



Cook County
Department of Transportation and Highways

Cook County

BIKE PLAN



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Letter from the President

Dear Cook County Residents,

The launch of Cook County's first-ever Bike Plan continues my administration's commitment to reimagine the County's role in transportation. In addition to building and maintaining highways, we can help residents get around safely, conveniently and affordably by supporting biking, walking and mass transit. I'm proud that the Department of Transportation and Highways has risen to the challenge.

At a time when the transportation sector is responsible for the largest share of carbon emissions in the United States, our policy must respond. In addition to the renewable energy and energy efficiency programs we've begun at Cook County, we can reduce our carbon footprint by prioritizing low-emissions travel. For bicycling, that means building bike paths and other facilities to make biking attractive for any rider.

However, research shows that not everyone has the same access to bike facilities. Where a person lives has too long determined whether or not their neighborhood receives a bike path or bike lane. The County's Invest in Cook program responded to this need by implementing critical transportation projects since 2017. We prioritized bicycle and pedestrian projects in historically under-resourced neighborhoods, and with the publication of this Bike Plan, we take another step toward making transportation equitable.

I look forward to seeing the new paths we can build together in this proposed plan.

Sincerely,



Toni Preckwinkle, President
Cook County Board of Commissioners

Introduction

In 2016, the Cook County Department of Transportation and Highways (DoTH) published Connecting Cook County, the County's first long range transportation plan (LRTP) in 75 years. The LRTP emphasized the vital role of transit, biking and walking in helping residents get around. The Cook County Bike Plan expands on the vision of Connecting Cook County by identifying the initiatives DoTH will prioritize and pursue to improve bike facilities across the region. The plan can also serve as a tool for local agencies that want to support cycling, providing key principles and best practices they can use to expand local facilities and connect into a regional bike network. Shaped by extensive public engagement, input from experts and community surveys, this plan defines DoTH's role in supporting biking in the County.

As a sister agency to the Forest Preserves of Cook County, which owns the most off-street trails in the County, DoTH has an opportunity to create on- street or roadside bike facilities connecting to these trails where appropriate along the 91 miles of County roadways neighboring Forest Preserves property.

DoTH can also work across the 134 municipalities, 80 park districts and 20 townships within the County to build missing segments between bike facilities. As such gaps frequently occur at jurisdiction borders, DoTH has a natural role in advancing projects where identifying a lead agency would otherwise be difficult. Another way DoTH supports local jurisdictions is through the Invest in Cook grant program. Since 2017, Invest in Cook grants have provided nearly \$20 million for 99 bike and pedestrian projects, with over half of those awards going to projects in disinvested and underserved communities.

DoTH's Complete Streets policy requires that pedestrian and bicycle accommodations be considered as part of any roadway reconstruction project on the 568 miles of roadways DoTH owns and maintains. Through this plan, DoTH is providing details on how the County can continue to implement its Complete Streets Policy, like identifying additional path connections to build along County roads.





Cook County's current bike network also offers numerous opportunities for improvement. Existing facilities are often discontinuous or not tied together in a cohesive and complete network. Where facilities do exist, they are not always designed to be comfortable for inexperienced riders. Bicyclists and pedestrians are the most vulnerable users of the transportation system, as evidenced by the recent climb in deaths of bicyclists and pedestrians in traffic.^{1,2} Planning is needed to build bicycle facilities that are safe and comfortable for all users, across all communities, to enhance the experience of those already biking and to encourage new riders.

Biking is a sustainable and low-cost form of transportation and part of a healthy, active lifestyle for many people. Access to quality bike facilities, such as a bike lane or off-street trail, impacts quality of life. The COVID-19 pandemic inadvertently catalyzed a biking renaissance as people discovered how pleasant the world can be with fewer cars on the road, with record rates of bikes purchased and used, in addition to a spike in first time cyclists of all ages. In a survey done for the Bike Plan, 50% of respondents said they began biking more during the pandemic. The plan seeks to build on this momentum.

Summary

Key opportunities for DoTH to help improve conditions for bicycling include:

- Building bike infrastructure along DoTH jurisdiction roadways to make key bike network connections
- Supporting feasibility studies for new off-street trails outside of DoTH right-of-way, followed by funding assistance for feasible projects
- Supporting municipalities as they designate bike routes on residential streets
- Working with partner agencies to make intersections safer for people on bikes, with a focus on locations where bike paths and bike routes cross major roads

To promote equity in plan implementation, DoTH will prioritize working with disinvested communities. This plan's recommended additions to the bike network include 90 miles of new off-street paved trails, 150 miles of new sidepaths and at least 230 miles of new on-street bike routes. Implementing the plan would ensure that 96% of County residents would be less than a mile from a bike facility that is comfortable for nearly any rider. In addition, DoTH and partners would further support biking in the County by:

- Developing new models for improved long-term bike facility maintenance
- Addressing community concerns with new bike infrastructure
- Better integrating our transit system and bike network
- Improving the quality and availability of bicycle data

¹ Badger, E. and A. Parlapiano (2022, November 27). The Exceptionally American Problem of Rising Roadway Deaths. The New York Times. <https://www.nytimes.com/2022/11/27/upshot/road-deaths-pedestrians-cyclists.html?searchResultPosition=3>

² Illinois Department of Transportation. (No date.). 2016 – 2020 Illinois Crash Data Trends. <https://idot.illinois.gov/Assets/uploads/files/Transportation-System/Resources/Safety/Crash-Reports/trends/Trends%202016-2020.pdf>

Cook County Bike Plan Principles

This plan is guided by three principles: increase everyday cycling, create a core low-stress bike network and invest equitably.

Increase Everyday Cycling

Everyday cycling could be increased by making it easier to use a bicycle for a wide array of trips, including shopping trips and work trips in addition to riding recreationally. Over half of daily vehicle trips are less than three miles, a reasonable distance to bike if the appropriate infrastructure is in place.³ A more visible and complete system of bike facilities, complementary to the transit network and connecting to major destinations, is another key to supporting increased everyday cycling. Furthermore, addressing additional needs, such as bike parking and storage as well as bike availability itself, are important aspects of making cycling more convenient.

Create a Core Low-Stress Bike Network

Attracting new riders depends on building and maintaining bike facilities that appeal to riders of all ages and abilities. Bike facilities where users feel comfortable because they have little risk of being hit by a motor vehicle are termed “low-stress.” Those low-stress facilities include sidepaths (a paved shared-use trail adjacent to a roadway), off-street trails, bike routes on low-traffic streets and fully separated bike lanes on major roads. The County surveyed residents for the Bike Plan, where 60% of respondents said they would bike more if they had access to lower-stress bike facilities. Many streets in the County should already be comfortable for most people who bike. However, this comfort may only last for a short distance before encountering a challenging road crossing or physical barrier. Selecting specific, primarily low-traffic residential streets to receive better wayfinding signage and on-street improvements as well as providing connections from them to off-street trails can form the core of a coherent low-stress network. The County can fund studies to overcome major obstacles to create a cohesive network as well as provide funding assistance to local agencies working to expand local trails and on-street routes.

Invest Equitably

The final principle of the Cook County Bike Plan is to ensure better access to bike facilities in disinvested communities, which primarily impacts Black and Latine communities. Inequity in access to bike facilities can partially be attributed to inadequate local funding and staff capacity to make bike improvements in the County’s lower income communities. Throughout the 20th century, transportation infrastructure was used to divide, displace and disinvest in Black, Latine and immigrant communities.⁴

The current availability of high-quality bike facilities is lower for Cook County’s Black and Latine residents compared to County residents overall. For example, DoTH analysis of 2019 American Community Survey 5-Year data indicates that 24% and 28% of white and Asian County residents live within a mile of an off-street trail compared to 14% of Black and Latine County residents. DoTH will actively work to correct these inequities by prioritizing investments in off-street trails, sidepaths and other high quality bike facilities in lower income communities. Also, DoTH will develop new strategies for the long-term, financially sustainable maintenance of bike facilities.

³ U.S. Department of Transportation, Federal Highway Administration, 2017 National Household Travel Survey. URL: <https://nhts.ornl.gov>.

⁴ Glover, Jeremy. “Want to see how dramatically highways changed Chicagoland?” Metropolitan Planning Council, 22 July 2022, <https://www.metroplanning.org/news/10042/Want-to-see-how-dramatically-highways-changed-Chicagoland>.

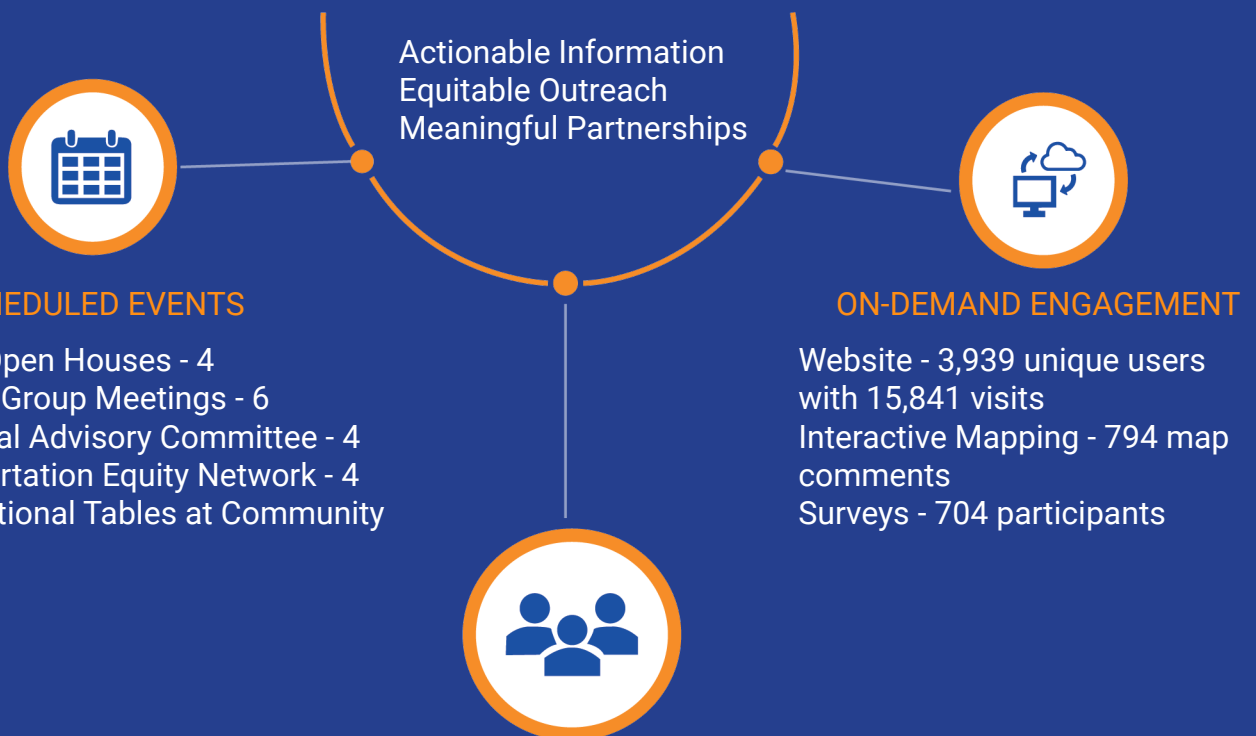
Public Engagement

The principles and recommendations of the Cook County Bike Plan stem from more than a year-long outreach effort to gather feedback from residents. Early on, the project team recognized that it was essential to capture perspectives and voices that were inclusive of all Cook County residents. Historically, very active bicyclists tended to provide the most input on bike initiatives across the region.

The County project team employed multiple strategies to ensure substantial public engagement and input throughout the planning process. DoTH engaged the Transportation Equity Network (TEN), a coalition of community groups focused on transportation equity issues, to describe their experience and share concerns from communities with whom they work. The project team met with TEN at several points during the course of planning to update the group on its activities and validate proposed plan recommendations based on community feedback. In addition, the County held several targeted interest group meetings focused on gender and cycling, environmental sustainability, public health and safety, racial equity and youth.

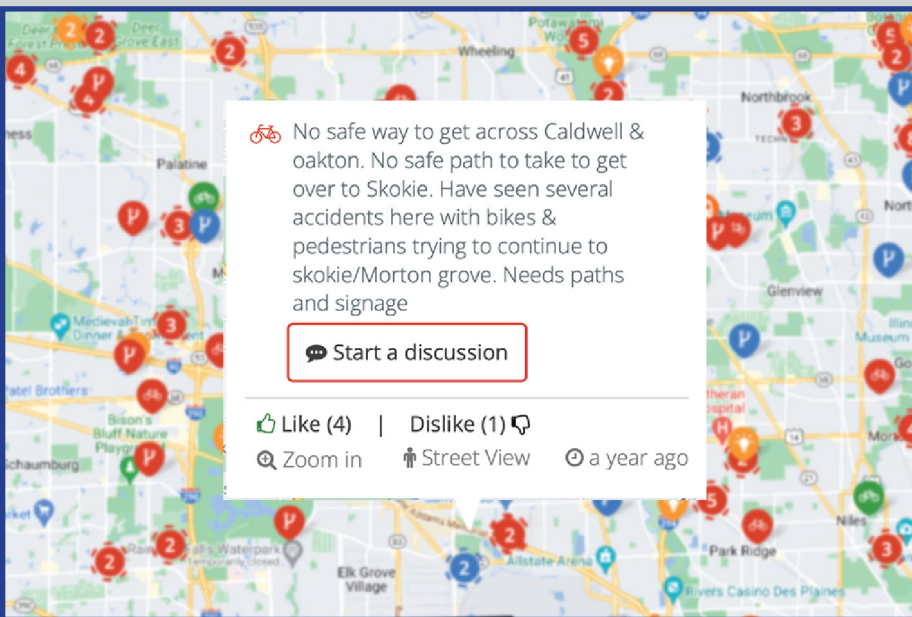
A Technical Advisory Committee (TAC) formed with participants from other transportation agencies and organizations also provided support for the Bike Plan. TAC meetings were conducted nearly every quarter to provide technical insight and guidance. The TAC also helped review presentations and materials for public open houses. The project team conducted four public open houses at critical times to gather feedback near the beginning of the project and to discuss the draft recommendations. Participants included any community member interested in learning more about the ongoing activities and updates from the project team.

COMMUNITY ENGAGEMENT STATISTICS



Public Engagement

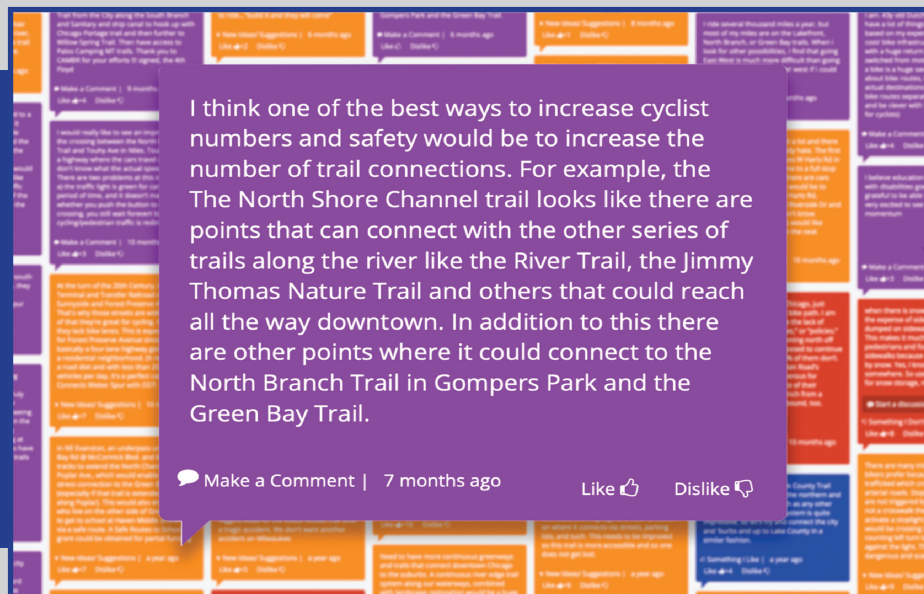
Lastly, the planning process featured several virtual, on-demand opportunities and tools for engagement via the Bike Plan project website. All materials used during engagement events, including videos of the public open houses, were available on the site to facilitate input from interested residents and stakeholders who were unable to join scheduled engagement sessions. An interactive mapping survey allowed web visitors to indicate locations of concern or areas to highlight and address in the Bike Plan. A virtual “ideas wall” also let community members provide thoughts and opinions for further discussion. Finally, project partners could access a digital Community Partner Toolkit to help promote the Bike Plan in their communities.



To keep the public involved and engaged throughout the development of the Bike Plan, the project team developed surveys to gather more feedback on focused topics. The first survey was to gauge how the COVID-19 pandemic impacted cyclists and their views on biking in the future.

The second and third surveys asked participants how often and how comfortable they are riding on different types of bike infrastructure.

These engagement activities led to the refinement of the concepts and recommendations in the Bike Plan.



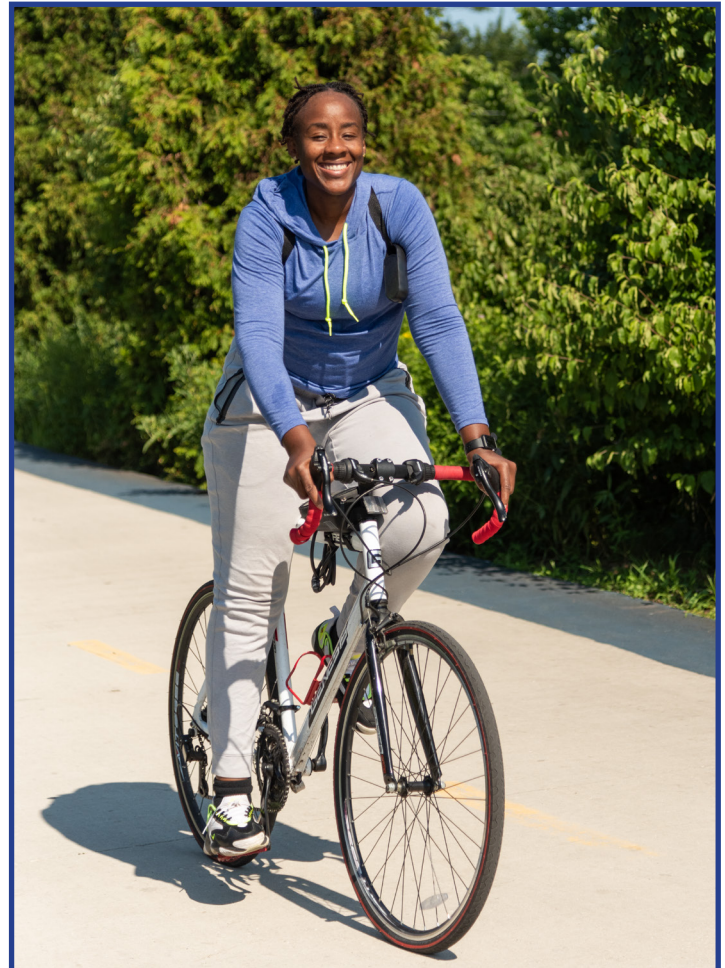
How County Residents Bike

Who Rides and Where

The general lack of data on bicycling and bicycling infrastructure was one of the greatest challenges in developing this plan. To create informed recommendations, DoTH used a combination of available data sources alongside proxy measures for network safety and cyclist behavior. Additionally, DoTH has assembled available data to document existing bike facilities and bike routes throughout the County.

Data is also inadequate to estimate the amount of bike travel and where it occurs. This plan employed a model based on cell phone user data (Replica), records of specific trips recorded by users of apps (Strava) and local bike share user data (Divvy in Chicago and Evanston) to understand network trends. However, because all these data sources are incomplete, DoTH incorporated research about user types and their comfort bicycling in different on-street locations, a common approach in bicycle planning.

Data on the number of people injured while bicycling is also incomplete, necessitating the use of proxy data to make informed recommendations for user safety and best practices. While we do know how many cyclists are killed or gravely injured, less serious incidents are rarely documented. A proxy for this is to classify the relative safety of streets based on the level of traffic, number of travel lanes, the type of bike facilities and other characteristics. Open Street Map (OSM), a regularly updated data source, classifies the level of traffic stress (LTS) of road segments according to a four-category scale, with LTS 1 as the least stressful and LTS 4 as the most stressful. Creating or upgrading bicycle facilities in or along a roadway, such as adding protected bike lanes, improves the LTS score.



Ideal Characteristics of a Cycling Network

Robust. Facilities should be:

- Well-drained so they can be used during and after rains
- Plowed so they can be used in winter
- Open 24 hours

Accessible. Facilities should be:

- Close to residents wherever they live
- Compliant with ADA standards (for off-street trails and sidewalks on residential bike routes)
- Legible to residents, so that they know how to get to the core network and where it goes

Consistent and Connected.

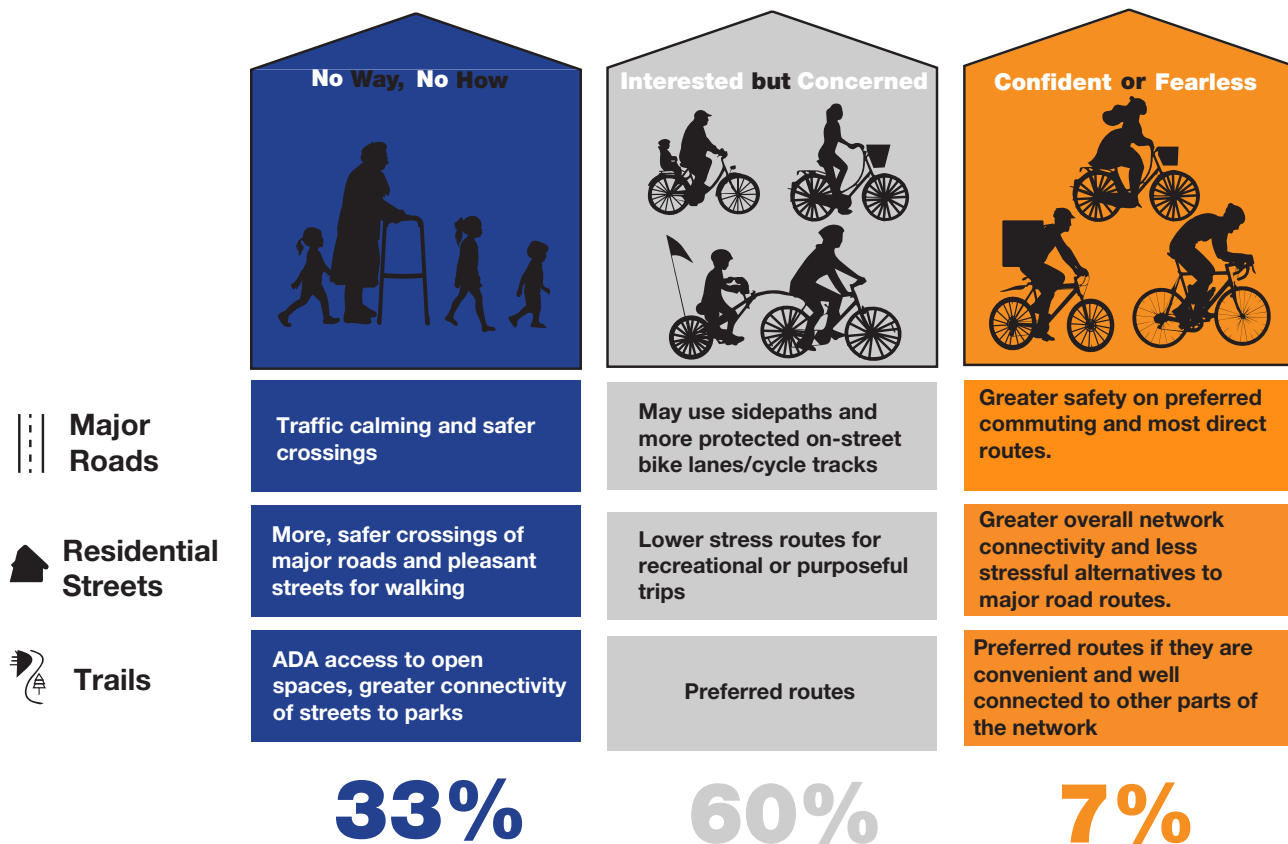
- The physical characteristics of bike facilities and signage should be similar across different jurisdictions and ownership.
- Spurs from the network should connect to neighborhoods or other destinations

Who Rides and Where

Bike facilities can be used by anyone who wants to ride, although different riders may have different preferences. One widely used system to categorize riding styles and preferences divides riders into four groups (Table 1).^{5,6} The “strong and fearless” group is the smallest. Members of this group are willing to bike on all types of roads (up to LTS 4 in the OSM scale) and are the only riders willing to bike on highly trafficked streets without bike lanes. This group also bikes much more frequently for a variety of trips and bikes throughout the year and at night. The “enthusiastic and confident” group bikes for many reasons but will avoid high-traffic streets unless there are bike lanes (up to LTS 3). Users in this group bike less often than the “strong and fearless,” particularly in winter, at night and in bad weather. These first two groups may represent between 7 - 10% of the adult population. For this plan, the “confident” and “fearless” groups are taken as a unit, since their needs are similar (Table 1).

The “interested but concerned” group represents more than half of all adults. These users are much less comfortable biking near cars and primarily keep to low-traffic streets unless there are fully separated bike lanes. This means they would only use LTS 1 and potentially LTS 2 streets. This group bikes mostly for recreation in nice weather and much less often than the first two groups, but with encouragement and expanded bike facilities may ride more. Lastly, the “no way no how” group will not bike under any circumstances and comprise about a third of the population.

Table 1: Percentage of Adults by How They Bicycle (Geller, 2006).



⁵ Geller, Roger. “Four Types of Cyclists.” Portland Office of Transportation, October 16, 2022, <https://www.portlandoregon.gov/transportation/article/264746>

⁶ Jennifer Dill and Nathan McNeil (2013). Four types of cyclists? Examination of typology for better understanding of bicycling behavior and potential. Transportation Research Record: Journal of the Transportation Research Board, 2387(129-138).

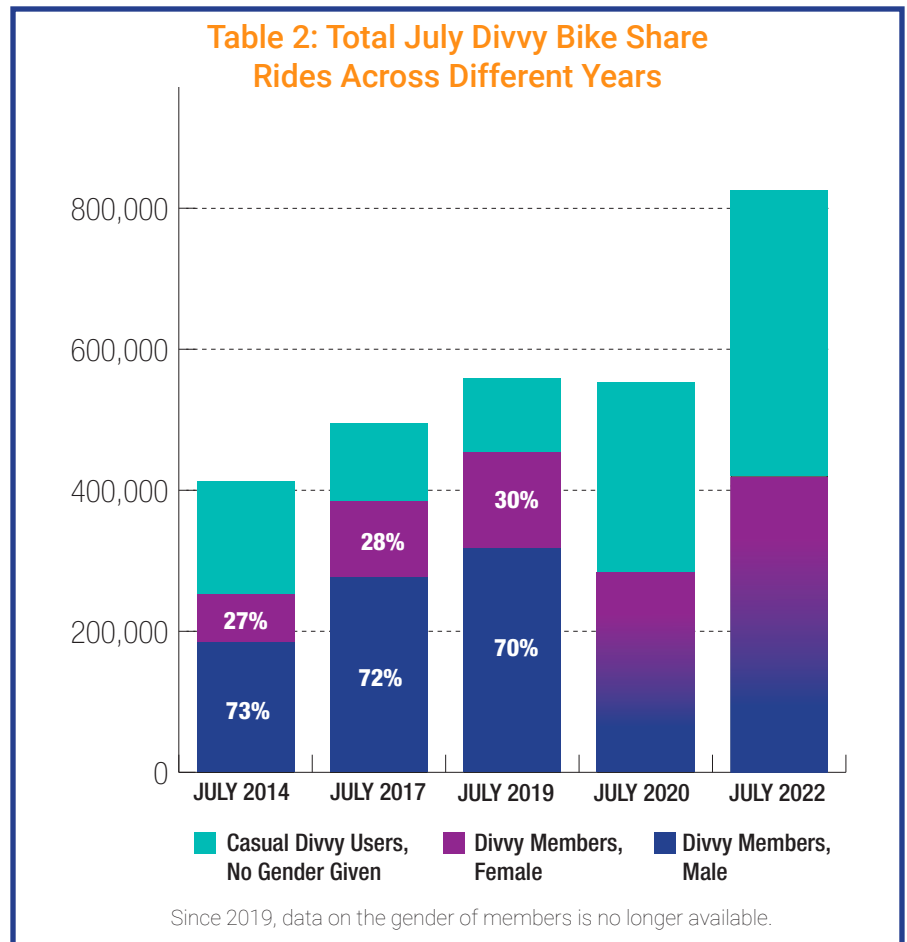
Who Rides and Where

The Cook County Bike Plan focuses on creating low-stress bike infrastructure specifically meant to appeal to the “interested but concerned” group, where there is the greatest opportunity to increase rates of bike use. Low-stress routes are appealing across all ages and abilities, particularly among older and younger riders along with women. Numerous studies have found that women prefer facilities separated from traffic, and the increasing proportion of female Divvy riders likely indicates the impact of new bike facilities on area ridership (Table 2).^{7,8,9}

Low-stress infrastructure benefits other users beyond the “interested but concerned” group. As summarized in Table 1, low-stress trails and sidepaths also serve the “no way, no how” group that does not bike by providing better paths that adhere to the Americans with Disabilities Act (ADA) guidelines and by providing safer crossings of major roads. These can be used by pedestrians and persons in wheelchairs. The “confident or fearless” group also benefits from low-stress bike infrastructure. For instance, off-street trails can be preferred routes for experienced riders, while safety improvements on major roads will protect very confident cyclists.

While data for rates of bicycling are incomplete (particularly compared to auto use), available data can provide insights on patterns of use. Data from the Divvy bike share

program, serving Chicago and Evanston, shows that trips decrease 90% in winter, a constant trend even as the total trips have increased. Between 2014 – 2019, ridership among women members increased steadily in warmer months, totaling nearly a third of all member rides (a possible indicator of safer bicycling conditions). Aside from a slight decrease during the beginning of the COVID-19 pandemic, Divvy rides have increased steadily overall. Non-members are the main users in the summer. Since 2020, data on the gender of members is no longer available. Shortcomings in data require the use of other methods to assess the impact of new bike facilities on different types of potential users as discussed above.



⁷ L. Aitbihiouali and J. Klingen (2022). Inclusive roads in NYC: Gender differences in responses to cycling infrastructure. *Cities*, 127(103719).







⁸ Watt, Anna, (2019, September 6–7). The role of gender and experience in cycling preferences and behavior in the UK [Conference presentation]. Cycling & Society Annual Symposium 2018 Convention, Bristol, United Kingdom. http://www.cyclingandsociety.org/wp-content/uploads/2018/09/3_3-Watt-Cycling-and-gender-presentation.pdf.

⁹ Rachel Aldred, Bridget Elliott, James Woodcock & Anna Goodman (2017). Cycling provision separated from motor traffic: a systematic review exploring whether stated preferences vary by gender and age. *Transport Reviews*, 37:1(29-55).

Who Rides and Where

Rider preferences for different types of bike routes help focus the Bike Plan’s recommendations. According to a 2021 survey conducted by the County, residential streets and off-street trails are the preferred routes by people who bike in Cook County (Table 3). This data aligns with the sentiment of the “interested but concerned” cyclists, who are the majority of riders in the County and the focus of this plan. Providing more off-street trails and expanding bike routes on low-traffic residential streets are key priorities for the Bike Plan. Nearly half of survey respondents ride on major roads for at least short stretches, showing the importance of making these routes more comfortable and safer. Survey data also shows that sidepaths are used less often, likely because of geography. Sidepaths are another low-stress and comfortable route since they are located adjacent to a roadway. Only 10% of County residents live within a half-mile of a sidepath. Expanding options to make sidepaths along major roads more accessible is another key area for the Bike Plan.

Table 3: 2021 Survey: Where do County Residents Bike?

	Long Stretches	Short Stretches	Rarely	Don't Use
 Residential Streets	65.7%	29.7%	4.1%	0.6%
 Off-Street Trails	57.0%	14.5%	25.6%	2.9%
 Major Roads	24.4%	23.3%	32.0%	20.4%
 Sidepaths	19.2%	26.7%	42.4%	11.6%
 Industrial Streets	7.0%	14.0%	49.7%	29.2%
 Alleys	1.8%	7.0%	32.2%	59.1%

Cook County's Existing Bike Infrastructure

Off-Street Bike Trails

A trail is any off-street, multi-use path for pedestrians and bicyclists. Trails are typically within a park or forest preserve and can be used during the day and into the evening. Because off-street trails are closed at night and not plowed in the winter, parallel on-street facilities are at times needed as supplements to assure network connectivity.

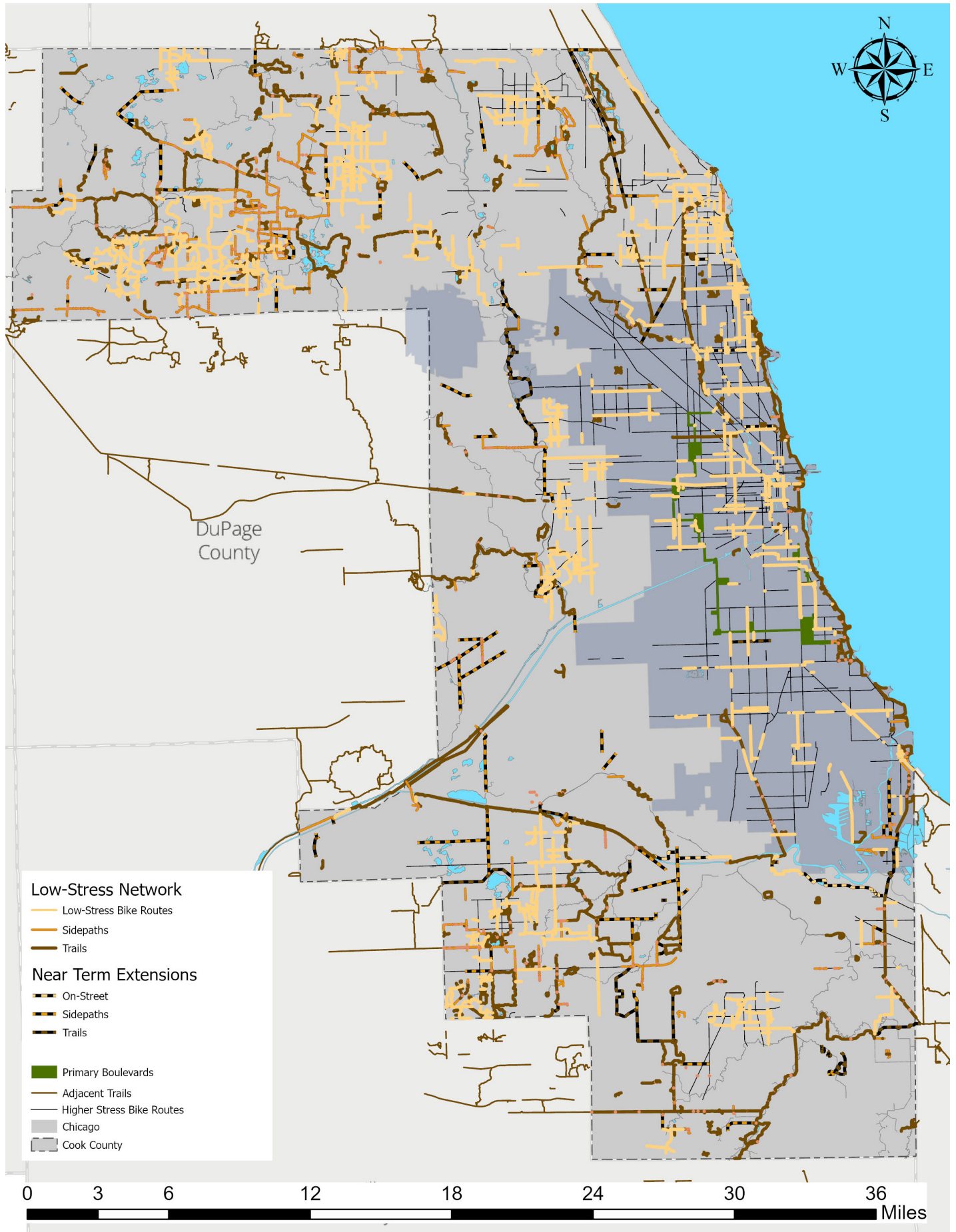
As part of the plan, DoTH documented all off-street trails in the County that are more than one mile long. The team focused on paved trails in order to identify infrastructure that can appeal to the broadest range of adults whether riding a bike or using a wheelchair. Segments of trails that crossed public streets were coded separately. DoTH also gathered information on planned trail segments from the Forest Preserves and other agencies. These segments (included as part of the existing low-stress network in Map 1) are all likely to be built over the next 10 years. Lastly, DoTH documented potential new off-street trail connections, such as through utility corridors and unused railroad rights of way. Further investigation is needed to determine if these sites are feasible for future trail development.

Currently Cook County has over 400 miles of paved trails. The Forest Preserves owns close to 150 miles of trails, followed by the Chicago Park District with at least 67 miles. Some segments of regional trails are on land owned by utilities such as ComEd, Nicor and the Metropolitan Water Reclamation District of Greater Chicago (MWRD). Other regional trail segments are managed by various municipalities, local parks districts or non-profit organizations.

There are more than 320 places where these trails cross County or Illinois Department of Transportation roads, requiring special treatment. These crossings are often under separate ownership and have a different maintenance schedule than the trail itself. Trails with frequent crossings are much less appealing than those with few or no crossings. On the other hand, trails with frequent road crossings are more accessible and can be very useful for commuting and shopping.



Map 1: Existing Low-Stress Network



Off-Street Bike Trails

The marquee trails in the County serve as valuable examples for future trail development. The Chicago Lakefront trail is unique and notable for having separated paths for cyclists and pedestrians (Figure 1). The Cal-Sag Trail is a 26-mile corridor along the Cal-Sag Channel that is being developed through a partnership between several municipalities and park districts. Despite multiple owners, the trail has consistent wayfinding signage using a common brand, helping users locate themselves and identify destinations along the trail. Good wayfinding is essential to helping trails function as a network, yet many other trails do not yet have such well-developed signage.

Adding connections from low-stress neighborhood streets to regional trails advances the goal of integrating trails into the overall bike network. In older communities like Evanston and Chicago, even short segments of trails have greatly increased network connectivity where population densities are high, road crossings are tamed and commercial districts and other destinations are close.

In many cases trails in these communities serve as the connecting links between neighborhoods and local low-stress streets. For example, the Green Bay and Major Taylor Trails exemplify how former rail and active utility corridors can be redeveloped to provide more direct connections than trails in larger parks or forest preserves. In another example, communities along the Cal-Sag Trail have begun to build connections to the trail, such as Palos Hills' short path to connect to Moraine Valley Community College, which was awarded Invest in Cook funding in 2022.

Finally, trails can be extended within existing open spaces, as part of new parks in utility corridors and in property held by public agencies such as the MWRD or the Illinois International Port District (IIPD). These are identified as network study areas in the Recommended Low-stress Network (Map 2 on page 25). Partnerships to advance projects to fill gaps and upgrade existing trail segments are essential.

The Forest Preserves' steady progress on improving the Des Plaines River Trail is an example for communities and organizations across the regional trail system. The Forest Preserves has been working with municipalities along the trail to upgrade the existing path that becomes impassable after it rains and move segments to higher ground while upgrading the surface to meet outdoor ADA standards.



Off-Street Bike Trails

Paved shared use paths are appealing for biking and walking because they are entirely removed from motor vehicle interactions. Pavement needs to be at least 8 feet wide for two-way bike traffic, but more space would make it easier to accommodate larger numbers of people and a wider range of activities.

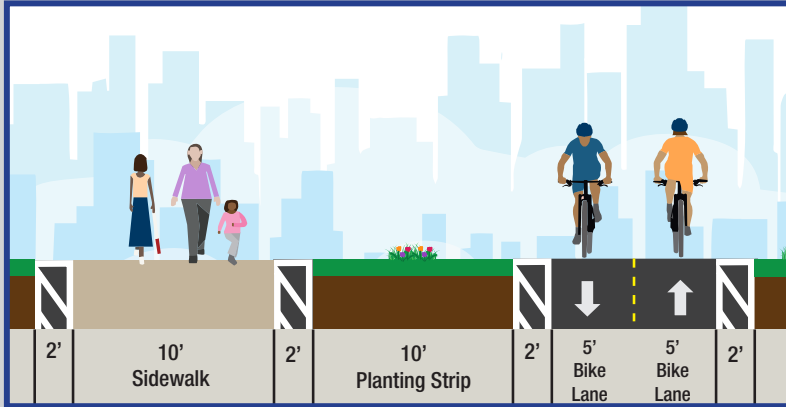


Figure 1: Chicago Lakefront Trail

One of the premier off-street trails in the country, the Lakefront trail is heavily used by Chicago residents and visitors, particularly in warmer months. It is the only trail in the County with separated facilities for cyclists and pedestrians. For residents, the trail is both a recreational amenity as well as a commuting route to downtown Chicago, Hyde Park and other employment centers near the lake.

Figure 2: Narrow Park Paths

While bicycling is allowed in parks throughout the County, the pavement can be too narrow for two-way cycling. Increasing the width of these surfaces and, in some cases, creating separate paths for cyclists and pedestrians in more heavily used open spaces can make parks safer and easier to use.

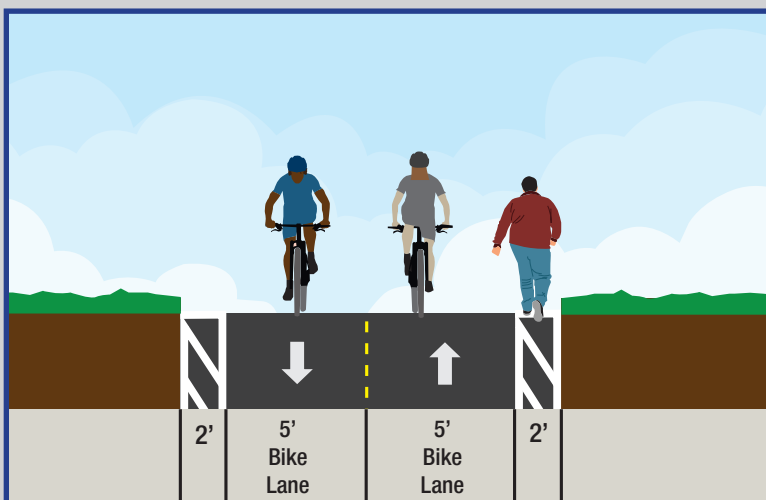
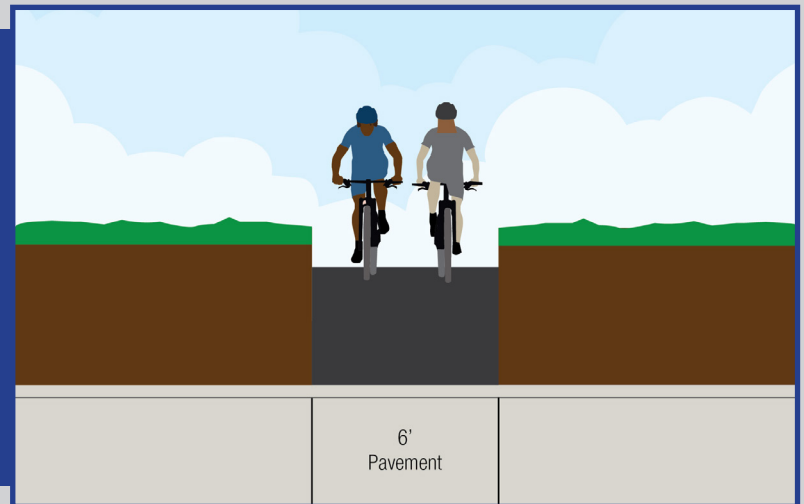


Figure 3: 10-Foot Shared-Use Path with 2-Foot Shoulders

Ten-foot-wide paved trails with 2-foot gravel 'shoulders' on either side are common trail dimensions in the forest preserves and on former rail lines. This allows room for pedestrians and cyclists to pass each other and is more accommodating to larger groups. This is a good size for most off-street trails and sidepaths.

Off-Street Bike Trails

The most stressful part of using an off-street trail is when it crosses a street. The best crossing would go over or under the street, eliminating conflicts with motor vehicles. But most crossings are at the same level of the street. Designing these crossings to take advantage of intersections with existing crossing signals and providing clear directions to users of both the trail and the road makes for safer crossings.



Figure 4: Old Plank Road Trail: Crossing at Western Avenue

1. Where grade separation is not feasible, the safest way to cross may be to take a sidepath from the trail to an existing road with a crossing signal.
2. When crossing a roadway from a trail, a highly visible crosswalk or other infrastructure is ideal.
3. Clearly delineated sidepaths are preferred to sidewalks to ensure cyclists know that they are on the correct path.
4. Sidewalk and bike connectivity on major roads next to trails is crucial. For example, in this case pedestrians have created a dirt path to reach the trail because there is no official sidewalk.



Figure 5: Valley Line Trail: Bridge at Touhy Avenue

1. Providing a bridge at a trail crossing with a major road is ideal to avoid motor vehicles, although some riders may find the uphill ride difficult.
2. By also making a connection to the street below, a trail can function better in a network context and is easier for local residents to access.
3. Connecting bicyclists and pedestrians to a lower-stress crossing with a signal, away from major road intersections and buildings, allows for safer crossings.

On-Street Bike Routes

Bikes are allowed on almost all streets in Cook County, but the official bike network consists of designated bike routes and off-street trails. This includes streets with bike lanes, sidepaths, signed bike routes or streets with shared use lanes indicated by sharrows, which are two inverted V-shapes above a bicycle (Figure 11). In recent years, many municipalities have invested in upgrading bike facilities on existing bike routes. New bike routes tend to incorporate bike facilities into the roadway design from the beginning. Existing on-street bike routes include major roads with sidepaths, different types of bike lanes and shared lane markings, as well as residential streets designed with biking in mind.

According to OSM data, more than 75% of the nearly 14,000 miles of streets in the County are comfortable for most people to bike on (LTS 1) and less than a quarter are high stress (LTS 3 and 4). Despite this, more than half of the 950 miles of existing bike routes in the County are on these higher stress streets. To create a more appealing bicycle network, hundreds of miles of future bike routes need to be designated on lower trafficked streets and by expanding protected bike lanes or sidepaths on major roads all over the County.

Major Roads

Major roads carry the highest volume and widest variety of motor vehicles, including buses and trucks (Figure 9-14). These are often the most direct routes to a given destination and would be more attractive to bicyclists of all ages and abilities to ride if they were made safer and more comfortable. To encourage everyday cycling, local governments should improve existing bike lanes with buffers and add separated bike lanes where they don't exist to provide dedicated space for people on bikes.

Particularly where major roads have been designated as bike routes, investment in safe bicycle accommodations should follow. In more urban parts of the County, the need to accommodate on-street parking, high pedestrian use, bus stops and motor vehicles constrain how much space can be specifically allocated for bicycles. Many times, intersections can be the main source of discomfort and safety for people biking. Designing bike accommodations for difficult intersections should be a priority for any major roadway bicycle improvement and a focus area for DoTH.

Sidepaths warrant special attention because they are often the only way a low-stress facility can be added along a roadway. Sidepaths are classified as low-stress even though segments crossing driveways for shopping centers or office parks are more stressful than segments adjacent to forest preserves or cemeteries. Unlike off-street trails, sidepaths may be plowed in the winter, do not close at night and may have better lighting due to proximity to the roadway. Where there is local support for maintenance, minimal impacts on flooding or wildlife and space in the right-of-way, new sidepaths can be constructed quickly.

There are currently more than 125 miles of sidepaths in Cook County, mostly adjacent to DoTH or IDOT rights of way and along local roads in suburban communities such as Hoffman Estates, Schaumburg or Orland Park. As with off-street trails, DoTH reviewed planned investments. Most sidepaths in the County were added in the past decade and fill gaps in local sidewalk networks.

Major Roads

Examples of sidepaths include Wise Road in Schaumburg, which is one of the longer continuous sidepaths in the County that has good connectivity to north-south sidepaths on either end. It has numerous driveway crossings and a variable width but relatively few major road crossings, some of which, like Roselle Road, have enhanced pavement markings for safety and a stronger sense of place. A sidepath was installed along the north side of Higgins Road in 2021, filling a gap near Plum Grove Road and upgrading an existing sidewalk to encourage biking. The designers paid close attention to the intersection at Plum Grove Road, facilitating a good crossing experience. Intersections are frequently the biggest issue with sidepaths. For instance, there are sidepaths on Meacham and Schaumburg Roads but no marked crosswalks to get across the intersection.

Sidepaths are more common in wealthier, suburban communities. To date, 75% of the sidepath mileage along DoTH roadways has been built in predominantly white, higher income communities. Only 10% of all County residents are within a half mile of a sidepath. While this is partially due to the geography of DoTH's roadway assets, the disparity in access to this high-quality, low-stress infrastructure for Black and Latine communities is inequitable. Planned investments in trails and sidepaths proposed in this Bike Plan will help correct that imbalance, addressing historic patterns of disinvestment.

Allocating space to cycle comfortably along roads with high levels of car and truck traffic and bridges can be very challenging, but it is necessary to create a viable network. This is particularly important where crossing over rails, interstates and waterways funnels all traffic onto a few, widely spaced streets. Because of the time and cost involved in making these investments, agencies including DoTH who frequently implement cross-jurisdictional improvements need to work closely with local communities to ensure that new bike facilities connect to local routes.



Major Roads

The characteristics of major roads change dramatically across the County. In some cases, there may be opportunities to provide separated cycling facilities where space on a major road is limited. In other situations, it may make sense to create a new bike route on a parallel minor street. Widening roads only to add on-street bike facilities is not generally appropriate.

Figure 9: Old Orchard Sidepath

In this case, the wide right of way allows for the sidepath to be far away from the roadway, reducing exposure to noise and pollution from motor vehicles.

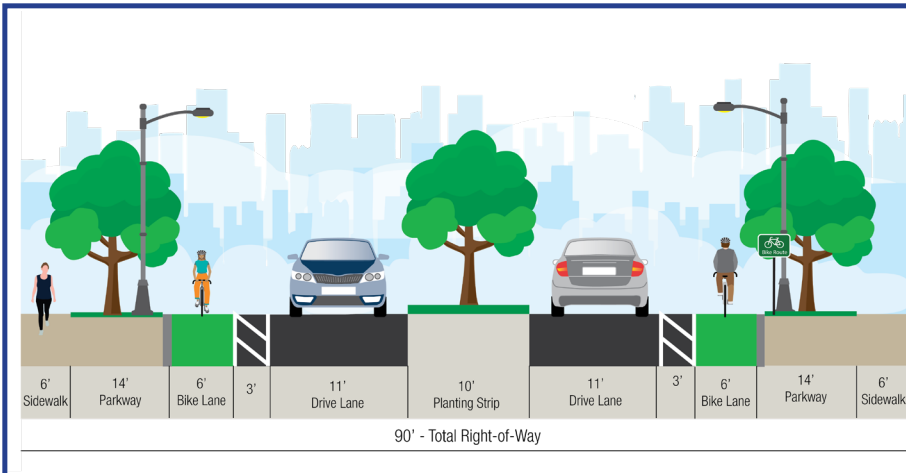
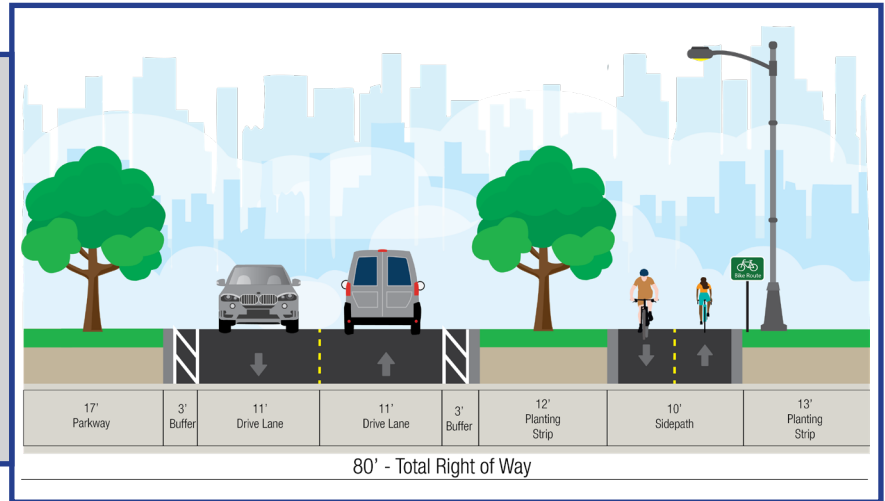
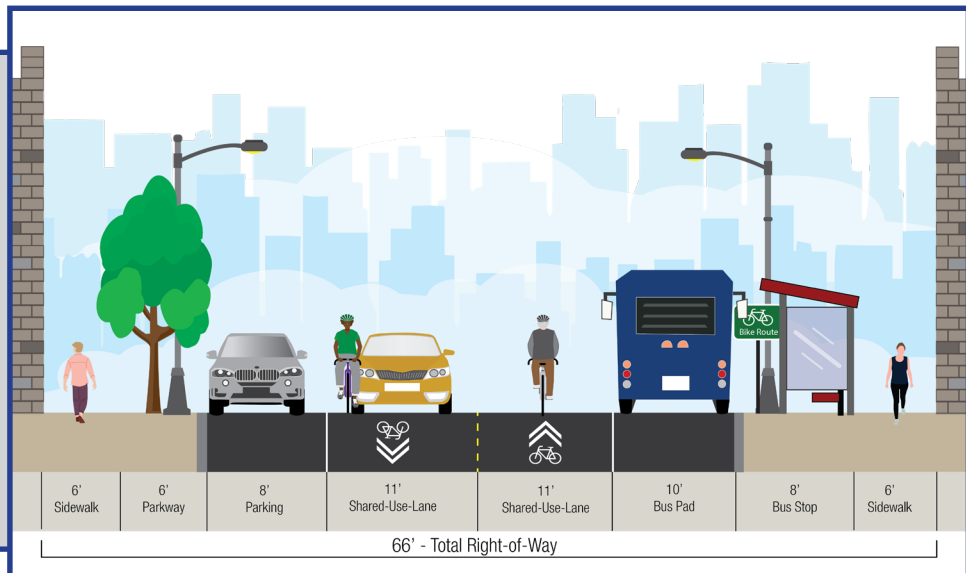


Figure 10: Proposed Crawford Avenue Buffered Bike Lanes

In some situations, the level of motor vehicle traffic on a four-lane road may be low enough to eliminate one of the travel lanes and add bike lanes. Designers balance factors including bicyclist comfort, available right of way, maintenance requirements, and others.

Figure 11: Urban Retail Street

On most urban retail streets, wider sidewalks accommodate street furniture such as bus shelters, outdoor dining and benches. On-street parking makes it difficult to create separate space for bicycles. Parallel routes on minor streets may be needed for the low-stress network.



Major Roads

When bike routes on major roads intersect with other major roads, great care must be taken to accommodate people on bikes while still accommodating the movement of motor vehicles.



Figure 12: On-Street Bike Lanes at Damen/North/Milwaukee

1. Paint and directional guidance help bicyclists navigate complex intersections.
2. In urban areas, intersection designs balance needs for pedestrians, such as large bump outs and sidewalk infrastructure, with the needs of bicyclists, such as having clear sightlines around corners.
3. Space constraints with on-street parking can make it difficult to provide bike accommodations.
4. Urban major roads with retail and commercial uses may result in many delivery trucks and customers double parking in the bike lane, forcing the cyclist to bike in the travel lane.

Figure 13: Sidepath at Roselle and Algonquin

1. Because of their width, dual left turning lanes can be uncomfortable for cyclists. In some cases, signal phasing can allow time for cyclists to cross while no cars are turning.
2. Clearly delineated and consistent sidepaths are ideal on busy roadways.
3. Right turning lanes need to be designed to ensure vehicles slow down to reduce conflicts with crossing bicyclists.

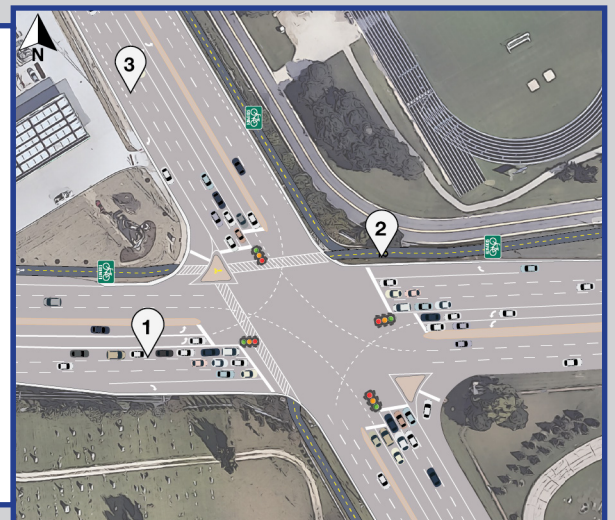


Figure 14: Sidepath at Brainard and Terry

1. Sidepaths are ideal when traveling around major roads where buildings are set back from the street and there is space to add infrastructure.
2. A sidepath on one side of a major road tends to be on the side with fewer driveways and auto oriented uses.
3. Roadways with fewer lanes tend to have shorter crossing distances and fewer cars may create more comfortable situations for bicyclists.
4. Sharrows adjacent to sidepaths create access points to sidepaths and connections to destinations.

Minor Streets

Biking on residential streets can be less stressful than biking on major roads. Survey data collected for the Bike Plan indicated a strong preference by cyclists to bike on residential streets over all other on-street locations, even among experienced riders (shown earlier in Table 3). To make cycling more appealing and comfortable for residents, particularly in the interested but concerned category, municipalities in the County should consider designating bike routes on low-volume, low-speed minor roads. Bike routes like these give riders and drivers direction about the safest routes for riders to take. Although most residential streets are low-stress (and classified as LTS 1 in OSM), adding traffic calming devices to slow or reduce vehicle traffic on these streets, such as traffic circles and cul-de-sacs at intersections, can improve their bike-friendliness. Additional measures may include implementing regulatory changes like lowering the speed limit or allowing cyclists to slow down or yield without stopping when crossing other residential streets.

Most of the low-stress network should be composed of residential streets selected by local communities that smoothly connect to streets in adjacent communities or to trails and sidepaths as available. The development of bike facilities on residential streets is relatively new and municipalities are experimenting with different approaches. These facilities are referred to by different names, most commonly “neighborhood greenways” (the terminology used in Chicago) or “bike boulevards.” Of municipalities in the County, Chicago has had the most experience with them. Examples include portions of Roscoe Street and School Street in the Lakeview neighborhood and part of Rockwell Street in the Logan Square neighborhood. The width of the roadway, the presence of on-street parking, whether car traffic is two-way or one-way, and the level of use by different types of motor vehicles (particularly delivery trucks) all influence the types of improvements that are possible.



Minor Streets

Beyond the new neighborhood greenways, there are many older bike routes on residential streets. Using OSM data on level of traffic stress, there are more than 433 miles of bike routes on low-stress streets (LTS 1 and 2). While they are low-stress, improved signage along these routes, upgrades to crossings at major roads and tactical upgrades to add facilities in higher stress gaps, would increase local awareness and make it easier to navigate these routes for all riders.

Intersection improvements where residential bike routes cross major roads dramatically increase the value of the designated bike routes for pedestrians and people who bike, both of whom are a necessary focus for thoughtful bike planning. Crossings should ideally occur at intersections with signals. Traffic signals can also be enhanced along with modifying the roadway with refuge islands, curb bump outs or raised tables to slow traffic and shorten the crossing distance. At intersections with County roads, DoTH will be a partner to communities in making intersection improvements to support safe biking on residential streets. Another key consideration is coordinating designation of bike routes with adjacent communities to ensure that the routes connect. Residential routes should be designed to connect to the off-street trail network to help riders cross barriers easily.

As mentioned above, most bike routes in the region are currently on highly trafficked major roads (LTS 3 and 4). Creating more routes on selected low-stress (LTS 1 and 2) residential streets or making low-stress upgrades to existing routes will increase the appeal of these improvements to less confident riders. In Chicago and most inner ring suburbs, there are only limited opportunities for new off-street trails. Therefore, the core of a low-stress network in these areas needs to be primarily on-street. A potential starting point for this would be the existing historic park and boulevard system as these wide rights of way and regional parks are strategically located in neighborhoods across large parts of the south, west and northwest sides of the Chicago where few new trails are possible and space for bicycles on major roads is limited.



Residential bike routes have minimal maintenance needs and can be implemented quickly within existing rights of way where there is community and political support. In some places, there may be physical barriers which require significant investments to overcome, but once managed, can significantly improve access and connectivity as part of the bike network. Strategically creating low-stress ways through or around barriers is a necessary part of creating a fully connected low-stress network for the entire region. Combined with trails, there are nearly 800 miles of official low-stress bikeways in the County.

Minor Streets

Many minor streets may have such low levels of car traffic that most people would be comfortable biking on them as they are. Others may be more comfortable with a few small improvements. In a few special cases, new bike infrastructure can be added to take advantage of some streets with wider rights of way and provide important connections within the low-stress network. As much as possible, bike routes should allow people to bike in both directions.

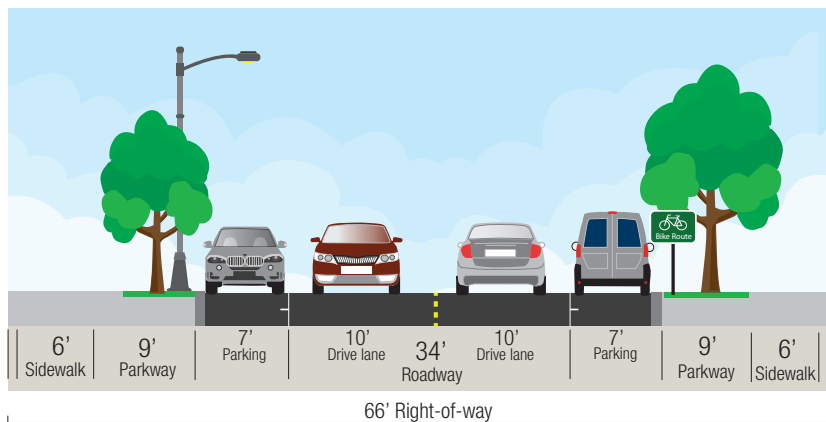


Figure 15: Typical Bike Route on Minor Street

Most people would be comfortable bicycling on two-way streets with parking when car traffic is slow and infrequent. Existing bike routes can be made lower stress by adding traffic calming measures at intersections without changing the road.

Figure 16: Proposed Dickens Greenway west of Oz Park

Many streets in Chicago and older suburbs are one-way for cars which may allow for a median refuge island at intersections with major roads. In a few places, such as Dickens on the north side of Chicago, there is room to add bike lanes in both directions without reducing parking. Similar opportunities exist elsewhere in the County.

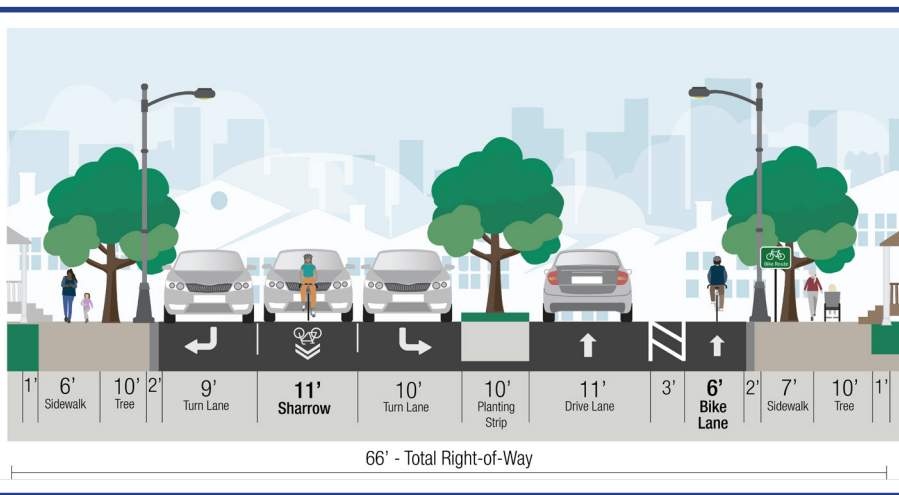
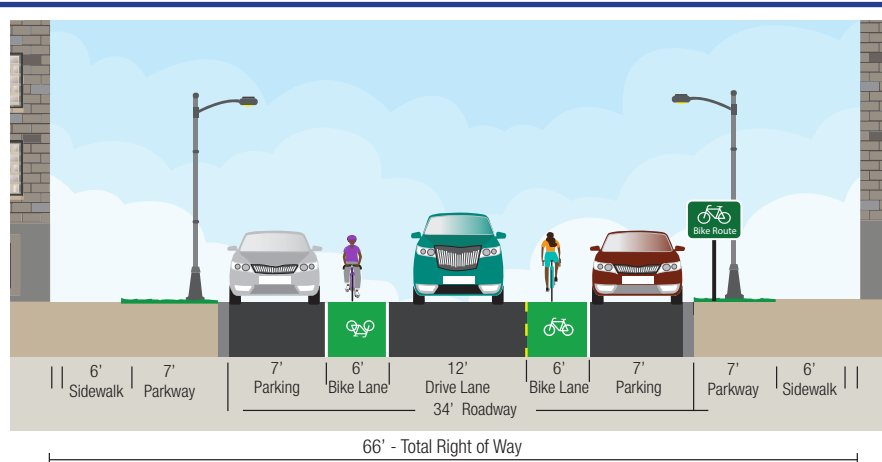


Figure 17: Intersection Approach on a Suburban Collector Street

Many suburban collector streets have much wider roadways and limit on-street parking, allowing for bike lanes to be added against the curb. However, these accommodations may disappear to provide turn lanes where such streets approach major roads.

Minor Streets

Creating safe crossings of major roads is crucial to make them useful and efficient routes for cycling. Making sure that pavement markings provide clear guidance to both bicyclists and drivers is key.

Figure 18: Roscoe Greenway Crossing Broadway

1. At a very challenging intersection like this one between a residential street and major road, a combination of painted and separated bike lanes can make riders comfortable.
2. Improving the visibility of bike lanes using paint can be effective but also requires frequent re-painting to remain visible in segments which cars drive over.

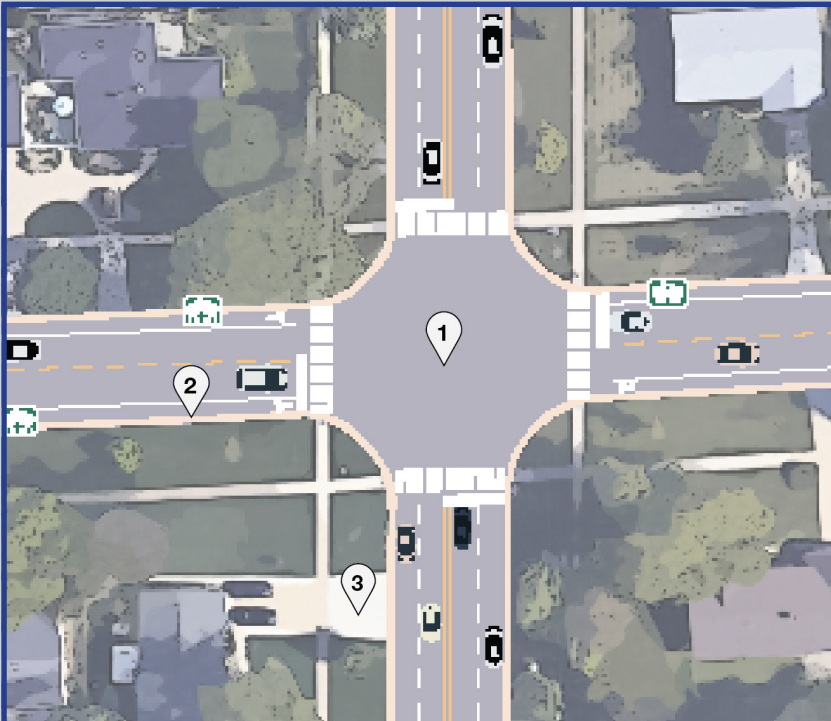
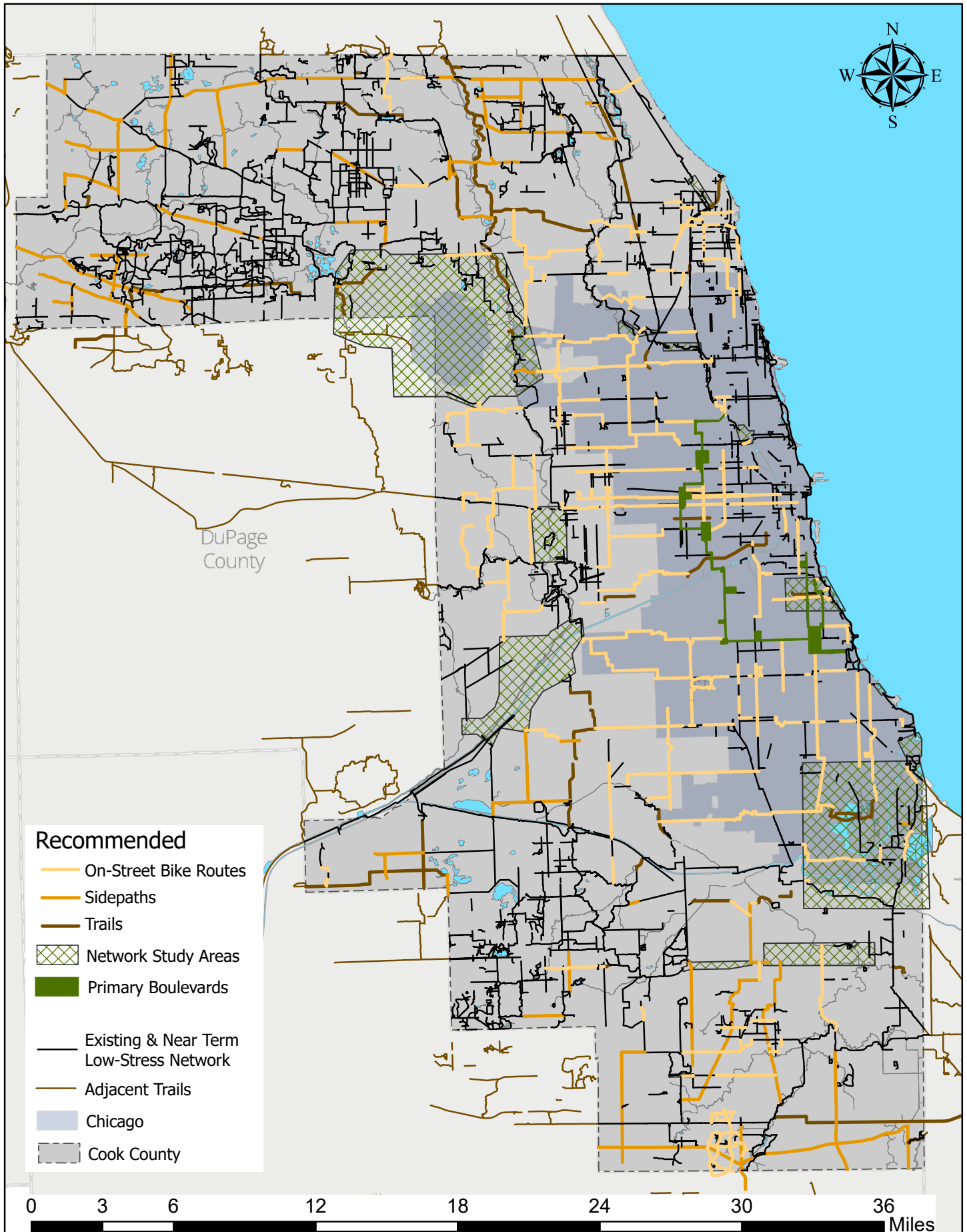


Figure 19: Weathersfield Way and Springinsguth Rd

1. Suburban areas have the space for more spread-out intersections and lane widths, which allows room for bike lanes, but bicyclists may face wider road crossings and higher traffic speeds.
2. Bike lanes are not always continuous and may flex between a dedicated bike lane and a sharrow when the street approaches a major road.
3. Driveways and parking lots can create conflicts between bikes and motor vehicles.

Map 2: Recommended Low-Stress Network



Recommendations

Creating a Connected Low-Stress Network

To create a complete cycling network throughout the County, careful coordination among municipalities, park districts and other regional agencies is required. DoTH's activities in the following four areas will assist in implementing these regional enhancements: creating a connected low-stress network, expanding local networks, integrating bicycling and transit and improving the quality and availability of data.

Research has shown that people would bike more often and for greater distances if there is convenient access to comfortable bike routes. This plan's recommended network, highlighted in Map 2 above, ensures 96% of residents would be less than a mile from low-stress bike routes. The recommended additions to the network include 90 miles of new off-street paved trails, 150 miles of new sidepaths and at least 230 miles of new low-stress on-street bike routes. The mix of these elements would vary across the County, and the alignments are conceptual. Sidepaths and trails will be a major part of the network in northwestern and southern parts of the County. In most cases, providing new on-street routes would be led by municipalities, and before implementation the concept-level routes shown in this plan would require further refinement with local planning and community outreach.



Key elements of the network include all segments of Chicago's primary boulevard system, new trails within utility corridors and more sidepaths, primarily along IDOT and DoTH roads. The plan recommends continued improvements to trails in the County's Forest Preserves. The plan shows specific areas for network studies to determine what combination of sidepaths, trails and new on-street routes would make them accessible by bike. These studies will work with the multiple jurisdictions and impacted communities in each area to determine how to connect across the waterways, railways, interstates, industrial uses and other obstacles to the low-stress network. Several of these network studies are already underway and the remaining will be undertaken in the next several years.

Many smaller gaps in the low-stress bike routes can be closed by upgrading existing higher stress segments, particularly by making improvements at intersections. In other cases, short extensions from trails in parks and forest preserves can make direct connections to on-street routes. These projects combined with improved wayfinding will make the network easier to navigate and access.

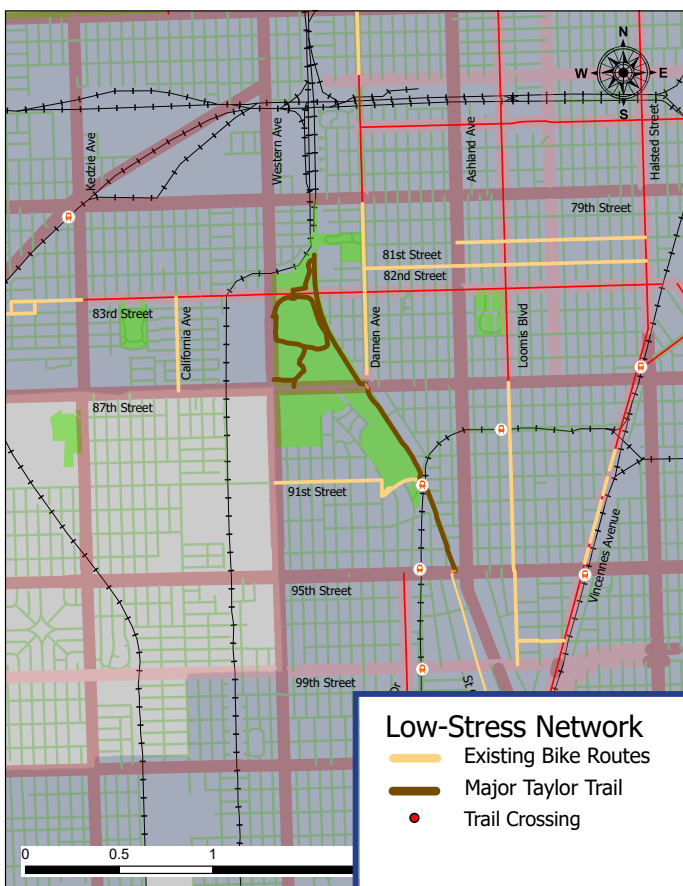
An example of linking off-street and on-street segments into a low-stress network is the area where the Forest Preserves' Major Taylor Trail ends within Dan Ryan Woods north of 83rd Street (Maps 3 and 4). Most of the local bike routes are high-stress, such as Vincennes, Halsted and 83rd Street. Parts of the bike routes on Damen and 83rd are low-stress, but higher stress when crossing major roads like 79th Street. People biking to the Major Taylor Trail can reach it only from 83rd Street and 87th Street, requiring the use of busy roadways to reach a trailhead. Recommended improvements include extending the Major Taylor Trail through Dawes Park to end at 81st and Damen and extending the existing bike route on 81st (which has a traffic signal at Ashland) to connect to the trail.

Creating a Connected Low-Stress Network

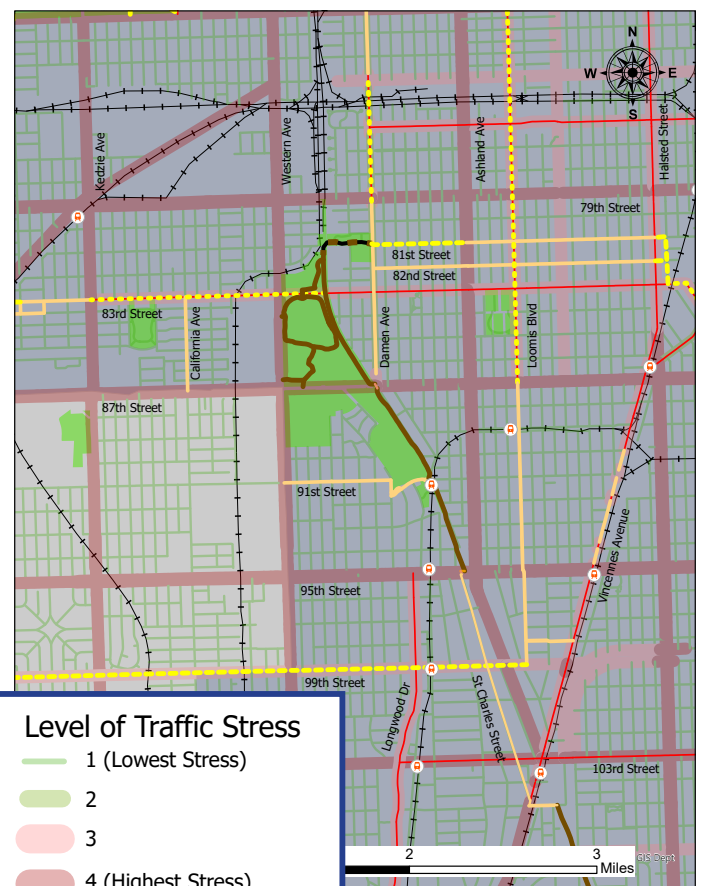
Possible ways to make the area more comfortable for bicyclists would be upgrading bike lanes on segments of 83rd, Loomis and Damen to make them low-stress and creating a new connection between Chicago and the suburbs of Evergreen Park and Oak Lawn on 99th Street. Loomis Boulevard would connect Foster Park in Auburn Gresham to Ogden and Sherman Parks in West Englewood and would connect to the primary boulevard system at Garfield Boulevard. DoTH is working with the Chicago Department of Transportation (CDOT), the Forest Preserves and the Chicago Park District to plan for the extension of the Major Taylor Trail through Dawes Park.

Beyond this example, DoTH can play a key role to support this regional network. DoTH will build new sidepaths and provide other upgrades to bike facilities, such as intersection improvements where bike routes cross DoTH roads. DoTH will lead new bike network studies and trail feasibility studies in addition to working with local agencies to secure funding for implementation. DoTH will continue to support locally led bicycle projects with regional impact through its annual Invest in Cook grant program and to provide technical and financial assistance to many of the park districts and localities expanding bike facilities in the County.

Map 3: Dan Ryan Woods Existing Bike Network



Map 4: Dan Ryan Woods Illustration of Low-Stress Network



Low-Stress Network
 Existing Bike Routes
 Major Taylor Trail
 Trail Crossing

Recommended
 New Bike Routes
 Upgraded Bike Routes
 New Trail in Dawes Park

Level of Traffic Stress
 1 (Lowest Stress)
 2
 3
 4 (Highest Stress)

Higher Stress Bike Routes
 Metra Stations
 Railroads
 Chicago

Expanding Local Bike Networks

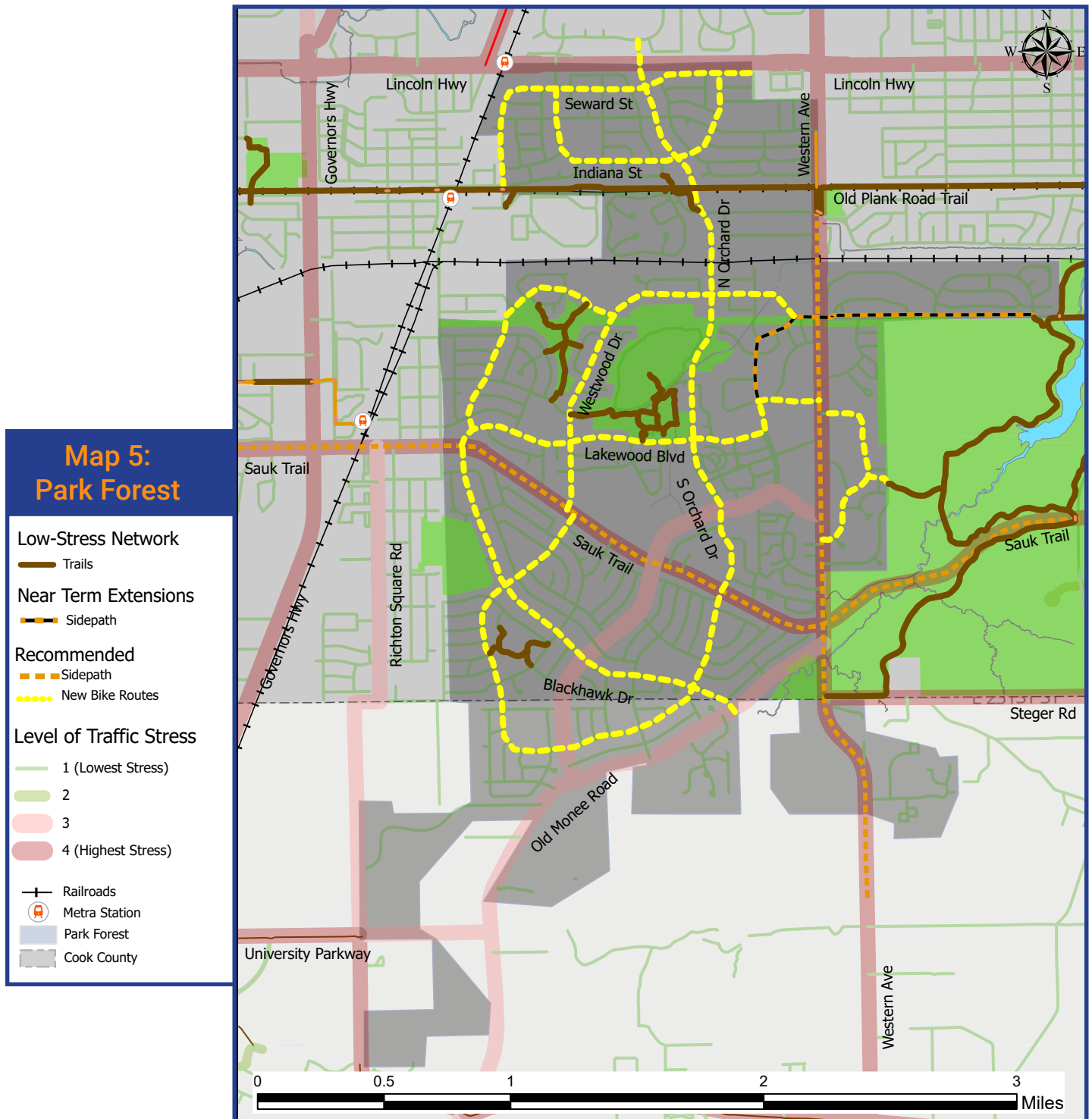
The key to creating a low-stress network is to integrate all network components at the local level. DoTH can support Cook County municipalities as they build out their bike networks in several ways, including through funding new local bike plans and supporting ongoing implementation of existing plans. DoTH can also support upgrades to existing trails in parks and preserves, such as widening or improving connections to local roads, making them more bikeable. DoTH can leverage its own jurisdictional assets to facilitate local network development by making improvements to its own roads where local routes cross them, or where a sidepath or bike lane may be desired. Lastly, the County can ensure that its facilities (administrative offices, courts, and hospitals) are more bike friendly by providing upgraded bicycle storage for employees and visitors while making it easier to bike to and from the local bike network.

Two illustrations of current and potential future cycling networks at the community level are Park Forest and Homewood. With opportunities for a mix of on-street routes, sidepaths, and off-street trails, a multifaceted approach to implementation (Maps 5 and 6) involves creating trails in local parks connected to low-stress routes on local streets and making connections to adjacent regional trails. Routes in Maps 5 and 6 are conceptual with further local planning needed.



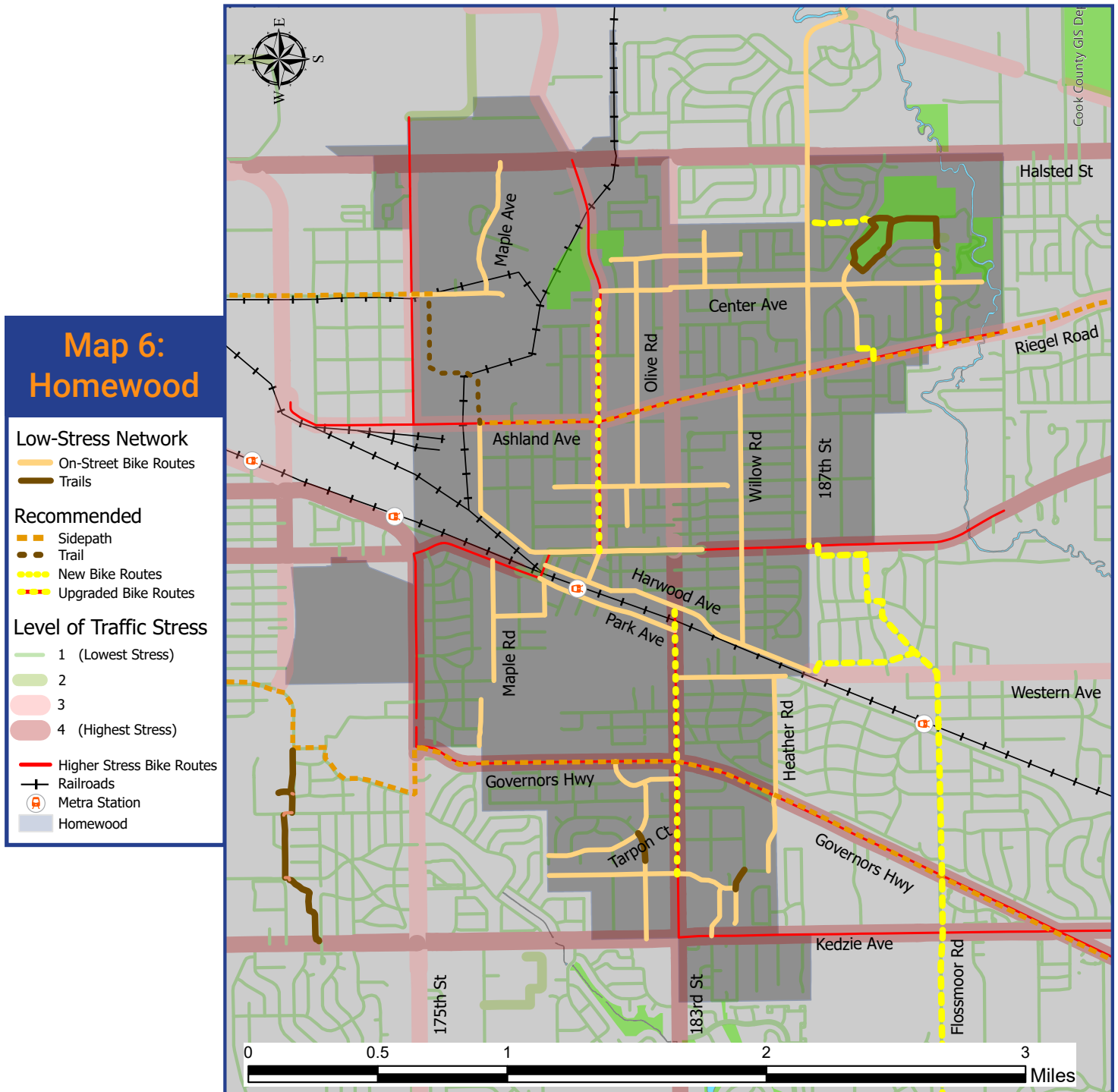
Expanding Local Bike Networks: Park Forest

Planning documents for the Village of Park Forest (Map 5) have identified numerous opportunities to tie a local on-street network into regional trails and sidepaths. Low-stress bike routes on village streets can accommodate local circulation and knit together trails that meander through Central and Winnebago Parks. On-street routes can also connect to the Old Plank Road Trail to the north and Thorn Creek trail system to the east for comfortable longer distance travel. Planned sidepaths, such as along Sauk Trail, could provide connections between neighborhoods and to businesses. Grants from Invest in Cook have helped the Village of Park Forest build out its network. Potential bike improvements such as these in Park Forest provide examples for other communities.



Expanding Local Bike Networks: Homewood

Another illustration of weaving together on-street, sidepath, and trail elements is Homewood. On-street bike routes are prominent in the village's existing network. Few regional trails are nearby, but on-street routes connect to the Thorn Creek system to the east through the Village of Glenwood, illustrating the importance of continuity at municipal borders. Low-stress on-street routes can also connect to paths through parks while sidepaths along major roads can provide connectivity between communities. Routes leading to the Homewood Metra station provide even stronger links between modes and encourage everyday cycling. Homewood also illustrates how regional barriers such as expressways and railroad viaducts shape opportunities to provide bicycle accommodations. Local planning would further refine routing.



Expanding Local Bike Networks: Support Community Priorities

The key to mitigating concerns sometimes raised about where, when and how to expand local bike networks is to put community needs first. Cycling promotes the health and well-being of communities by providing opportunities to be physically active and environmentally conscious. But communities that do not traditionally ride bikes or that are geographically underserved by the lack of bike infrastructure should receive tailored outreach and engagement. Education, encouragement and promotional programs help people of all ages, races, genders and abilities feel more comfortable using the bike network and engaging with the planning process around transportation investments.

In lower income communities, particularly those that have historically received inadequate infrastructure investment, bike facilities are sometimes seen as a signal of gentrification. High profile investments in off-street trails can heat up the market for nearby real estate, making it less affordable for current residents. Moreover, residents may see bike facilities as something that is not meant for them but for someone else, in the belief that existing residents will not use the new infrastructure. This came up multiple times during public engagement sessions for the Bike Plan. Distributing bike facilities equitably and designing them for use by everyone at any ability level can help overcome the potential for bike infrastructure to cause gentrification.

It is best to provide network improvements for cycling in locations where communities want them. Implementing bike facilities in underserved neighborhoods will expand travel choices, increase access to jobs and opportunities and make the distribution of cycling infrastructure more equitable. Bike facilities are only one part of meeting a community's transportation needs. Balanced investment in transit and roads is required as well, so that implementing new bike facilities isn't a lost opportunity for other transportation priorities. As the bike network expands, negative reactions to new bike facilities are likely to diminish over time. Network expansion is best served by making small enhancements to the biking experience, building community momentum, then making larger improvements aligned with local priorities.



Expanding Local Bike Networks: Maintenance

Planning for future maintenance is a crucial element to support local bike network development and keeping up an appropriate level of maintenance systemwide is key to the long-term success of the plan. This includes minor and major upkeep, ranging from trimming vegetation, sweeping and snow plowing to surface repairs or ultimately more significant rehabilitation. Regular maintenance is especially critical for the high-use bike facilities most appealing to all user types such as off-street trails and protected bike lanes, and the multijurisdictional reality of the region's transportation network means that the level of maintenance being performed can vary widely from trail to trail and town to town. With the construction of more bike facilities, as recommended in this plan, more maintenance will be required.



Historically, the County has required communities to contribute to the cost of designing and constructing bike infrastructure along County roads. DoTH recently reevaluated this approach and is changing the way the capital costs of bike facilities are shared with communities. The County will now fund the design and construction of bike facilities along DoTH-owned roadways as part of regular DoTH investments to rehabilitate its roads or as standalone projects identified in this plan. This will help ensure that low-stress infrastructure is built in disinvested communities, which are more likely to have capital constraints that preempt developing their local bike networks. This change aligns with recent state legislation (Public Act 102-0660) that eliminated requirements for communities to contribute to the capital cost of bike accommodations as part of a roadway reconstruction project on an IDOT route.



The issue of maintenance also directly relates to the Bike Plan particularly those that have historically received inadequate infrastructure investment an principle to invest equitably. Historically, DoTH has committed to building adjacent sidepaths or trails only when there is a local partner that can commit to performing ongoing maintenance activities. A lower income community may face financial barriers to accepting associated maintenance responsibilities, potentially preventing a bike facility from being built or kept in a usable condition year-round. DoTH can assist in providing resources to high-need communities to ensure that they are adequately equipped to address long-term, ongoing maintenance of bike facilities on DoTH right-of- way and elsewhere throughout the County.

DoTH should continue refining the maintenance policy for the paths it builds. During preliminary engineering, the eventual maintenance partner should be identified, and memoranda of understanding should be signed with relevant jurisdictions regarding maintenance responsibilities. In higher-capacity communities, the expectation should be that an adjoining local unit of government will take on routine maintenance, including snow removal. Responsibilities for major repairs (such as path reconstruction) will also need to be memorialized and may need to remain the responsibility of DoTH in lower capacity communities. There may not be a single ideal approach, but instead multiple models. These are explored in the implementation section.

¹⁰ <https://www.ilga.gov/legislation/publicacts/fulltext.asp?Name=102-0660&GA=102>

Integrating Bicycles and Transit

Cook County can play a significant role in improving the integration of bicycling and transit infrastructure, which will support everyday cycling. A key part of everyday cycling is recognizing that the bike and transit networks are broadly complementary. Bicycle trips can expand the reach of the transit network by providing connections for the “first mile” or “last mile” of trips. For example, a commuter going to a suburban office park, industrial facility or warehouse may be able to find a reasonably direct transit route yet still have a long distance to walk at the end of the trip. Creating better connections to denser employment clusters near but disconnected from transit (e.g., the southern end of the Illinois Medical District, Loyola Medical Center in Maywood, etc.) will encourage employees to take a non-auto mode to get to work. Cook County and other agencies have explored micro-transit (on-demand services with flexible routing, generally using vehicles smaller than buses) partnerships to cover the first/last mile part of the transit trip, but biking can be a key link as well. Transit stations serving denser employment centers need to have adequate bike parking for those who choose to leave a bike overnight to take the last leg of their trip to work. Expanded bike share programs may also help fill the first/last mile gap. Furthermore, fewer residents bike in the colder months or in bad weather, and transit is the ideal backup for them.

Chicago’s successful Divvy program is currently the largest bike share program in the country and, as of 2022, has expanded to cover nearly the entire city. With its widespread availability and “Divvy for Everyone” equity pricing program, Divvy has put cycling within reach for Chicago. A key objective is to expand bike share to suburban communities, starting in denser suburban downtown areas and near train stations to serve those first/last mile short distance trips. Many models for expansion are possible, such as funding collaborations between groups of municipalities or major institutions in an area with similar characteristics. In 2022, Harper College in Palatine began piloting a bike share program with docking stations on its campus and at the Palatine Metra station. Outside of Cook County, several communities along the Fox River also have developed bike sharing programs through the same vendor. Evanston also participates in the Divvy program. Early research will look for lessons learned among the small number of municipalities that began a bike sharing program in the region but discontinued it.



Employees commuting by bike need to have safe, convenient and ideally sheltered locations to store their bikes at workplaces. The bike storage also needs to be accessible to employees in the evening and not ‘close’ at the end of the workday (even though the parking lot may be open 24 hours). Additionally, changing rooms and showers are important for larger employers. Cook County may have an opportunity to lead by example, not just in encouraging biking among employees, but by ensuring that its numerous facilities directly serving the public are bike-friendly. Beyond this, employers can consider financial incentives to encourage riding, such as a reduction in health insurance premiums.

While bicycling and transit are complementary, it is not always appropriate to try to accommodate heavy use by both people who bike and buses on the same roadway. On a road with high frequency bus service, high traffic volume and tight right of way, adding low-stress bike infrastructure may be difficult. In those cases, a better choice in accommodating bicycles would be to seek lower stress parallel routes wherever possible.

Improving the Quality and Availability of Data

As stated earlier, one thing learned during development of the Bike Plan is that the data on biking and bike facilities need an upgrade. In general, data is much less available for bicycling than for motor vehicles. For motor vehicles there are regularly updated traffic counts for major roads and data on fuel consumption, vehicle registrations, etc. For bicycles, no equivalent datasets are available. Bike count data is sporadically collected by many different agencies using non-standardized methods and not regularly updated. Other data sources are incomplete. The American Community Survey covers only the journey to work, which is likely a relatively small part of overall biking and does not provide route information. Phone apps (such as Strava) that track routes and mileages for bicyclists provide some indication of where bike travel happens but are biased toward dedicated cyclists. It is not currently possible to estimate total bike travel. A bike counting program would address this problem and would help equalize the background information available for biking relative to roadways, which is a key part of increasing the priority of transportation alternatives.

Throughout the development of the Bike Plan, a critical element was to build a better geographic information systems (GIS) database of bike facilities within Cook County. Maintaining and updating this documentation by creating a publicly accessible dataset will ensure that it can be checked for errors by users and that the goals of developing a Countywide network are accomplished. It can also be used to track shared street and bike route designation over time. An additional benefit of maintaining this documentation is the metadata associated with the map, such as ownership of trails, maintenance models and a consistent definition of bicycle facilities throughout the County.



DoTH also worked with the University of Minnesota Access Observatory to implement a model that estimates the number of jobs and other travel opportunities that are available within a certain travel time by bike at an acceptable level of traffic stress. Many novel analyses are possible with this tool that would help target bike improvements to locations where they have the highest impact. Continued support for the tool would benefit the County and region. However, the level of traffic stress as a measurement would benefit from refinement to provide additional gradations and help better characterize which types of riders prefer which types of facilities. These data will help develop a better understanding of the relationships between riders, drivers and the physical environment along with helping improve existing tools to measure trail accessibility.

Actions for Implementation

Creating a Core Low-Stress Network

Based on the recommendations in the previous sections, DoTH has developed a set of implementation actions to ensure that the goals of this Bike Plan can be advanced in a meaningful way and progress can be measured. For each recommendation, DoTH has established a quantifiable objective which will assist in tracking progress.

<p>Action Form community advisory committee in 2023.</p>	<p>Build on the engagement that has taken place for the Bike Plan by forming a community advisory committee to counsel DoTH on the implementation of the plan. This will also allow an open channel with County residents and cyclists to provide targeted feedback on issues in the network and collaborate with DoTH to implement the plan in an equitable manner.</p>
<p>Action Assess at least 10 of DoTH's 150 crossings per year for safety and other improvements.</p>	<p>In conjunction with the agencies that own trails, DoTH should prioritize crossings under its jurisdiction for evaluation and improvements focused on safety. DoTH should also consider updating standards for trail crossings to have common markings and wayfinding signage.</p>
<p>Action Construct at least 15 miles of sidepath on DoTH right of way over the next ten years.</p>	<p>Install sidepaths or separated bike lanes on County-owned/maintained roads (Map 2 on page 25). DoTH will continue to build new bike facilities in its rights of way without requiring financial participation by adjoining municipalities. Building new bike facilities in DoTH right of way will occur as part of regular investment to rehabilitate roads past their useful life as well as by prioritizing areas where the addition of bike facilities will fill gaps serve high cycling demand and benefit disinvested communities.</p>
<p>Action Work with the Forest Preserves on developing a wayfinding toolbox.</p>	<p>Collaborate with the Forest Preserves and other transportation agencies to implement a wayfinding toolbox that gives regional trails in Cook County a common brand identity regardless of trail ownership or management, such as mile markers using a common design along trails, signs indicating mileage to key destinations and signs at crossings indicating the name of the trail and the road being crossed, using the system in place in Lake County as a potential example. This effort may also include improved signs directing pedestrians and people on bikes to trails. Consider making bulk purchases of bike route signs, bollards and other wayfinding elements for use by other agencies in the County.</p>

Actions for Implementation

Creating a Core Low Stress Network

<p>Action Advance 1 – 3 new segment feasibility studies per year.</p>	<p>Prepare preliminary studies with project partners to determine the feasibility, cost and maintenance of potential new low-stress bike connections in utility corridors, along riverbanks in open spaces and other publicly held land. In general, the best new segments to explore are those which are closest to residents, have local support, avoid heavy industrial areas, connect elements in the existing system and serve disinvested communities. Applying these filters, DoTH has identified more than 240 miles of potential new segments within the County (Map 2). Over the coming years, the County will work with local agencies to determine the feasibility of these segments, identify potential funding sources and determine how to maintain these new facilities.</p>
<p>Action Complete one network study every two years.</p>	<p>There are significant physical and jurisdictional barriers to connectivity at many places in the County, including the areas around Lake Calumet, O’Hare airport, along the Stevenson Expressway and the Sanitary and Ship Canal as well as the segment along either side of the Des Plaines River between Madison and 31st Street. These are non-residential locations (cemeteries, port, railroad and industrial facilities) and are mostly inaccessible to pedestrians/cyclists and are barriers to overall connectivity in the bike network. These network studies will work with local communities to create new low-stress off-street and on-street connections to close gaps in the regional network as well as give residents easier access to open space. Studies in disinvested areas are priorities to begin in the near term.</p>
<p>Action Seek opportunities to work with CDOT to identify options for bike accommodations on the boulevard system after completion of the Bike Plan.</p>	<p>The historic boulevard system in Chicago comprises streets that specifically limit commercial traffic and are intended to connect different parks within the city. The boulevards’ width, residential character and connectivity to parks make them potential candidates for residential bike routes, particularly where they include frontage roads.</p>

Actions for Implementation

Supporting Local Networks

<p>Action Complete a study of bicycle and pedestrian needs at County facilities by 2025.</p>	<p>Identify bike facilities at County-owned buildings to be upgraded. Possible locations include hospitals, court buildings and downtown office buildings among others.</p>
<p>Action Continue direct outreach to disinvested and underserved communities for Invest in Cook.</p>	<p>Each year during the Invest in Cook call for projects, DoTH reaches out to lower-capacity and disinvested communities that have not received awards previously to consider project ideas and encourage application. This should continue, also using the Bike Plan to help identify potential projects. More than half of Invest in Cook awards for bicycle and pedestrian projects since the program's inception in 2017 have been for disinvested communities.</p>
<p>Action Starting in 2024, work with at least two communities per year to designate neighborhood street bike routes, including implementation of intersection treatments.</p>	<p>Developing a connected system of residential routes is a crucial element in building out a Countywide low-stress bicycle network. A key role for DoTH besides funding and technical assistance is capital improvements at intersections with major roads to lower traffic stress, including implementing a standard set of intersection treatments to give riders a predictable riding experience on residential routes. Disinvested communities lacking any bike routes and that have crossings of major County roads are early priorities for implementation.</p>
<p>Action Work with bicycle organizations to sponsor community engagement activities starting in 2024 - 2025.</p>	<p>Consider promoting community organization-led rides via County communication channels and consider contributing to bicycling encouragement programs led by community organizations that offer incentives such as bike giveaways and other bike themed items.</p>

Actions for Implementation

Supporting Local Networks

<p>Action Work with CDOT, suburban municipalities and advocacy organizations to further support bike outreach programs starting in 2024 - 2025.</p>	<p>Consider addressing issues of education and barriers related to bicycling by expanding bike ambassador programs in partnership with advocacy groups and municipalities.</p>
<p>Action Prepare individual studies identifying needed connections in the north, northwest, west, southwest and south portions of the County between 2024 and 2027.</p>	<p>Identify locations where local connections are needed from regional trails into neighborhoods or major institutions like colleges or employers, then initiate project development at the highest priority locations. Criteria would include places where there are already unpaved, unofficial trail connections and where use is expected to be highest, with a focus on underserved communities.</p>
<p>Action Continue refining maintenance policy and working with partners to ensure adequate maintenance for bike facilities.</p>	<p>DoTH should continue refining the maintenance policy for the paths it builds. Models for assisting lower-capacity and disinvested communities with maintenance include:</p> <ul style="list-style-type: none"> • Working with agencies such as the Chicago Cook Workforce Partnership to create maintenance crews for trails of regional significance • Financially supporting local, community-led organizations to collect trash, remove leaves and manage adjacent landscaping and otherwise fostering the development of nonprofits to serve as the maintainers for specific trails or trail segments • Collaborating with other Countywide units of government that work interjurisdictionally, such as the Forest Preserves and the MWRD, to identify and respond to regional maintenance needs • Exploring shared services arrangements with councils of government in Cook County for municipalities to jointly procure bike facility maintenance equipment and services • Providing funding to the adjoining unit of government to carry out maintenance • Directly handling maintenance responsibilities with DoTH crews in select instances

Actions for Implementation

Integrating Bike and Transit Networks

<p>Action Starting in 2023, conduct outreach to councils of government and major institutions to assess opportunities for bike share expansion.</p>	<p>Work with partners to expand bike share beyond Chicago, using criteria such as population density, proximity to train stations and bus stops, access to major destinations and proximity to the bike network. DoTH should discuss expansion options with the City of Chicago as well as clusters of suburban communities and consider docking stations at County facilities.</p>
<p>Action Complete a study of bike/transit connections in the County by 2026</p>	<p>Review the availability and functionality of bike racks and bike share facilities at train stations and higher ridership bus stops in the County, including a particular focus on CTA stations within interstate medians. This study should also examine the proximity of low-stress bike infrastructure to stations and high-ridership bus stops to make recommendations on improving these bike/transit connections.</p>
<p>Action Propose approach for including parallel streets in preliminary engineering on a relevant project initiated in 2023 - 2024.</p>	<p>Pilot an approach to complete streets during preliminary engineering for a roadway project in which one or more alternatives for bike accommodations use low-traffic parallel streets. This may include investigating partnerships with communities in the project area to fund upgrades to those parallel streets as well as collaborating with IDOT on an appropriate environmental review process.</p>

Actions for Implementation

Improving Data Availability and Quality

<p>Action Starting in 2024, develop a plan for a counting program and implement starting in 2025.</p>	<p>A holistic Countywide bike counting program would be designed to include regular counting on routes with high bicyclist use that could potentially enable interested parties to rent out the equipment for projects on an as-needed basis. The program would count bikes on County routes but would not be restricted to County routes. This program would provide a representative estimate of bicycling activity that accounts for variables such as weather, day of week, etc. The data would also be used in future bike facility planning. A multi-agency partnership would be ideal for collecting count data and could potentially spread to other counties as well.</p>
<p>Action Regularly update Cook County bicycle facility layer.</p>	<p>Regular updates to the GIS data indicating bike facility types as well as which elements of the on-and off-street system comprise the low-stress network can serve both as a tool for trip planning and help guide future investments. DoTH would ideally partner with the Chicago Metropolitan Agency for Planning, IDOT and other agencies to update the inventory.</p>
<p>Action Explore partnerships to maintain and use the access tool following publication of the Bike Plan.</p>	<p>A long-term home for the access tool is needed to ensure that it receives updates, that the data needed to run it are kept fresh and that staff are available to run the model. DoTH intends to work with partners such as the Chicago Metropolitan Agency for Planning to maintain the access tool.</p>

Conclusions and Next Steps

There are many benefits of increased cycling including improved public health, reduced greenhouse gas emissions and giving residents more choices in how they get around. The vision of this Bike Plan is to improve the existing bicycle infrastructure to encompass everyday cycling, develop a complete low-stress network that can attract riders of all ages and abilities and provide equitable access for communities throughout the County.

One global lesson from the bike planning process is that coordination among organizations working on bike initiatives needs to be more intentional. Even the actions DoTH can take directly to implement the Bike Plan require coordination with other agencies. Due to the number of agencies involved in bike facility development and the interconnectivity of ownership, coordination can be challenging, resulting in gaps in the network. To ensure agencies are learning from each other and working collaboratively to fill the gaps, DoTH and other partners can explore several initiatives, such as an annual bike planning conference for the region's agencies and stakeholders looking to develop bike facilities as well as making interagency one-on-one coordination meetings more regular.

The recommendations in the Bike Plan focus on the built environment as well as support for organizations that want to encourage cycling. In the end, some improvements to the cycling experience can only come legislatively. There may be a role for the County to take a proactive stance on certain issues, such as driver's education requirements to include updated information on how drivers interact with cyclists in the interest of safety or on programs to encourage everyday cycling, such as a commuter benefit program at the state level.

As the bike network is built and conditions evolve, new possibilities will arise. DoTH envisions refreshing the Bike Plan in the coming years to review progress and capitalize on emerging opportunities. DoTH will use this plan to guide the use of the County's rights of way, funds, and expertise to implement equitable improvements that make it better for those already biking and encourage people interested to begin. Creating and implementing this plan helps make Cook County a better place to live, work and visit.

