



Algonquin-Cary Subarea Plan

Adopted

Algonquin Village Board, April 20, 2021

Cary Village Board, May 4, 2021



Acknowledgements

Special thanks to:

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Village of Lake in the Hills

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Funding Acknowledgement

This project was supported through the Chicago Metropolitan Agency for Planning's (CMAP) Local Technical Assistance (LTA) program, which is funded by the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), U.S. Department of Housing and Urban Development (HUD), Illinois Department of Transportation (IDOT), and the Chicago Community Trust. The Villages of Algonquin and Cary and CMAP would like to thank these funders for their support for this project.

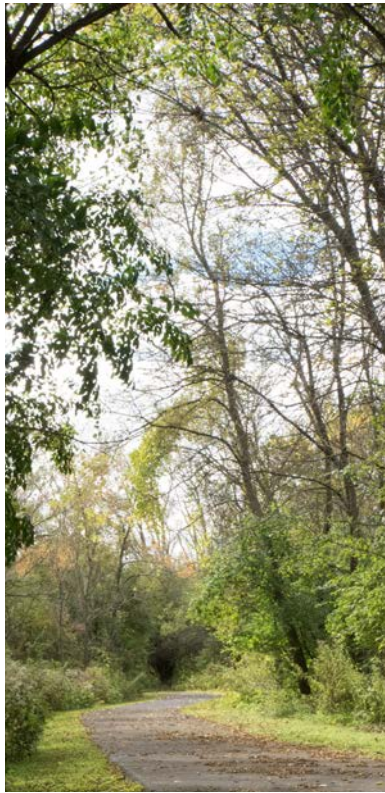


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Chapter 1

INTRODUCTION



The Algonquin-Cary Subarea Plan presents a vision for the future of the Route 31 corridor and adjacent surface mining operations. After decades of sand and gravel mining, several hundred acres of land – predominantly owned by LafargeHolcim, Ltd. – may become suitable for restoration and redevelopment in the future. This plan is the result of a collaborative effort led by the Village of Algonquin and the Village of Cary to plan for the redevelopment of their shared border.

The Villages jointly sought technical assistance from the Chicago Metropolitan Agency for Planning (CMAP) for the creation of a subarea plan to identify the highest and best uses for the mining areas, including recreation, natural resource protection, and economic development, as well as transportation system improvements to improve bicycle and pedestrian circulation between the mining sites, Algonquin and Cary downtowns, and the Fox Bluff Conservation Area. Building on recent planning, the subarea plan presents a vision for the future of the area and a road map to achieve it. The recommendations, examples, and actions that follow will allow the Villages, residents, business owners, and potential investors to make informed decisions on land use, environmental protection, transportation, and capital improvements to implement the vision for the Subarea.

Project Introduction

The Algonquin-Cary planning area is located in southeast McHenry County along the IL Route 31 corridor, approximately 45 miles from downtown Chicago. The area is situated approximately nine miles north of Interstate 90, two miles from US Route 14 and the Cary Metra Station, and along the western shoreline of the Fox River. It boasts incredible natural and recreational resources – Fox Bluff Conservation Area and the Prairie Trail, owned by the McHenry County Conservation District, and Cary Park District’s Hoffman Park – and is rich in mineral resources, which have sustained the surface mining industry in this area for many decades. The planning area is also home to several residential neighborhoods and Downtown Algonquin and is easily accessed from Route 31.

The planning area comprises three unique restoration and redevelopment areas, which are illustrated in Figure 1.

Subarea 1

Situated to the east of Route 31 and north of Klasen Road, this area spans 250 acres across both Villages. Bordered by Hoffman Park, the Fox Trails subdivision, and the unincorporated Traube Fox River Trail neighborhood, this area features Cary Lake at Rotary Park (196.0 acres) and four potential development sites: 1) Chally property (12.9 acres), 2) Route 31 frontage (21.2 acres), 3) Klasen Road frontage west (11.4 acres), and 4) Klasen Road frontage east (8.1 acres). The Route 31 frontage falls within both Villages, while the two parcels that front onto Klasen Road are in the Village of Algonquin. Sites 1 and 2 are owned by the Chally family. Sites 3 and 4 are still under ownership by LafargeHolcim, Ltd. Just north of Subarea 1 along Route 31, between Hoffman Park and the Wal-mart Supercenter in Crystal Lake, is the 38-acre Damisch Farm property.

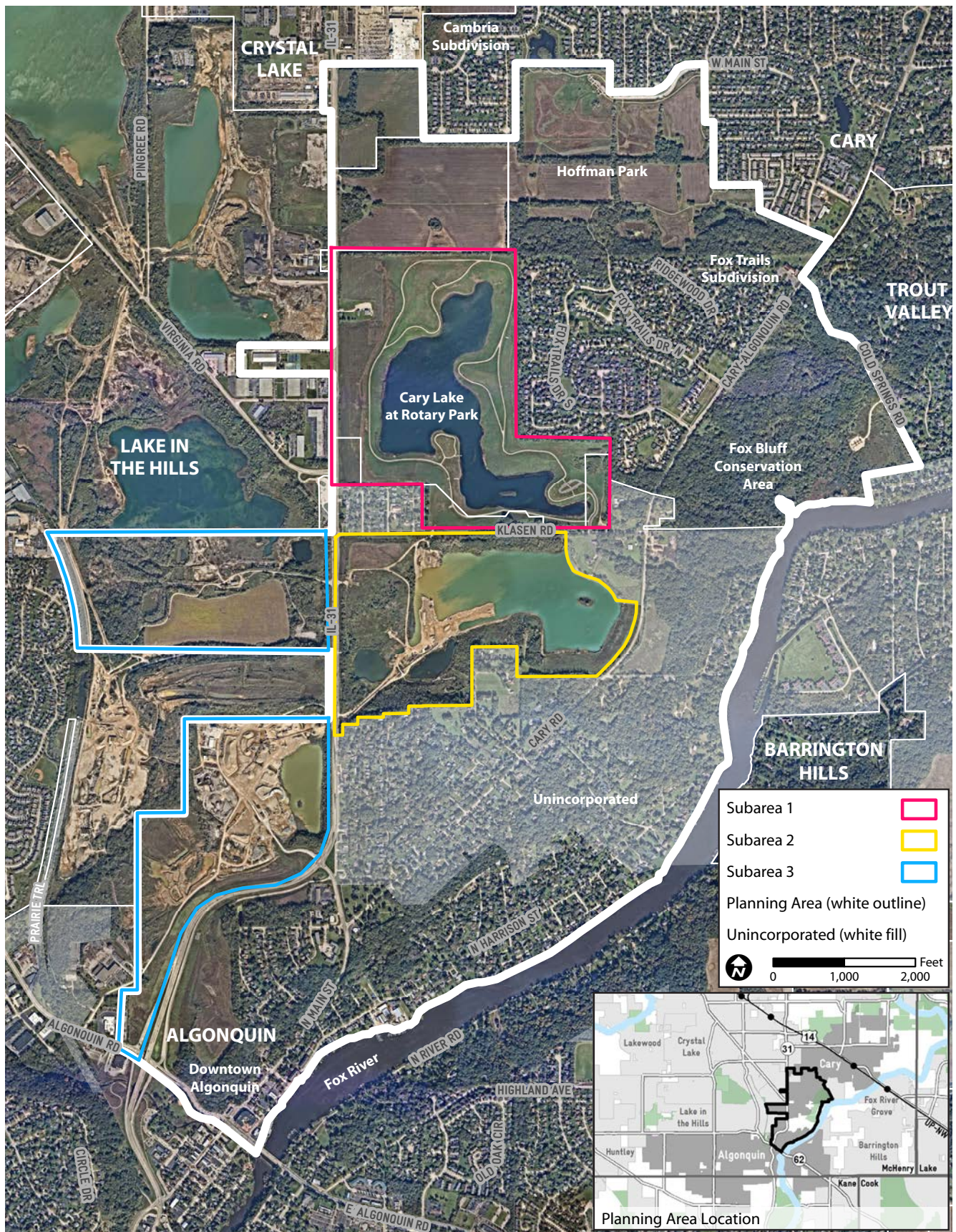
Subarea 2

Located to the east of Route 31 and south of Klasen Road in the Village of Algonquin, this area comprises 191 acres that are owned by LafargeHolcim, Ltd. It extends from Route 31 to Cary Algonquin Road and abuts the unincorporated Algonquin Hills neighborhood to the south and a few private properties at the corner of Klasen Road and Cary Algonquin Road. Surface mining operations are expected to continue until approximately 2022.

Subarea 3

West of Route 31, this area comprises 291 acres that are predominantly owned by LafargeHolcim, Ltd. in the Village of Algonquin. This area is divided into a north area (138 acres) and south area (153 acres) that are separated and bordered by approximately 163 acres owned by Lehigh Hanson, Heidelberg Cement Group (“HeidelbergCement”) in the Village of Lake in the Hills. The north area extends from Route 31 to the Prairie Trail, and the south area stretches along Route 31 to Algonquin Road and the Village of Algonquin Public Works Facility. Operations are expected to continue until approximately 2029, however, they may cease in the north area as soon as 2021. Either area could continue to support mining activities if subsurface mining is permitted by the villages in the future.

Figure 1. Algonquin-Cary planning area



Chicago Metropolitan Agency for Planning, 2020

Why Create a Subarea Plan?

Development decisions impact and are impacted by the actions of neighboring local governments and private landowners. A development that is proposed today will influence the possibilities of what will be proposed in the future. By planning together, the Villages of Algonquin and Cary can take advantage of the unique redevelopment opportunity that they both share and develop complementary and coordinated strategies to redefine and connect the mining sites to the surrounding community.

The subarea plan presents a unified vision for the future and charts a coordinated path for the Villages, open space managers, and other stakeholders. Specifically, the plan will help the communities by:

- Initiating public engagement in the development process, including neighboring residents who could be impacted by future decisions;
- Providing a roadmap, developed with input from the public, to share with the private development community as the area begins to develop over the next decade;
- Outlining strategies to maximize recreational assets for current and future residents, as well as economic development;
- Examining the market potential to guide fiscally responsible commercial and residential development;
- Identifying pedestrian and bicycle improvements to develop a strong network with links to Algonquin and Cary's downtown areas; and
- Coordinating recent planning efforts in Downtown Algonquin, as well as the Village of Cary 2015 Comprehensive Plan, Cary Park District Comprehensive Master Plan, McHenry County Conservation District Fox Bluff Master Plan, McHenry County 2030 and Beyond Plan and Long Range Transportation Plan, and Fox River Corridor plans for both communities.

Planning Process

The planning process to create the Algonquin-Cary Subarea Plan included multiple steps that were undertaken over approximately two years. The process was developed in close consultation with the Village of Algonquin and the Village of Cary and was designed to include extensive input from community residents, business owners, open space managers, civic groups, and community leaders throughout.

- Pre-kickoff (Feb. 2018)
- Existing conditions (Apr. 2018–Apr. 2019)
- Community outreach and engagement (June 2018–Aug. 2019)
- Visioning (Apr.–May 2019)
- Framework plans and preliminary recommendations (June–Sep. 2019)
- Plan development (Oct. 2019–Jan. 2021)
- Public review and adoption (Feb.–Apr. 2021)
- Community implementation of the plan (begins following adoption)

To assist with the formulation of recommendations within this plan, CMAP contracted with Kretchmer Associates and Kane, McKenna and Associates to conduct a market analysis of the development potential of Subarea 1 and Subarea 2 (see Appendix B).

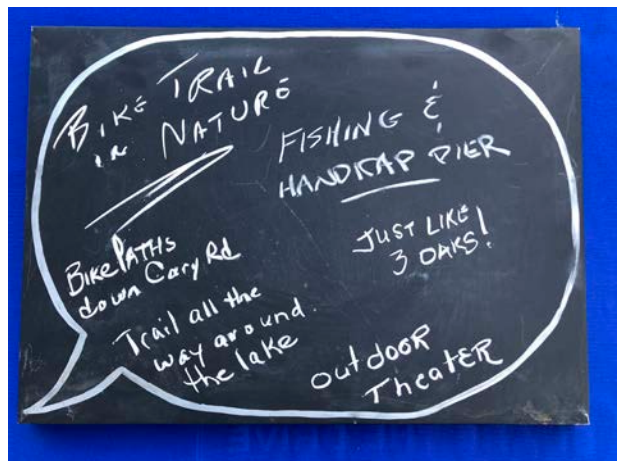
Community Engagement

To better understand and address the communities' needs and vision for the future of the Subarea, a number of community engagement activities were conducted to gather public feedback. In addition to the ongoing input of the project steering committee, this included conducting two public workshops, a virtual open house, and online survey, tabling at community events, and confidential interviews with key stakeholders throughout the planning area to identify the primary concerns of local residents, businesses, and property owners, among other stakeholders. Since the start of the planning process, over 1,500 residents and stakeholders have participated in the community engagement process.

Overall, participants held many of the same concerns and desire to create public access to the large lakes. Several viewed the sites as a “blank canvas” to create a unique destination and space for the community to promote economic development and unity between the two villages. Ideas for development and amenities include outdoor recreation, event space, natural resources protection, and context-sensitive commercial and residential development that take advantage of the lakes and reduce negative impacts to surrounding neighborhoods. Providing safe connections to existing trails and expanding the trail network was also commonly cited. Many raised the need to generate revenue for long-term maintenance and management of parks and open space. Refer to the Appendix C for more information on outreach activities and results.



Meeting participants brainstorm strengths, challenges, and opportunities in the planning area during the public community workshop on July 23, 2018 at the Cary Park District Community Center.



Ideas for the future of the mining areas received at the Algonquin concert series on August 1, 2019.

Relationship with the ON TO 2050 Plan

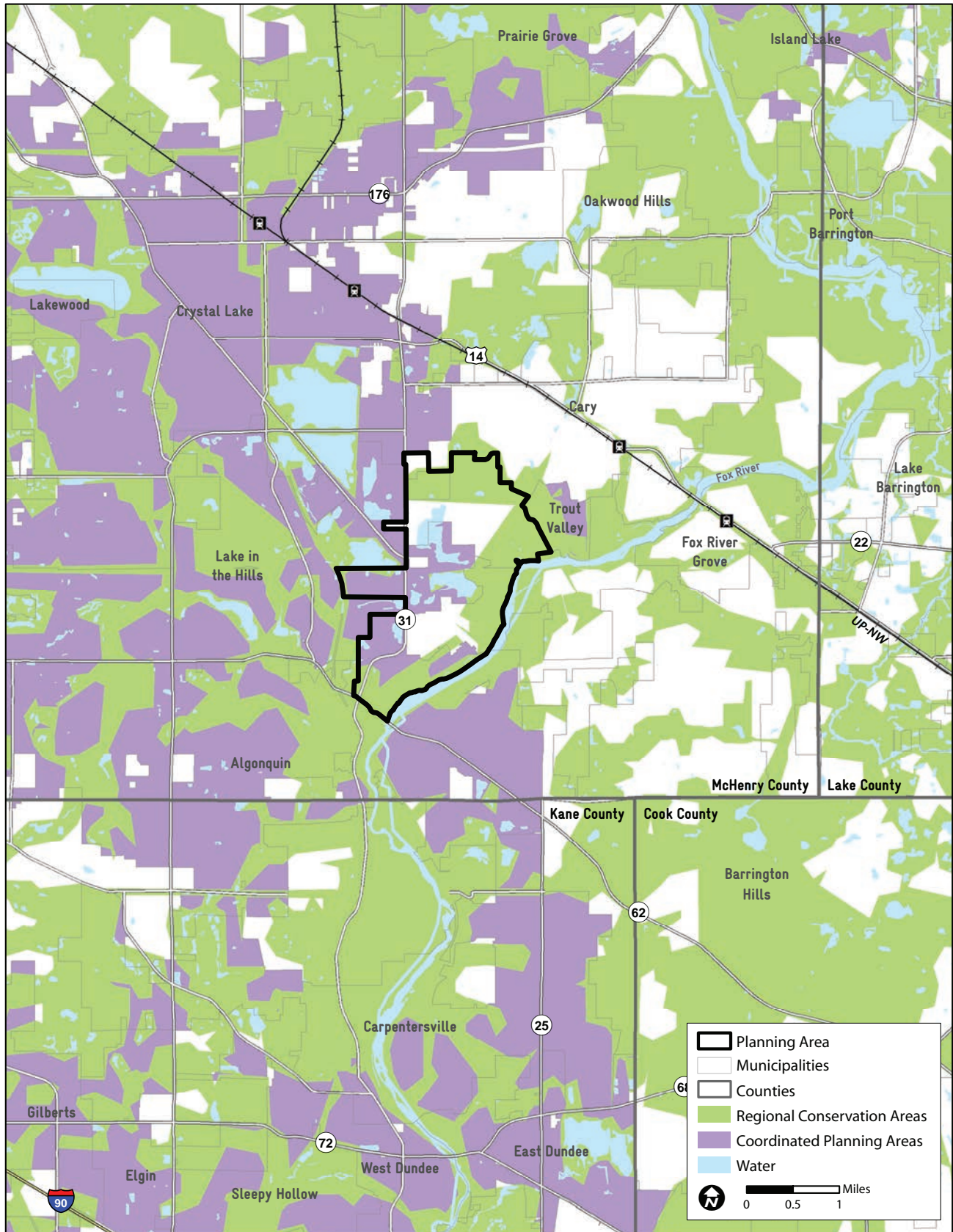
As part of the Chicago area, Algonquin and Cary both influence and are influenced by the region. Local autonomy over land use decisions requires communities to take responsibility for how those decisions shape a community's livability, as well as impacts on neighboring communities and the region as a whole. The cumulative choices of 284 municipalities and seven counties determine quality of life and economic prosperity across our region.

Adopted in October 2018, the ON TO 2050 comprehensive regional plan presents a collective vision for the future of the Chicago region and identifies steps for stakeholders across the region to take in order to achieve that vision. ON TO 2050 focuses on the need to grow our economy through opportunity for all (Inclusive Growth), prepare for rapid changes (Resilience), and carefully target resources to maximize benefit (Prioritized Investment). The plan guides transportation investments and frames regional priorities on development, the environment, the economy, and other issues affecting quality of life.

The Chicago region is growing in the same places where important natural resources are most abundant. Between 2000 and 2016, the populations of Algonquin and Cary increased by 30 percent and 15 percent respectively. Some of this growth occurred on previously developed land, while other developments took place on former agricultural land or open space. In addition to their residents, the communities are also home to valuable natural resources like the Fox River, Fox Bluff Conservation Area, and Hoffman Park as well as oak woodlands, wetlands, prairie, and the quarry lakes. These resources are not only important to the overall environment of Algonquin and Cary, but they also contribute to the local economy and high quality of life enjoyed by residents.

ON TO 2050 emphasizes the importance of reinvesting in our existing communities and infrastructure. Recognizing that some portions of the Chicago region face greater greenfield development pressure, communities that have a significant amount of agricultural or natural lands within or adjacent to their boundaries are mapped as coordinated planning areas (see Figure 2).¹ These areas include Village of Algonquin and nearby communities of Lake in the Hills and Crystal Lake. In coordinated planning areas and communities with regional conservation areas, ON TO 2050 recommends that future land use plans and development ordinances take into account larger scale open space protection and long-term infrastructure costs associated with expansion decisions. These recommendations are woven into the Algonquin-Cary Subarea Plan as a means to achieve the communities' vision for the future of the planning area and contribute to regional goals.

Figure 2. Regional conservation and coordinated planning areas



Chicago Metropolitan Agency for Planning, 2020

Chapter 2

VISION



It is clear that the communities of Algonquin and Cary have great hopes and optimism for the future of the Subarea. Through this planning process, the following vision emerged:

By 2035, the Algonquin-Cary Subarea will be a unique destination that brings the communities together and enhances surrounding neighborhoods. The planning area will connect to downtown Algonquin and Cary, the Prairie Trail, Fox Bluff Conservation Area, the Fox River, and nearby communities through a comprehensive transportation network. Restoration of the mining areas will create vibrant and serene places that balance natural areas, recreation amenities, and new development. As the planning area transforms over time, new improvements will continue to enhance the area's connectivity to the surrounding community and maintain its delicate balance of land uses.

Design Principles

Applying the following design principles in future restoration, development, and infrastructure decisions will help the communities implement the subarea plan and achieve the vision. These principles are illustrated in Figure 3 and Figure 4.

Expand parks, open space, and recreation. Set aside space to offer a variety of recreation activities in natural and developed settings. Provide public access to the lakes for people of all ages and abilities. Utilize trails and open space to create a continuous trail system between parks, development, and the surrounding neighborhoods.

Connect to the surrounding communities.

Coordinate transportation improvements to ensure the area is accessible for people of all ages and abilities through trail development, complete streets design, and road safety measures. Design development to take advantage of the proposed fixed-route bus service on Route 31.

Pursue compact, walkable development.

Integrate a mix of services, amenities, and transportation options into new development that offers community gathering spaces and a strong local identity. Expand housing choice to help the communities meet the needs of an aging population, increasing diversity, and changing living patterns.



Protect natural resources. Incorporate conservation design principles, stormwater best management practices, restoration, and environmental education into future development plans. Mitigate potential impacts that certain recreation activities can have on lake water quality.

Orient development toward the water. Develop businesses, event spaces, and housing that take advantage of the lakes and still provide public access to the water. Buildings should “front” both the street and lakes by placing as much importance on the design of the front of the building as the back of the building.

Buffer existing neighborhoods from new development and parking. Utilize open space, natural vegetation, berms, and other methods to maintain picturesque views and a sense of tranquility for existing and future residents.

Display the history of mining operations in future development. Tell the story of the sites in a way that attracts visitors and serves as a reminder of its rich mineral resources and role in the development of the surrounding area.

Incorporate market and fiscal realities into development and infrastructure decisions. Consider the short-term construction and long-term maintenance costs associated with new infrastructure like utilities, streets, and parks. Coordinate and establish mechanisms for financing, when possible.



Figure 3. Subarea 1 development concept illustration

Framework Plan

The framework plan for the Algonquin-Cary Subarea consolidates key elements from the individual land use, open space, and transportation frameworks in the subsequent chapters (See Figure 5). When implemented together, new development will be connected through a network of open space and trails that creates a unique and ecologically rich destination in the communities.

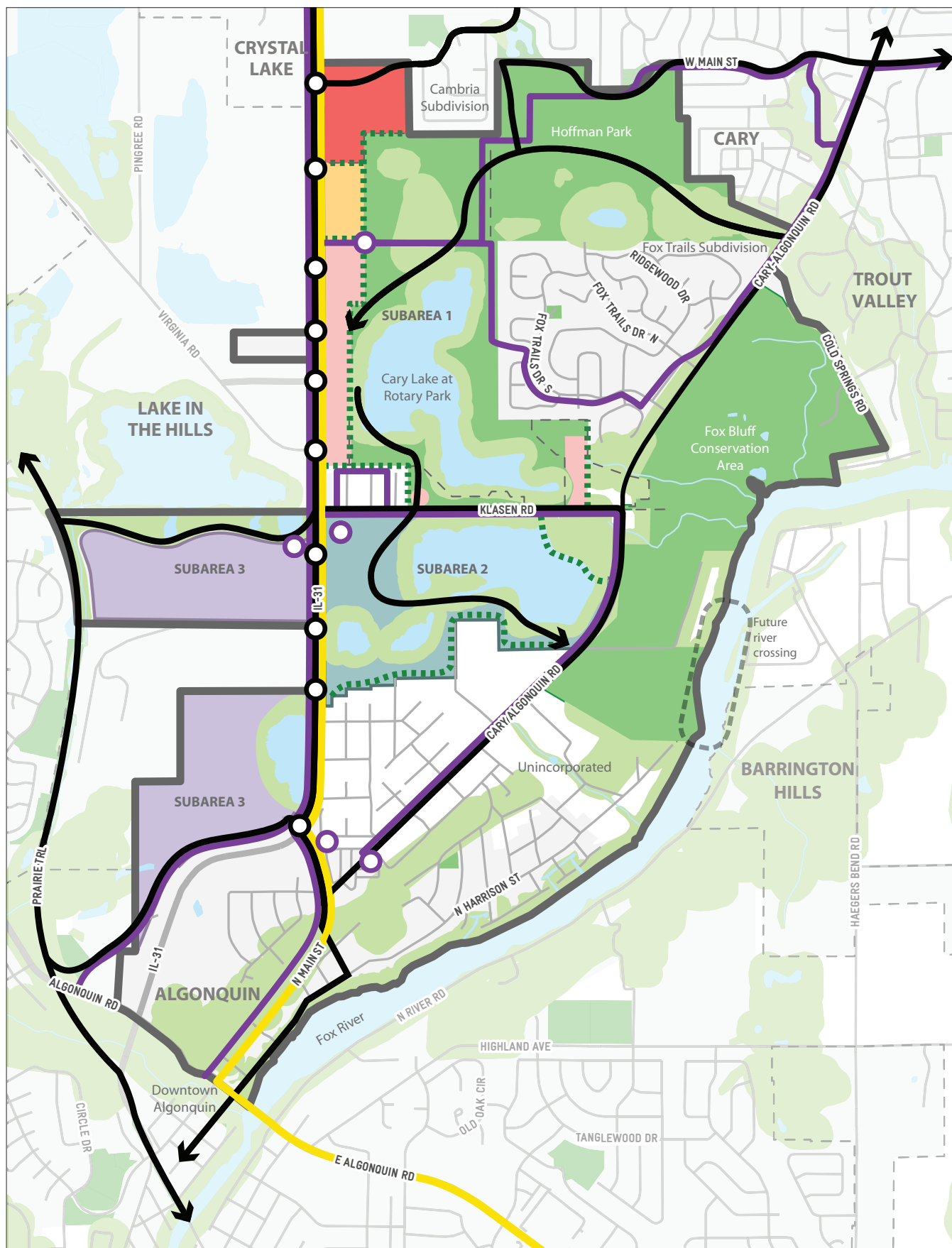
The framework plan includes:

- Future land uses and development opportunities over the short, medium, and long term. These designations are broad to provide flexibility for the Villages to respond to market dynamics and specific opportunities. See Chapter 3 for details on recommended land uses.
- Open space and green infrastructure network. These areas combine existing and proposed open space as well as recommended areas for conservation or restoration to protect and link important natural resources. See Chapter 4 for recommendations.
- Transportation and infrastructure improvements. These include bikeways and trails, new intersections and access points, intersection improvements, and transit service to enhance circulation between development, open space, and surrounding destinations. See Chapter 5 for recommendations.



Figure 4. Subarea 1 development concept illustration of Route 31 frontage and Cary Lake at Rotary Park

Figure 5. Subarea framework plan



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Commercial Focus on Damisch Farm. Coordinate redevelopment with New Haven Road extension and use native trees and vegetation to buffer development from Hoffman Park and Cambria subdivision.
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Flexible Commercial/Residential Redevelopment. Pursue near term opportunities in Subarea 1 that compliment Cary Lake at Rotary Park. Connect development and park through trails and green infrastructure like native plant buffers, grassland prairie, and oak woodland protection. Create four-leg intersection at Route 31 and Virginia Road to access development and future bus route.
- 

Hoffman Park Buildout. Explore market potential for recreation or commercial development along Route 31. Incorporate green infrastructure and trail connections in future development plans.
- 

Open Space and Recreation. Implement plans for new recreation amenities and habitat restoration at Cary Lake at Rotary Park, Hoffman Park, and Fox Bluff Conservation Area. Minimize impacts of future amenities on natural resources.
- 

Medium Term Redevelopment. Develop an open space and redevelopment concept plan for Subarea 2. Incorporate open space, recreation, and lake protection. Orient commercial development to take advantage of Route 31 access and residential development to compliment the lake and surrounding open space. Explore ways to connect this area with Cary Lake at Rotary Park, Fox Bluff, and surrounding development.
- 

Long Term Redevelopment. Explore market potential for office or light industrial in Subarea 3 before mining operations cease. Integrate Prairie Trail connector, open space, and lake restoration into future redevelopment plans.
- 

Green Infrastructure Protection. Expand natural resources through protected open space and sustainable development practices. These areas are identified in the McHenry County Green Infrastructure Plan to protect important resources like lakes, streams, wetlands, and oak woodlands.
- 

Native Plant Buffer. Use native trees and vegetation to buffer future development from residential areas, Cary Lake at Rotary Park, and Hoffman Park.
- 

Planning Area. The planning area extends from Prairie Trail to the west, Hoffman Park to the north, the Fox River to the east, and Downtown Algonquin to the south.
- 

Site Access. Build off the existing street network to create a more connected grid for all street users. Create a four-leg intersection at Virginia Road, coordinate Route 31 access to Subarea 2 and Subarea 3, and connect Subarea 1 and Subarea 2 across Klaser Road.
- 

Bike and Pedestrian Network. This conceptual network connects new development and open space in the subareas, the Prairie Trail, Hoffman Park, Fox Bluff Conservation Area, Algonquin and Cary downtowns, and Crystal Lake. See the Path and Trail Plan for the complete network.
- 

Future River Crossing. The North Algonquin Fox River Crossing is a proposed project in the McHenry County Long Range Transportation Plan to facilitate movement across the river and between Route 25/County Line Road and Route 31. The ultimate design of the road and bridge should provide access for people walking or biking across the river and a separate wildlife passage through Fox Bluff.
- 

Bus Corridor. The proposed Crystal Lake - Barrington Road bus route would provide regularly-scheduled weekday service between Virginia Road at Route 31 and Interstate 90 at Barrington Road. As the subareas develop, transit needs should continue to be assessed.
- 

Water and Sewer Expansion. Planning for expanded public water and sewer service should be coordinated with road improvements and future development. Coordinate near term water and sewer expansion with site redevelopment around Cary Lake at Rotary Park, Hoffman Park, and the Damisch Farm property, as well as land to the west in Lake in the Hills.

Chapter 3

LAND USE AND DEVELOPMENT



Goal: The land use plan promotes the expansion of open space and strategic development of key sites that balances vibrant and serene areas. New open space will provide enhanced recreation for residents and visitors, as well as habitat for plants and wildlife. Development opportunities will allow for a mix of services, amenities, and housing types that embrace the surrounding parks and lakes.

Redevelopment of the mining areas holds the potential to transform the planning area and create a new destination in Algonquin and Cary. Careful coordination and consideration of development proposals can ensure that the planning area redevelops in a sustainable and fiscally responsible way that maximizes the potential of the sites and meets the needs of current and future residents.

Key Findings

Coordination among key players. Coordinated planning across municipal boundaries can provide economic benefits to both Algonquin and Cary while creating a unique destination in the area. Coordination among many jurisdictions, including the villages, special service districts, and transportation agencies, will be essential to redevelopment of the subareas.

Excitement for new parks and open space. Cary Lake at Rotary Park is a significant added amenity to the area. Many stakeholders would like to see recreation and open space incorporated into the park and future redevelopment through amenities like a swimming beach, boardwalk, access for paddling activities, and natural areas.

Commercial potential linked to new residential growth. Economic development in the subareas could consist of new housing opportunities and complimentary commercial development. Market research was conducted to determine the feasibility of different types of development in the planning area.

Development impacts to surrounding neighborhoods. Neighbors are excited about the potential for boosted property values and new amenities, but are also concerned about parking, noise and light pollution, and encroaching development.

Funding and financing for long-term success. Many stakeholders were excited about the opportunity to transform the mining sites, but questioned how the Villages would pay for it. Financing, long-term funding, and maintenance of potential development and amenities need to be considered.

Market Potential

CMAP contracted with Kretchmer Associates and Kane, McKenna and Associates to conduct a market analysis of the development potential of Subarea 1 and Subarea 2. The two subareas were divided into five development sites which are referenced below and illustrated in Figure 6.

The results of the study refer to the potential for development without future approval by the Villages for subsurface mining, which is currently being planned and budgeted by LafargeHolcim, Ltd. for a long-term underground quarrying operation. According to brokers familiar with the area who were interviewed for the study, commercial and residential development prospects would be minimal if subsurface mining were to occur beneath these sites. If there is interest from either village to grant subsurface mining, more research could be conducted on the impact of underground mining as part of any potential entitlement process on the market potential in this area, including the outlook for new flex office/warehouse development atop such mining activities.

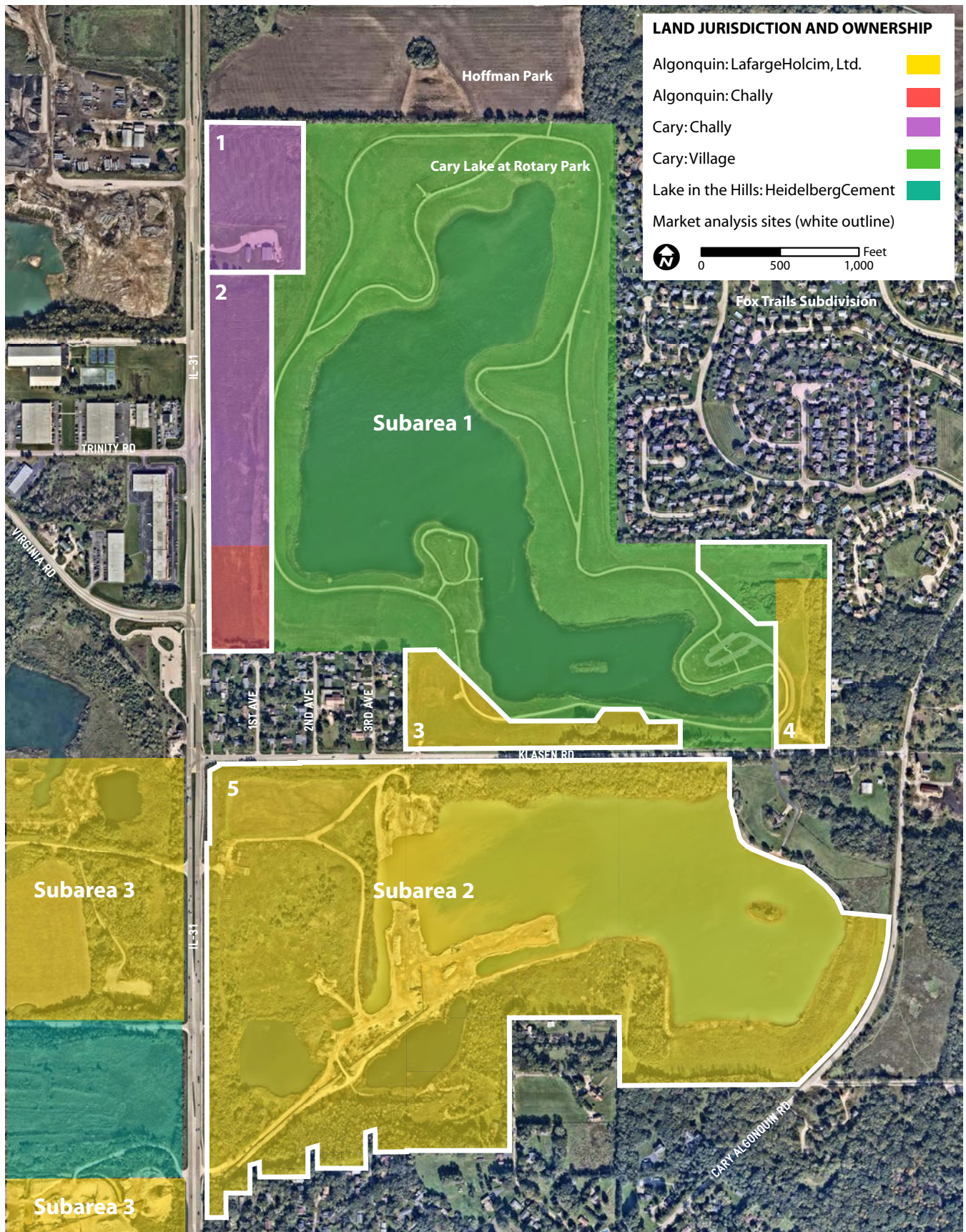
Based on data analysis and conversations with developers and real estate brokers in the area, the study found that residential use has the highest development potential in both subareas. Brokers are very positive about the market demand for residential development, including apartments, townhouses, single-story attached duplexes or ranch homes, and single-family detached houses. There is also demand for market rate and affordable housing for low- and moderate-income households targeting families, singles, empty nesters and seniors. High quality apartments can cater to a wide range of ages including those who are downsizing from single-family homes and young professionals.

If Subarea 1 were to develop within the next five years, residential will be the leading use. Depending on land availability, lower density homes like duplexes are most suitable on Site #4 near the Fox Trails subdivision, while apartments or townhouses are more appropriate along and buffered from Route 31 in Site #2. Site #1 provides more flexibility for a range of residential types given its depth from the highway. Site #3 could also be developed for a range of housing types, however, moderately steep slopes will significantly limit the development footprint (see Figure 8 on page 26).

The potential to attract commercial development to the subareas without adding a significant amount of new households to the area is limited. Competition from commercial clusters in Crystal Lake, Downtown Algonquin, and along Randall Road will make it challenging to attract new businesses without increasing residential density. While the commercial market findings indicate limited interest, the study did acknowledge that a gas station with a convenience store could likely be supported at current residential densities based on traffic counts on Route 31 and Klasen Road.

As new housing expands in the subarea, more attractive and inviting commercial development could follow. Retailers and restaurants will have a better chance of success with more nearby residents and with active recreational uses in the park. A small scale (10,000-15,000 square foot) shopping center with multiple spaces for restaurants, service-oriented retail, and small offices for local service providers could occur if it accompanies residential development to generate sufficient demand. Attracting a specific destination entertainment use like an event space with a seasonal café or an adventure park is possible, particularly if Cary Lake at Rotary Park or Subarea 2 (Site #5) develops into a significant recreational attraction. However, it is difficult to gauge general potential without making that “golden” connection to the right person who believes in the area and wants to invest.

Figure 6. Jurisdiction and ownership of market analysis sites

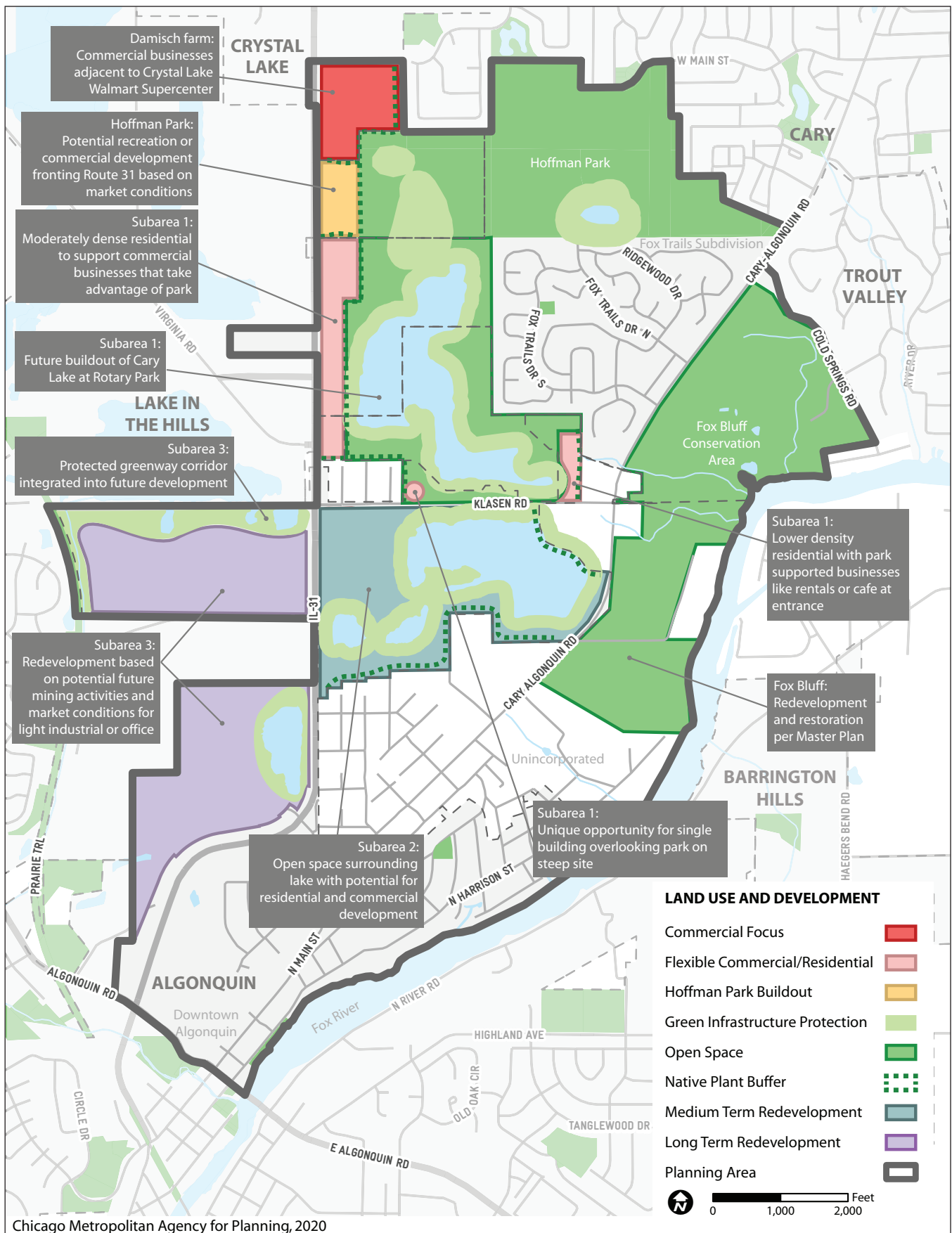


Chicago Metropolitan Agency for Planning, 2020

Recommendations

The land use and development plan identifies future land uses and development opportunities over the short, medium, and long term. Market realities and site conditions, such as steep slopes, help inform what could be supported in the future. Recreation opportunities stem from existing plans and green infrastructure protection enhances the natural environment of the area. See Figure 7 for detailed opportunities.

Figure 7. Land use and development plan



3.1 Establish advisory committee to continue collaboration.

Through the partnership established between the Villages of Algonquin and Cary to develop this plan, the planning process has been a testament to the benefits of multi-jurisdictional planning and coordination. The involvement of LafargeHolcim, Ltd., Cary Park District, McHenry County, McHenry County Conservation District, and others has been crucial to plan for the future of the planning area as well.

Collaboration between these partners, in addition to the Village of Lake in the Hills and other property owners, should continue. The existing project steering committee could become a long-term advisory committee along with other key stakeholders in the area who should be involved. The committee's charge should be broad and defined for long-term engagement, as mining activities may continue in Subarea 3 well into the future. It will be important for the Villages of Algonquin and Lake in the Hills, LafargeHolcim, Ltd., and HeidelbergCement, in collaboration with McHenry County Conservation District, to coordinate the long-term development of Subarea 3 and the surrounding land. Having clear lines of communication between stakeholders will allow for a smoother transition to a future land use as well as coordinated development.

View of Site #3 from Cary Lake.



3.2 Update ordinances to facilitate desired development.

Assessing development proposals for the mining sites should consider how the development helps achieve the vision for the planning area. The design principles presented in Chapter 2 express the look and feel that the community would like to see. There are several strategies that should be allowed and encouraged, which follow the subarea design principles and can help realize the long-term vision.

- Concentrate commercial development at park entrances and main access points to create attractive, vibrant gateways. Locate smaller-scale retail and businesses to service park-goers, such as recreational equipment, rentals, concessions, or an event space around entrances to draw in visitors and provide an amenity-rich park experience.
- Cluster residential development to create a unique setting around the lakes. Development that is oriented towards the water and park will be more marketable due to the scenic views, recreational amenities, and open space benefits. Clustered and conservation development also preserves and enhances high-quality natural resources and minimizes infrastructure maintenance costs. Encourage high energy efficiency standards and solar power to reduce greenhouse gas emissions.²
- Design buildings and sites to take advantage of the lakes and provide public access to the water. Buildings should be designed to have two fronts, one toward the street and the other toward the lake to create attractive and inviting spaces from both sides.



Two examples of residential developments oriented around water: 444 Social Apartments in Lincolnshire, IL (top) and Lexington Row at Port Clinton Place, Vernon Hills, IL (bottom).

Source: Kretchmer Associates

Highlight: Housing choice excerpt from Making Room: Housing for a Changing America (AARP, 2019)³

“We have only three basic types of residences: apartments, townhomes, and single-family houses. What’s truly lacking is affordability, adaptability, and variety to meet the diverse and changing needs of individuals and families.

A key message of Making Room is that a wider menu of housing designs and layouts would enable people to find housing they can afford, and this is especially true for underserved populations, such as single-occupant households.

A truly livable community includes a range of housing options – at various price points – and allows for different types of housing...

Few homes are able to meet all of an individual’s or household’s needs over a lifetime. But if housing can adapt to its residents’ needs during differing ages and life stages, fewer people will be forced to leave the homes and communities they love.”

Making Room is a free publication with resources for residential builders and designers, community leaders, and the general public on how to provide housing options to better serve people of all ages and needs.

- Allow for different styles of housing than what is currently available in the market area, including one-floor only living, apartments and townhomes, and more affordable, family-friendly development.
- Encourage shared parking to limit impervious surface and reduce the overall cost of construction. Right-size parking areas to ensure adequate parking space and avoid parking that overflows into existing residential neighborhoods. Parking areas should be designed with pedestrian scale lighting, appropriate screening, interior landscaped islands and walkways, and other pedestrian-oriented design elements.
- Capture rain where it falls. Providing stormwater management for new development is important to maintain the water quality of the lakes and groundwater. Integrate stormwater management into the design of buildings, streets, parking, and landscaping (see Recommendation 4.5).
- Use natural buffers between new development, park amenities, and existing neighborhoods. Trees and natural features will enhance the area by providing an intimate sense of place, noise and light mitigation, and an appropriate separation of uses. Natural grasses and vegetation will provide habitat for wildlife and stormwater management.
- Connect development with the local and regional trail and path network. Incorporating trail and path connections into new residential developments will expand residents’ living space, providing access to a significant recreational amenity while making clustered development more appealing. Connections to commercial development will allow easy access between these areas.

Both Villages should assess their respective zoning codes and subdivision ordinances to facilitate the type of development desired by the community. This may entail determining the zoning district that is most conducive to allow clustered development while offering flexibility in use and density. The Villages should also review bulk standards, which limit heights and setbacks, as well as landscaping standards and conservation/cluster development requirements (see Recommendation 4.3). Subdivision ordinances should be reviewed to ensure public access to pedestrian and bicycle facilities is integrated into the site.

For Subarea 1, the Villages could regulate part or all of the developable land as a planned unit development (PUD) whereby a developer submits applications to both communities for approval. This could work particularly well for Site #2 (Route 31 frontage), which spans both communities. Subarea 2 and Subarea 3 should also be regulated as a PUD, with the potential for coordination with the Village of Lake in the Hills in Subarea 3 depending on the timing of redevelopment. In the short term, Algonquin and Cary should work together to determine how this approval process could be coordinated. See Recommendations 3.4 and 5.5 for strategies to coordinate economic development initiatives and infrastructure financing.

Site #2 (Route 31 frontage) development concept illustration.



3.3 Develop conceptual site plan for Subarea 2.

Gravel mining in Subarea 2 is expected to cease within the next few years. Spanning approximately 191 acres, this land has the potential to accommodate a variety of land uses. LafargeHolcim, Ltd. has begun to build up approximately 34 acres along Route 31 to make it suitable for redevelopment. The large lake and surrounding land present a unique opportunity for restoration and recreation and to explore options for development that compliments the surrounding area.

The subarea planning process initiated a conversation with residents and other stakeholders on what this area could be in the future. Some ideas include a nature preserve for birding and outdoor education, a recreation area or adventure park, lakefront condominiums, a wedding venue, businesses with outdoor seating, and repurposing existing gravel mining equipment as a reminder of the site's legacy.

It also examined the market potential for commercial and residential development over the next 10 years. Similar to Subarea 1, the land along Route 31 was considered most feasible for residential and commercial development, with commercial situated near the highway and residential set further back into the site to take advantage of the lake and open space amenities. There could be potential to develop the site into a significant recreational destination such as an adventure park.

Subarea 2 looking west from Cary Algonquin Road.



With surface mining activities nearing a close, the Village of Algonquin, in collaboration with LafargeHolcim, Ltd., should take the next step to develop a conceptual site plan for the property. Conceptual site plans provide detail as to the type and form that development and open space could take. Often times two or three options could be developed to have stakeholders weigh in on the preferred option or combination of options.

The conceptual planning process should:

- **Incorporate input obtained thus far.** The subarea planning process solicited opinions on future development and amenities that could be considered for the area. Building on past engagement can take advantage of existing momentum, reaffirm the desires of the community, and streamline the process.
- **Build on recommended development and improvements in Subarea 1.** The plan should acknowledge potential park improvements and commercial and residential development in Subarea 1, including future access drives from Klasen Road. The lake could provide complementary but different recreational uses than Cary Lake at Rotary Park.
- **Target outreach to neighbors.** The Village of Algonquin should engage nearby neighborhoods in Algonquin, Cary, and unincorporated McHenry County in the development of a conceptual site plan. This will allow for current residents to shape the future of the land that surrounds them and help garner support for future redevelopment.
- **Incorporate design principles for the subarea.** The design principles express the look and feel that the community would like to see. The conceptual site plan should explore ways to incorporate strategies like clustered development, natural resource preservation, open space expansion, and trail connectivity (see also Recommendation 3.2 and Recommendation 4.2). It should also explore how the history of gravel mining – its impact on the land and role in helping to build the Chicago region – could be incorporated into future development.
- **Build on annexation agreement.** Reclamation plans establish the process and terms for reconvertng land, such as a closed mining site, to productive uses between current and future landowners. In 2009, the Villages of Cary and Algonquin approved a reclamation plan for Subarea 1 with LafargeHolcim, Ltd. before mining activities ceased. The 2016 schematic design plan for what is now Cary Lake at Rotary Park formed the redevelopment plans for the site, including grading and landscaping (see Figure 8).

There could be interest from LafargeHolcim, Ltd. to enter into a similar agreement for Subarea 2, where the lake and surrounding land is deeded to the Village of Algonquin for park or open space and the developable frontage property is retained for private development. The Village of Algonquin should work with LafargeHolcim, Ltd. to build on the existing annexation agreement as part of the conceptual planning process. This will ensure alignment between the agreement and the community’s desired future for the site.

3.4 Establish goals for economic development initiatives.

Many governments provide economic development incentives to specific businesses that already intend to locate within the region or submarket. Officials use incentives to subsidize revenue-generating development, compete with other jurisdictions, or compensate for weak spots in their overall business environment. This activity can result in public expenditures for limited economic gain.

At the same time, many communities do provide incentives to developments that meet local and regional goals such as increasing particular types of employment, promoting infill, remediating brownfields, and encouraging mixed-use development. Given limited fiscal resources, Algonquin, Cary, and nearby communities should coordinate to support regionally beneficial industries and target incentives for development of regional and local economic benefit. In addition, tax sharing agreements between local governments, which pool revenue generated in an area together and disburse it between the municipalities, taxing districts, or other parties as per the agreement, are an innovative approach to economic development coordination. They diminish the interest in using incentives to encourage development in one jurisdiction over another.

Economic development incentives can help the Villages realize the plan's goals for development in the subareas. The market analysis found residential development to be the most market-feasible land use in the near term and that any significant commercial development is contingent on increasing the population of the area. Even the most market-friendly development opportunities, such as residential, will likely require the use of financial incentives to help offset the costs of site preparation and infrastructure improvements.

Before establishing financial incentives, both Villages should assess the advantages and disadvantages of subsidizing development in the subareas against their respective economic development goals and priorities, including commercial development in other locations within their jurisdictions. More information on financial tools is available in Appendix B.

Guidance for tax increment financing and other incentives

Tax increment financing (TIF) allows certain eligible redevelopment project costs to be funded by the property tax revenues that are created from increases in real estate values. It is not recommended to use TIF as a means to attract commercial development without sufficient market demand. This can result in public expenditures for limited economic gain and potential overbuilding, but also incentives usually are not sufficient to make up for a weak market. A more prudent strategy would be to prioritize resources on market feasible development.

If designating a TIF district or business district,⁴ in the case of retail, is determined to meet the Villages' goals, it should only be established once developer commitments are obtained. TIF districts should be structured intentionally to ensure that transfers to the school districts are calculated to account for the fiscal impact of residential development in the TIF. The Villages should share such proposals with the local school districts for review and comment.

The Villages should also consider mechanisms to finance long-term maintenance and management of new infrastructure. This could take the form of a special service area⁵ or a special developer agreement (see Recommendation 5.5 for more information).

Explore tax sharing agreement

Development of residential, commercial, and open space should be complementary and coordinated. Municipal competition for certain businesses or types of development in the planning area will not serve the broader community. Rather than spending resources to attract a business to a site in one jurisdiction over another within the subareas, cooperation could allow the Villages to focus their efforts on covering only the amount necessary to deal with any extraordinary development costs.

Algonquin and Cary can reduce costs by sharing revenues from specific developments. Developing a tax sharing agreement for Subarea 1 and Subarea 2 would help promote complementary development and ensure both Villages receive the full benefit from collaboration. In the future, Algonquin could work with Lake in the Hills on a similar agreement for Subarea 3 and adjacent land, if appropriate.

When exploring the potential, Algonquin and Cary should consider revenue and expenditures, including long-term maintenance of infrastructure, the possibility of collaboration to build out utility services to the subareas, and the rules of engagement on competition and revenue sharing. The Villages should work with CMAP to convene a meeting to start a conversation around tax sharing.

Case study: Northern Lake County

The Villages of Beach Park, Winthrop Harbor, Wadsworth, and Zion have an intergovernmental agreement to pursue joint economic development projects. The agreement allowed the four communities to hire a shared economic development coordinator to market their municipalities as one, with the caveat that all four will benefit from any sales tax earned by businesses the new coordinator brings to the area.

“Instead of competing for the same retailers who are trying to pit us against each other to get the largest incentive, we decided to look at ourselves as one market area,” said Jon Kindseth, former Village Administrator of Beach Park. “It really breaks down that competition and ‘race to the bottom’ between municipalities.”⁶



Village of
Beach Park



VILLAGE OF COUNTRY LIVING
WADSWORTH
ILLINOIS

Case Study: River Point District⁷

The River Point District is an initiative by the City of La Crosse, WI to brand, market, and promote the master-planned development of a sustainable, mixed-use waterfront neighborhood on 65 acres of formerly industrial land. Working with WiRED Properties, a Milwaukee-based master developer, they created a forward-looking brand for the area, including a new neighborhood name, logo, and website with information specifically targeted towards investors, developers, businesses, and residents. The brand gives what was formerly an undefined area a recognizable identity that can be referred to in promotions and conversations.



3.5 Market the sites to developers, brokers, and users/tenants.

The subareas have significant development potential. Cary Lake at Rotary Park is an incredible new asset and the sites are within three miles of Cary Metra station. However, they are also situated on the outer fringe of both communities and have a legacy of surface mining. A comprehensive approach to create an identity for the planning area and sell that image to potential developers, brokers, and users will help the Villages realize the vision.

- Develop a brand to market the subareas. Currently, the area lacks a recognizable identity beyond ‘the quarries’ or references to the surrounding roads. Development of a brand for the area, which could encompass all of the subareas with their own sub-brands, helps give the area a sense of place. A brand is a shorthand way for potential developers, business owners, and residents to easily understand where the area is located and why they should want to move or invest there. Sub-brands can help put into context the phasing of development across the mining sites and give each a distinctive, but related, identity to the neighboring areas and developments.
- Conduct outreach to potential developers and users/tenants. Attracting developers to the area is necessary and should be done in partnership with LafargeHolcim, Ltd. and other private landowners. The Villages can do this by attending local developer meetings and conferences to market the opportunities present and identifying nearby local businesses with an interest in expanding or relocating near significant recreational amenities. Outreach efforts should also target developers and landowners with experience in conservation design, recreation, and commercial uses to gauge development interest. Depending on how development emerges and evolves in Subarea 1, subsequent outreach for Subarea 2 and Subarea 3 may require a more active or passive approach.

3.6 Assess fiscal impact of proposed site improvements and developments.

Lack of understanding of long-term expenses leads to a mismatch between needs and costs, resulting in increased taxes or fees or declining services and infrastructure. Before approving any proposed development, the Villages should perform a fiscal impact analysis of the proposal. While utilizing financing options like TIF is recommended to offset the costs of residential development, they should not be used before conducting a more thorough development cost analysis of specific proposals.

There is considerable development potential in the study area. However, it is in a community's best interest to understand the full cost of the fiscal impact of new developments to their budgets. When considering proposed developments a fiscal impact analysis should be conducted to ensure the development is fiscally responsible and a net benefit for the community. A fiscal impact study can review the impacts of potential tax or other financial incentives and review the necessary site improvements like road access, water, sewer, and electricity. The Villages could establish a joint contract to hire a consultant with fiscal impact expertise to serve development proposals in both communities.

3.7 Coordinate site preparation for commercial development and park infrastructure.

Entrance roads to Cary Lake at Rotary Park will draw people off of Route 31, making lots lining these new streets appealing candidates for development such as recreation-oriented businesses and concessionaires. As a first step, the Villages should coordinate site preparation efforts for small-scale commercial development when developing park infrastructure. This could include laying water and sewer lines concurrently with access road construction and building slips for new development entry and exit along the streets (see also Recommendation 5.1 and Recommendation 5.5).

3.8 Assess market potential of Subarea 3 before mining operations cease.

The future of Subarea 3 will depend on a variety of factors such as the duration of mining activities and the real estate market potential at the time. Based on the intensity of use at this site and depending on market conditions, the Village of Algonquin is interested in developing a business park or light industrial area upon the completion of surface mining operations.

The Village of Algonquin, Village of Lake in the Hills, LafargeHolcim, Ltd., and HeidelbergCement should work together to assess the long-term market feasibility of the area and determine appropriate future land uses. The market feasibility study would be best conducted within one or two years before mining activities cease.

The northern edge of Subarea 3 has significant existing natural resources and is the location of a possible proposed protected greenway corridor. As surface mining is phased out, this area should be a priority for preservation and enhancement of green infrastructure and stormwater mitigation. Initiating a concept planning process, in conjunction with a market analysis, would help ensure suitable sites are made available for future development, important natural resources are protected, and a connection to the Prairie Trail is explored.

Chapter 4 OPEN SPACE AND ENVIRONMENT



Goal: The open space and environment plan promotes the protection of natural resources through conservation, restoration, and sensitive development practices. It also takes advantage of the lakes and surrounding area to provide a unique recreational experience for residents and visitors alike. Recreation amenities and programming, green infrastructure, and stormwater best management practices will maximize the environmental benefit of the area to the community for future generations to enjoy.

Open space and natural resources are some of the most important features of the planning area. In fact, assets like Hoffman Park, Fox Bluff Conservation Area, and the Fox River are among the region's conservation priorities. Connecting these natural assets through open space and native vegetation on public and private land vastly expands the benefits for nature, people, and the planet. The mining area restoration and development process presents a unique opportunity to protect and enhance the natural environment of the subareas, while creating an immense recreational asset and economic driver for the communities.

Key Findings

Support for recreation and lake access. Both communities would like to see recreation incorporated into the redevelopment of the subareas that provides year-round use, is accessible to people of all ages and abilities, and differentiates the sites from other parks in the area. Many stakeholders would like to see public access to the lakes. Feedback received on recreation amenities varies – some are in favor of more active amenities like a swimming beach and amphitheater, while others favor more passive amenities like hiking trails, kayak launches, and fishing piers.

Desire to expand habitat and protect scenic views. Stakeholders are enthusiastic about the idea of new public open space and believe that development should preserve the scenic views and enhance the natural resources of the communities. Redevelopment of the mining sites provides an opportunity to create new habitat for native plants and animals that link to existing resources in Hoffman Park and Fox Bluff Conservation Area.

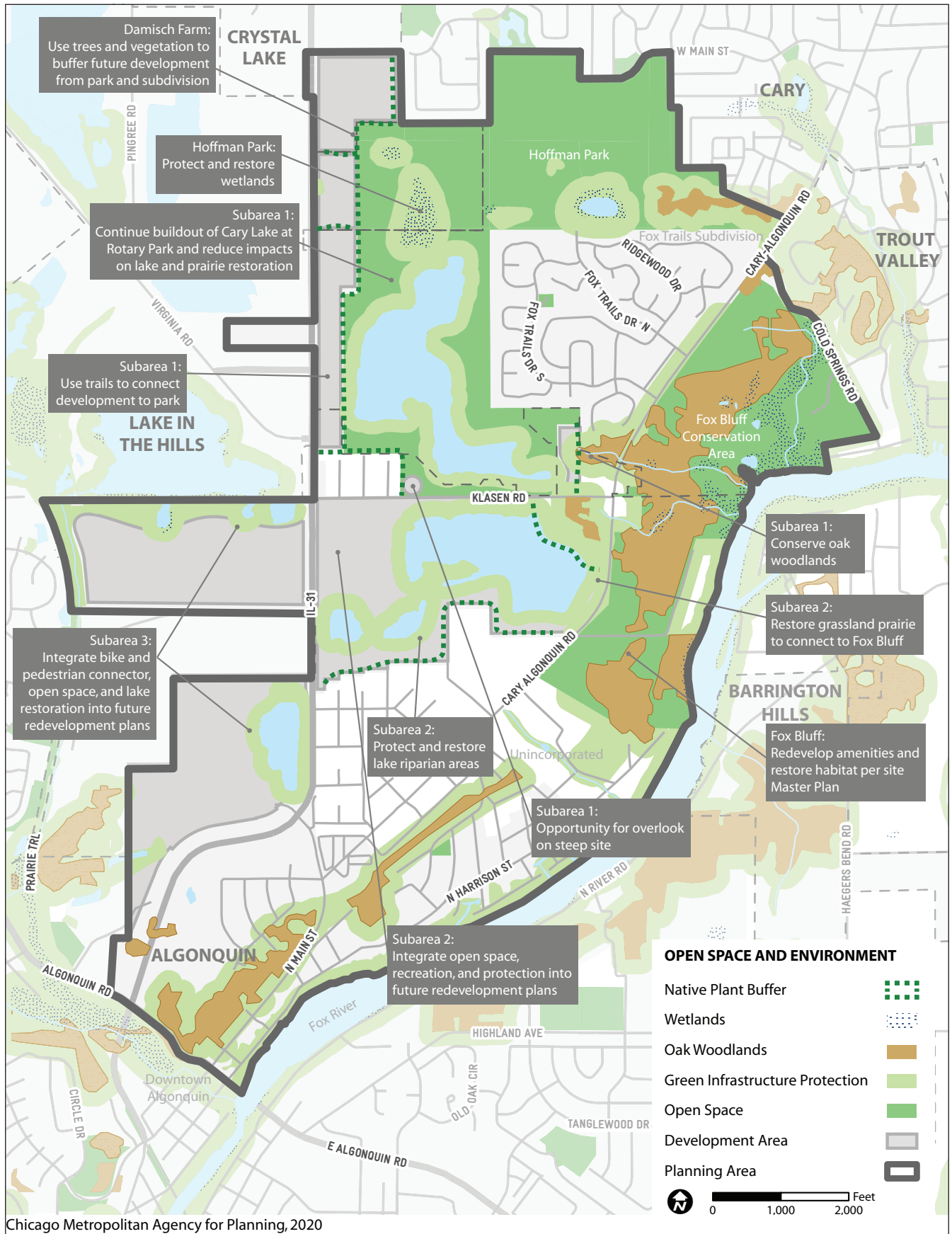
Importance of water quality protection. The mined lakes are likely connected to the local drinking water supply. Much of the subarea comprises highly permeable soils and geology that promote groundwater recharge but are also susceptible to contamination. Cary Lake at Rotary Park will provide stormwater management for future development in Subarea 1, which makes reducing and purifying runoff important.

Coordination with Cary Park District and McHenry County Conservation District. Hoffman Park has many features including a dog park, community garden, trails, and disc golf course. The master plan for Fox Bluff Conservation Area proposes new trails, canoe and kayak launches, and fishing access along the Fox River, with a proposition of a high-end camping experience being considered. Future planning decisions made by Cary Park District and McHenry County Conservation District could be coordinated with the Villages and the future of the mining sites to provide more of a unified recreational vision for the region.

Recommendations

The open space and environment plan identifies opportunities to expand parks, recreation, and green infrastructure. These areas combine existing and proposed open space as well as recommended areas for conservation or restoration to protect and link important natural resources such as wetlands, oak woodlands, and prairie. See Figure 8 for detailed opportunities.

Figure 8. Open space and environment plan



4.1 Assess short and long term needs for Cary Lake at Rotary Park

Cary Lake at Rotary Park is a new 198-acre park in the Village of Cary. Opened in September 2019, the park features over two miles of gravel paths, a kayak launch, fishing pier, picnic tables, grills, restroom, and parking lot at the park entrance on Klasen Road. The park is landscaped with native prairie and no mow grasses that provide multiple benefits. The naturalized landscaping creates new habitat for wildlife, protects the water quality of the lake and groundwater, encourages groundwater recharge, and captures carbon to reduce impacts of climate change. It also reduces maintenance by eliminating the need for mowing, which will result in cost savings for the Village while also reducing its carbon footprint.

These features are part of an overall vision developed by the community (see Figure 9). With the park now open for use by the public, there are several steps that the Village of Cary should take to plan for needs in the short and long term.

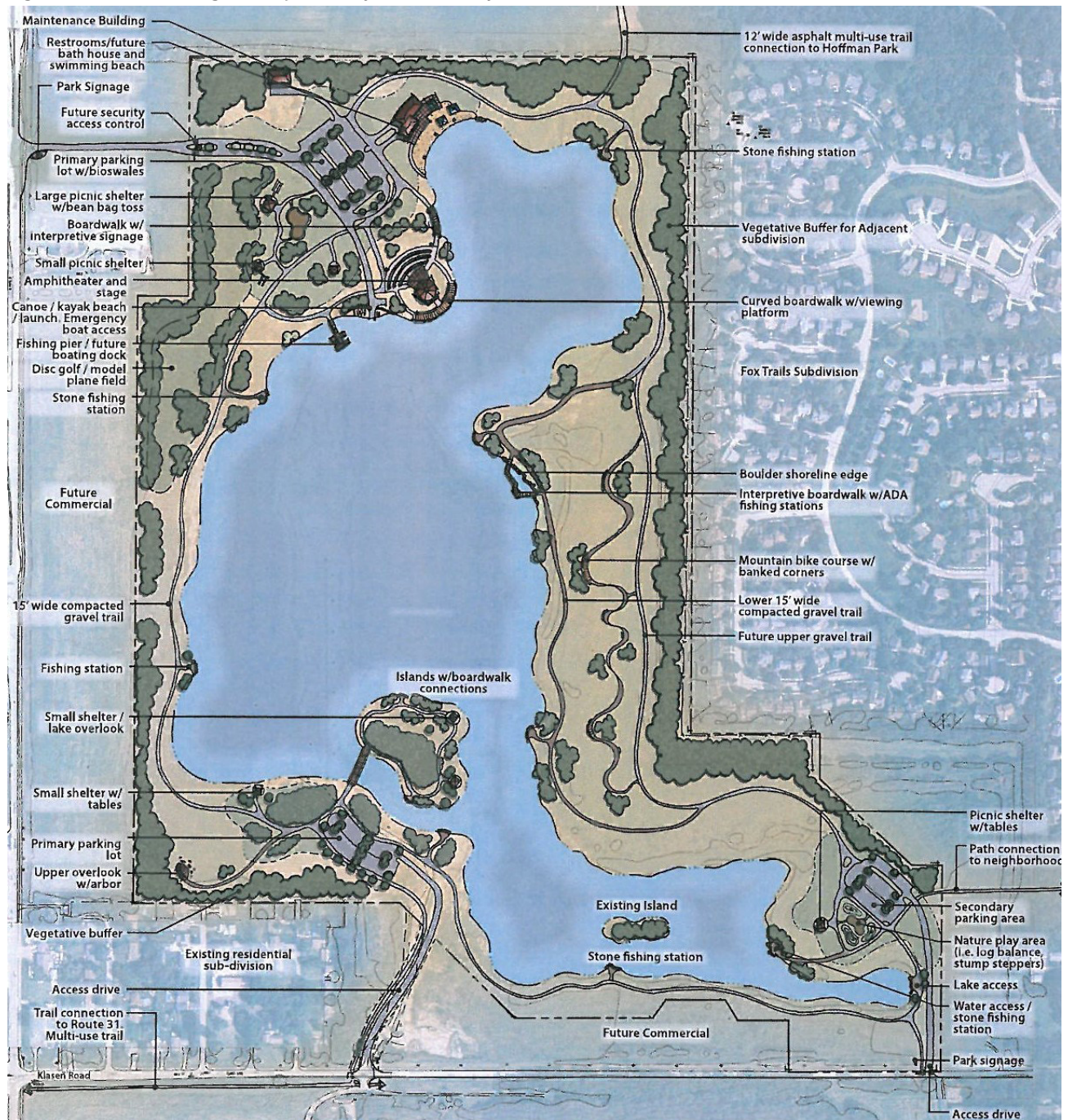
- **Establish a Cooperative Fishing Management Agreement with IDNR.** A sustainable fish population is essential for the lake. Resources exist through the Illinois Department of Natural Resources (IDNR) to help communities establish public fishing locations. The Village of Cary should work with IDNR to establish an agreement to work with a biologist to set limits and potentially stock the lake for fishing. The agreement allows IDNR to conduct a fish survey every few years, provide the Village with consultation and recommendations for stocking, fishing regulations, and habitat enhancement. It would also add the lake to IDNR's list of places to fish.



Educational signage on aquatic invaders.

- **Guard against aquatic invaders.** Aquatic invaders like zebra mussels cause damage to watercraft and equipment, harm native plants and animals, and reduce habitat for fish and other wildlife. This could create an unnecessary and costly burden for the Village if left uncontrolled. Cary should develop an approach toward managing and monitoring for aquatic invasives at Cary Lake. This could entail restricting use of personal watercraft or allowing personal watercraft under certain conditions. If personal watercraft is permitted, the Village must have a mechanism for inspection or cleaning, as well as ban “live” bait like minnows and other aquatic creatures, and educate the public through signs and campaigns. The Village could charge a launch fee to cover the increased costs of inspecting and cleaning. See the Illinois-Indiana Sea Grant’s Transport Zero program⁸ for local resources.

Figure 9. Schematic design concept for Cary Lake at Rotary Park



Source: Village of Cary and Hitchcock Design Group, 2016.

- **Continue to conduct outreach on park amenities.** Taking an incremental approach toward park build-out gives users a chance to weigh in on future amenities, while also allowing the Village to budget for maintaining and managing a park of its size. Park users are already taking the path of least resistance by launching their kayaks closer to the parking lot instead of the designated area much further away. Being nimble in the design and rollout of improvements could lead to a better experience that is informed by the people who use them the most. The Village should seek opportunities to solicit feedback from park users and engage them in the planning process for future improvements. Companies like Opinionator can provide the Village with a platform to receive real-time feedback from park users.

- **Mitigate impacts of future amenities.** The mine's reclamation process invested in the restoration of the prairie landscape that historically covered much of northeastern Illinois. These grasses help protect Cary Lake and the local groundwater supply by filtering out pollutants and encouraging groundwater recharge. Future recreational amenities such as a swimming beach, amphitheater, mountain bike course, and parking lots should be designed to reduce their environmental impact and contribute to the overall sustainability of the park. This should include sustainable shoreline stabilization measures to prevent erosion increases and anticipate potential fluctuations in lake levels.

Disc golf course and native landscaping at Hoffman Park.



- **Develop strategy for long-term maintenance and management.** The park and any new amenities require funding for maintenance and management over the long term. As planning around build-out continues, the Village of Cary should convene relevant stakeholders, like the Cary Park District or similar organizations, to help develop a viable strategy for maintenance and management of the natural and built environment, discuss potential changes in ownership in the future, or intergovernmental agreements for shared programming and development of the park.
- **Explore potential public private partnerships.** The Village has already established a partnership with the Rotary Club of Cary-Grove to construct a pavilion near the existing parking lot. A developer or private business may have interest in partnering with the Village to manage, program, or operate elements of the park, which could help attract private development to the area. This also helps address potential funding questions regarding long term operations and maintenance of constructed recreational facilities.

There may be an opportunity for Cary and Algonquin to jointly pursue a public private partnership for Site #4 at the main entrance to Cary Lake at Rotary Park on Klasen Road.

Case Study: Saganashkee Slough Boat Launch

The Forest Preserve District of Cook County has a partnership with the recreational equipment retailer REI. REI partners with the District at the Saganashkee Slough Palos Preserves by offering canoe and kayak rentals at the Saganashkee Slough boat launch, funding the installation of signage and wayfinding throughout the 15,000-acre Palos Preserves complex, and organizing and promoting events for their customers to experience the preserves. REI uses a mobile trailer on site to house the canoe and kayak rentals and other equipment.



Source: Jim Phillips

4.2 Consider parks, open space, and recreation in conceptual site plan for Subarea 2.

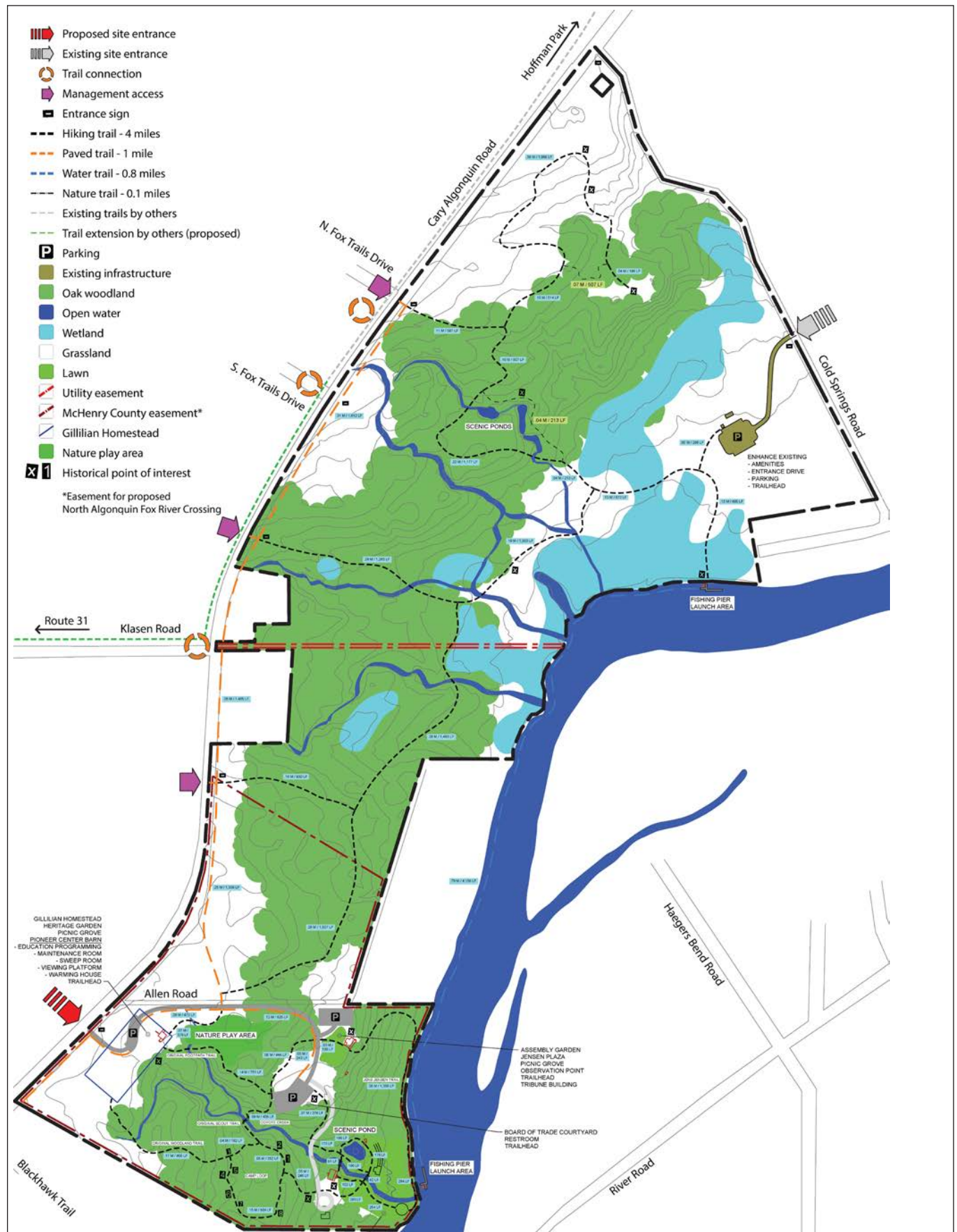
The lakes and surrounding land present a unique opportunity to protect natural resources and expand open space. If this area were protected, it would create a concentration of high quality natural areas linking Cary Lake at Rotary Park, Hoffman Park, Fox Bluff Conservation Area, and the Fox River, supporting habitat for biodiversity, groundwater recharge, and carbon sequestration. To build on community support expressed for public use and environmental protection, the conceptual planning process should:

- Balance conservation, recreation, and potential development that embraces the lakes. Integrate conservation into development sites through planting native trees and vegetation and incorporating green stormwater practices (see also Recommendation 4.5).
- Integrate public or private open space into development plans through cluster and conservation development and incorporate stormwater management practices (see also Recommendation 4.3). Identify mechanisms for long-term management and maintenance of proposed open space.
- Examine surrounding land uses when exploring recreation potential. For example, active areas should be separated and buffered from existing neighborhoods. Passive areas should protect and restore existing natural resources. Consider amenities and proposed improvements in Cary Lake at Rotary Park and Hoffman Park as well as those identified in the Fox Bluff Conservation Area (see Figure 10).
- Anticipate potential fluctuations in lake levels in the design of recreation and other amenities. Collaborate with USGS and the City of Crystal Lake in ongoing efforts at Three Oaks Recreation Area to assess impacts of development on lake levels.



The development concept illustration for Subarea 1 (site #2) features a mix of open space and development, native plant buffers, and trail connections to Cary Lake at Rotary Park.

Figure 10. Fox Bluff master plan⁹



Source: McHenry County Conservation District, 2015.

- Explore opportunities to incorporate environmental education and the history of surface mining operations into the site design. This could include a walking tour or outdoor classroom with interpretive signs on the geography, geology, and hydrology of the site. It could also describe the history of gravel mining, its impact on the land, and subsequent restoration of the landscape for long-term protection.
- Identify ecological connections for plants and wildlife to migrate to surrounding natural areas. For example, the landscape plan can expand grassland prairie habitat on the north side of the site to tie into Cary Lake and Rotary Park and include oak woodland and grassland areas to tie into Fox Bluff Conservation Area on the east side of the site.
- Incorporate physical connections for people to safely move between Subarea 2 and Cary Lake at Rotary Park without having to use a vehicle. This could potentially entail reclaiming the former tunnel between the two sites used for mining operations (see also Recommendation 5.2).



Educational sign featuring renewable energy features at Hoffman Park.

4.3 Promote conservation and cluster development.

Each redevelopment site represents an opportunity to limit the impacts of new development and enhance the natural features of the communities. The subareas are situated on soil and geology that is highly permeable, which promotes groundwater recharge but is also susceptible to contamination. The lakes, wetlands, prairie, and wooded areas provide multiple community benefits from groundwater protection and carbon sequestration to scenic beauty and recreation potential.

Conservation and cluster development takes advantage of these valuable resources by incorporating them into the development process. This method seeks to minimize disturbance to natural areas by clustering homes or commercial development on smaller lots and buffering them with native landscaping. This type of development protects open space areas for recreation, stormwater management, carbon sequestration, and groundwater recharge, as well as maintaining scenic views. Conservation design practices can also encourage other sustainable design elements such as orienting buildings to maximize the potential for passive solar.

Development ordinances for both Villages permit conservation and cluster development. The Village of Algonquin ordinance requires conservation design standards and procedures for sites that contain or abut sensitive natural resource areas, including McHenry County Natural Area Inventory (MCNAI) sites like Fox Bluff, high quality lakes, wetlands, native woodlands, and sensitive aquifer recharge areas.¹⁰ Given the extent of sensitive aquifer recharge areas, the Village of Cary should adopt similar protections for Subarea 1.

There are several strategies the Villages can use to promote conservation design practices in the subareas:

- **Utilize land use and open space plans to communicate conservation priorities for redevelopment.** The open space and environment plan highlights important natural areas, including water bodies and riparian areas, wetlands, and oak woodlands (see Figure 8). It also maps green infrastructure protection; a 200-foot buffer around these sensitive resources. The development of a conceptual site plan for Subarea 2 and Subarea 3 can reinforce the vision for development, environmental protection, connectivity, and recreation (see Recommendation 4.2).
- **Require identification of conservation areas in proposed developments.** The Villages could require that developers assess site conditions to identify buildable and unbuildable areas. Both Algonquin and Cary already require the mapping of streams, lakes, floodplains, wetlands, and other significant natural features in development plans. Unbuildable areas could include water bodies and wetlands, oak woodlands, and steep slopes (i.e. over 20 percent). The assessment could also identify existing structures, roads, and trails, and adjacent parks and open space. The Villages could use the resources mapped in Figure 7 as a starting point.
- **Amend conservation/cluster design ordinance.** An ordinance should specify which features, such as riparian areas, wetlands, and woodlands, must be set aside and protected. It could also require that a certain percentage of the remaining site be preserved as open space, as either public or private, and be connected to the local path and trail system.
- **Require conservation areas be protected in perpetuity.** For private open space, this can be accomplished by a deed restriction, a conservation easement, or a “fee simple” donation.



The Fox Mill development in Campton Hills utilizes conservation design, which concentrates homes on smaller lots to conserve open space. It was also designed to protect the quality of Mill Creek from the impacts of development. The community features 688 homes, 275 acres of open space, and 5.5 miles of bike trails.

Source: Fox Mill HOA



4.4 Explore potential to connect to the Prairie Trail.

The Prairie Trail (in McHenry County) and Fox River Trail (in Kane County) stretches over 66 miles from the Wisconsin state line to Oswego, IL. Making a connection to the Prairie Trail through the north section of Subarea 3 will require close coordination with various jurisdictions and property owners, including LafargeHolcim, Ltd., McHenry County Conservation District, Village of Algonquin, and potentially HeidelbergCement, Inc. and Village of Lake in the Hills.

The feasibility, timeline, and trail alignment will depend on a variety of factors, including the site's current use for mineral extraction, sensitive natural resources, and future redevelopment potential. Under current conditions, the trail would need to pass over or under the existing conveyor system that runs parallel to the Prairie Trail and services the HeidelbergCement site in Lake in the Hills. Trail impact on sensitive natural areas should be assessed to identify the preferred route.

If and when the connection is deemed feasible, it is recommended that the Village of Algonquin work with LafargeHolcim, Ltd. to establish a right-of-way easement under the Village's jurisdiction (see also Recommendation 5.2).

4.5 Integrate stormwater management, landscaping, and development.

Providing on-site stormwater management for new development is important to maintain the water quality of the lakes and groundwater to protect the health of the community's drinking water. It is also an important line of defense to protect communities from more frequent flooding as a result of climate change. Any development in the subareas, whether it be residential, commercial, or park, should consider how to reduce and manage stormwater runoff from the outset and integrate it into the site design.

Stormwater best management practices (BMPs) – such as naturalized drainage and detention, permeable paving, rain gardens, and green roofs – use vegetation, soils, and natural processes to purify stormwater runoff and recharge groundwater aquifers. Since most BMPs promote the use of native vegetation, combining stormwater management and landscaping can result in lower design, construction, and maintenance costs. Vegetated BMPs provide water quality pretreatment, are more resilient to increases in precipitation, and are easier to upgrade than gray infrastructure.

Integrating BMPs into the site design process can also help reduce the need for extensive site grading or maximize development footprints. For example, designing a parking lot constructed with permeable pavers and bioretention islands will reduce the need for detention elsewhere on site. At the same time, these practices provide additional benefits by improving air quality and public health, increasing habitat diversity and property values, and contributing to the area's visual image and identity.



A parking lot at the Morton Arboretum features permeable pavers and bioretention islands (top) and a vegetated swale filters runoff from a parking lot in Aurora, IL (bottom).

Source: Center for Neighborhood Technology

Development in Cary and unincorporated McHenry County must comply with the McHenry County Stormwater Management Ordinance, whereas development in Algonquin must comply with the Kane County Stormwater Management Ordinance. In both cases, there are several strategies the Villages can use to promote stormwater management that meets the vision for the subareas:

- **Utilize pre-treatment BMPs in development sites surrounding Cary Lake at Rotary Park.** Since the park was designed to receive runoff from the adjacent sites, new development should include BMPs that minimize stormwater volumes. Vegetative swales, bioswales, and bioretention can remove pollutants from runoff and reduce runoff volumes by promoting infiltration and evapotranspiration. These types of surface BMPs offer several advantages over underground pipes – they can be less costly, add to the landscape and overall aesthetics, offer education opportunities, and be more easily rightsized to accommodate increases in precipitation as a result of climate change.
- **Plan for regional stormwater management in Subarea 2 and Subarea 3.** The restoration and design process for Cary Lake at Rotary Park is a good example of how stormwater management could be incorporated into designated open space, provided that water quality BMPs are integrated into future development. The conceptual site plan for Subarea 2 should consider opportunities for regional stormwater management, such as vegetated buffers and naturalized drainage and detention that is integrated into broader plans for development, open space, recreation, and environmental education. The long-term development sites in Subarea 3 should take a similar approach and evaluate opportunities for shared stormwater systems with Lake in the Hills, as well.

4.6 Incorporate design principles and recommendations of the Subarea in Hoffman Park.

Hoffman Park is an immense asset to the Subarea. The 258-acre park currently features an accessible fishing pier, shelters, parking, restrooms, open dog play area, trails, and a community garden. It is also home to a unique prairie pothole wetland and 40 acres of woodland, savanna, and remnant prairie.

Cary Park District's 2016 Comprehensive Master Plan¹¹ recommends the development of a master plan for the park that would engage the community and determine appropriate recreation amenities for the future. The Comprehensive Master Plan also recommends that the District re-evaluate the market potential of the 80-acre frontage property along Route 31.

There are a few strategies that Cary Park District can employ to align future efforts with the design principles and recommendations of the plan:

- **Coordinate park improvements and long term maintenance with the Village of Cary.** Cary Park District should invite the Village of Cary and McHenry County Conservation District to participate in the master planning process for Hoffman Park to ensure improvements are coordinated, and not duplicated, between Cary Lake and Rotary Park and Fox Bluff Conservation Area. With these potential partners at the table, the master plan should also look at potential opportunities to coordinate funding and financing for long term maintenance. This could entail a shared maintenance agreement that leverages the unique assets of each jurisdiction.
- **Develop conceptual site plan for frontage property.** Whether this takes place as part of the master plan or as a separate effort, the future of the 80-acre frontage site should embrace this plan's design principles and recommendations, including cluster and conservation development, integrated stormwater management, sustainable and resilient practices, and general compatibility with Hoffman Park and Cary Lake at Rotary Park. Developing a conceptual site plan can assist in discussions with potential developers and help implement the vision for the planning area.

Hoffman Park frontage property.



Chapter 5

TRANSPORTATION AND INFRASTRUCTURE



Goal: The transportation and infrastructure plans promote a mix of mobility options and infrastructure investments to support future development. Road improvements will support increased automobile traffic and accommodate people of all ages and abilities, including those taking transit, biking, walking, and rolling (wheelchair, skateboard, scooter, etc.). Investments in bike lanes, sidepaths, and trails will expand the trail system in the Subarea. The Villages will plan together to coordinate utility expansion and ensure fiscally responsible development.

An enhanced transportation and infrastructure system will be essential as the planning area develops over time. Much of the land that is currently used for surface mining operations will take on new life, requiring improvements in the circulation and safety of all street users and infrastructure to support and serve new development. Investments in bicycle and pedestrian facilities and transit will offer low carbon alternatives for getting around.

Key Findings

Good access from major roads. Route 31, Cary Algonquin Road, and Klasen Road serve the planning area with daily traffic counts of approximately 15,000, 5,000, and 2,300 vehicles respectively. Route 31 was recently reconstructed with four lanes and a center turn lane/median. Cary Algonquin Road and Klasen Road both have two lanes that are 11 feet wide. The mining areas have access from Route 31 and Subareas 1 and 2 have access from Klasen Road.

Proposed river crossing. The southern 116 acres of Fox Bluff Conservation Area includes a County Grant of Easement of Way which was secured at the time of acquisition, for a planned transportation corridor crossing the Fox River. While no alignment has been determined and no funding has been obtained, the agreement between the County of McHenry and the McHenry County Conservation District grants a 250 foot right-of-way through the site. Some stakeholders are concerned about an increase in traffic to the area and others believe that a new river crossing could reduce traffic on other local roads. Future planning efforts should consider elements to improve access to the planning area including biking, walking, and vehicular access.

Gaps in path and trail network. The Prairie Trail and Route 31 sidepath are two regional trails that connect Algonquin and Cary to other communities and destinations. Local sidepaths and trails also exist in Cary Lake at Rotary Park, Hoffman Park and the Cambria subdivision to the north of the planning area, and on a portion of Cary Algonquin Road. Improvements are needed along Algonquin’s Main Street, Cary’s Main Street, Klasen Road, and Cary Algonquin Road to increase safety for people biking between the subareas and both downtowns.

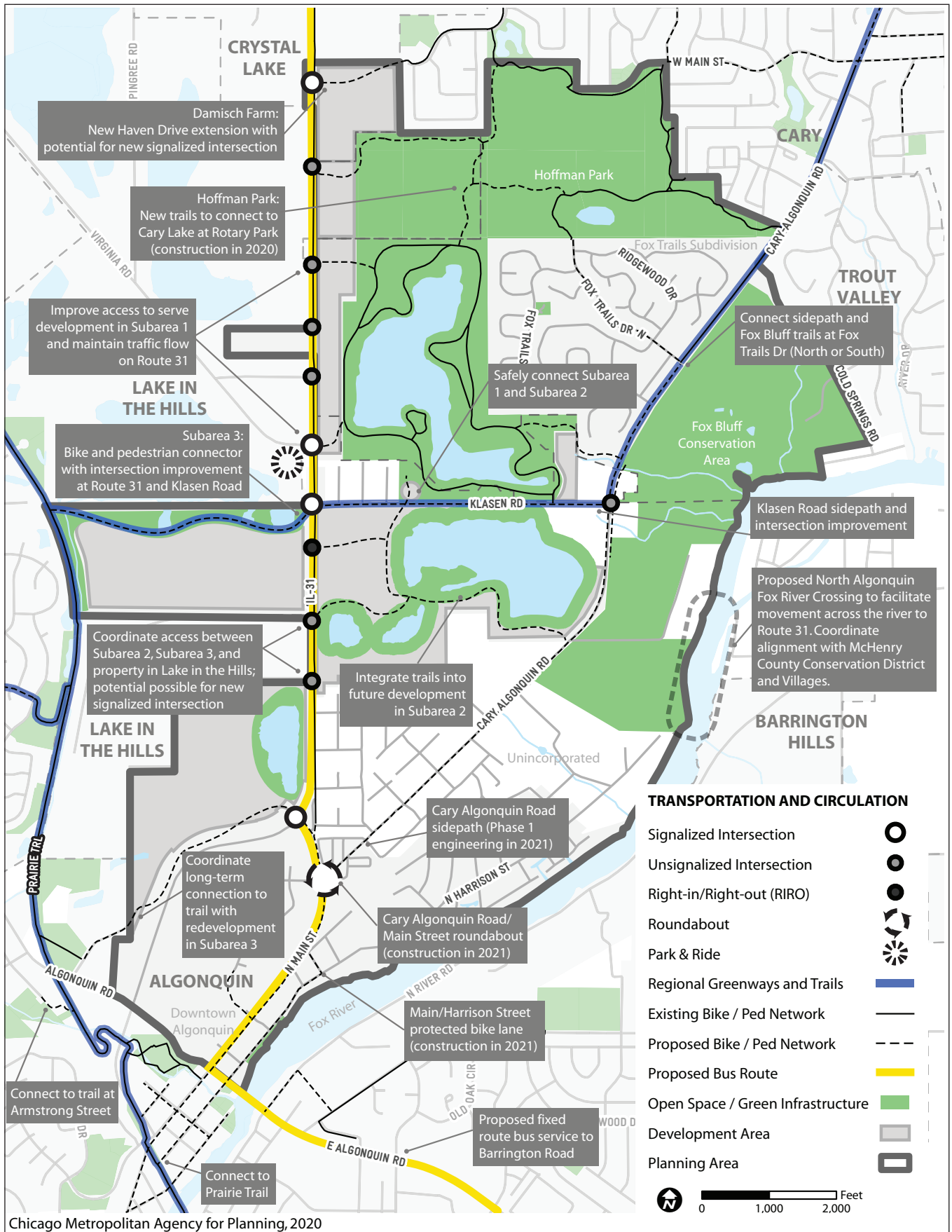
Need for water and sewer infrastructure. Both Villages have conducted studies and planning for extending public water and sewer to the subarea. Depending on the scale of development and potential for shared infrastructure, the existing system may require upgrades to adequately serve the subareas.

Multiple jurisdictions and service providers. The roads, public utilities, and private utilities that are required to serve new development are owned by different entities. Coordination between jurisdictions and service providers will be important to ensure efficient infrastructure provisions and long-term maintenance and management.

Recommendations

The transportation and circulation plan illustrates a conceptual bikeway and trail system that links development, open space, and surrounding destinations. It identifies key routes through the planning area and improvements such as new and improved intersections, access points, and transit service. Proposed traffic signals must meet applicable traffic signal warrants in accordance with the Federal Highway Administration Manual on Uniform Traffic Control Devices (MUTCD) and, if applicable, IDOT's Strategic Regional Arterial guidelines. See Figure 11 for detailed opportunities.

Figure 11. Transportation and circulation plan



5.1 Improve road access and circulation.

Development sites and Cary Lake at Rotary Park.

Planning for access to the subareas should consider existing infrastructure, access management, and mobility for all street users. Utilizing existing infrastructure can reduce construction costs and disruptions and better integrate new streets within the existing road network. Access management balances traffic flow, while providing access to nearby properties through designing the location, spacing, design, and operation of driveways, median openings, and street connections. Following Complete Streets principles for new and existing roads will ensure the comfort and convenience of bicyclists and pedestrians and maximize the impact of road investments.

Access roads to new development should build off of the existing street network, use cross access, and share driveways to create a more connected grid. Intersections should be equipped with high-visibility crosswalks, pedestrian signals with countdown features, ADA-compliant curb ramps, proper lighting, and adequate “walk” times for people to cross the street. They should also be considered for bus stop placement as appropriate (see also Recommendation 5.3). Figure 10 illustrates recommended access locations from Route 31.



Examples of high-visibility crosswalks.

Source: Toole Design Group, Mike Cynecki, pedbikeimages.org.

- **Create cross access to Route 31 frontage sites in Subarea 1 and Lake in the Hills.** The Virginia Road intersection is signalized and provides a crosswalk between the sidepath and park and ride commuter lot, making it a good location to access the frontage sites in Subarea 1. Trinity Drive is another access point that could connect development on both sides of Route 31 and to Virginia Road. Further study and coordination with IDOT will be required.
- **Coordinate Route 31 access to Subarea 2 and Subarea 3.** There are three entrances into both mining sites from Route 31. The Village of Algonquin should work with McHenry County and IDOT, as well as Lake in the Hills to explore whether a new four-way intersection could be created through the one-mile stretch between Klasen Road and Main Street Algonquin.

Algonquin and Lake in the Hills should collaborate on planning internal road access to both sections of Subarea 3 and the HeidelbergCement property between them. This road network should also consider how to connect to Meyer Drive.

- **Connect Subarea 1, Subarea 2, and existing development.** The conceptual site plan for Subarea 2 should explore options for access from and across Klasen Road (see Recommendations 3.3 and 4.2). Access drives already exist into the mining sites just east of 3rd Avenue. However, extending 2nd Avenue and 3rd Avenue could be preferred to create a more connected grid. Creating a four-way intersection in this area would help people travel between the two areas by foot or bike, thus reducing traffic and parking demands.

A secondary route, which came out of the planning process, could utilize the existing tunnel beneath Klasen Road as a unique way of linking the two destinations. The feasibility of restoring and expanding the tunnel could be explored as part of the conceptual site plan development, in collaboration with LafargeHolcim, Ltd. It could also incorporate interpretive signage on the history of the gravel mining areas.



Route 31 and Virginia Road intersection.



Existing site access to Subarea 1 and Subarea 2 on Klasen Road.

Cary Algonquin Road at Main Street Algonquin Roundabout

A roundabout at Cary Algonquin Road and Main Street Algonquin is expected to be constructed in 2021. This improvement is being led by the Village of Algonquin in collaboration with the McHenry County Division of Transportation. The project will include new crosswalks, curb ramps, and connections for the planned Main Street protected bike lane. Once complete, it will improve circulation and safety at this busy intersection for all street users.

Figure 12. Roundabout engineering plan



Source: Village of Algonquin

New Haven Drive extension

Extending New Haven Drive in coordination with future development on the Damisch Farm property would provide direct local access between the Cambria subdivision, new development, and Route 31. The Cary Comprehensive Plan recommends creating a signalized intersection at Route 31, when needed, to accommodate future development and traffic needs. The Village should consider measures that deter through traffic, maintain low travel speeds, and ensure safety for people walking and biking, as well as extend a sidepath to connect to Route 31, a distance of approximately 1,400 feet. Other elements such as high visibility crosswalks and ADA-compliant curb ramps should be incorporated as well.

Engineering and traffic safety studies will be required to inform the road extension and intersection design. The Village of Cary should initiate preliminary studies well before the property is sold to give more certainty to prospective developers and ensure the road extension is incorporated into potential site plans.

Figure 13. New Haven Drive extension concept



Source: Village of Cary Comprehensive Plan



New Haven Drive terminus.

North Algonquin Fox River Crossing

The North Algonquin Fox River Crossing is a proposed project in the McHenry County Long Range Transportation Plan to facilitate movement across the river and between Route 25/County Line Road and Route 31.¹² The southern 116 acres of Fox Bluff Conservation Area includes a County Grant of Easement of Way, which was secured at the time of acquisition, for the future transportation corridor. While no alignment has been determined and no funding has been obtained, the agreement between the County of McHenry and the McHenry County Conservation District grants a 250 foot Right-of-Way east-west through the site.

McHenry County Division of Transportation and the McHenry County Conservation District will continue to collaborate to ensure the planned improvements in the Fox Bluff Master Plan and proposed road and bridge meet the future needs of the County while sustaining vital natural system's health and cultural integrity.

Before the project comes to fruition, McHenry County Division of Transportation should work with the Villages and McHenry County Conservation District to study the potential alignment. This will allow Algonquin and Cary to weigh in on how a new river crossing can be integrated into their plans for the area. Similarly, the Village of Algonquin should engage McHenry County Division of Transportation in the development of a conceptual site plan for Subarea 2 to consider future road improvements.

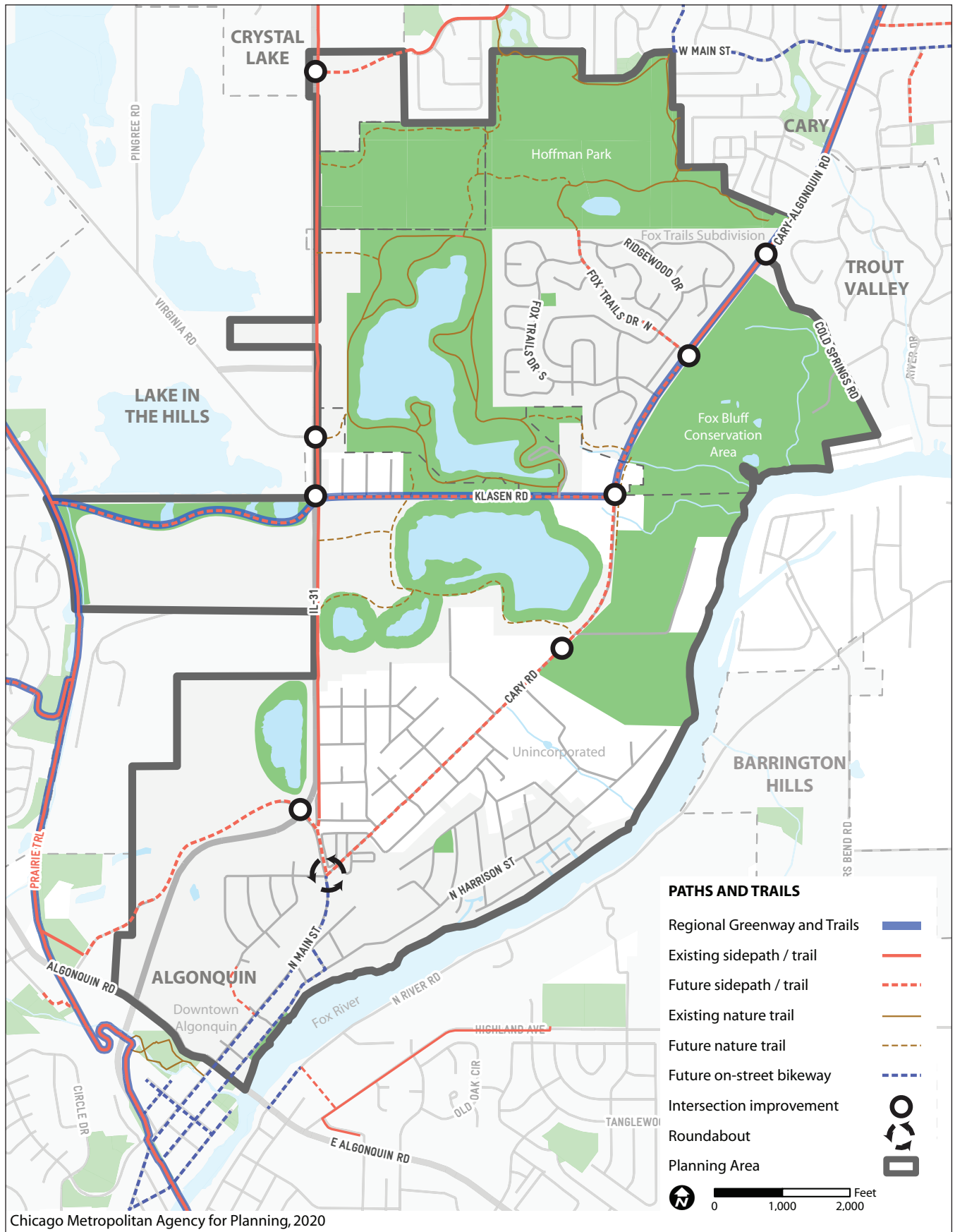
The ultimate design of the road and bridge should provide access for people walking or biking across the river to tie into the local path and trail network as well as provide a separate wildlife passage beneath the road as it passes through Fox Bluff Conservation Area.

5.2 Expand and connect trail and path network.

Linking redevelopment to the local path and trail network will allow people to access the area by foot or bike, thus promoting healthy and active lifestyles, creating recreation and economic development opportunities, reducing carbon emissions, and potentially reducing the demand for parking. Connecting the subareas to other destinations, including Algonquin and Cary's downtowns, Cary Metra station, the Prairie Trail, and Fox River will expand the regional trail system and benefit the community and surrounding area. The existing and proposed network is illustrated on Figure 14.

The Northeastern Illinois Greenways and Trails Plan, adopted as part of ON TO 2050, envisions a network of continuous greenway and trail corridors, linked across jurisdictions, providing scenic beauty, natural habitat, and recreational and transportation opportunities. To achieve this vision, CMAP has been using the regional greenways and trails plan to guide funding decisions for the Transportation Alternatives Program (TAP). Several routes are proposed through the planning area, including Cary Algonquin Road, Klasen Road, and the Prairie Trail connector through the north section of Subarea 3, which would qualify for funding through TAP among other sources.

Figure 14. Path and trail plan



Cary Algonquin Road and Main Street Algonquin/Cary

Cary Algonquin Road is an important arterial that connects Main Street Algonquin, the Subarea, and Main Street Cary. It is identified as a key route in the regional greenways and trails plan to connect to Route 14 to the north. Several improvements are recommended to make this a bike-friendly corridor:

- Sidepath on west side of Cary Algonquin Road, from Fox Trails Drive South to Main Street Algonquin, is programmed for Phase 1 engineering in 2021. In the future, safe crossings should be provided at Cold Springs Road, Fox Trails Drive (North or South), and Klasen Road to connect with McHenry County Conservation District's planned access to Fox Bluff Conservation Area. This sidepath extension would connect with the Main Street Algonquin protected bike lane at the new roundabout.
- Sidepath on west side of Cary Algonquin Road to replace existing sidewalk from Main Street Cary to Industrial Drive.
- Protected bike lane on the east side of Main Street Algonquin from Greenwood Court to Park Street to Harrison Street to connect the Route 31 sidepath and the Prairie Trail. This project is programmed for construction in 2021.
- Roundabout at Cary Algonquin Road and Main Street Algonquin. This project is programmed for construction in 2021.

Klasen Road

Klasen Road is an important link between Fox Bluff Conservation Area, the mining sites, and the potential Prairie Trail connector as identified in the regional greenways and trails plan. The Village of Algonquin and Algonquin Township Road District share road jurisdiction. Recommended improvements include:

- Sidepath from Route 31 to Cary Algonquin Road. There is sufficient right-of-way along most of the road to accommodate an 8- to 14-foot wide sidepath. One exception is at the intersection with Cary Algonquin Road where there is only 10-feet of right-of-way available on the north side of Klasen Road. The Village of Algonquin should work with Cary, McHenry County, and Algonquin Township to determine the best alignment. This will also require collaboration with IDOT and a study to determine the impact to safety and operations approaching the Route 31 intersection and mitigation required to address the identified impacts. Safe crossings should be provided at each entrance to Cary Lake at Rotary Park and future development in Subarea 2.
- Intersection improvement at Cary Algonquin Road to safely extend sidepath to connect to McHenry County Conservation District's planned trail along the western edge of Fox Bluff Conservation Area. This will require coordination between Algonquin Township and McHenry County.



Cary Algonquin Road and Klasen Road intersection looking south.

Prairie Trail connection

The Prairie Trail and Fox River Trail, to the south in Kane County, are extensive regional trails that stretch 66 miles across Illinois and Wisconsin. There are two trailheads just outside of the planning area at the McHenry County Conservation District's Algonquin Road Trail Access and Village of Algonquin Towne Park in Downtown Algonquin. However, these locations are not safely accessed by bike from the subareas and are approximately two miles from the intersection of Route 31 and Klasen Road. Connecting to the Prairie Trail from Route 31 through the north section of Subarea 3 would provide direct access from the heart of the Algonquin-Cary Subarea and is recommended in the regional greenways and trails plan (see Figure 15).

Assessing feasibility to extend a connector trail through this area will require collaboration among several entities, including the Villages of Algonquin, Cary, and Lake in the Hills, McHenry County Conservation District, and LafargeHolcim, Ltd.

The trail may need to pass over or under the existing conveyor system that runs parallel to the Prairie Trail and services the HeidelbergCement site in Lake in the Hills.

Coordination with IDOT will also be necessary to provide a safe crossing at the Klasen Road intersection and extend a sidepath down the west side of Route 31 to connect with the proposed trail connection. This will require a study to determine the impact to safety and operations at the intersection of Route 31 and Klasen Road and mitigation required to address the identified impacts.

Ultimately, the feasibility, alignment, and construction timeline of the trail will depend on a variety of factors, including the property's current use for mineral extraction, sensitive natural resources, future redevelopment potential, and funding. The Villages should continue the initial conversations on trail feasibility, which took place as a part of this planning process (see also Recommendation 4.4).

Figure 15. Aerial imagery of site conditions in Subarea 3 and vicinity



Source: Aerial imagery, October 2019, Nearmap US, Inc.

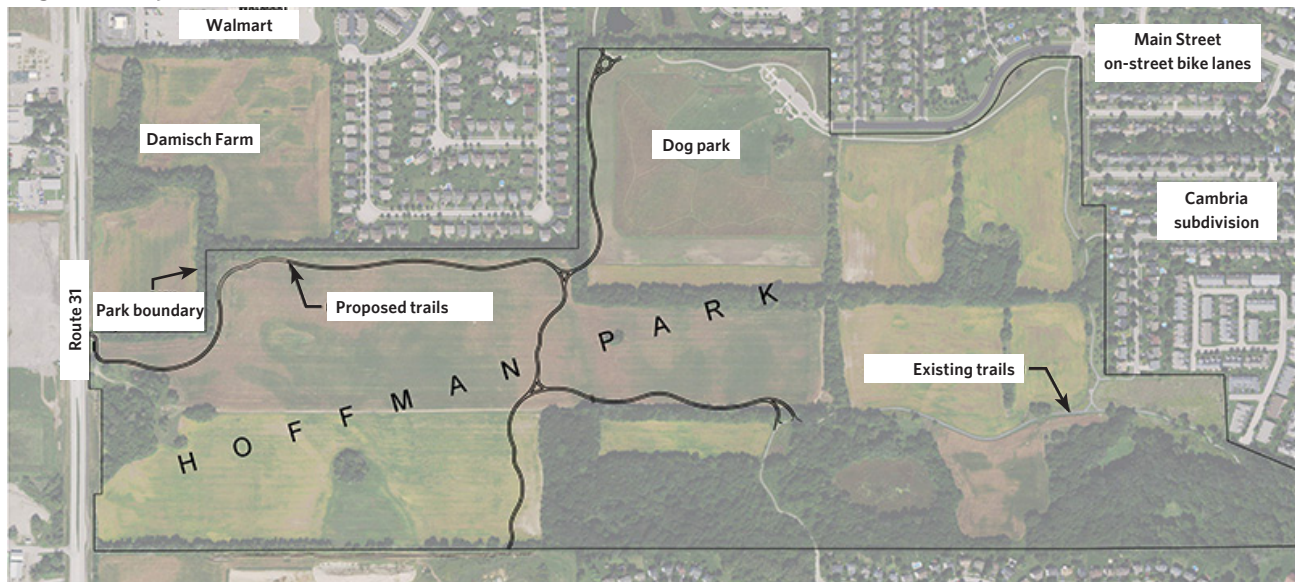
Hoffman Park and surrounding paths

Cary Park District received a \$1.1 million grant from the Illinois Transportation Enhancement Program (ITEP), with local match funding obtained from LafargeHolcim, v., to construct 1.4 miles of trails in the near-term. The trails will weave through Hoffman Park and connect to sidepaths in the Cambria subdivision and along Route 31 and to the trails in Cary Lake at Rotary Park (see Figure 16).



Picnic pavilion at the Hoffman Park dog park.

Figure 16. Proposed trails in Hoffman Park



Source: Cary Park District

5.3 Support transit service.

New bus service

Transit is an important ingredient of a transportation system. The proposed Crystal Lake – Barrington Road bus route would provide regularly-scheduled weekday service between Virginia Road at Route 31 and Interstate 90 at Barrington Road.¹³ This route would connect riders with the I-90 Bus on Shoulders Express Service, which in turn can take riders to the Northwest Transportation Center and Rosemont Transportation Center. The project has an initial capital cost of \$720,000 to purchase two 30-foot buses and one paratransit vehicle, and an annual operations and maintenance cost of \$500,000 million.

Through the area, the route is proposed follow Route 31 to Main Street Algonquin and Algonquin Road (IL Route 62). While stops would be identified in coordination with Pace, priority locations in the planning area include the Lake in the Hills Park & Ride, Main Street (at Route 31 or Cary Algonquin Road), and Downtown Algonquin. Pursuing higher density residential development in the subareas, as described in Chapter 3, will help support transit service in the future. Pace has created a useful manual, Transit Supportive Guidelines for the Chicagoland Region,¹⁴ designed for a range of stakeholders from municipal staff and elected officials to developers and businesses.

Protections should be in place at the park & ride to ensure security for riders. All bus stops should ensure safe access, in compliance with the Americans with Disabilities Act (ADA), by filling in sidewalk gaps and providing intersection improvements like marked crosswalks and refuge islands.

As the subareas develop, transit needs should continue to be assessed including the potential to provide bus service to and from Cary Metra station.

Dial-a-Ride

The planning area is served by two Pace Dial-a-Ride (DAR) programs.

- MCRide provides on demand service between the communities of Crystal Lake, McHenry, Huntley, Harvard, Johnsburg, Ringwood, Marengo, Woodstock, Hebron, Fox River Grove, Richmond, and Union and within Dorr, McHenry, Nunda, Grafton, Marengo, Greenwood, Riley, Alden, and Richmond Townships. It also provides service to or from the planning area at the Lake in the Hills Park & Ride.
- Southeast McHenry County Dial-a-Ride provides a limited on demand service that is already at capacity within and between Cary, Fox River Grove, and an area north of the planning area defined as west of the McHenry/Lake County border, north of Three Oaks Road, east of Pingree Road, and south and east of Route 176.

To improve DAR transport, the Villages should consider joining the MCRide program, which would allow all residents to travel throughout the entire service area. As the subareas develop, the Villages should promote DAR service and continue to work with Pace to ensure it meets the needs of people living in the area.



Lake in the Hills Park & Ride.

5.4 Provide consistent and branded wayfinding.

Wayfinding signage helps people navigate through an area and reach their destination. When paired with branding, it can create a common identity for the Subarea. The Villages should collaborate to develop a design that could be incorporated into new street signs and wayfinding signage to reinforce the identity of the subareas.

Branded wayfinding should be incorporated into future redevelopment to reinforce the area as a single destination. Information on parking availability, parks, local businesses, and distances to destinations should also be posted. Prominent destinations in the planning area to feature include: Cary Lake at Rotary Park, Prairie Trail, Hoffman Park, Fox Bluff Conservation Area, future development, Downtown Algonquin, Downtown Cary and Metra Station, Fox River, and Park & Ride.

Wayfinding signage should complement proposed path and trail improvements to familiarize users with the network, identify preferred routes to destinations, and indicate to motorists when they are driving along a bicycle route and should use caution. The Villages should work with McHenry County Conservation District, McHenry County, and Kane County to promote a consistent look across the planning area and surrounding community. This could be done in concert with other wayfinding efforts such as the Regional Active Mobility Program.¹⁵



Custom signage in Algonquin (left) and Cary (right).



Branded wayfinding in Kent, Ohio.

Source: Guide Studio, Inc.

5.5 Develop coordinated strategy for sewer and water expansion

Developing the subareas will require infrastructure, including roads as well as water, sewer, electric, gas, and telecommunications. Planning for expanded public water and sewer service should be coordinated with road improvements and future development. In addition to sewer and water provisions, the Villages should coordinate with service providers to ensure necessary community facilities and infrastructure are in place for future growth. Overall, decisions to expand public infrastructure should consider the full the cost and long-term financial impacts of growth in the subareas.

The water and sewer infrastructure plan illustrates planned improvements to service the subareas. See Figure 17 for proposed locations and details.

Building Better Budgets: A National Examination of the Fiscal Benefits of Smart Growth Development (Smart Growth for America, May 2013)¹⁶

Smart Growth America defines smart growth as, “an approach to development that encourages a mix of building types and uses, diverse housing and transportation options, development within existing neighborhoods, and community engagement.” In 2013, Smart Growth for America conducted a survey to explore the costs and potential revenues associated with smart growth development and conventional suburban development.

The study illustrates how pursuing smart growth can help suburban, rural, and urban communities maintain and improve their fiscal solvency. Specifically, the study found that smart growth development:

- Costs one-third less for upfront infrastructure;
- Saves an average of 10 percent on service delivery such as police, ambulance, and fire services; and
- Generates 10 times more tax revenue per acre than conventional suburban development.

Previous planning

Both Villages have developed plans or conducted studies to provide municipal water and sewer service to the subareas. Currently, water and sewer lines to service Subarea 1 terminate at the northwest corner of Cary Lake at Rotary Park and the nearest connections to serve Subarea 2 and Subarea 3 are at Main Street Algonquin and Greenwood Court. If connected, existing systems could require upgrades to provide sufficient capacity to meet the demands of future development.

Village of Cary – Subarea 1

In 2018, the Villages of Cary and Lake in the Hills commissioned a water and sewer interconnect study to assess future demand and improvements needed to connect Route 31 and Route 14 properties to Cary’s municipal system. Specifically, the study looked at unserved properties on Route 31 between Rakow Road and Virginia Road and on Route 14 near Three Oaks Road. Cost estimates were developed for recommended improvements that would provide sufficient capacity and a connection to the sites surrounding Cary Lake at Rotary Park at the northwest corner of Subarea 1. This includes sufficient capacity for the properties in Algonquin as well.

Based on projected demand from commercial and industrial uses, the study recommended several water improvements totaling \$1.78 million, including:

- Two new shallow wells to provide 450 gallons per minute (gpm) estimated at \$980,000;
- 600 feet of new water main from existing terminus to Route 31 right-of-way estimated at \$200,000; and
- 1,800 feet of new water main to loop new water system to the existing Cambria subdivision system at Summerhill Lane estimated at \$600,000.

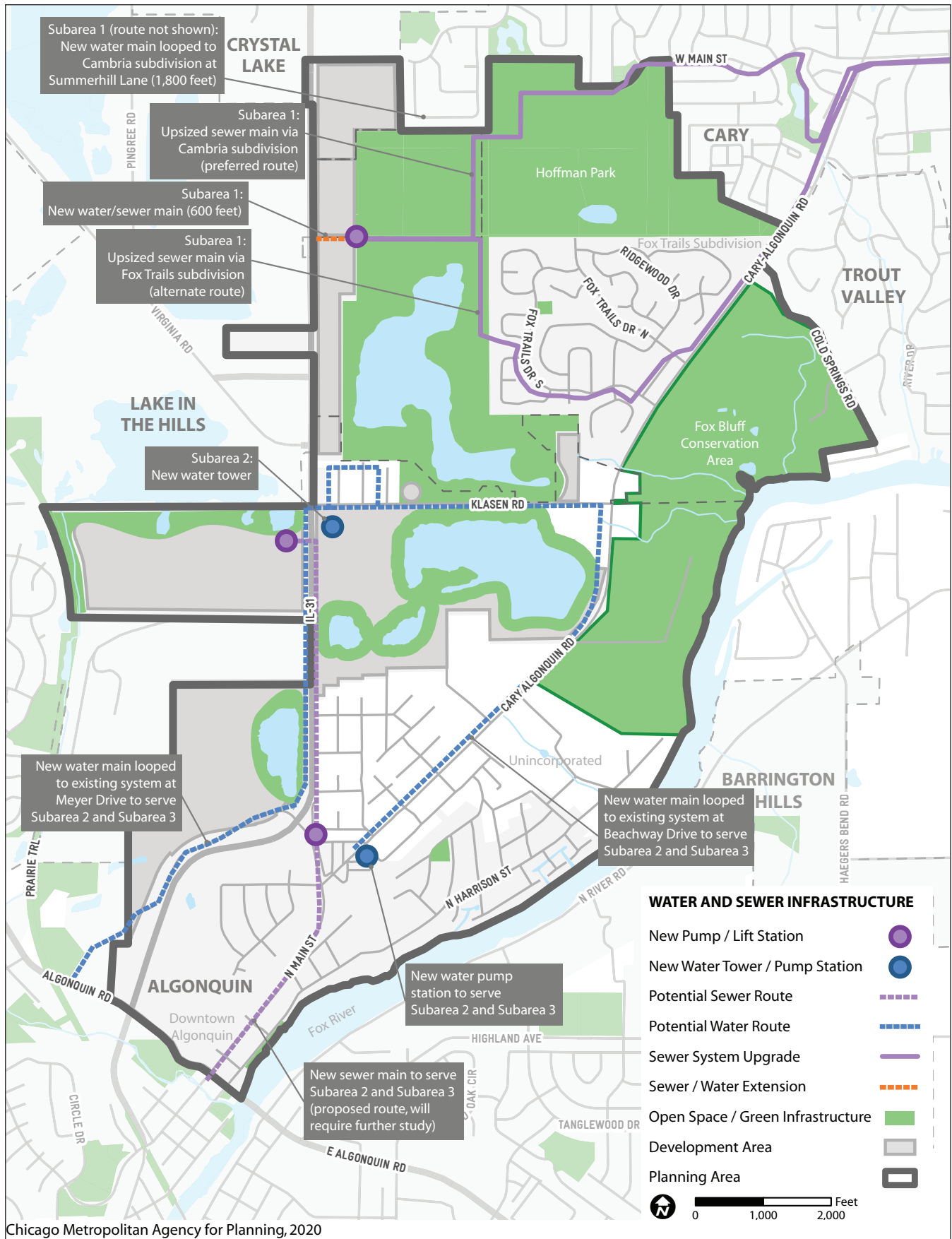
Based on projected demand from commercial and industrial uses, the study recommended several sewer improvements totaling \$5.7 million, including:

- A new pump station and 600 feet of new sewer main from existing terminus to Route 31 right-of-way estimated at \$3.0 million; and
- Upsized sewer main through Cambria subdivision estimated at \$2.7 million.

Village of Algonquin – Subareas 2 and 3

Algonquin developed a Water Master Plan (2012) and Wastewater Facility Plan (2014) to guide future improvements. Both plans provide initial considerations for extending service to Subarea 2 and Subarea 3. Water is proposed to extend from Algonquin Cary Road and Beachway Drive up to Subarea 2 and create a loop via Cary Algonquin Road, Klasen Road, Route 31, and Meyer Drive. Other water improvements include an upgraded pump station in the Algonquin Cemetery and a new water tower in Subarea 2. Extending the sewer system will require additional study, but new mains are proposed to extend up Main Street from Downtown and generally follow Route 31. Two new lift stations will be required at Main Street and Greenwood Court and in the north section of Subarea 3.

Figure 17. Water and sewer infrastructure plan



Components of a coordinated strategy for water and sewer expansion.

In an era of limited resources, communities can minimize their infrastructure maintenance costs by limiting expansion and building more compactly when they do extend water and sewers to new locations. Sewer and water improvements are significant public expenditures that must be made wisely to ensure a proper return on investment. Planning to expand these systems should be carefully coordinated by the Villages of Algonquin, Cary, and Lake in the Hills to identify efficiencies and cost savings, increase opportunities for funding, avoid duplicating service, and properly site facilities.

- **Calculate demand from residential use.** The Lake in the Hills and Cary water and sewer interconnect study calculated future demand based on a mix of commercial and industrial uses for the remaining land in Subarea 1, Hoffman Park frontage, Damisch Farm property, and land to the west of Route 31 in Lake in the Hills. The study should be updated to calculate demand from residential uses in Subarea 1 and assess whether residential development will increase or decrease the estimated water and sewer demand.
- **Identify opportunities to share services and infrastructure.** The Cary and Lake in the Hills study is a great example of how planning together can allow both communities to meet mutual goals for development. The study already identifies water and sewer improvements needed to develop the remaining land in Subarea 1, Hoffman Park frontage, Damisch Farm property, and land to the west of Route 31 in Lake in the Hills. While some of the land in Subarea 1 is in the Village of Algonquin, it could be more cost-effective for this property to receive water and sewer service from the Village of Cary in perpetuity. Looking at shared services may reveal additional opportunities for the Villages to coordinate and reduce costs.
- **Encourage water conservation and demand management.** Sewer and water utilities should be installed with sufficient capacity for future needs. At the same time, incorporating efficiency standards and conservation design practices into development decreases the demand for water and sewer. The Villages should promote indoor water efficiency by encouraging fixtures that meet WaterSense ratings and development practices that reduce the need for outdoor irrigation by limiting the amount of turf landscape. In addition to efficiency, the Villages should assess the water demand from new development to insure it can be sustainably met by the current water supply.
- **Assess options for phasing.** The Villages should consider utilizing adjacency requirements to promote the orderly extension of infrastructure. A strategy should also determine how improvements should be phased – whether to construct part or all of the improvements in advance of development or base it on individual development agreements. Focusing on where efficiencies can be gained and how infrastructure can be added incrementally could result in cost savings and also give the Villages the certainty that development will occur. One way to do this is to assess potential development timelines of the sites with phasing options for improvements from the Cary and Lake in the Hills study. For example, what level of development in Subarea 1 could be handled by the existing system? What is the most cost-effective way of expanding service to development sites in the Subarea, as well as Lake in the Hills?

- **Consider future development when siting large facilities.** Facilities such as water towers require land for construction and can also contribute to the branding of an area. When planning for a new water tower in Subarea 2, the Village of Algonquin should consider future development needs and look at ways for it to contribute to the identity of the subarea. The Lake in the Hills airport and flight path requirements should also be considered.
- **Identify financing mechanisms to maximize return on investment.** When planning for the construction of new infrastructure, the Villages should determine how to utilize financing mechanisms to minimize public infrastructure costs and maximize the return from public investment. This includes assessing what portion of the cost should be covered by the developer and what should be financed by the Villages.

TIF and local development fees can help finance infrastructure improvements. SSAs or other special developer agreements, which have a longer-term view than impact fees, can help fund infrastructure construction as well as future maintenance. There could be the potential for the Villages to coordinate the establishment of an SSA across multiple jurisdictions, particularly for developments in Subarea 1 that benefit from the same infrastructure provisions.

Innovative financing can save on capital delivery costs and maintenance, and aggregating infrastructure projects across jurisdictions – whether for water, sewer, roads, or lighting – can lead to even greater efficiencies. Pursuing a project together could help the communities meet a financing threshold needed to attract private financing that they could not meet if they pursued a project independently.

- **Consider the cost to extend and maintain water and sewer service in fiscal impact analyses.** Future development must consider the full cost to construct, repair, maintain, and operate public infrastructure. When considering proposed developments the Villages should conduct a fiscal impact analysis to ensure the development is fiscally responsible and a net benefit for the community. The Villages should also carefully weigh the long-term costs of maintaining and replacing infrastructure against the fiscal benefits of new development. These assessments can help determine whether development specific revenue sources should be employed to fund infrastructure improvements or future maintenance (see also Recommendation 3.6).
- **Sequence infrastructure construction.** Water and sewer should be extended before street construction or reconstruction. Work on both utilities and transportation improvements in this area should be coordinated between the villages and various taxing bodies, along with involving the property owner to coordinate decisions with regards to laying utilities prior to land being refilled or prepared for development. The Villages should coordinate site preparation efforts for small-scale commercial development when developing park infrastructure, such as laying water and sewer lines concurrently with access road construction and building slips for entry/exit from new development along the roads.

Chapter 6

IMPLEMENTATION



To guide implementation, this section identifies areas of coordination, short-term actions, and potential partners for the Villages. These implementation strategies do not represent a complete list of actions, but provide suggested next steps to help realize the vision for the planning area.

Implementation of the plan will entail coordination between the Villages of Algonquin and Cary, as well as Cary Park District, McHenry County, McHenry County Conservation District, Illinois Department of Transportation, Algonquin Township, Lake in the Hills, LafargeHolcim, Ltd., and other private property owners. Areas for coordination are recommended throughout the plan to improve land use planning and development processes; streamline open space enhancements, maintenance, and management; implement transportation improvements; and strategically expand utility infrastructure.

Areas for Coordination	Recommendation
Establish an advisory committee to continue collaboration.	3.1
Develop planned development approval process for Subarea 1.	3.2
Coordinate conceptual site planning and reclamation agreement.	3.3
Explore potential for tax sharing agreement.	3.4
Develop comprehensive approach for marketing and branding.	3.5, 5.4
Coordinate site preparation and park infrastructure in Subarea 1.	3.7
Collaborate with Lake in the Hills to plan for Subarea 3.	3.8
Develop a strategy for long-term maintenance and management at Cary Lake at Rotary Park.	4.1
Examine surrounding land uses when exploring recreational potential, including proposed improvements in Hoffman Park and Fox Bluff Conservation Area.	4.2
Explore potential to connect to the Prairie Trail.	4.4, 5.2
Coordinate improvements and maintenance at Hoffman Park with the Village of Cary.	4.6
Collaboratively plan for new access roads and a bridge over the Fox River.	5.1
Coordinate among transportation agencies to expand sidepaths along key routes and establish transit service.	5.2 and 5.3
Develop coordinated strategy for water and sewer expansion.	5.5

Implementation Actions

These tables outline short-term actions for the Villages and other stakeholders to take over 1 to 3 years (Phase 1) and 4 to 5 years (Phase 2).

Action	Responsibility	Description
Phase 1		
Establish advisory committee. Recommendation 3.1	Lead: Village of Algonquin, Village of Cary Support: Cary Park District, LafargeHolcim, Ltd., McHenry County Conservation District, McHenry County Planning & Development, Village of Lake in the Hills	Work together to develop an advisory committee to guide implementation of the subarea plan over the short- and long-term. Build from the steering committee convened to advise the development of the plan and identify other key stakeholders who should be involved. The committee should coordinate development, long-term park management, and a potential connection to the Prairie Trail through Subarea 3.
Assess development regulations for design principles. Recommendation 3.2, 4.3	Lead: Village of Algonquin, Village of Cary	Assess respective zoning codes and subdivision ordinances to facilitate the type of development desired by the community. Determine the zoning district that is most conducive to allow clustered/conservation development while offering flexibility in use and density. Review bulk standards, which limit heights and setbacks, as well as landscaping standards and clustered/conservation development requirements. Evaluate subdivision ordinances to ensure public access to pedestrian and bicycle facilities is integrated into the site.
Determine approval process for Subarea 1 sites. Recommendation 3.2, 4.3, 5.1	Lead: Village of Algonquin, Village of Cary Support: Illinois Department of Transportation	Work together to determine the approval process for development in Subarea 1, including Site #2 (Route 31 frontage) which crosses both villages. Consider if and how it could be regulated jointly as a PUD. Coordinate with the Illinois Department of Transportation regarding site access from Route 31.
Initiate reclamation discussions. Recommendation 3.3	Lead: Village of Algonquin, LafargeHolcim, Ltd. Support: Village of Cary	Build on the existing annexation agreement as part of the conceptual planning process to ensure alignment between the agreement and the community's desired future for the site. The Village of Cary may be able to offer guidance based on experience from Subarea 1.
Develop conceptual site plan for Subarea 2. Recommendation 3.3, 4.2, 5.1	Lead: Village of Algonquin Co-lead: LafargeHolcim, Ltd. Support: Advisory committee, including McHenry County Conservation District, McHenry County Division of Transportation, and Village of Cary; Illinois Department of Transportation	Hire a consultant to develop a conceptual site plan for Subarea 2. The plan should illustrate a vision for restoration, recreation, and development across the 191-acre site and how it can be connected to Subarea 1, Fox Bluff Conservation Area, and the surrounding neighborhoods. Engage nearby residents, elected officials, and other stakeholders in the process.
Establish cooperative management agreement with IDNR. Recommendation 4.1	Lead: Village of Cary Support: Illinois Department of Natural Resources	Work with the Illinois Department of Natural Resources to establish a cooperative management agreement to provide recommendations for stocking, fishing regulations, and habitat enhancement.
Develop a Strategy to manage and monitor aquatic invasive species. Recommendation 4.1	Lead: Village of Cary Support: Illinois-Indiana Sea Grant, Illinois Department of Natural Resources	Develop an approach toward managing and monitoring for aquatic invasives at Cary Lake. The sooner an approach is implemented, the lower the risk of infestation. This could entail restricting use of personal watercraft or allowing personal watercraft under certain conditions, as well as banning "live" bait like minnows.
Calculate water and sewer demand from residential use. Recommendation 5.5	Lead: Village of Cary Support: Village of Lake in the Hills, Village of Algonquin	Update the Water and Sewer Interconnect Study to calculate demand from residential uses in Subarea 1 and assess whether residential development will increase or decrease the estimated water and sewer needs.

Action	Responsibility	Description
Phase 2		
Develop a coordinated strategy for water and sewer expansion. Recommendation 5.5	Lead: Village of Algonquin, Village of Cary Support: Village of Lake in the Hills	Develop a coordinated strategy for water and sewer expansion. Build on the updated Water and Sewer Interconnect Study to identify opportunities to share services and infrastructure and assess options for phasing. This should consider needs for all subareas, with a focus on Subarea 1.
Explore potential for tax sharing agreement. Recommendation 3.4	Lead: Village of Algonquin, Village of Cary Support: CMAP	Work with CMAP to convene a meeting to initiate a conversation around tax sharing, its benefits, and how an agreement could be established.
Market the sites to developers Recommendation 3.5, 4.3	Lead: Village of Algonquin, Village of Cary	Develop a unified brand and conduct outreach to prospective developers. Utilize land use and open space plans to communicate conservation priorities for redevelopment. See also Recommendation 4.3 (cluster and conservation development).
Conduct outreach on park amenities. Recommendation 4.1	Lead: Village of Cary Support: Cary Park District	Solicit feedback from park users and engage them in the planning process for future improvements. Cary Park District could be a resource for sharing outreach methods and best practices.
Secure funding to construct Cary Algonquin Road sidepath (from Fox Trails Drive South to Main Street Algonquin). Recommendation 5.2	Lead: Village of Algonquin, Village of Cary, McHenry County Division of Transportation Support: McHenry County Planning & Development, Bicycle Advocates, CMAP	A sidepath on the west side of Cary Algonquin Road, from Fox Trails Drive South to Main Street Algonquin, is programmed for Phase 1 engineering in 2021. The Villages should work with McHenry County Division of Transportation to apply for construction funding. Potential funding: Surface Transportation Program (STP-L), Transportation Alternatives Program (TAP-L), and Transportation Enhancements Program (ITEP). This project would help complete the Regional Greenways and Trails Plan.
Secure funding to conduct Phase 1 study of Klasen Road sidepath. Recommendation 5.2	Lead: Village of Algonquin, Village of Cary Support: Algonquin Township, McHenry County Division of Transportation, Village of Cary	There is sufficient right-of-way along most of the road to accommodate an 8- to 14-foot wide sidepath. Work with Algonquin Township, Village of Cary, and McHenry County Division of Transportation to secure funding to study Klasen Road alignment and connections to the Cary Algonquin Road and Route 31 sidepaths. Potential funding sources include: STP-L, TAP-L, and ITEP. This project would help complete the Regional Greenways and Trails Plan.

Endnotes

1 CMAP, ON TO 2050 Coordinated planning areas local strategy map, October 2018, <https://www.cmap.illinois.gov/2050/maps/conservation-areas-growth>

2 In 2019, the Village of Lake in the Hills received SolSmart Gold designation to make it easier for residents and businesses to utilize solar technology. The Village adopted guidelines for solar-ready building design, electrical and fire design, and permitting and inspection, which are available on the Village webpage. See <https://www.lith.org/cd/page/support-solar-energy-growth>.

3 AARP and the National Building Museum, "Making Room: Housing Choice for a Changing America," 2019, <https://www-pi.aarp.org/livable-communities/housing/info-2018/making-room-housing-for-a-changing-america.html>.

4 A Business District allows for many of the same redevelopment activities as TIF, including the ability to finance public or private buildings. This tool funds redevelopment through up to a one percent increase in sales taxes rather than property taxes.

5 A Special Service Area, or SSA, is a taxing mechanism imposed on property owners in a contiguous area within a municipality or county to fund special services and infrastructure.

6 CMAP, ON TO 2050, Profile of Jon Kindseth, <https://www.cmap.illinois.gov/2050/profiles/jon>.

7 City of La Crosse, River Point District webpage, <https://www.riverpointdistrict.com/>.

8 Be A Hero - Transport Zero campaign webpage, <http://www.transportzero.org/transport-zero-ndash-aquatic.html>.

9 McHenry County Conservation District, "Fox Bluff Master Plan," June 2015

10 Village of Algonquin Municipal Code, Chapter 21 Section 21-11-J.

11 Cary Park District, "2016 Comprehensive Master Plan Update," September 2016, <https://www.carypark.com/rccms/comprehensive-master-plan/>.

12 McHenry County, "Long Range Transportation Plan: Motorized Vehicle Plan," March 2014, <https://www.mchenrycountyil.gov/county-government/departments-j-z/transportation/transportation-plans/long-range-transportation-plan>.

13 McHenry County, "Long Range Transportation Plan: Transit Plan," March 2014, <https://www.mchenrycountyil.gov/county-government/departments-j-z/transportation/transportation-plans/long-range-transportation-plan>.

14 Pace Suburban Bus, Transit Supportive Guidelines, <http://pacebus.com/guidelines/index.asp>.

15 CMAP, Regional Active Mobility Program webpage, <https://www.cmap.illinois.gov/programs/lta/aurora-mobility>.

16 Smart Growth America, "Building Better Budgets: A National Examination of the Fiscal Benefits of Smart Growth Development," May 2013, <https://smartgrowthamerica.org/resources/building-better-budgets-a-national-examination-of-the-fiscal-benefits-of-smart-growth-development/>.

A “Algonquin-Cary Subarea Plan Existing Conditions Report,” CMAP, May 2019, <https://www.cmap.illinois.gov/documents/10180/999288/Algonquin-Cary+Subarea+Plan+Existing+Conditions+Report.pdf/a1c5596e-19da-4f4c-f6ba-9733a00ec190>

B “Algonquin-Cary Subarea Plan Market Analysis Report,” Kretchmer Associates and Kane, McKenna Associates, August 2019, <https://www.cmap.illinois.gov/documents/10180/999288/Algonquin-Cary+Market+Analysis+and+Economic+Development+Tools.pdf/d631fc4a-bee5-56eb-49de-f939eb56198b>

C “Algonquin-Cary Subarea Plan Community Engagement Summary” CMAP, August 2020, <https://www.cmap.illinois.gov/documents/10180/999288/Algonquin-Cary+Subarea+Plan+Community+Engagement+Summary.pdf/0e5f49e3-73fb-d67e-5ad0-fab3bdb9bfb0>

The Chicago Metropolitan Agency for Planning (CMAP) is our region's comprehensive planning organization. The agency and its partners developed and are now implementing ON TO 2050, a new long-range plan to help the seven counties and 284 communities of northeastern Illinois implement strategies that address transportation, housing, economic development, open space, the environment, and other quality-of-life issues.

See cmap.illinois.gov for more information.