transit options include Metra commuter train service and Pace Suburban Bus service. The three Metra commuter lines in the County primarily link County residents with Chicago's loop and other destinations along the way, while the Pace bus system is more oriented toward intra-County travel, linking destinations in adjacent communities. In 2011, County residents utilized transit for about 3.8 percent of work trips, slightly below the collar-county average of 4.4 percent.³⁹

Figure C-2. County Metra Ridership, 1983-2011



Source: Metra Strategic Plan Update – State of the System Report 2012

³⁹ 2011 American Community Survey 1-Year Estimate. Collar county average includes DuPage, Kane, Lake, McHenry, and Will Counties (data not available for Kendall County).

Metra Service

Lake County is served by the Milwaukee District North (MD-N), North Central Service (NCS), and Union Pacific North (UP-N) Metra rail lines (see Figure C-1. Transportation Facilities). In general, all three lines have seen slow but steady increases in ridership over the past three decades (see Figure C-2. County Metra Ridership). In 2011, system ridership as a whole increased by 1.6 percent to 82.7 million trips, marking Metra's third-highest year for ridership (after 2008 and 2007). Nine of Metra's 11 lines experienced ridership gains, including two that serve Lake County. The NCS line saw a 6.1 percent increase in ridership (second only to the Union Pacific Northwest Line's 7.5 percent increase) while the MD-N line gained 1.8 percent in ridership. However, the County's third Metra service route, the UP-N, experienced the greatest drop in ridership of the Metra system, at 6.7 percent.⁴⁰

While the UP-N line boasts the highest ridership of the three system-wide, the MD-N has the highest ridership when only considering boardings for stations within Lake County (see Table C-4. Characteristics of County Metra Stations).⁴¹ From 2002 to 2006, all three Metra lines in Lake County saw significant increases in ridership, with the NCS line experiencing the highest growth (13.7 percent). While the mode of access to Metra stations was somewhat consistent between the NCS and MD-N lines, the UP-N line is unique in its relatively high representation of cyclist and pedestrian access – a rate of 25 percent versus just 11 percent for both the NCS and MD-N lines. Fewer than half of riders accessed UP-N stations in Lake County by driving alone, compared to 61 percent of riders on the NCS line and 67 percent on the MD-N line. While the NCS line has less than half the ridership of the UP-N and MD-N lines, its stations provide 340 more parking spaces than MD-N line stations and 34 percent more spaces than UP-N stations. However, less than 50 percent of the spaces provided at NCS line stations are utilized. This may point toward anticipated growth in NCS line communities and/or the relative auto-dependence of its station areas.

Metra is conducting capital projects along two of the three lines that run through Lake County, although neither project is located within the County. As a whole, the improvements will improve the overall safety and efficiency of the Metra lines that serve Lake County residents and businesses.^{42,43}

⁴⁰ RTAMS, 2012; Metra, 2012a

⁴¹ "Metra Strategic Plan Update – State of the System Report 2012." 3/30/12. Metra. Retrieved 6/10/12 from http://metrarail.com/content/dam/metra/documents/Board_Information/2012/April2012/Strategic%20Plan%20Update%20-%20State%20of%20the%20System%20Report2012.pdf

⁴² Pace, 2011; Metra, 2012c-d

⁴³ "Union Pacific North Bridge Project." Metra. Retrieved 6/10/12 from http://metrarail.com/metra/en/home/about_metra/capitalprojects/construction_projectupdates/UPNbridge.html

Table C-4. Characteristics of County Metra Stations

		Mode of Access						Parking		Ridership	
		Drove Alone	Carpool	Drop Off	Walk/Bike	Transit	Other	Parking Capacity	Parking Utilization	Boarding, 2006	% Change from 2002
Union Pacific North Line	Braeside	46%	8%	11%	<u>35%</u>		1%	131	87%	327	-0.6%
	Ravinia	26%	1%	13%	<u>59%</u>	2%		147	54%	332	0.6%
	Highland Park	55%	6%	15%	<u>22%</u>	2%		421	82%	<u>1,118</u>	1.0%
	Highwood	26%		15%	<u>57%</u>	2%		96	25%	279	<u>-11.5%</u>
	Fort Sheridan	69%	3%	13%	<u>15%</u>			301	50%	279	<u>-2.2%</u>
	Lake Forest	47%	4%	21%	<u>27%</u>		1%	782	<u>92%</u>	725	-0.1%
	Lake Bluff	58%	4%	10%	<u>28%</u>	1%	1%	202	87%	519	2.9%
	Great Lakes	48%	3%	30%	9%	<u>9%</u>		84	60%	306	<u>49.0%</u>
	North Chicago	27%	3%	38%	<u>21%</u>	5%	5%	56	77%	191	0.5%
	Waukegan	57%	7%	21%	5%	<u>9%</u>	3%	439	51%	<u>1,030</u>	13.3%
	Zion	56%	6%	22%	13%		4%	100	<u>92%</u>	152	<u>32.2%</u>
	Winthrop Harbor	<u>75%</u>	4%	10%	11%	2%		107	65%	79	2.5%
	Total for UP-N	49%	4%	18%	25%	3%	1%	2,866	69%	5,337	6.1%
Milwaukee District North Line	Deerfield	65%	1%	15%	<u>17%</u>	2%		621	<u>91%</u>	<u>1,315</u>	2.2%
	Lake Forest (west)	69%	7%	14%	8%	1%		553	70%	578	0.3%
	Libertyville	61%	5%	19%	12%	2%	1%	448	<u>97%</u>	<u>1,169</u>	4.3%
	Prairie Crossing	<u>72%</u>	8%	10%	10%			647	42%	344	n/a
	Grayslake	69%	6%	14%	10%			670	54%	<u>772</u>	<u>-12.8%</u>
	Round Lake	67%	5%	20%	7%	2%		489	55%	710	20.3%
	Long Lake	66%	2%	16%	<u>15%</u>			49	78%	133	23.3%
	Ingleside	68%	6%	14%	12%			119	55%	150	<u>30.7%</u>
	Fox Lake	68%	4%	21%	5%			408	<u>91%</u>	632	24.8%
	Total for MD-N	67%	5%	16%	11%	1%	0%	4,004	70%	5,803	12.1%
North Central Service Line	Buffalo Grove	<u>71%</u>	4%	14%	11%			1,062	40%	545	-0.4%
	Prairie View	64%	6%	12%	<u>18%</u>		1%	404	71%	299	14.7%
	Vernon Hills	56%	6%	17%	<u>20%</u>		2%	656	32%	353	19.5%
	Mundelein	<u>72%</u>	2%	20%	5%		1%	516	36%	283	16.8%
	Prairie Crossing	52%	21%	6%	14%	4%	2%	647	42%	117	<u>35.0%</u>
	Washington St (Grayslake)	56%	5%	28%	9%		1%	149	58%	109	n/a
	Round Lake Beach	61%		26%	12%	1%		358	29%	154	-1.9%
	Lake Villa	65%	5%	27%	3%			234	49%	150	4.7%
	Antioch	55%	7%	28%	10%		1%	318	58%	262	<u>35.5%</u>
	Total for NCS	61%	6%	20%	11%		1%	4,344	46%	2,272	13.7%

Underline: Drove alone - above 70%; Walk/bike - above 15%; Transit - above 5%; Parking utilization - above 90%; Boarding - top 5 increase or greater than 2% decrease.
n/a = data not available

Source: Regional Transportation Authority - Mapping & Statistics, <http://rtams.org/rtams/home.jsp>

Transit-Oriented Development

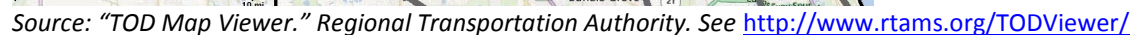
TOD focuses on the ideal mix of land uses and urban design characteristics adjacent to transit stations to support ridership. TOD has many benefits, including increased walkability, reduced automobile dependence, and enhanced opportunities for economic development as transit riders utilize proximate commercial uses.⁴⁴ The importance of TOD and EOD in Lake County is underscored on the Future Land Use Map with the identification of transit and employment centers, along with a walkable half-mile radius around each center. Eight TOD plans have been completed to date and two are currently underway in Fox Lake and Lake Villa (see Figure C-3. TOD Plans Completed, In Progress, or Programmed).

^{45,46,47} In addition, in April 2012, Libertyville began to consider a TOD proposal within its downtown.⁴⁸

⁴⁴ RFP, page 9-16.

⁴⁵ "RTA Funding Programs." Regional Transportation Authority. Retrieved 6/10/12 from <http://www.rtams.org/rtams/planningStudies.jsp?congdistID=8&isFundingProgram=1>.

Figure C-3. TOD Plans Completed, In Progress, or Programmed⁴⁹



⁴⁹ *Ibid.*

Table C-5. Land Uses within One-Half Mile of County Metra Stations*

Land Use Category	Existing Land Use (2005)		Future Land Use		Percent Change
	Area (acres)	Area (% of total)	Area (acres)	Area (% of total)	
Single-family Residential	4,649	31.4%	5,128	34.6%	10.3%
Transportation	2,751	18.6%	2,656	17.9%	-3.5%
Open Space	1,835	12.4%	2,284	15.4%	24.5%
Government/Institutional	1,023	6.9%	1,009	6.8%	-1.4%
Retail/Commercial	797	5.4%	789	5.3%	-1.0%
Industrial	530	3.6%	714	4.8%	34.7%
Agriculture	385	2.6%	69	0.5%	-82.1%
Multifamily Residential	258	1.7%	583	3.9%	126.0%
Office and Research	152	1.0%	115	0.8%	-24.3%
Other	2,430	16.4%	1,463	9.9%	-39.8%
Total	14,810	100.0%	14,810	100.0%	-

*Transportation, utilities, and water land use categories were excluded from this analysis. Future land use totals include existing Metra stations (future Metra stations or employment centers designated in the *Regional Framework Plan* are not included)

Source: *Regional Framework Plan*

Table C-6. Change in Residential Land Uses within One-Half Mile of Metra Stations

Land Use Category	Existing Land Use (2005)		Future Land Use		Percent Change
	Area (acres)	Area (% of total)	Area (acres)	Area (% of total)	
Single-family Residential	4,649	94.7%	5,128	89.8%	10.3%
Multifamily Residential	258	5.3%	583	10.2%	126.0%
Total	4,907	100.0%	5,711	100.0%	-

Source: *Regional Framework Plan*

The Land Use and Development section also noted that much of the future residential development in the County will likely be at sufficient densities to support commuter rail, such as Metra, but not other types of public transit. Examining the mix of existing and proposed land uses within one-half mile of the County's Metra stations is a good indication of whether those station areas will foster transit-oriented development (see Table C-5. Land Uses within ½-Mile of County Metra Stations and Figure C-4. Existing Land Use within ½-Mile of Metra Stations). Currently, within the County's station areas, single family residential uses are by far the most common, at 31.4 percent of land area. The prevalence of single family uses speaks to the commuter-oriented nature of many of the County's Metra stations, but may pose issues in terms of walkability. Conversely, multifamily residential uses are expected to increase dramatically (by 126 percent), indicating a potential shift toward more supportive residential density near station areas. Despite this increase, however, single family uses will still comprise almost 90 percent of residential land area within ½ mile of Metra stations (see Table C-6. Change in Residential Land Uses within ½-Mile of Metra Stations). The *Regional Framework Plan* notes that providing the right balance of single family and multifamily uses is a key component of creating transit centers, and

indicates that an optimum mix of residential uses within one-half mile of a transit station (per Metra) is one-third multifamily and two-thirds single-family dwellings.⁵⁰

According to the future land use projections, commercial and office uses, which are supportive of TOD, are not projected to increase. Retail/commercial uses are expected to comprise slightly less area than they do now (with about a one percent decrease in area), while office and research uses are projected to decrease by almost a quarter. As co-location of employment uses and transit stops helps to reduce dependence on private vehicles and vehicle miles traveled, it is important to encourage commercial and office uses within station areas.

Pace Service

Pace Suburban Bus service provides connectivity between many destinations within Lake County that are not adjacent to rail. In 2010, Pace's service area consisted of 8.3 million residents in Cook, DuPage, Kane, Lake, McHenry, and Will Counties, with just over 35 million boardings. Pace operates 193 ADA-accessible fixed bus routes, with 19 fixed routes serving Lake County; a majority of the routes are located in the eastern half of the County (see Figure C-1). All of the County's fixed-route buses operate on weekdays, 12 routes operate on Saturdays, and two routes offer Sunday service.^{51,52} In the past five years, Pace ridership on fixed lines that serve the County has increased about 10.6 percent (see Table C-7. Weekday Pace Ridership). Fourteen of these 19 routes saw increases in ridership.

The County is also served by ten "shuttle bug" routes. The Transportation Management Association of Lake Cook (TMA) administers the Shuttle Bug Program, which is a public-private partnership between the TMA, Pace, Metra, and interested area businesses.⁵³ While these shuttle bugs provide valuable transportation between Metra stations and employment centers, half of the routes saw declines in ridership from 2007-2012, and overall ridership declined over six percent.

Pace also provides Dial-a-Ride service, vanpool/rideshare services, and paratransit service to complement its fixed route bus lines. To use these services, customers call the provider to schedule a pick up time at their home at least a day in advance. Pace's suburban bus system is complemented by two types of paratransit, or demand-response service. The first type of paratransit, Pace Dial-a-Ride, is typically run through a joint partnership between Pace and a township or municipality, offering rides for residents traveling within their own communities. The second type of paratransit is ADA paratransit service, which is mandated by the Americans with Disabilities Act. ADA paratransit service allows registered passengers to call for a ride, with 24 hours' notice. Pace's Vision 2020 plan seeks to expand paratransit services to increase resident eligibility and to allow more door-to-door trips across municipal and county boundaries.⁵⁴

Capital projects to improve Pace service are also underway. Pace's Suburban Capital Program spent \$100.2 million in 2012 to return the Pace system to a "state of good repair," with improvements scheduled for rolling stock, support facilities and equipment, stations and passenger facilities, and miscellaneous necessities.

⁵⁰ RFP, p. 9-16

⁵¹ "2020 Transportation Priority Plan."

⁵² "Transit Services in Lake County." Retrieved 7/20/12 from

<http://www.lakecountyil.gov/Transportation/TransitParatransit/Pages/TransitOverview.aspx?#Pace>

⁵³ "TMA Shuttle Program." Retrieved 7/20/12 from http://www.tmalakecook.org/shuttle_overview.html

⁵⁴ (Pace Suburban Bus, 2012a)

Table C-7. Weekday Pace Ridership, 2007-2012⁵⁵

Route	Weekday Boardings, May 2007	Weekday Boardings, May 2012	Percent Change
Pace routes			
213 Green Bay Road	1,189	1,285	8.1%
568 Belvidere	1,131	1,213	7.3%
572 Westfield Hawthorn-Waukegan	896	1,200	33.9%
565 Grand Ave	1,051	1,038	-1.2%
569 Lewis	917	1,003	9.4%
422 Linden CTA/Glenview/Northbrook Court	796	793	-0.4%
272 Golf Mill-Westfield-Milwaukee Ave	684	757	10.7%
571 Zion	526	630	19.8%
561 Castlecrest via McAree	404	549	35.9%
626 Skokie Valley Limited	432	474	9.7%
562 Gurnee via Sunset	382	470	23.0%
566 McAree-Keller	285	375	31.6%
570 Fox Lake-Gurnee Mill via CLC	164	348	112.2%
234 Wheeling - Des Plaines	446	342	-23.3%
564 Jackson/14th	286	337	17.8%
563 Great Lakes Naval Station	263	244	-7.2%
471 Highland Park-Northbrook Court	201	234	16.4%
472 Highland Park-Highwood	279	134	-52.0%
573 Green Bay Road	19	17	-10.5%
<i>Total, Pace routes</i>	<i>10,332</i>	<i>11,426</i>	<i>10.6%</i>
Lake-Cook TMA Shuttle Bug routes			
635 Lake Cook Shuttle Bug 5	168	188	11.9%
627 Discover-Takeda Shuttle Bug	166	176	6.0%
632 Lake Cook Shuttle Bug 2	168	151	-10.1%
633 Lake Cook Shuttle Bug 3	144	126	-12.5%
628 Braeside Shuttle Bug 8	112	124	10.7%
631 Lake Cook Shuttle Bug 1	130	107	-17.7%
634 Lake Cook Shuttle Bug 4	110	85	-22.7%
629 Braeside Shuttle Bug 9	57	73	28.1%
625 Lake Forest Shuttle Bug	42	56	33.3%
576 Deerfield Metra to Buffalo Grove/Lincolnshire	48	45	-6.3%
<i>Total, Lake-Cook TMA Shuttle Bug routes</i>	<i>1,145</i>	<i>1,131</i>	<i>-1.2%</i>

Freight

Although often overlooked, the movement of freight, which is a critical component of the region's economic strength and competitiveness, has considerable environmental impacts. The freight sector is responsible for approximately eight percent of global carbon dioxide emissions, and the sector's greenhouse gas emissions have risen 58 percent since 1990. This increase is more than double that of passenger travel, due to more stringent regulations for passenger vehicles in terms of fuel efficiency and emissions production. Freight is also a major source of air pollutants that are linked to premature death,

⁵⁵ <http://www.rtams.org/rtams/ridershipDetail.jsp?dataset=paceBus&month=5&dayTypeID=1>

asthma, lung cancer, low birth weight, and cardiovascular illness.⁵⁶ The *Regional Framework Plan* acknowledges that the region's road and freight rail systems are in need of improvement and specifically cites traffic congestion and pollution as key concerns.⁵⁷

In the Chicago region, 67 percent of freight is moved by truck, 30 percent is moved by rail, and three percent is moved by air or water.⁵⁸ Trucks make up one out of every six vehicles on the urban interstates in Illinois.⁵⁹ Despite the prevalence of freight movement via trucking, it is also the most fuel-intensive mode, emitting the largest amount of greenhouse gases and pollutants. Freight movement via rail is three times more fuel efficient than trucking.⁶⁰ Although Lake County is not home to any intermodal facilities or container yards, there are several freight trains moving through the County on a daily basis, which run mostly on the Elgin, Joliet, and Eastern (EJ&E), Canadian Pacific (CP), and Canadian National (CN) railways. The majority of this traffic is likely passing through to intermodal facilities in Cook or Will Counties or on its way to other areas of the country.

Non-Motorized Transportation

Access to non-motorized transportation options, such as bicycling and walking, is a key feature of sustainable communities. Lake County recently recognized the importance of these options through the adoption of LCDOT's Non-Motorized Travel Policy, which emphasizes the incorporation of pedestrian and bicycle facilities in the construction and reconstruction of County highway improvements. The Policy recognizes that "increased commitment to, and investment in, bicycle facilities and walking networks can help meet goals for cleaner, healthier air, less congested roadways, and more livable, safe, cost-efficient communities."⁶¹

Bicycling

Lake County has made the promotion of cycling a goal and boasts almost 500 miles of high quality trails and bike paths (see Table C-8. Bicycle Path Mileage).⁶² LCDOT owns 57 miles of bike paths and maintains over 47 miles. The Lake County Forest Preserve District (LCFPD) maintains over 130 miles, the Illinois Department of Natural Resources (IDNR) is responsible for 13.2 miles, and municipalities, townships, and other entities maintain the remaining 297 miles (see [map](#)).^{63,64} The Des Plaines River Trail, which at 31 miles spans nearly the whole length of Lake County, and Millennium Trail, of which 20 of 35 planned miles are complete, serve as regional trails within the County.^{65,66} The County's North Shore Path, Des Plaines River Trail, Robert McClory Trail, and Green Bay Trail also form about 40 miles of the Grand

⁵⁶ "The Good Haul." Environmental Defense Fund. Retrieved 7/27/12 from http://www.edf.org/sites/default/files/10881_EDF_report_TheGoodHaul.pdf

⁵⁷ RFP, 7-16

⁵⁸ GO TO 2040 Comprehensive Regional Plan

⁵⁹ Drill down report

⁶⁰ "The Good Haul."

⁶¹ Non-Motorized Travel Policy, p.1.

⁶² Lake County Board, 2004

⁶³ Lake County. Retrieved 7/28/12 from <http://lakecountyil.gov/bikepath/Pages/Default.aspx>

⁶⁴ "Activities at your forest preserves." Lake County Forest Preserves. Retrieved 7/28/12 from http://www.lcfpd.org/preserves/index.cfm?fuseaction=preserves.viewActDetail&object_id=125

⁶⁵ "Des Plaines River Trail and Greenway." Lake County Forest Preserves. Retrieved 7/28/12 from http://www.lcfpd.org/preserves/index.cfm?fuseaction=home.view&object_id=160

⁶⁶ "Millennium Trail and Greenway." Lake County Forest Preserves. Retrieved 7/28/12 from http://www.lcfpd.org/preserves/index.cfm?fuseaction=home.view&object_id=19345&type=P

Illinois Trail system, which consists of 475 miles of trails running from Chicago to Rock Island to Galena and back to Chicago.⁶⁷

Table C-8. Bicycle Path Mileage, 2009

Responsible Entity	On-Road Paths	Off-Road Paths	Total
LC DOT	6.9	46.6	53.5
LC FPD	1.7	128.9	130.6
IDNR	1	12.2	13.2
Municipal/Township/Other	25.5	271.6	297.1
Total	35.1	459.3	494.4

Source: Lake County Department of Transportation

While the County is clearly well served by off-road trails, on-road bicycle lanes, which are especially convenient for transportation and commuting purposes, are not as prevalent. LCDOT currently maintains almost seven miles of on-road bicycle facilities,⁶⁸ but the establishment of its Non-Motorized Travel Policy is expected to increase this mileage. The Policy provides standards for County roads to increase bicycle-friendliness via the use of paved shoulders and marked bicycle lanes, as well as guidelines for when these types of facilities are appropriate.

LCDOT's Non-Motorized Travel Policy may serve as a model for municipalities that wish to facilitate non-motorized transportation options as well. Municipalities maintain many miles of bicycle facilities within their respective jurisdictions. Goal 7.3 of the *Regional Framework Plan* acknowledges that connecting residential neighborhoods with employment and other non-residential areas via bicycle facilities is an opportunity to facilitate this non-motorized mode of transportation. Since most of the County's residents and employment centers are located within municipalities, these areas have great potential for such bicycle linkages.

Walking

While pedestrian activity for recreational purposes is strongly facilitated in the County, very few residents choose walking as their transportation mode, particularly for commuting. In fact, pedestrian commuting figures across the Chicago region represent a low percentage of mode share (see Table C-9. Share of Commuters Walking to Work). However, the number of Lake County residents who walk to work is higher than the collar-county average (2.8 percent versus 1.7 percent). This can largely be attributed to a mismatch between where people live and where they work (see Economy section), as well as spatial land use patterns that make walking less desirable than other modes of transportation.

⁶⁷ "Grand Illinois Trail Users Guide." Illinois Department of Natural Resources. Retrieved 7/28/12 from <http://www.dnr.illinois.gov/recreation/greenwaysandtrails/Documents/gitusersguide.pdf>

⁶⁸ "Lake County, County Bikeway Map." Retrieved 7/28/2012 http://www.lakecountyil.gov/Transportation/Publications/Documents/LakeMap_Back.pdf

Table C-9. Share of Commuters Walking to Work, 2010

	Lake County	Collar County Average	United States
Pedestrian Commuters	2.8%	1.7%	2.8%

Source: 2011 American Community Survey 1-Year Estimates, U.S. Census Bureau

LCDOT's Non-Motorized Travel Policy considers sidewalks an integral component of transportation corridors. The Policy includes enhanced guidelines to encourage sidewalks in its roadway projects. When a new County roadway improvement or construction project is underway, LCDOT considers pedestrian accommodations if they are not already available and if any of the following conditions exist:

- Evidence of pedestrian activity, or public interest in such facilities (observed by staff or reported during the public participation process)
- A history of pedestrian-related crashes
- Existing or planned development that would attract pedestrian travel
- A state, county, or local government policy or plan has previously designated pedestrian improvements in the area
- The roadway provides primary access to a school, park, recreation area, or other significant destination, or across a natural or manmade barrier

With regard to private development, the County's Unified Development Ordinance (UDO) requires sidewalks of at least five feet in width to be installed on all new streets except single-family residential subdivisions that are comprised of lots with an average area of 40,000 square feet or greater.⁶⁹ The future land use projections established in the *Regional Framework Plan* indicate that much of the new residential development expected for the unincorporated County will occur at density levels low enough for exemption from this sidewalk installation requirement.

Goal & Policies

Goal: Provide a full range of transportation options.

Policy 1: Continue to work with Pace Suburban Bus, Metra, and the Regional Transportation Authority (RTA) to support and advocate for the coordination of existing transit services and to study and evaluate extending transit service in other areas of the County (such as Pace demand-response service to connect with Metra), improved transit facilities, and additional public transportation options (i.e. bus rapid transit).

[Ref.: Pol. 7.3.1; Pol. 7.3.3]

Action 1: Work with Pace to install more bus infrastructure (such as signage and shelters) in needed locations.

Action 2: Work with Lake County Partners and employers to encourage the use of vanpools and other transit services.

⁶⁹ UDO, 10.10.17 Sidewalks

Action 3: Work with Metra and RTA to facilitate specific collaboration with Pace to increase bus service along East-West corridors through the County to enhance connections to train stations.

Action 4: Increase public awareness of transit alternatives via educational materials to post on the County's website and distribute to County and municipal partners.

Action 5: Continue to work with the [Lake County Coordinated Transportation Services Committee](#) (LCCTSC), in order to "facilitate the implementation of coordinated, efficient, reliable and affordable public transportation throughout Lake County...."

Policy 2: Continue to support and implement Non-motorized/Complete Streets policies, including the Lake County Division of Transportation's (DOT) Non-motorized Travel Policy and the Illinois Department of Transportation's Complete Streets policy, to further facilitate all travel modes, including carpooling, bicycling and walking. In addition, encourage local agencies to support, adopt, and implement Complete Streets policies and practices.

[Ref.: Pol. 7.3.7; Pol. 7.3.8; Pol. 7.3.10]

Action 1: Coordinate more directly with LCDOT and other departments on non-motorized transportation projects to ensure integration of land use and roadway/right-of-way design.

Action 2: Update the County's regulations to require non-motorized facilities in new development or infill development.

Action 3: Launch public education efforts to inform residents about bicycle and pedestrian safety issues, existing bicycling options throughout the county, and non-motorized signage and striping that indicate how and where motorists and cyclists must share the road.

Action 4: Create non-motorized pathways whenever possible to link residents and businesses with county resources (e.g. County facilities, forest preserves and parks, cultural attractions, transit stations, municipalities, schools and residential areas. etc.)

Action 5: Use outreach and education to encourage local agencies to implement Complete Streets practices.

Policy 3: Improve multi-modal transportation options for county residents and workers.

[Ref.: Pol. 7.3.9; Pol. 7.5.1; 7.3.4; Pol. 7.9.3; Non-motorized Policy Guidelines, p. 18]

Action 1: Encourage Metra to continue its study of parking utilization for all Lake County Metra stations and to conduct Origin-Destination Surveys in conjunction with Boarding-Alighting counts.

Action 2: Support municipalities in working with Metra to provide adequate access to trains via on-site parking, connecting bus and demand-responsive services, and bicycle parking.

Action 3: Support local agencies in working to improve the connection of bicycle paths and lanes and pedestrian paths and sidewalks with access to Metra stations, and to increase the availability of bicycle parking near Metra stations.

Action 4: Educate the public about the option of bringing bicycles onto trains and buses.

Action 5: Ensure Metra stations and surrounding roadways are designed to facilitate easy, rapid, and safe access by transit buses.

Policy 4: Coordinate appropriate land uses and context sensitive street design to foster walkability near transit station areas, schools, and employment centers.

[Ref.: Pol. 7.1.3; Pol. 7.3.5; *Promoting Sustainable Building and Development Practices* report, pp. 22, 29]

Action 1: Coordinate land use and transportation investments by establishing meetings between the Lake County Planning, Building, and Development Department (PBD), the Health Department (HD), and the Division of Transportation (DOT).

Action 2: Encourage the use of context sensitive design for any roadway expansions or improvements, such that the new facilities fit with the character of the community.

Action 3: Encourage transit-friendly site design, using such policies as the Pace Design Guidelines.

Policy 5: Remain an active partner in corridor planning processes to ensure coordinated development, the protection of natural resources, and the provision of transportation alternatives, including the Route 53/120 Corridor.

[Ref.: 2020 Transportation Priority Plan]

Action 1: Actively participate with the Chicago Metropolitan Agency for Planning (CMAP) in the Route 53/120 Corridor Land Use Study.

Action 2: Help implement the next steps and recommendations of the Route 53/120 Blue Ribbon Advisory Council Resolution and Summary Report.

Action 3: Actively participate in other Lake County corridor studies with the various stakeholders.

Action 4: Continue to implement PASSAGE technology across the travel network in Lake County.

Indicators

While the policies in this Chapter will be implemented on an ongoing basis, each indicator will be monitored on an annual basis and evaluated every five years. “Lake County Indicators” include indicators that are within the County government’s purview, while “Community Indicators” relate to activities within the County at large.

Lake County Indicators:

Indicator 1: The County will increase the installation of pedestrian facilities along County Highways through 2018, provided there is a municipal or local agency partner. (DOT)

Indicator 2: The County will increase the number of bicycle-friendly shoulders along County Highways through 2018. (DOT)

Indicator 3: The Forest Preserve District will increase the miles of regional trails and accessible routes for bicycles through 2018. (FPD)

Indicator 4: The County will continue to expand coverage and functionality of the Lake County PASSAGE system across the travel network in Lake County thru 2018. (DOT)

Community Indicators:

Indicator 1: Overall transit ridership in Lake County will increase by 2018. (DOT)

Indicator 2: The number of participants in Pace vanpool and shuttle services between Metra stations and employment centers will increase by 2018. (DOT)

Indicator 3: The number of bus shelters updated or installed will increase by 2018. (DOT)

Indicator 4: The number of municipalities adopting Complete Streets or non-motorized travel policies will increase by 2018. (PBD)

Implementation Approach

Policy	Inter-governmental	County Departments and Agencies	Non-County Agencies
1 Continue to work with Pace Suburban Bus, Metra, and the Regional Transportation Authority to support and advocate for the coordination of existing transit services and to study and evaluate extending transit service in other areas of the County (such as Pace demand-response service to connect with Metra), improved transit facilities, and additional public transportation options (i.e. bus rapid transit).	County, Municipalities, Transit Agencies	LCDOT, PB&D	RTA, Metra, Pace
2 Continue to support and implement Non-motorized/Complete Streets policies, including the Lake County Division of Transportation's (DOT) Non-motorized Travel Policy and the Illinois Department of Transportation's Complete Streets policy, to further facilitate all travel modes, including bicycling and walking. In addition, work to encourage local agencies to support, adopt, and implement Complete Streets policies and practices.	County, Municipalities	LCDOT, PB&D	
3 Improve multi-modal transportation options for county residents and workers.	County, Municipalities	LCDOT, PB&D	RTA, Metra, Pace
4 Coordinate appropriate land uses and context sensitive street design to foster walkability near transit station areas, schools, and employment centers.	County, Municipalities	LCDOT, PB&D	
5 Remain an active partner in corridor planning processes to ensure coordinated development, the protection of natural resources, and the provision of transportation alternatives, including the Route 53/120 Corridor.	Counties, Municipalities	LCDOT, PB&D, CAO	CMAA, ISTHA, IDOT

Figure C-1. Transportation Facilities

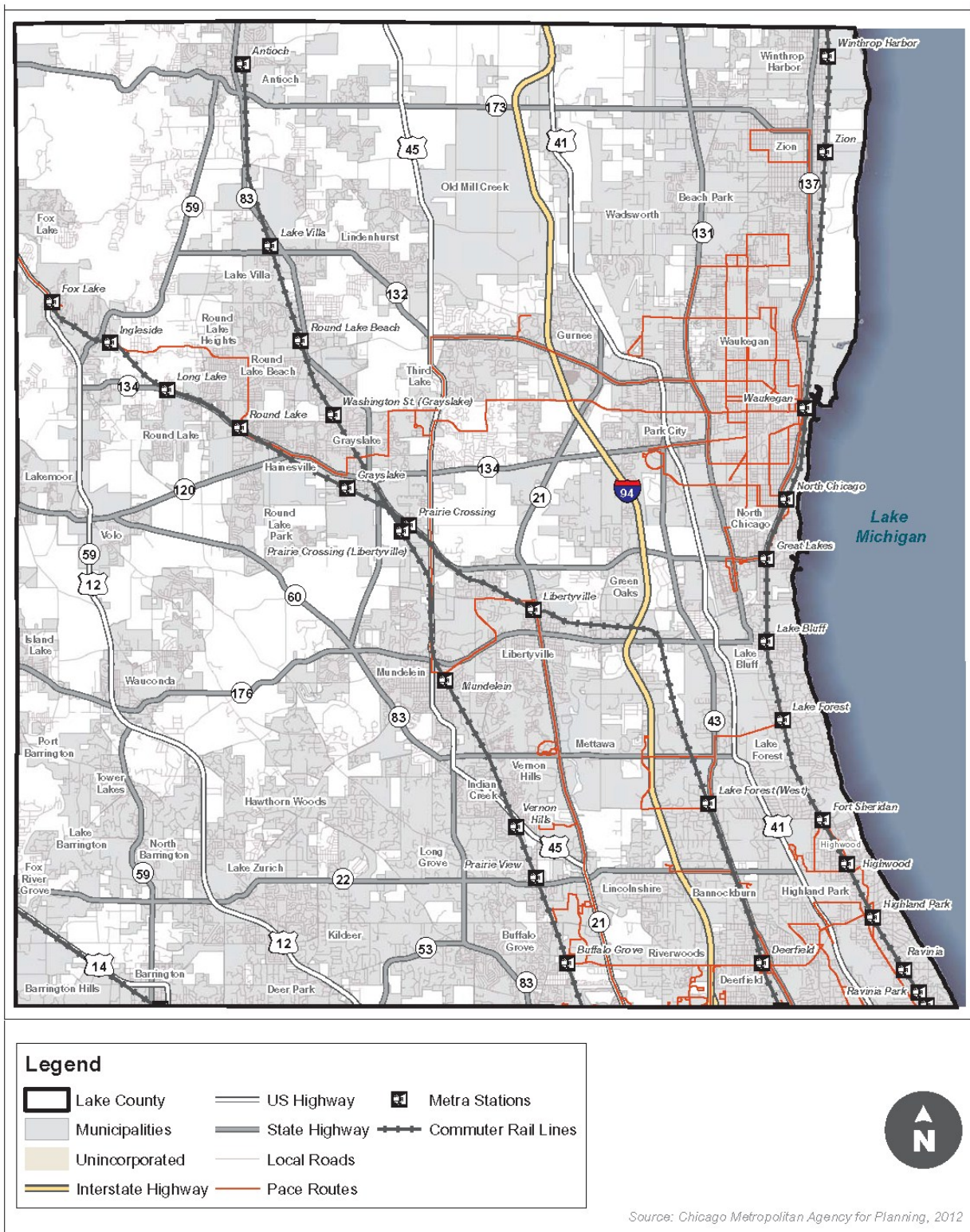
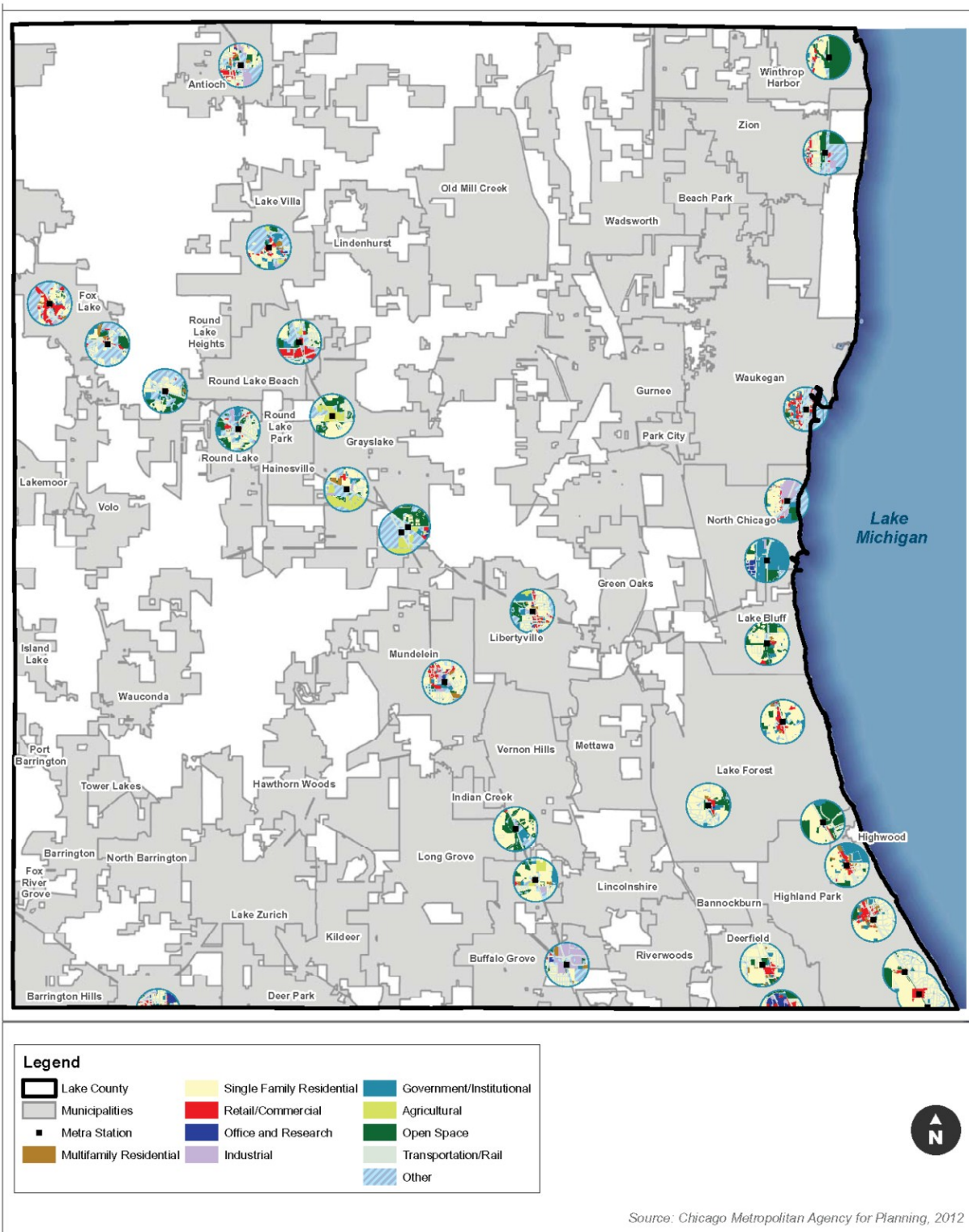


Figure C-4. Existing Land Use within 1/2-Mile of Metra Stations (2005, RFP)



D. Open Space

The content of the Open Space section of the Sustainability Chapter is most closely related to Regional Framework Plan Chapter 4: Environmental Resources, Open Space, and Farmland and Chapter 5: Infrastructure and Services, particularly the Parks and Recreation section.

Significance

Open space areas provide rich recreational, social, aesthetic, restorative, economic, environmental, and ecological benefits to the County. Environmental benefits include air purification, enhanced groundwater recharge, water filtration, flood mitigation, and a cooling effect on temperatures. The benefits received from open space make it a cost-effective expenditure of public and private investments. Agricultural land uses are also important because they help buffer protected natural areas and habitat and provide an economic use of private land while still offering some of the public benefits in terms of ecosystem services. Farmland also contributes to the scenic quality and character of Lake County.

Public and Private Open Space and Agricultural land are both land use categories of the *Regional Framework Plan*. However, the land use classification of open space is broader than the discussion in this section, which focuses on permanently protected open space. Protected open space areas in the County are managed by a variety of entities, both public (municipalities, park districts, Lake County Forest Preserve District, Illinois Department of Natural Resources, etc.) and private (i.e. non-profit conservation organizations, homeowners associations) (see Existing Land Use Map and Figure D-1. Open Space Network). It can be helpful to discuss open space within the context of the following broad categories:

- **Protected public lands:** Land owned by a unit of government and managed primarily for conservation purposes, such as forest preserves, state parks, and Libertyville Township open space. Some ancillary recreational functions may also exist.
- **Protected private lands:** Land held in private ownership but protected either via conservation easement held by a non-profit conservation land trust, or via dedication to the State Nature Preserves Commission.
- **Public recreational lands:** Land owned by park districts and municipalities and managed primarily for recreational uses, although conservation purposes or “passive” recreational uses may be an ancillary or supporting use.
- **Farmland:** Farmland offers some of the benefits provided by protected open space, without public acquisition costs. However, most of the land that is currently in agricultural production is not permanently dedicated to that land use, and may face development pressure.
- **Golf courses:** Golf courses were included as open space in Chapter 5 of this Plan due to their recreational function. Golf courses may be publicly owned, protected by a conservation easement, or part of a development set-aside. Certain golf courses are also managed to provide open space benefits, such as habitat. However, privately held and non-protected golf courses are subject to potential land use changes, and therefore are not traditionally considered as open space.

Other categories that could be included as open space include regulated lands and common open space. In Lake County, regulated lands include wetlands, floodplains, and riparian buffers, which are subject to land use regulations that provide protection against impact or conversion. This ensures protection of these resources on at least a temporary basis as long as regulations do not change. Common open space is land that is required to be set aside or platted as part of a subdivision approval for open space

or recreational use by the subdivision residents.⁷⁰ However, many common areas do not necessarily embody natural resource values and may not be managed for conservation purposes.

The *Regional Framework Plan* emphasizes the value of open space in one of its overall Vision Statements by stating that, “In the year 2020, Lake County will have: A superior open space network that preserves natural resources, cultural resources, and farmland to promote and enhance functioning ecosystems, agricultural activities, and the quality of life for all residents.”⁷¹ The importance of open space and natural resource protection is also cited in other *Regional Framework Plan* Vision Statements (such as those for the land use and water supply sections) and in the 2009 Strategy for a Sustainable Lake County. The *Regional Framework Plan* directly recognizes the contribution of state lands, forest preserves, parks and recreation facilities to livable cities and villages, and sets a goal of maintaining and increasing the then-current County ratio of public parks to residents.⁷² Farmland is also noted in the *Regional Framework Plan* as contributing to open space goals at a very low cost – 36 cents spent on community services for farmland provided for every dollar of property tax revenue.⁷³

Issues & Opportunities

The following key issues and opportunities related to open space have been identified through the existing conditions analysis:

- The County-wide goal of achieving the permanent protection of 60,000 acres of open space is two-thirds of the way accomplished. The Lake County Forest Preserve District (FPD) and private organizations have been leading the way in the County with regard to increasing acreage of protected open space, with a total of 4,486 acres added since 2008.
- In 2004, the recreational land within the County exceeded the recommended standard for adequate access to parks, which is defined as ten acres per 1,000 residents. As the County continues to grow, it is important that new residents are provided with adequate open space.
- 52.3 percent of households in the unincorporated County are served by walkable access to open space (open space exists within ¼-mile). The greatest potential for increased access to open space exists in the northwest and southwest corners of the County.
- Continued coordination among various organizations (i.e. park districts, Lake County FPD, school districts, municipalities, Lake County DOT, and the Stormwater Management Commission) is essential to economically and efficiently improve the County’s parks and trails system.
- The County can utilize tools such as the Illinois Natural Areas Inventory (INAI) and Green Infrastructure Vision 2.0 to guide decision-making regarding environmentally sensitive areas.
- Some of the best farmland in the world is located in Lake County, but less of this land is being used for agricultural production than in the past, and this use is expected to continue to decrease. Promoting new and sustainable farming activities, such as local food production, and addressing barriers to small-scale agricultural uses may help to foster the agricultural sector of the County’s economy.
- There is unmet demand for locally grown food in Lake County. The local food economy has the potential to create more revenue and a greater number of jobs than traditional agricultural uses.

⁷⁰ If the land is dedicated to a local park district for a public park, it falls within the category of public recreational land.

⁷¹ RFP, p. 4-1

⁷² RFP [p. 5-148, Policy 5.36.2]

⁷³ RFP [p.4-28]

Analysis

Protected Lands

In January 2010, the Lake County Board adopted the Vision Statement developed by the Land Conservation Partners of Lake County: “To realize a Lake County landscape where, by 2030, at least 20% of the County is preserved forever as natural areas, parks, trails, farmland, and scenic views.” All 16 governmental and non-profit conservation organizations working in land preservation in Lake County have adopted the same vision to protect 60,000 acres in total. Organizations that own and/or maintain protected open space within Lake County include the Lake County Forest Preserve District (FPD), Illinois Department of Natural Resources, Libertyville Township Open Space District, McHenry County Conservation District, Citizens for Conservation, Land Conservancy of Lake County, Lake Bluff Open Lands Association, Lake Forest Open Lands Association, and Conserve Lake County (formerly Liberty Prairie Conservancy).⁷⁴

Table D-1, below, shows changes in protected open space since the *Regional Framework Plan* was adopted. Lake County and the Land Conservation Partners of Lake County are currently tracking progress towards accomplishing the Lake County Land Preservation Vision to calculate increases in protected open space. In 2012, Lake County had over 50,000 acres of protected public and private lands (see Figure D-1. Open Space Network for a map of all protected County open space areas).⁷⁵

The *Regional Framework Plan* mapped priority lands for open space acquisition utilizing a resource point system developed by the Lake County Regional Planning Commission in consultation with local governments (see Chapter 4, Figure 4.11. Priority for Open Space). The *Regional Framework Plan* also identified Environmental Limitations, showing the location of the most critical environmental resources in the County (see Chapter 4, Figure 4.12). The Priority Open Space Map informed goals and policies of Chapter 9: Land Use, and was intended to serve as a planning tool to provide guidance on development decisions. Although the number of acres of protected open space has changed since 2004, many of the other criteria that informed them— such as hydric soils, floodplains, and INAI sites – will have remained more or less constant.

The voters of Lake County authorized a referendum in November 2008, which provided the Lake County FPD with \$185 million to create new trails, restore wildlife habitats, and improve public access to new and existing preserves.⁷⁶ These funds have enabled the acquisition of over 2,000 acres of new forest preserves. The State of Illinois Nature Preserves Commission, which protects land by accepting the donation of a form of conservation easement over public or private land, has added 2,485.6 acres to the state nature preserve system since January 2010, all of which is owned by the Lake County FPD. The private sector’s role has been expanding over time as non-profit conservation land trusts work with private landowners to permanently protect their land.

⁷⁴ Caliper report, 2009

⁷⁵ Lake County Vision for Preservation Thermometer (maintained by Conserve Lake County)

⁸³ Includes public water bodies.

⁸⁴ Consisting of 4,616 acres of conservation easements and 2,330 acres held by other conservation districts and agencies. The 2009 figure double-counts certain private land trust and conservation agency land that also falls within another category, such as state nature preserves or forest preserve district-owned conservation easements. The 2012 figure eliminates double counting.

⁸⁵ Consisting of 2,848 acres of private land trust land (no double counting); 422 acres owned by McHenry County Conservation District; and 1,535 acres owned by Libertyville Township Open Space District.

⁷⁶ http://www.lcfpd.org/html_lc/referendum/main.html

Table D-1. Open Space Acreage, 2004-2012

Category	Open Space Acreage, 2004¹	Open Space Acreage, 2009²	Open Space Acreage, 2012
State Parks and Natural Areas ⁷⁷	7,799	9,676	10,312
Lake County FPD (includes conservation easements)	24,220	26,492	28,971
Libertyville Township Open Space	1,535	N/A (included below)	N/A (included below)
Nature Preserves (includes both FPD and Private Land Trust lands)	5,194	6,720	9,570
Private Land Trusts and Other Conservation Agencies (includes conservation easement and fee simple interests)	N/A	6,946 ⁷⁸	4,805 ⁷⁹

Sources: ¹Regional Framework Plan, ²Caliper report

Ecosystem Restoration

Healthy ecosystems are essential to support species biodiversity, which is a cornerstone of sustainability. A variety of important resources and processes (collectively referred to as “ecosystem services”) are supplied by natural, healthy ecosystems. Such services include water filtration, clean air, crop pollination, and carbon sequestration, among many others.

The *Regional Framework Plan* recognizes the value contributed by healthy ecosystems by recommending, for example, that the health of Lake County’s remaining wetlands should be maintained by reducing the pollution in run-off from impervious surfaces, retaining absorbent solids and deep-rooted vegetation in bordering buffer areas.⁸⁰ Protection of hydric soils was also recognized as important to purify water and direct runoff into streams, rivers, and aquifers. Restoring prairies and wetlands was also noted as beneficial to reducing the frequency and severity of flooding.⁸¹ The 2011 Sustainable Building and Development Practices report recommended the use of native plant species, which require less maintenance and water; stabilize soils; and provide food and shelter for native birds, animals, and insects.⁸²

Many different actors within Lake County are working to restore ecosystems or otherwise ensure that they remain functioning. The Lake County FPD, Libertyville Township, and the Illinois Department of Natural Resources provide on-going work on their publicly-owned properties to eliminate invasive species, restore natural hydrology, introduce and support native species, and apply management strategies such as controlled burns. Some privately owned corporate campuses have restored and

⁷⁷ Includes public water bodies.

⁷⁸ Consisting of 4,616 acres of conservation easements and 2,330 acres held by other conservation districts and agencies. The 2009 figure double-counts certain private land trust and conservation agency land that also falls within another category, such as state nature preserves or forest preserve district-owned conservation easements. The 2012 figure eliminates the double counting.

⁷⁹ Consisting of 2848 acres of private land trust land (no double counting); 422 acres owned by McHenry County Conservation District; and 1535 acres owned by Libertyville Township Open Space District.

⁸⁰ RFP [p. 4-11]

⁸¹ RFP [p. 4-12]

⁸² Sustainable Building and Development Regulations report, [p34-35]

preserved open space, resulting in educational opportunities. Openlands, a private non-profit organization, has launched a high-quality ecological restoration of the ravines and bluffs at the 77-acre Openlands Lakeshore Preserve along Lake Michigan. In addition, the private non-profit organization Conserve Lake County has launched Conservation@Home, an ambitious program that encourages private landowners to plant native species in their yards. Likewise, the Lake County Stormwater Management Commission (SMC) offers educational programming and materials. For example, SMC's *Rain Gardens: A How-To Manual for Homeowners* publication demonstrates the value of establishing native plants in rain gardens to reduce flooding and enhance groundwater recharge. The Lake County FPD has an annual program of restoring native habitat and monitoring the health of natural areas. In 2009 alone, the FPD installed 15,000 native plants and 4,310 trees and shrubs on its properties.

The Illinois Natural Areas Inventory (INAI) provides information about high quality natural areas, habitats of endangered species, and other significant natural features. The original state-wide inventory, performed in the 1970s, was completed by the Illinois Natural History Survey and identified 15,847 acres in Lake County as INAI sites, which are mapped in Chapter 4, Figure 4.4. An update to the original inventory is currently underway, the results of which will be a useful tool in evaluating how Lake County's INAI sites have fared over the last four decades.

Parks & Recreation

Parks and recreational facilities offered by local park districts and municipalities provide residents with a wide range of places to participate in healthy and restorative activities, as well as offering a sense of community. Such places include aquatic centers, nature museums, beaches, picnic areas, playgrounds, fitness trails, and community centers. The *Regional Framework Plan* notes that parks and recreation are "an essential component of livable cities and villages."⁸³ "Livability" refers to those characteristics of places that are directly linked to quality of life, such as access to open space, affordability, transportation options, public health, and social equity.

In 2004, the *Regional Framework Plan* set a goal of maintaining the County's ratio of recreational land to residents. This calculation compared the population level to the amount of local park and recreation sites (including some school playgrounds). The County's existing ratio in 2004, 19.5 acres per 1,000 residents, was higher than the statewide average supply of community outdoor recreation lands, which is 11.35 acres per 1,000 residents,⁸⁴ in part because lakes were included in the calculation of recreational land. The 2004 measured ratio was almost double the general standard for adequate access to parks, which is defined as ten acres per 1,000 residents.⁸⁵

Current indicators are moving away from considering access to open space in the sole context of a people-to-parks ratio, and instead looking at the physical proximity of people to parks. In addition to providing a sufficient acreage of open space, it is also important to ensure that open space areas are located close to where people live. Figure D-2. Walkable Access to Open Space Areas shows residential uses in the County that have open space areas available within a walkable distance (1/4-mile). Those served by walkable access to open space constitute 52.3 percent (or 16,308 of 31,209) of households. The map illustrates which areas of the County might benefit most from additional open space; these areas are largely concentrated in the northwest and southwest corners of the County. The Trust for Public Land has developed a new tool, called ParkScore, that will allow communities to look at park

⁸³ RFP [p. 5-141]

⁸⁴ [Illinois Statewide Comprehensive Outdoor Recreation Plan, 2009-2014 (SCORP)]

⁸⁵ GO TO 2040 Comprehensive Regional Plan, p. 124

accessibility in a dynamic way (for example, by considering barriers to access such as highways or rivers). This tool may be useful to Lake County and its municipal governments as they plan and add new recreational lands.

Regional Framework Plan Policy 5.36.3 recommends requiring developers to provide adequate recreation facilities and parkland in new developments. To that end, the County has enacted a parkland dedication provision in its UDO that requires a land set-aside, cash-in-lieu payment, or both, as part of the approval of a final plat of subdivision.⁸⁶ However, subdivisions comprised entirely of single-family detached houses with a net density of equal to or less than 1.25 dwelling units per acre are exempt from the requirement. Per the future land use projections established in the *Regional Framework Plan*, most new development in the unincorporated County will be single family development at density levels low enough for an exemption from the parkland dedication requirement. Therefore, it remains to be seen how much of an impact this requirement will have on ensuring that new residents are served by new parkland. Since the bulk of new residential development is expected to occur within municipal limits, it may be useful to survey municipal entities to determine whether local park dedication ordinances are supportive of the larger *Regional Framework Plan* goal.

Connectivity and Greenway Corridors

Greenway corridors are the connective tissue in a sustainable open space system that serve to protect and enhance habitats, provide recreational and non-motorized transportation options, assist with ecosystems services (particularly those related to water), and improve overall quality of life. In 2004, the nonprofit coalition Chicago Wilderness developed a Green Infrastructure Vision (GIV) for the broader metropolitan region, including Lake County. In this vision, natural areas and their surrounding landscapes will be developed and managed with mutual benefits in mind as the region grows. The GIV identifies many acres of land that can be restored, protected, or connected through conservation and thoughtful, sustainable development practices. The GIV guides the protection and development of an accessible, interconnected network of healthy ecosystems that contribute to economic vitality and quality of life for all the region's residents. Chicago Wilderness recently facilitated an update to the Green Infrastructure Vision (titled GIV 2.0) which enhances the functionality for decision-makers across the region (see Figure D-3. Green Infrastructure).

Many *Regional Framework Plan* policies relate to connectivity from both a physical perspective – such as establishing on-the-ground greenway corridors – and an administrative perspective – such as interjurisdictional cooperation among local governments.⁸⁷ Recognizing that coordination among infrastructure and service providers is a major challenge, the County established a goal that, “the publicly-owned recreation and parks facilities in Lake County will form a balanced network serving all portions of the County.”⁸⁸ Policies to implement this goal include acquiring land and developing trails and paths that connect existing and new parks and recreation sites,⁸⁹ as well as encouraging coordination among park districts, the Lake County FPD, school districts, municipalities, Lake County DOT, and the Stormwater Management Commission to economically and efficiently improve the park and trails system.⁹⁰

⁸⁶ UDO Section 11.2 Park and Recreation Areas

⁸⁷ RFP Policies 5.37.1, 5.37.3, 6.3.3, 7.3.8, 9.2.1

⁸⁸ RFP Goal 5.37

⁸⁹ RFP [Policy 5.37.1]

⁹⁰ RFP [Policy 5.37.3]

Agricultural Land Uses

Some of the best farmland in the world is located in our region, thanks to abundant rainfall and fertile soil conditions. These conditions make much of the land in Lake County and the surrounding region well-suited to farming and food production. While agriculture was once a leading sector of the Lake County economy, it has been negatively impacted by growth and development. As a result, there has been a significant reduction in the County's agricultural land area. From 2000 to 2007, the County has seen a 20.7 percent decrease in agricultural land area, with the bulk of the change occurring by 2005. This translates to just over 9,000 acres of agricultural land lost in just seven years.

Table D-2. Agricultural Land Area, 2000-2007

Year	Total Agricultural Land (acres)	Percent of Total Land	Percent Change, 2000-2007
2000	43,530	14.5%	N/A
2002	38,860	12.9%	-10.7%
2005	35,021.6	11.6%	-9.9%
2007	34,525	11.5%	-1.4%
Total	-9,005	N/A	-20.7%

Sources: Caliper report (2009); 2007 Census of Agriculture in Lake County; Lake County Planning, Building, & Development Department

To address this issue, *Regional Framework Plan* Goal 4.8 states that the County should, “preserve select remaining farmland,” particularly high quality areas or those most likely to succeed into the future.⁹¹ Strategies to accomplish this goal include promoting sustainable farming activities, such as the sale of fresh produce, and identifying County regulations that make it challenging to start, expand, or continue agricultural operations. The *Regional Framework Plan* acknowledges the work of local conservation land trusts in preserving farmland through conservation easements.⁹² Work is also underway with Openlands and CMAP, among others, to identify opportunities and challenges to agricultural operations.

Some agricultural uses may have detrimental environmental effects when they occur on highly erodible soils or neglect to use best management practices (BMPs). Without the use of sustainable farming practices, agricultural operations can degrade soil health by causing the loss of topsoil and well as impact environmental resources off-site. For instance, using chemical applications not only impacts on-site soil conditions but can also pollute water downstream.⁹³ The Soil Survey of Lake County report offers recommendations for sustainable soil-erosion control measures, such as structural practices like conservation tillage (also known as no-till farming) or ridge planting. Crop rotations that include one or more years of close-grown grasses or legumes, as well as grassed waterways, also help with erosion and soil management.⁹⁴

⁹¹ RFP [Goal 4.8].

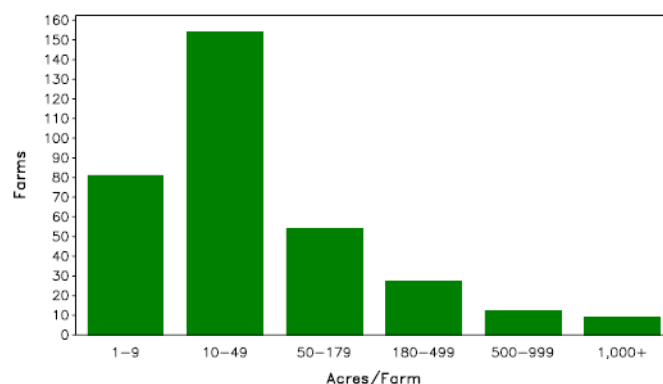
⁹² RFP p.4-17

⁹³ Urban Agriculture and Community Food Security in the United States: Farming from the City Center to the Urban Fringe, 2003

⁹⁴ *Soil Survey of Lake County*. Natural Resources Conservation Service, 2002. Retrieved 6/30/12 from http://soildatamart.nrcs.usda.gov/Manuscripts/IL097/0/Lake_IL.pdf

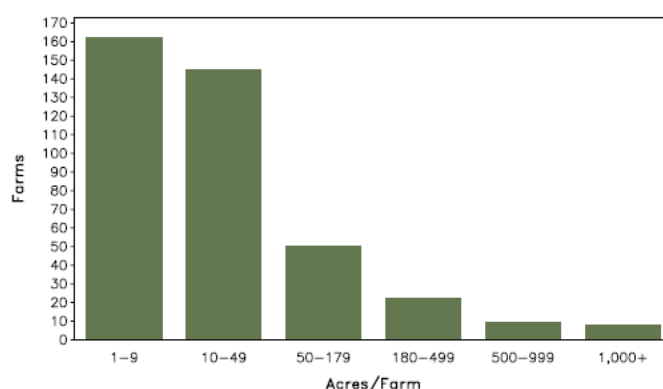
Although the total amount of land devoted to agricultural production in Lake County is declining, the County is experiencing an increase in the number of farms. While the gross number of farms declined 12 percent from 1997 to 2002 (385 farms), it then increased by 2.9 percent from 2002 to 2007 (to a total of 396 farms). The increased number of farms can be accounted for by a shift toward smaller-sized farms (see Figures D-4 and D-5. Lake County Farms by Size). The 2007 Census of Agriculture marked a 100 percent increase in small sized farms (one to nine acres) between 2002 and 2007, from 81 farms in 2002 to 162 farms in 2007 (Agricultural Census).⁹⁵ Fortunately, a trend towards smaller farms supports the growing sustainable local food system in Lake County, as local food operations tend to be concentrated on smaller-sized land parcels and typically do not require large-scale equipment and infrastructure compared to commodity crops.

Figure D-4. Lake County Farms by Size, 2002



Source: United States Department of Agriculture, 2002 Census of Agriculture, County Profile

Figure D-5. Lake County Farms by Size, 2007



Source: United States Department of Agriculture, 2007 Census of Agriculture, County Profile

Local Food Production

Ensuring that people have access to fresh, healthy, affordable food is a basic tenet of sustainability. Local food production makes fresh food more available and accessible to community members.⁹⁶ Local food consumption also increases the efficiencies and profitability of local food operations as farmers can sell their produce directly to consumers at local retail venues like farmers' markets or farm stands. Direct-to-consumer sales have multiple benefits, as farmers are able to access the local market, which

⁹⁵ 2007 Census of Agriculture in Lake County

⁹⁶ Sustainable Building and Development Regulations report, [p75]

increases their earnings and compensation, and consumers can learn about where and how their food is grown. Local food sales also keep food dollars in the local economy, which benefits the community at large.⁹⁷ Overall, supporting local food production in Lake County offers public health, economic, and environmental benefits and also fosters agriculture as an ongoing and viable land use.

Community gardens, which use vacant land to grow produce for local consumption, are a subset of local food production and help promote access to fresh, local food. The 2011 Sustainable Building and Development Practices report recommends expressly allowing community gardens, market farms, community-supported agriculture farms, and farmers' markets to remove potential regulatory barriers to those uses.⁹⁸ Examples of community gardens in Lake County are located at Prairie Crossing in Grayslake, Mano a Mano in Round Lake Park, College of Lake County (CLC) (Grayslake campus), Avon Township, a senior housing complex in the Village of Grayslake, and Waste-Not Gardens in Waukegan. In addition to small scale farms and community gardens, many residents in Lake County are cultivating backyard gardens to produce food. A 2012 qualitative survey conducted in the County to learn more about the potential for sustainable farming illustrated that local residents are also becoming increasingly interested in keeping honeybees and backyard chickens.⁹⁹ This interest reflects a documented national growing trend to produce honey and eggs on residential lots. As a result, city councils and local planning departments across the country are re-examining local zoning ordinances to determine whether these practices are a compatible land use in residential zones.¹⁰⁰

In evaluating the potential for expanding local food production and sustainable farming practices in Lake County, the most significant barriers appear to be land access and affordability; zoning provisions also pose challenges to certain sustainable agricultural uses on parcels that are less than 200,000 square feet. The UDO defines agricultural uses and distinguishes between exempt and non-exempt agricultural uses based on the parcel size. Uses that qualify for an agricultural exemption in the UDO have a minimum lot area of 200,000 square feet (4.59 acres or more) and the coinciding zoning regulations permit all agricultural uses and animal husbandry. The UDO allows community garden uses on public land (Section 4.3.2.6), which allows the possibility of using protected public open space land for local food growing as a method to increase local food production.

However, land parcels less than 200,000 square feet in size are classified as non-exempt agricultural land and are subject to more restrictions, which might pose barriers to some agricultural uses. For instance, although "crop raising" is allowed in any zoning district in unincorporated Lake County, the UDO presents some issues for local food production within residential districts. For example, the UDO does not currently permit beekeeping or backyard chickens in residentially-zoned lots fewer than 200,000 square feet in size. *Regional Framework Plan* Policy 4.8.3 calls for the examination of the County's regulations and elimination of barriers to local food farming, which will enable the County to foster a viable local food system and economy. Local municipalities may also be interested in information on how to zone to support local food production within their incorporated boundaries.

⁹⁷ Meter, Ken. "Local Food as Economic Development." Crossroads Resource Center. October 2008.

⁹⁸ 2011 Sustainable Building and Development Practices in Lake County

⁹⁹ Survey designed and conducted by the Chicago Metropolitan Agency for Planning (CMAP) in 2012 to identify barriers to sustainable agriculture across several stakeholder groups in Lake County

¹⁰⁰ LaBadie, K. (2008). *Residential Urban Chicken Keeping: An Examination of 25 Cities*. University of New Mexico.

Local Food Economy

The term “local food system” is characterized by its geographical focus based on the area where food is grown and consumed (also known as a “foodshed”); it also refers to the infrastructure and conditions needed to sustain this system such as local food production, conducive local government policies, programs, and decisions, matching supply and demand, building the local supply-chain (packing, processing, and distribution), preserving farmland, and sustainably managing organic agricultural waste. The “local food economy” is the economic impact that this system generates.

There is unmet demand for locally grown food in Lake County, as there is throughout the metropolitan Chicago area and state-wide.¹⁰¹ Perhaps as an effect, Lake County farm operations are increasing sales of vegetable products, with no negative impact on revenues from commodity crops.¹⁰² There is great market potential to further increase production of vegetables and fruits based on the \$180 million annual demand for vegetables and fruits in Lake County.¹⁰³

As evidence of the economic potential of local food production in Lake County, there has been an increase in the value of direct-to-consumer sales of local food products. If County consumers bought five dollars of food directly from local farms each week, local farms would earn an additional \$182 million.¹⁰⁴ Typically, direct marketing to consumers accounts for a higher percentage of sales for smaller farms than for larger farms. On a national scale, studies have shown that farm income and per acre net revenue for fresh market vegetables are five to 50 times greater than that for commodity crops.¹⁰⁵ Due to the hands-on nature of local food production, skilled farmers and farmhands play a crucial role in producing the output, whereas commodity farming is highly mechanized. A recent USDA report reveals that fruit and vegetable farms that sell into local markets employ 13 full-time employees per every \$1 million in sales, versus just three employees for their counterparts that sell into global farm commodity markets. In other words, a dollar spent at the farmers’ market supports four times as many workers as a dollar spent at the supermarket.¹⁰⁶ Overall, by promoting sustainable local farmland protection and food production, farmers can meet this growing demand and earn better compensation.

Further, consumer interest in local food, as indicated in the qualitative survey, increases the potential for additional food dollars to stay in Lake County. The multiplier effect would compound these economic effects to generate even more local revenue. According to research conducted at the University of Wisconsin Extension, the multiplier effect for small farms is 2.6, meaning that every dollar that goes toward local food purchases nearly triples the economic benefits to the local economy.¹⁰⁶ This positive trend also influences labor income and jobs as studies show that fruit and vegetable production

¹⁰¹ Bureau of Labor Statistics and Census, from Meter, Ken. “Local Food as Economic Development.” Crossroads Resource Center. October 2008.

¹⁰² USDA Census of Agriculture from 2002 and 2007 in Lake County, IL

¹⁰³ Meter, Ken. “Local Food as Economic Development.” Crossroads Resource Center. October 2008.

¹⁰⁴ Meter, Ken. “Local Food as Economic Development.” Crossroads Resource Center. October 2008.

¹⁰⁵ Ibid

¹⁰⁶ Interview with economics professor Larry Swain (2001), retired community development specialist for University of Wisconsin Extension, and retired director of the Survey Research Center at the University of Wisconsin — River Falls. See also Swain, L. (1999). “A Study of the Economic Contribution of Small Farms to Communities — Completed 1996 to 1999.” Unpublished manuscript; and Swain, L & D Kabes (1998). “1996 Community Supported Agriculture Report.” Unpublished manuscript.

has the potential to generate three to seven times more local jobs and farm income than corn and soybean production.¹⁰⁷

An important part of a sustainable local food system is sustainable waste management; composting organic agricultural materials is a viable way to divert biodegradable waste from landfills. There are also entrepreneurial opportunities related to composting organic waste as demonstrated by composting facilities in Lake County, including Midwest Organics Recycling in Wauconda Township and New Earth Compost in Waukegan. Although there are regulatory challenges related to this type of composting for public health reasons, there are still opportunities to establish composting businesses that comply with regulations. For instance, Midwest Organics Recycling has obtained proper permitting from the Illinois Environmental Protection Agency (IEPA) to compost food scraps, horse manure, and landscape waste, and have been able to create an economically viable business while having an impact on organic waste diversion. Based on United States Environmental Protection Agency (USEPA) national statistics, food scraps constitute 12 percent of landfill capacities across the country.¹⁰⁸ Given the economic and environmental opportunities associated with food scrap and organic waste composting, it makes sense to expand these types of businesses while adhering to composting codes. Further, there is another entrepreneurial role for licensed composting haulers, such as Organix Recycling based in Mokena, Illinois. This company has contracted with grocery stores, including Jewel-Osco, and others to pick up food scrap waste. These local composting businesses are already demonstrating their business potential and can serve as a replicable business model in Lake County.

The Illinois General Assembly is also playing a key role in supporting the viability of local food production in Illinois and farmers who rely on this income. The “Local Food, Farms, and Jobs Act” (P.A. 096-0579) passed in 2011 includes a procurement goal that 20 percent of all food products purchased by State agencies and State-owned facilities shall be local farm or food products by 2020. This is an impressive target and has established a framework for local communities, like Lake County, to set similar targets to bolster their own sustainable local farm and food economies.

Goal & Policies

Goal: Conserve and enhance Lake County’s natural resources, open space network, and local food system for environmental, economic, recreational, and aesthetic benefits.

Policy 1: Support the Lake County Forest Preserve District as the largest land holder and open space provider in Lake County by backing the adopted “Lake County Vision for Land Preservation” and “The Forest Preserve District’s 100-year Vision for Lake County” (pending adoption as of the publication of this document) and track progress through the countywide partnership.

[Ref.: Goal 3.1; Goal 4.1; Goal 4.2; Goal 9.1; Goal 9.2; Pol. 4.1.1; Pol. 4.1.3; Pol. 5.37.3; Pol. 9.2.1]

Action 1: Continue to actively coordinate with public and private conservation partners.

¹⁰⁷ Swenson, David. Selected Measures of the Economic Values of Increased Fruit and Vegetable Production and Consumption in the Upper Midwest. Research, Department of Economics, Iowa State University, Ames: Leopold Center for Sustainable Agriculture, March 2010.

¹⁰⁸ US Environmental Protection Agency, 2008

Action 2: Continue tracking the amount and type of protected open space under the Lake County Vision for Land Preservation and incorporate such figures into future *Regional Framework Plan* updates, using a commonly used methodology.

Action 3: Encourage partnerships to preserve, manage and enhance high priority conservation areas.

Action 4: Encourage partnerships to focus on coordinating land acquisitions to provide greenway corridor connectivity where appropriate.

Action 5: Protect high quality natural resources through fee-simple purchase or conservation easements.

Commentary: The Land Conservation Partners of Lake County developed the goal of preserving 20 percent as open space, adopted by the County Board in 2010. This group has been coordinated by Conserve Lake County. It has established a methodology for tracking protected open space, which should continue to be used to ensure consistency.

Policy 2: Promote convenient and safe access to local parks, open space areas, and recreational facilities for all County residents.

[Ref.: Goal 3.1; Goal 4.2; Goal 5.36; Goal 5.37; Goal 9.1; Pol. 4.2.2; Pol. 4.2.4; Pol. 5.36.3; Pol. 5.37.1; Pol. 5.37.2; Pol. 9.2.1; Pol. 10.2.2]

Action 1: Measure access to parks and recreational facilities in unincorporated areas within one half mile of area residences, rather than by county-wide averages.

Commentary: One half mile is a commonly used measure, developed by the Trust for Public Lands, as a metric to evaluate access to parks.

Action 2: Evaluate the potential to expand park dedication requirements in existing County ordinances. The development review process should encourage protecting open space areas that align with existing and potential greenway corridors.

Action 3: Provide model regulatory language for municipalities to encourage them to adopt best practices in park dedication requirements.

Policy 3: Incorporate the consistent application and use of available data and resources to further identify and prioritize the protection of natural resources in development decisions.

[Ref.: Goal 4.1; Goal 4.2; Goal 4.3; Goal 4.4; Goal 5.11; Goal 5.12; Goal 9.2; Pol. 4.1.1; Pol. 4.2.2; Pol. 4.4.2; Pol. 5.11.1; Pol. 5.37.1; Pol. 5.37.3; Pol. 6.3.3; Pol. 9.2.1; Pol. 9.2.3; Pol. 9.2.4; Pol. 9.2.5]

Action 1: Incorporate criteria in development regulations from state of the art resources for evaluating development proposals (see Commentary below for examples).

Action 2: Share available resources for prioritizing natural areas with other jurisdictions.

Action 3: Evaluate the concept of a Lake County green infrastructure map and plan.

Commentary: Examples of available resources for natural area evaluation include the Green Infrastructure Vision 2.0 and the Illinois Natural Areas Inventory (INAI).

Policy 4: Promote the use of native plants to create habitat, remove invasive species, and promote infiltration of rainwater.

[Ref.: Goal 4.1; Goal 4.3; Goal 4.4; Goal 5.1; Goal 5.2; Goal 5.3; Goal 5.11; Goal 5.12; Pol. 4.4.2; Pol. 5.3.2; Pol. 10.3.1]

Action 1: Incentivize use of native plants in site development practices, such as in bioretention areas for bioswales and rain gardens.

Action 2: Support and encourage the use of native plants in existing residential and nonresidential landscaping settings.

Commentary: Conserve Lake County's Conservation@Home and Openlands Treekeepers programs are examples of programs that provide residents recognition for planting trees and incorporating native plants into their landscaping.

Action 3: Continue to promote native landscaping best practices at Lake County demonstration facilities, where appropriate.

Policy 5: Provide opportunities and incentives that will facilitate an economically viable local food system.

[Ref.: Goal 4.8; Pol. 4.8.1; Pol. 4.8.3; Pol. 4.8.4]

Action 1: Adapt zoning ordinances to provide more opportunities for local food producers to operate on non-exempt land (under 200,000 square feet) in unincorporated areas.

Action 2: Support the increase in direct-to-consumer sales opportunities by allowing farmers markets in all zoning districts and increasing the length of Temporary Use Permits for onsite seasonal sales, with minimum space and location requirements.

Action 3: Encourage stronger connections within the food systems between farmer training programs, business development, and potential aggregation services (i.e. food hubs).

Action 4: Continue to support the Lake County Local Food Working Group and its recommendations in the Lake County Sustainable Local Food Systems Report (Spring 2013).

Commentary: The Lake County Local Food Working Group is a public-private partnership developed with CMAP Local Technical Assistance and with the support of the County.

Policy 6: Promote sustainable local food farming activities that create a productive transitional or permanent land activity (for instance, on public, tax delinquent land), thereby supporting the local food economy.

[Ref.: Goal 4.8; Pol. 4.8.1; Pol. 4.8.3; Pol. 4.8.5; Pol. 4.8.7]

Action 1: Clearly define sustainable local food farming in development regulations to promote it as a legitimate long-term use when making land use planning decisions.

Action 2: Work with partners to evaluate the opportunities to provide affordable land for local food operations through redesigned license agreements on public lands.

Commentary: Examples of public lands that lease to farmers include the Lake County Forest Preserve District and the Libertyville Township Open Space District.

Action 3: Encourage local community groups to establish community garden programs in urbanized areas.

Action 4: Encourage programs which allow local food farmers to license public land at a reduced rate in exchange for donating a percentage of their produce to food pantries.

Indicators

While the policies in this Chapter will be implemented on an ongoing basis, each indicator will be monitored on an annual basis and evaluated every five years. “Lake County Indicators” include indicators that are within the County government’s purview, while “Community Indicators” relate to activities within the County at large.

Lake County Indicators:

Indicator 1: County regulations will be evaluated for expanded park dedication requirements that could also serve as a model for municipalities by 2018. (PBD)

Indicator 2: The annual number of registrations for chicken coops and hoop houses will increase by 2018. (PBD)

Community Indicators:

Indicator 1: At least 20 percent of the County will be preserved as natural areas, parks, trails, farmland, and scenic views by 2030. (Vision for Land Preservation, 2010) (PBD/FPD)

Indicator 2: The number of residents with limited access to fresh and local food will decrease by 2018. (PBD)

Indicator 3: The number of locations and hours of operation of farmers markets will increase by 2018. (PBD)

Indicator 4: The number of small local food farming operations will increase by 2018. (PBD)

Implementation Approach

Policy	Inter-governmental	County Departments and Agencies	Non-County Agencies
1 Support the adopted "Lake County Vision for Land Preservation" and "The Forest Preserve District's 100-Year Vision for Lake County" and track progress through the countywide partnership.	County, Municipalities, Townships, Agencies	PB&D	LCFPD, Conserve Lake County, other local land trusts
2 Promote convenient and safe access to local parks, open space areas, and recreational facilities for all County residents.	County, Municipalities	PB&D	Trust for Public Lands
3 Incorporate the consistent application and use of available data and resources to further identify and prioritize the protection of natural resources in development decisions.	State, County, Municipalities	PB&D	LCFPD, Chicago Wilderness
4 Promote the use of native plants to create habitat, remove invasive species, and promote infiltration of rainwater.	County, Municipalities	PB&D, SMC	Conserve Lake County
5 Provide opportunities and incentives that will facilitate an economically viable local food system.	County, Municipalities	PB&D	Liberty Prairie Foundation
6 Promote sustainable local food farming activities that create a productive transitional or permanent land activity (for instance, on public, tax delinquent land), thereby supporting the local food economy.	County, Municipalities	PB&D	LCFPD

Figure D-1. Open Space Network

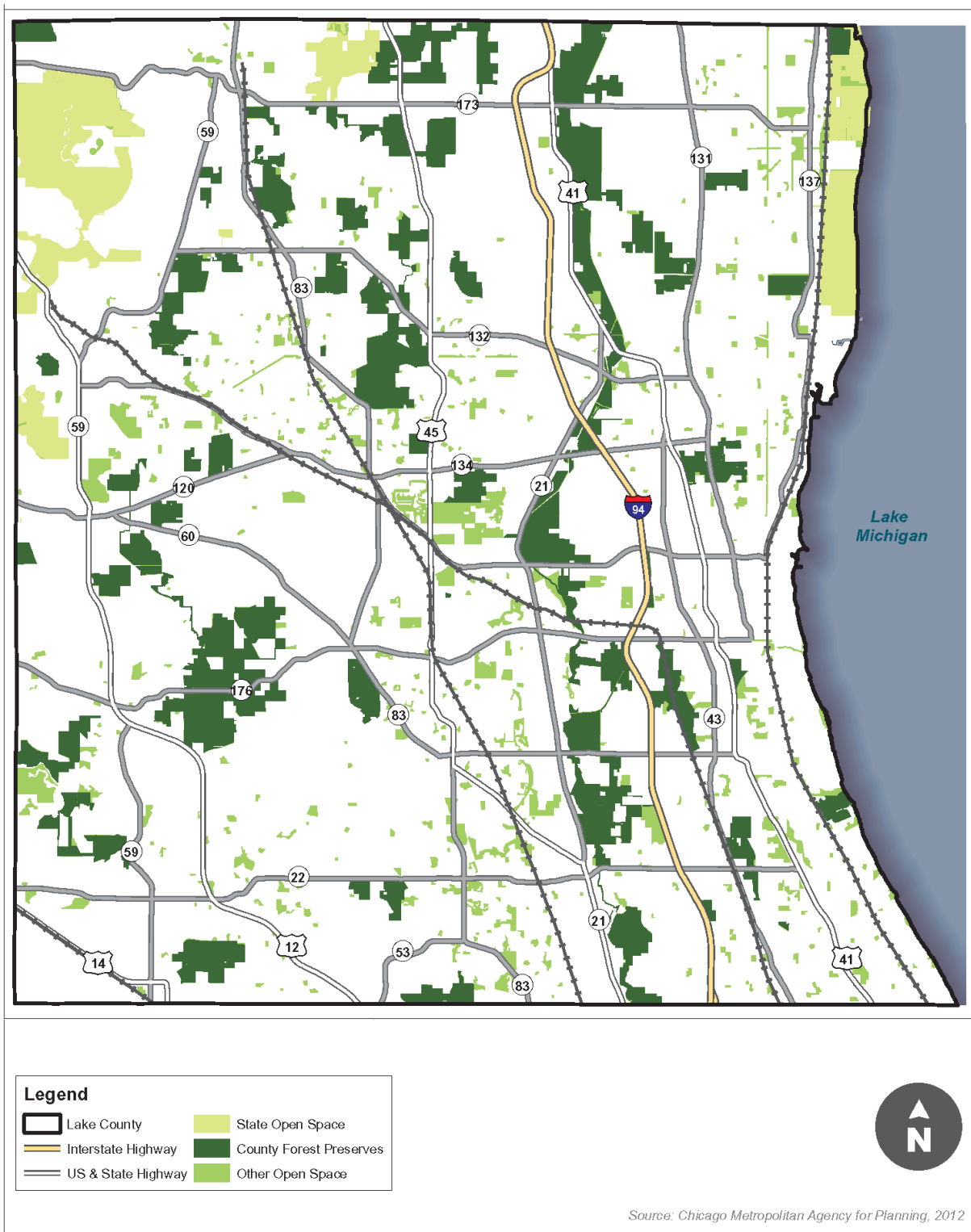


Figure 4.11 (from RFP). Priority for Open Space

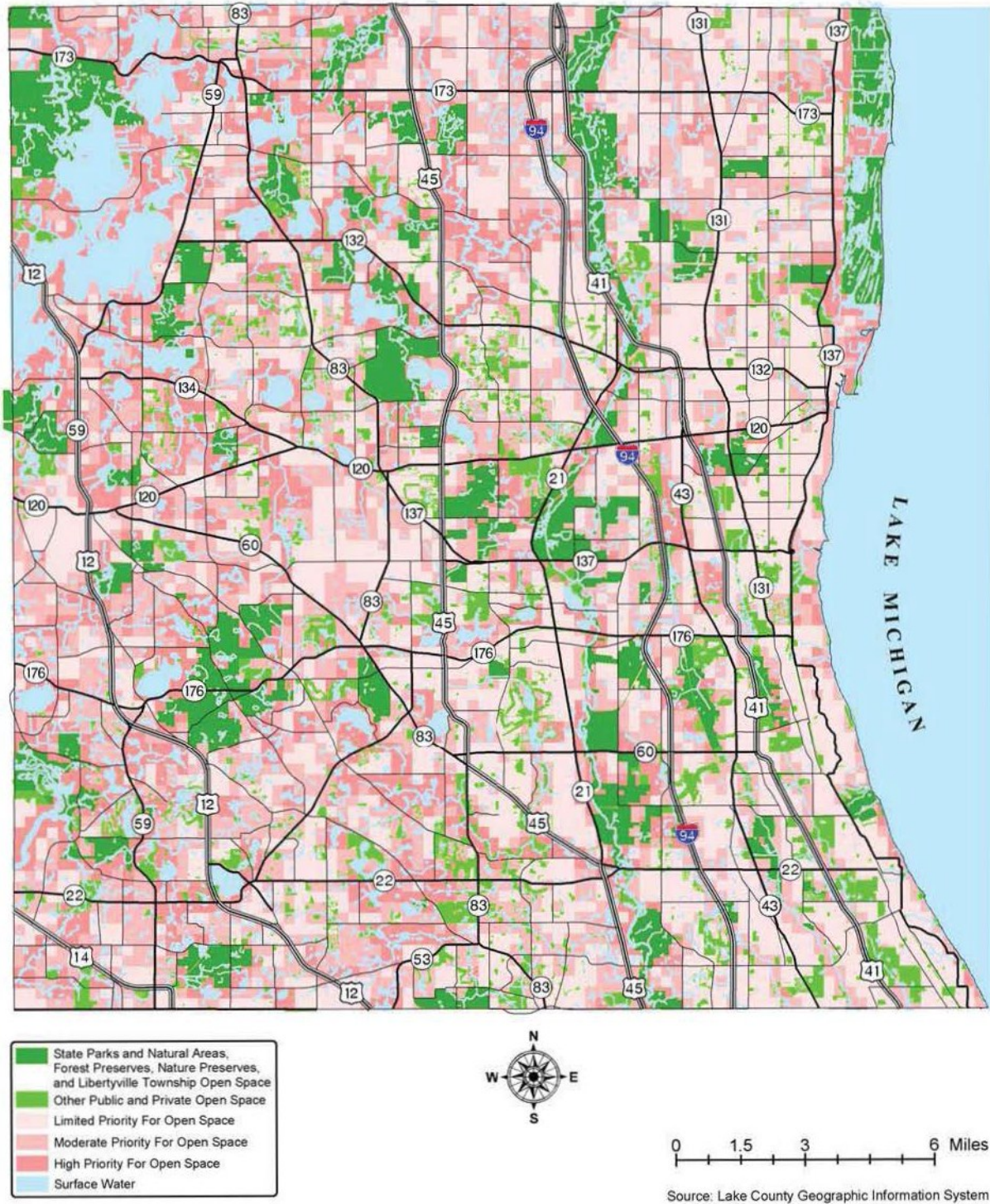


Figure 4.12 (from RFP). Environmental Limitations

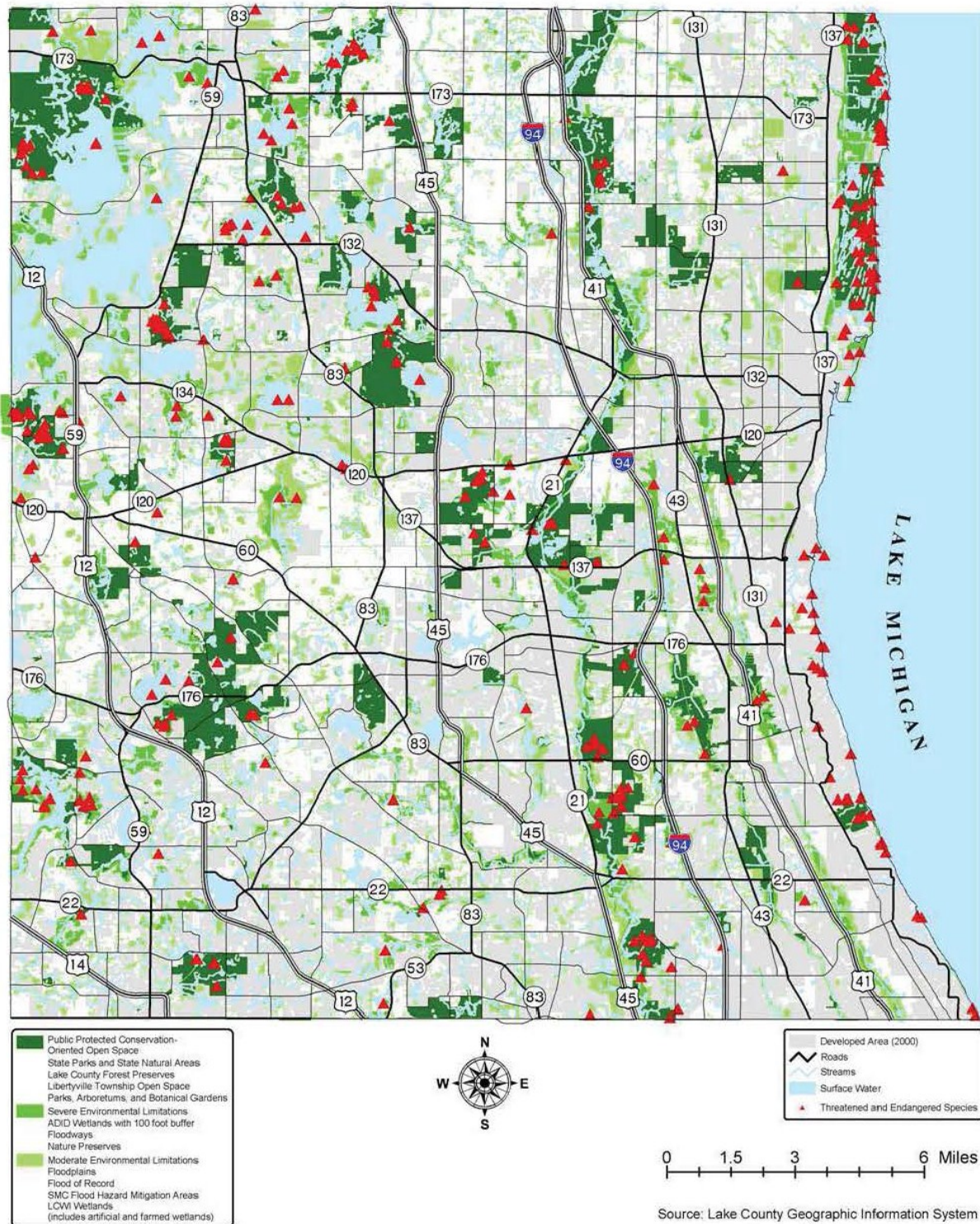


Figure 4.4 (from RFP). Illinois Natural Areas Inventory Areas

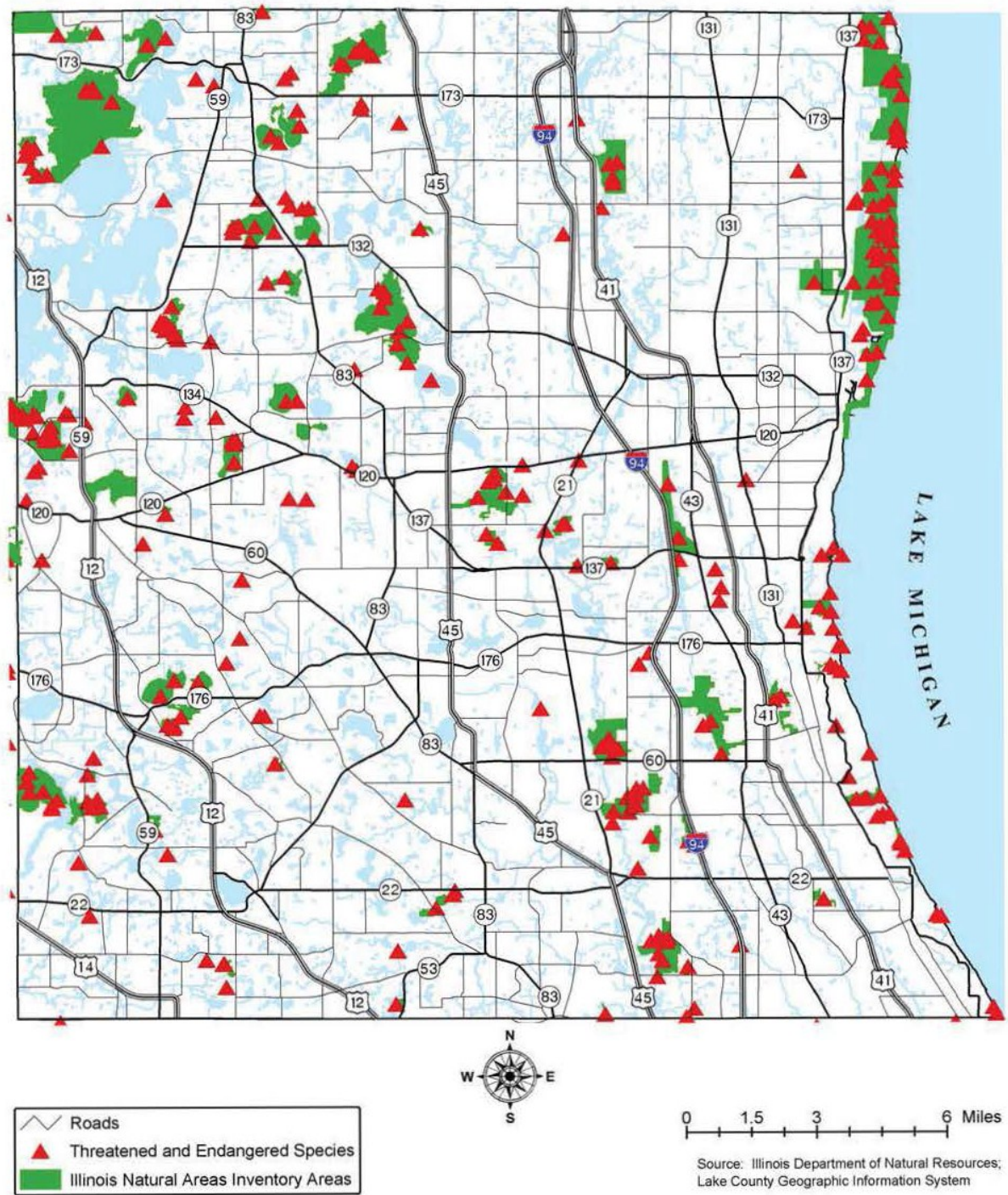


Figure D-2. Walkable Access to Open Space

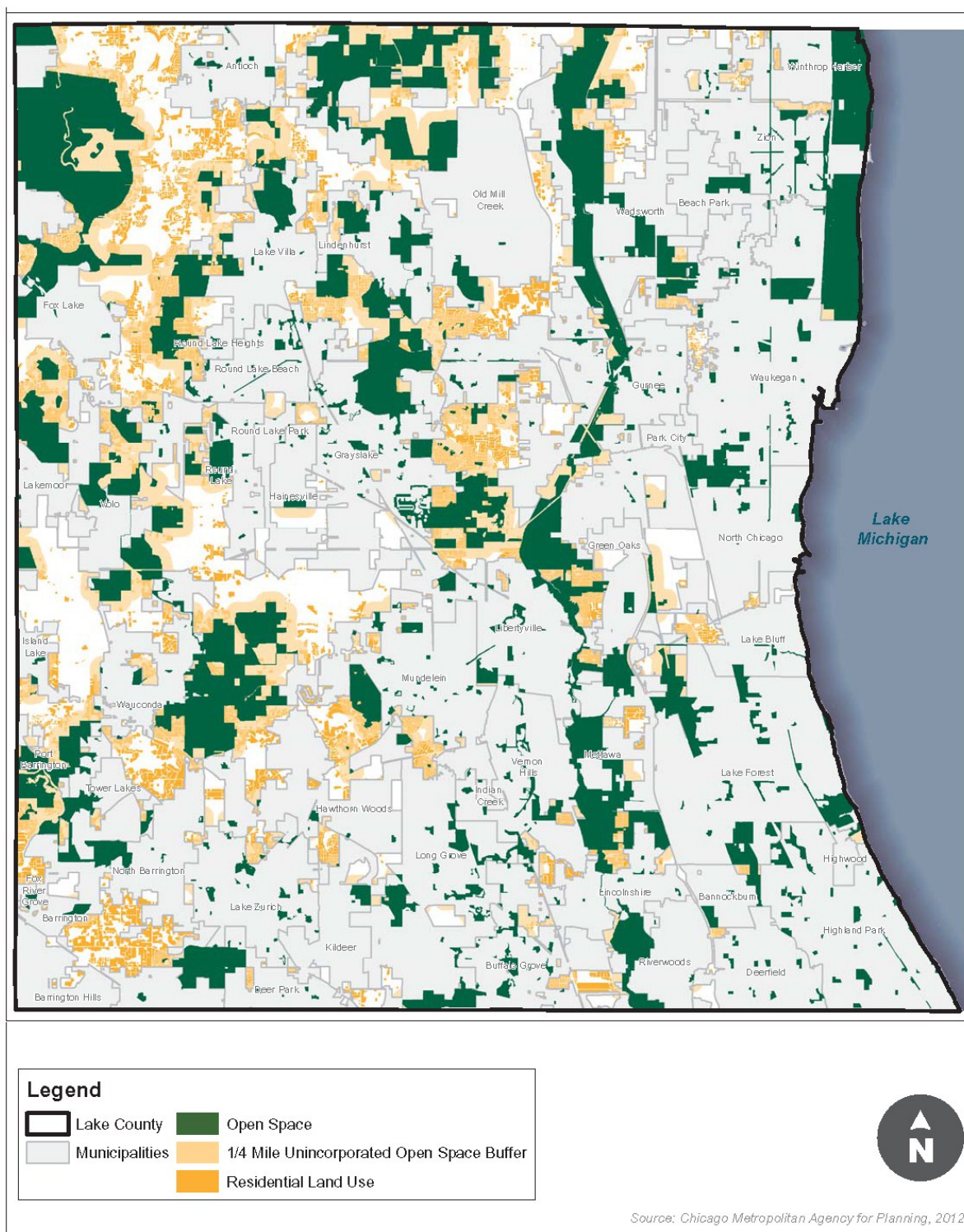
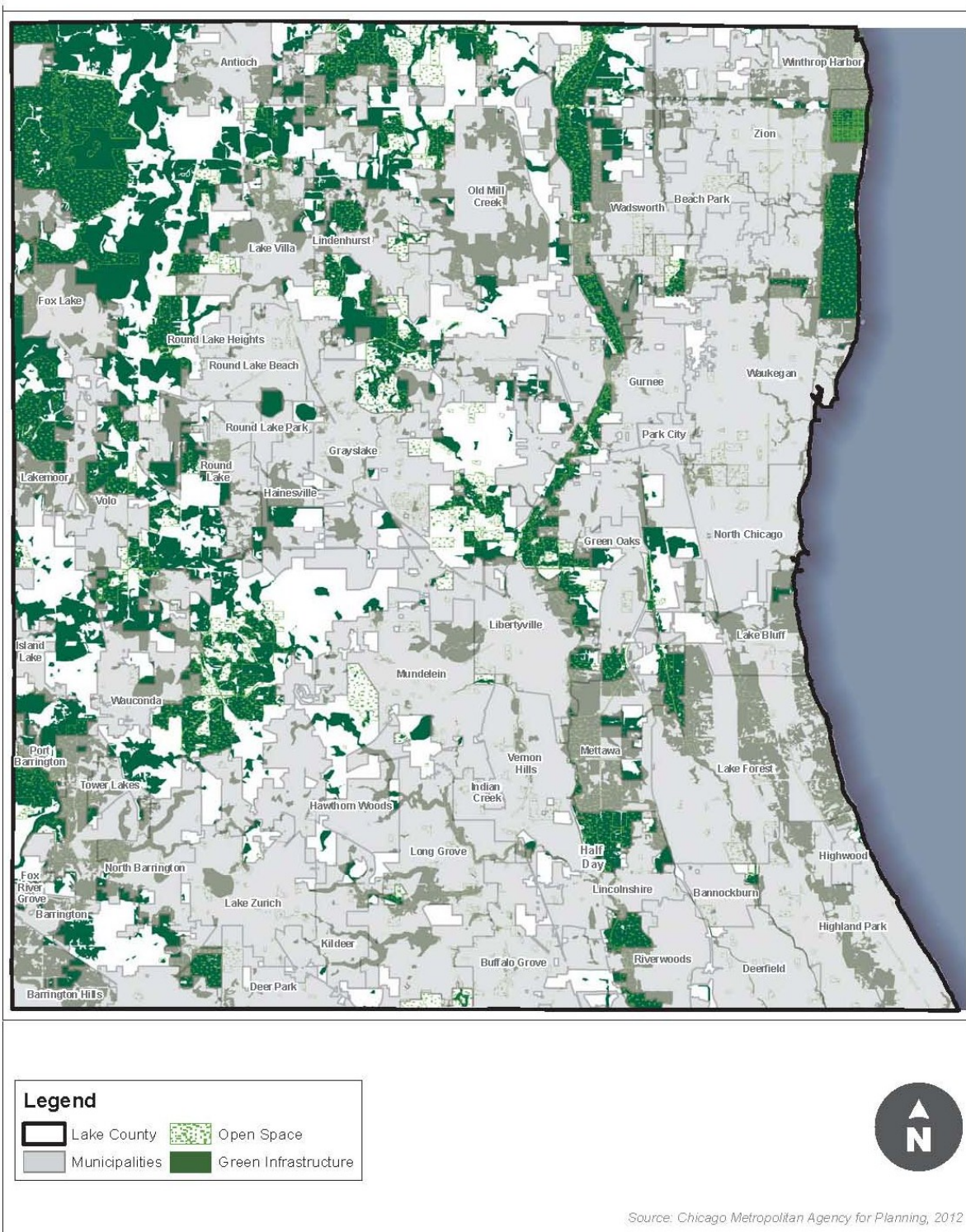


Figure D-3. Green Infrastructure



E. Water Resources

The content of the Water Resources section of the Sustainability Chapter is most closely related to Regional Framework Plan Chapter 4: Environmental Resources, Open Space, and Farmland and Chapter 5: Infrastructure and Services, particularly the Water Supply and Stormwater Management sections.

Significance

Lake County has long recognized the importance of protecting its water resources. Clean and plentiful water is a fundamental necessity for the health of County inhabitants and the natural environment. Reducing water consumption and stormwater runoff saves energy and prolongs the life of water infrastructure. Expanding the use of stormwater best management practices can reduce flood damage to the built and natural environment and create attractive amenities, such as rain gardens and roof top gardens. Several planning initiatives in the County have stressed how the area's lakes, rivers, and groundwater form an interconnected and extremely complex water system, which requires an integrated water resource management approach.

The 2013 Lake County Strategic Plan states that the County should strive to “preserve the health of our natural resources and our drinking water through the widespread use of sustainable and environmental management practices, effective stormwater management and the enhancement and rehabilitation of lakes, wetlands and other fragile ecosystems.” Many other County documents, including the *Regional Framework Plan*, contain similar policies and goals. The *Regional Framework Plan* describes how many County decisions can influence water in subtle ways.¹⁰⁹ For example, the location and layout of new residential development can increase stormwater runoff and flooding, which can in turn negatively affect drinking water quality.¹¹⁰

Overall, Lake County is part of a national movement that views rainwater as an asset rather than a waste and promotes solutions to capture rain where it falls and harvest it as a commodity. The County utilizes extensive education and outreach to teach residents and businesses how sustainable practices can maximize innovative ecological, recreational and economic opportunities. This is a fundamental step towards achieving the County's goal of “a regional environment that is healthy for residents, offers scenic and recreational open space, and provides habitat for wildlife.”¹¹¹

The County has taken an active role in protecting its water resources, particularly through participation in several groups, including the Northwest Water Planning Alliance (NWWPA) and Lake County Water Supply Advisory Committee. Lake County developed its “State of Lake County's Water Supply” in 2008, which documents Lake County's existing water supply and water use patterns, identifies existing water management practices, and provides groundwork for future actions. In addition, the Lake County Stormwater Management Commission (Lake County SMC), which is responsible for administering stormwater management standards and floodplain regulations, has nearly completed the process of updating the County's Watershed Development Ordinance (WDO), which will improve baseline water quality performance standards for the County.

¹⁰⁹ RFP, p. 4-4

¹¹⁰ RFP, p. 1.

¹¹¹ RFP, p. 8.

Issues and Opportunities

The following key issues and opportunities related to water resources have been identified through the existing conditions analysis:

- Lake County's water resources are natural amenities that contribute to the County's quality of life, which is a major determinant in business retention and location decisions.
- However, the County's water supply is not endless and demand could potentially increase up to 121 percent by 2050. Communities are drawing down more water from shallow aquifers than can be replenished, and some deep aquifers are contaminated with harmful substances. In addition, Lake Michigan as a water source is only projected to be sustainable for the region until 2030.¹¹²
- Encouraging awareness and implementation of water conservation measures is an important element of ensuring a sustainable source of drinking water for the County.
- Lake County surface and groundwater resources face growing issues with "emerging contaminants," such as chlorides (deicing salt), phosphorus from fertilizers, and pharmaceuticals. This compounds traditional water quality issues, such as contamination from commercial and industrial processes, as well as erosion and sedimentation from increased stormwater runoff.
- Without adequate measures to manage stormwater, increased impervious coverage (roof tops, parking lots, etc.) has the potential to contribute to flood damage and degraded water quality and aquatic habitat.
- The County is facilitating the wide-spread and systematic use of best management practices (BMPs) to manage stormwater, which is considered the most cost-effective and environmentally friendly solution. Improved stormwater regulations, in line with future state and federal performance standards, will help to curb the volume and concentration of polluted stormwater runoff.
- Lake County has developed a number of sub-watershed plans that take a holistic approach to managing water resources, addressing both sources of urban and agricultural runoff as well as specific pollutants, such as ones that the IEPA identified as impairments to the county's waterways.
- Lake County is part of state-wide discussions to think creatively about funding these initiatives to afford the best possible protections to its water resources.

Analysis

Existing Water Resources

Lake County has tremendous water resources and is bordered on the east by Lake Michigan. Nearly 90,000 acres (about 30 percent of the County) consists of lakes, streams, wetlands, and floodplain areas (see Figure E-1. Water Resources). It has four major watersheds, and 26 sub-watersheds (see *Regional Framework Plan*, Figure 4.2). The County's geology is heavily influenced by glaciers that formed the area, and has a ground surface of silt, clay, sand, and glacial till. Over 350 inland lakes and ponds span 16,895 acres, including part of the Chain-O-Lakes area, Fox Lake, and Lake Nippersink. Lake County has 159.6 linear miles of classified streams, with 33.6 miles of Class B High Value Aquatic Resources. In addition, 38,474 acres of Advance Identification (ADID) wetlands¹¹³ and 61,495 acres of other wetlands are found in the County.¹¹⁴ The County has 17,533 acres of INAI sites (which contain unique or exceptional

¹¹² Water 2050

¹¹³ Data reported in 1992,

¹¹⁴ Lake County Wetland Inventory

environmental resources). These resources are part of the natural environment that is home to over 130 different known threatened and endangered species.

Water Supply & Demand

Lake County receives its water from three main sources: Lake Michigan, shallow aquifers, and deep aquifers (see Figure E-2. Water Sources and Table E-1. Water Supply by Source). In 2008, the Lake Michigan water service area covered 195 square miles (41 percent of the County's area), extending service to approximately 70 percent of the County's population.¹¹⁵ There were 37 Lake Michigan water allocation permits, including 26 municipal systems, five non-municipal systems, and six commercial, industrial, or institutional systems. In 2010, the Illinois Department of Natural Resources approved Lake Michigan allocations for ten additional Lake County communities: Antioch, Fox Lake, Lake Villa, Lake Zurich, Lindenhurst, Long Grove, Volo, Wauconda, and unincorporated Lake County (Fox Lake Hills and Grandwood Park).¹¹⁶

Areas in Lake County that do not receive Lake Michigan water rely on groundwater aquifers. More than 80 percent of Lake County's groundwater supply is drawn from shallow aquifers.¹¹⁷ Only a small portion of the population draws from deep aquifers. While deep aquifers are less susceptible to surface contaminants (such as road deicing salt and unsealed or abandoned wells), this deep "legacy" water is replenished very slowly and can have naturally occurring water quality issues, such as radium, barium, salinity, and total dissolved solids (TDS). Radium levels above the drinking water standard occur in some areas of the County.

Table E-1. Water Supply by Source¹¹⁸

Water Source	Population in Service Area	Millions of Gallons per Day
Lake Michigan	494,620 ¹	834.7
Shallow Aquifers	248,760	18.1
Deep Aquifers	49,240	4.3
Total	792,620²	857.1

¹ Includes non-contact cooling water that is returned to the lake

² Exceeds the County's total population – not everyone in the service area utilizes Lake Michigan water

While Lake County is known for its abundant water resources, it does not have an endless supply of drinking water. To understand the growing demand on its limited water resources, Lake County participated in the Northeastern Illinois Regional Water Supply Planning Group, which was facilitated by CMAP. This three-year intensive study produced a comprehensive view of the region's water supply and demand, and recommended numerous specific measures that local governments could adopt to become more sustainable. The study resulted in the *Water 2050: Northeastern Illinois Water Supply/Demand Plan Report (Water 2050)*, adopted in 2010. Scenario projections indicated that if the County continues along its current trend, water withdrawals will increase by around 44 percent by 2050. If Lake County implements stronger conservation practices, it could potentially restrict its rate of

¹¹⁵ 2008 Report, *The State of Lake County's Water Supply, Executive Summary*

¹¹⁶ "North-West Lake County Lake Michigan Water Planning Project." Retrieved 7/5/12 from <http://www.lakecountyil.gov/PublicWorks/PublicInformation/Pages/LakeMichiganWaterFeasibilityStudy.aspx>

¹¹⁷ *The State of Lake County's Water Supply*, Executive Summary, p. 2 (2008)

¹¹⁸ *ibid*

increase to 13 percent. Alternatively, if Lake County becomes more resource-intensive, it will potentially withdraw over 75 percent more water by 2050 than the 2005 baseline, a 28 percent increase over the baseline scenario.¹¹⁹ Overall, the Illinois State Water Survey estimated in 2008 that the demand for water in Lake County will increase between 45 percent and 121 percent by 2050, depending upon water consumption practices.¹²⁰

Table E-2. Scenario Water Withdrawals in Millions of Gallons per Day, 2005-2050

	Current Trend (Baseline)	Less Resource Intensive	More Resource Intensive
2005 Reported ¹²¹	105.3	105.3	105.3
2005 Normal	91.3	91.3	91.3
2050 Normal	131.6	103.1	160.1
2005-2050 Change (MGD)	40.3	11.8	68.9
2005-2050 Change (%)	44.1%	13.0%	75.4%
Change from Current Scenario	0	-28.5	28.6

Source: [Northeastern Illinois Water Demand Report](#), ISWS (2008), Table ES-8

The amount of water that Lake County can withdraw from Lake Michigan is limited. A United States Supreme Court Consent Decree restricts the amount of water that Illinois can divert from Lake Michigan each year to 3,200 cubic feet per second, which amounts to approximately 2.1 billion gallons of water per day.^{122,123} In 2005, Lake County reported withdrawing an average of 105 million gallons per day (MGD) (see Table E-2. Scenario Water Withdrawals). Continued County growth will further constrain the amount of available Lake Michigan water. In fact, if the region maintains status quo use, Lake Michigan water is projected to only provide a sustainable supply through the year 2030.¹²⁴ In the immediate future, CMAP estimates that Illinois is currently 50 to 75 million gallons per day under the federal limit on diverting Lake Michigan water. While this is enough to accommodate the ten recent communities that were approved for new allocations of lake water, it is possible that inadequate local water supplies could limit growth and development opportunities in the future if new sources of water are not utilized.¹²⁵

¹¹⁹ See [Northeastern Illinois Water Demand Report](#), ISWS, Executive Summary (ES) (2008).

¹²⁰ See [Northeastern Illinois Water Supply Planning Investigations: Opportunities and Challenges of Meeting Water Demand in Northeastern Illinois](#), Contract Report 2012-03, Table 17, p. 46.

¹²¹ The 2005 reported figures for Lake County water withdrawal scenarios were unusually high because the region was in a period of drought. If Lake County experiences hotter and drier weather in the future, this figure illustrates how the demand may intensify beyond the current “normal” projections.

¹²² “U.S. Supreme Court Decree: *Wisconsin v. Illinois*, 388 U.S. 426 (1967).” Retrieved 7/5/12 from <http://www.cglg.org/projects/water/docs/WIVIL--1967Decree.pdf>

¹²³ “U.S. Supreme Court Decree (Amended): *Wisconsin v. Illinois*, , 449 U.S. 48 (1980).” Retrieved 7/5/12 from <http://www.cglg.org/projects/water/docs/WIVIL--1980Amendment.pdf>

¹²⁴ CMAP Water 2050

¹²⁵ See CMAP Water 2050, p. XI.

Communities that rely on aquifers face supply issues as well. About 30 percent of Lake County utilizes groundwater.¹²⁶ Groundwater withdrawals are projected to increase faster than surface water withdrawals.¹²⁷ While the recent approval by IDNR for additional allocation permits will potentially reduce this strain, the long-term pressure on aquifer levels still remains a critical issue.

The groundwater supply in Lake County is susceptible to both increased drawdowns as well as potential contamination. Shallow aquifers are particularly vulnerable to surface contamination from illicit discharges (such as leaking underground storage tanks) to abandoned wells and chemicals in stormwater runoff (such as road salt). The list of potential contaminants is enormous and includes various organic classes (e.g. petroleum, solvents, pesticides), toxic metals (e.g. cadmium, lead, chromium), mercury, chlorides from road salt and septic softeners, sulfates, nitrogen, and high total dissolved solids (TDS).¹²⁸

To better understand the yield of the County's groundwater sources, the Lake County Water Supply Advisory Committee is working with the Illinois State Geological Survey (ISGS) and University of Illinois on part of a federal and state initiative to create high resolution 3D geologic mapping of the western three quarters of Lake County, illustrating both surface water and groundwater resources. Pending future funding, the County intends to expand the project to identify the quantity of available groundwater supplies. This part of the project would not be completed for several years.¹²⁹

According to the 2008 Illinois State Water Survey report, "urbanization can seriously degrade groundwater quality of shallow aquifers, particularly in snowy climes where deicers are heavily used. In addition, thousands of abandoned wells throughout Lake County are no longer monitored, and could easily and quickly contaminate neighboring wells in the area."¹³⁰

Water Conservation

To address concerns about water supply, Lake County has begun to implement water conservation measures. As a foundation, the Lake County Board endorsed CMAP's *Water 2050* plan, which defined several goals related to managing water demand, ensuring sufficient supply, protecting water quality and sustaining aquatic ecosystems, encouraging stewardship, fostering intergovernmental communication for water conservation and planning, and improving integration of land use and water use planning. *Water 2050* underscores how "investments in water conservation and efficiency are not only integral to water supply planning, but also beneficial on the larger economic scale through job creation, associated energy savings, and the avoided cost of new infrastructure."¹³¹ Since its adoption of *Water 2050*, Lake County has taken several steps to meet these sustainable water resource goals.

In September 2010, Lake County, along with five other counties and approximately 80 communities, formed the regional "Northwest Water Planning Alliance" (NWWPA) to implement *Water 2050*

¹²⁶ "Annual Report of the Lake County Water Supply Advisory Committee." September 2011. Retrieved 7/5/12 from <http://www.lakecountyil.gov/savewater2/Documents/WSAC+2011+Full+Doc.pdf>

¹²⁷ See [Regional Water Demand Scenarios for Northeastern Illinois: 2005-2050](#) (2008), p. 2-16.

¹²⁸ See [An Evaluation of Temporal Changes in Shallow Groundwater Quality in Northeastern Illinois Using Historical Data](#), Illinois State Water Survey (2008) p. 1.

¹²⁹ "Annual Report of the Lake County Water Supply Advisory Committee." September 2011. Retrieved 7/5/12 from <http://www.lakecountyil.gov/savewater2/Documents/WSAC+2011+Full+Doc.pdf>

¹³⁰ [Lake County Water Supply Advisory Committee 2011 Annual Report](#)

¹³¹ *Water 2050*, p. 89.

recommendations and concepts concerning groundwater and inland surface water dependent communities. The NWPA formed a Technical Advisory Committee (TAC), comprised of municipal and county water and planning professionals, consulting agency partners, and conservation organizations, to provide technical expertise. The group has focused on two initiatives: cooperation between the Illinois State Water Survey and water utility operators to measure water levels in deep aquifers; and collaboration with CMAP to create educational materials for the public on water conservation. The TAC is also considering potential ordinance recommendations, such as lawn watering restrictions, for county and municipal governments.

In addition, the Lake County Board formed a Water Supply Advisory Committee (WSAC), which is comprised of representatives from County and municipal governments. This committee, along with its technical and policy advisory groups, has made progress on several local water supply planning initiatives, including developing recommendations for a comprehensive water supply planning strategy; creating and promoting the adoption of County-wide water management and conservation ordinances, including CMAP's 2010 *Model Water Use Conservation Ordinance*; and adopting recommendations for appropriate water pricing practices, such as full cost and conservation pricing.

Lake County has engaged in several studies and initiatives to develop sustainable water practices. In 2008, the County Board adopted the *State of Lake County's Water Supply* report, which documented Lake County's existing water supply and water use patterns, identified existing water management practices, and provided groundwork for future actions. The December 2011 *Promoting Sustainable Building and Development Practices in Lake County* report lists many examples of sustainable water practices, including rainwater harvesting and reuse; high-efficiency plumbing fixtures; low water use landscaping; efficient irrigation systems; turf-area management; and individual metering.

Lake County is also a leader with regard to water reuse practices. The County is home to one of the first rainwater harvesting systems for toilet flushing in the region, located at the Lake County Forest Preserve District's Ryerson Woods Welcome Center.^{132,133} Rainwater harvesting systems conserve potable water and reduce the overall amount of water that is sent to be treated. The Forest Preserve District led by example in securing a variance for the Ryerson Woods system, which is not currently permitted under the Illinois Plumbing Code. The District's pioneering efforts in this area helped to inspire new legislation in 2012 that authorizes amending the Illinois Plumbing Code to accommodate rainwater reuse systems without a variance.¹³⁴

Water Quality

The *Regional Framework Plan* calls for regional and state agencies to identify and protect the quality of its most vulnerable lakes, streams, wetlands, and floodplain areas, noting agricultural and stormwater runoff, and industrial waste as particular threats.^{135,136} The *Regional Framework Plan* also stresses the value of promoting smart growth and wise land use decisions as a vehicle for water quality protection. The *2009 Strategy for a Sustainable Lake County* and *Strategic Plan* documents contain similar

¹³² <http://www.ryersonwoods.org/p/GreenArchitecture.html>

¹³³ <http://chicagolandh2o.wordpress.com/2012/01/11/from-gray-to-green-investing-in-sustainable-infrastructure/>

¹³⁴ "Bill Status of HB4496." Retrieved 7/5/12 from <http://www.ilga.gov/legislation/billstatus.asp?DocNum=4496&GAID=11&GA=97&DocTypeID=HB&LegID=64151&SessionID=84>

¹³⁵ RFP, Exec. Summary, p. 9.

¹³⁶ RFP, p. 4-9.

acknowledgements of the importance of water quality. Lake County has also enacted numerous regulations and incentives related to water quality, many of which have been in place for years.

Lake County recognizes that, “the quality of our surface and ground waters has suffered as a result of numerous waste products that find their way into the water.”¹³⁷ Watershed management plans identify actions to improve water quality, protect natural resources, and reduce the risk of flooding. The Lake County Stormwater Management Commission has completed 15 of 26 sub-watershed plans for the County. One of its most recent watershed plans for North Mill Creek/Dutch Gap Canal included a water quality and biological study to target future projects and activities to improve aquatic resources and habitat in streams and lakes. SMC watershed plans include best management practices to maintain and improve water quality and protect aquatic habitat.

Most recently, in June 2012, CMAP began to develop a Total Maximum Daily Load (TMDL) implementation plan to improve water quality for lakes and their combined watersheds in southwestern Lake County, along with many partners, including Lake County. A number of streams, lakes, and other County waters are impaired for certain types of pollutants, which limit how people and aquatic life (such as fish and mussels) use the waterways. When the IEPA lists part of a waterway as “impaired” under 303(d) of the Clean Water Act, it is charged with creating a Total Maximum Daily Load (TMDL) analysis to identify what sources are causing the pollution and also developing a plan to reduce the amount of pollution discharged by these sources. The goal is to reduce the pollution so that the waterway can support “general use,” in that it is clean enough for people to swim and a healthy range of fish to thrive in.

CMAP and partners are taking a watershed-based approach to develop a TMDL plan for southwestern Lake County, collaborating with community decision makers to identify the pollution sources for the affected waterways. While watershed planning has traditionally focused on reducing non-point source pollution (such as urban and agricultural runoff), Lake County is part of a growing trend to look more holistically at both point sources (such as permitted discharges from industrial facilities) and non-point sources.

Lake County has also spearheaded a new initiative with many partners, the Des Plaines River Watershed Workgroup of Lake County, a voluntary, dues paying membership organization that will work to improve water quality within the Des Plaines River basin in Lake County. The group consists of NPDES permit holders, both Publically Owned Treatment Works and MS4s, other interested organizations, and individuals, which contribute annual membership dues based on their NPDES permits. The group’s first goal is to conduct an extensive bioassessment that will establish baseline levels for water and sediment chemistry, fish and macroinvertebrates, and habitat. The group will also complete, with the assistance of Lake County Stormwater Management, watershed based planning within the Des Plaines River basin and then move into project implementation, which will improve water quality within the Des Plaines.

The government of Lake County has also implemented a number of measures for its own operations to reduce pollutants that degrade water quality. The County has substituted eco-friendly products for many traditional chemicals (pesticides, herbicides, etc.) in favor of eco-friendly products. For example, LCDOT has begun to use a non-toxic alternative to road salt that is derived from sugar beets. This measure is to reduce the use of traditional deicing salts, which have the potential to contaminate

¹³⁷ *Lake County Stormwater Management Plan*, 2002, p. B-5.

shallow aquifers (a source of drinking water in the County).¹³⁸ Additionally, as part of a public outreach campaign, Lake County has advised residents to use low phosphorus detergents and apply outside chemicals (such as fertilizers) sparingly. In 2010, the State of Illinois passed a law restricting the use of lawn fertilizers containing phosphorus by commercial applicators, and ten County municipalities have also passed ordinances related to phosphorus fertilizer restrictions aimed at homeowners and commercial applicators. This is especially important since a large percentage of Lake County's lakes have high phosphorus levels. According to the Lake County Health Department, 193 lakes in Illinois are impaired for phosphorus, and 76 lakes require TMDL plans for such; half of these lakes are in Lake County.

Stormwater Management

Stormwater management is crucial to maintaining a sustainable County, and is central to meeting many natural resource-related goals across the County's policy documents. There is a relationship between the amount of impervious surface in the County and the degraded quality of many of its waterways.¹³⁹ When the ground is paved, rain cannot percolate into the soil. This hampers the process of rain absorption, which naturally filters out pollutants and reduces runoff that may otherwise flood homes and businesses. High runoff flow weakens the stability of stream channels through erosion, degrades habitat, and reduces aquatic passageways. It also thins tree canopy by eroding roots resulting in reduced shade and increased water temperature.

Planning on a sub-watershed level to maintain enough pervious (absorptive) ground is crucial to managing the growing intensity of storm events in Lake County. The process "considers protecting land and water resources that extend beyond jurisdictional boundaries while reducing negative impacts of land development, such as flood damage, soil erosion, habitat loss and water pollution. As Lake County continues to grow, there is a need to predict and manage, through watershed planning, how land use changes will affect the natural hydrologic systems of streams, lakes, and wetlands and the high quality habitats and environmental resources they connect."¹⁴⁰

Lake County encourages the use of stormwater best management practices (BMPs), or solutions that mimic nature, that capture rain where it falls to reduce runoff. A strategic combination of green infrastructure BMPs, such as bioswales and green roofs, and grey infrastructure, like pipes and pumping stations, can help to prevent flood damage to people and the environment, filter pollutants that would otherwise flow into waterways, and replenish shallow aquifers. Lake County has incorporated BMPs into new County facilities, such as the Central Permit Facility that opened in April 2010. The Central Permit Facility showcases an 8,000 square foot green roof, native plantings, bioswales, and other vegetation to reduce stormwater runoff.¹⁴¹

Stormwater Management Commission

The Lake County Stormwater Management Commission (Lake County SMC) is the delegated stormwater authority for over 90 jurisdictions in Lake County. The SMC advocates for the use of strong incentives, ordinances, and land use planning at the sub-watershed level to help inform development, preserve sensitive areas, and maintain or reduce impervious coverage. Its priorities include managing the County's floodplains and watersheds; achieving flood damage reduction; and protecting and restoring

¹³⁸ *Strategy for a Sustainable Lake County*, p. 7.

¹³⁹ Schueler, T. 1994. The Importance of Imperviousness. In Watershed Protection Techniques 1(3):100-111.

¹⁴⁰ Lake County RFP, Ch. 4, p. 4-4.

¹⁴¹ *Lake County Strategic Plan 2011 Progress Report*, p. 5.

natural resources. These priorities are mostly addressed through the SMC's administration of stormwater management standards and floodplain regulations, development of sub-watershed plans, and encouragement of stormwater BMPs.¹⁴²

The SMC recently updated its Watershed Development Ordinance (WDO), which will improve water quality protection standards. The WDO establishes countywide standards for stormwater runoff maintenance, detention sites, erosion control, water quality, volume, wetlands, riparian areas, and floodplains. The Lake County Board passed 94 amendments and enhancements to the WDO in 2012. The changes include new agricultural and wetland protections, such as applying mitigation requirements to wetlands that are as small as one tenth of an acre. While the updated WDO does not set a numeric limit for reducing the volume of runoff on sites, it established a framework to implement a standard in the future. This is especially salient, since the State of Illinois and United States EPA are considering baseline volume requirements for urbanized areas in the foreseeable future. The IEPA is awaiting recommendations from a work group on volume requirements for Municipal Separate Storm Sewer System (MS4) areas, and the United States EPA has closed public comments on draft federal regulations that include volume control requirements.

The SMC understands the strong correlation between land use practices, water quality, and flood damage. In addition to traditional infrastructure and streambank stabilization projects, the SMC has led wetland and upland restoration work to prevent polluted runoff from degrading downstream waterways. Its 2011 Annual Report highlights 16 best management practices projects, such as helping communities install rain gardens and porous pavement lots.¹⁴³ Its programs recognize the nexus between good farmland and water conservation practices, and promote agricultural best management practices, such as stream channel and riparian area management, rain barrel/cisterns, rain gardens, and nutrient and pesticide management.¹⁴⁴

The Lake County SMC places a heavy emphasis on education and outreach on the benefits of sustainable practices, such as green infrastructure and wetland restoration work, to foster broad systemic change throughout its communities. The SMC also runs a successful rain barrel program in partnership with the Solid Waste Agency of Lake County, webinars, conferences, and workshops, which complement other aspects of its program. The SMC has integrated innovative and fun outreach, such as geocaching for BMPs. To further incentivize conservation behavior, it also issues stormwater awards for initiatives that best conserve and protect water resources.¹⁴⁵

Regulatory Actions

In addition to the stormwater management updates to the WDO, a host of other regulatory mechanisms exist to protect water resources. Both Lake County's WDO and Unified Development Ordinance (UDO) require the preservation of riparian buffers, which are the natural vegetative areas next to streams, lakes, ponds, and wetlands. These buffers naturally filter nutrients, like phosphorus in fertilizers, and

¹⁴² "Lake County Stormwater Management Commission." Lake County, IL. Retrieved 7/6/12 from <http://www.lakecountyil.gov/Stormwater/AbouttheCommission/Pages/Default.aspx>

¹⁴³ "Lake County Stormwater Management Commission 2011 Annual Report." Lake County Stormwater Management Commission. Retrieved 7/6/12 from http://www.lakecountyil.gov/Stormwater/Documents/Public%20Information%20and%20Mapping/Annual%20Reports/2011%20Annual%20Report_Mayred.pdf

¹⁴⁴ <http://www.lakecountyil.gov/Stormwater/LakeCountyWatersheds/BMPs/Pages/Agriculture.aspx>

¹⁴⁵ See e.g. LCSMC [Video library](#).

sediment; stabilize waterway banks; and provide important habitat and wildlife corridors. The UDO requires 100-foot buffers for wetlands near steep slopes to prevent erosion and sedimentation and preserve the natural landscape. The WDO also requires mitigation for development that impacts “isolated” wetlands, such as depressions and kettles, to complement federal requirements to mitigate for “jurisdictional” ones with a significant nexus to a waterway. In addition, the UDO requires tree preservation and mitigation, keeping existing woodland areas, and replacing lost trees, which helps to protect and improve water quality by reducing stormwater runoff, flooding, and erosion.

The County has also taken steps toward mitigating the impact of land use on water quality by promoting the use of conservation design in the *Regional Framework Plan* (Policies 5.3.2 and 10.3.4) and UDO. Developments that utilize conservation design help to preserve open space, filter stormwater runoff (thereby reducing flooding and improving water quality), and provide habitat and wildlife corridors. The UDO incentivizes the use of conservation design via density bonuses and allowance of a broader range of housing types than conventional subdivisions (see Section B. Land Use and Development for more details). Lastly, Lake County’s weed ordinance allows use of native plants that typically require less water and maintenance than non-native species. Native plants stabilize soils and limit erosion, and provide habitat for native birds, animals, and insects.

Goal and Policies

Goal: Protect and conserve water resources.

Policy 1: Encourage water conservation through potential regulatory amendments and incentives.
[Ref.: Goal 5.1; Goal 5.3; Goal 5.4; Pol. 5.1.4; Pol. 5.1.7; Pol. 5.3.1; Pol. 5.3.3; Pol. 5.4.1]

Action 1: Evaluate potential regulatory changes to encourage water conservation.

Action 2: Identify additional regulatory incentives to encourage water conservation.

Commentary: CMAP and the NWPA have developed model ordinances and the US EPA has developed the WaterSense program that provides educational resources to promote water conservation.

Policy 2: Facilitate the use of water reuse systems.
[Ref.: Goal 5.3; Pol. 5.3.1]

Action 1: Endorse and incorporate updates to regulations under the Illinois Plumbing Code and License law, which will allow water reuse through rainwater harvesting. Encourage installation and use of these systems in County facilities.

Action 2: Encourage local communities to consider updates of municipal plumbing codes to incorporate water reuse allowances and incentives under amendments of the Illinois Plumbing Code and Licensing regulations.

Action 3: Encourage the use of green infrastructure including rain barrels/cisterns, rain gardens and bioswales to reuse water onsite for native landscape plantings.

Policy 3: Consider opportunities to balance water supply and demand in land use planning and development decisions.

[Ref.: Goal 5.1; Goal 5.4; Pol. 4.7.1; Pol. 4.7.2; Pol. 4.7.3; Pol. 4.7.4; Pol. 5.1.1; Pol. 5.1.2; Pol. 5.1.4; Pol. 5.1.5; Pol. 5.1.6; Pol. 5.2.5; Pol. 5.4.1]

Action 1: Complete the Illinois State Geological Survey GIS-based 3D mapping initiative to illustrate the amounts, locations, and areas of ground and surface water supply and potential contamination throughout Lake County.

Action 2: Utilize the maps and findings within the planning and development process.

Action 3: Continue to support development regulations and policies that protect sensitive water resources.

Policy 4: Protect the County's groundwater resources by facilitating the sealing of abandoned water wells.

[Ref.: Goal 4.7; Goal 5.1; Goal 5.2; Pol. 4.7.3; Pol. 5.2.1; Pol. 5.2.4]

Action 1: Explore incentivizing the sealing of abandoned water wells.

Action 2: Establish a public awareness campaign, in conjunction with a County cost-sharing program, to encourage more people to seal their abandoned water wells.

Action 3: Pursue policies to regulate and monitor supplemental irrigation wells (non-potable water wells that are used for residential landscape watering and/or other outdoor purposes, where a separate water supply exists for drinking, culinary and sanitation purposes).

Policy 5: Update stormwater management practices and performance standards to meet State and federal requirements, as they occur. [Ref.: Pol. 4.4.2; Goal 5.11; Goal 5.12; Pol. 5.12.1; Pol. 5.12.2]

Action 1: Adopt county-wide standards for runoff volume reduction in line with adopted standards of the IEPA and USEPA.

Action 2: Implement and enforce runoff volume reduction strategies and water quality improvements in accordance with periodic updates to the Watershed Development Ordinance, on an as needed basis dependent upon state and federal requirements.

Action 3: Support legislation that allows the IEPA to use State Revolving Loan Funds for innovative projects that maximize combinations of "green" and "grey" (traditional) infrastructure solutions. Partner with municipalities on Illinois Green Infrastructure Grant projects to showcase community-based stormwater solutions.

Action 4: Continue to offer community education and outreach on compliance with current and future Municipal Separate Storm and Sewer System (MS4) permit requirements; include successful strategies to implement stormwater best management practices at the county level.

Policy 6: Encourage or require innovative practices to reduce point and nonpoint sources of pollution of water resources.

[Ref.: Goal 5.2; Pol. 5.2.2; Goal 5.4; Goal 5.8; Goal 5.12; Goal 11.1; Pol. 5.2.3; Pol. 5.4.2; Pol. 5.8.1; Pol. 5.8.2; Pol. 5.11.4; Pol. 11.1.5]

Action 1: Work with the Health Department to evaluate the state-wide legislative ban on selling phosphorous fertilizer.

Action 2: Encourage communities to adopt municipal ordinances banning the sale of phosphorous fertilizer.

Action 3: Evaluate opportunities for the Lake County Health Department, SMC, Forest Preserve District and local municipalities to collaborate to conduct a countywide stream inventory and assessment and to monitor and report the levels of indicator pollutants in County streams and lakes.

Action 4: Continue to expand the use of non-toxic alternatives to deicing salt compounds on roads that the County maintains; eliminate salt usage on roads near highly sensitive natural resources.

Action 5: Encourage strategies to reduce the amount of contaminants discharged into Lake County waterways (such as increased use of medicine take-back programs). Consider monitoring levels of endocrine disrupting compounds in county waterways.

Action 6: Incorporate Total Maximum Daily Loads (TMDLs) into appropriate watershed plans, when established by the IEPA, to reduce pollutants to impaired water bodies in the county, including in-lake remediation efforts.

Action 7: Increase efforts to reduce pollutants discharged into streams in unincorporated areas via FPA agreements and watershed best management practice implementation.

Action 8: Encourage strategies to reduce contamination from wildlife sources (e.g. geese, gulls).

Action 9: Work with the Health Department and homeowners to reduce contamination from onsite wastewater treatment systems (septic) systems.

Action 10: The Lake County Division of Transportation will continue to explore ways to implement native landscaping and manage invasive species along County roadways.

Action 11: Continue to support the Des Plaines River Watershed Workgroup and analogous organizations as an efficient, collaborative way to improve water quality.

Policy 7: Enhance Integrated Water Resource Management strategies by combining planning and regulatory initiatives to improve water quality in Lake County.

[Ref.: Goal 4.4; Goal 4.5; Goal 5.6; Goal 5.8; Goal 11.1; Pol. 4.3.3; Pol. 4.3.4; Pol. 4.5.1; Pol. 4.5.2; Pol. 5.3.2; Pol. 5.5.4(c)&(d); Pol. 5.8.1; Pol. 5.11.1; Pol. 5.11.2; Pol. 5.11.3; Pol. 5.11.4; Pol. 11.1.2]

Action 1: SMC will continue to complete the remaining watershed plans in the county to prevent the degradation of and develop enhancement objectives for natural hydrological systems. Existing watershed plans should be updated as needed based on action plan implementation progress and changes to watershed planning requirements. Any new water quality plans should integrate and cross-reference other related plans, standards, and requirements.

Action 2: Integrate TMDL limits when established by the IEPA and planning efforts to recommend pollutant reduction measures in watershed plans, MS4 permits, and Facility Planning Areas amendments.

Policy 8: Implement projects that will improve and protect water quality and aquatic habitat.

[Ref.: Goal 4.1; Goal 4.3; Pol. 4.1.1; Pol. 5.8.2]

Action 1: Encourage the SMC, other agencies, and local units of government to continue to develop, implement, support, and fund projects (i.e. green infrastructure best management practices and wetland, lake, and stream restoration projects) that will improve water quality and aquatic habitat.

Action 2: The SMC will continue to explore and apply for grant funding to implement water quality improvement projects.

Action 3: Protect existing water resources from detrimental and unnecessary modifications to preserve their beneficial natural functions.

Action 4: Educate homeowners on land use practices that will improve water quality and habitat.

Action 5: Encourage water infiltration through the use of green infrastructure and native landscaping.

Action 6: Continue programs to remove flood-prone buildings and convert property to open space.

Indicators

While the policies in this Chapter will be implemented on an ongoing basis, each indicator will be monitored on an annual basis and evaluated every five years. “Lake County Indicators” include indicators that are within the County government’s purview, while “Community Indicators” relate to activities within the County at large.

Lake County Indicators:

Indicator 1: Water conservation ordinances will be evaluated and updated by 2018.

Indicator 2: The County will update its regulations to reflect the Illinois Plumbing Code rainwater harvesting amendments within one year of their adoption at the State level.

Indicator 3: The County will adopt amendments to the existing Water Well Ordinance that require the regulation of supplemental irrigation wells by 2018.

Indicator 4: The County will provide a source of funding for a cost-sharing program to seal abandoned water wells by 2018.

Indicator 5: Volume reduction standards will be adopted, as necessary, within one year of state and federal regulatory updates.

Indicator 6: The SMC will continue to develop sub-watershed plans with a goal of completion by 2028.

Indicator 7: The SMC will continue to hold educational workshops on an annual basis.

Community Indicators:

Indicator 1: Chloride concentrations will not increase in surface waters by 2020.

Indicator 2: Phosphorous levels will not increase in surface waters by 2020.

Indicator 3: The number of impaired waterways on the 303(d) list will decrease by 2020.

Indicator 4: The number of community water suppliers adopting outdoor water conservation policies will increase by 2018.

Implementation Approach

Policy		Inter-governmental	County Departments and Agencies	Non-County Agencies
1	Encourage water conservation through potential regulatory amendments and incentives.	County, Municipalities	LCPW, PB&D	CMAF, NWPA
2	Facilitate the use of water reuse systems.	State, County, Municipalities	LCHD, PB&D	IDPH
3	Consider opportunities to balance water supply and demand in land use planning and development decisions.	State, County, Municipalities	PB&D, LCHD	ISGS, USGS
4	Protect the County's groundwater resources by facilitating the sealing of abandoned water wells.	State, County, Municipalities	LCHD, PB&D	ISGS, USGS
5	Update stormwater management practices and performance standards to meet State and federal requirements, as they occur.	State, County, Municipalities	SMC, PB&D	IEPA, US EPA
6	Encourage or require innovative practices to reduce point and nonpoint sources of pollution of water resources.	State, County, Municipalities	SMC, PB&D	IEPA, US EPA
7	Enhance Integrated Water Resource Management strategies by combining planning and regulatory initiatives to improve water quality in Lake County.	State, County, Municipalities	SMC, PB&D	IEPA, US EPA, IDNR, watershed planning groups, WWTPs
8	Implement projects that will improve and protect water quality and aquatic habitat.	State, County, Municipalities	SMC, PB&D	IEPA, US EPA, USACE

Figure E-1. Water Resources

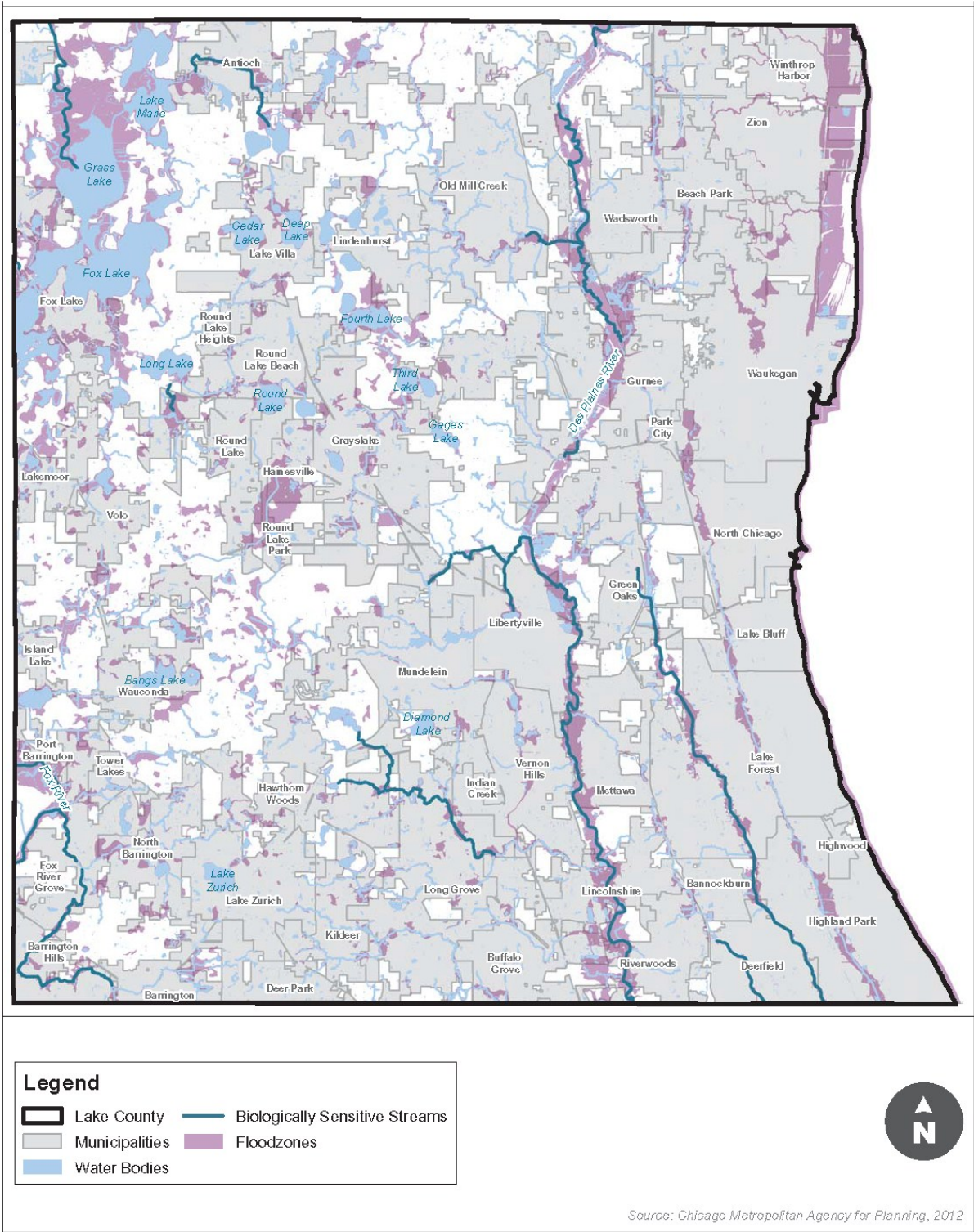


Figure 4.2 (from RFP). Watersheds & Subwatersheds

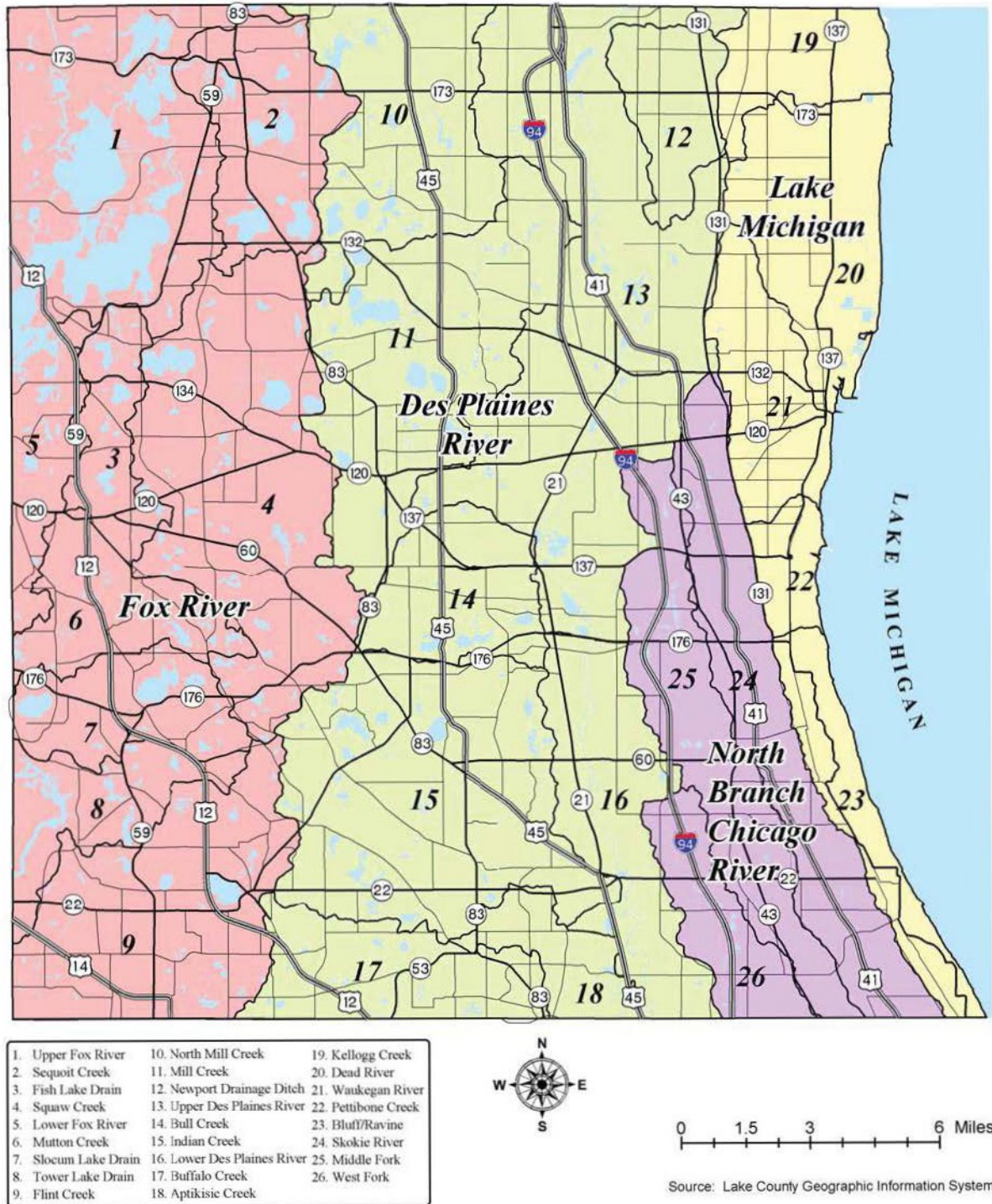
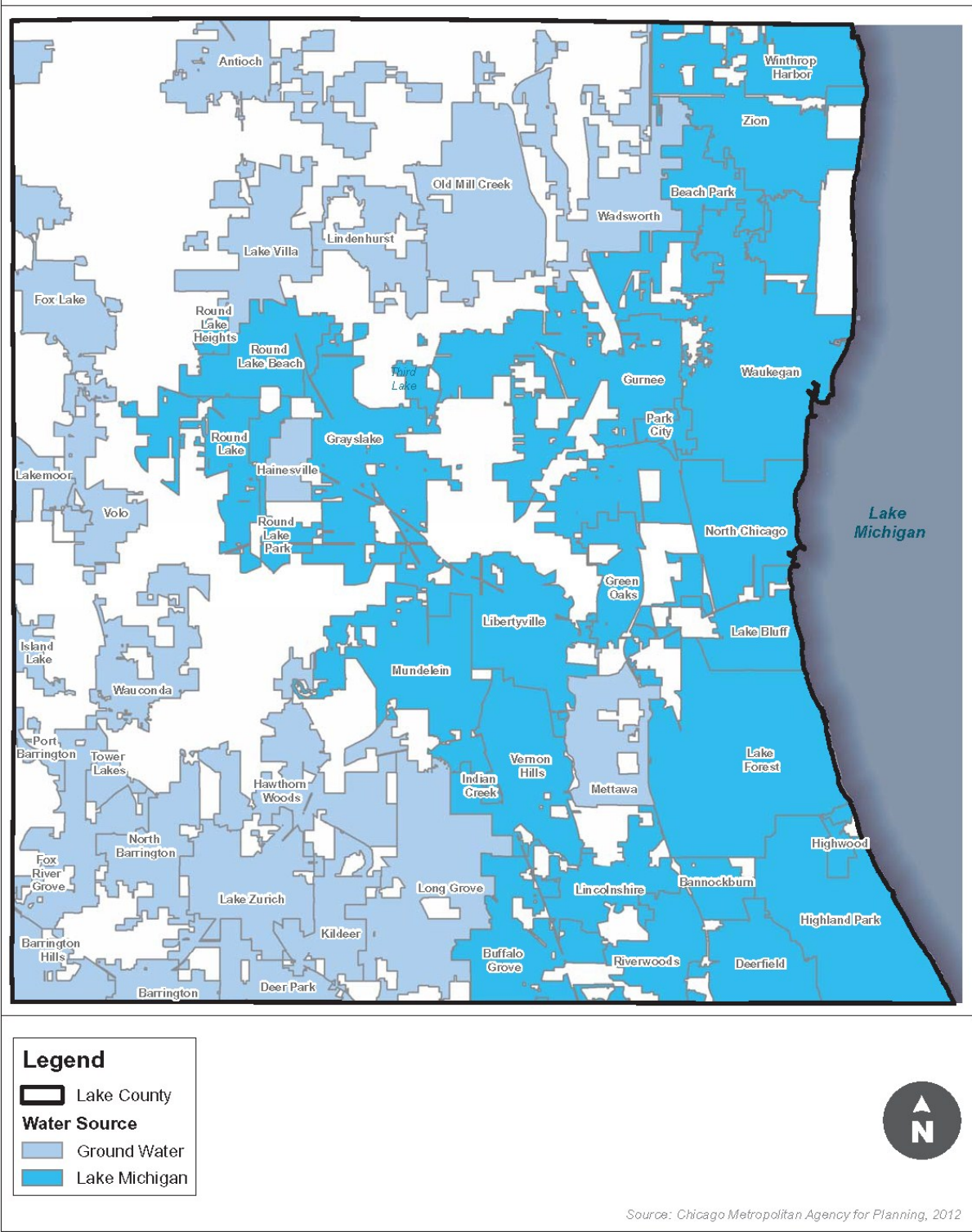


Figure E-2. Water Sources



F. Energy

The content of the Energy section of the Sustainability Chapter is most closely related to Regional Framework Plan Chapter 5: Infrastructure and Services, particularly the Energy section.

Significance

Encouraging alternative and renewable energy systems, and reducing demand through energy conservation measures, are vital to long-term sustainability, as costs, resource depletion, and negative environmental impacts associated with traditional energy sources continue to increase. Producing energy from fossil fuel combustion presents public health risks via increased production of greenhouse gases and particulate matter. Energy consumption in Lake County was responsible for 68.8 percent of greenhouse gas emissions in 2007 (see Table F-1).¹⁴⁶ Air pollutants like carbon monoxide, nitrogen dioxide and particulate matter, have been linked to aggravated asthma.^{147,148}

In addition, energy costs attributed to electricity and natural gas consumption represent a significant portion of the budget for many Lake County families and businesses. Although financial instruments like municipal energy aggregation can reduce energy costs, overall consumption of electricity and natural gas has risen and is expected to continue to increase. Major contributors to growing energy consumption include population growth – Lake County’s population has increased 9.2 percent since 2000¹⁴⁹ – along with greater adoption of household electronics and other power-hungry electrical equipment.

Many communities are addressing energy issues by facilitating the use of alternative, cleaner energy generation methods, including renewable energy sources like wind, solar, and geothermal. These technologies are becoming increasingly accessible and affordable through industry advances. In addition, energy consumption can be reduced by encouraging energy efficiency and conservation through retrofits and behavior changes. Businesses, residents, and governments are becoming increasingly aware of opportunities to improve energy efficiency through energy audits, building retrofits, and simple changes in behavior. As the demand for products and services related to energy efficiency grows, so does the market opportunity for new and innovative industry. In recent years, demand for energy efficient products and services has been driven by financial incentives through the Illinois Energy Efficiency Portfolio Standard, Energy Impact Illinois, and Illinois Department of Commerce and Economic Opportunity, and many new businesses have emerged to meet the demand for related services as a result.

Lake County has already begun to address these changes and opportunities. Through the Alternative Energy Task Force (AETF) of Lake County Communities, the County and over 20 participating municipalities have explored the potential for renewable energy sources, particularly solar and wind. The AETF prepared wind and solar model ordinances for reference and adoption by Lake County and its municipalities; the County and several municipalities have adopted renewable energy ordinances as a result.

¹⁴⁶ CNT Municipal Energy Profile Project.

¹⁴⁷ U.S. EPA, “Six Common Air Pollutants.” Available from: <http://www.epa.gov/air/urbanair/>. Accessed 6/10/2012

¹⁴⁸ U.S. EPA, “Asthma Triggers: Outdoor Air Pollution.” Available from: <http://www.epa.gov/asthma/outdoorair.html>. Accessed 6/10/2012.

¹⁴⁹ CNT Energy. 2009. *Chicago Regional Energy Snapshot: Profile and Strategy Analysis*. Retrieved from www.cntenergy.org/media/Chicago-Regional-Energy-Snapshot.pdf

To increase energy efficiency, the County secured over \$5.6 million in American Recovery and Reinvestment Act (ARRA) funds through the Department of Energy's "Energy Efficiency and Conservation Block Grant Program (EECBG)." Lake County is leveraging this federal funding with \$5 million of capital funding to broaden the impact of this program and improve the energy efficiency of several buildings, including the Lake County Administrative Tower in Waukegan.

Issues & Opportunities

The following key issues and opportunities related to energy have been identified through the existing conditions analysis:

- Energy consumption (electricity and natural gas use in buildings) in Lake County was responsible for 68.8 percent of greenhouse gas emissions in 2007. Energy demand (especially for natural gas) is rising along with population growth.
- Lake County has the highest residential per-household electricity and natural gas consumption of any county in the region. As a result, residents of Lake County also have the highest energy bills in the region. The vast majority of the County's electricity comes from nuclear power and coal-fired generation. However, there is growing interest in small renewable energy systems that could supplant traditional sources of power.
- The Alternative Energy Task Force has played a key role in promulgating alternative and renewable energy options. The AETF has researched alternative energy options, developed a renewable energy resource guide, and published model ordinances to permit renewable energy systems. Their efforts have already effected change, as the County and several municipalities have adopted their own ordinances to permit renewable energy systems.
- Electricity aggregation efforts may offer an opportunity to support clean energy sources through the purchase of renewable energy credits or certificates.
- There is great potential to increase the energy efficiency of the County's building stock through system upgrades and retrofits, as well as through behavior changes. The County has led the way in this arena by implementing energy management and retrofits in its facilities, which has resulted in an energy savings of 16 percent per year.

Analysis

Energy Sources

Currently, Commonwealth Edison (ComEd) provides electricity to all of Lake County, which comes from a mixture of nuclear and coal generation. According to the US Energy Information Administration, about 48 percent of the energy generated in Illinois comes from nuclear power and about 46 percent comes from coal-fired generation.¹⁵⁰ The remainder is generated by petroleum, natural gas, hydroelectric, and other renewables. Natural gas is supplied by People's Gas and Northshore Gas. The County is home to the decommissioned Zion Nuclear Power Station, taken offline in 1998. The facility, originally owned by ComEd, was sold to ComEd's parent company, Exelon, to be dismantled; its constituent parts were salvaged.¹⁵¹

¹⁵⁰ U.S. Energy Information Administration, "Electric Power Industry Generation by Primary Energy Source, 1990 Through 2010." Accessed 6/7/2012 from <http://www.eia.gov/electricity/state/illinois/>

¹⁵¹ U.S. Nuclear Regulatory Commission, "Zion Units 1&2." Available from: <http://www.nrc.gov/info-finder/decommissioning/power-reactor/zion-nuclear-power-station-units-1-2.html>. Accessed 6/10/2012

Lake County is also home to a number of sites that utilize renewable energy systems. For example, Prairie Crossing Farm in Grayslake is home to a 100-foot wind turbine generating 20 kilowatts (kW) and a Chipotle restaurant in Gurnee houses a six kW Small Wind Energy System (SWES).¹⁵² Deerfield's Walgreen's store (200 Wilmot Rd) has been approved to install solar panels on their south roof.¹⁵³ The College of Lake County (CLC) has installed a large-scale geothermal system on campus for use in training students to work with the technology.¹⁵⁴

Energy Consumption

Energy consumption in Lake County is generally comparable with other counties and the Chicago metropolitan region as a whole (see Table F-2. Natural Gas and Electricity Consumption). In 2005, Lake County represented just over eight percent of the region's population and was responsible for 7.8 percent of its natural gas consumption and 8.9 percent of its electricity consumption. Upon closer examination of energy consumption by sector, however, it is evident that Lake County's residential sector consumed the highest amount of electricity and natural gas per household of any county in the region (see Table F-3. Residential Energy Consumption). The residential sector's natural gas consumption was 13 percent higher than the regional average, while its electricity consumption was over 32 percent higher.

Table F-1. Greenhouse Gas Emissions by Sector (percentage of total emissions), 2007

Sector	Cook	DuPage	Kane	Kendall	Lake	McHenry	Will	Region
Electricity	45.2%	50.8%	46.5%	43.1%	47.2%	45.7%	44.5%	46.1%
Natural Gas	24.6%	18.7%	22.5%	19.2%	21.6%	21.7%	24.6%	23.3%
Transportation	21.0%	26.2%	24.5%	30.0%	25.4%	25.1%	25.5%	23.0%
Solid Waste	4.7%	0.7%	2.1%	3.1%	1.7%	2.7%	1.4%	3.4%
Waste Water	0.9%	0.7%	0.8%	0.8%	0.9%	0.9%	0.8%	0.8%
Product Use	3.6%	3.0%	3.5%	3.8%	3.3%	3.8%	3.2%	3.4%

Source: Center for Neighborhood Technology Municipal Energy Profile Project

¹⁵² Alternative Energy Task Force of Lake County Communities. 2010. *Alternative Energy Devices: Wind Energy, Solar Energy & Geothermal Energy*. Retrieved 9/12/12 from <http://www.lakecountyil.gov/Planning/PlanningandSupportServices/Pages/PlansReports.aspx>

¹⁵³ Village of Deerfield, "Development in Deerfield with Sustainable Elements or Features," Available from http://www.deerfield.il.us/residents/greenupdeerfield/sustainable_projects.aspx Accessed 6/10/2012

¹⁵⁴ Susnjara, B (2011). College of Lake County leading the way with its increasing green effort. *Daily Herald*. Retrieved from <http://www.dailyherald.com/article/20110418/news/704189959/>

Table F-2. Natural Gas and Electricity Consumption, 2005

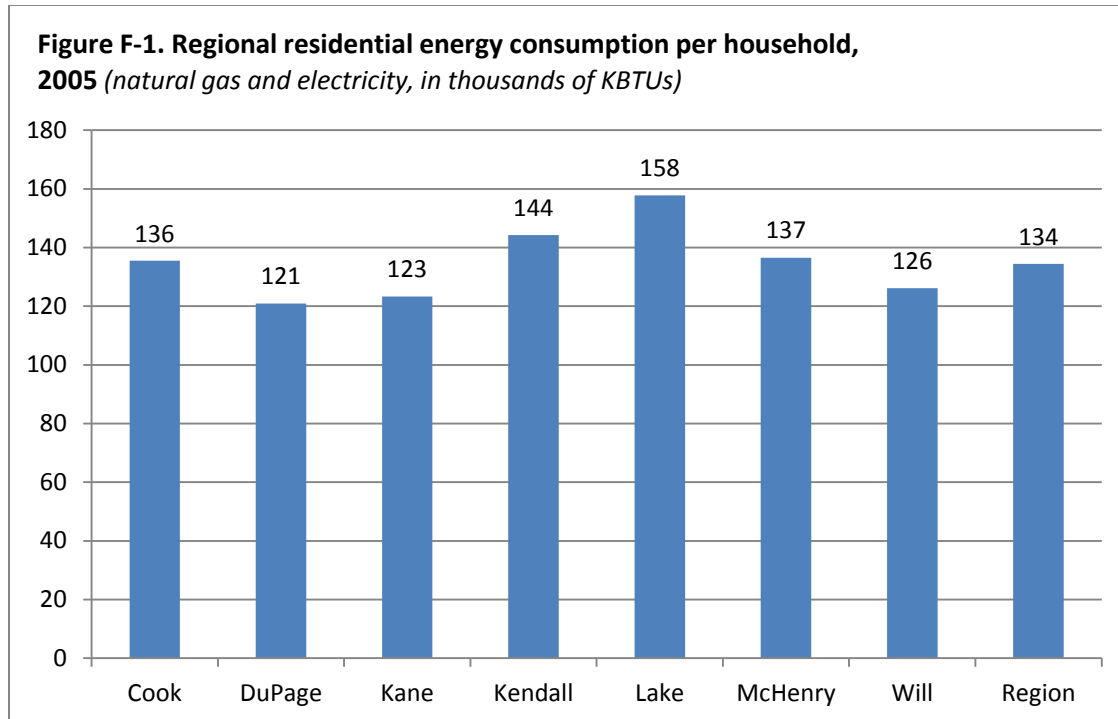
County	Total Population	Percent of Regional Population	Natural Gas Consumption (therms)	Natural Gas Consumption (% of region)	Electricity Consumption (kWh)	Electricity Consumption (% of region)
Cook	5,288,161	62.5%	3,565,888,888	65.3%	51,000,097,200	59.7%
DuPage	928,086	11.0%	551,843,159	10.1%	11,642,109,688	13.6%
Kane	489,641	5.8%	292,265,089	5.4%	4,936,700,065	5.8%
Kendall	87,808	1.0%	48,280,317	0.9%	723,687,762	0.8%
Lake	703,706	8.3%	425,822,712	7.8%	7,573,847,852	8.9%
McHenry	309,448	3.7%	174,814,538	3.2%	2,783,917,642	3.3%
Will	654,540	7.7%	401,485,665	7.4%	6,837,876,039	8.0%
Region	8,461,390	100.0%	5,460,400,368	100.0%	85,498,236,248	100.0%

Source: 2005-2007 American Community Survey, U.S. Census Bureau; Center for Neighborhood Technology
Regional Energy Snapshot

Table F-3. Residential Energy Consumption, 2005

County	Electricity Consumption			Natural Gas Consumption		
	Total (kWh)	Residential Sector (kWh)	Residential Sector (per household)	Total (therms)	Residential Sector (therms)	Residential Sector (per household)
Cook	51,000,097,200	15,376,395,958	7,935	3,565,888,888	2,101,159,795	1,084
DuPage	11,642,109,688	3,015,947,372	9,124	551,843,159	296,676,157	898
Kane	4,936,700,065	1,454,100,543	9,376	292,265,089	141,615,345	913
Kendall	723,687,762	280,921,972	10,668	48,280,317	28,404,347	1,079
Lake	7,573,847,852	2,699,023,830	11,631	425,822,712	273,917,101	1,180
McHenry	2,783,917,642	1,197,956,940	11,561	174,814,538	100,616,102	971
Will	6,837,876,039	2,271,873,428	11,109	401,485,665	180,399,933	882
Total	85,498,236,248	26,296,220,043	8,795	5,460,400,368	3,122,788,780	1,044

Sources: 2005-2007 American Community Survey, U.S. Census Bureau; Center for Neighborhood Technology
Regional Energy Snapshot



Source: Center for Neighborhood Technology Regional Energy Snapshot

Table F-4. Number of Bedrooms in Housing Units, 2010 estimate

Area	Total Units	0-2 Bedrooms		3 Bedrooms		4+ Bedrooms	
		Count	% of Total	Count	% of Total	Count	% of Total
Lake County	260,363	86,232	33.1%	87,942	33.8%	86,189	33.1%
Chicago region	3,372,505	1,527,732	45.3%	1,137,893	33.7%	706,880	21.0%

Source: 2010 American Community Survey 1-Year Estimates, U.S. Census Bureau

Some of the geographic difference in per-household energy consumption may be explained by physical differences, including building type, age, and use. Lake County's residential housing stock consists primarily of single unit detached homes, with over 75 percent of its housing built in the last 50 years. Compared to the region as a whole, Lake County's housing stock is newer and consists of more detached homes and fewer multifamily homes. While newer homes are typically more energy efficient than older homes, floor area may play a factor in the amount of energy consumed. The housing stock in Lake County appears to be split almost evenly between units with zero to two bedrooms, units with three bedrooms, and units of four bedrooms or more (see Table F-4. Number of Bedrooms in Housing Units). However, the regional average trend shows a significantly higher share of smaller (zero to two bedroom) units. Lake County's proportion of large units consisting of four or more bedrooms is over 12 percent higher than the regional average, which may account for some tendency toward increased energy consumption.

Along with the rest of the region, Lake County's energy consumption has been going up in recent years. Natural gas and electricity consumption are on the rise in the residential, commercial, and industrial sectors. Data used for CNT's Regional Energy Snapshot report (see Table F-5. Energy Consumption

Trends) represents 2005 and 2007 electricity and natural gas consumption. The trends illustrated are consistent with current usage patterns and can be updated when finalized data sets are made available by the electric and natural gas utilities.

Table F-5. Energy Consumption Trends, 2005 and 2007

Energy Indicator	Consumption, 2005	Consumption, 2007	Percent Change
<i>Electricity Consumption (kWh)</i>			
Residential Sector	2,699,023,830	2,712,001,587	0.5%
Commercial and Industrial Sectors	4,874,824,022	4,909,885,018	0.7%
Total	7,573,847,852	7,621,886,605	0.6%
<i>Natural Gas Consumption (therms)</i>			
Residential Sector	273,917,101	289,179,708	5.6%
Commercial and Industrial Sectors	151,905,611	169,622,009	11.7%
Total	425,822,712	458,801,717	7.7%

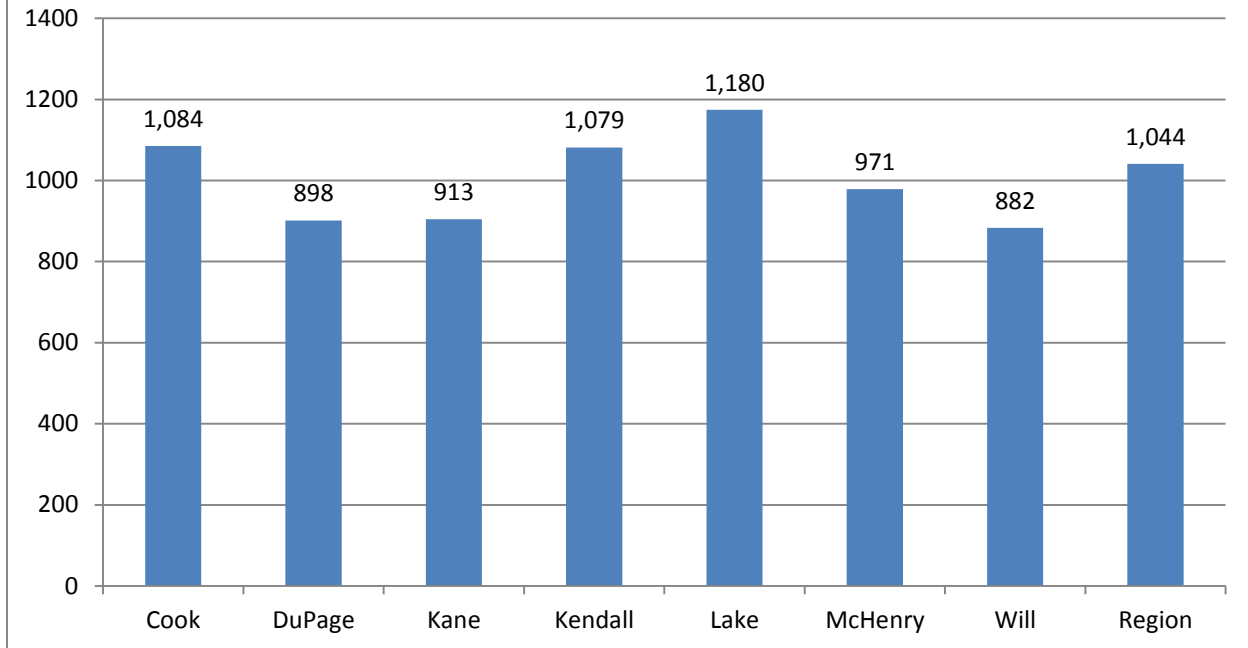
Source: Center for Neighborhood Technology Regional Energy Snapshot, Municipal Energy Profile Project

Table F-6. Average Residential Natural Gas Consumption and Cost, 2005

	Therms per Household	Annual Cost per Household
Lake County	1,180	\$1,384
Chicago Region	1,044	\$1,224

Sources: 2005-2007 American Community Survey, Center for Neighborhood Technology Regional Energy Snapshot

Figure F-2. Residential Natural Gas Consumption per Household (therms), 2005



Source: Center for Neighborhood Technology Regional Energy Snapshot

Natural Gas Consumption

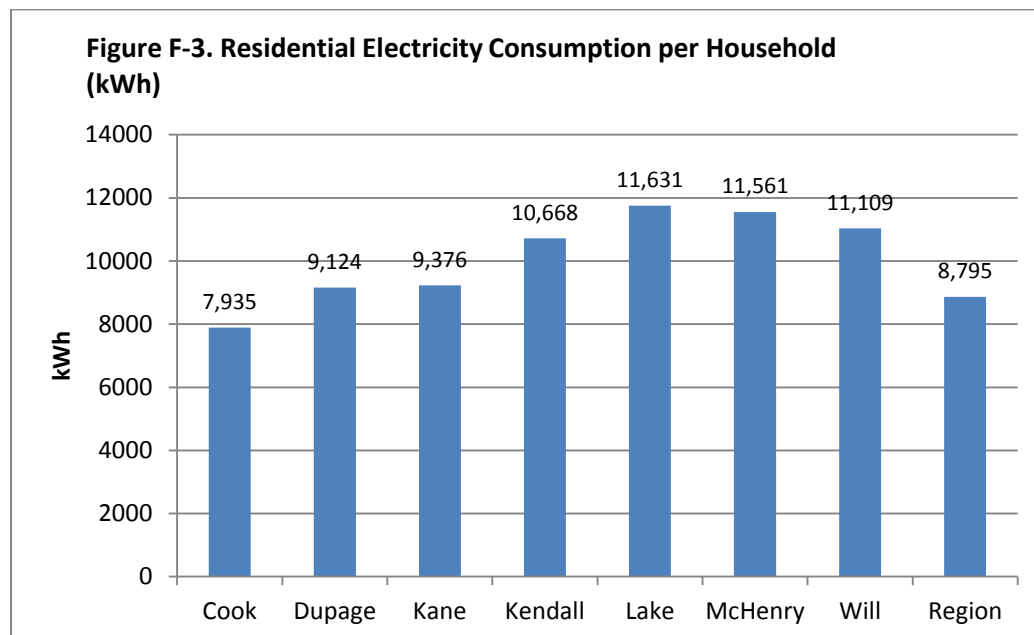
In Lake County and the region at large, natural gas is primarily used to heat buildings, but is also used in other processes, such as water heating, clothes driers, and industrial processes. While natural gas consumption has increased with population increases, the rate of per capita consumption has decreased, primarily due to gains in building efficiency.¹⁵⁵ Lake County consumed a total of 458,801,717 therms of natural gas in 2007, an increase of 7.7 percent over 2005; the commercial and industrial sectors in particular saw an 11.7 percent increase in natural gas usage in just two years (see Table F-5). The County's natural gas consumption in general is broadly in line with the rest of the region. As noted earlier, the County's per household natural gas consumption was about 13 percent higher than the regional average in 2005. Since Lake County's per-household consumption rate is the highest in the region, it is also home to the highest per-household natural gas costs in the region, which amounted to about \$1,384 per household in 2005, \$160 higher than the regional average (see Table F-6. Average Residential Natural Gas Consumption and Cost).

Electricity Consumption

Though its electricity consumption has not increased as rapidly as natural gas consumption, Lake County is consuming electricity at an increasing rate. In 2007, the County consumed 7,621,886,605 kilowatt hours (kWh) of electricity, an increase of 0.6 percent over 2005 rates. While Lake County's overall electricity consumption is on par with the rest of the region – it consumes just under nine percent of the region's electricity while accounting for just over eight percent of the population – its residential sector electricity consumption rate is significantly higher than the rest of the region. Lake County's annual per-household electricity consumption was 11,631 kWh in 2007, which is about 32 percent higher than the regional household consumption rate of 8,795 kWh per household. As with natural gas, Lake County

¹⁵⁵ CNT Energy. 2009. *Chicago Regional Energy Snapshot: Profile and Strategy Analysis*. Retrieved from www.cntenergy.org/media/Chicago-Regional-Energy-Snapshot.pdf

residents pay more per year for electricity than other residents of the region. The annual household cost for electricity in Lake County was \$1,000 in 2005, \$244 higher than the regional average.



Sources: 2005-2007 American Community Survey, Center for Neighborhood Technology Energy

Table F-7. Average Residential Electricity Consumption and Cost, 2005

	kWh per Household	Annual Cost per Household
Lake County	11,631	\$1,000
Chicago Region	8,795	\$756

Sources: 2005-2007 American Community Survey, Center for Neighborhood Technology Regional Energy Snapshot

In March 2012, 26 communities in Lake County passed referenda to permit the pursuit of “opt-out” electricity aggregation. This enables municipalities to purchase energy on behalf of residents and small businesses.¹⁵⁶ Under such a system, an alternative retail electricity supplier (ARES) purchases energy in bulk to be delivered to the electric utility (ComEd will serve as that utility in Lake County). ComEd will still deliver electricity, but will no longer sell it directly to customers. Since an ARES purchases electricity in the market place, it can typically purchase it at a lower cost than the Illinois Power Authority does for utilities such as ComEd.

To secure lower rates, municipalities can include more consumers in their aggregation. For example, four Lake County communities (Deerfield, Lake Bluff, Highland Park, and Lake Forest) have joined the North Shore Electricity Aggregation Consortium (NSEAC), which estimated that their customers would save between 26 and 47 percent on the supply portion of their electricity bills during the program’s first year in 2012.¹⁵⁷ The NSEAC offers a “100% Green Power Program,” in which residents and small businesses can opt to pay a nominal increase in price to purchase Renewable Energy Certificates to

¹⁵⁶ <http://www.icc.illinois.gov/ormd/municipalaggregation.aspx>

¹⁵⁷ North Shore Electricity Aggregation Consortium. “North Shore Electricity Aggregation Consortium.” Available from: <http://northshoreelectricityaggregation.com/index.html>. Accessed 6/10/2012

cover up to 100 percent of their energy consumption.¹⁵⁸ Some communities in the region (such as Oak Park and Lombard) are even opting to purchase 100 percent renewable energy through their aggregation contracts.^{159,160}

Alternative/Renewable Energy Generation Opportunities

Regional Framework Plan Goal 5.19 advocated for the creation of the Alternative Energy Task Force (AETF). Since then, the AETF has done extensive work around wind, geothermal, and solar opportunities in Lake County.^{161,162} The AETF is a cooperative effort between representatives from over 20 local jurisdictions of local municipalities and unincorporated areas of Lake County. It has researched alternative energy options for the County; developed an extensive solar, geothermal, and wind generation resource guide; and published solar, geothermal, and wind power model ordinances for use by County municipalities.

The AETF's "Alternative Energy Devices: Wind Energy, Solar Energy & Geothermal Energy" document is meant to serve as a resource guide for a broad audience, including government officials, planners, consultants, and residents. It provides basic information on the operation of wind, solar, and geothermal systems and guidance on the local implementation considerations for each. While it is not intended to be a comprehensive guide or policy document, it establishes a strong technical grounding from which the County can build its alternative and renewable energy capacity.¹⁶³

The AETF's model ordinances establish the groundwork for consistent adoption of renewable energy solutions across the County. Each outlines the characteristics, including benefits and concerns, of each alternative energy solution. The model ordinances also cover zoning requirements, permit applications, and definitions. The County has amended its development ordinance to include language on wind energy. In addition, the model ordinances have been adopted by a number of communities, including Deerfield, Gurnee, Grayslake, Lincolnshire, Long Grove, Wadsworth, Bannockburn, and Highland Park.

Potential for Efficiency and Conservation Gains

Lake County has expressed its support for measures that conserve energy through efficiency gains and conservation. To date, the County has completed a thorough internal energy audit of all its facilities,¹⁶⁴ which in turn prompted the implementation of energy management and retrofit programs. These programs have reduced energy consumption across these facilities by 16 percent per year. While the

¹⁵⁸ http://www.cityhpil.com/documents/18/55/070312_Renewable_Energy_201207031600379344.pdf

¹⁵⁹ <http://www.dailyherald.com/article/20120503/news/705039513/>

¹⁶⁰ <http://www.oak-park.us/aggregation/>

¹⁶¹ Wind Energy Task Force of Lake County Communities. 2010. *Wind Energy Systems Model Ordinance*. Retrieved from

http://www.lakecountyil.gov/Planning/PlanningandSupportServices/Documents/WETF_Model_Wind_Energy_Ordinance.pdf

¹⁶² Alternative Energy Task Force of Lake County Communities. 2010. *Solar and Geothermal Energy Systems Model Ordinance*. Retrieved from

http://www.lakecountyil.gov/Planning/PlanningandSupportServices/Documents/AETF_Solar_Geothermal_%20Model_Ordinance.pdf

¹⁶³

http://www.lakecountyil.gov/Planning/PlanningandSupportServices/Documents/Final_Alternative_Energy_ResourceGuide_Wind_Solar_Geo_8-24-2010.pdf

¹⁶⁴ Lake County Board. 2011. *Lake County Strategic Plan 2011 Progress Report*. Retrieved from www.lakecountyil.gov/StrategicPlan/Documents/ProgressReport.pdf

County plans to continue internal evaluation through its EECBG funding, there are also opportunities to take advantage of residential, commercial, and industrial energy programs. ComEd, People's Gas, Northshore Gas, Energy Impact Illinois, the Illinois Home Weatherization Program, and many more provide opportunities for private sector participants to implement cost-saving energy efficiency measures in their homes or facilities.

Goal & Policies

Goal: Conserve energy resources.

Policy 1: Model energy conservation by continuing to increase the energy efficiency of County facility buildings.

[Ref.: Goal 5.19; Pol. 5.19.4; Pol. 5.19.2]

Action 1: Continue to explore grant opportunities to retrofit County facilities to improve energy efficiency.

Action 2: Where possible, utilize building automation controls to enhance energy efficiency, such as networking lighting sensors and HVAC devices to control occupancy run schedules and monitor outlet energy use to explore usage patterns.

Action 3: Encourage County staff to change energy consumption behavior through helpful reminders, such as signage to turn off lights or shut down computers.

Action 4: Continue to report energy efficiency gains in annual strategic plan progress reports and participate with ICMA Performance Measures.

Policy 2: Promote the Alternative Energy Task Force of Lake County Communities' (AETF) model ordinances for wind, solar and geothermal energy systems.

[Ref.: Pol. 5.19.1; Pol. 5.19.4]

Action 1: Adopt the remaining AETF model ordinances for unincorporated areas.

Action 2: Continue to encourage Lake County communities to adopt the AETF model ordinances.

Action 3: Track successful model ordinance implementation case studies.

Policy 3: Continue to develop methodologies to collect and maintain data on energy use in order to evaluate progress.

[Ref.: Goal 11.1]

Action 1: Continue to monitor energy consumption trends for County facilities.

Action 2: Explore establishing data sharing agreement with the appropriate utilities to access aggregated county-wide energy consumption data.

Action 3: Continue to collect and aggregate data on a quarterly basis.

Policy 4: Continue to explore ways the County can encourage energy efficiency and high performance buildings for its residents, businesses, and member communities.

[Ref.: Goal 5.19, Pol. 5.19.3]

Action 1: Assist in gathering and distributing information related to energy efficiency to property owners and implementation of other energy-related recommendations in this Chapter.

Action 2: Create a set of communication and education strategies related to energy efficiency, identify opportunities for economic gain through energy efficiency, and assist parties interested in exploring cooperative energy efficiency gains.

Action 3: Work through partners, such as the Lake County Municipal League, to provide information about the 2012 International Energy Conservation Code to municipalities and encourage them to adopt the standards.

Action 4: Request usage data from utilities to record usage rates and track energy usage across the county.

Policy 5: Seek funding to construct a renewable energy demonstration project on a County facility.
[Ref.: Pol. 5.19.2]

Action 1: Explore potential funding sources and applying for grants¹⁶⁵ as opportunities arise.

Policy 6: Provide information about the Renewable Energy Portfolio Standard to municipalities and townships that are choosing to pursue electricity aggregation.

Action 1: Work through partners, such as the Lake County Municipal League, to provide information related to best practices for aggregation to municipalities.

Action 2: Encourage municipal leaders to incorporate renewables in their aggregation bid documents and “plan of governance,” as required by aggregation legislation.

Policy 7: Explore opportunities to work with ComEd, other electric utility providers, and municipalities to raise public awareness and evaluate cost-effective strategies to modernize the electric utility infrastructure or “Smart Grid” system.

Action 1: Explore opportunities to communicate with the public about the benefits associated with Smart Grid implementation.

Action 2: Explore opportunities to encourage residents to upgrade their own homes with up to code wiring and faceplates to ensure adequate electrical capacity.

Action 3: Explore opportunities for using Smart Grid technology to promote energy efficiency, as it becomes available.

Commentary: According to the Illinois “Energy Infrastructure and Modernization Act” [97-0616](#), it is the policy of the State of Illinois to encourage investments to modernize and upgrade the transmission and distribution of electric utility service known as the Smart Grid.

Policy 8: Explore opportunities to support alternative fuel vehicles.

Action 1: Support community efforts to encourage alternative fuel vehicles.

Action 2: Explore opportunities to procure electric vehicles and install electric charging stations at County facilities’ parking lots.

¹⁶⁵ DCEO, Utility Program, Illinois Clean Energy Foundation

Indicators

While the policies in this Chapter will be implemented on an ongoing basis, each indicator will be monitored on an annual basis and evaluated every five years. "Lake County Indicators" include indicators that are within the County government's purview, while "Community Indicators" relate to activities within the County at large.

Lake County Indicators:

Indicator 1: Lake County will adopt the remaining model AETF ordinances by 2018. (PBD)

Indicator 2: Analyze energy usage for County facilities and with weather adjusted data establish attainable energy reduction goals by 2018. (Facilities)

Indicator 3: Communication and education resources for energy efficiency will be developed for posting to the County website and distribution to County municipalities by 2018. (Communications)

Community Indicators:

Indicator 1: 50 percent of county municipalities will adopt the model ordinances for Alternative Energy Systems by 2018. (PBD)

Implementation Approach

Policy	Inter-governmental	County Departments and Agencies	Non-County Agencies
1 Model energy conservation by continuing to increase the energy efficiency of County facility buildings.	County	Facilities	
2 Promote the Alternative Energy Task Force of Lake County Communities' (AETF) model ordinances for wind, solar and geothermal energy systems.	County, Municipalities	PB&D	
3 Continue to develop methodologies to collect and maintain data on energy use in order to evaluate progress.	County, Municipalities	CAO, Facilities	ComEd, North Shore Gas
4 Continue to explore ways the County can encourage energy efficiency and high performance buildings for its residents, businesses, and member communities.	County, Municipalities	PB&D	LCML
5 Seek funding to construct a renewable energy demonstration project on a County facility.	County	Facilities	
6 Provide information about the Renewable Energy Portfolio Standard to municipalities and townships that are choosing to pursue electricity aggregation.	County, Municipalities	CAO	LCML
7 Explore opportunities to work with ComEd, other electric utility providers, and municipalities to raise public awareness and evaluate cost-effective strategies to modernize the electric utility infrastructure or "Smart Grid" system.	County, Municipalities	CAO	LCML

G. Waste

The content of the Waste section of the Sustainability Chapter is most closely related to Regional Framework Plan Chapter 5: Infrastructure and Services, particularly the Solid Waste section.

Significance

Effective waste management is integrally important to a sustainable County, as the core notion of sustainability revolves around the wise use of resources. The amount of waste generated by a community reflects how efficiently its inhabitants are utilizing resources. In addition, the way that products and food are produced, consumed, and disposed of has a large impact on greenhouse gas emissions (comprising about 42 percent of emissions in 2009 at a national level).¹⁶⁶

It is desirable to both minimize waste and dispose of or reuse it in intelligent ways. Reducing the amount of waste that is landfilled reduces associated costs, and also makes the most of the space available in landfills, which have finite capacity. Facilities within Lake County, Countryside Landfill and Zion Landfill, are likely to reach capacity by 2022 and 2032, respectively, unless they are expanded.¹⁶⁷ This is a particular challenge in light of expected increases in demand as the County's population grows. The continuation and broadening of recycling, composting, and hazardous and electronic waste management programs is necessary to lessen the strain on available facilities.¹⁶⁸

The Solid Waste Agency of Lake County (SWALCO) has been a leader in the region and beyond with regard to waste management. SWALCO represents 85 percent of the County's population and has members from 43 municipalities.¹⁶⁹ Its activities are primarily related to the implementation of the Lake County Solid Waste Management Plan, which includes recommendations on waste management, landfills, recycling, household chemical waste management, and many other pertinent issues.¹⁷⁰ Most recently, the Lake County Board, in conjunction with SWALCO's Board of Directors, took action on the Plan's recommendation to appoint the 60% Recycling Task Force. In December 2011, the Task Force published its report, which included recommendations to help the County meet its goal of a 60 percent recycling rate by 2020. The 60% Recycling Task Force Report and Solid Waste Management Plan are considered SWALCO's principal planning documents.¹⁷¹

Issues & Opportunities

The following key issues and opportunities related to waste have been identified through the existing conditions analysis:

- From 2007 to 2010, the amount of solid waste produced per capita per day fell, but the total amount of waste increased. This is a reflection of population growth. The majority of the reduction in waste produced per capita per day may be attributed to the residential and commercial sectors.

¹⁶⁶ U.S. Environmental Protection Agency. "Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2009." Retrieved 7/11/12 from <http://www.epa.gov/nonhaz/municipal/pubs/msw2009-fs.pdf>

¹⁶⁷ Note: the EPA recently approved permit application for an expansion at Zion

¹⁶⁸ Willis, 2012

¹⁶⁹ <http://www.swalco.org/AboutUs/History>

¹⁷⁰ "2009 Solid Waste Management Plan Update for Lake County, Illinois." SWALCO. Retrieved 7/11/12 from <http://www.swalco.org/Publications/Documents/Lake%20County%202009%20Plan%20Update.pdf>

¹⁷¹ Willis, 2012

- Lake County's waste is sent primarily to two landfills, Countryside Landfill and Zion Landfill, which are expected to reach capacity by 2022 and 2032.
- The County reported an increase in recycling from 2009 to 2010, with an impressive 39 percent recycling rate -- or 511,368 tons of municipal weight (MW tons) -- in 2010. This already exceeds the national average recycling rate of around 34 percent; the County and SWALCO have committed to achieving a 60 percent recycling rate by 2020.
- SWALCO is widely recognized as a leader in the region and beyond in the field of waste management and has been leading the charge to increase recycling rates and composting in the County. In addition, the 60% Recycling Task Force has developed various recommendations to help the County achieve its goals.
- Volume-based pricing, or pay-as-you-throw service, which charges customers based on the volume of waste produced, offers an opportunity to significantly reduce the amount of waste sent to landfill.
- The collection and composting of food scraps presents an opportunity to divert over nine percent of the County's waste stream from landfill.¹⁷²

Analysis

Waste Generation

In recent years, the amount of solid waste produced per capita per day (PCD) has declined in Lake County. In 2007, the County's waste production was about 11.6 pounds PCD; by 2009, the rate fell to 10.2 pounds PCD and remained stable through 2010 (see Figure G-1. Solid Waste Produced PCD). For Lake County as a whole, 1,309,495 MW tons of waste was produced.¹⁷³ However, because the population of the County continues to grow, the amount of waste has increased by approximately 15,000 tons. The economic recession is likely to have helped reduce consumption and subsequent waste generation.

The total waste generated per capita per day includes residential, commercial, construction and demolition (C&D) debris, landscape, and non-municipal solid waste such as industrial processes and special waste (see Table G-1. Waste Generation and Diversion). A comparison of waste generation rates denotes a reduction in residential and commercial waste generated per capita per day from 2007 to 2008, with diversion rates (i.e. the amount of waste diverted to recycling or composting) staying essentially the same.

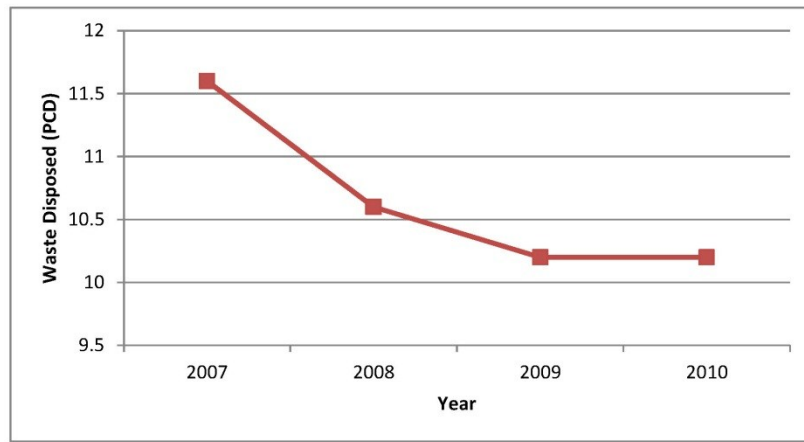
In addition to residential and commercial contributors, several other types of waste are substantial factors in Lake County's waste stream, including C&D debris, waste from industrial processes, and landscape waste. C&D materials are largely non-hazardous, non-contaminated solid waste by-products generated from construction, remodeling, renovation, or demolition conducted on buildings and other built structures. Such materials include brick (masonry), rock, concrete, lumber, gypsum board, plumbing and lighting fixtures, roof shingles, siding, appliances, and flooring. Most often, these materials pose little environmental threat due to their largely non-hazardous content, but in rare instances, C&D materials may contain hazardous content, such as asbestos, lead, and other heavy metals. C&D debris represented 17 percent of waste generation in 2008. As of January 2014, Lake

¹⁷² "Illinois Commodity/Waste Generation and Characterization Study." Illinois Department of Commerce and Economic Opportunity. Retrieved 8/17/12 from <http://www2.illinois.gov/gov/green/Documents/Waste%20Study.pdf>

¹⁷³ IEPA, Illinois EPA Municipal Waste Survey for 2010, 2011

County requires the recycling of 75 percent of C&D debris from buildings of 1,500 square feet area or more. There was an eight percent increase in the diversion rate for this type of waste from 2007 to 2008.

Figure G-1. Solid Waste Produced (PCD), 2007-2010



Sources: SWALCO Solid Waste Management Plan, IEPA Survey (2010), 60% Task Force Report, 60% Task Force Meeting Packet¹⁷⁴

Table G-1. Waste Generation & Diversion, 2007-2008

	Waste Generation, 2007 (PCD)	Diversion Rate, 2007	Waste Generation, 2008 (PCD)	Diversion Rate, 2008
Municipal Solid Waste				
Residential	4.00	32%	3.84	31%
Commercial	5.16	35%	4.24	36%
Construction/Demolition	1.81	40%	1.81	48%
Other Landscape	.2	-	.27	-
Subtotal	11.17	-	10.16	-
Non-Municipal Solid Waste				
Industrial Process/ Special Waste	.4	-	.46	-
Total Solid Waste PCD	11.57		10.62	

Source: Solid Waste Management Plan, 2009

Regional Landfills and Related County Facilities

Currently, 87 percent of disposal for waste generated in Lake County is disposed of in Lake County landfills. The majority of waste is disposed in two County landfills that have finite capacity. The Countryside Landfill near Grayslake is expected to close in 2022. At Zion Landfill, a proposal for a vertical expansion to provide an additional ten years of solid waste disposal capacity (7.23 million cubic yards of air space) was approved by the IEPA in June 2011. Separate to the permit application, Zion Landfill was expected to close in 2019, although a facility expansion has extended capacity to 2032.¹⁷⁵ Demand for

¹⁷⁴ <http://www.swalco.org/Recycling/Documents/February%2016%202011%20Meeting%20Packet.pdf>

¹⁷⁵ Solid Waste Landfill Capacity Certification, IEPA, January 1, 2012 for Zion Landfill.

landfill space is likely to continue to grow as the County's population increases.¹⁷⁶ Beyond landfills, Lake County hosts a number of waste service facilities and providers for businesses and residents,¹⁷⁷ including:

- 30 commercial waste and recycling collection providers
- 12 public recycling and/or scrap facilities
- Six residential curbside providers
- Five compost facilities
- One municipal drop-off facility

Recycling

Lake County's reduction and stabilization of per capita waste can be attributed in part to SWALCO's recycling and diversion programs. The County reported an increase in recycling from 2009 to 2010, with an impressive 39 percent of waste (or 511,368 MW tons) recycled in 2010. For comparison, in 2009, Americans recycled and composted about 33.8 percent of their trash.¹⁷⁸ To aid in boosting recycling rates, SWALCO has developed clear guidelines for recycling for Lake County residents. For example, to provide clarity to residents on which products are appropriate for curbside recycling, SWALCO provides an online guide, *SWALCO's Recycle & Redirect Guide*.^{179,180} In addition, SWALCO, in conjunction with a non-profit partner, Curbside Value Partnership (CVP), is broadening its efforts to increase participation in curbside recycling through resident outreach. This outreach partnership will focus early efforts on educating residents, incorporating use of modern media outlets, such as the web and social media.¹⁸¹

In June 2010, the Lake County Board, in conjunction with the Board of Directors for SWALCO, established the 60% Recycling Task Force as the appointed County body to investigate and evaluate alternatives, and develop recommendations on how to achieve a 60 percent County recycling rate by 2020. Beginning in September 2010, the Task Force (a 27-member team of private citizens, waste hauler representatives, and municipal administrators) convened in monthly meetings to develop specific recommendations and identify challenges to achieving recommendations.¹⁸² The Task Force specifically analyzed the residential, commercial, and C&D sectors in Lake County, identifying opportunities to expand current programming, while developing new programs and ideas within each of these sectors.¹⁸³ At the conclusion of the Lake County Recycling Task Force series meetings in October 2011, the Task Force developed 36 recommendations for material (waste) diversion, which were adopted by the Lake County Board. Lake County implemented several of those recommendations in June 2013.

Recycling & Waste Hauling Services

While SWALCO is responsible for implementing its Solid Waste Management Plan and provides some recycling services, municipalities are largely responsible for providing waste hauling and recycling

¹⁷⁶ (IEPA, IEPA - Landfill Certification Form for Zion, 2012) (Willis, 2012)

¹⁷⁷ Note: A complete listing of Lake County disposal and recycling providers can be found on SWALCO's website <http://www.swalco.org/DisposalGuide/ServicesandFacilities>

¹⁷⁸ Illinois Environmental Protection Agency. "Nonhazardous Solid Waste Management and Landfill Capacity Report (2009)." Accessed November 3, 2011. See www.epa.state.il.us/land/landfill-capacity/2009/report.pdf

¹⁷⁹ "Lake County Curbside Recycling Guidelines." Retrieved 7/26/12 from <http://www.swalco.org/Recycling/Documents/Swalco%20Recycling%20Guidelines%20Final%20April%202010.pdf>

¹⁸⁰ (SWALCO, SWALCO, 2010)

¹⁸¹ (Source: Source: Curbside Recycling News – June 15, 2012; CVP/SWALCO Partnership).

¹⁸² (SWALCO, 60% Recycling Task Force Report).

¹⁸³ *ibid*

services for their residents. Most Lake County municipalities contract with a single private waste hauler to provide recycling and waste collection services for residents, including curbside pickup, within its respective geography. Some residents, such as those living within multifamily buildings over a certain size, and many businesses also contract for these services independently.

Recycling and waste hauling are handled through a variety of measures for Lake County unincorporated areas. Contracted private haulers that serve unincorporated areas are required to offer an option for volume-based pricing, or “pay-as-you-throw” (PAYT) service, which tracks the amount of garbage that households produce and charges them accordingly.¹⁸⁴ One study estimates that PAYT communities generate about 49 percent less waste than those that charge traditionally (through taxes or fixed fees).¹⁸⁵ The 60% Recycling Task Force Report also encourages the establishment of a hauler franchise pilot program to serve unincorporated areas, with a goal to determine effectiveness in increasing recycling rates and decreasing costs.¹⁸⁶

Related Programs

SWALCO provides or supports specialized recycling and waste disposal programs for aluminum, batteries, commingled recycling, construction/demolition debris, glass, landscape waste, metals, latex paint, paper, plastics, tires, and scrap electronics. To support diversion rates and proper management of such materials, SWALCO offers a number of educational initiatives and programs. To promote yard waste composting, the Lake County Planning, Building and Development Department is administering a pilot program to limit landscape waste burning in a designated area. For food waste, Lake County has begun to sell compost bins to encourage composting and has taken steps to authorize local non-profit organizations to distribute compost bins to residents. In addition, the City of Highland Park conducted a composting pilot program in a residential neighborhood to determine its feasibility on a city-wide scale.¹⁸⁷

SWALCO also offers education programming assistance to Lake County schools for recycling, waste management, and other environmental projects. The School Education Corner offers resources and information for educators, school administrators, and parents interested in initiating recycling and waste diversion education programs.¹⁸⁸ To further broaden awareness around new C&D recycling pilot programs, Lake County has hosted a series of “C&D Handling Alternative Seminars” and focused on the goal of increasing awareness among the developer/building community. The 60% Recycling Task Force took a deeper evaluation of Lake County C&D debris, with resulting recommendations that focus on the development of a C&D ordinance to establish recycling requirements. A priority for SWALCO is increasing the local processing capacity.

¹⁸⁴ “Pay-As-You-Throw.” Retrieved 7/26/12 from <http://www.epa.gov/waste/conserve/tools/payt/index.htm>

¹⁸⁵ U.S. Environmental Protection Agency. “Pay-As-You-Throw Summer 2010 Bulletin.” Retrieved 7/26/12 from <http://www.swalco.org/Recycling/Documents/US%20EPA%20PAYT%20Summer%202010%20Bulletin.pdf>

¹⁸⁶ Under a franchise arrangement municipalities can allow multiple haulers to competitively bid out a specified scope of service within a defined geography or “franchise” area. Once a hauler is determined to an appointed ‘franchise’ area, residents then contract directly with the hauler for waste collection services at the approved price under the franchise agreement. (EPA, Decision Maker’s Guide To Solid Waste Management – Vol. II (Chapter 4 – Collection and Transfer).

¹⁸⁷ <http://www.cityhpl.com/CivicAlerts.aspx?aid=102>

¹⁸⁸ <http://www.swalco.org/Programs/SchoolResourceCorner/Default>

SWALCO also organizes and hosts recycling collection events. Electronics can be delivered to year-round drop-off facilities, and special one-day collection events are held as well.¹⁸⁹ The Household Chemical Waste facility in Gurnee, IL serves as the permanent disposal facility for household hazardous waste. Residents can drop off waste at the facility year round, or at mobile collection events organized throughout Lake County.¹⁹⁰ SWALCO also runs the “Reuse-A-Shoe” gym shoe recycling program. Some of the shoes are donated to the Share Your Soles Foundation, an Illinois-based charity that refurbishes shoes to give to those in need; the remainder are shipped to Nike to be processed as material for playgrounds and athletic fields.¹⁹¹

Goal & Policies

Goal: Minimize waste.

Policy 1: Support and implement the recommendations of the 60% Recycling Task Force.

[Ref.: 60% Recycling Task Force Report]

Action 1: Enhance existing residential recycling programs to increase rates of diversion, per the Task Force Recommendations.

Action 2: Enhance existing programs for commercial sector recycling.

Action 3: Support implementation of local ordinances to increase the rates of recycling of construction and demolition debris.

Action 4: Educate Lake County residents about ways to reduce waste by using social media and other tools to change behavior.

Action 5: Implement the Construction and Demolition Debris Recycling provisions of the amended Solid Waste and Recycling Ordinance in 2014.

Action 6: Implement a procurement policy for the County to request, where applicable, sustainable alternatives for products and services.

Policy 2: Increase onsite scavenging in landfills and encourage markets for reusable materials.

Action 1: Encourage Lake County’s landfills to evaluate on-site scavenging of valuable recyclables prior to landfilling.

Action 2: Explore the feasibility of working with SWALCO and Lake County Partners to develop markets for recycled and refurbished products including finished compost, plastics, plastic film and glass.

Action 3: Encourage Lake County businesses, institutions, and local governments to purchase goods with recycled content in order to support local recycling businesses and the overall market for recycling.

Policy 3: Continue coordination between municipalities and other entities through SWALCO.

Action 1: Work with SWALCO and the Lake County Municipal League to identify opportunities for collaboration and coordination of services between the various communities for greater efficiency and evaluate the cost benefit of bidding waste hauler and recycling services together.

¹⁸⁹ <http://www.swalco.org/collectionevents/ElectronicsCollectionEvents>

¹⁹⁰ <http://www.swalco.org/collectionevents/HouseholdWasteCollectionEvents>

¹⁹¹ <http://www.swalco.org/Programs/Reuse-A-Shoe>

Action 2: Use communication tools (website, LCTV, e-newsletters) to communicate related information and best management practices.

Action 3: Evaluate model innovative recycling and diversion practices for County facilities to share with other jurisdictions.

Indicators

While the policies in this Chapter will be implemented on an ongoing basis, each indicator will be monitored on an annual basis and evaluated every five years. “Lake County Indicators” include indicators that are within the County government’s purview, while “Community Indicators” relate to activities within the County at large.

Lake County Indicators:

Indicator 1: The Solid Waste Hauling and Recycling Ordinance will be amended to be consistent with the 60% Recycling Task Force Report recommendations by 2016. (CAO/PBD)

Community Indicators:

Indicator 1: Lake County will achieve a 60 percent diversion rate by 2020. (SWALCO)

Indicator 2: One or both landfills will evaluate and implement an on-site scavenging or collection program for materials prior to landfilling by 2018. (SWALCO)

Indicator 3: The number of communities coordinating joint procurement of hauling services for refuse, recyclables, and organics will increase by 2018. (SWALCO)

Implementation Approach

Policy		Inter-governmental	County Departments and Agencies	Non-County Agencies
1	Support and implement the recommendations of the 60% Recycling Task Force.	County, Municipalities	CAO	SWALCO
2	Increase onsite scavenging in landfills and encourage markets for reusable materials.	County, Municipalities	CAO	SWALCO
3	Continue coordination between municipalities and other entities through SWALCO.	County, Municipalities	CAO	SWALCO

H. Economy

The content of the Economy section of the Sustainability Chapter is most closely linked with Regional Framework Plan Chapter 3: Economy and Employment.

Significance

The *Regional Framework Plan's* Vision Statement for the Economy and Employment Chapter recognizes the importance of a balanced and diverse economy that provides high-quality jobs for all income strata. Traditional economic development strategies are discussed at length in the *Regional Framework Plan* and other County documents, including the Lake County Comprehensive Economic Development Strategy (CEDS) developed by the Lake County Partners in 2013.

To embed environmental sustainability in economic development, sustainable industries and jobs require a particular focus. To connect the topic of economic development with this Sustainability Chapter's overall focus on environmental sustainability, the Economy section will focus on the local, sustainable economy. Sustainability-related sector(s) of the economy represent a growing opportunity for economic development. For the purposes of this document, a sustainable economy for Lake County is defined as an economy that:

- Attracts and fosters “green” businesses that offer sustainable products and services;
- Is supported by local job training and workforce development; and
- Protects and supports local food and farming.

Green businesses are those whose primary function is to produce goods and provide services that benefit the environment or conserve resources.¹⁹² Green businesses often relate to renewable energy sources, energy efficiency, pollution reduction and removal, greenhouse gas reduction, alternative transportation, recycling and reuse, natural resources conservation, environmental education and green job training. Many of these sectors have significant potential for economic growth, and jobs in these “green” industries are worth pursuing. Green jobs can be higher-quality for low- and middle-skilled workers, with median wages estimated to be 13 percent higher than traditional jobs.¹⁹³ Better wages support the long term livability and sustainability of the County.

Issues & Opportunities

The following key issues and opportunities related to the economy have been identified through the existing conditions analysis:

- Since sustainability is a new economic development theme, there is not yet a well-defined system for tracking green jobs and businesses.
- Employment growth in some sectors is strong. For example, employment in the service sector has increased about 56 percent since 2000.
- Between 2008 and 2018, the total number of jobs in Lake County is expected to grow by 9 percent.¹⁹⁴ The greatest growth is estimated to be in the health care and social assistance, professional and business services, and administrative and waste management services sectors. These professions are generally high value-added and have a relatively low environmental impact.

¹⁹² BLS, 2012

¹⁹³ “Sizing the Clean Economy.” The Brookings Institution.

¹⁹⁴ IDES Employment Projections- Long-term Workforce

- Despite overall growth in employment, the County has recently seen sharp employment declines in most sectors, particularly in the agricultural sector (which has shown a 155 percent decline in employment since 1990). This challenging economic context makes it difficult to drive growth in new sectors of the economy or encourage investment in sustainability within existing sectors.
- There is concern about the County's ability to compete for economic development with other jurisdictions, such as Kenosha County in Wisconsin.
- Waukegan and Libertyville are home to the greatest number of jobs in the County, followed closely by Deerfield, Gurnee, and North Chicago.
- The green sector of the economy represents an opportunity for the County, particularly as a part of the service and manufacturing sectors. Potential nodes for green economic development include Waukegan, Gurnee, Buffalo Grove, Deerfield, Lake Bluff, Lake Forest, Lake Zurich, Libertyville, and Wauconda.
- 42.2 percent of County residents also work within the County, and over 75 percent work within 25 miles of their home. By working close to home, County residents can reduce transportation-related pollution and emissions, support local businesses, and improve quality of life.
- Ecotourism is a notable feature of the Lake County economy. Developing this industry, and sustainable services and products for tourism providers and visitors, can be a source of economic growth while protecting the County's natural assets.

Analysis

The sustainable economy may be approached in two main ways – through looking at the development of green businesses and jobs (as defined above), and also by looking at the potential for traditional businesses to incorporate green practices (such as recycling, green cleaning, cradle-to-cradle processes, etc.). However, it is first helpful to understand existing businesses and jobs in Lake County as a framework for estimating the green sector's potential within the economy at large.

Local Business Profile

Lake County is positioned to host green jobs and currently has employment in job classification areas that can support green jobs. Roughly 50 percent of the County's workforce is in the service sector, followed by 14 percent in both manufacturing and retail trade (see Figure H-1).¹⁹⁵ Manufacturing in particular is considered an integral part of the green economy, comprising about 26 percent of green jobs (compared with just nine percent attributed to manufacturing in the broader economy).¹⁹⁶

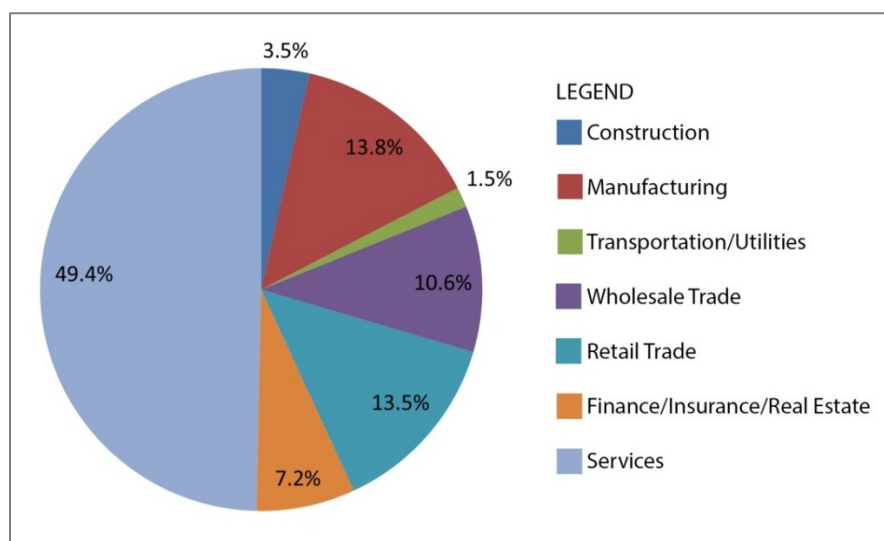
Historically, Lake County has hosted a diverse workforce (see Table H-1. Employment by Classification) and has added more jobs each year. However, between 2000 and 2009, job growth grew the slowest of the four decades included in the analysis. In prior decades, jobs generally grew in each sector. Between 2000 and 2009, jobs in all categories declined with the exception of service sector jobs, which increased by approximately 56 percent. Compared to regional and state employment, the County has a greater percentage of manufacturing, retail jobs, wholesale trade, and professional/management jobs, and fewer health and social service provider jobs. Interestingly, while the number of wholesale trade jobs is high, there are relatively few transportation and warehousing jobs.

¹⁹⁵ According to *U.S. Census Bureau, County Business Pattern* for 2009,

¹⁹⁶ "Sizing the Clean Economy." The Brookings Institution.

Workforce patterns within Lake County vary greatly by town. Waukegan and Libertyville are home to the greatest number of jobs in the County, followed closely by Deerfield, Gurnee, and North Chicago.¹⁹⁷ Almost a quarter of the jobs in Waukegan are related to administrative services and waste management. In Libertyville, the majority of jobs are in the fields of professional and scientific services and healthcare. Gurnee jobs are dominated by the retail sector, while North Chicago has a concentration of jobs in chemical manufacturing. Deerfield is more diverse with the largest number of jobs in wholesale trades and a relatively equal number of jobs in the retail, finance, and manufacturing sectors.

Figure H-1. Employment by Classification, 2009



Source: U.S. Census Bureau, County Business Patterns, 2009

Table H-1. Employment by Classification, 1970-2009

Classification	1970			1980			1990			2000			2009		
	Employees	Percent of Total		Employees	Percent of Total	Percent change	Employees	Percent of Total	Percent change	Employees	Percent of Total	Percent change	Employees	Percent of Total	Percent change
Agricultural Services, Forestry, Fishing	343	0.4%		858	0.6%	150.1%	2,260	1.1%	163.4%	692	0.2%	-69.4%	97	0.0%	-86.0%
Mining	19	0.0%		NA	NA	NA	156	0.1%	NA	NA	NA	NA	NA	NA	NA
Construction	4,872	5.4%		6,065	4.5%	24.5%	11,559	5.6%	90.6%	15,294	4.9%	32.3%	11,230	3.5%	-26.6%
Manufacturing	41,017	45.7%		49,765	36.7%	21.3%	53,664	25.8%	7.8%	54,439	17.6%	1.4%	44,070	13.8%	-19.0%
Transportation & Public Utilities	3,518	3.9%		5,082	3.7%	44.5%	6,640	3.2%	30.7%	7,935	2.6%	19.5%	4,686	1.5%	-40.9%
Wholesale Trade	2,666	3.0%		6,183	4.6%	131.9%	16,400	7.9%	165.2%	22,800	7.4%	39.0%	33,860	10.6%	48.5%
Retail Trade	19,058	21.3%		31,793	23.4%	66.8%	45,717	22.0%	43.8%	61,053	19.7%	33.5%	43,064	13.5%	-29.5%
Finance, Insurance, & Real Estate	2,629	2.9%		7,366	5.4%	180.2%	13,942	6.7%	89.3%	45,417	14.7%	225.8%	22,962	7.2%	-49.4%
Services	15,350	17.1%		27,082	19.9%	76.4%	58,129	27.9%	114.6%	100,871	32.6%	73.5%	157,647	49.4%	56.3%
Total Employment	89,665	100.0%		135,774	100.0%	51.4%	208,054	100.0%	53.2%	309,313	100.0%	48.7%	319,399	100.0%	3.3%

Sources: Regional Framework Plan Figure 3.1, U.S. Census Bureau, County Business Patterns

Note: NA- Exact employment figures not available due to employer confidentiality

¹⁹⁷ 2012 Illinois at Work report

Table H-2. County, Regional, and State Employment Totals, 2009

Industry Description	Lake County Employment	Percent of Total	Regional Employment	Percent of Total	State Employment	Percent of Total
Manufacturing	44,070	13.8%	360,240	10.0%	566,887	11.1%
Retail trade	43,064	13.5%	392,182	10.9%	600,315	11.7%
Wholesale trade	33,860	10.6%	238,410	6.6%	304,994	6.0%
Health care and social assistance	30,719	9.6%	479,517	13.3%	732,836	14.3%
Professional, scientific, and technical services	28,350	8.9%	301,557	8.4%	359,119	7.0%
Administrative & support, waste management/remediation services	24,766	7.8%	313,261	8.7%	450,855	8.8%
Accommodation and food services	23,536	7.4%	311,555	8.6%	457,084	8.9%
Management of companies and enterprises	21,676	6.8%	140,842	3.9%	174,726	3.4%
Finance and insurance	19,607	6.1%	241,737	6.7%	324,750	6.3%
Construction	11,230	3.5%	142,191	3.9%	206,452	4.0%
Other services (except public administration)	11,167	3.5%	170,155	4.7%	247,266	4.8%
Arts, entertainment, recreation	6,751	2.1%	58,007	1.6%	77,873	1.5%
Educational services	6,611	2.1%	124,515	3.5%	151,647	3.0%
Transportation and warehousing	4,686	1.5%	151,786	4.2%	219,414	4.3%
Information	4,071	1.3%	98,883	2.7%	126,128	2.5%
Real estate and rental and leasing	3,355	1.1%	64,951	1.8%	81,321	1.6%
Forestry, fishing, hunting, and agriculture support	97	0.0%	269	0.0%	1,715	0.0%
Mining, quarrying, oil and gas extraction	NA	NA	971	0.0%	8,608	0.2%
Utilities	NA	NA	10,933	0.3%	28,602	0.6%
Total for all sectors	319,399	100.0%	3,601,962	100.0%	5,120,970	100.0%

Source: U.S. Census Bureau, County Business Patterns, 2009

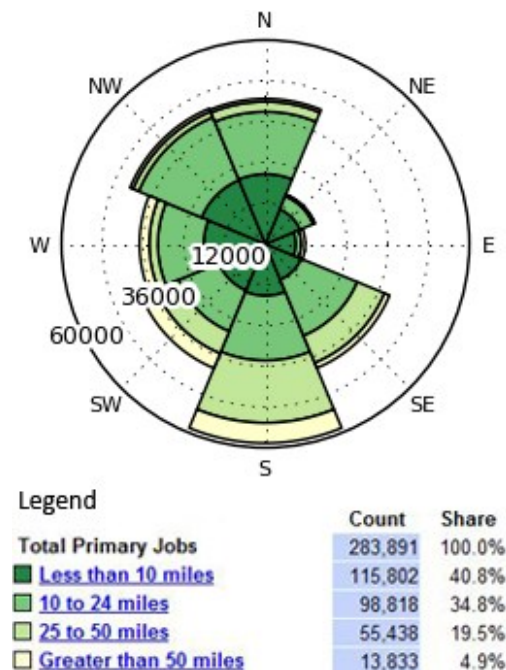
Note: NA- Exact employment figures not available due to employer confidentiality

Commuter Travel Patterns

The distance (and associated travel time) that County residents commute to work has an effect on the County's livability, potential fuel consumption and emissions associated with driving, and economic development. Currently, approximately 42.2 percent of Lake County's workforce also resides within Lake County. The majority of County residents (about 75.6 percent) work within 25 miles of their residence (see Figure H-2. Commuting Distances for County Residents).¹⁹⁸ However, as discussed in the Transportation and Mobility section, the average Lake County household drove approximately 61 miles per day in 2007, versus a regional average of about 48 miles per day. This indicates that despite the relative proximity of employment locations for many Lake County residents, most are still driving almost 30 percent more than the regional average.

¹⁹⁸ 2010 U.S. Census Bureau, Longitudinal Employer-Household Dynamics. Retrieved 7/10/12 from <http://lehd.did.census.gov/led/>

Figure H-2. Commuting Distances for County Residents



Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2002-2010)

Table H-3. Green Sector Opportunities by Employment Classification

Employment Classification	Examples of Green Sector Opportunities
Agriculture, Forestry, Fishing	Natural resources conservation; sustainable and organic food and farming
Construction	Green architecture and construction
Manufacturing	Energy and water efficient building systems; renewable energy systems; electric and hybrid vehicle production; green chemicals; green building materials
Transportation and Public Utilities	Alternative and non-motorized transportation; recycling, reuse, and waste management; renewable energy systems
Retail	Environmentally preferable products; organic and local products
Service	Remediation; organic services (restaurants, spas, etc)

Source: *Sizing the Clean Economy*, The Brookings Institution

Green Businesses & Jobs

The green sector of the economy is not represented by a single employment classification. Traditional classifications, such as manufacturing and construction, are likely to contain both green and traditional

jobs. A job classification system is used to group positions which have similar duties and levels of complexity and responsibility, require similar training and experience at the time of recruitment, and are compensated at the same general levels of pay. While green businesses are present in all employment classifications, there are some classifications, such as agriculture, manufacturing, and construction, where a more direct connection can be made (see Table H-3. Green Sector Opportunities by Employment Classification).

The green sector of the economy may encompass many traditional sectors but, as an emerging field, is not yet well tracked or quantified. To better understand the green sector within Lake County, it is helpful to look at how traditional employment sectors in the County (defined by the North American Industry Classification System or NAICS) may be linked with green jobs. Figure H-3. Potential Green Jobs Centers was developed by utilizing general NAICS codes that have been linked with the green sector. The Potential Green Jobs map indicates that Waukegan has the highest potential concentration of green jobs in the County, followed by Gurnee. Several other communities, including Buffalo Grove, Deerfield, Lake Bluff, Lake Forest, Lake Zurich, Libertyville, and Wauconda, have the potential of housing between 1,000 to 2,500 green jobs.

The U.S. Department of Commerce has developed a more detailed methodology for determining green jobs by using NAICS product and service codes, which delve into a finer grain of detail to classify businesses into very specific categories. The U.S. Department of Commerce combed through the product and service code classifications to identify over 700 that are strongly linked with the green sector.¹⁹⁹ Unfortunately, the 2007 Economic Census (the source for NAICS product and service codes) does not provide the codes at the county level, which would be necessary to replicate the analysis for Lake County. However, were data to become available in the future, this methodology could represent a viable avenue for quantifying and tracking the County's green jobs.

Another approach to approximate the number of green jobs in the County is to apply "broad" and "narrow" national green employment ratios, as determined by the Department of Commerce, to County employment by sector. The narrow ratio includes products and services that are widely accepted as green, while the broad ratio includes products and services that may be more contentious or open to debate about their classification. Table H-4 shows the narrow and broad percentages of each applicable sector's green employment at the national level (for agriculture, manufacturing, construction, and services). These national ratios were applied to Lake County's employment numbers from the 2000 and 2009 Economic Censuses (see Table H-5. Narrow and Broad Estimates for Green Jobs). This application suggests that roughly 4,800 to 6,400 jobs in Lake County are potentially green jobs. The trend observed from 2000 to 2009 shows very little growth in the number of green jobs and declines in all but the service sector. This trend reflects the overall Lake County employment picture, which illustrates significant growth in the service sector but declines in agriculture, manufacturing, and construction.

¹⁹⁹ <http://www.labormarketinfo.edd.ca.gov/contentpub/GreenDigest/WA-NAICS-Industry-List.pdf>

Table H-4. Green Products' and Services' Share of the National Economy by Sector, 2007

Sector	Narrow	Broad
Agriculture	0.3%	0.3%
Manufacturing	1.5%	1.8%
Construction	3.0%	4.1%
Services	1.5%	1.9%
All Sectors	1.5%	2.0%

Source: Department of Commerce, *Measuring the Size of the Green Economy* (p.17)

Table H-5. Narrow and Broad Estimates for Green Jobs, 2000 and 2009

Sector	Total Jobs, 2000	Total Jobs, 2009	Green Jobs Range, 2000 (Narrow - Broad)	Green Jobs Range, 2009 (Narrow - Broad)
Agriculture	692	97	2	0
Manufacturing	54,439	44,070	817 - 980	661 - 793
Construction	15,294	11,230	459 - 627	337 - 460
Services	100,871	153,576	1,513 - 1,917	2,304 - 2,918
All Sectors	309,313	319,399	4,460 - 6,186	4,791 - 6,388

Future Trends

Employment forecasts for Lake County expect moderate job growth within the next four to five years. Between 2008 and 2018, the total number of jobs in Lake County is expected to grow by nine percent.²⁰⁰ The greatest growth is estimated to be in the health care and social assistance (25 percent), professional and business services (22 percent), and administrative and waste management services (21 percent) sectors (see Table H-6. Employment Growth Sectors). The waste management services sector offers the greatest opportunity for green jobs growth. Lake County municipalities that are already showing employment in these growth sectors have the greatest likelihood of additional job creation. 2009 data shows that several municipalities in the County have high employment in the growth areas; Waukegan, Gurnee, Buffalo Grove, Libertyville, and Lake Forest have high employment in four or more growth sector categories (see Table H-7. County Municipalities with Greatest Number of Jobs in Growth Sectors). It should be noted that all of the communities shown in Table H-7, with the exception of Barrington, have the potential for 500 or more green jobs per the analysis in Figure H-3. This indicates that not only do these communities have the highest potential for job growth per the identified growth sectors, but they also have particular potential to capitalize on and grow existing green businesses relative to those sectors.

²⁰⁰ IDES Employment Projections- Long-term Workforce

Table H-6. Employment Growth Sectors

Sector	Expected Job Growth, 2008-2018
Transportation and public utilities	19%
Professional and business services	22%
Administrative and waste management services	21%
Educational and health services	19%
Health care and social assistance	25%
Leisure and hospitality (includes arts and entertainment and accommodations)	17%

Source: IDES Employment Projections- Long-term Workforce

Table H-7. County Municipalities with Greatest Number of Jobs in Growth Sectors, 2009

Sector	Rank				
	1	2	3	4	5
Transportation, Warehousing & Utilities	Grayslake	Waukegan	Buffalo Grove	Gurnee	Libertyville
Professional & Business Services	Libertyville	Buffalo Grove	Deerfield	Waukegan	Vernon Hills
Administrative & Waste Management Services	Waukegan	Gurnee	Unclassified	Deerfield	Lake Forest
Educational & Health Services	Lake Forest	Unclassified	Mundelein	Libertyville	Barrington
Health Care & Social Assistance	Libertyville	Waukegan	Highland Park	Lake Forest	Zion
Leisure Hospitality (Arts & Entertainment)	Gurnee	Unclassified	Lake Forest	Highland Park	Buffalo Grove
Leisure & Hospitality (Accommodations)	Unclassified	Gurnee	Lake Forest	Lincolnshire	Waukegan

Source: IDES Local Employment Dynamics- 2009

Economic Opportunities

Lake County has many opportunity areas related to the sustainable economy, including the agricultural sector, tourism and eco-tourism, and workforce development, particularly related to green jobs skills. The County's agricultural sector has recently been declining both in acreage devoted to such uses and the number of associated jobs. However, substantial opportunities exist for remaining farms to capitalize on a growing trend toward locally produced food. Currently, only a fraction of dollars spent on food in Illinois annually is spent on locally-grown (in-state) products.²⁰¹ This topic is explored in greater detail in the Open Space section of this Chapter.

Tourism

Tourism is a significant aspect of the economy worldwide, representing five percent of gross domestic product and six to seven percent of employment. The leisure and hospitality sector represents 31,000

²⁰¹ Illinois Department of Agriculture

to 33,000 jobs for the metropolitan statistical area of Lake and Kenosha Counties.²⁰² Lake County ranks third in Illinois travel expenditures behind Cook and DuPage Counties, with visitors spending over \$1 billion, employment in the industry over 10,000, \$23.3 million in local taxes, and \$59.4 million in state taxes in 2010.²⁰³

On a global level, there is increased demand for sustainable tourism (eco-tourism). Concurrently, the industry is responding to this demand partially by greening hotels and restaurants with use of green technology and building systems that conserve water and energy. Such facilities in Lake County include eco-friendly hotels such as Hotel Indigo in Vernon Hills, the Hyatt Deerfield, and various Marriott and Hilton properties. The Lake County Convention and Visitors Bureau actively markets these hotels, along with local farms, farmers markets, wineries, and noteworthy open space areas, such as state parks.²⁰⁴

Tourism and ecotourism may present an opportunity for the County to take advantage of projected growth in tourism while utilizing existing natural assets. Visitors come to Lake County to see Illinois Beach State Park, Historic Long Grove, the Naval Training Center, Ravinia Park, Lake County Fairground events, the 37 golf courses located in the County, Cuneo Museum, and the Lake County Museum. Additionally, it should be noted that State Parks, State Natural Areas, and Lake County Forest Preserves attract a large number of visitors each year; in an average year, 2.5 million people visit the County's forest preserves. In 2000, Illinois Beach State Park had around 2.5 million visitors, Chain O'Lakes State Park had 1.3 million visitors, and Volo Bog had almost 52,000 visitors.²⁰⁵

Workforce Development Programs

Lake County has significant workforce development programs that support both local job seekers and local businesses. The Lake County Job Center connects potential employees with businesses. The Job Center's Workforce Investment Board was established to, "create a workforce development system that meets the need of employers for qualified workers and by expanding employment opportunities for residents of Lake County."

Housed at the College of Lake County, the Workforce and Professional Development Institute (WPDI) provides the community with training, consulting, and professional development courses in six areas: Center for Personal Enrichment, Client Solutions, Continuing Professional Development, Illinois Procurement Technical Assistance Center, Illinois Small Business Development Center, and Judicial Services. WPDI hosts a Small Business Development Center (SBDC) and a Procurement Technical Assistance Center (PTAC). The SBDC is focused on supporting small businesses in the region. The PTAC focuses on helping businesses secure government contracts. Each of these centers has the potential to support sustainable businesses through targeted technical assistance related to sustainable business practices as well as promoting and/or bringing sustainable products to market.

The Illinois Green Economy Network (IGEN) is also housed at the College of Lake County. IGEN was established to provide training to a variety of stakeholders on green economy issues. Most recently, IGEN and the College of Lake County have been providing training and job preparation services related

²⁰² http://www.bls.gov/eag/eag.il_lakecounty_md.htm

²⁰³ <http://triblocal.com/gurnee/community/stories/2012/05/visit-lake-county-celebrates-national-tourism-week/>

²⁰⁴ <http://www.visitlakecounty.org/green.cfm>

²⁰⁵ <http://www.dnr.illinois.gov/cmp/Documents/ICMPPD.pdf>

to green jobs in such fields as sustainable design and construction, sustainable agriculture, heating and air conditioning, energy efficiency, and renewable energy.²⁰⁶

Goal & Policies

Goal: Promote growth of the local sustainable economy

Policy 1: As the U.S. Department of Labor and the Illinois Department of Commerce and Economic Opportunity further define the green jobs and businesses, work with Lake County Partners to attract green businesses and jobs and monitor the emerging green industry data.

[Ref.: Goal 3.1; Pol. 3.4.2; Pol. 5.26.4]

Action 1: Once commonly accepted definitions of green jobs and green businesses are identified, work with Lake County Partners to establish a baseline number of green jobs and businesses as well as a target increase.

Action 2: Work with Lake County Partners to monitor green jobs and businesses on an annual basis.

Action 3: Assess creating opportunities to incent green business development.

Policy 2: Work with the Illinois Green Economy Network (IGEN) to support green businesses through alignment of workforce development programs with current and future opportunities.

[Ref.: Pol. 5.26.4]

Action 1: Research Illinois Department of Commerce and Economic Opportunities (DCEO) workforce development grant opportunities that would serve to bolster existing activities.

Action 2: Encourage IGEN and College of Lake County to convene an annual meeting with County high school guidance counselors on opportunities for green jobs and related workforce development in the County.

Policy 3: Encourage businesses to adopt green practices.

Action 1: Work with chambers and other business associations to publicly recognize businesses that incorporate green practices by working with partners to create a green business recognition program.

Action 2: Encourage businesses to voluntarily achieve green building certifications.

Action 3: Encourage businesses and residents to pursue related financing opportunities, such as utility programs that provide rebates for energy efficiency programs.

Action 4: Inform residents and businesses of the benefits of green products and services.

Commentary: Green building and development certification programs include USGBC's LEED Rating System, Energy Star, and Green Seal etc.

Policy 4: Promote eco-tourism and agri-tourism activities as a way to enhance the economy and draw attention to the importance of natural resources.

²⁰⁶ <http://www.igencc.org/about-us>

Action 1: Encourage hotels, restaurants, and other entertainment venues to seek green building certifications such as LEED certification and Energy Star.

Action 2: Encourage the food industry to emphasize the use of local food.

Action 3: Coordinate with Lake County Convention and Visitors Bureau, Illinois Bureau of Tourism, and Chicago Convention and Tourism Bureau to promote eco-tourism and agri-tourism.

Indicators

While the policies in this Chapter will be implemented on an ongoing basis, each indicator will be monitored on an annual basis and evaluated every five years. “Lake County Indicators” include indicators that are within the County government’s purview, while “Community Indicators” relate to activities within the County at large.

Lake County Indicators:

Community Indicators:

Indicator 1: The number of LEED certified commercial and office spaces will increase in the County by 2018.

Indicator 2: The number of green jobs will increase by 2018.

Implementation Approach

Policy	Inter-governmental	County Departments and Agencies	Non-County Agencies
1 Work with Lake County Partners to attract green businesses and jobs and monitor the emerging green industry data.	County, Municipalities	CAO	LCP
2 Work with IGEN to support green businesses through alignment of workforce development programs with current and future opportunities.	County, Municipalities	CAO	LCP, IGEN
3 Encourage businesses to adopt green practices.	County, Municipalities	CAO	LCP, Chambers
4 Promote eco-tourism and agri-tourism activities as a way to enhance the economy and draw attention to the importance of natural resources.	County, Municipalities	CAO	LCP, Visitor's Bureau

Figure H-3. Potential Green Jobs Centers

