

# Chicago Streets for Cycling Plan 2020

Department of Transportation





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Dearborn Street





## OFFICE OF THE MAYOR CITY OF CHICAGO

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www.cityofchicago.org • @chicagosmayor

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### Dear Fellow Chicagoans,

Bicycling is an integral part of Chicago's transportation system. Every day, thousands of people bike on our streets, whether it is to ride to work, to the store, or for recreation. As we grow as a city, it is imperative that our streets include safe bicycle infrastructure that encourages all residents - young, old and in between - to ride their bike. Bicycling is a reliable, fast, affordable, healthy, and fun form of transportation. Developing this infrastructure will improve the quality of life for all Chicagoans and will catalyze economic growth in the neighborhoods throughout our City.

My vision is to make Chicago the most bike-friendly city in the United States. The Streets for Cycling Plan 2020 helps bring this vision to reality by identifying a 645-mile network of on-street bikeways that will encourage all Chicagoans to ride their bikes. Over the next few years, we will build more protected bike lanes than any other city in the country, redesign intersections to ensure they are safer for bicyclists, and improve hundreds of miles of residential streets for bicyclists, pedestrians, and the people that live on them.

Best of all, these improvements do not just benefit bicyclists. They also benefit pedestrians, transit users, and motorists by making our streets safer. They will be safer because pedestrians and motorists will have a better knowledge of where and when to expect to see bicyclists.

I look forward to riding along with the Department of Transportation and the citizens of Chicago as we implement this plan and transform into the most bike-friendly city in the country.

Sincerely,



**Rahm Emanuel**  
Mayor





# DEPARTMENT OF TRANSPORTATION CITY OF CHICAGO

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## Dear Friends,

Making our streets safer for bicycling will benefit all Chicagoans. Everyone should have the opportunity to ride and feel safe on our City's streets, from an eight year old just learning to ride their bike to an eighty year old who rides to the store. However, the only way we can accomplish this is to build bicycle infrastructure that makes them feel safer and more comfortable.

The Streets for Cycling Plan 2020 bikeway network connects neighborhoods and destinations throughout Chicago. When complete, we will have hundreds of miles of barrier and buffer protected bike lanes, traditional bike lanes, neighborhood greenways, and additional innovative treatments that will create safer streets for bicyclists, pedestrians and motorists.

This Plan was developed through a partnership between the Department of Transportation and the citizens of Chicago. Chicago is a city of neighborhoods, and the people that know each neighborhood best are those that bike, walk, and drive them on a daily basis. We are incredibly thankful to all who shared their thoughts, experiences, and vision for bicycling in Chicago with us.

This proposed 645-mile bicycle system will run throughout Chicago's neighborhoods. The overall system consists of three smaller systems: Neighborhood Bike Routes that utilize residential streets, Crosstown Bike Routes that use collector and arterial roadways, and Spoke Routes that connect all corners of the City to Downtown. Once the network is complete, all Chicagoans will be within 1/2 mile of a bicycle facility.

I look forward to implementing this plan and making Chicago the best city for bicycling in the United States.

Sincerely,



**Gabe Klein**  
Commissioner, Department of Transportation

# introduction

Bicycling will play a critical role in Chicago's economic future. It will help current and future residents traverse the City and attract new employers. Making bicycling safer and more convenient will increase bicycling activity which will have positive impacts on the quality of life for the people of Chicago, including:

- Improved physical health
- Reduced transportation costs
- Increased economic development

Chicago's Streets for Cycling Plan 2020 sets forth a bold blueprint to implement Mayor Rahm Emanuel's vision of a world-class bike network in Chicago: the best big city for bicycling in the United States. The Plan identifies a 645-mile bike network of innovative bikeways that will allow all Chicagoans, from eight years old to eighty and beyond, to feel safe and comfortable bicycling on city streets.

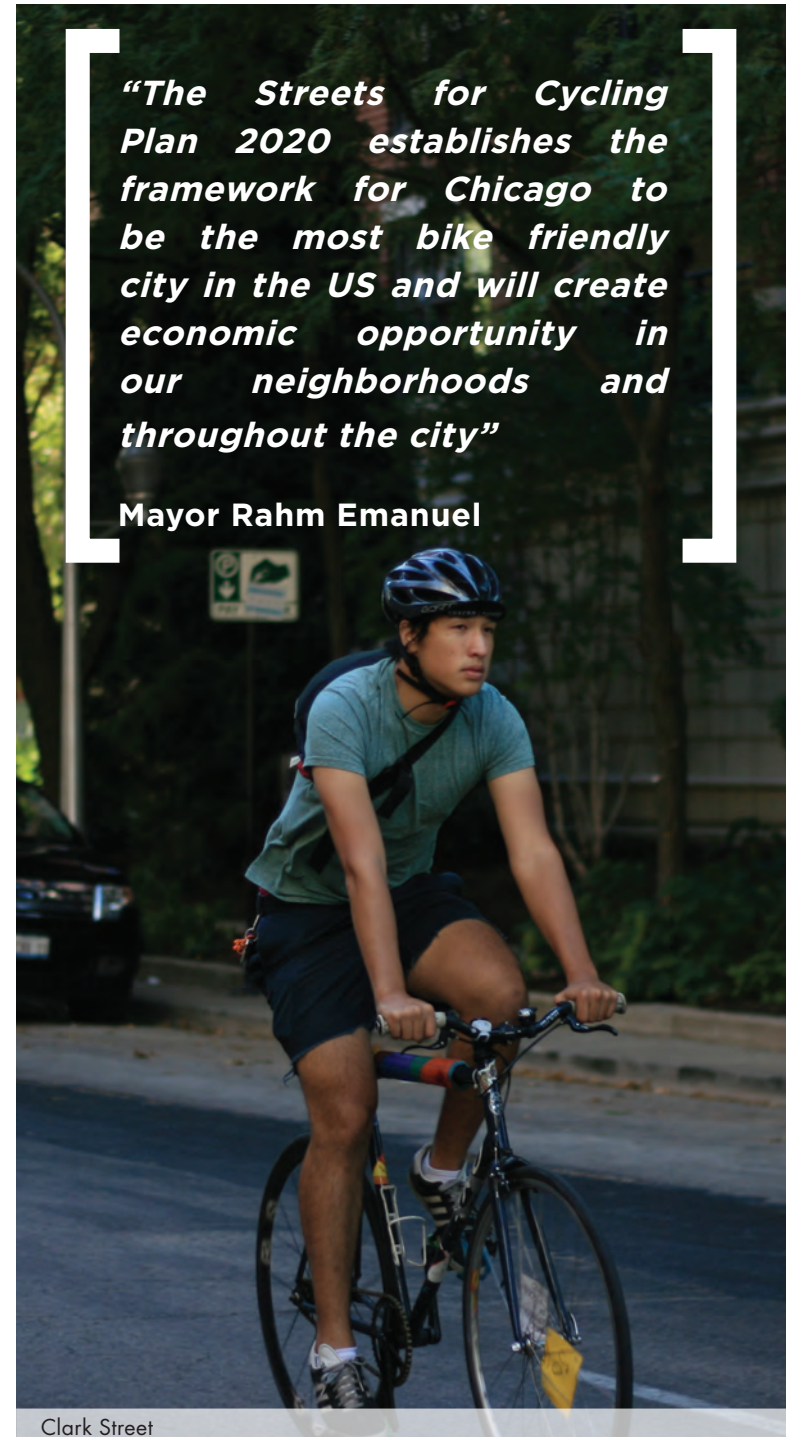
The Plan's network was developed using three guiding principles:

- Provide a bicycle accommodation within  $\frac{1}{2}$  mile of every Chicago resident
- Provide a greater number of bikeways where more people live
- Increase the amount of infrastructure where ridership is high, while establishing a strong backbone of infrastructure where ridership is currently lower, but has the potential to grow

A robust public outreach process was conducted, including citywide public meetings and community advisory groups. The recommended network builds on Chicago's existing on-street bikeways, which are discussed in the next section.

***“The Streets for Cycling Plan 2020 establishes the framework for Chicago to be the most bike friendly city in the US and will create economic opportunity in our neighborhoods and throughout the city”***

**Mayor Rahm Emanuel**



Clark Street





# bicycling in chicago NOW

The City's current bicycle accommodations include over *200 miles* of on-street bikeways, 36 miles of trails, and more bike parking (over 12,000 racks) than any other city in the United States. The City has also completed a number of successful education, encouragement, and enforcement programs for bicyclists. Bike share will launch in 2013 with 3,000 bikes and 300 bike stations and grow to 4,000 bikes and 400 stations shortly thereafter. These investments, along with social, economic and environmental factors, have led to a tremendous increase in bicycling throughout Chicago over the past decade.

Chicago has also long been recognized as one of the top cities for bicycling in the United States. In 2001, Bicycling Magazine named Chicago the Best Big City for Bicycling in the U.S. and in 2012, again recognized Chicago as the 5th most bicycle-friendly city of all cities with more than 95,000 residents. Mayor Rahm Emanuel has committed to creating streets that are safe and comfortable for bicyclists of all ages and abilities and making Chicago the most bicycle-friendly city in the country.

This ongoing commitment has led to the percentage of bicycle commuters in the City of Chicago more than doubling between 2000 and 2010, from 0.5% to 1.3%. While this percentage is higher than New York (0.8%) or Los Angeles (0.9%), it is less than other cities such as San Francisco (3.5%) and Portland (6.0%). A crucial element to increasing bicycling in Chicago, both among commuters and others, is to provide facilities that make more people feel safe riding on the street.



Dearborn Street

1963  
Lakefront Trail officially designated as a bike path

1991  
Mayor's Bicycle Advisory Council created

2001  
Chicago ranked as the best city for bicycling among cities over 1 million people

2006  
Bike 2015 Plan released

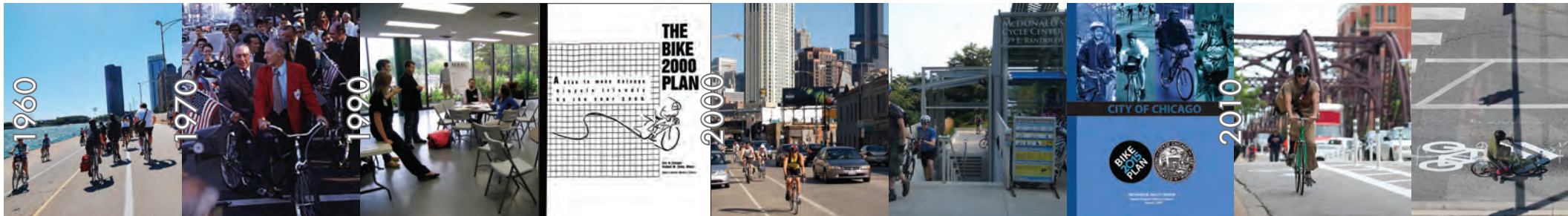
2012  
Chicago is ranked as the fifth best United States city for bicycling among cities over 95,000 people

1971  
First on-street bike lane in Chicago

1992  
Bike 2000 Plan released

2004  
McDonald's Cycle Center opens

2011  
First barrier protected bike lane installed on Kinzie Street





# 1 Previous Plans

This section describes Chicago’s previous bike plans as well as recent initiatives by the current administration that address bicycling.



## Bike 2000 Plan

Chicago’s first bike plan, the Bike 2000 Plan, was adopted by the Mayor’s Bicycle Advisory Council (MBAC) in 1992. Though the plan did not recommend a specific network of bicycle accommodations, its key recommendation was to “develop a network of a minimum of 300 miles of bikeways” including on-street bike lanes, signed routes, wide curb lanes, and shared-use trails. This plan focused primarily on the installation of on-street bikeways and included several strategies to leverage support, including funding, staff, and the development of the Chicago Bike Map.



## Bike 2015 Plan

The Bike 2015 Plan, approved by MBAC in 2006, is Chicago’s vision to make bicycling an integral part of daily life. The plan recommends projects, policies, and programs over a ten-year period to encourage bicycling throughout the city. To date, CDOT and its partner agencies have implemented or are currently implementing close to 100 of the 150 strategies in the plan. The Streets for Cycling Plan 2020 will complement the Bike 2015 Plan and help reach the goals of increasing the number of trips made by bicycle and reducing the number of crashes involving bicyclists.



## Mayor Emanuel's Chicago 2011 Transition Plan

The Chicago 2011 Transition Plan includes 55 initiatives to promote growth and increase safety throughout Chicago. These initiatives include “creating a world-class bike network and increasing cycling” by installing 100 miles of protected bike lanes by 2015 and other innovative bike accommodations that encourage all Chicagoans to ride a bike, to “improve street safety using engineering solutions that will reduce street fatalities and injuries significantly”, and implement a “large scale bike share program”.



## Chicago Forward

In May 2012, CDOT released its two-year action plan, Chicago Forward. It established the goal of making Chicago the best big city in America for bicycling and walking and also incorporated the action items of installing 100 miles of protected bike lanes by 2015, installing an additional 10 miles of bike lanes each year, installing 10 miles of neighborhood greenways by 2015, and launching bike share.



# 2 Existing Bicycling Conditions

The Bike 2000 Plan and Bike 2015 Plan have been instrumental in developing Chicago's existing network of on-street bicycle accommodations.

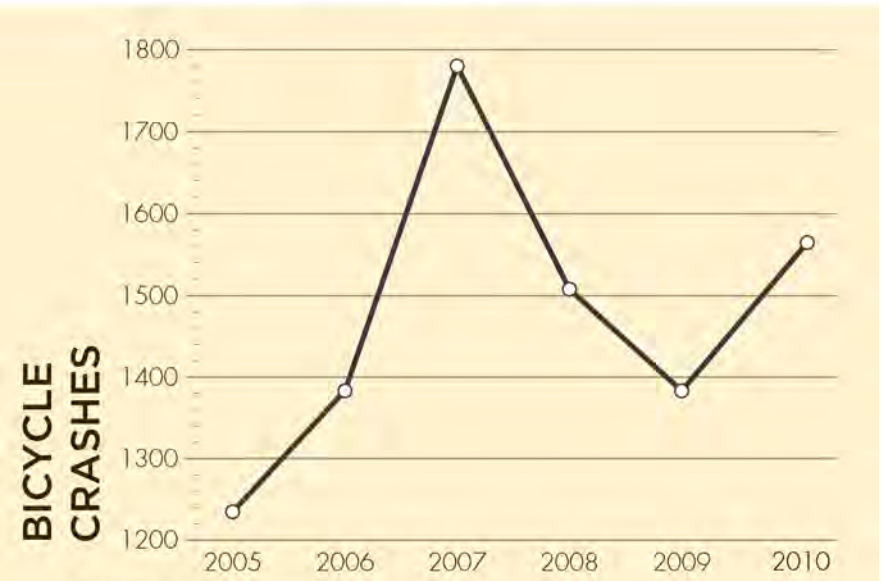
These accommodations have helped increase bicycle ridership across the city. Bicyclists are seen on Chicago's streets year round and for a variety of trip purposes.

With this increased activity, bicycle crashes have also been on the rise. A comprehensive crash analysis is currently underway to look at where, when, and how crashes are occurring, who is involved, and how the crashes can be prevented. The findings of this report will be used to design better facilities.

***Bicycling has increased in Chicago over the last five years at a rate higher than almost every major city in the United States. Fortunately, the rate of crashes has increased at a much lower rate than ridership during this same time period.***



**BICYCLISTS AS A PERCENTAGE OF ALL COMMUTERS**  
12 largest cities with percentages over 0.5%



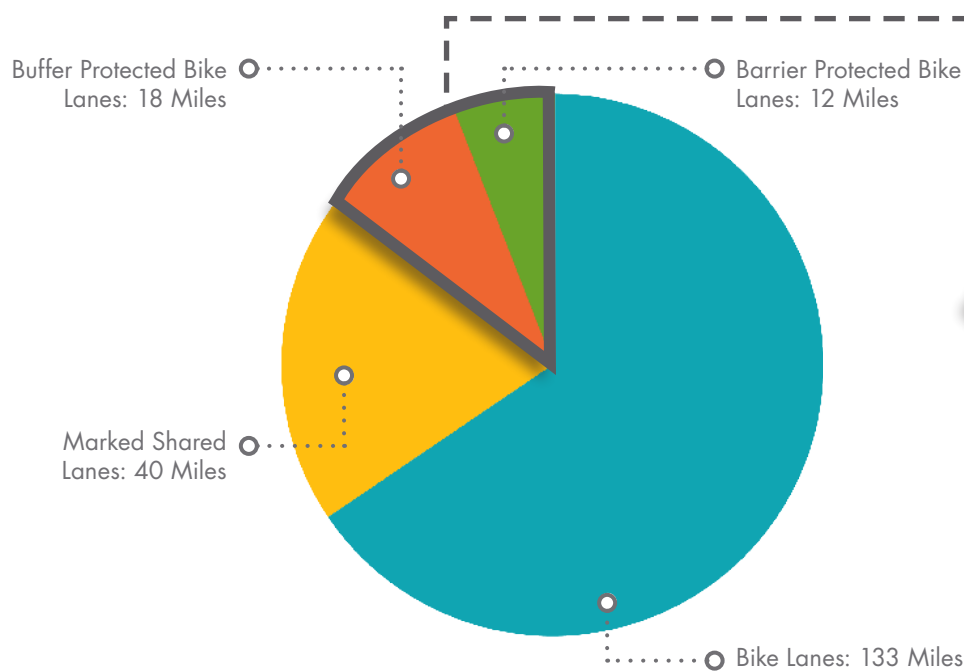
SOURCE CITY OF CHICAGO 2012 BICYCLE CRASH ANALYSIS SUMMARY REPORT

# CHICAGO'S BIKE LANES

## A QUICK HISTORY

Chicago's first on-street bike routes were created by Mayor Richard J. Daley with rush hour bike lanes on both Clark Street and Dearborn Street. But it wasn't until the mid-1990's that Chicago got serious about its bike infrastructure. Over the last twenty years, the City has installed over 170 miles of standard bike lanes and marked shared lanes.

In 2011, Chicago installed its first barrier protected bike lane with a 1/2 mile stretch on Kinze Street. Since that first installation, CDOT has progressed at an unprecedented pace to meet Mayor Emanuel's initiative of 100 miles of protected bike lanes by May 2015. By the end of 2012, over 13 miles of barrier protected bike lanes and 18 miles of buffer protected bike lanes are scheduled to be installed on Chicago's streets.



### BIKEWAYS INSTALLED IN CHICAGO

# 200+ MILES

of on-street bikeways have been installed on Chicago's streets over the past twenty years.

### PROTECTED BIKE LANES

In 2011, CDOT initiated the installation of barrier and buffer protected bike lanes in Chicago. By 2015 Chicago will have installed over

# 100 MILES

of these bike lanes.

NOTE: One mile of bike lane refers to one mile of centerline lane

# what we heard

Chicago has a passionate bicycling community of all ages and abilities. This project provided the opportunity to engage Chicagoans all over the city in order to take advantage of each community's knowledge of the city's streets and infrastructure. A robust public outreach process was conducted to understand what streets people thought were appropriate for new or improved bike facilities and to develop a network that fits everyone's needs.

Each neighborhood has its own unique opportunities and challenges for bicycling. Bicycling in Edison Park is different from bicycling in Hegewisch and bicycling on Dearborn Street in the Loop is different from bicycling on 26th Street in Little Village. In order to develop a citywide plan that is appropriate for all neighborhoods in Chicago, close collaboration was necessary with local residents and leaders. This included large public meetings led by CDOT and smaller neighborhood meetings that were organized and led by the public, to reach as many people as possible.



Copernicus Center



Gary Comer Youth Center

## THE PROCESS









# 1 Public Meetings

Eight public meetings were held to discuss bicycling on Chicago's streets today, streets that could have improved facilities, and to get input on the findings of the Plan.

## Downtown Open House

The outreach process kicked off in December 2011 with 160 people at a citywide open house in a pop-up storefront in the Loop hosted by the Chicago Loop Alliance.

The project team identified nine sections of the city, using barriers such as interstates, waterways, railways, and arterial roadways as the section borders. Large maps of each section were posted, allowing participants to draw or write in destinations, barriers, proposed bicycle routes and other information and suggestions. The maps also served as a catalyst for discussions between participants and the project team about the draft Plan and bicycling in Chicago.

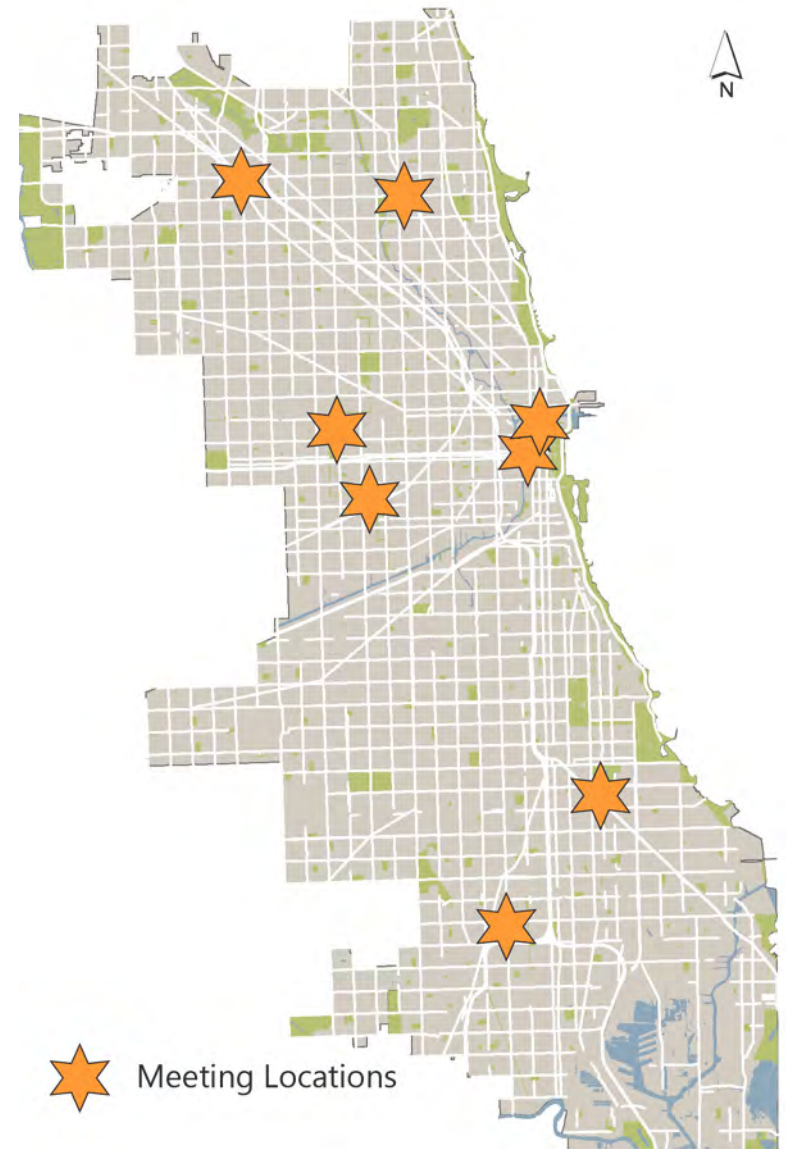
The open house included educational videos on protected bike lanes, information on upcoming CDOT bikeways projects and the Active Transportation Alliance's Neighborhood Bikeway Campaign.



Discussing the Southwest side



Viewing videos



## Neighborhood Meetings – Existing Conditions

Public meetings were held in early 2012 at the Garfield Park Conservatory, Woodson Regional Library, and Sulzer Regional Library to formally introduce the project and obtain input on existing conditions. Each meeting consisted of a presentation about the project, questions and answers, and mapping activities. The maps focused on the specific area of the city where the meeting was held.

The open house and the initial public meetings provided valuable information on bicycling in Chicago, including:

- **Destinations:** The purpose of developing a bike network is to get people where they want to go (park, school, work, transit, shopping, etc). Participants made it clear that the network should establish facilities that connect to as many destinations as possible. Destinations large and small were identified, from major parks and the Lakefront Trail to corner stores that sell fresh fruit.



Woodson Regional Library

- **Barriers:** Much of the infrastructure that helped build Chicago – access to water, rail, arterial roadways, interstates – acts as a barrier for bicyclists. Many viaducts, bridges, and intersections were not designed with bicyclists in mind, and are difficult to traverse. These trouble spots were identified in the public outreach process.
- **Chicago’s Streets:** Participants talked about streets they currently use, and streets they would like to bike on if they felt comfortable or safe doing so.

## Neighborhood Meetings – Revealing the Network

After the draft network was developed, four public meetings were held in the spring of 2012 at the Copernicus Center, Gary Comer Youth Center, Douglas Park, and the Inland Steel Building to receive comments on the draft network. Participants provided additional suggestions and the network was revised, where appropriate, based on these comments.



Douglas Park

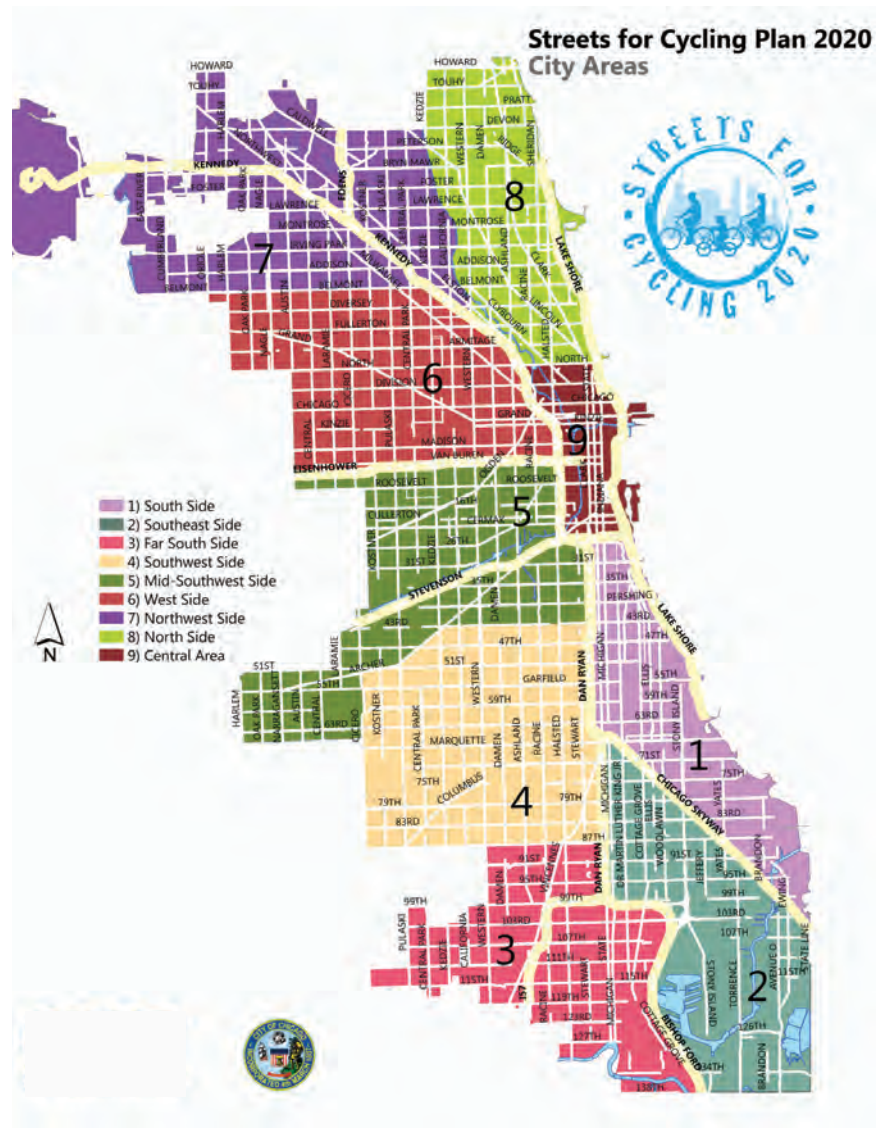


# 2 Community Advisory Groups

Identifying a comprehensive bicycle network in a city the size of Chicago requires more information than could be gained at a few large neighborhood meetings alone. In an effort to gather as much input as possible, and to tap into the local knowledge held by Chicagoans who have been bicycling for years, nine Community Advisory Groups (CAGs) were formed in separate sections of the city. Each CAG consisted of two or three volunteer leaders who organized monthly meetings to obtain input on each phase of the project.

The CAGs were asked to identify the best streets for future on-street bikeways in their section of the city. For six months, the CAGs met at local coffee shops, restaurants, and residences to discuss destinations, barriers, and streets that should be included in the plan.

This process was a tremendous success. Over 200 people attended and participated in at least one CAG meeting. The CAGs attracted people who wanted greater involvement in the planning process than simply attending a public meeting as well as people who could not or did not want to attend the larger neighborhood meetings. The success of the CAGs was directly due to the leaders of each group and the considerable amount of time and effort that they volunteered to. The input from the CAGs ensured that the Plan would reflect the desires of the local communities throughout the City.





Discussing the South and Southeast sides



Providing feedback on the West side



Meeting of all of the CAG leaders



Meeting held on the North side, organized by the CAG

# 2020 network

Chicago's current network of bikeways has encouraged thousands of residents to bike, whether it is to work, to the park, or to the store. However, this network of bike lanes and marked shared lanes only appeals to a small segment of the population that feels safe riding next to moving motor vehicle traffic. To encourage greater ridership, bikeways that make people feel safer and more comfortable are necessary.

Chicago's current bike network does not provide enough protection and perceived safety to encourage "interested, but concerned" people to ride on street, whether it's for work, shopping, or fun (see following page).

The purpose of the Streets for Cycling Plan 2020 network is to develop a comprehensive network of bikeways that attracts riders of all ages, from 8 to 80, and abilities. It was developed using three key principles:

- 1. Provide a bicycle accommodation within 1/2 mile of every Chicagoan.** The network should achieve the Bike 2015 Plan's goal of having a bicycle accommodation within 1/2 mile of every Chicagoan. These accommodations should connect to the destinations identified in the public input phase of the planning process.
- 2. Provide a greater number of bikeways where more people live.** Ridership is the key criterion for evaluating the success of bicycle infrastructure. The need to provide accommodations on a citywide basis was balanced with an analysis of residential and employment density.
- 3. Increase the amount of infrastructure where ridership is high, while establishing a strong backbone of infrastructure where ridership is currently lower.** Building a citywide network means providing accommodations and connections in all neighborhoods, from Rogers Park to Altgeld Gardens. The network identifies new bicycle infrastructure for all neighborhoods. The Streets for Cycling Plan 2020 network meets the needs of an eight year old just learning to ride a bike, an eighty year old that rides to the park, the commuter who rides 10 miles to the Loop every day for work, and everyone in between.

This is accomplished through the designation of three route types that together build the Streets for Cycling Plan 2020 network. These three sets of routes - Neighborhood Routes, Crosstown Routes, and Spoke Routes-total 645 miles in length. A description of each route type, as well as the hierarchy of bike accommodations to be considered for each individual route, follows.

## ROUTE CLASSIFICATIONS

Neighborhood Bike Routes

Crosstown Bike Routes

Spoke Routes

## NETWORK MAPS

Overall

Section 1: Far Southwest

Section 2: Far South

Section 3: Southwest

Section 4: South

Section 5: Near Southwest

Section 6: Near South

Section 7: West

Section 8: Central

Section 9: Northwest

Section 10: North

# TYPES OF BICYCLISTS

The City of Portland, Oregon conducted a study of its population to better understand why people ride or don't ride their bicycle. The number one reason people do not ride their bike is because they don't feel safe sharing the road with motorists. The results of the survey led to the conclusion that there are four distinct types of people who ride bikes in Portland.



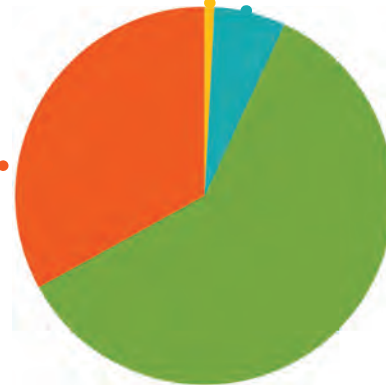
The strong and fearless individual is someone who will ride their bike regardless of the roadway conditions. This segment of the population is who many people picture as the "typical" bicyclist. Less than 1 percent of the population likely fits into this category.

**Strong and Fearless <1%**



The enthused and confident population feels safe riding their bike on most of Chicago's streets, but particularly those with some sort of bike accommodation, whether it is bike lanes or marked shared lanes. Many existing bicycle commuters fit within this segment.

**Enthused and Confident 6%**



There is also a portion of the population that has no desire to ride their bike on-street, regardless of the types of facilities provided. This represents about a third of the population.

**No Way No How 33%**



The majority of the population is interested in riding their bike, whether for work, fun, or errands, but are concerned about the safety of riding in traffic. This includes family, children, and seniors. Building safer facilities will encourage this portion of the population to ride their bike.

**Interested but Concerned 60%**



# 1 Neighborhood Bike Routes

Chicago has thousands of miles of residential streets. Most of these streets have low traffic volumes and speeds; therefore, these streets are ideal for encouraging more active uses.

Neighborhood Bike Routes are quiet, mostly residential streets that connect to local destinations, such as neighborhood retail, parks, schools, and transit. Most of these streets are already “low stress” bike routes. The amount of new infrastructure required may vary route to route with some requiring few changes and others requiring considerably more. The characteristics of Neighborhood Bike Routes include:

- Low vehicular traffic speeds and volumes
- Minimal bus routes
- Residential/neighborhood retail land uses
- Intersection treatments at major crossings to assist bicyclists across the street

Neighborhood Bike Routes will require a great deal of sensitivity and outreach during the design process to ensure contextually appropriate solutions for each neighborhood. Specific bike accommodations will be determined through the design and implementation stages of the plan, and the feasibility of the following improvements will be considered, in order of priority:

- Neighborhood greenways (preferred treatment)
- Barrier protected bike lanes
- Buffer protected bike lanes
- Bike lanes or marked shared lanes
- Signed bike routes



57th Street



Hamlin Avenue



# NEIGHBORHOOD BIKE ROUTES: BEST PRACTICES

The goal of Neighborhood Bike Routes is to create slow, safe streets that will in turn be low stress bikeways. Neighborhood Bike Routes will be designed in close collaboration with the neighbors who live on these streets. Each Neighborhood Bike Route will require a unique design, and what is appropriate in one neighborhood may not work in another.

There are several ways in which neighborhood streets can be improved for bicycling:



Portland has focused on making residential streets safer for bicyclists and pedestrians by building a network of neighborhood greenways (sometimes referred to as bicycle boulevards). Neighborhood greenways prioritize bicyclist and pedestrian safety by utilizing a variety of traffic calming treatments to discourage cut through motor vehicle traffic and to reduce motor vehicle speeds. By 2015, over 80% of Portland residents will live within 1/2 mile of a neighborhood greenway

## PORTLAND NEIGHBORHOOD GREENWAYS



The City of Montreal installs barrier protected bike lanes on some residential streets. These can be one-way or two-way barrier protected bike lanes. There is typically no separation between the bike lane and the parking lane.

## MONTREAL BARRIER PROTECTED BIKE LANES



New York City installs standard bike lanes on one-way residential streets throughout Brooklyn. While many of these streets were probably adequate for bicycling already, the bike lane provides dedicated space for bicyclists and may reduce traffic speeds. As of 2012, there are only two residential streets in Chicago with bike lanes striped on them.

## BROOKLYN BIKE LANES

# 2 Crosstown Bike Routes

Chicago's 1,000 miles of collector and arterial streets serve as connections for motorists, transit users, and bicyclists. They have higher traffic volumes than neighborhood streets, and typically have traffic signals at major intersections. The routes allow more direct connections to destinations and will help facilitate longer trips for bicyclists.

Crosstown Bike Routes are long, continuous routes that get bicyclists across Chicago. These routes are located on collector and arterial streets and connect neighborhoods, major destinations, and Neighborhood Bike Routes. The majority of Chicago's protected bike lanes will be located on Crosstown Bike Routes.

Crosstown Bike Routes typically have the following characteristics:

- Lead to major destinations
- Travel through a range of land uses
- Higher vehicular traffic speeds and volumes
- Bus routes

Specific bike accommodations will be determined through the design and implementation stages of the plan, and the feasibility of the following improvements will be considered, in order of priority:

- Barrier protected bike lanes (preferred treatment)
- Two-way barrier protected bike lanes
- Buffer protected bike lanes
- Bike lanes or marked shared lanes



55th Street



Crosstown Bike Route Rendering

# CROSTOWN BIKE ROUTES:

## Case Study: Elston Avenue

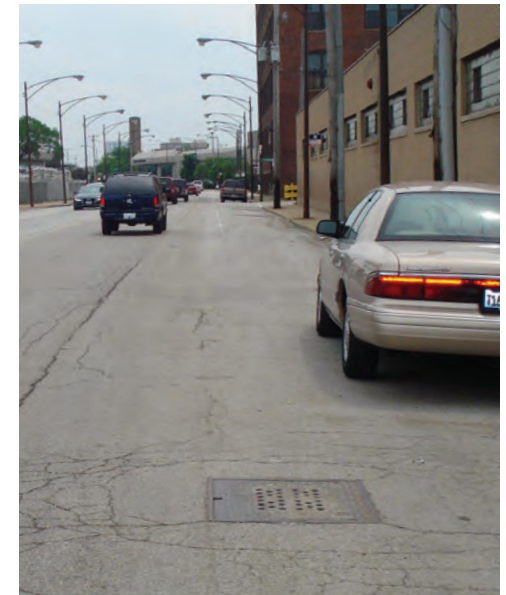
Elston Avenue is identified as a Crosstown Bike Route for its entire length (approximately 9.5 miles) in the Streets for Cycling Plan 2020. Elston is a popular commuter route for bicyclists riding to the Loop and there are standard bike lanes on its entire length.

The southernmost segment of Elston, between Milwaukee Avenue and North Avenue, consists of industrial land uses with truck traffic comprising 21% of all traffic during peak periods. Motorist speeds are also high, with 60% of motorists traveling faster than the posted speed and 5% traveling faster than 40mph.

To separate bicyclists from the high truck traffic and the fast moving motor vehicle traffic, and to reduce vehicle speeds to create a safer roadway for all users, CDOT upgraded the existing bike lanes between Milwaukee Avenue and North Avenue to barrier and buffer protected bike lanes in the spring of 2012. Parking was consolidated to one side of the street in areas where it was lightly used to provide room for barrier protected bike lanes. This required direct outreach and negotiation with the adjacent businesses and the industrial council representing the businesses. At locations with residential and commercial land uses, on-street parking could not be removed so buffer protected bike lanes were installed.

After installation of the enhanced bikeways bicycle ridership increased by 49% in the morning peak period and 62.5% in the afternoon. The project also resulted in slower and safer motorist speeds. The location of several bollards was modified after installation to ease turning movements for trucks and worked directly with business owners to find solutions for parking and loading.

The design and implementation of future Crosstown Bike Routes will follow a similar process. The highest bicycle accommodation possible will be built dependent on existing motor vehicle traffic, parking situations and land uses adjacent to each route. Crosstown Bike Routes will be a combination of barrier protected bike lanes, buffer protected bike lanes, standard bike lanes, and marked shared lanes.



**BEFORE**



**AFTER**



# 3 Spoke Routes

Thousands of people commute to Downtown Chicago on a daily basis by bike. Some of these commuters come from the edges of the City as well as the suburbs. Providing designated commuting routes to the Loop will make it safer and more convenient for employees to bike to and from work.

Spoke Routes are direct routes in and out of the Loop that will provide a safe, continuous bikeway and connect all areas of Chicago with the downtown. The primary goal of the Spoke Route network is to increase bicycle commuting citywide.

The seven Spoke Routes are:

1. Clark Street
2. Milwaukee Avenue
3. Lake Street/Randolph Street
4. Archer Avenue
5. Vincennes Avenue
6. South Chicago Avenue
7. State Street/Wabash Avenue

The design of the Spoke Routes will follow the same process as the Crosstown Routes:

- Barrier protected bike lanes (preferred treatment)
- Two-way barrier protected bike lanes
- Buffer protected bike lanes
- Bike lanes or marked shared lanes

In addition, spoke routes may include enhanced intersections, colored pavement, improved surface conditions, bike signals, and improved traffic signal timing for bicycling. Additional treatments will be considered to brand and promote the routes as the Spoke Route network is developed.



Spoke Route Rendering



Lake Street

# SPOKE ROUTES: BEST PRACTICES

Spoke Routes provide continuous on-street bike accommodations between the Loop and the city limits. Two European cities have implemented similar routes to accommodate longer commutes and increase bicycling.



Copenhagen recently installed its first bicycle superhighway, the first of 26 routes that are scheduled to be built. The bicycle superhighways connect to Copenhagen's suburbs and are intended for longer rides. Features include air pump stations, traffic signals timed so bicyclists travelling a specific speed do not have to stop, digital user counters, smooth surfaces, and other innovative features to encourage longer rides.

## COPENHAGEN BICYCLE SUPERHIGHWAY



The Barclays Cycle Superhighways are routes that connect the outer portions of London with central London. Four Barclays Cycle Superhighways are completed to date and another eight will be completed by 2015. These routes are designated by their blue color and the bike lane treatments vary from location to location. Bicycling has increased by approximately 70% on these routes.

## LONDON BARCLAYS CYCLE SUPERHIGHWAYS



# Network Maps

The Streets for Cycling Plan 2020 network is an ambitious proposal for bicycling in Chicago. It consists of 645 miles of bikeways, including 310 miles of Neighborhood Bike Routes, 275 miles of Crosstown Bike Routes, and 60 miles of Spoke Routes.

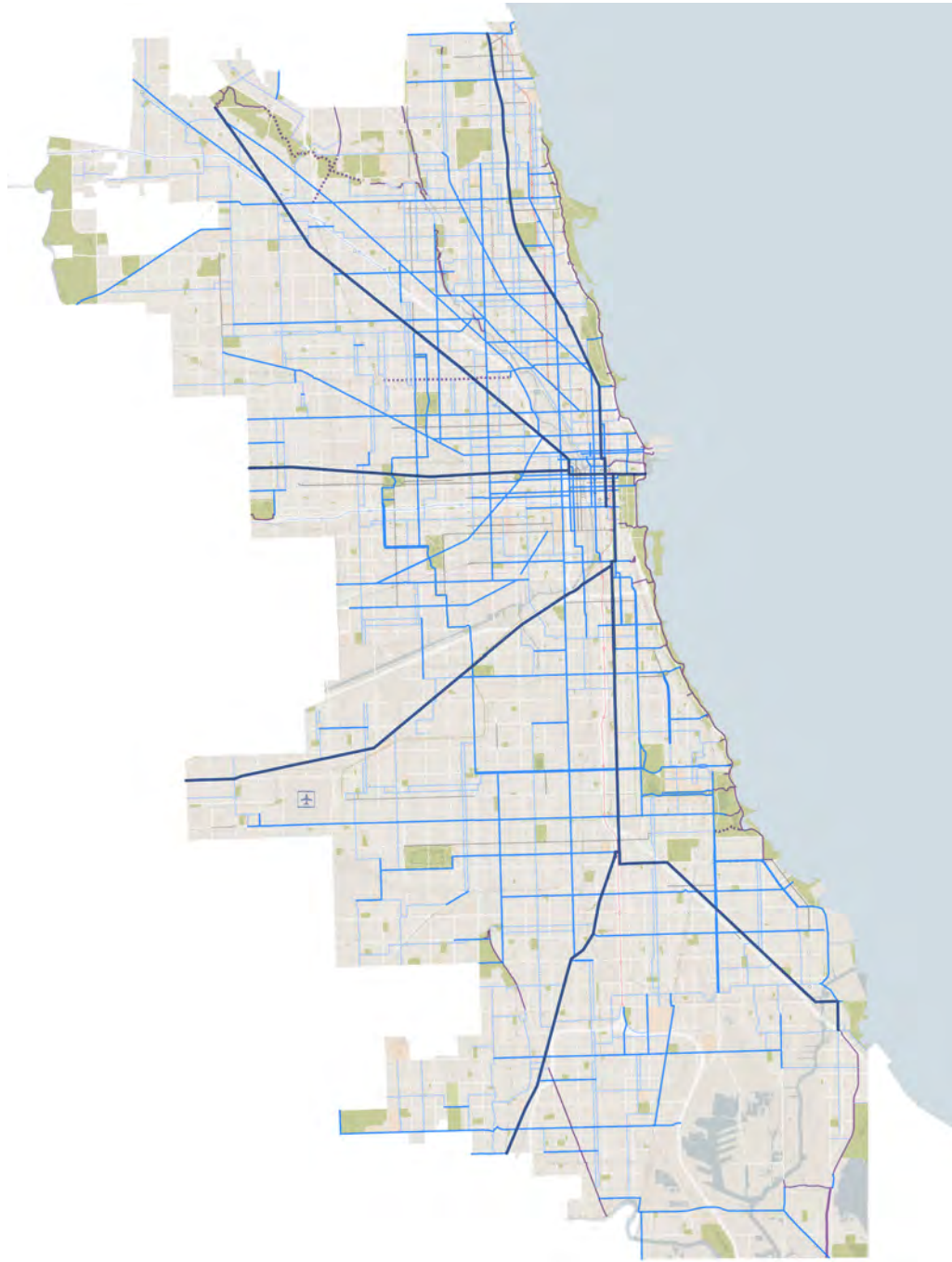
Several streets already popular for bicycling are included in the network and additional improvements to these streets and their intersections will make them safer for everyone. Although a few streets identified are not considered safe and comfortable for most bicyclists currently, they are necessary for a complete citywide network and will require considerable modifications in order to provide safe bicycle accommodations. Funding, local support, and willingness to considerably change the character of many of these roadways will be required to implement all of the projects in the Plan.

The following pages display the Streets for Cycling Plan 2020 network. This network was developed in conjunction with the Community Advisory Groups, participants at the public meetings, individual aldermen, the Chicago Transit Authority and the Illinois Department of Transportation.

This is a dynamic plan; adjustments are likely between now and 2020. There will be opportunities to add bike accommodations to streets not currently included in the proposed network and land use or traffic changes may make some streets better for bicycling than they are at present. Changes to the network will also occur throughout the design and outreach process, such as modifying a route to avoid a certain intersection.



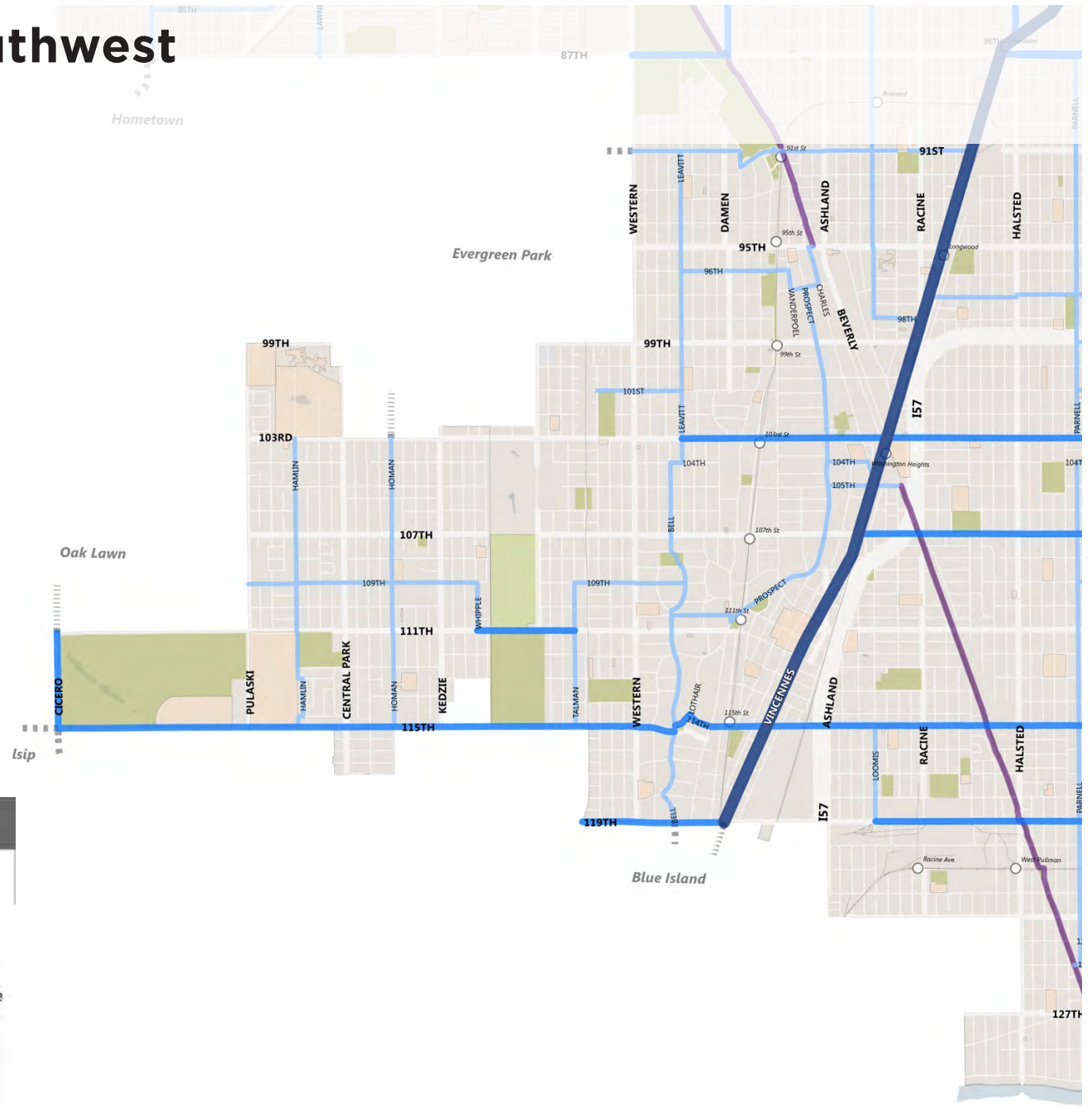
South Chicago Avenue





# 1

## Far Southwest



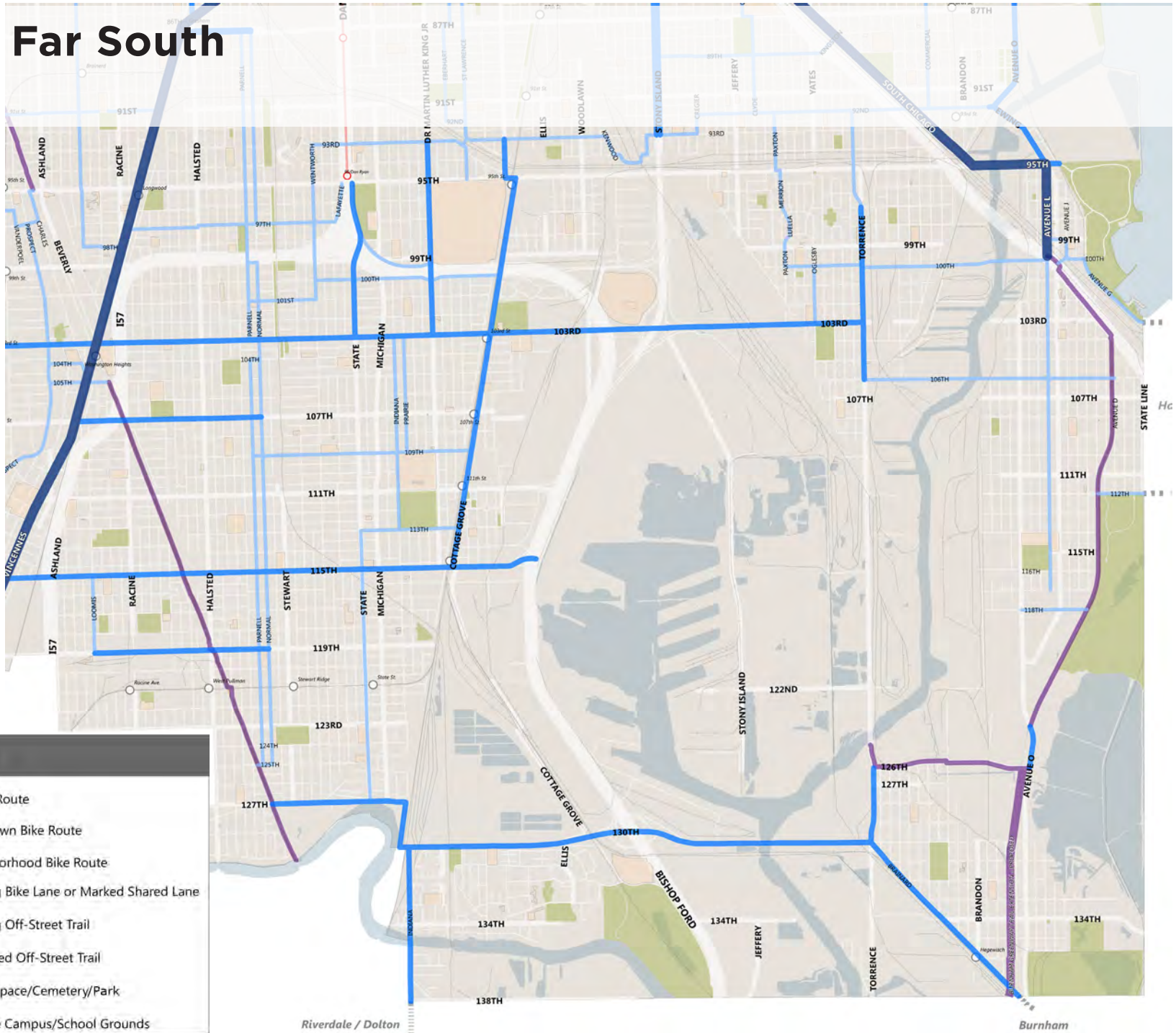
**Legend**

- Spoke Route
- Crosstown Bike Route
- Neighborhood Bike Route
- Existing Bike Lane or Marked Shared Lane
- Existing Off-Street Trail
- Proposed Off-Street Trail
- Open Space/Cemetery/Park
- College Campus/School Grounds



# 2

## Far South



**Legend**

- Spoke Route
- Crosstown Bike Route
- Neighborhood Bike Route
- Existing Bike Lane or Marked Shared Lane
- Existing Off-Street Trail
- Proposed Off-Street Trail
- Open Space/Cemetery/Park
- College Campus/School Grounds

Riverdale / Dolton

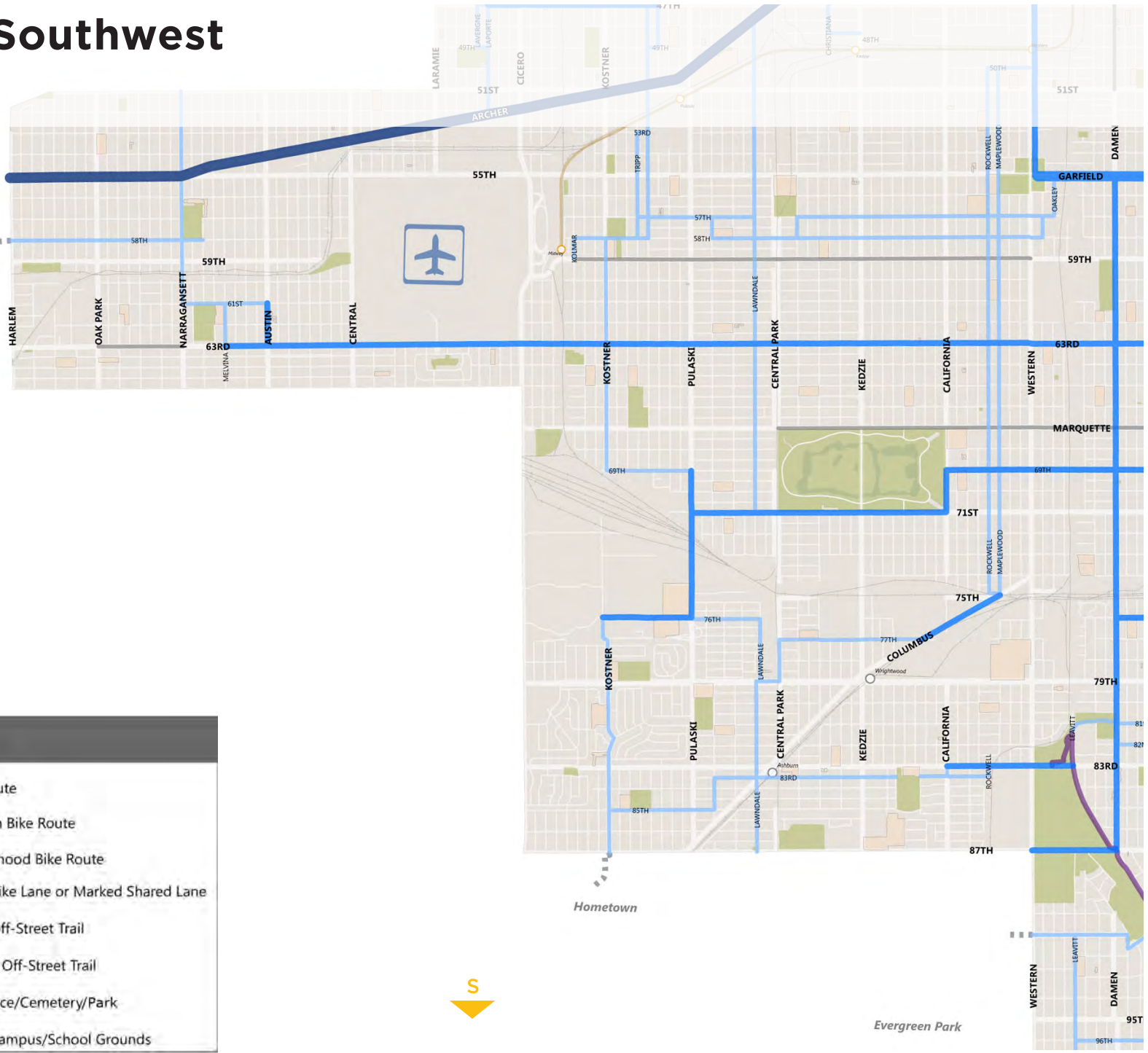
Burnham



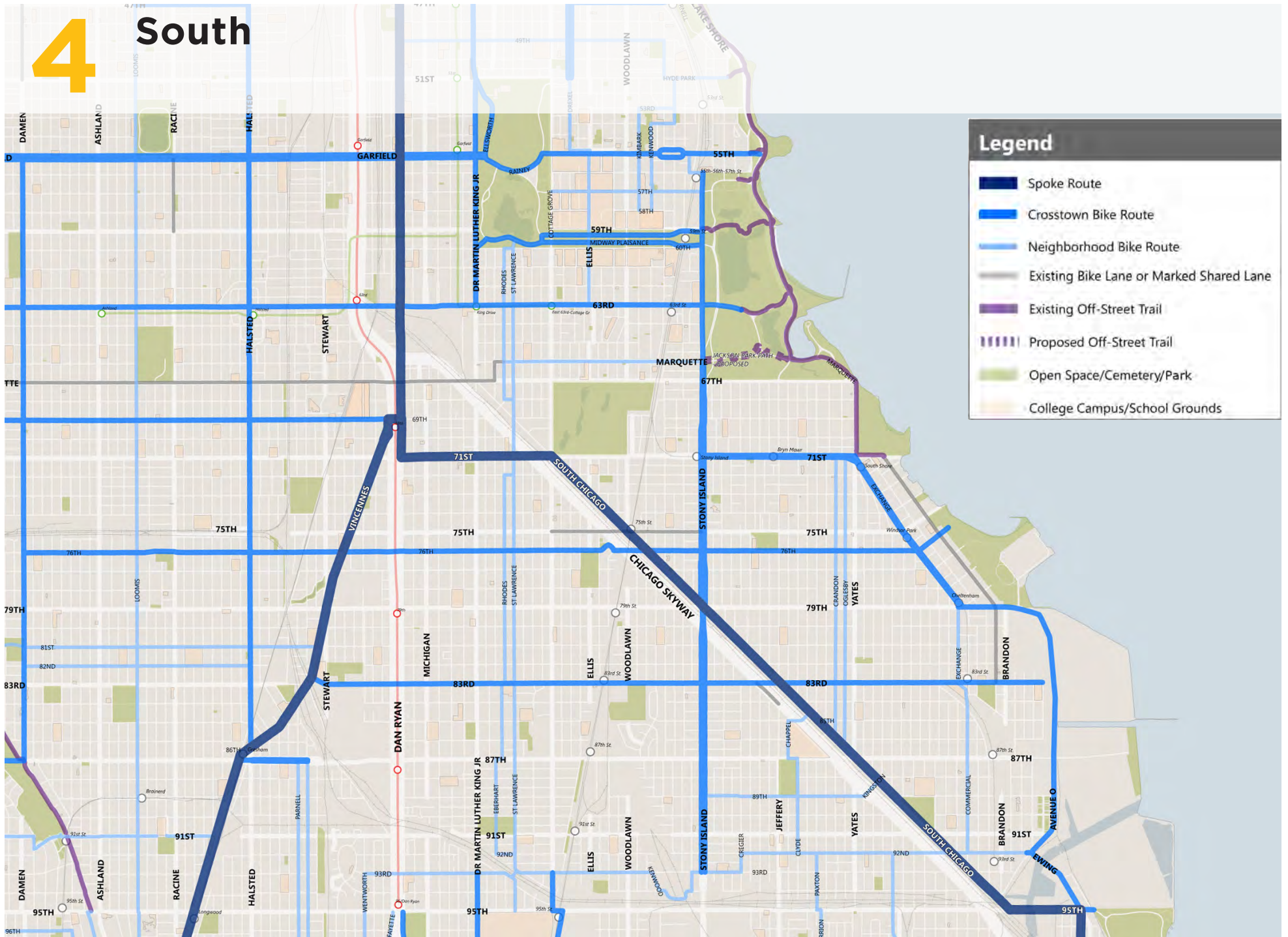
# 3 Southwest

**Legend**

- Spoke Route
- Crosstown Bike Route
- Neighborhood Bike Route
- Existing Bike Lane or Marked Shared Lane
- Existing Off-Street Trail
- Proposed Off-Street Trail
- Open Space/Cemetery/Park
- College Campus/School Grounds



# 4 South



### Legend

- Spoke Route
- Crosstown Bike Route
- Neighborhood Bike Route
- Existing Bike Lane or Marked Shared Lane
- Existing Off-Street Trail
- Proposed Off-Street Trail
- Open Space/Cemetery/Park
- College Campus/School Grounds



# Case Study: 55th Street

Barrier protected bike lanes were installed on 55th Street in the Hyde Park neighborhood, between Cottage Grove Avenue and Dorchester Avenue, in July 2012. This was accomplished by placing 55th Street on a **“ROAD DIET”** and using the additional space for the barrier protected bike lanes. A road diet is a traffic engineering technique that reduces the amount of space for motor vehicles, either through eliminating lanes or shrinking the width of lanes, and reallocating that space for other uses.

55th Street is the northern boundary of the University of Chicago’s campus. Prior to the project, this stretch of 55th Street was a five-lane roadway, with two travel lanes in each direction and a center left-turn lane at some intersections. To the east and west, it is a two-lane roadway.



The average vehicle speed on 55th Street was 34 mph.

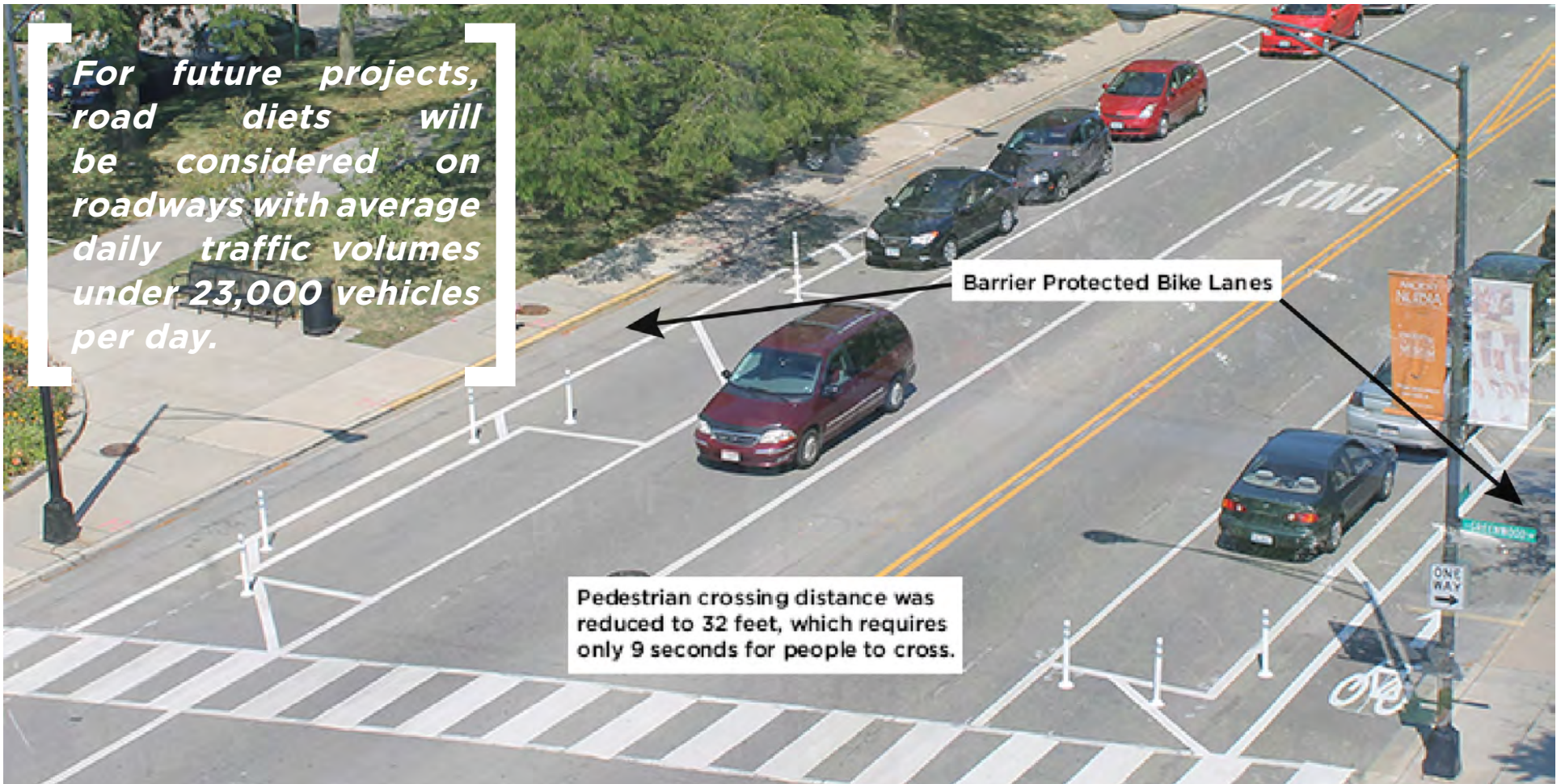
55th Street was 66 feet in width, which required almost 19 seconds for pedestrians to cross the street

**BEFORE**

The average daily motor vehicle traffic on 55th Street is approximately 16,000 vehicles per day, well below the capacity of a five-lane roadway. 55th Street was uninviting for pedestrians and bicyclists due to the width of the street and the lack of on-street bike accommodations.

The solution was to redesign 55th Street to balance the needs of pedestrians, bicyclists and motorists and improve access to the university. This was accomplished by reducing the number of travel lanes in each direction to one and providing a barrier protected bike lane in each direction.

In addition to providing barrier protected bike lanes, the road diet has also made it much easier for pedestrians to cross the street. Instead of crossing five lanes of traffic, pedestrians now only cross three, making it easier for students that live north of 55th Street to walk to the university



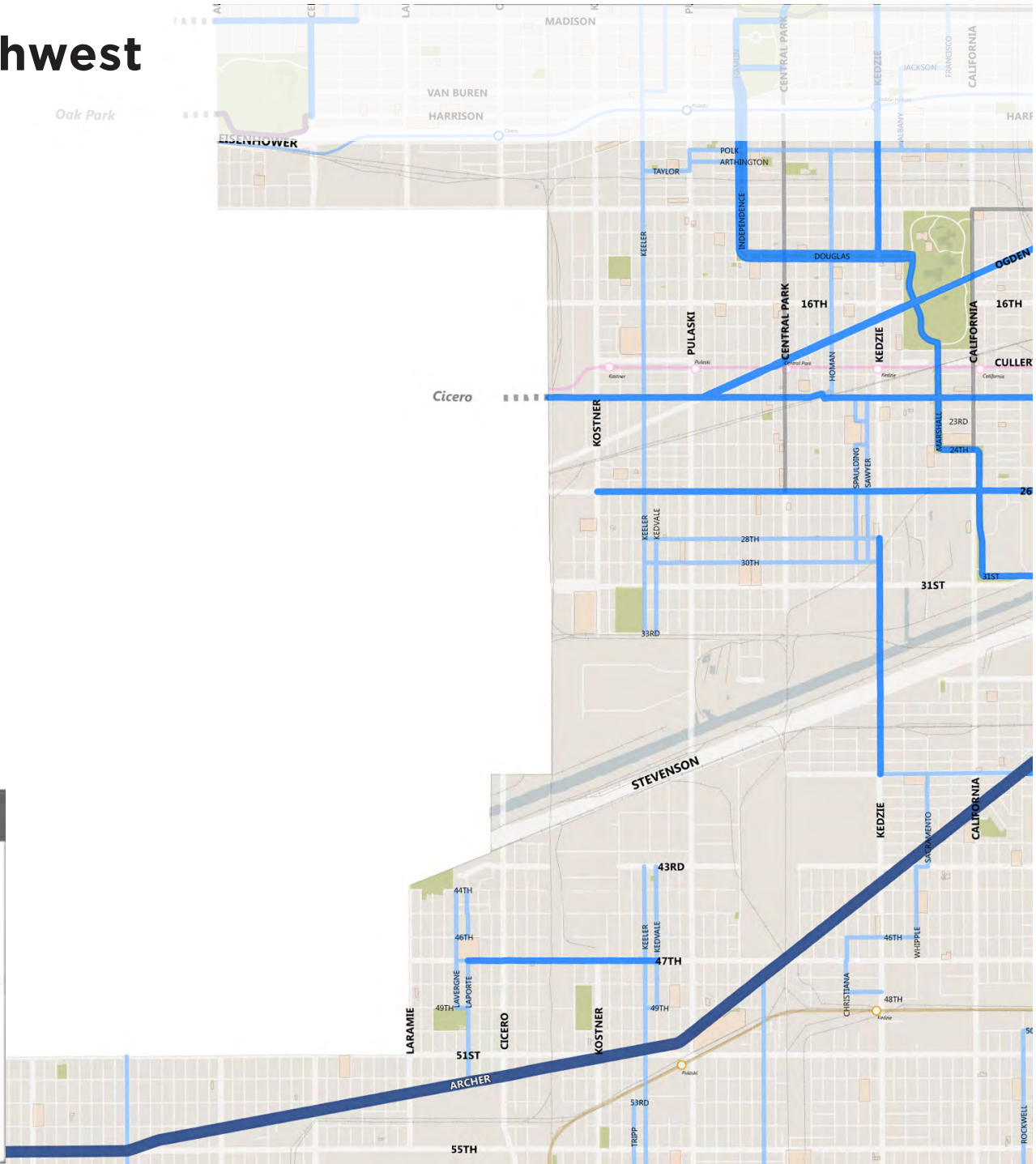
**AFTER**



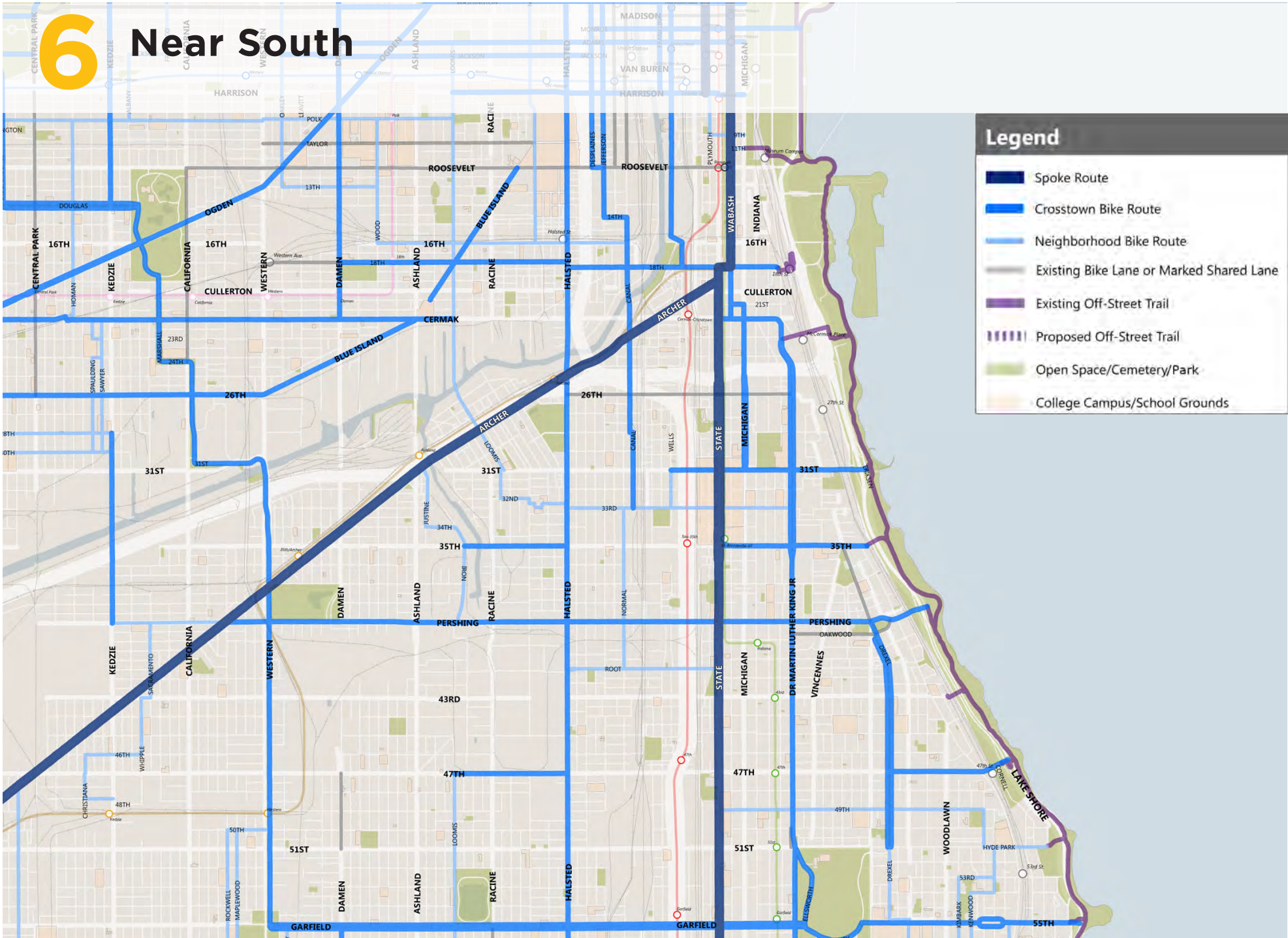
# 5 Near Southwest

**Legend**

- Spoke Route
- Crosstown Bike Route
- Neighborhood Bike Route
- Existing Bike Lane or Marked Shared Lane
- Existing Off-Street Trail
- Proposed Off-Street Trail
- Open Space/Cemetery/Park
- College Campus/School Grounds

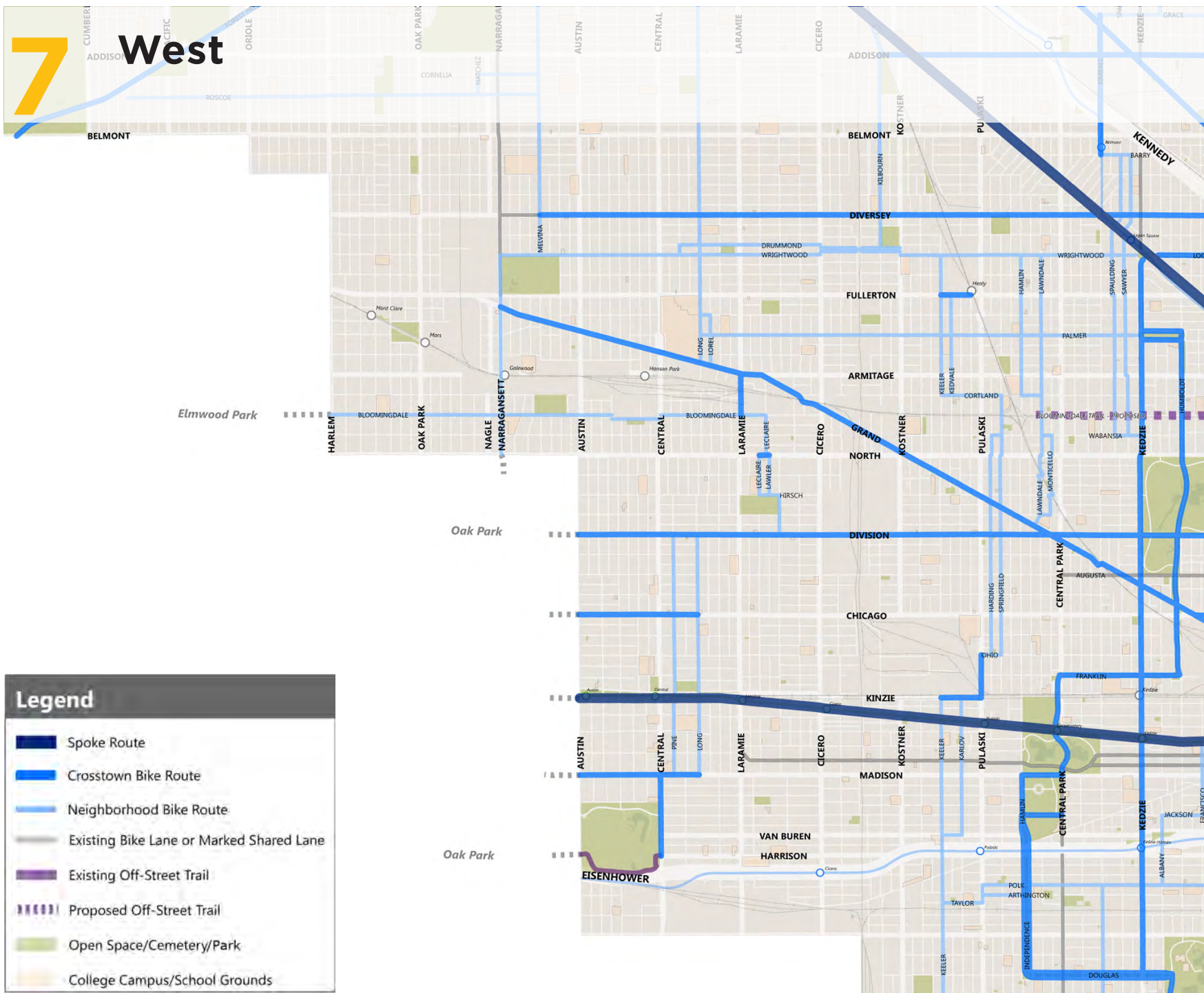


# 6 Near South



### Legend

- Spoke Route
- Crosstown Bike Route
- Neighborhood Bike Route
- Existing Bike Lane or Marked Shared Lane
- Existing Off-Street Trail
- Proposed Off-Street Trail
- Open Space/Cemetery/Park
- College Campus/School Grounds



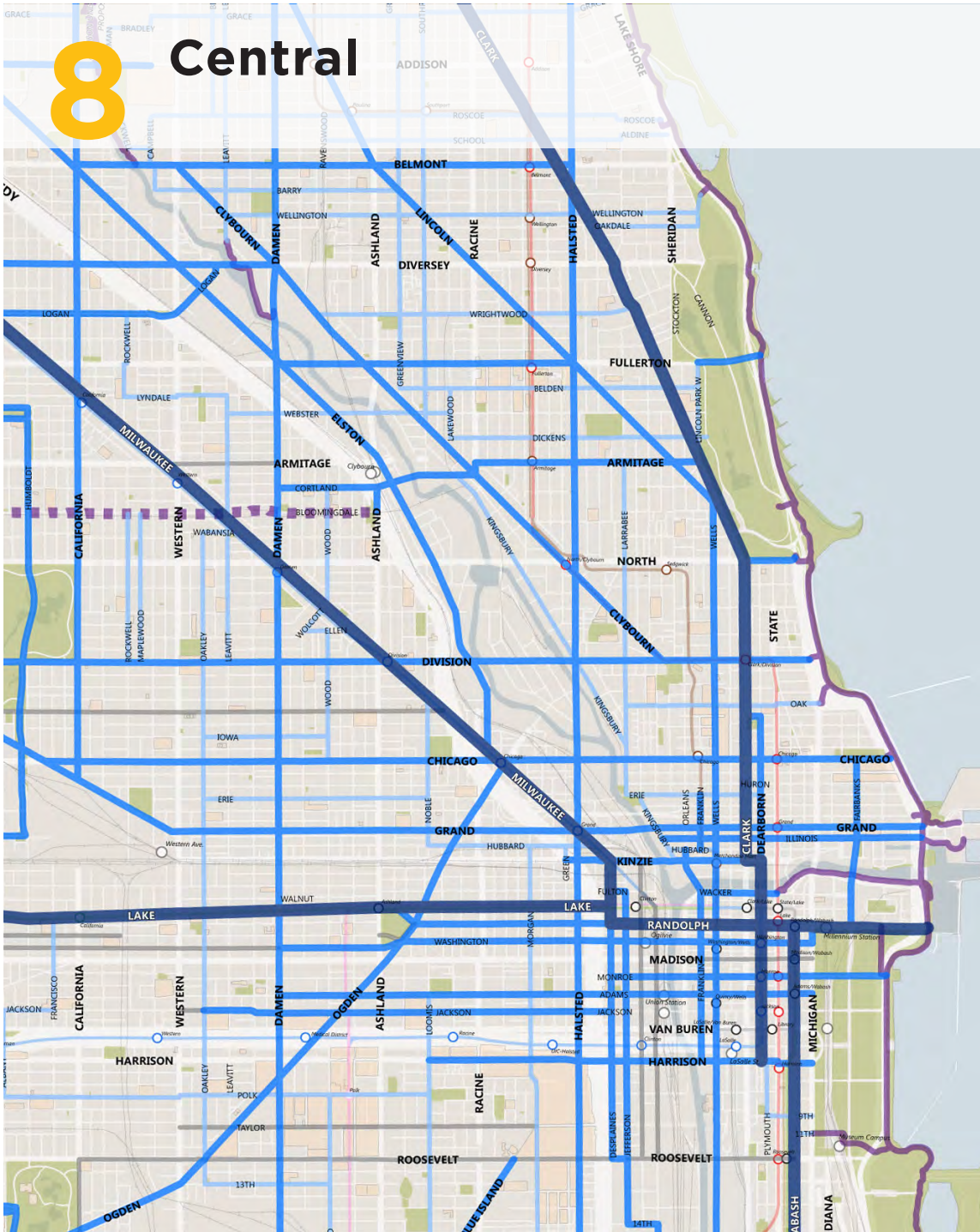
**7 West**

### Legend

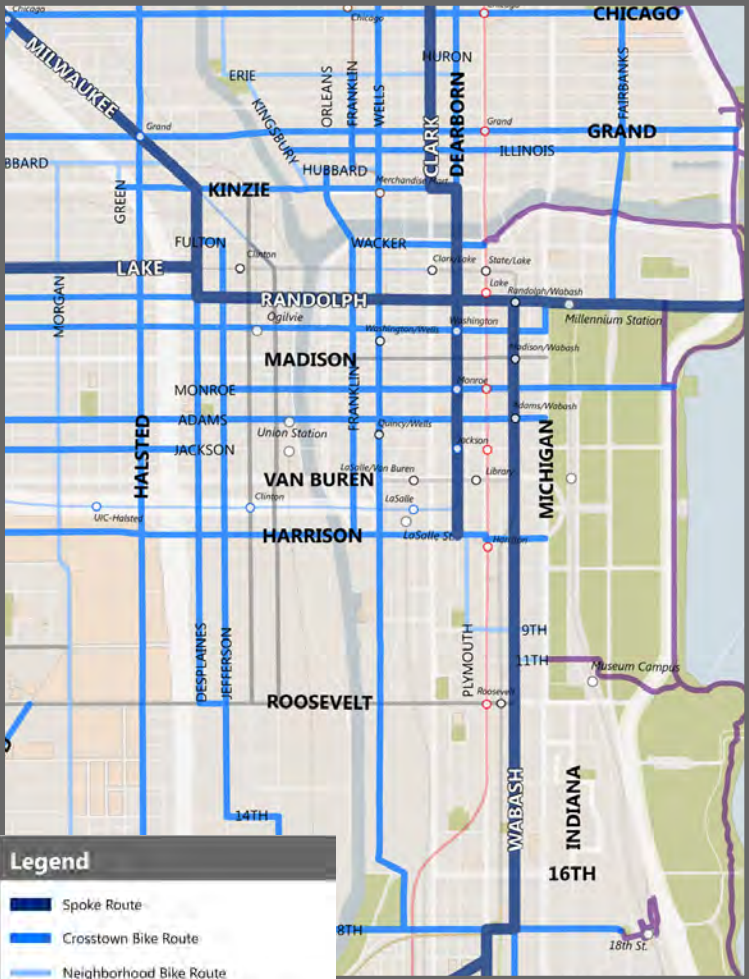
- Spoke Route
- Crosstown Bike Route
- Neighborhood Bike Route
- Existing Bike Lane or Marked Shared Lane
- Existing Off-Street Trail
- Proposed Off-Street Trail
- Open Space/Cemetery/Park
- College Campus/School Grounds



# 8 Central



# Loop Inset



**Legend**

- █ Spoke Route
- █ Crosstown Bike Route
- █ Neighborhood Bike Route
- █ Existing Bike Lane or Marked Shared Lane
- █ Existing Off-Street Trail
- █ Proposed Off-Street Trail
- █ Open Space/Cemetery/Park
- █ College Campus/School Grounds

# Case Study: Kinzie Street

Chicago's first barrier protected bike lanes were installed on a 1/2 mile stretch of Kinzie Street, between Milwaukee Avenue and Wells Street, in June 2011.

Kinzie Street was selected as the first location for a number of reasons:

- It connects Milwaukee Avenue and Wells Street, two of Chicago's most popular bike routes
- The existing lane configuration changed back and forth from one lane in each direction to two lanes in each direction several times
- The existing motor vehicle traffic volumes did not necessitate two travel lanes in each direction

The lanes were installed by creating a consistent cross-section of one motor vehicle travel lane in each direction throughout the entire corridor.

The new barrier protected bike lanes were an instant success. A survey of bicyclists riding on Kinzie found that **41% OF BICYCLISTS** changed their usual route to take advantage of the barrier protected bike lanes. Almost every bicyclist felt safer riding in these lanes compared with standard bike lanes and almost half felt driver behavior improved after the barrier protected bike lanes were installed.



The number of bicyclists using Kinzie increased tremendously after the barrier protected bike lanes were installed as well. Ridership increased 55% and bicyclists can now account for over 50% of eastbound traffic in the morning peak hour!

The new barrier protected bike lanes have had minimal impact on motor vehicle travel times throughout the corridor. The travel times for westbound motorists during the morning rush hour and both directions of travel during the evening rush hour decreased, while the travel time for eastbound motorists during the morning rush increased by less than one minute.



**BEFORE**



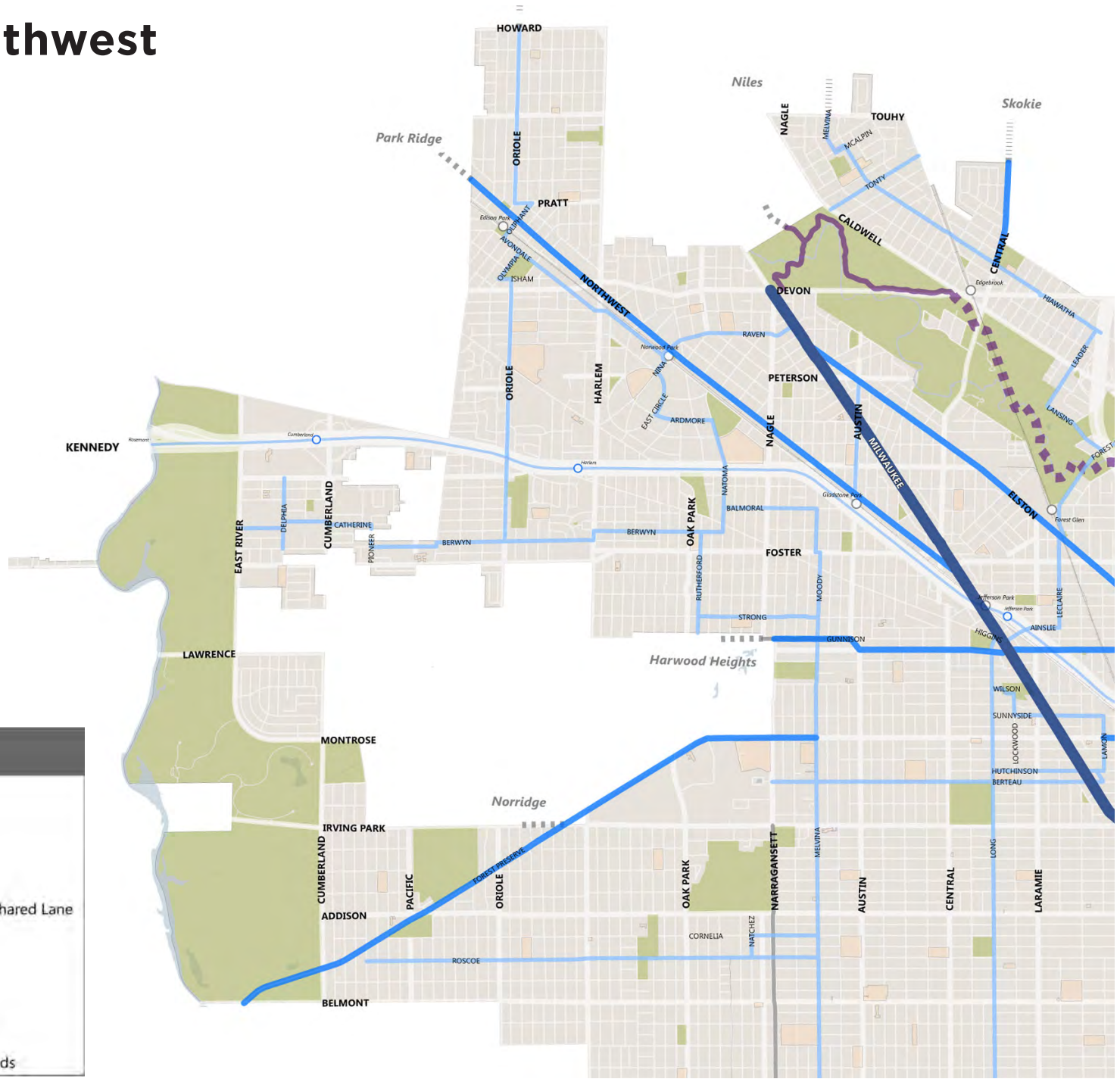
**AFTER**



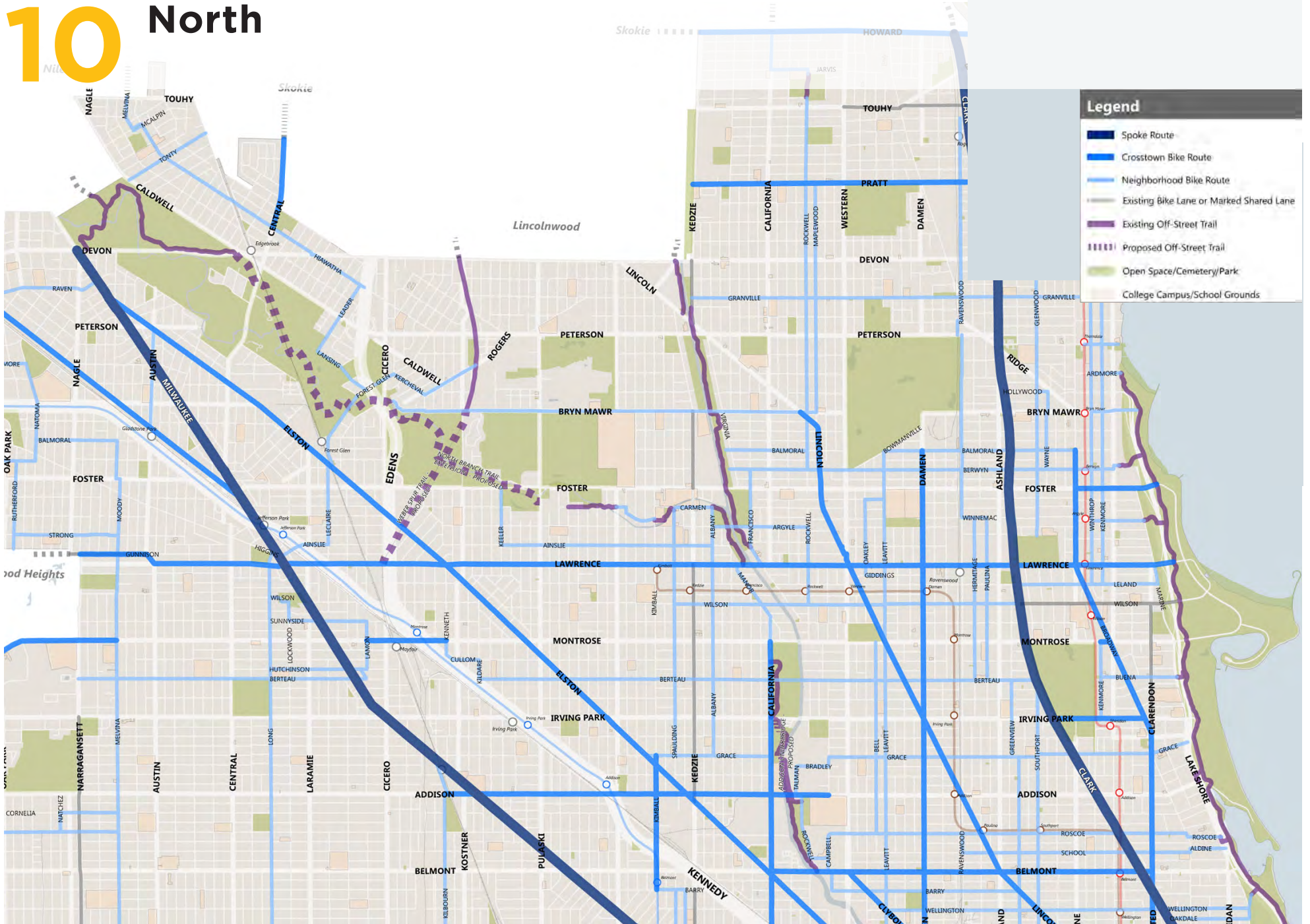
# 9 Northwest

**Legend**

- Spoke Route
- Crosstown Bike Route
- Neighborhood Bike Route
- Existing Bike Lane or Marked Shared Lane
- Existing Off-Street Trail
- Proposed Off-Street Trail
- Open Space/Cemetery/Park
- College Campus/School Grounds



# 10 North



# making it happen: implementation

The Streets for Cycling Plan 2020 will transform hundreds of miles of Chicago streets so that Chicago's youngest and oldest residents will feel safe bicycling on them. Taking this plan through implementation will require funding from many sources, as well as continuous design, outreach, and construction through 2020.

It will also require political leadership, community support and coordination with other agencies as future projects will require sensitive changes to Chicago's built environment, including travel lane removals, metered on-street parking removal or establishing bikeways on state or county jurisdiction roadways. The following milestones lay the framework for Chicago to establish the most ambitious on-street bikeway network in the United States.

By 2015:

- 100 miles of protected bike lanes
- 10 miles of neighborhood greenways
- 20 miles of bike lanes on Neighborhood Bike Routes
- Continuous bikeways on three Spoke Routes

By 2020:

- Continuous bikeways on all Spoke Routes
- An additional 50 miles of protected bike lanes
- An additional 30 miles of neighborhood greenways
- An additional 40 miles of bike lanes on Neighborhood Bike Routes
- Mark and/or sign all Neighborhood Bike Routes

These milestones propose over 500 hundred miles of new on-street bikeways over the next eight years. This is a dynamic plan, and not all of the routes identified in the network will be constructed by 2020. Routes will be refined, projects will be deemed unfeasible for various reasons, new opportunities will arise, and some bikeways will need additional improvements.

## TABLE OF CONTENTS

1. **Phasing**
2. **Funding**
3. **Maintenance**





# 1 Phasing

Implementation of the network will occur in three stages:

**PHASE ONE** will run through 2015 and primarily consist of building 100 miles of protected bike lanes as well as the first 10 miles of neighborhood greenways. The list of Phase One projects is described on the following pages.

**PHASE TWO** will largely implement the remainder of the network through 2020. This will include an additional 50 miles of protected bike lanes and a stronger focus on the Neighborhood Bike Routes, including 30 miles of neighborhood greenways and 40 miles of bike lanes. Additionally, improvements to make intersections safer and to improve bicycle accommodations at existing barriers such as viaducts and bridges will be completed.

**PHASE THREE** will fill remaining gaps in the network and expand the number of bikeways in many neighborhoods that do not currently experience much bicycling activity. The Plan will be updated in 2018 to assess the impact of all of the new bicycling facilities and make recommendations for Phase Three of implementation.

The projects listed on the following pages are subject to change and may require approvals from agencies outside of CDOT.



Roscoe Street



## May 2011 - May 2012 Completed Projects

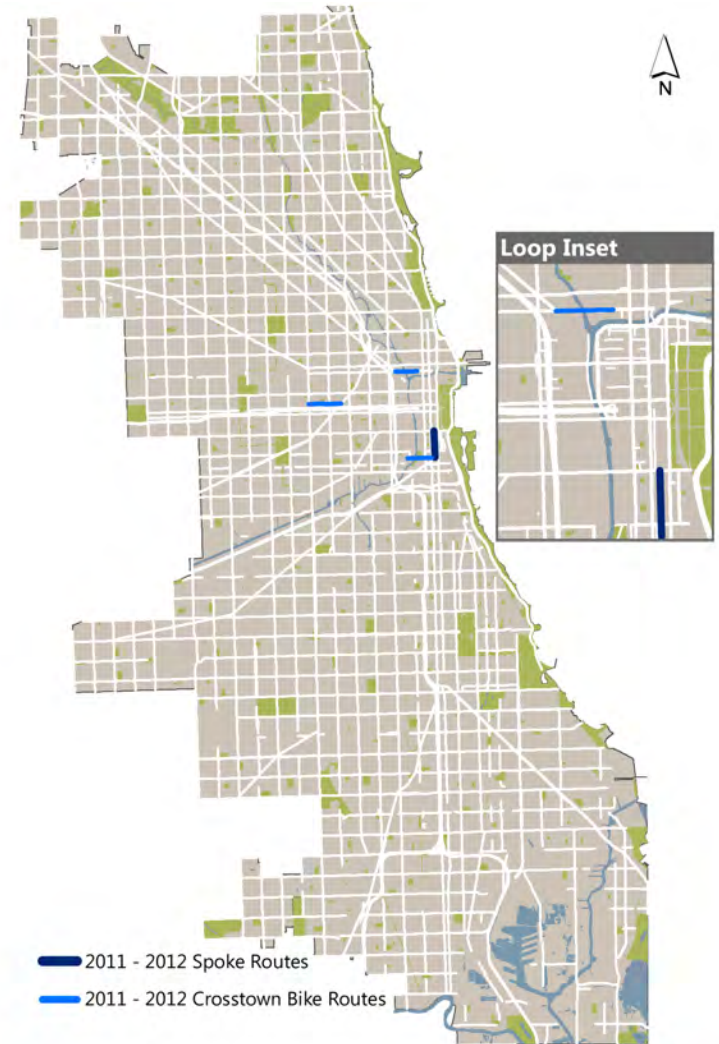
Route	Street	From	To
<b>Spoke Routes</b>	Wabash	18th	Roosevelt
<b>Crosstown Bike Routes</b>	18th	Canal	State
	Jackson	Western	Ogden
	Kinzie	Milwaukee	Wells



Jackson Boulevard



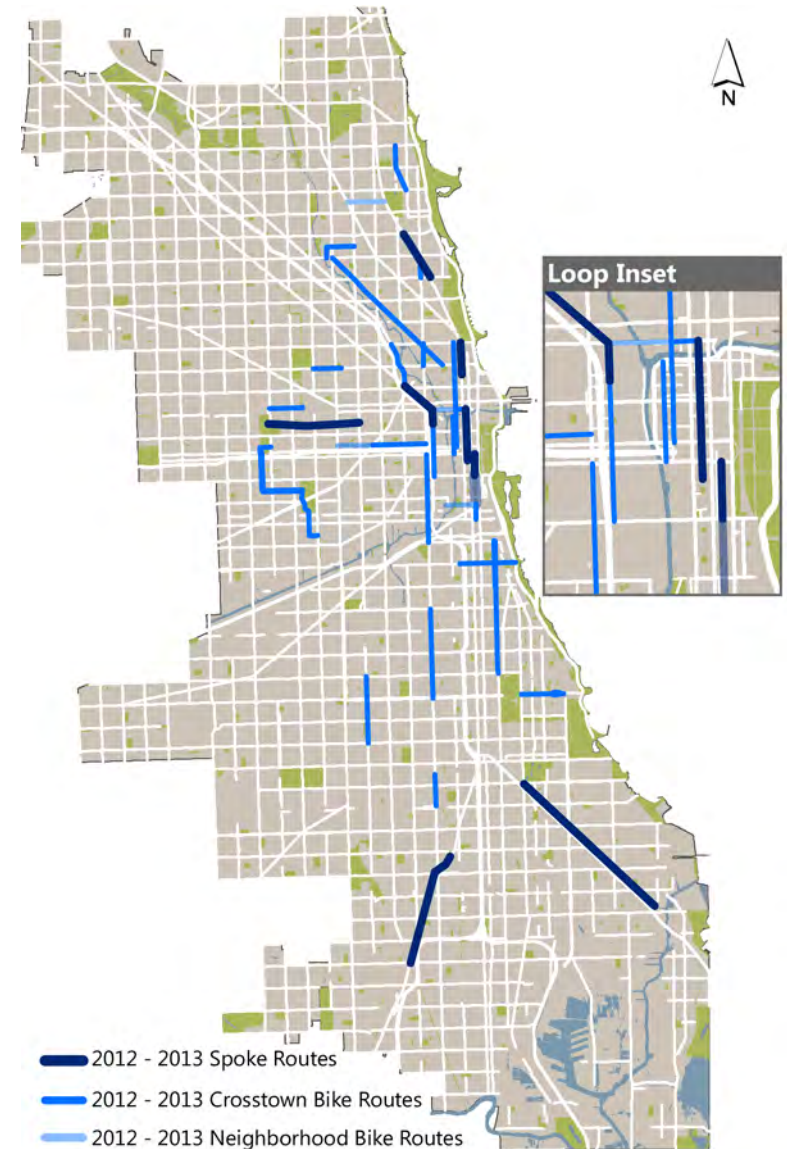
18th Street





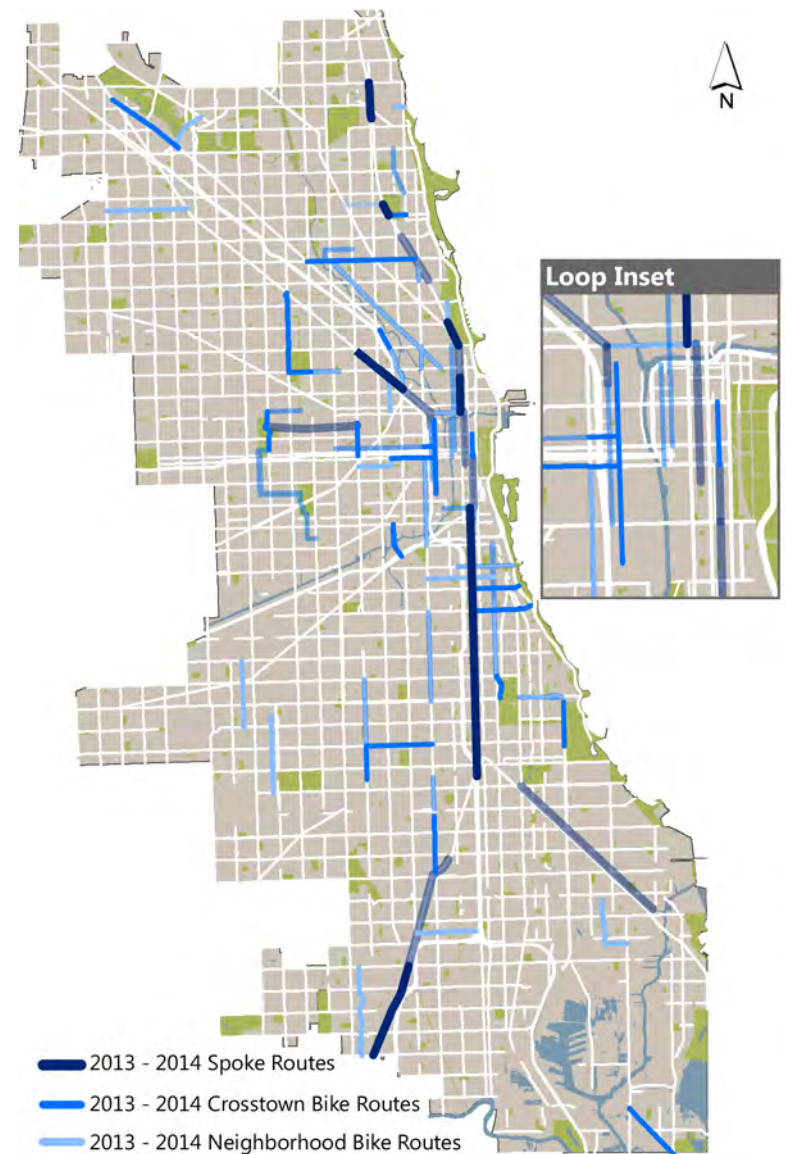
## May 2012 - May 2013 Completed and Planned Projects

Route	Street	From	To
<b>Spoke Routes</b>	Clark	Oak	North
	Clark	Diversey	Addison
	Dearborn	Polk	Kinzie
	Desplaines	Randolph	Kinzie
	Lake	Central Park	Damen
	Milwaukee	Kinzie	Elston
	South Chicago	Baltimore	79th
	Wabash	Roosevelt	Harrison
	Vincennes	103rd	84th
<b>Crosstown Bike Routes</b>	31st	Wells	LSD
	55th	Cottage Grove	Lake Park
	Broadway	Montrose	Foster
	Campbell/Roscoe	Belmont	Damen
	Clybourn	Division	Belmont
	Damen	63rd	51st
	Desplaines	Roosevelt	Randolph
	Division	California	Western
	Elston	Milwaukee	North
	Franklin	Madison	Wacker
	Franklin	Sacramento	Central Park
	Halsted	75th	69th
	Halsted	Garfield	39th
	Halsted	26th	Harrison
	Halsted	Division	North
	Halsted	Diversey	Wellington
	Jackson	Central Park	Independence
	Jackson	Ogden	Halsted
	King Drive	51st	26th
	Kinzie	Wells	Dearborn
Wabash	Cermak	18th	
Wells	Van Buren	North	
West Side Boulevards	Douglas Park	Garfield Park	
<b>Neighborhood Bike Routes</b>	Berteau	Lincoln	Clark



# May 2013 - May 2014 Planned Projects

Route	Street	From	To
<b>Spoke Routes</b>	Clark	Kinzie	Oak
	Clark	North	Lincoln Park West
	Clark	Irving Park	Berteau
	Clark	Edgewater	Devon
	Milwaukee	Elston	North
	State	18th	69th
	South Chicago	71st	79th
	Vincennes	119th	103rd
	35th	State	Lake Front Trail
	63rd St	Damen	Halsted
<b>Crosstown Bike Routes</b>	Belmont	Elston	Clark
	Brainard Ave	130th	Burnham
	Central Park	Jackson	Franklin
	Damen	69th	63rd
	Damen	Congress	Walnut
	Division	Kedzie	California
	Elston	North	Cortland
	Elston	Forest Glen	Milwaukee
	Elsworth/Rainey	MLK Drive	55th
	Halsted	Vincennes	76th
	Harrison	Loomis	Fulton
	Irving Park	Clark	Sheridan
	Jackson	Halsted	Jefferson
	Jefferson	14th	Fulton
	Kedzie	Division	Milwaukee
	Loomis	Archer	Cermak
	Pershing	State	Lake Shore Drive
	Stony Island	64th	56th
	Wabash	Harrison	Madison
	<b>Neighborhood Bike Routes</b>	97th/Lafayette	Vincennes
33rd		Halsted	King
100th		Paxton	Torrence
Bell		119th	103rd
Berteau		Narragansett	Milwaukee
Forest Glen		Elston	Caldwell
Keeler		59th	47th
Lawndale		71st	57th
Lincoln Park West		Clark	Fullerton
Loomis		Polk	Harrison
Paxton		100th	92nd
Polk		Damen	Loomis
Thorndale		Red Line	Lakefront

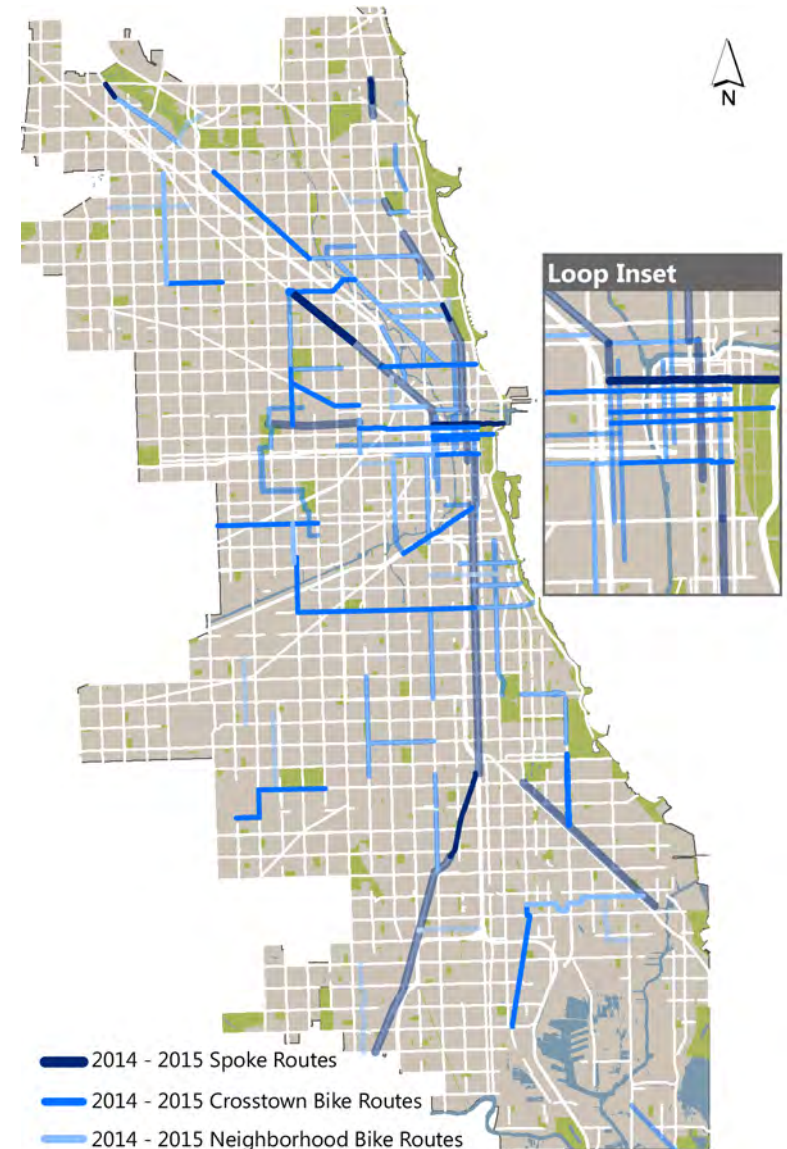




# May 2014 - 2015 Planned Projects

Appendix  
 Making it Happen  
 2020 Network  
 What We Heard  
 Chicago NOW  
 Introduction  
 Bicycling in

Route	Street	From	To
<b>Spoke Routes</b>	Clark	Lincoln Park West	Belden
	Clark	Peterson	Devon
	Randolph	Desplaines	Lake Shore Drive
	Milwaukee	North	Logan
	Vincennes	84th	69th
<b>Crosstown Bike Routes</b>	71st	Pulaski	California
	76th	Kostner	Pulaski
	Adams	Desplaines	Michigan
	Archer	Loomis	State
	Cermak	City Limits	California
	Cottage Grove	93rd	115th
	Diversey	Long	Kostner
	Diversey	Logan	Damen
	Division	Milwaukee	Lake Shore Drive
	Elston	Belmont	Lawrence
	Grand	Kedzie	Damen
	Harrison	Fulton	Michigan
	Kedzie	Pershing	28th
	Kedzie	Lake	Division
	Logan	Kedzie	Diversey
	Monroe	Desplaines	Lake Shore Drive
	Pershing	Kedzie	State
Pulaski	76th	71st	
Stony Island	South Chicago	Marquette	
Washington	Damen	Michigan	
<b>Neighborhood Bike Routes</b>	92nd/93rd/94th	Cottage Grove	South Chicago
	Belden/Dickens	Clybourn	Clark
	Long	Diversey	Lawrence
	Loomis	Cermak	Polk
	Sawyer	30th	Cermak



## 2 Funding

Funding, engineering, and constructing the Streets for Cycling Plan 2020 network will require collaboration between CDOT and its partners. Presently, there are three methods to implement projects, as described below.

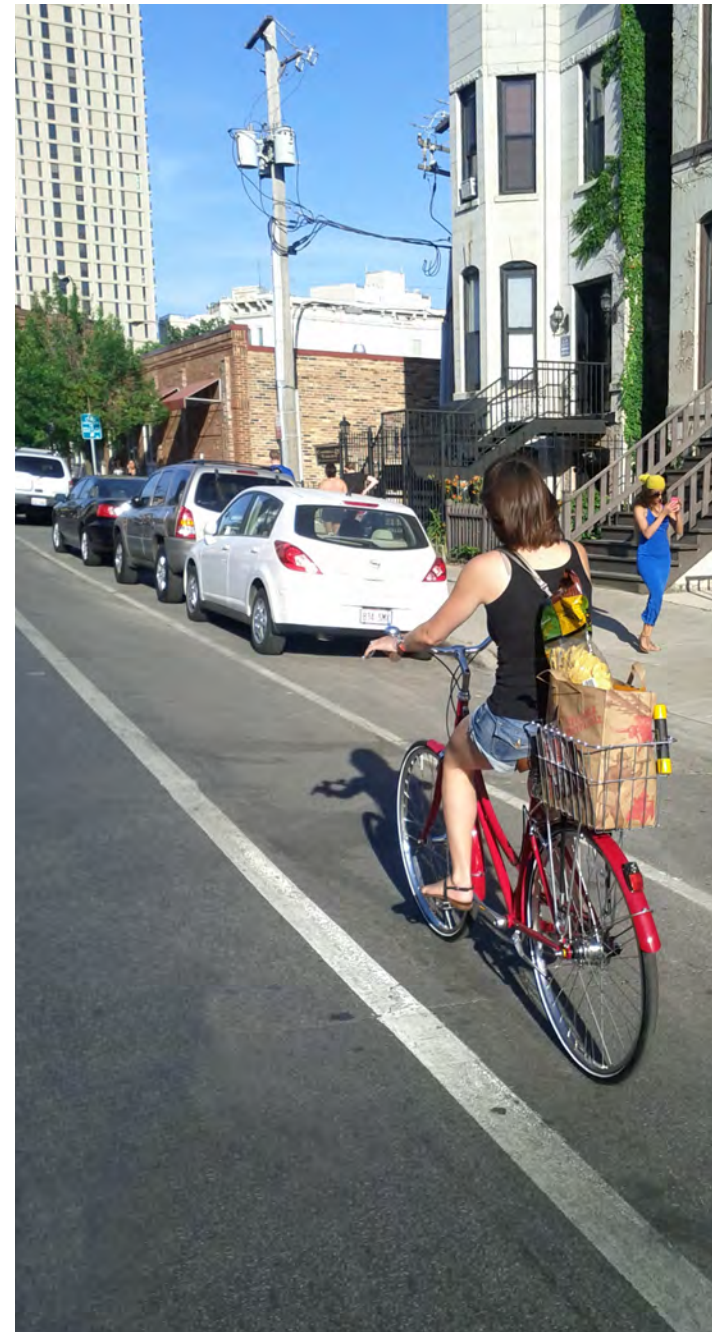
**Federal Funds:** The majority of the implementation through the year 2015 will be funded through a \$32 million grant that was provided through the Congestion Mitigation and Air Quality (CMAQ) Improvement Program, matched by \$8 million in local funds. This will fund the construction of the Phase 1 projects.

**Arterial Resurfacing Projects:** CDOT's Arterial Resurfacing (AR) program, funded in part by the Illinois Department of Transportation, typically resurfaces arterial streets on an annual basis. As a number of the projects identified in this plan are on arterial streets, CDOT will coordinate the installation of all types of bikeways with the AR program.

CDOT's Bike Program should be involved in the selection and design process for streets included in the AR program to expedite the implementation of the Plan and ensure bikeways are included in projects on streets identified in the Plan.

**Aldermanic Menu Funding:** The Aldermanic Menu Program allocates funding to each of Chicago's 50 aldermen on an annual basis (currently \$1.32 million per year). Individual aldermen determine how to spend this money. Aldermen will continue to be encouraged to assist with the funding of the routes identified in this Plan.

There is also the opportunity to incorporate bicycle improvements into other transportation projects. Compared to the overall cost of most transportation projects, adding bicycle accommodations is very affordable. All projects being designed in the public way should be reviewed to ensure recommendations from this Plan are incorporated in the overall project.



Armitage Avenue



# 3 Maintenance

This plan identifies hundreds of miles of new bicycle accommodations. This infrastructure must be maintained in both the short-term (snow and debris removal from bike lanes) and long-term (striping) to keep the network in a state of good repair. Several strategies to maintain the bike network are listed below.

1. Establish a reliable and sustainable funding source for the upkeep of bicycle pavement markings and signs. There currently is no dedicated annual funding source for maintaining pavement markings and signs. Through 2012, the only time bicycle pavement markings are restored is through resurfacing projects or with aldermanic menu money. A dedicated funding source must be established that is tied to the life cycle of the facilities in order to keep bicycle infrastructure in a state of good repair.
2. Establish maintenance practices to keep protected bike lanes clear. Barrier protected bike lanes are new to the United States and most public works/streets and sanitation departments have not had much experience in maintaining them. Keeping barrier protected bike lanes clear in Chicago will be just as important as keeping all streets clear. CDOT will coordinate with the Department of Streets and Sanitation to ensure street sweeping and snow clearing of barrier protected bike lanes.
3. Coordinate with utility companies. Utility companies do a considerable amount of work in the public right-of-way, often times negatively impacting existing bike accommodations. Utility companies must be held responsible for replacing bike facilities when they do work in the public right-of-way. Guidance should be added to CDOT's Regulations for Openings, Construction and Repair in the Public Way to ensure bike lanes are properly restored.



Elston Avenue



ST. LOUIS



## ACKNOWLEDGEMENTS

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## FRONT COVER

18th Street Barrier Protected Bike Lane

## REAR COVER

Jackson Boulevard Barrier Protected Bike Lane

## PHOTO CREDITS

All photos are courtesy of the City of Chicago and Sam Schwartz Engineering, except for the following:

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- » Page 25, Montreal Barrier Protected Bike Lanes, MBest324
- » Page 25, Brooklyn Bike Lanes, Complete Streets
- » Page 29, Copenhagen Bicycle Superhighways, SirPecanGum
- » Page 29, London Barclays Cycle Superhighways, Transport for London

private collections

- » Pages 9, 26, 37, and 47: University of Chicago

# Bicycle Facilities Guide

Streets for Cycling Plan 2020



BS

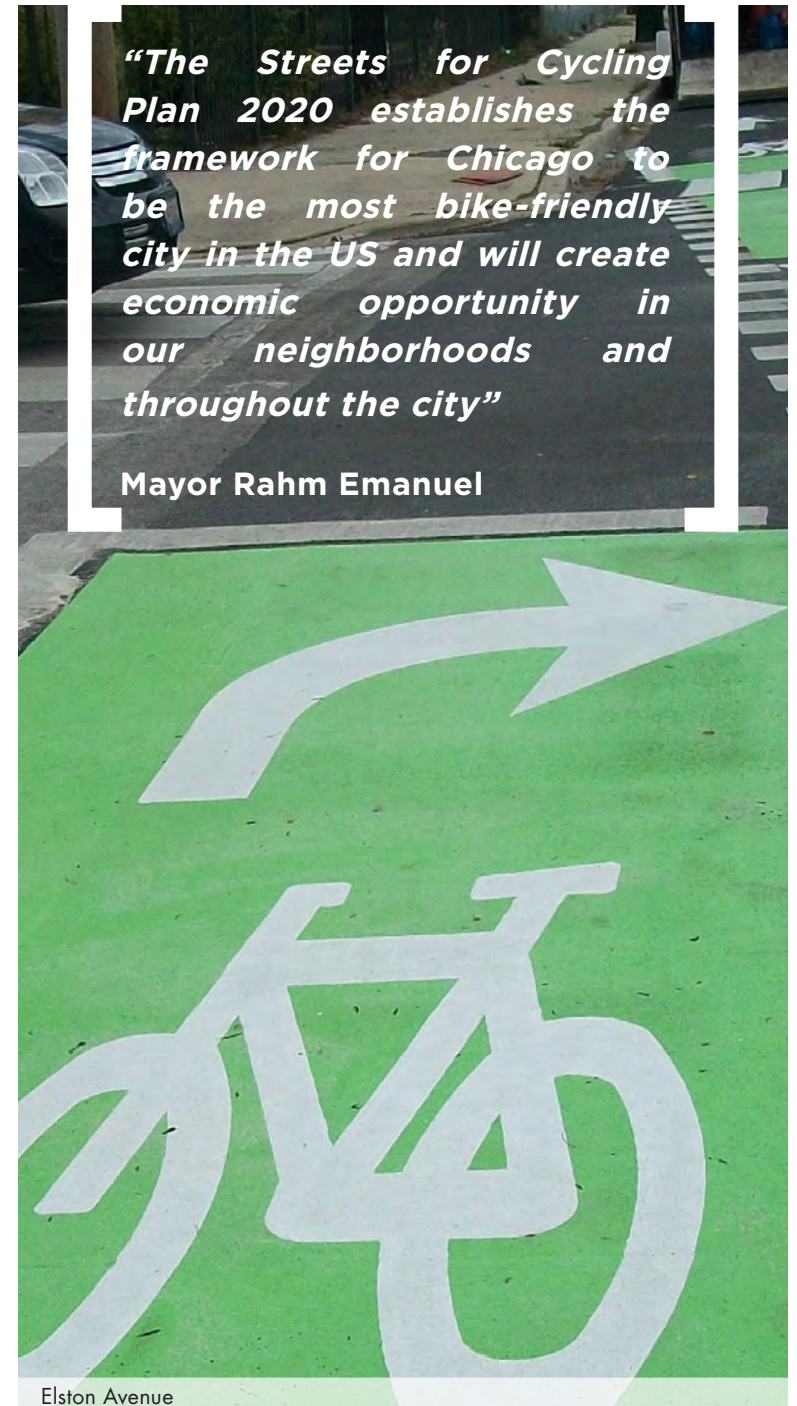
# introduction

Most Chicagoans have experienced standard bike lanes and marked shared lanes on city streets since the early 1990's, but the bike accommodations included in the Streets for Cycling Plan 2020 are new to the City. It is important that bicyclists, pedestrians and motorists understand how to use the new accommodations to ensure our streets are safe for all users.

The Streets for Cycling Bicycle Facilities Guide is intended to educate all Chicagoans on these new bike accommodations. A description of each treatment is provided, as well as the benefits it provides to all roadway users. Instructions are provided for bicyclists and motorists to help both better understand how to operate safely on the roadway.

The Streets for Cycling Bicycle Facilities Guide is not a technical design guide. A number of technical resources will be used to design these accommodations including the North American City Transportation Officials Urban Bikeway Design Guide, the upcoming Chicago Department of Transportation Bicycle Program Design Guidelines, the Illinois Department of Transportation Bureau of Design & Environment Manual, the Manual on Uniform Traffic Control Devices, and the American Association of State Highway and Transportation Officials Green Book.

Residents, community groups, and leaders will all be able to use this guide to envision safer streets in their neighborhoods.



Elston Avenue

# table of contents

1. One-Way Barrier Protected Bike Lanes
2. Two-Way Barrier Protected Bike Lanes
3. Buffer Protected Bike Lanes
4. Neighborhood Greenways
5. Barrier Protected Bike Lanes and Driveways/Alleys
6. Bicycle Signals
7. Mixing Zones
8. Two-Stage Turn Boxes
9. Intersection Crossing Markings
10. Bike Boxes



Roscoe Street

- One-Way Barrier Protected Bike Lanes
- Two-Way Barrier Protected Bike Lanes
- Buffer Protected Bike Lanes
- Neighborhood Greenways
- Protected Bike Lanes and Driveways
- Bicycle Signals
- Mixing Zones
- Two-Stage Turn Boxes
- Intersection Crossing Markings
- Bike Boxes

# 1 One-Way Barrier Protected Bike Lanes

## Benefits:

1. Provide dedicated space for bicyclists in order to increase comfort and safety.
2. Prevent over-taking crashes.
3. Reduce the risk of dooring crashes and eliminate the risk of a doored bicyclist being run over by a passing motor vehicle.
4. Prevent double-parking in the bike lane, unlike a standard bike lane.
5. Encourage bicyclists of all ages and abilities to ride.

## What **MOTORISTS** should know:

Streets with barrier protected bike lanes will experience high levels of bicycling. Take extra care when turning right or left through the bicycle lane at intersections. Bicyclists may be traveling at high speed; check and double check before turning through a bicycle lane.

## What **BICYCLISTS** should know:

The barrier protected bike lane provides physical separation from motor vehicles; however, bicyclists should remain alert in potential vehicle conflict areas and stay vigilant as pedestrians can step out into the bike lane, particularly when accessing parked vehicles adjacent to the bike lane. Bicyclists should obey all traffic control devices.

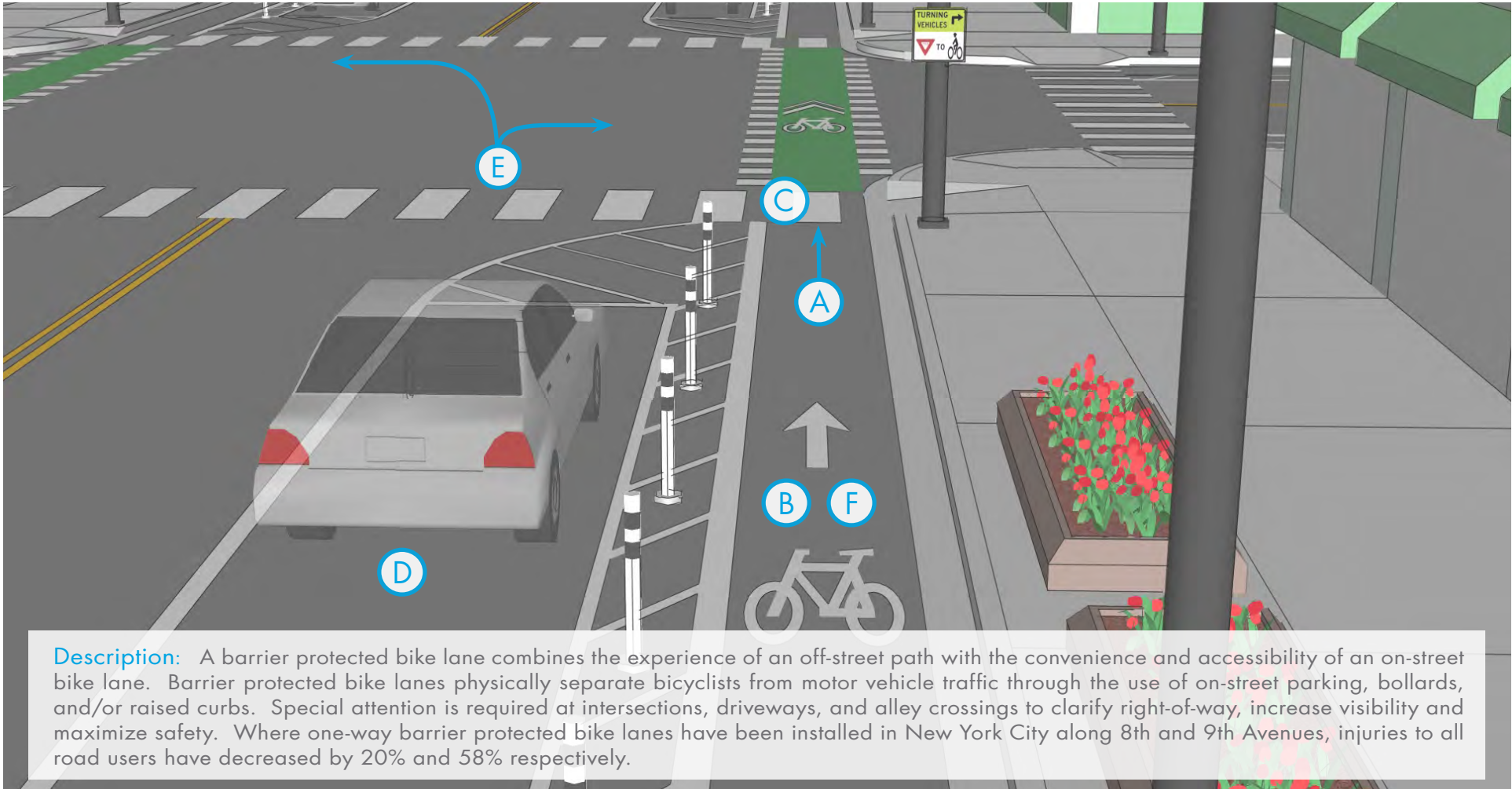
## When **BARRIER PROTECTED BIKE LANES** can be installed:

Barrier protected bike lanes are the preferred bicycle accommodation and will be considered on all streets.

The minimum roadway width for installing barrier protected bike lanes on roadways with one travel lane and one parking lane in each direction is 52'. However, this width present several operational and maintenance challenges and should only be installed for short segments at critical locations. The following should be considered before installing barrier protected bike lanes on 52' roadways:

- Bus traffic: Barrier protected bike lanes should not be installed on 52' roadways with bus routes.
- Truck traffic: If there is heavy truck traffic on the roadway, barrier protected bike lanes should not be installed.
- Maintenance: Special maintenance equipment is required to clear debris and snow from barrier protected bike lanes on 52' roadways.

The **preferred minimum roadway width** for barrier protected bike lanes is 58'. The wider bike lane and buffer space creates a safer and more comfortable experience for all users and allows for easy maintenance.



**Description:** A barrier protected bike lane combines the experience of an off-street path with the convenience and accessibility of an on-street bike lane. Barrier protected bike lanes physically separate bicyclists from motor vehicle traffic through the use of on-street parking, bollards, and/or raised curbs. Special attention is required at intersections, driveways, and alley crossings to clarify right-of-way, increase visibility and maximize safety. Where one-way barrier protected bike lanes have been installed in New York City along 8th and 9th Avenues, injuries to all road users have decreased by 20% and 58% respectively.

## Bicyclists

- (A)** Watch for turning vehicles when approaching intersections, driveways and alleys.
- (B)** Be alert for passing bicyclists within the bike lane and for pedestrians crossing the bike lane to legally access parked motor vehicles.
- (C)** Watch for pedestrians when approaching crosswalks.

## Motorists

- (D)** Park in the marked parking lane between the travel lane and the bike lane.
- (E)** Expect to see a greater number of bicyclists on streets with barrier protected bike lanes. Be cautious when turning across the bike lane at intersections, driveways, and alleys.
- (F)** Watch for oncoming bicyclists when accessing your parked vehicle. If using a loading zone, do not block the bike lane or use it as a staging area.

One-Way Barrier Protected Bike Lanes

Two-Way Barrier Protected Bike Lanes

Buffer Protected Bike Lanes

Neighborhood Greenways

Protected Bike Lanes and Driveways

Bicycle Signals

Mixing Zones

Two-Stage Turn Boxes

Intersection Crossing Markings

Bike Boxes

# 2 Two-Way Barrier Protected Bike Lanes

## Benefits:

1. Provide dedicated space for bicyclists in order to increase perceived comfort and safety.
2. Prevent over-taking crashes.
3. Reduce the risk of dooring crashes and eliminate the risk of a doored bicyclist being run over by a passing motor vehicle.
4. Bollards or other barriers prevent motorists from double parking in the bike lane.
5. Encourage bicyclists of all ages and abilities to ride.
6. On one-way streets, reduce out of direction travel in areas with limited access by providing contra-flow movement.

## What MOTORISTS should know:

Streets with two-way barrier protected bike lanes typically experience high levels of bicycling. Take extra care when turning through the bicycle crossing at driveways or intersections as bicyclists may be traveling from both directions. Bicyclists have priority over turning vehicles.

## What BICYCLISTS should know:

Bicyclists enjoy the physical separation that barrier protected bike lanes provide from motor vehicles; however, bicyclists should remain alert in potential conflict areas. Watch for pedestrians who may step into the bike lane, especially if on-street vehicle parking is present. Make sure that turning motorists see you before continuing through an intersection. Bicyclists should obey all traffic control devices.

## When TWO-WAY BARRIER PROTECTED BIKE LANES should be installed:

Two-way barriered protected bike lanes are typically installed on one-way streets. The minimum width of the bike lane is 8'. Bike signals should be provided at every signalized intersection where two-way barrier protected bike lanes are present.

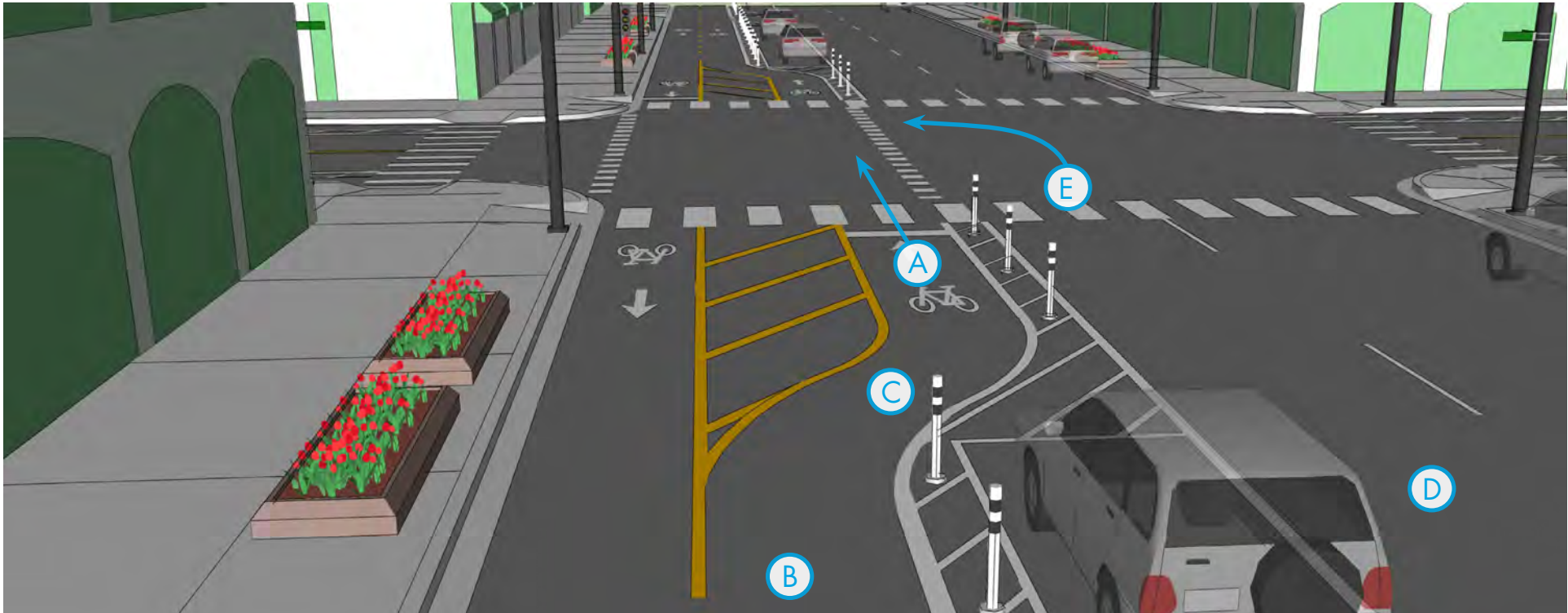


Dearborn Street



Washington D.C.





**Description:** A barrier protected bike lane combines the experience of an off-street path with the convenience and accessibility of an on-street bike lane. Protected bike lanes physically separate bicyclists from motor vehicle traffic through the use of on-street parking, bollards and/or raised curbs. Special attention is required at intersections, driveways, and alley crossings to clarify right-of-way, increase visibility and maximize safety. Two-way barrier protected bike lanes allow bicyclists to travel in both directions on one side of the street and are most common on one-way streets. Two-way barrier protected bike lanes increase intersection complexity and may require dedicated bicycle signal heads to operate safely.

## Bicyclists

- (A)** Watch for turning vehicles when approaching intersections, driveways, and alleys.
- (B)** Be alert for passing bicyclists within the bike lane and for pedestrians crossing the bike lane to legally access parked motor vehicles.
- (C)** The bike lane may weave as it approaches intersections to make bicyclists more visible to motorists.

## Motorists

- (D)** Park in the marked parking lane between the travel lane and the bike lane.
- (E)** Expect to see a greater number of bicyclists on streets with protected bike lanes. Bicyclists will be traveling in both directions in two-way protected bike lanes. Take extra caution and look both ways before turning across the bike lane at intersections, driveways and alleys, especially when the barrier protected bike lane is protected by on-street parking. Through bicyclists have the right-of-way at uncontrolled intersections, driveways and alleys.

# 3 Buffer Protected Bike Lanes

## Benefits:

1. Improve the perception of safety by providing extra separation space for bicyclists and help all roadway users share the road.
2. Encourage cyclists to ride outside of the door zone when used next to a parking lane. The door zone is the space where the door of a parked vehicle can open unexpectedly into the path of a bicyclist.
3. Reduce the risk of over-taking and dooring crashes.

## What MOTORISTS should know:

Use caution when turning across the buffer protected bike lane to reach or leave the parking lane.

## What BICYCLISTS should know:

Ride in the center of the buffer protected lane. If a travel lane side buffer is present, it can be used to pass slower bicyclists in the bike lane. Announce your presence to the slower bicyclist and check over your shoulder for approaching vehicular traffic. Never pass on the right of a slower bicyclist (unless the buffer protected bike lane is on the left side of a one-way street).

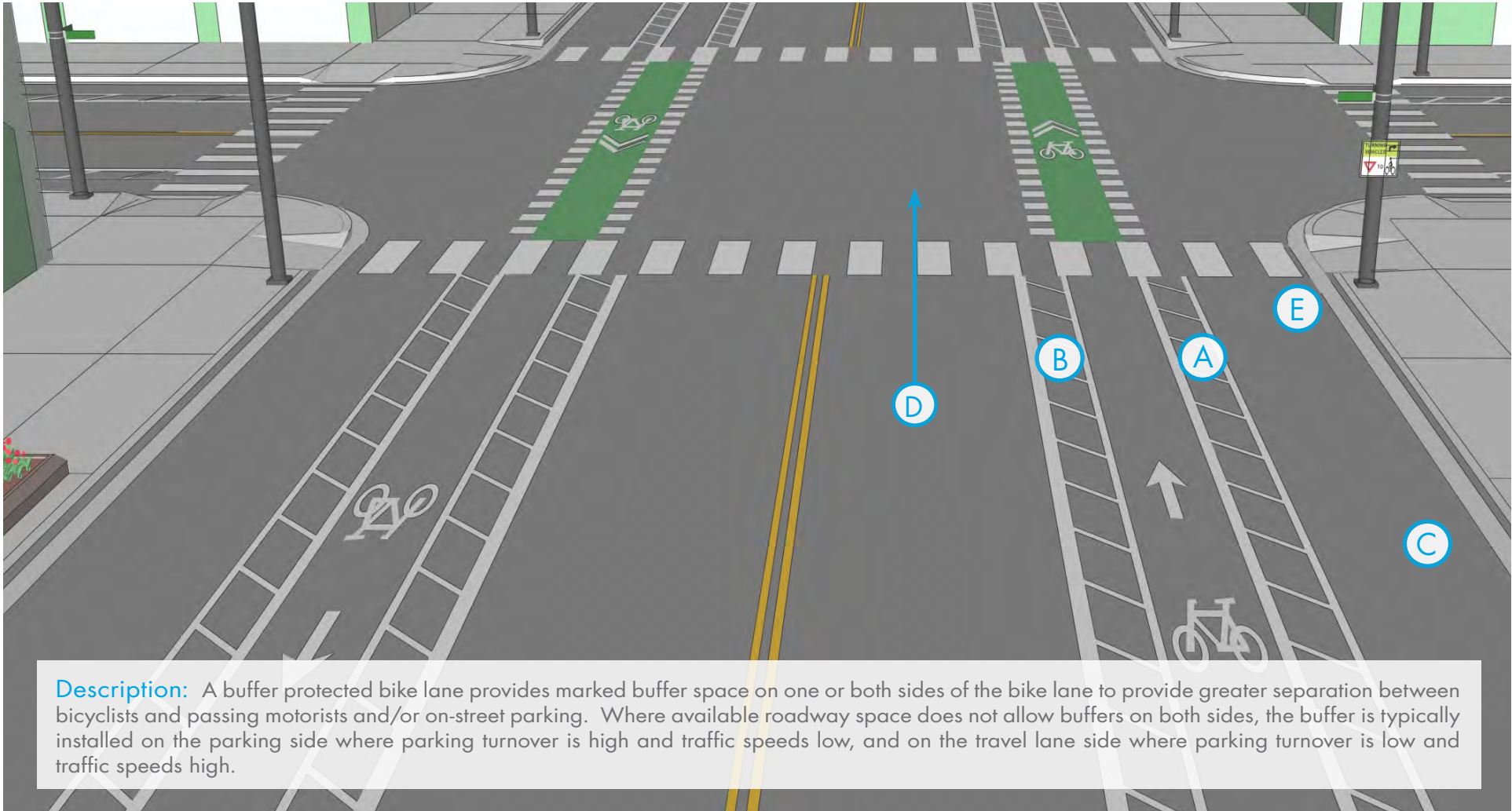
## When BUFFER PROTECTED BIKE LANES can be installed:

Buffer protected bike lanes can be installed on streets that are at least 48' wide. This allows for a 2' buffer between the parking lane and the bike lane to encourage cyclists to ride outside of the door zone of parked cars. The **preferred minimum roadway width** for buffer protected bike lanes is 50'. This allows for a 2' buffer between the parking lane and the bike lane to encourage cyclists to ride outside of the door zone of parked cars and a 2' buffer between the motor vehicle travel lane and the bike lane to provide greater separation between cyclists and motorists. They are an alternative to barrier protected bike lanes on streets that have a lot of driveways, alleys, and cross streets.



Jackson Boulevard

- One-Way Barrier Protected Bike Lanes
- Two-Way Barrier Protected Bike Lanes
- Buffer Protected Bike Lanes**
- Neighborhood Greenways
- Protected Bike Lanes and Driveways
- Bicycle Signals
- Mixing Zones
- Two-Stage Turn Boxes
- Intersection Crossing Markings
- Bike Boxes



**Description:** A buffer protected bike lane provides marked buffer space on one or both sides of the bike lane to provide greater separation between bicyclists and passing motorists and/or on-street parking. Where available roadway space does not allow buffers on both sides, the buffer is typically installed on the parking side where parking turnover is high and traffic speeds low, and on the travel lane side where parking turnover is low and traffic speeds high.

### Bicyclists

- A** The buffer on the parking side encourages bicyclists to ride out of the door zone.
- B** The buffer on the travel lane side provides greater separation between bicyclists and adjacent traffic.

### Motorists

- C** Be alert for bicyclists when pulling into and out of on-street parking spaces.
- D** Pass bicyclists at a safe distance, at least 3 feet per the Illinois Vehicle Code, even if a bicyclist is riding in the buffer space.
- E** Do not use the buffer protected bike lane for loading or parking.

# 4 Neighborhood Greenways

## Benefits:

1. Provide comfortable and attractive places to bicycle, walk, skate, and run for users of all ages and experience levels.
2. Improve bicyclist safety by controlling motor vehicle speeds and volumes.
3. Provide key routes and improve connectivity.
4. Improve bicyclist comfort by providing a low-stress route to destinations that would otherwise be inaccessible to many bicyclists.
5. Benefit neighborhoods and residents by reducing motor vehicle speeds and volumes while providing an attractive amenity.

## What **MOTORISTS** should know:

Neighborhood greenways are optimized for bicycle and pedestrian travel. Because they employ motor vehicle traffic calming and/or diversion methods, they should be limited to local traffic and are not ideal routes for long-distance or direct travel. When operating a vehicle on a neighborhood greenway, motorists should be aware that bicyclists will be more prevalent.

## What **BICYCLISTS** should know:

Neighborhood greenways are streets optimized for bicycle and pedestrian travel, and provide excellent connectivity and safe routes to key destinations. Though these routes give priority to bicyclists, always watch for motorists and other bicyclists. Bicyclists should obey all traffic control devices.

## What **RESIDENTS** should know:

Neighborhood greenways calm and reduce non-local vehicular traffic, enabling the street to be more community oriented. Local access to homes along the neighborhood greenways is preserved.

## When **NEIGHBORHOOD GREENWAYS** can be installed:

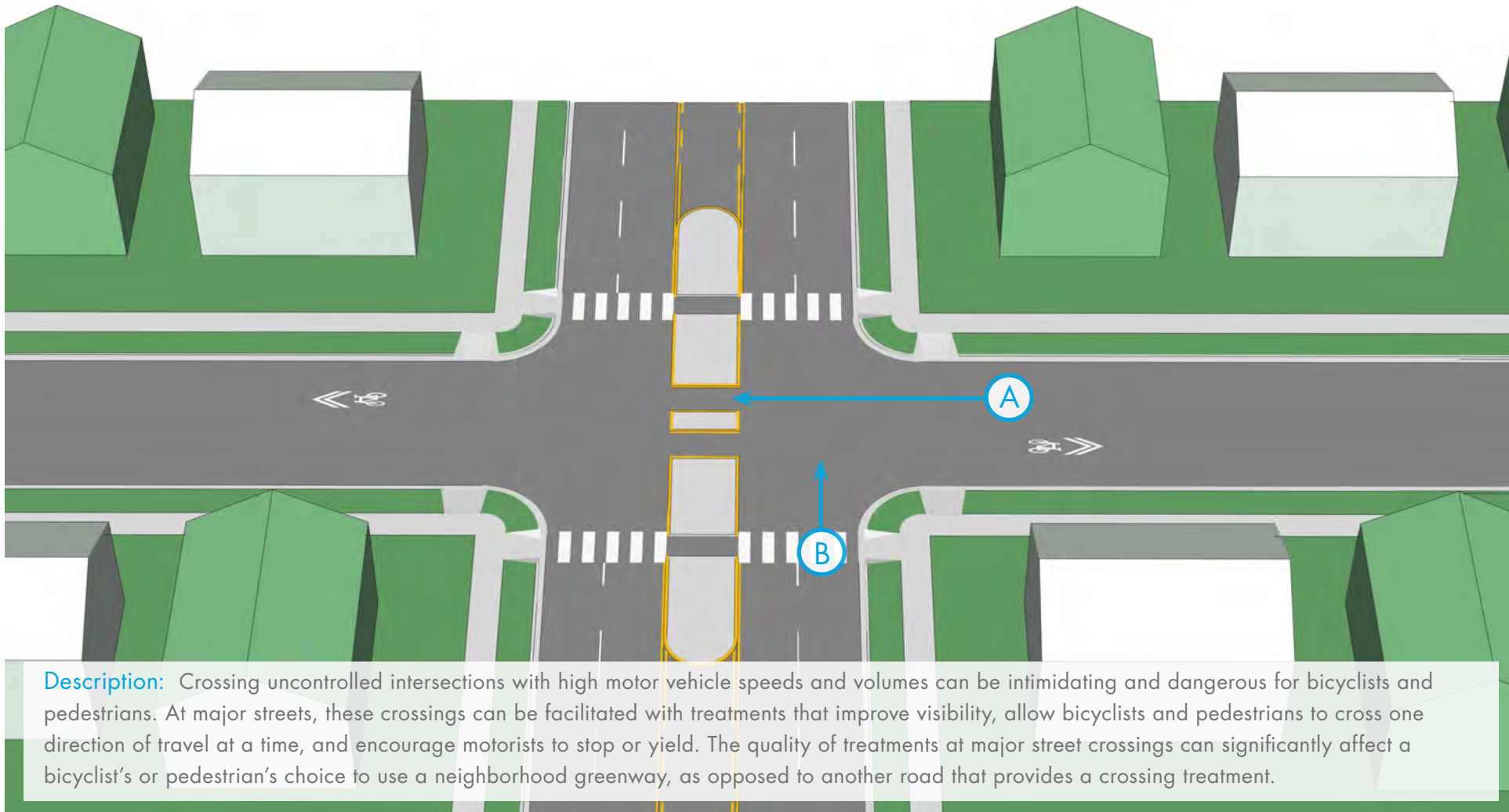
Neighborhood greenways can be installed on any residential street. They are most appropriate on streets high volumes of cut through traffic.



Seattle



Berteau Avenue



### Bicyclists

- Ⓐ Continue through the intersection cautiously, watching for motorists and obeying traffic signs or signals.

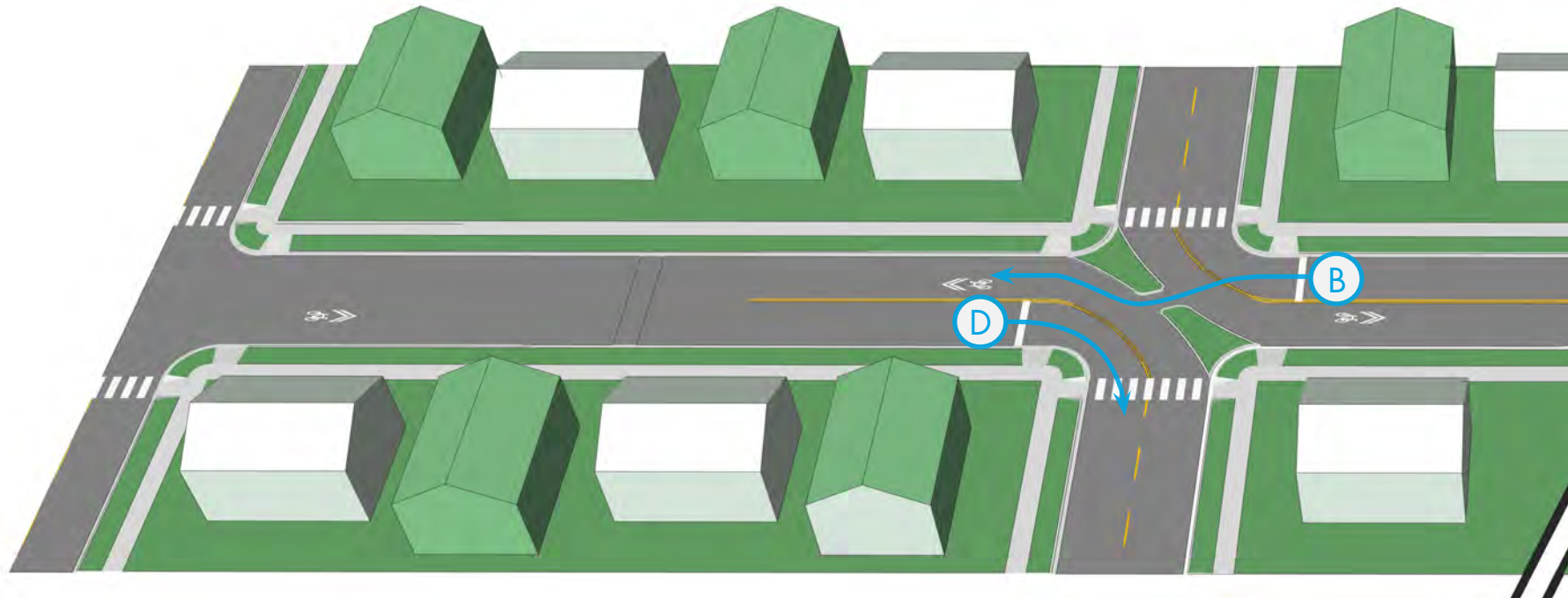
### Motorists

- Ⓑ Watch for bicyclists entering the intersection.

## Neighborhood Greenways Major Intersections

# Neighborhood Greenways Minor Intersections

- One-Way Barrier Protected Bike Lanes
- Two-Way Barrier Protected Bike Lanes
- Buffer Protected Bike Lanes
- Neighborhood Greenways
- Protected Bike Lanes and Driveways
- Bicycle Signals
- Mixing Zones
- Two-Stage Turn Boxes
- Intersection Crossing Markings
- Bike Boxes

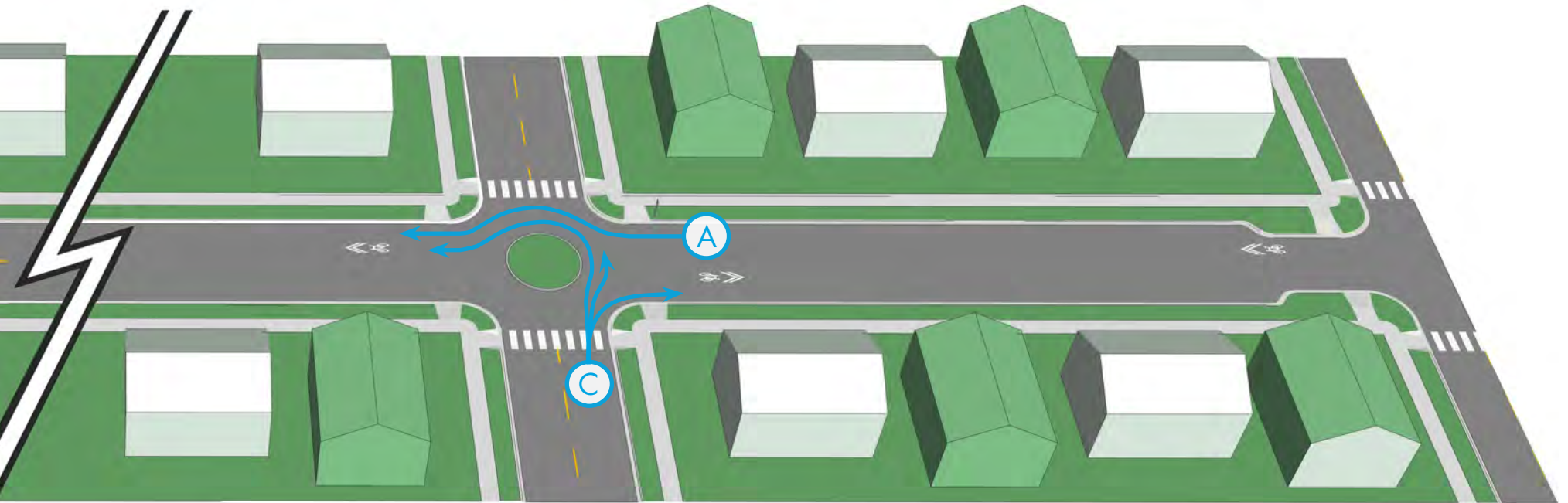


## Bicyclists

- A** Continue through the intersection cautiously.
- B** Continue through the intersection by using the bicycle cut-through in the middle of the diverter.

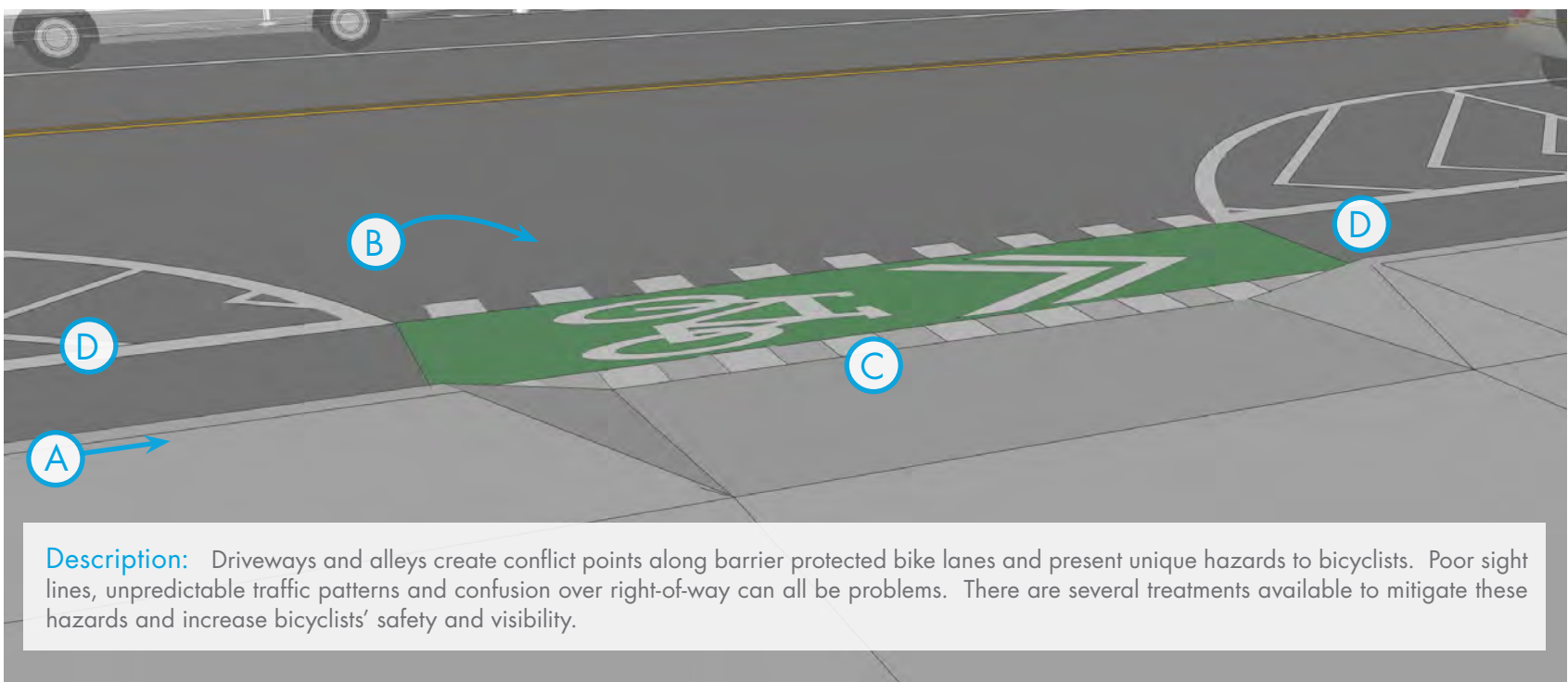
## Motorists

- C** Reduce speed to continue through the intersection or to make a turn. Watch for bicyclists.
- D** Stop and watch for bicyclists before proceeding.



# 5

## Barrier Protected Bike Lanes and Driveways/Alleys



**Description:** Driveways and alleys create conflict points along barrier protected bike lanes and present unique hazards to bicyclists. Poor sight lines, unpredictable traffic patterns and confusion over right-of-way can all be problems. There are several treatments available to mitigate these hazards and increase bicyclists' safety and visibility.

- One-Way Barrier Protected Bike Lanes
- Two-Way Barrier Protected Bike Lanes
- Buffer Protected Bike Lanes
- Neighborhood Greenways
- Protected Bike Lanes and Driveways
- Bicycle Signals
- Mixing Zones
- Two-Stage Turn Boxes
- Intersection Crossing Markings
- Bike Boxes

### Bicyclists

**A** Use caution and stay alert to your surroundings.

### Motorists

**B** Watch for bicyclists when turning at driveways and alleys, as bicyclists in the barrier protected bike lane have the right-of-way. Per the Illinois Vehicle Code, turning in front of a bicyclist who has the right-of-way is illegal.

**C** Green pavement is used at driveways and alleys with a high number of turns and is a reminder to look for bicyclists riding in the barrier protected bike lane.

**D** Parking is prohibited immediately before and after driveways and alleys to increase the visibility of approaching bicyclists in the barrier protected bike lane.

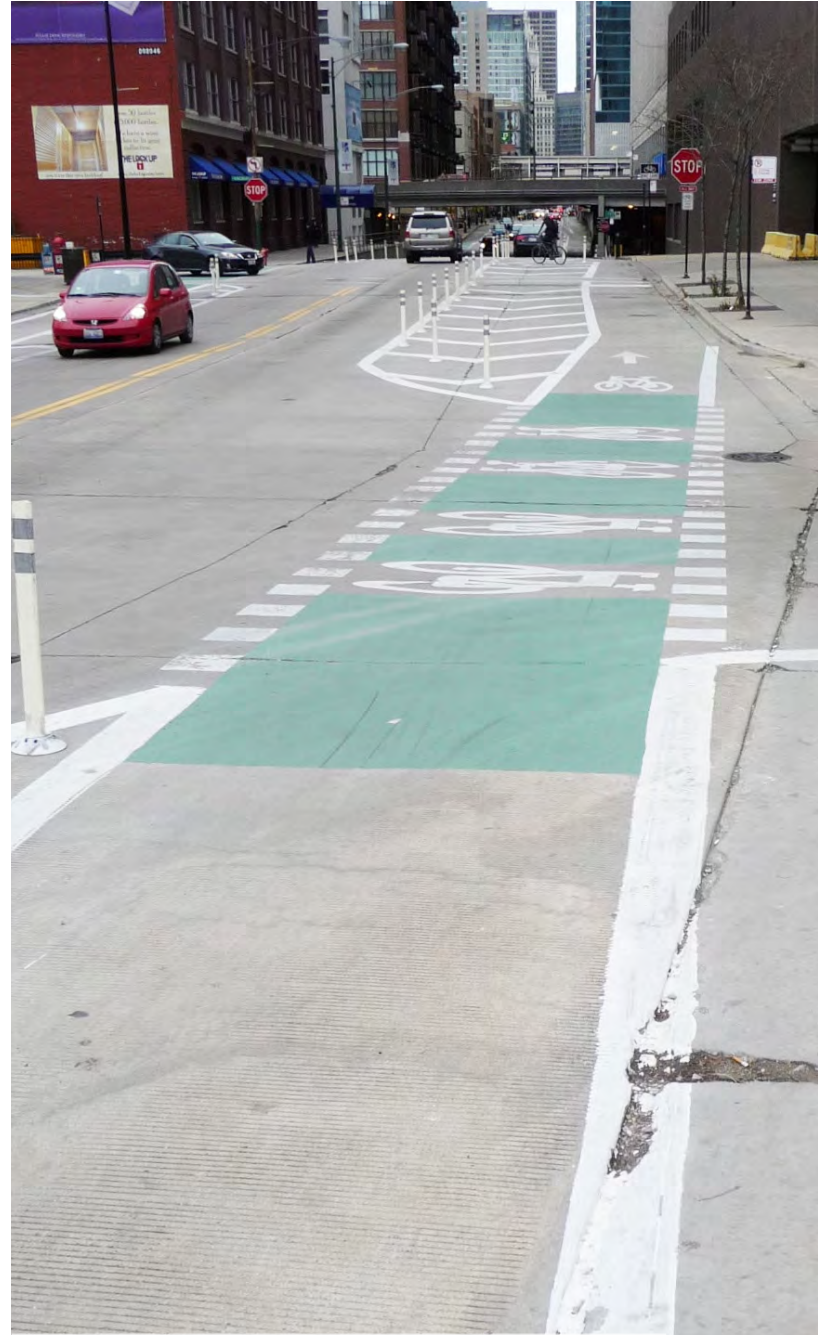




Jackson Boulevard



Kinzie Street



Kinzie Street

# 6 Bicycle Signals

## Benefits:

1. Separate bicycle movements from conflicting motor vehicle or pedestrian movements.
2. Allow for bicycle-only movements within signalized intersections.
3. Help to simplify bicycle movements through complex intersections and potentially improve operations or reduce conflicts for all modes.

## What **MOTORISTS** should know:

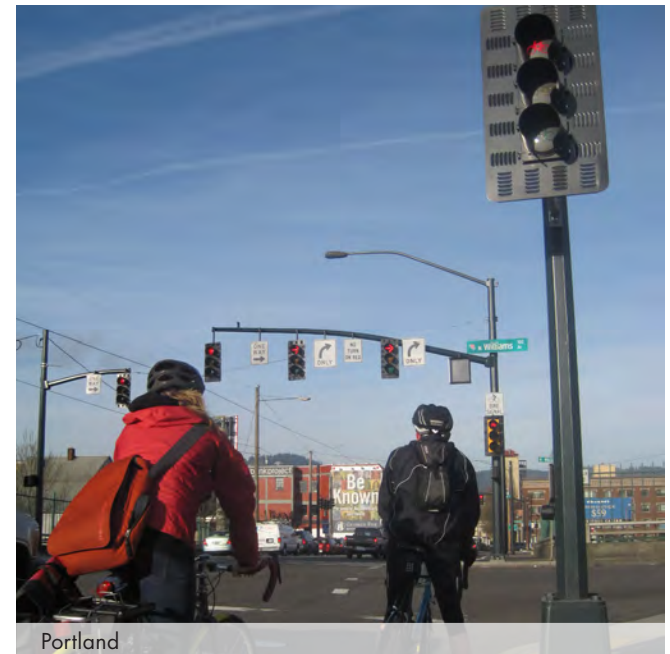
Bicycle signals are different from conventional traffic signals and will be clearly marked. Bicyclists may receive a green signal indication before motorists, so even if you see bicyclists traveling through the intersection please remain stopped until you receive a green signal indication for motorists.

## What **BICYCLISTS** should know:

Bicycle signals provide guidance for bicyclists at intersections and separate bicyclist movements from pedestrians and/or motorists. When traveling through an intersection with bicycle signal heads, make sure to obey only the bicycle signal instead of the adjacent traffic signals for motorists. This will make your travel safer by reducing potential conflicts with motorists and pedestrians.



New York City



Portland

One-Way Barrier  
Protected Bike Lanes

Two-Way Barrier  
Protected Bike Lanes

Buffer Protected  
Bike Lanes

Neighborhood  
Greenways

Protected Bike Lanes  
and Driveways

Bicycle Signals

Mixing Zones

Two-Stage  
Turn Boxes

Intersection  
Crossing Markings

Bike Boxes



**Description:** A bicycle signal is a traffic control device used in combination with a motor vehicle traffic signal to separate bicycle and motor vehicle movements. Their use ensures that turning motorists and through moving bicyclists can safely and comfortably travel through an intersection.

### Bicyclists

**A** When traveling through an intersection with bicycle signals, only obey the bicycle signal. The bicycle signal will either have bicycles on the face of the signal, or an accompanying sign identifying it as a bicycle signal.

### Motorists

**B** When traveling through an intersection with bicycle signals, only obey the conventional signal.

# 7 Mixing Zones

## Benefits:

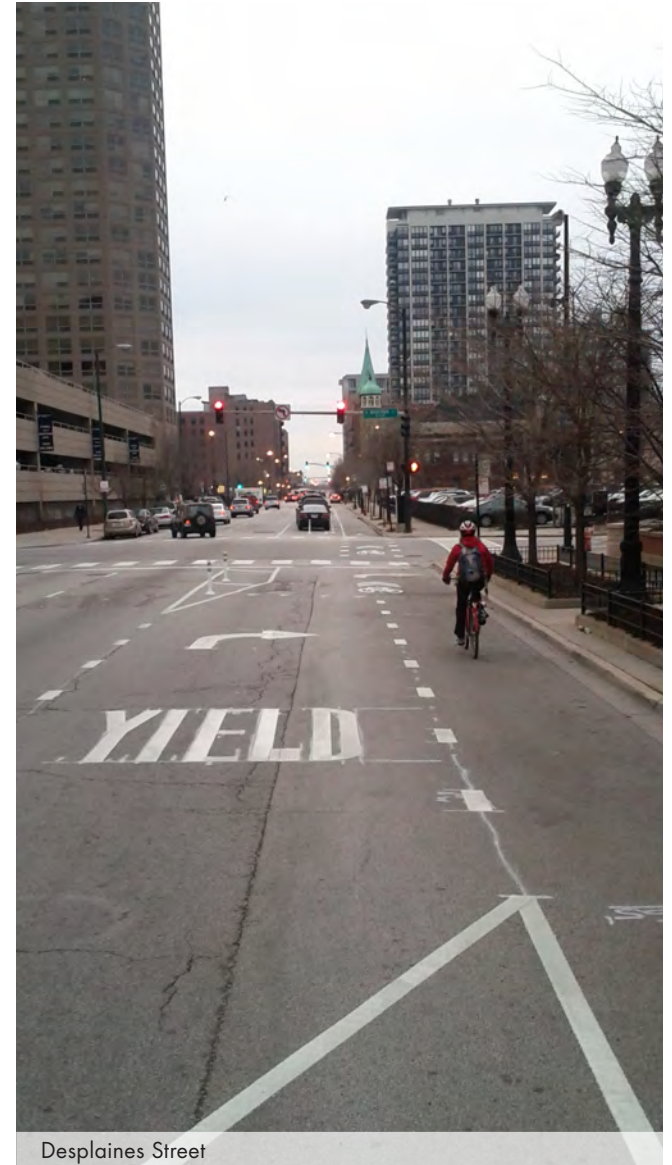
1. Preserve positive guidance for bicyclists in a situation where the bicycle lane might otherwise be dropped prior to an intersection.
2. Maintain bicyclist comfort in the absence of a dedicated signal phase.
3. Reduce motor vehicle speed prior to turning and prioritize bicycle movement.
4. Angle motor vehicles prior to merging so that bicyclists are more visible.

## What **MOTORISTS** should know:

A mixing zone is a wide shared bicycle/turn lane. Bicyclists have priority and may use the lane to continue straight through the intersection or to make a turn onto a cross street. When entering the turn lane, obey the yield markings and give priority to bicyclists approaching the intersection in the bike lane before proceeding.

## What **BICYCLISTS** should know:

Bicyclists have priority in the mixing zone, but remember that it is a shared lane. Watch for motorists and obey traffic signals. When continuing through the intersection, make sure to stay within the marked lines. If turning left, use the two-stage turn box if one is available. Bicyclists should obey all traffic control devices.



One-Way Barrier  
Protected Bike Lanes

Two-Way Barrier  
Protected Bike Lanes

Buffer Protected  
Bike Lanes

Neighborhood  
Greenways

Protected Bike Lanes  
and Driveways

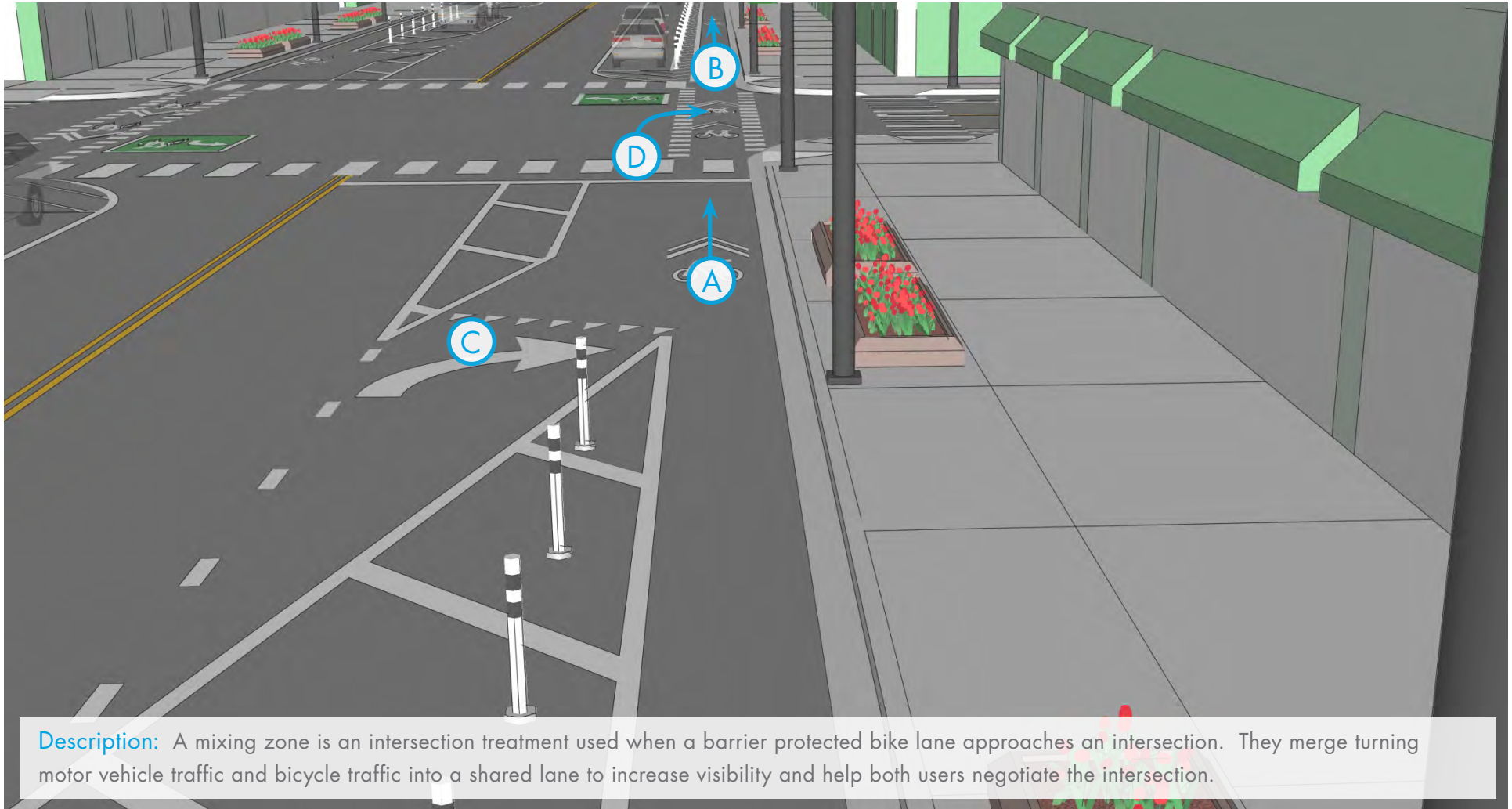
Bicycle Signals

Mixing Zones

Two-Stage  
Turn Boxes

Intersection  
Crossing Markings

Bike Boxes



**Description:** A mixing zone is an intersection treatment used when a barrier protected bike lane approaches an intersection. They merge turning motor vehicle traffic and bicycle traffic into a shared lane to increase visibility and help both users negotiate the intersection.

### Bicyclists

- A** Bicyclists have the right-of-way in a mixing zone, but remember this is a shared lane. Be aware of merging motorists and obey traffic signals.
- B** Follow the intersection markings when continuing straight through the intersection.

### Motorists

- C** Slow your speed and yield to approaching bicyclists when entering the mixing zone. The row of triangle markings is a yield bar, indicating that through bicyclists have the right-of-way.
- D** Bicyclists may occupy the full lane and may continue straight through the intersection or make a turn onto the cross street.

# 8 Two-Stage Turn Boxes

## Benefits:

1. Improve bicyclist comfort when making left or right turns across lanes of traffic.
2. Provide a formal waiting space for bicyclists making a two-stage turn.
3. Reduce turning conflicts between bicyclists and motor vehicles.
4. Prevent conflicts arising from bicyclists waiting to turn in a bike lane or crosswalk.

## What **MOTORISTS** should know:

Two-stage turn boxes are designated areas where bicyclists can wait to make a turn rather than merging through multiple vehicle lanes. Please keep a distance from bicyclists stopped in these boxes at intersections. When approaching an intersection that has turn boxes, make sure to read traffic signs as you may not be able to make right turns on red.

## What **BICYCLISTS** should know:

Use the two-stage turn box to comfortably make left turns (or right turns from left side bike lanes). Proceed through the intersection on a green light and into the marked turn box. Turn your bicycle in the direction of and follow the arrow pointing in the direction you want to travel. Wait here for a green signal indication before proceeding straight through the intersection. Bicyclists should obey all traffic control devices.



Portland



Jackson Boulevard

One-Way Barrier Protected Bike Lanes

Two-Way Barrier Protected Bike Lanes

Buffer Protected Bike Lanes

Neighborhood Greenways

Protected Bike Lanes and Driveways

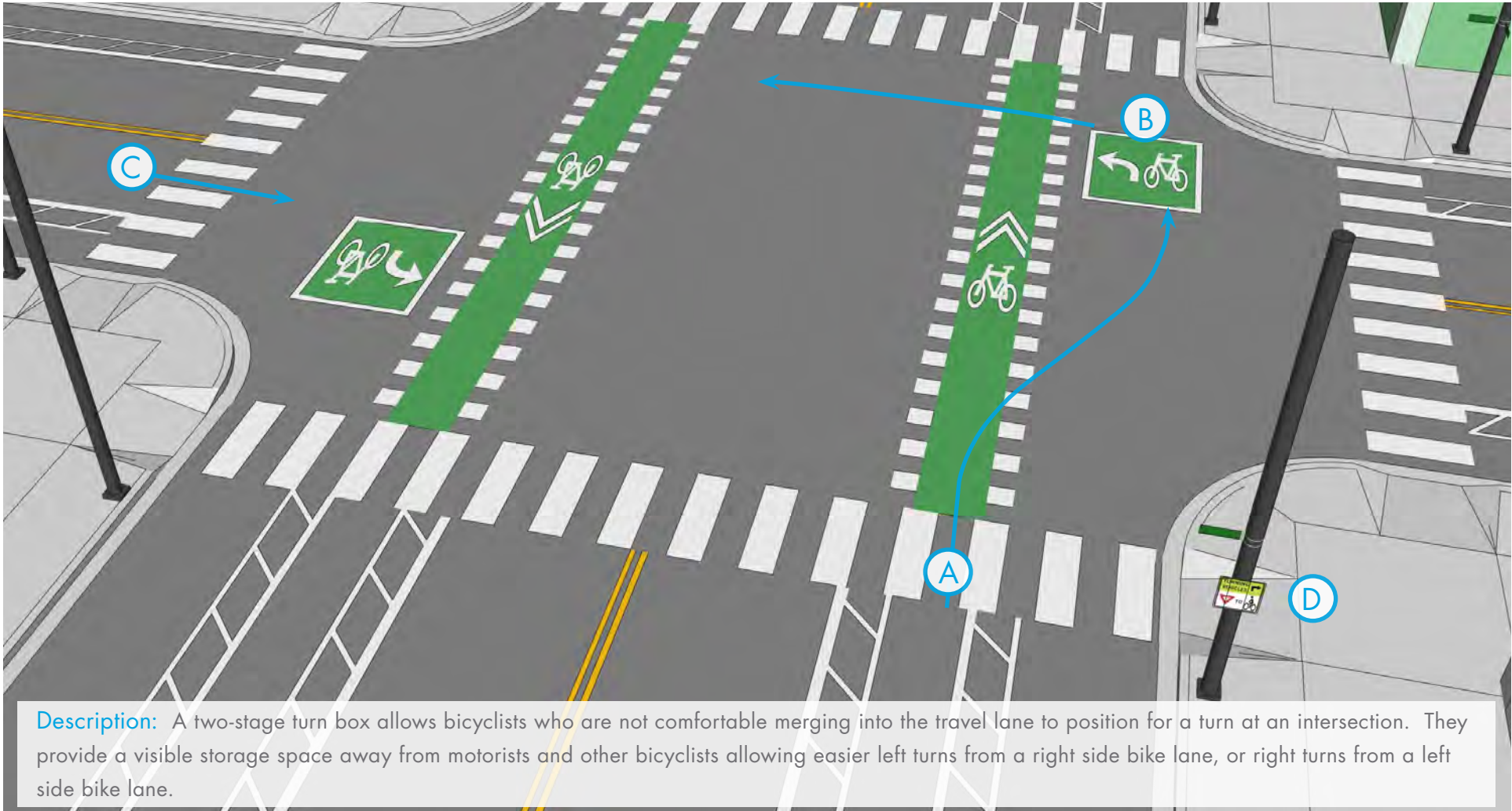
Bicycle Signals

Mixing Zones

Two-Stage Turn Boxes

Intersection Crossing Markings

Bike Boxes



**Description:** A two-stage turn box allows bicyclists who are not comfortable merging into the travel lane to position for a turn at an intersection. They provide a visible storage space away from motorists and other bicyclists allowing easier left turns from a right side bike lane, or right turns from a left side bike lane.

## Bicyclists

- A** Proceed through the intersection and into the marked turn box. Turn your bicycle in the direction you want to travel and wait for a green light, or for when it is clear to cross if at a non-signalized intersection, and proceed straight through the intersection.
- B** Make sure to position yourself out of the path of through moving bicyclists when in the two-stage turn box.

## Motorists

- C** Whether on the same street or the cross street, make sure to keep clear of bicyclists waiting in the two-stage turn box.
- D** When approaching an intersection with turn boxes, check for signage prohibiting right turns on red.

# 9 Intersection Crossing Markings

## Benefits:

1. Raise awareness for both bicyclists and motorists of conflict areas.
2. Remind motorists that through bicyclists at uncontrolled intersections have priority over turning vehicles or vehicles entering the roadway (from driveways, alleys or cross streets).
3. Guide bicyclists through the intersection in a straight and direct path, reducing the likelihood of bicyclists veering too far from the bike lane.
4. Reduce bicyclist stress by delineating the bicycle zone.
5. Promote shared use by bicyclists and motorists of the corridor.

## What **MOTORISTS** should know:

Intersection crossing markings increase the visibility and predictability of bicyclists. If driving parallel to a marked bike lane, be careful to keep a safe distance between you and the lane markings. Bicyclists have priority over turning vehicles; be aware of their presence. If approaching an intersection perpendicular to a marked bike lane, make sure to look for bicyclists before proceeding through the intersection or turning.

## What **BICYCLISTS** should know:

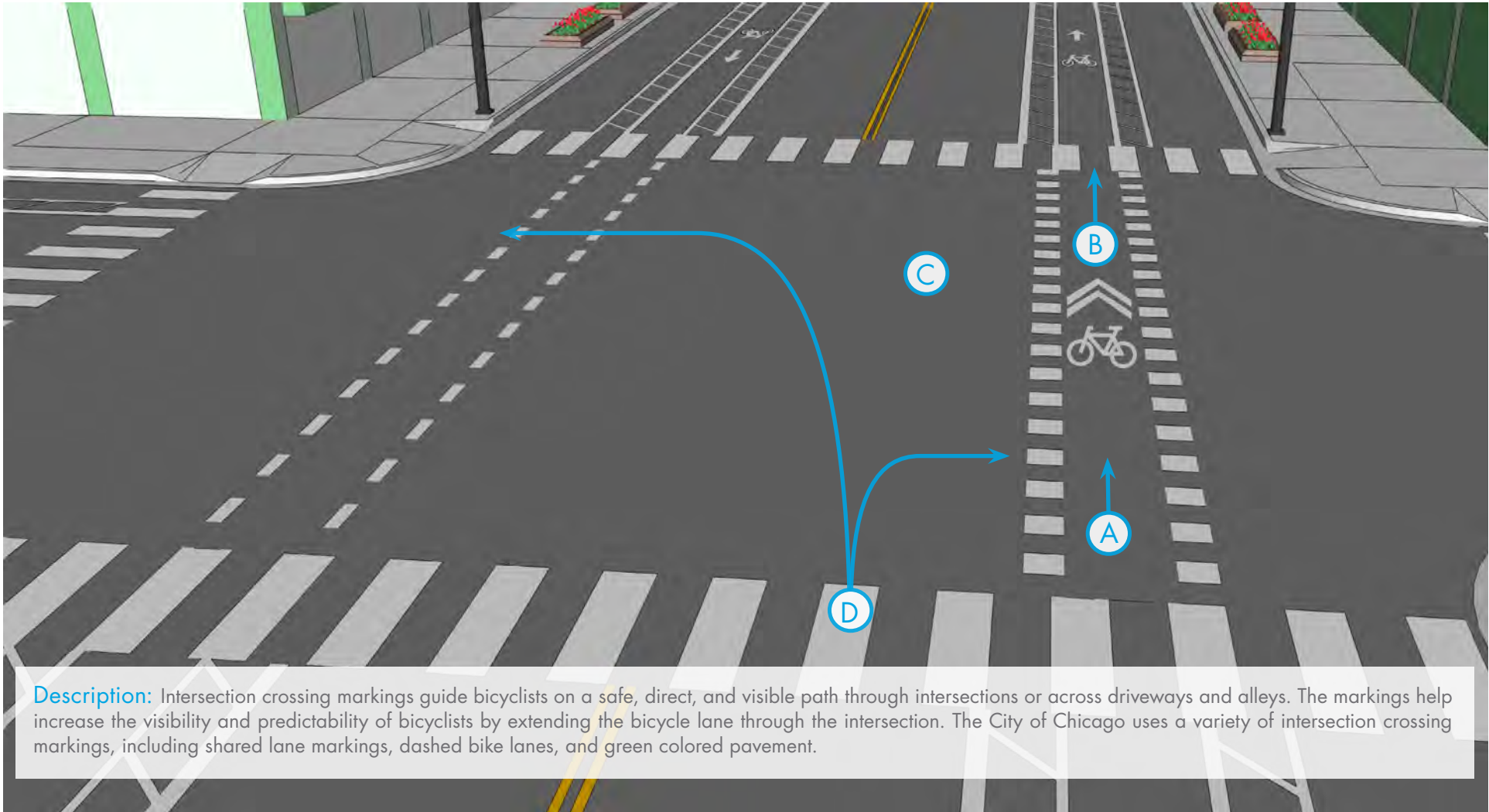
When traveling through an intersection, stay inside the marked area. This will guide you to the bike lane on the other side of the intersection and improve motorists' and pedestrians' awareness of your presence. Watch for pedestrians and turning motorists in conflict areas. Bicyclists should obey all traffic control devices.



Kinzie Street

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- Bike Boxes





**Description:** Intersection crossing markings guide bicyclists on a safe, direct, and visible path through intersections or across driveways and alleys. The markings help increase the visibility and predictability of bicyclists by extending the bicycle lane through the intersection. The City of Chicago uses a variety of intersection crossing markings, including shared lane markings, dashed bike lanes, and green colored pavement.

**Bicyclists**

- (A) Stay within the markings when traveling through the intersection. The markings lead to the bike lane on the other side of the intersection and increase bicyclist visibility and predictability.
- (B) Although intersection crossing markings make bicycling safer and more predictable, always watch for pedestrians, other bicyclists, and motorists when riding through intersections.

**Motorists**

- (C) Do not encroach on the markings when traveling through an intersection and give bicyclists at least 3 feet of clear space when passing.
- (D) When turning across the markings, look for bicyclists before proceeding, and yield the right-of-way to bicyclists traveling straight through the intersection.

# 10 Bike Boxes

## Benefits:

1. Increase bicyclist visibility when they are waiting at an intersection.
2. Reduce the instances of crashes, when motorists turn in front of through moving bicyclists.
3. Provide queuing space for bicyclists at red lights, allowing them to clear the intersection quickly and safely.
4. Can help position bicyclists to make a turn, especially at a red light.
5. Improve pedestrian safety and visibility by requiring motorists to stop further back from the crosswalk and prevent motorists from turning on red.

## What **MOTORISTS** should know:

Stop behind the stop bar when the traffic signal is yellow or red. Do not stop in the bike box. Turns on red are prohibited at intersections with bike boxes. Allow bicyclists to clear the intersection first when the light turns green. If you are turning, signal and watch for bicyclists to the right, especially within the marked bike lane within the intersection.

## What **BICYCLISTS** should know:

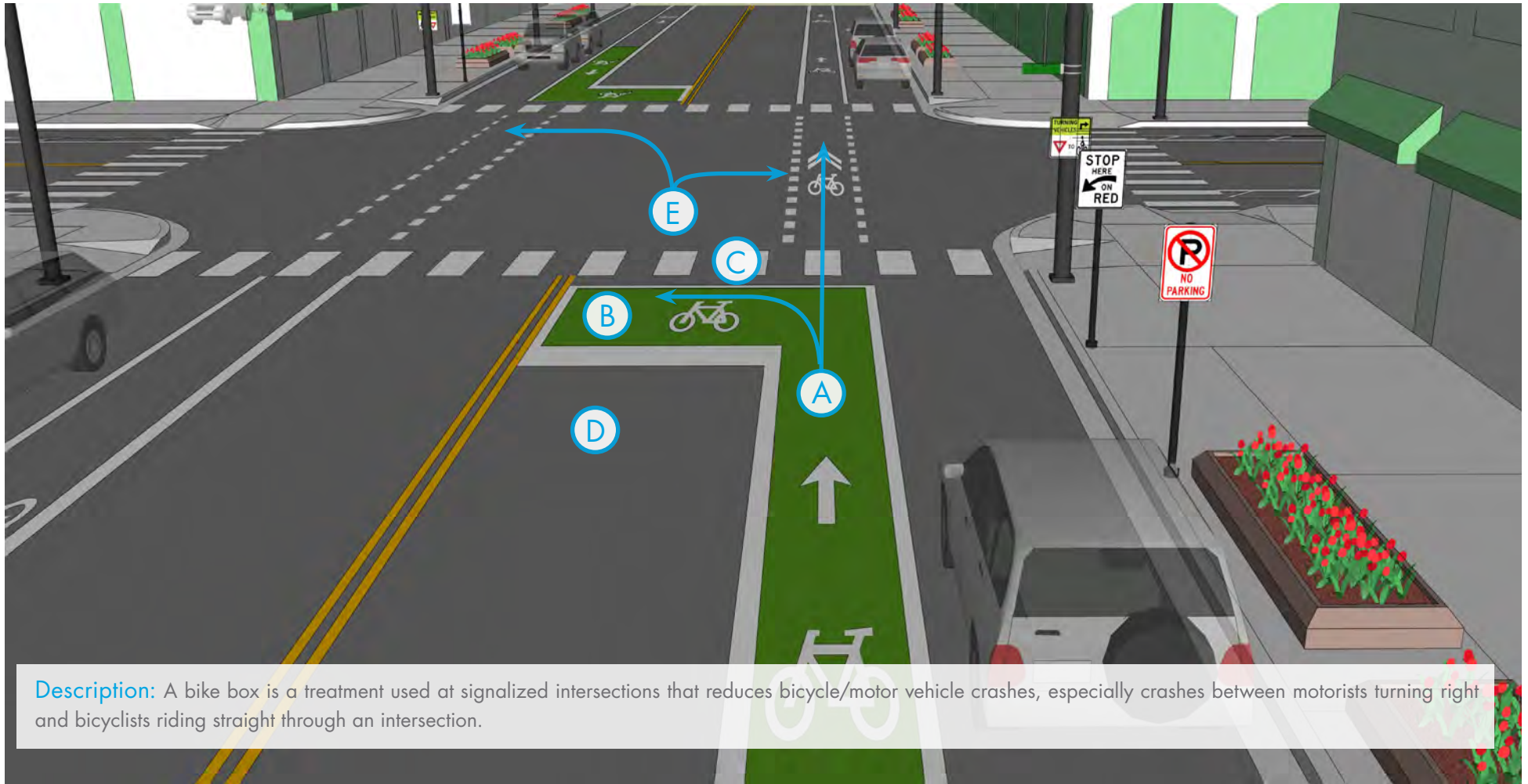
Enter the bike box from the receiving bike lane during a red light. Proceed as normal when the light turns green and be aware of turning vehicles. If you approach the signal on a green light, simply proceed through the intersection as normal, do not swerve in front of through vehicles. Be aware of turning vehicles. Bicyclists should obey all traffic control devices.

## When **BIKE BOXES** can be installed:

Bike boxes can be installed at signalized intersections, particularly intersections with a high number of crashes or when a high number of bicyclists queue at a red light.



Elston Avenue



**Description:** A bike box is a treatment used at signalized intersections that reduces bicycle/motor vehicle crashes, especially crashes between motorists turning right and bicyclists riding straight through an intersection.

## Bicyclists

- A** Enter the bike box from the approaching bike lane on a red light. If the light is green, continue through the intersection in the bike lane.
- B** Position yourself here during a red light. Use hand signals to indicate a turn. If continuing straight, enter the intersection crossing markings when the light turns green to enter the receiving bike lane.
- C** When stopped in the bike box, be sure to keep the crosswalk clear to ensure pedestrians can safely cross the street.

## Motorists

- D** Stop behind the stop bar and bike box when the light is red, do not stop in the bike box. Turns on red are prohibited at intersections with bike boxes.
- E** When the light turns green, allow bicyclists in the bike box to clear the intersection. If turning, signal and watch for bicyclists approaching from behind in the bike lane.



**CDOT**  
CHICAGO DEPARTMENT  
OF TRANSPORTATION

