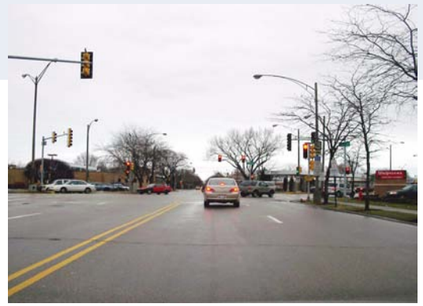
Village of Lincolnwood
BIKEWAY PLAN









June 27, 2006

***Prepared by* Land Design Collaborative, Inc.**

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Introduction

Land Design Collaborative incorporated

Bikeway Plan
Village of Lincolnwood

Background

The Village of Lincolnwood is in a keystone location to provide continuity to a regional bikeway system between the City of Chicago and the Village of Skokie. This report provides guidlines for the long-term development of a bikeway system in Lincolnwood that improves bicycle circulation within the community as well as establishes connections to larger bikeway systems.

For the purpose of continuity, the recommendations in this report are based on national guidelines from the AASHTO 'Green Book" and AASHTO's "Guide for the Development of Bicycle Facilities" which have been incorporated in the bikeway standards of Chicago and Skokie. Both communities have developed bikeway design standards, signs, and locations of routes in their plans. Lincolnwood's plan connects to these proposed bike routes in the adjacent communities with routes that provide east/west and north/south bikeways.

While connectivity both within and outside of Lincolnwood were the driving factors in selecting routes for the Lincolnwood Bikeway Plan, many other factors were considered, including:

- Safety of Cyclists and Pedestrians
- Convenience
- Road Width
- Street Conditions
- Parking
- Traffic Lane Usage
- Traffic Volumes

The Lincolnwood Bikeway plan consists of two major types of routes; on-street bikeways and off-street shared-use trails. On-street bikeways are preferred routes for transportation because they are both convenient and safe, minimizing conflicts between bikers and pedestrians and placing cyclists in the cone-of-vision of motorists. Major arterial streets are practical routes for the cyclist providing direct, efficient travel to destinations. The street may be marked as a bike route through the use of signage alerting motorists to the presence of cyclists, or combining signage with pavement markings designating a specific space for the cyclist. The addition of on-street bike lanes in Chicago has decreased accidents at intersections by 7.2% and mid-block accidents by 10.6%, according to the Chicagoland Bicycle Federation.

Off-street routes provide a safe area for recreational cyclists to ride separated from vehicular traffic. Problems with off-street routes occur at intersections where the bikeway must cross a road or highway. Motorists may not notice an unexpected cyclist quickly approaching an intersection. The off-road location of the path places the cyclist in an unfavorable position for crossing an intersection in the path of motorists making turns.

On-Street Bikeways

Lincolnwood's bike route options are limited to Pratt Avenue in the east/west direction due to the high volumes of traffic on other major roads crossing the Village. Pratt Avenue connects McCormick Boulevard and Channel Runne Park to the western Village limit at Central Avenue. Other major east/west roads, including Touhy Avenue and Devon Avenue, are too busy and narrow to accommodate a designated bike route. Lincoln Avenue provides a good south/east to north/west route, and proposed improvements to the right-of-way and road may provide the opportunity to incorporate the bike route with the design of the corridor. East Prairie Avenue is an important north/south route connecting residents on the north side to the school and library at Pratt Avenue. Further, IDOT has identified East Prairie as part of a regional bikeway system. Neighborhood streets will provide the other component for bicycle circulation. However, these neighborhood streets will not have lane symbols or striping. Signs will be used to identity streets as bicycle routes and aid in way-finding purposes.

Off-Street Shared-Use Trails

The Village is fortunate to have three north/south corridors for bike routes that can provide excellent recreational shared-use trails. These include the Utility right-of-way, the Union Pacific Railroad right-of-way, and Channel Runne Park. The Utility corridor is a 200 foot wide area that has an existing access road for service vehicles, and natural plant buffers along each side separating the corridor from adjacent homes and businesses.

Opportunities exist to make this route an attractive and unique experience. The other corridor is a railroad right-of-way soon to be abandoned by the Union Pacific Railroad. This line runs diagonally from Devon Avenue (east of Crawford Avenue) northeast to Touhy Avenue and into Skokie. The third north south route is in Channel Runne Park and is planned to be upgraded to meet bikeway design and safety standards and access to proposed park improvements. Connections to both Chicago and Skokie bike routes are provided.

NEXT STEPS

The information in this report and in the accompanying Geographic Information System (GIS) data provided was designed for use as a planning tool. Standards for bikeway placements and widths, pavement markings, road signs, and other bikeway features have been developed in conjunction with specific bikeway routes for the Village of Lincolnwood to aid in the future design and funding of a bikeway system. Before implementation of a project, a more detailed study of the project area should be conducted, possible with the assistance of a traffic engineer, to identify and resolve potential conflicts such as difficult intersections. The Chicagoland Bicycle Federation is a good resource for further study of specific routes and collaboration on future projects. Also, accurate base data should be utilized in the preparation of construction documents since the accuracy of the GIS base data is limited.

Definitions

Understanding the following terms as defined by IDOT will be helpful in reading this report.

1. **Bikeway**—A generic term for any road, street, path, or way which in some manner is specifically designated for bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or shared with other transportation modes.

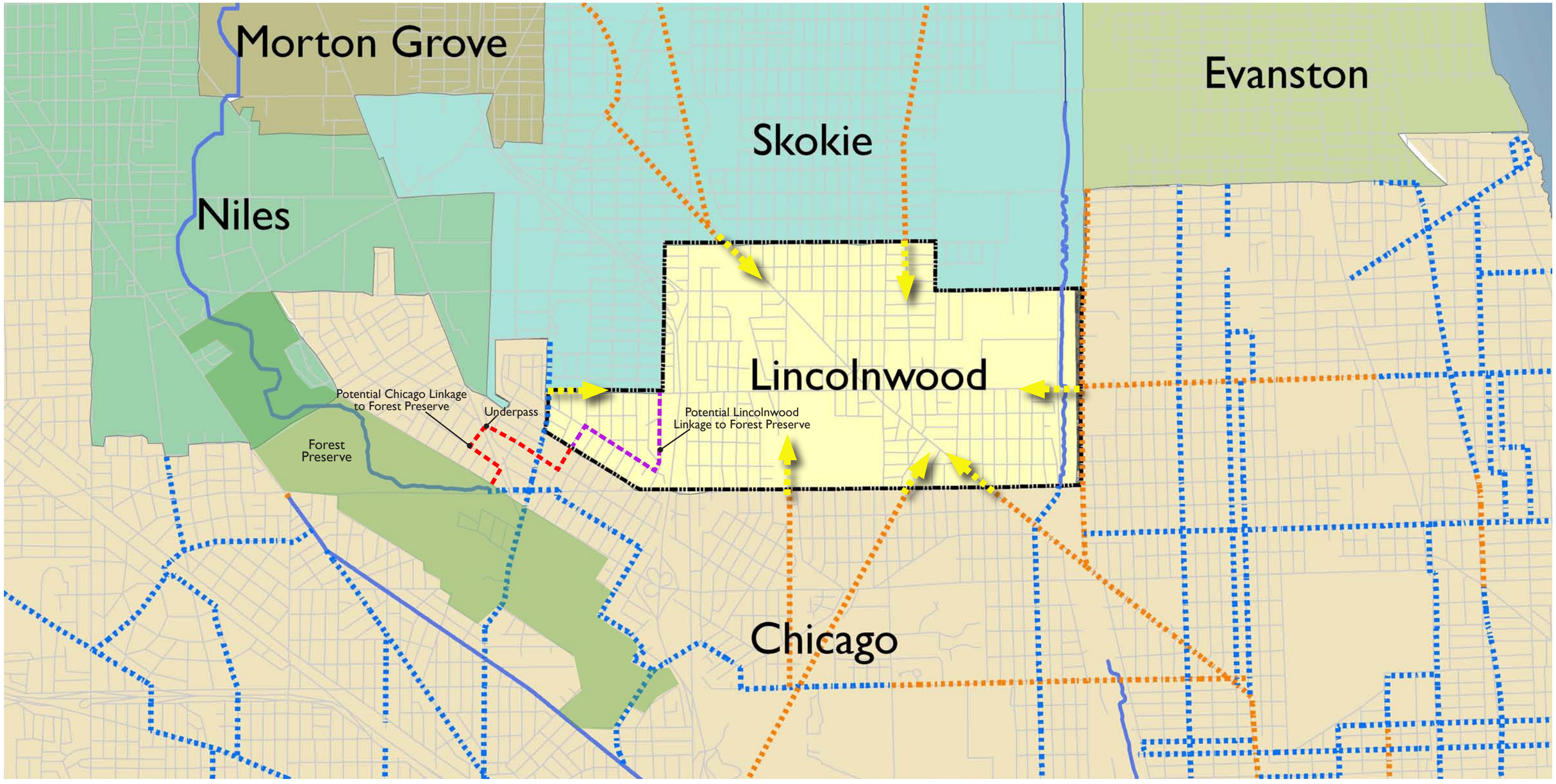
2. **Shared Roadway—**Any roadway upon which a separate bicycle lane is not designated and which may be legally used by bicyclists regardless of whether such facility is specifically designated as a bikeway.

3. **Bike Lane**—The portion of a roadway surface that is designated by pavement markings and signing for the exclusive use of bicyclists.

4. **Bicycle Path or Shared-Use Trail—**A facility physically separated from the roadway and intended for bicycle or other non-motorized transportation (e.g., pedestrians, disabled persons in wheelchairs, in-line skaters). The terms path and trail generally are describing the same facility.

5. **Bicycle Facilities**—A broad term which includes bikeways, shared roadways, shoulders (which may be used by bicyclists), traffic control devices, shelters, and parking facilities for bicycles.

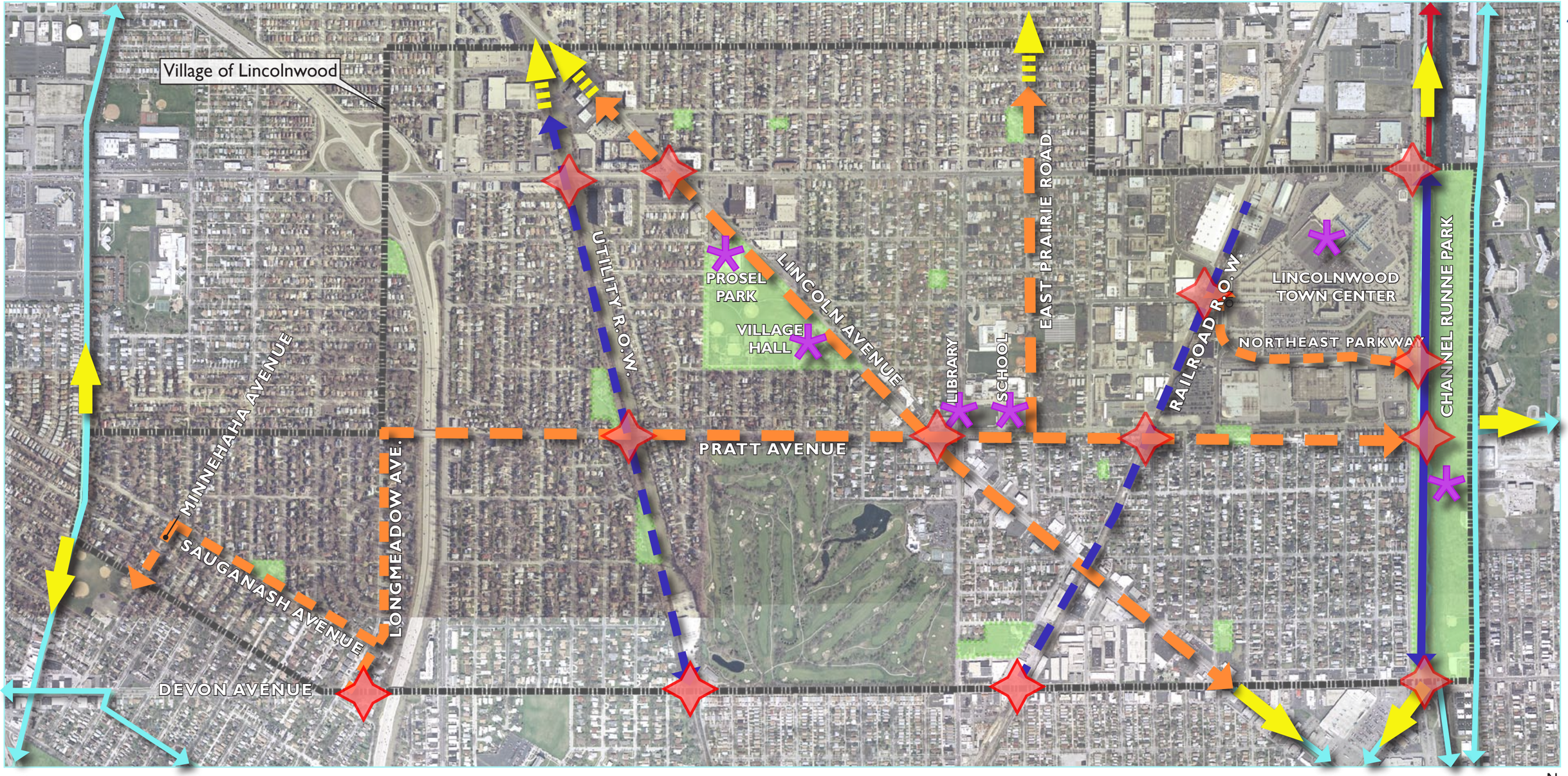
http://www.dot.state.il.us/desenv/BDE%20Manual/BDE/pdf/chap17.pdf



Land Design Collaborative incorporated

Bikeway Plan
Village of Lincolnwood

Regional Bikeway Connections Map



- Major Desired On-Street Route
- Desired Off-Street Route
- Existing Off-Street Route
- Difficult Intersection
- Connection to Existing Bikeway
- Connection to Proposed Bikeway
- Lincolnwood Parks
- Major Destinations
- City of Chicago Bikeway Route
- Village of Skokie Bicycle Route

Land Design Collaborative incorporated

Bikeway Plan
Village of Lincolnwood

Site Analysis and Destination Map

On-Street Bikeways

Land Design Collaborative incorporated

Bikeway Plan
Village of Lincolnwood

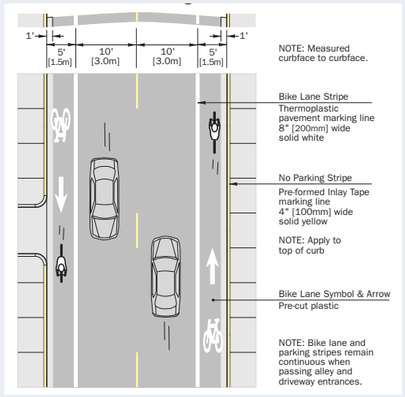



Eastbound - Central Avenue to McCormick Boulevard




Westbound - McCormick Boulevard to Central Avenue

36´ Roadway



"Bike Lane Design Guide"; City of Chicago

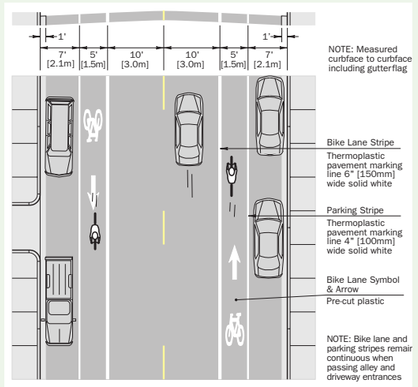
Shared Roadway

No pavement markings—post signage indicating street is a designated bike route.

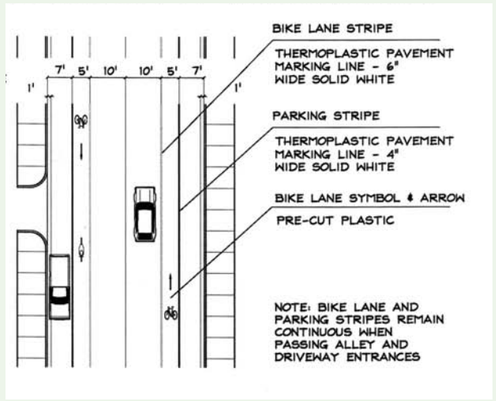
Attention should be given to improve railroad crossings, smooth pavement, make sure drainage and expansion joints are bicycle safe, and install signal timing and detector systems that respond to bicycles.

"Bicycle Facility Plan"; Village of Skokie

44´ Roadway



"Bike Lane Design Guide"; City of Chicago



"Bicycle Facility Plan";Village of Skokie

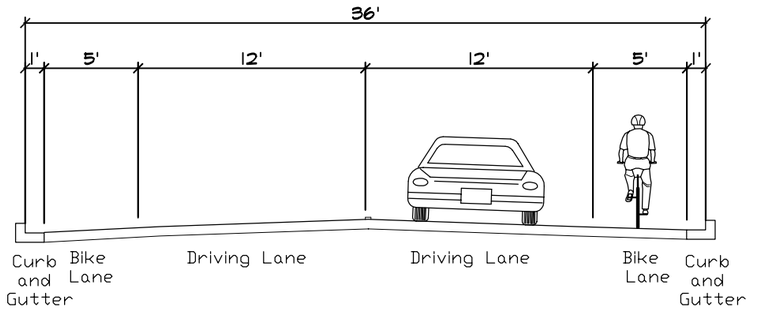
Existing Condition | **Applicable Standards** | **Recommendation**

Land Design Collaborative incorporated

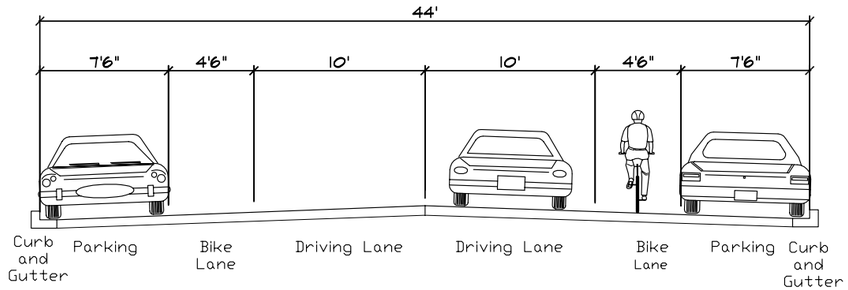
Bikeway Plan
Village of Lincolnwood

Pratt Avenue
Design Development

36´ Roadway



44´ Roadway

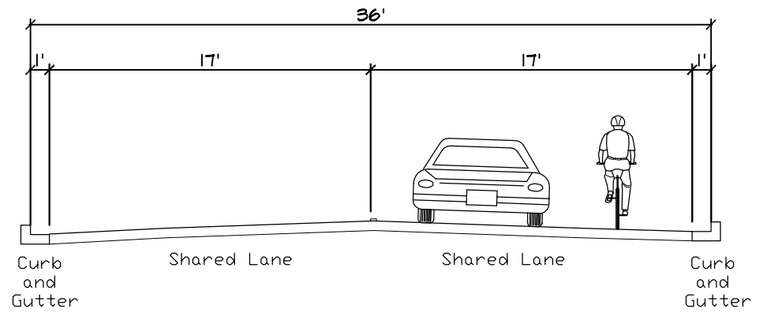


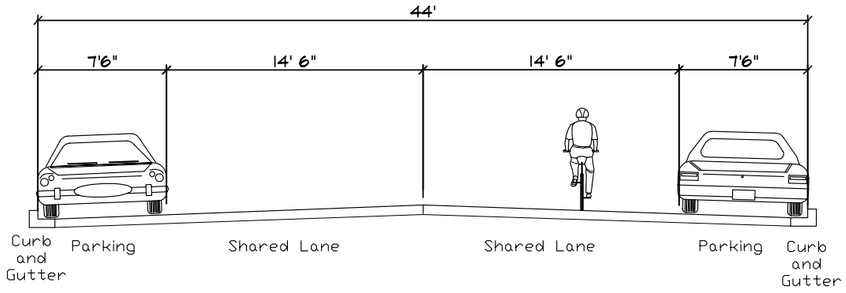
Pratt Avenue, the main east west street in the Lincolnwood bike-way plan, will safely accommodate cyclists with the addition of striped bike lanes. While there are alternatives to striped bike lanes, they are the safest option, giving cyclists a designated unobstructed space to ride in. The width of the central portion of Pratt from Longmeadow Avenue to Lincoln Avenue currently allows for 12′ striped driving lanes with curbside 5′ bike lanes. The widest section of Pratt, at the east end from Lincoln Avenue to McCormick Avenue, allows for 7′-6″ striped parking lanes, 10′ wide driving lanes, and 4′-6″ striped bike lanes.

The area of Pratt Avenue from Central Avenue to Longmeadow Avenue which connects Lincolnwood to Chicago and Skokie is currently too narrow to accomodate bike lanes. The Village has decided to direct cyclists to Chicago and ultimately the Forest Preserve via an alternative route through the neighborhood.

36´ Roadway

44´ Roadway





An alternative option to implementing striped bike lanes along Pratt Avenue is to designate a marked shared lane. This type of bikeway combines signage with pavement markings to encourage motorists to allow bicyclists full use of the roadway.

Although this type of bikeway does not provide bicyclists the comfort level of a fully striped lane, it is easier to implement and provides flexible lane usage. Painted symbols direct cars away from the curb to allow more room for bicycles. At the east end of Pratt, where parking is allowed, a striped parking lane combined with the bicycle pavement markings delineates the proper areas for both bicycles and cars.

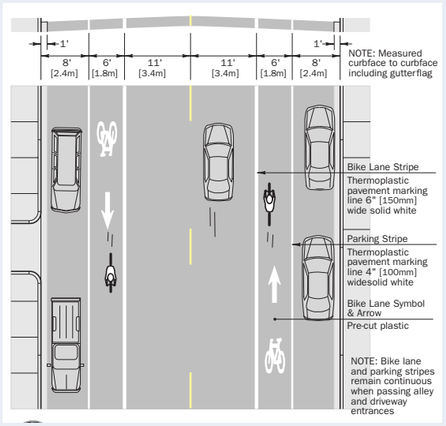



NORTHBOUND - DEVON AVENUE TO JARVIS AVENUE



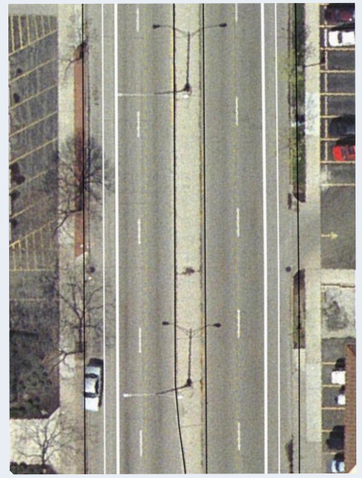

SOUTHBOUND - JARVIS AVENUE TO DEVON AVENUE

Exisitng Lincoln Avenue
76´ Roadway w/ Median



"Bike Lane Design Guide"; City of Chicago

The Village of Skokie Biclycle Facility Plan addresses Lincoln Avenue in the short term with signage and in the long term with designated striped bike lanes when the road is reconstructed.



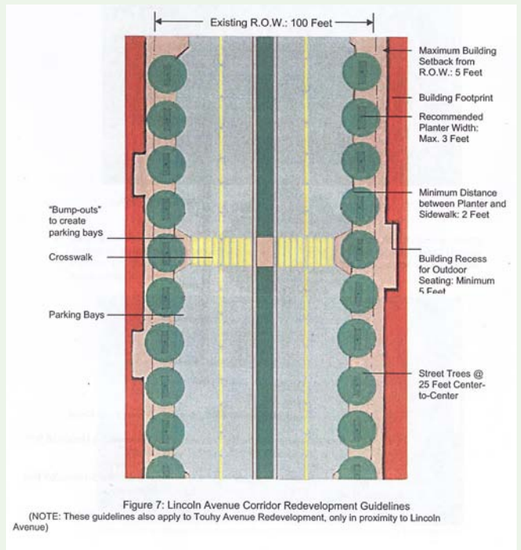
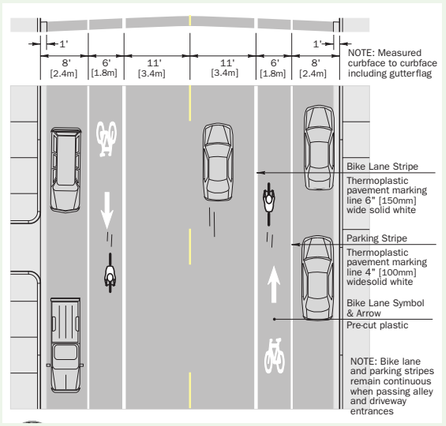
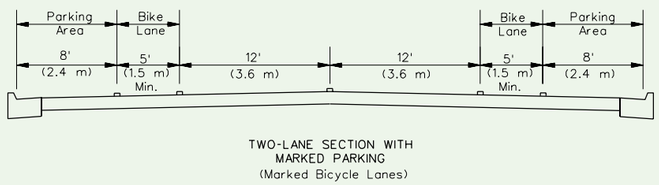


Figure 7: Lincoln Avenue Corridor Redevelopment Guidelines
(NOTE: These guidelines also apply to Touhy Avenue Redevelopment, only in proximity to Lincoln Avenue)

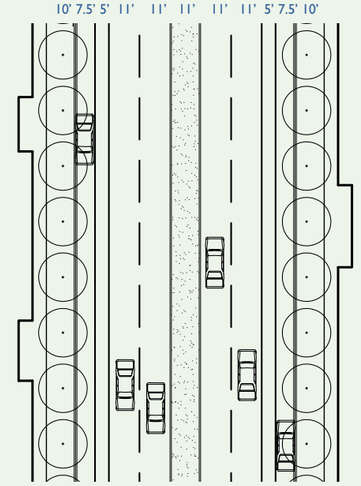
Proposed Lincoln Avenue



"Bike Lane Design Guide"; City of Chicago



"Manual, Chapter 17"; IDOT—Beareau of Design and Environment



Existing Condition

Applicable Standards

Recommendation

Land Design Collaborative incorporated

Bikeway Plan
Village of Lincolnwood

Recommendations:
If Lincoln Avenue is developed as it exists, striped bike lanes and the appropriate signage should be added. If the improvements as proposed in the Lincoln Avenue Corridor are implemented, then consideration should be given to design the R.O.W. to accommodate bike lanes. Obstacles such as mid-block crossings with accessible ramps may create hazardous situations for cyclists and pedestrians.

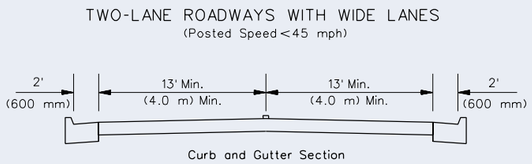
Lincoln Avenue
Design Development

NORTHBOUND - LINCOLN AVENUE TO JARVIS AVENUE

NORTHBOUND - LINCOLN AVENUE TO JARVIS AVENUE

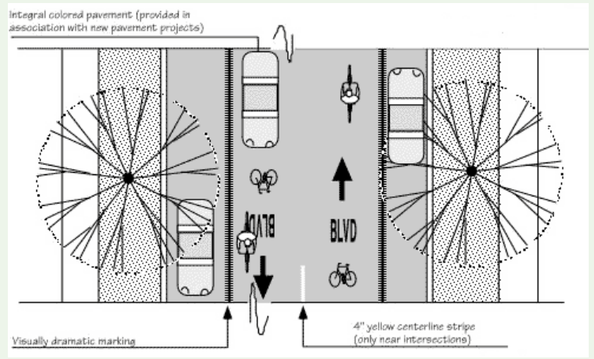
30-33´ Roadway

The Village of Skokie Bicycle Facility Plan identifies East Prairie Road as an "excellent route that only requires sign improvements and storm grate replacements." Skokie treats East Prairie as a Shared Roadway, posting signage and making necessary street condition improvements. Minimum width for a shared-use roadway according to IDOT is shown at right. East Prairie Road could be an excellent opportunity to implement a newer type of shared-use lane called a "bicycle boulevard", which incorporates a larger on-street symbol.



"Manual, Chapter 17"; IDOT—Beareau of Design and Environment

30-33´ Roadway



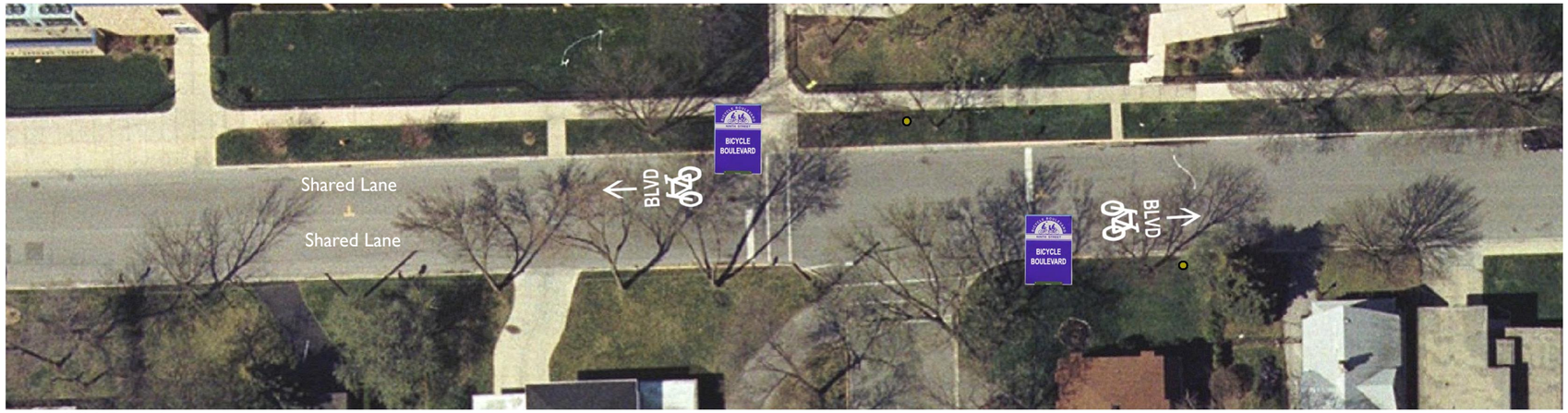
"Bicycle Boulevards in Berkeley"; City of Berkeley

Existing Condition | **Applicable Standards** | **Recommendation**

Land Design Collaborative incorporated

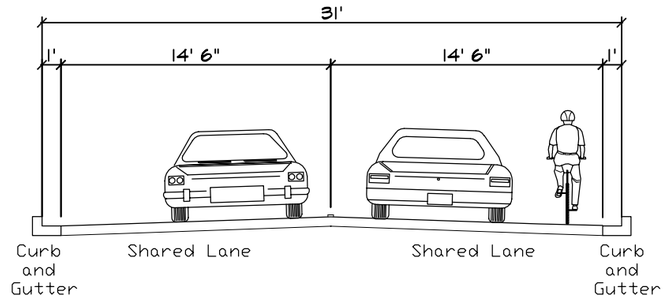
Bikeway Plan
Village of Lincolnwood

East Prairie Road
Design Development



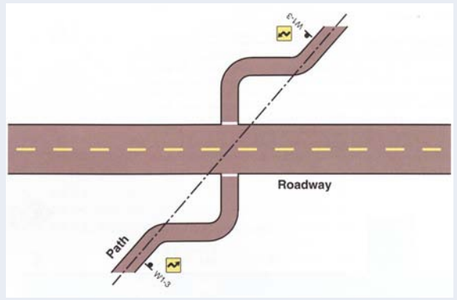
30-33´ Roadway

30-33´ Roadway

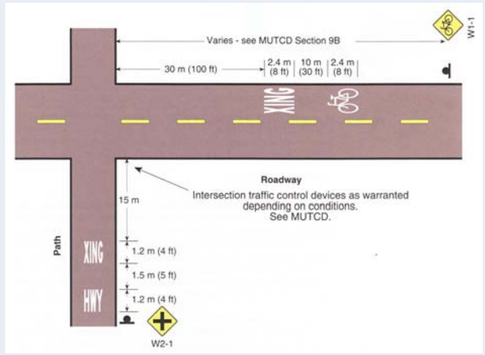


The low traffic volume and wide lanes on East Prairie Road provide an excellent opportunity for a *Bicycle Boulevard*. Implementing a bicycle boulevard makes the road safer for cyclists through on-street symbols, signage, and traffic-calming measures. The large bicycle symbol alerts motorists to the presence of cyclists. This, combined with signage, makes a very visible statement about the high priority that should be given to bicycles on this roadway. Bicycle boulevards also typically incorporate measures designed to slow traffic, although these measures may not be necessary on East Prairie Road, which currently has stop signs at nearly every intersection.

Railroad ROW Intersection



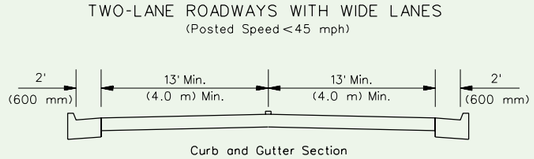
"Guide for the Development of Bicycle Facilities"
AASHTO



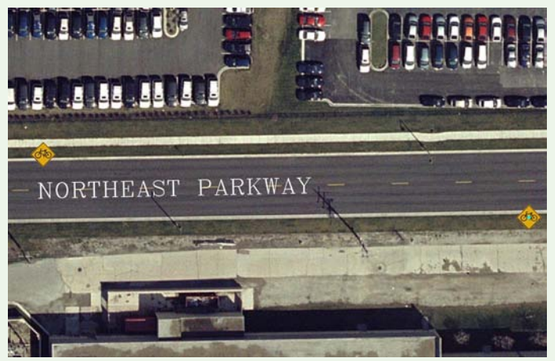
"Guide for the Development of Bicycle Facilities"
AASHTO

38´ Roadway

TWO-LANE ROADWAYS WITH WIDE LANES
(Posted Speed <45 mph)



"Manual, Chapter 17"; IDOT—Beareau of Design and Environment

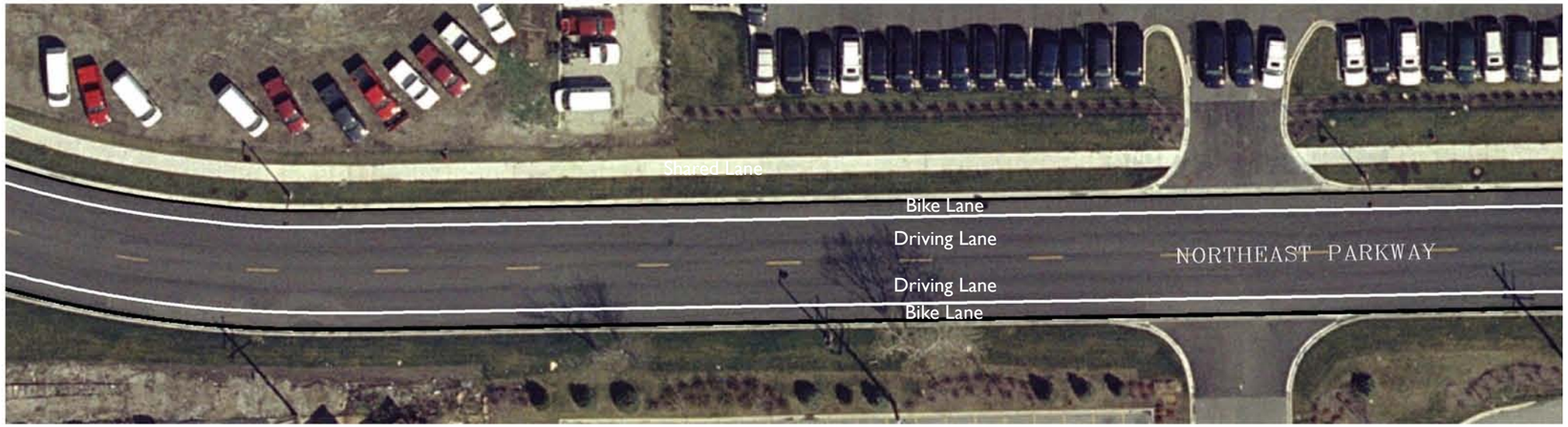


Existing Condition | **Applicable Standards** | **Recommendation**

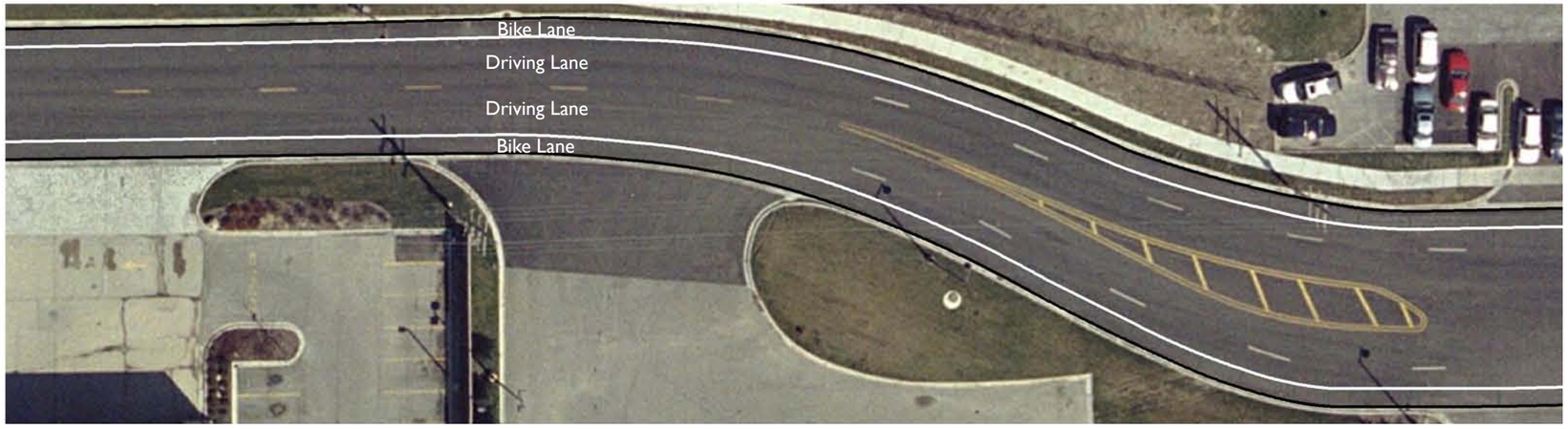
Land Design Collaborative incorporated

Bikeway Plan
Village of Lincolnwood

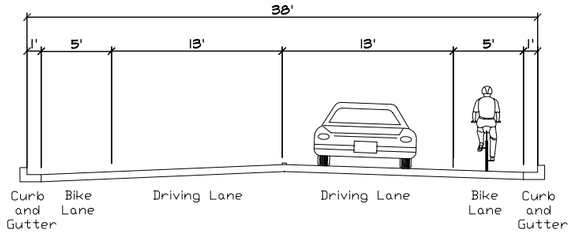
Northeast Parkway/Central Park Avenue
Design Development



38´ Roadway



38´ Roadway



Northeast Parkway is an on-street route included in the Lincolnwood Bikeway Plan intended as a connecting route between the Railroad right-of way corridor and Channel Runne park and also servicing Lincolnwood Town Center. The wide 18´ lanes provide more than ample room for a striped bike lane. Absence of a striped lane may encourage motorists to drive side-by-side, leaving little room for bicyclists.

26´ Roadway - Longmeadow Avenue

Shared Roadway

No pavement markings—post signage indicating street is a designated bike route.

Attention should be given to improve railroad crossings, smooth pavement, make sure drainage and expansion joints are bicycle safe, and install signal timing and detector systems that respond to bicycles.

"Bicycle Facility Plan"; Village of Skokie

43´ Roadway - Sauganash Avenue

"Chicago Bike Map"; City of Chicago

30-33´ Roadway - Sauganash Avenue

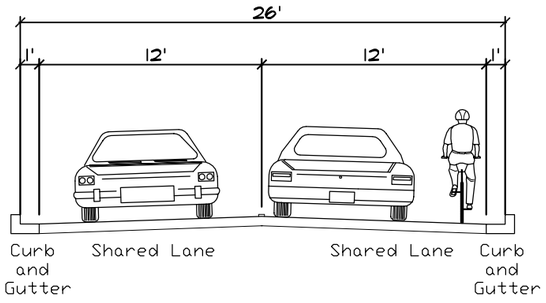
"Chicago Bike Map"; City of Chicago

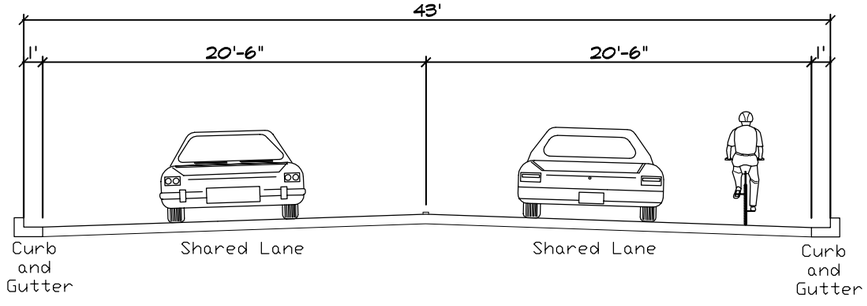
Existing Condition | **Applicable Standards** | **Recommendation**

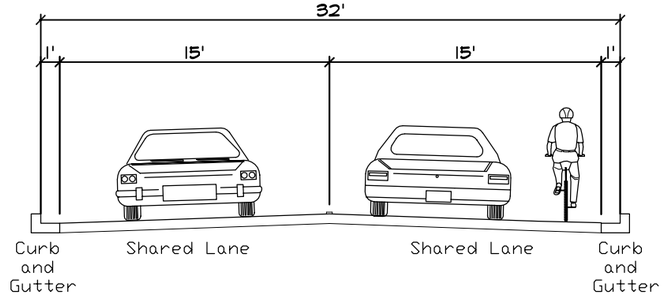
26´ Roadway - Longmeadow Avenue

43´ Roadway - Sauganash Avenue

32’ Roadway - Minnehaha Avenue







The Forest Preserve Connector route gives cyclists in Lincolnwood access to the Edgebrook Woods Forest Preserve and the North Branch off-street trail, which is ideal for recreational cycling use. The route brings them from Pratt Avenue, through neighborhood streets, to a four-way stop intersection at Central Avenue in Chicago and on to the Forest Preserve. The specific route starts at Pratt Avenue near Cicero Avenue, then travels south on Longmeadow Avenue, northeast on Sauganash Avenue, south on Minnehaha Avenue, and east on Hiawatha Avenue in Chicago which connects to an underpass that leads to the Forest Preserve. Since this route uses neighborhood streets with adequate space and low traffic volumes, only wayfinding signage directing the cyclists through the neighborhood is necessary.

Off-Street Shared Use Trails

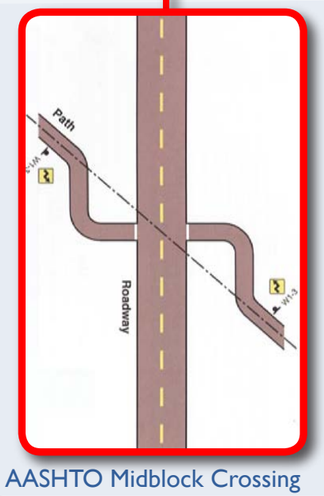
Land Design Collaborative incorporated

Bikeway Plan
Village of Lincolnwood

The Utility Right-of-Way is a long corridor of open greenspace connecting Chicago to Skokie that could provide active and passive recreation opportunities such as walking and biking trails, frisbee golf, dog parks and pedestrian plazas. Because the corridor is adjacent to residential property, the safety of the neighboring homes should be considered and service, emergency, and police vehicles should have access to the site.

Recommendation

- Electrical Transmission Tower



AASHTO Midblock Crossing

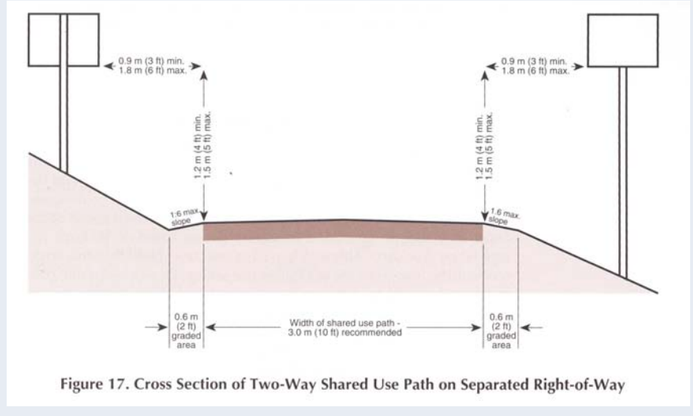


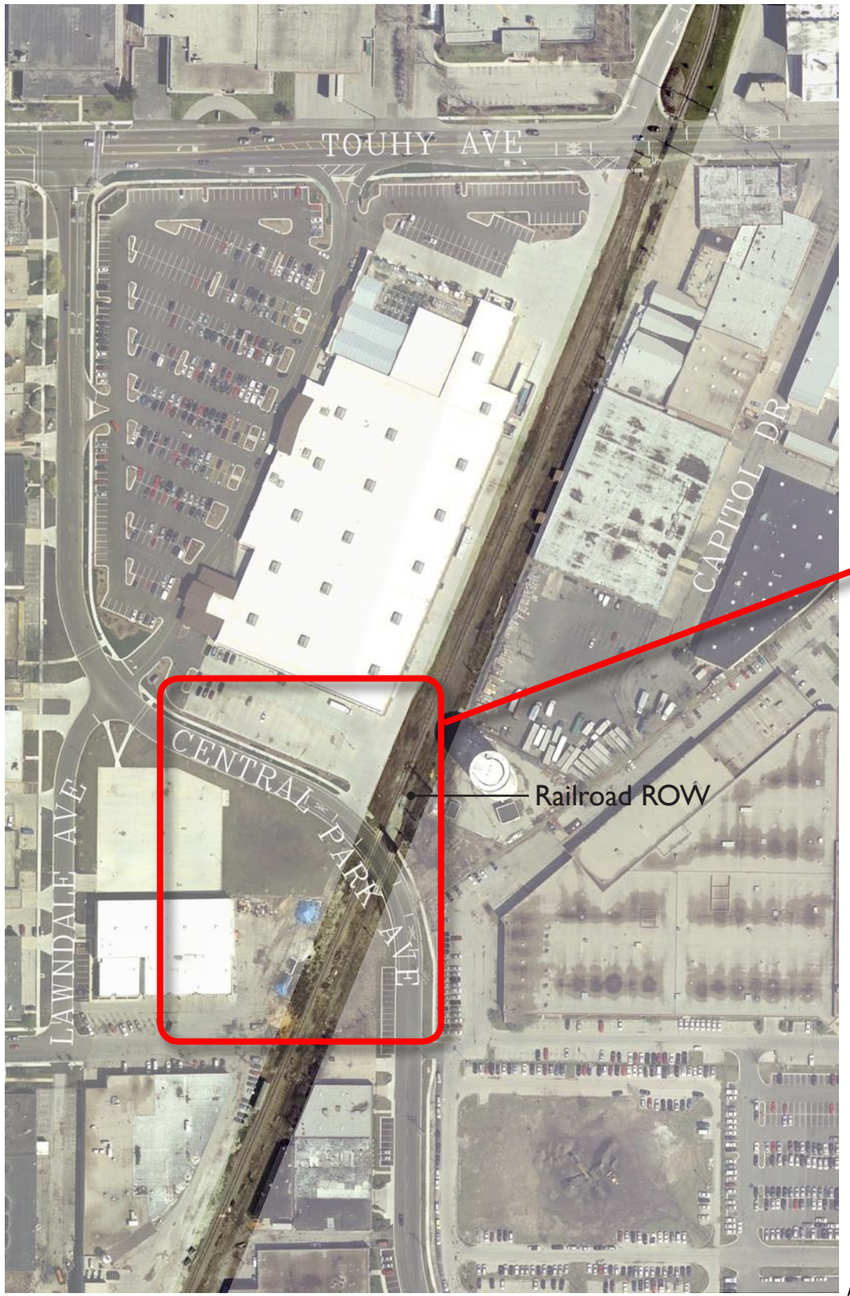
Figure 17. Cross Section of Two-Way Shared Use Path on Separated Right-of-Way

AASHTO Shared Path Cross Section

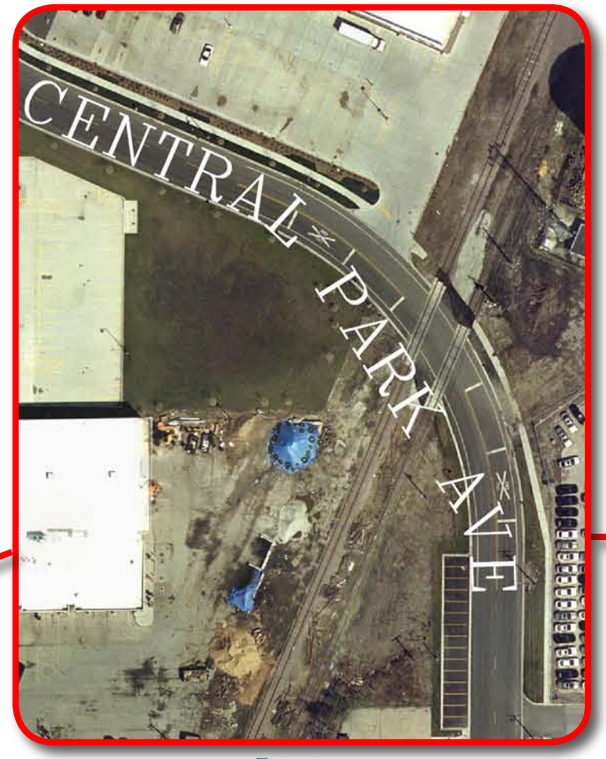
Applicable Standards

This corridor provides a unique opportunity for an off-street bikeway/pedestrian trail/greenspace through Lincolnwood. With an average width of 200′, the corridor can accommodate a shared-use path for bicycles and pedestrians, as well as recreational facilities such as a frisbee golf course, dog parks, and small parking lots to accommodate park users. According to AASHTO standards,The width of the shared use path should be 10′ with a 2′ shoulder to accomodate service vehicles. Signage and road markings are necessary at all intersections where an off-street path crosses a roadway so as to alert motorists to the presence of cyclists.

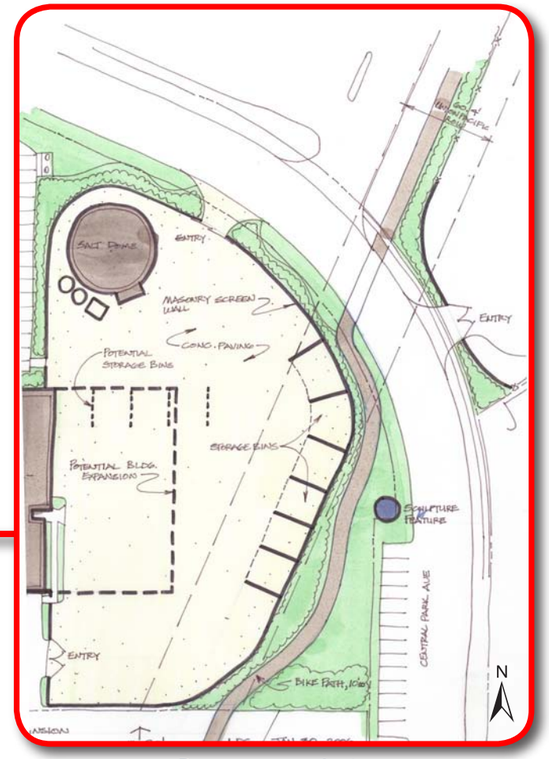
The Union-Pacific Railroad tracks on the east side of Lincolnwood can be converted to recreational trails and pathways. The rail corridor connects to a proposed Skokie bikeway and passes by Lincolnwood Town Center, making the currently unused space a logical and convenient choice for an off-street bikeway. The commercial and industrial surrounding land uses will require screening and buffering, and access should be provided for maintenance vehicles servicing overhead and underground utilities located in the R.O.W.



Existing



Existing
Public Works Site and
Intersecting Railroad R.O.W.



Recommendation
Proposed Public Works Site and
Bike Path

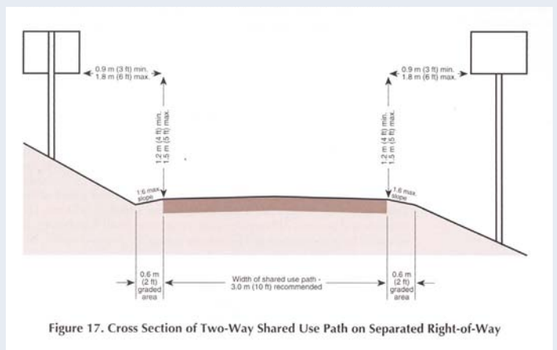
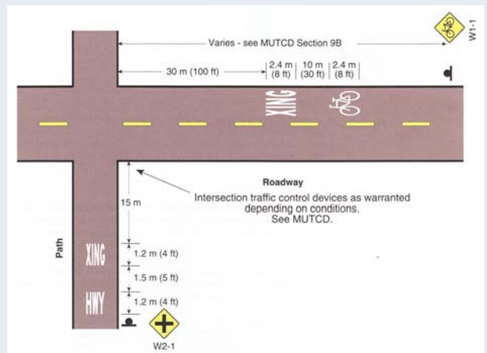


Figure 17. Cross Section of Two-Way Shared Use Path on Separated Right-of-Way

AASHTO Shared Path Cross Section



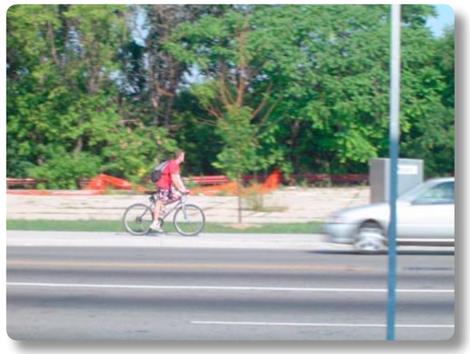
AASHTO Midblock Crossing Detail

Applicable Standards

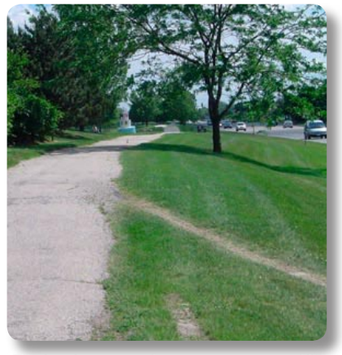
Land Design Collaborative incorporated

Bikeway Plan
Village of Lincolnwood

Railroad Right-of-Way
Design Development

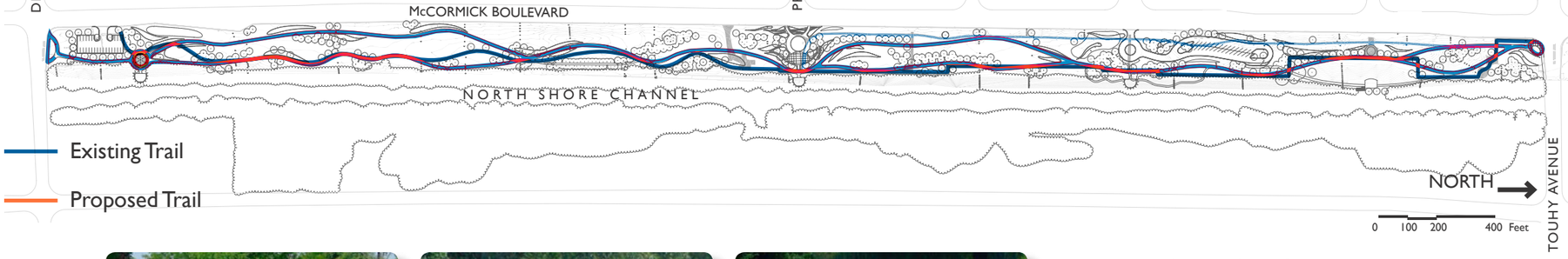


Visibility issues at intersections. Cyclists are forced to use sidewalk.



Path close to fast moving traffic

Desire paths where path angles too sharp



Surface failure at path edges

Hazardous dropoffs at path edges

Uneven path surface

New Trail Design Standards

- Designed to meet AASHTO bike trail safety standards
- 10' wide asphalt trail
- Horizontal and vertical clear zones
- Radii and sight distances based on appropriate speed
- Minimize grades at Intersections and approaches
- Enhance visibility of cyclists at intersections
- Provide sufficient waiting area at crosswalks

BIKE PATH ANALYSIS PLAN

CHANNEL RUNNE PARK

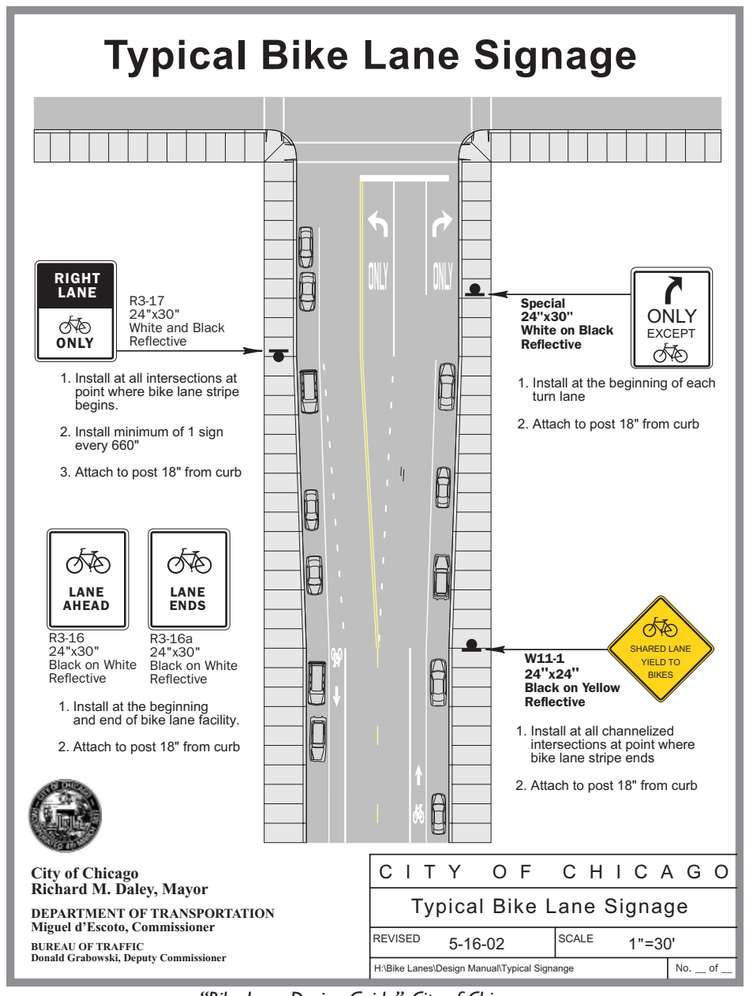
Land Design Collaborative incorporated

August 26, 2005

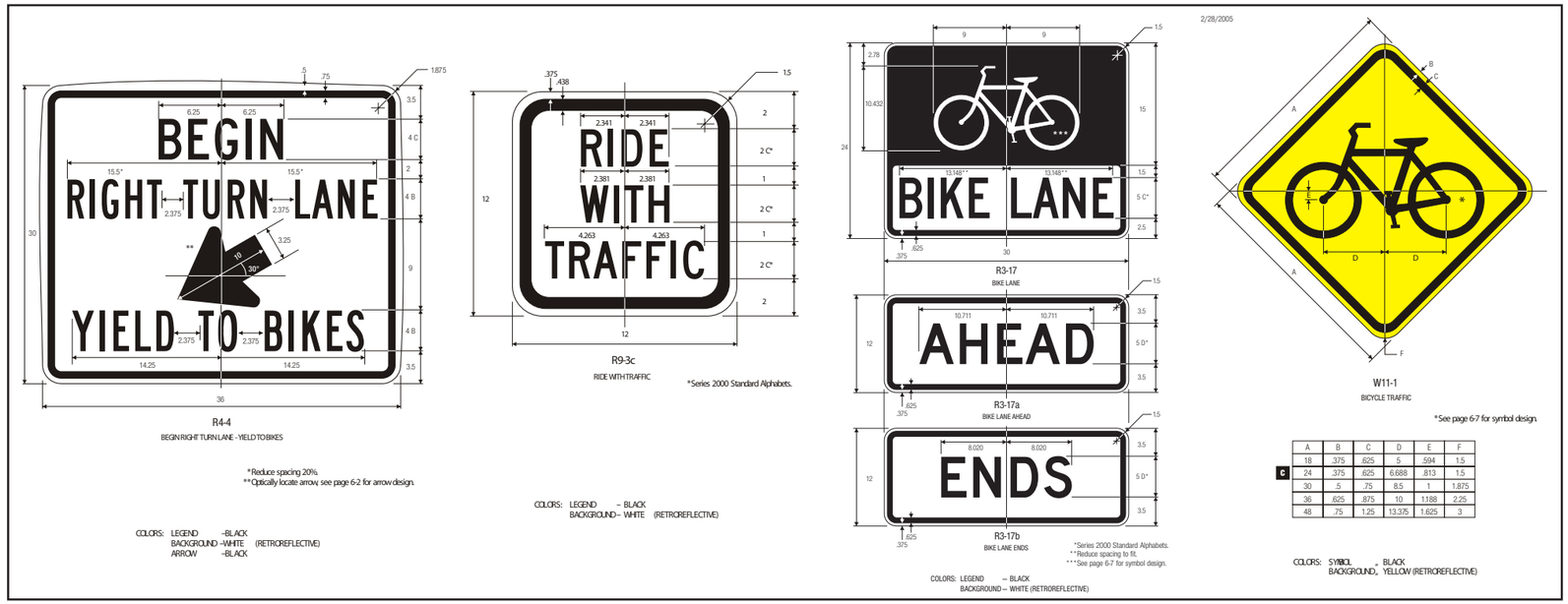
VILLAGE OF LINCOLNWOOD

Channel Runne Park has an existing shared use path that connects with both the Chicago and Skokie bikeways through a linear greenspace along Channel Runne Park, stretching from Lincolnwood through the communities of Skokie and Evanston. The park is a popular recreational facility that functions as a recreational space and sculpture park used by cyclists and pedestrians. The path as it exists has some features which may be dangerous to cyclists, as illustrated in the image to the left. These problems have been addressed and will be eliminated when improvements as designed by LDC are implemented.

Signage and Lane Striping

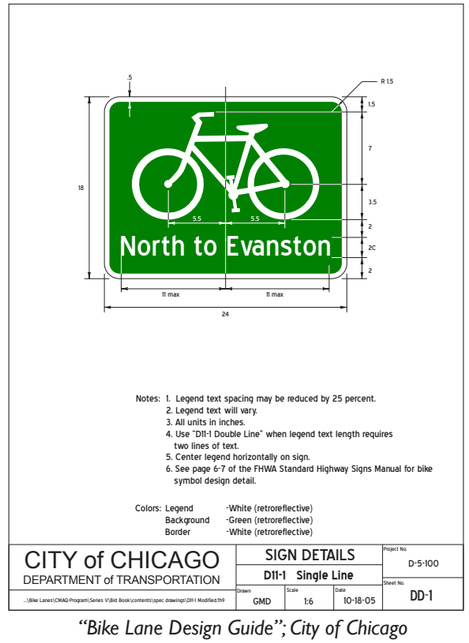


"Bike Lane Design Guide"; City of Chicago

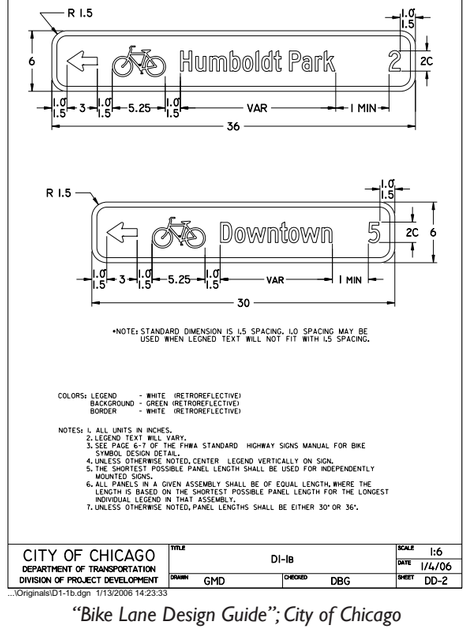


C	A	B	C	D	E	F
	18	.375	.625	5	.594	1.5
	24	.375	.625	6.688	.813	1.5
	30	.5	.75	8.5	1	1.875
	36	.625	.875	10	1.188	2.25
	48	.75	1.25	13.375	1.625	3

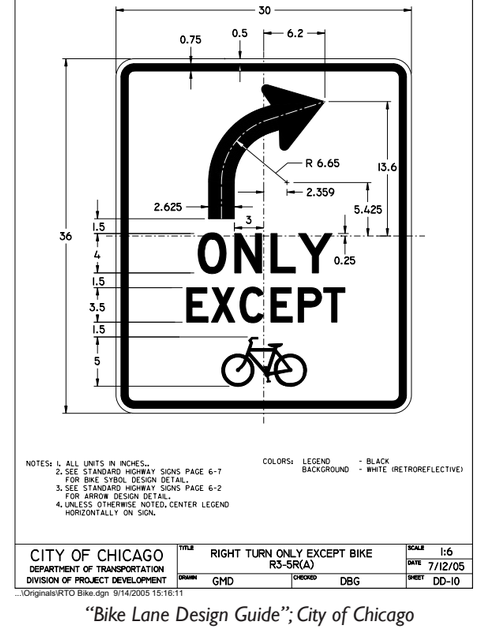
"Bike Lane Design Guide"; City of Chicago



"Bike Lane Design Guide"; City of Chicago



"Bike Lane Design Guide"; City of Chicago



"Bike Lane Design Guide"; City of Chicago

Land Design Collaborative incorporated

Bikeway Plan
Village of Lincolnwood

Recommendation:

All bike lane signage should be posted in accordance with most recent edition of the Manual of Uniform Traffic Control Devices (MUTCD) for Streets and Highways, Part 9, Traffic Controls for Bicycle Facilities, and in conjunction with the City of Chicago Bike Lane Signage as illustrated above. These design standards are guidelines only and will need to be reviewed in context with actual traffic and road conditions prior to implementation when construction plans are developed.

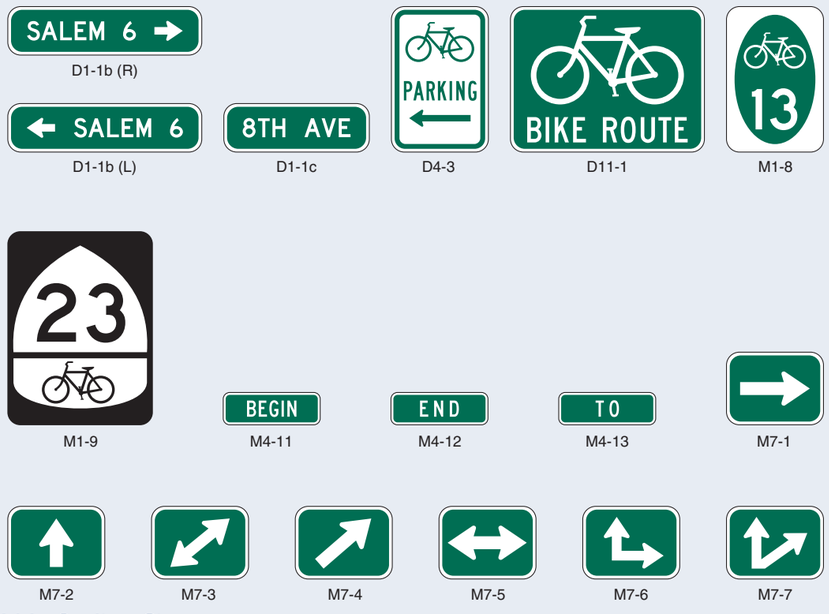
Chicago Signs

Bicycle Boulevard Signs

http://www.ci.berkeley.ca.us/transportation/Bicycling/BB/BicycleBoulevard.html

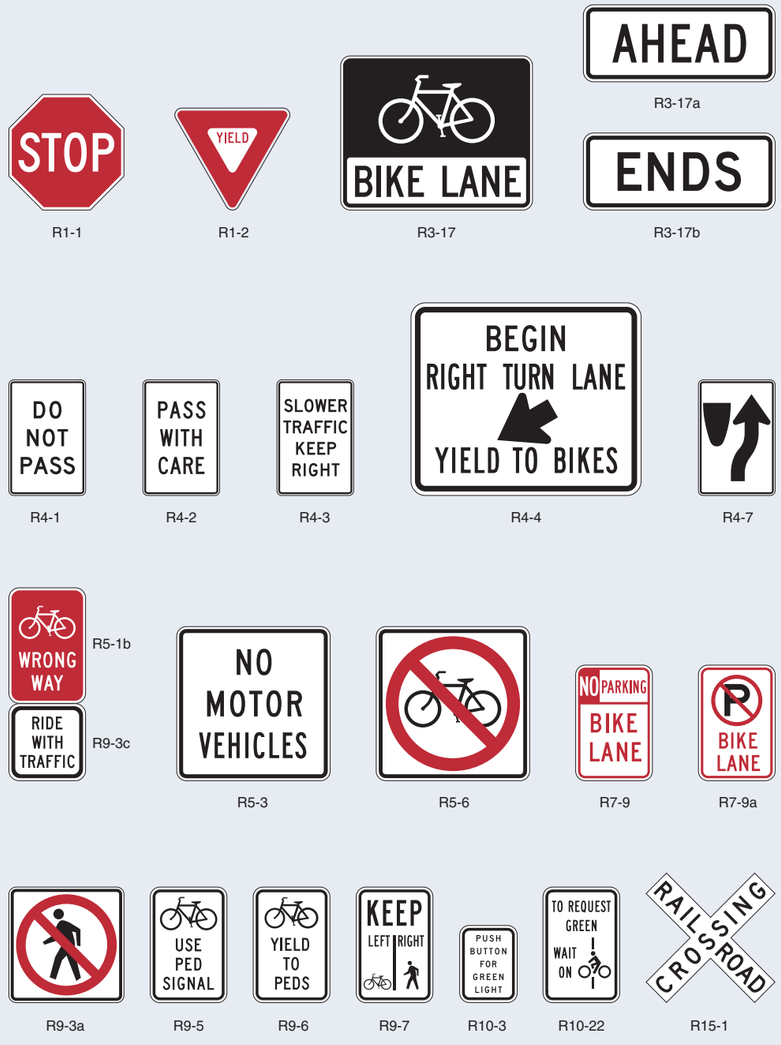
Shared Lane Sign

http://www.gvcc.bc.ca



Wayfinding Signs

"Manual on Uniform Traffic Control Devices. 2003 Edition"; U.S. Department of Transportation



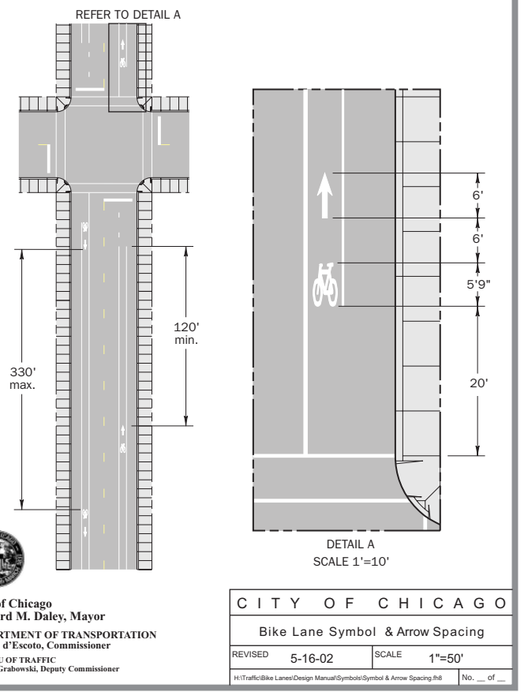
Sect. 9B.05

Regulatory Signs

"Manual on Uniform Traffic Control Devices. 2003 Edition"; U.S. Department of Transportation

Recommendation:
All bike lane signage should be posted in accordance with most recent edition of the Manual of Uniform Traffic Control Devices (MUTCD) for Streets and Highways, Part 9, Traffic Controls for Bicycle Facilities. The design standards illustrated are guidelines only and will need to be reviewed in context with actual traffic and road conditions prior to implementation when construction plans are developed.

Bike Lane Symbol & Arrow Spacing



City of Chicago
Richard M. Daley, Mayor
DEPARTMENT OF TRANSPORTATION
Miguel d'Escoto, Commissioner
BUREAU OF TRAFFIC
Donald Grabowski, Deputy Commissioner

CITY OF CHICAGO
Bike Lane Symbol & Arrow Spacing
REVISED 5-16-02 | SCALE 1"=50'
H:\Traffic\Bike Lanes\Design Manual\Symbols\Symbol & Arrow Spacing.fh8 | No. __ of __

"Bike Lane Design Guide"; City of Chicago

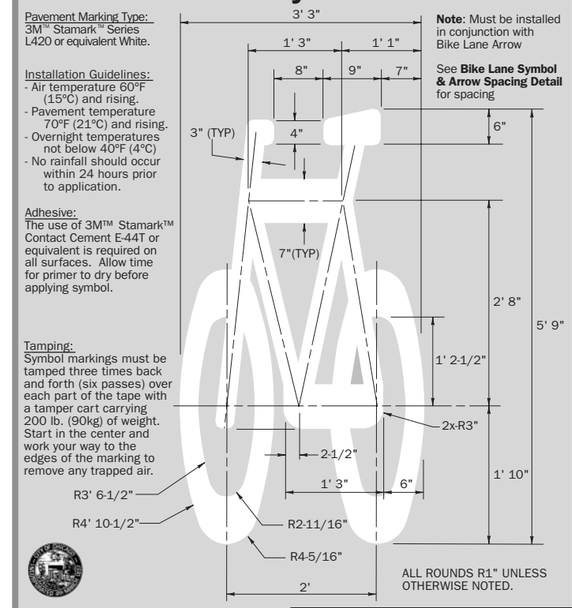
Bike Lane Symbol Detail

Pavement Marking Type:
3M™ Stamark™ Series L420 or equivalent White.

Installation Guidelines:
- Air temperature 60°F (15°C) and rising.
- Pavement temperature 70°F (21°C) and rising.
- Overnight temperatures not below 40°F (4°C)
- No rainfall should occur within 24 hours prior to application.

Adhesive:
The use of 3M™ Stamark™ Contact Cement E-44T or equivalent is required on all surfaces. Allow time for primer to dry before applying symbol.

Tamping:
Symbol markings must be tamped three times back and forth (six passes) over each part of the tape with a tamper cart carrying 200 lb. (90kg) of weight. Start in the center and work your way to the edges of the marking to remove any trapped air.



Note: Must be installed in conjunction with Bike Lane Arrow

See **Bike Lane Symbol & Arrow Spacing Detail** for spacing

ALL ROUNDS R1" UNLESS OTHERWISE NOTED.

City of Chicago
Richard M. Daley, Mayor
DEPARTMENT OF TRANSPORTATION
Miguel d'Escoto, Commissioner
BUREAU OF TRAFFIC
Donald Grabowski, Deputy Commissioner

CITY OF CHICAGO
Bike Lane Symbol Detail
REVISED 5-16-02 | SCALE 1" = 1'
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"Bike Lane Design Guide"; City of Chicago

Bike Lane Arrow Detail

Pavement Marking Type:
3M™ Stamark™ Series L420 or equivalent White.

Installation Guidelines:
- Air temperature 60°F (15°C) and rising.
- Pavement temperature 70°F (21°C) and rising.
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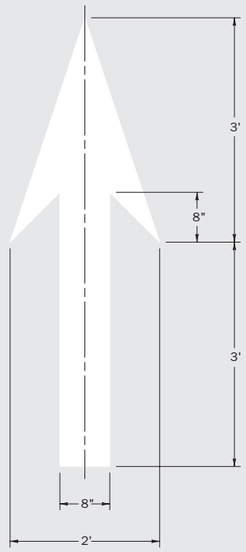
Note: Must be installed in conjunction with Bike Lane Symbol

See **Bike Lane Symbol & Arrow Spacing Detail** for spacing



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BUREAU OF TRAFFIC
Donald Grabowski, Deputy Commissioner

CITY OF CHICAGO
Bike Lane Arrow Detail
REVISED 5-16-02 | SCALE 1" = 1'
H:\Bike Lanes\Design Manual\Symbols\Bike arrow.fh8 | No. __ of __

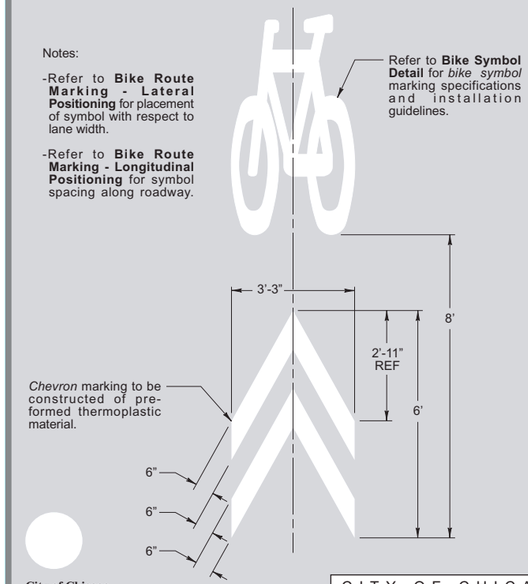
"Bike Lane Design Guide"; City of Chicago

Bike Route Marking

Notes:

-Refer to **Bike Route Marking - Lateral Positioning** for placement of symbol with respect to lane width.

-Refer to **Bike Route Marking - Longitudinal Positioning** for symbol spacing along roadway.



City of Chicago
Richard M. Daley, Mayor
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Miguel d'Escoto, Commissioner
BUREAU OF TRAFFIC
Donald Grabowski, Deputy Commissioner

CITY OF CHICAGO
Bike Route Marking
REVISED 7-15-03 | SCALE 1" = 2'
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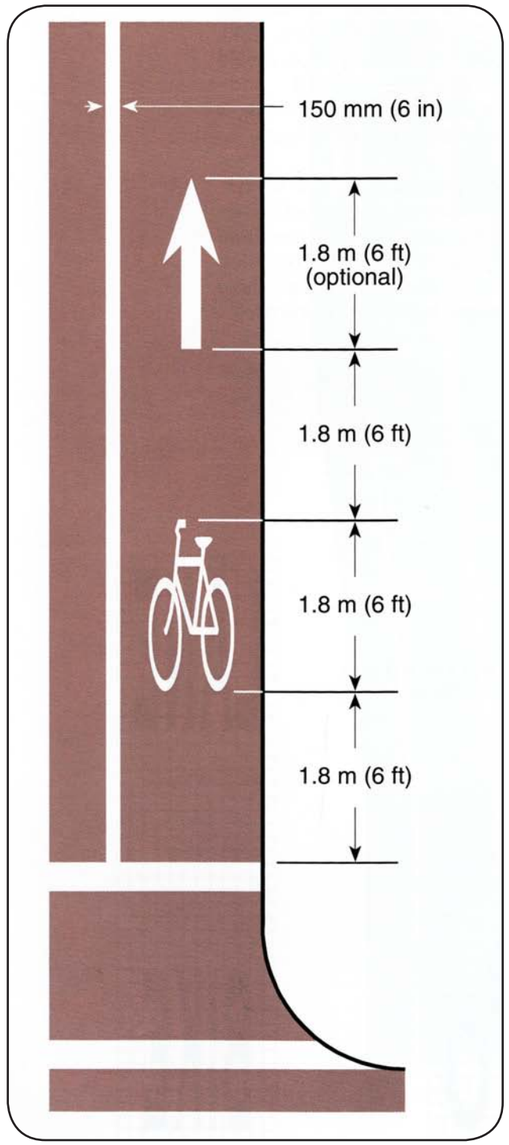
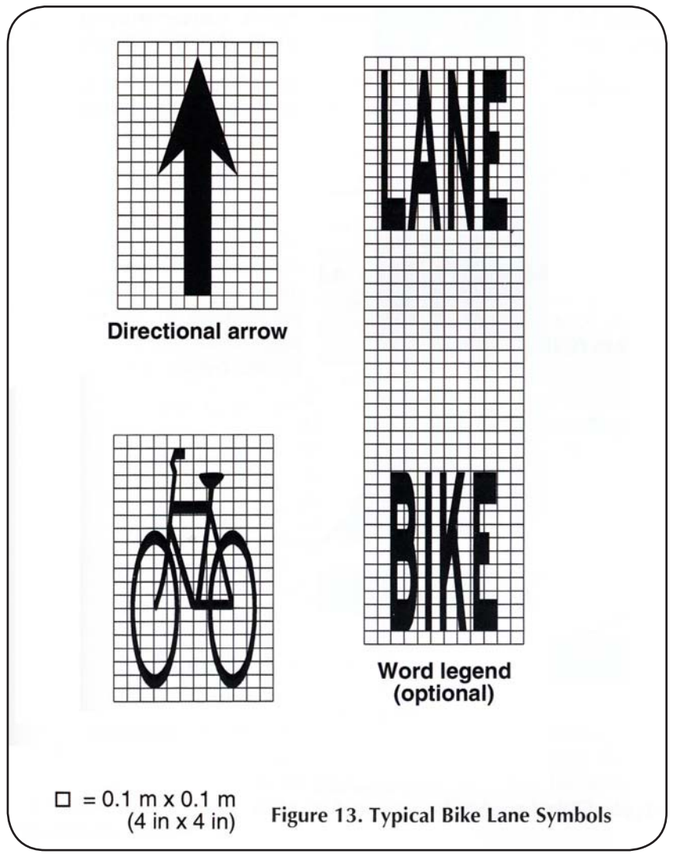
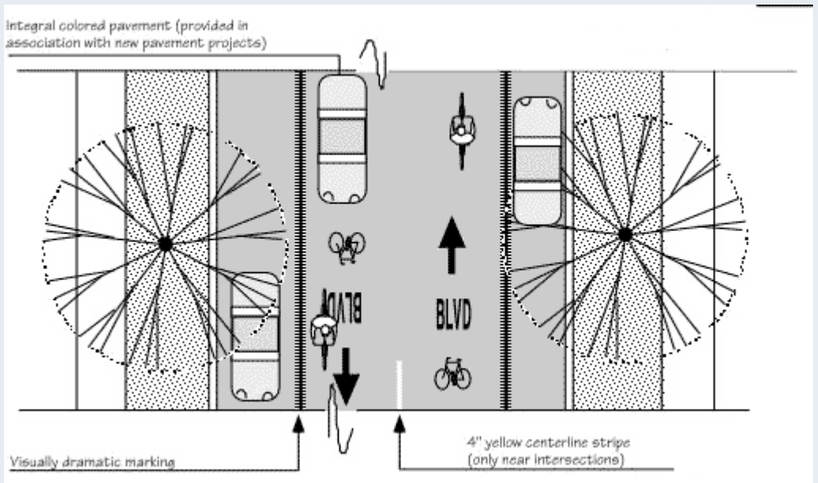
"Bike Lane Design Guide"; City of Chicago



AASHTO Bike Lane Marking Detail



AASHTO Bike Lane Marking Symbols

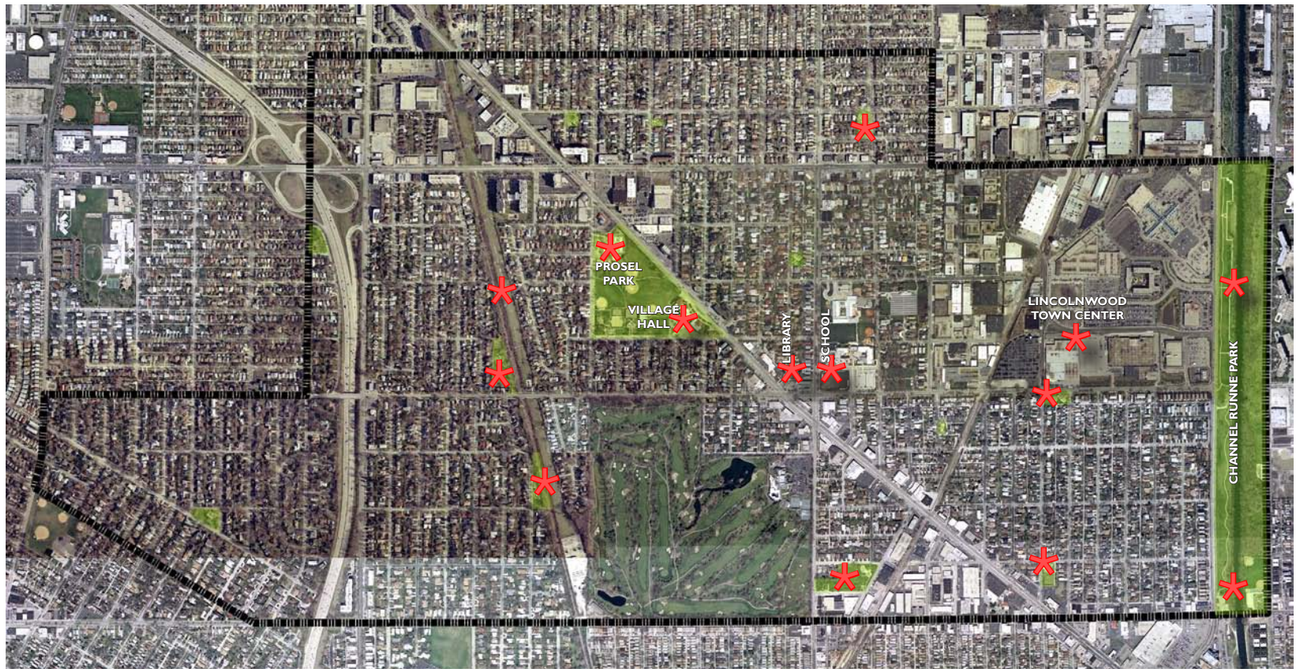


Bicycle Boulevard Pavement Markings

http://www.ci.berkeley.ca.us/transportation/Bicycling/BB/BicycleBoulevard.html

Recommendation:
All pavement markings should be in accordance with the most recent edition of the Manual of Uniform Traffic Control Devices (MUTCD) for Streets and Highways, Part 9, Traffic Controls for Bicycle Facilities, These design standards are guidelines only and will need to be reviewed in context with actual traffic and road conditions prior to implementation when construction plans are developed.

Appendix



* Proposed Bike Parking Locations

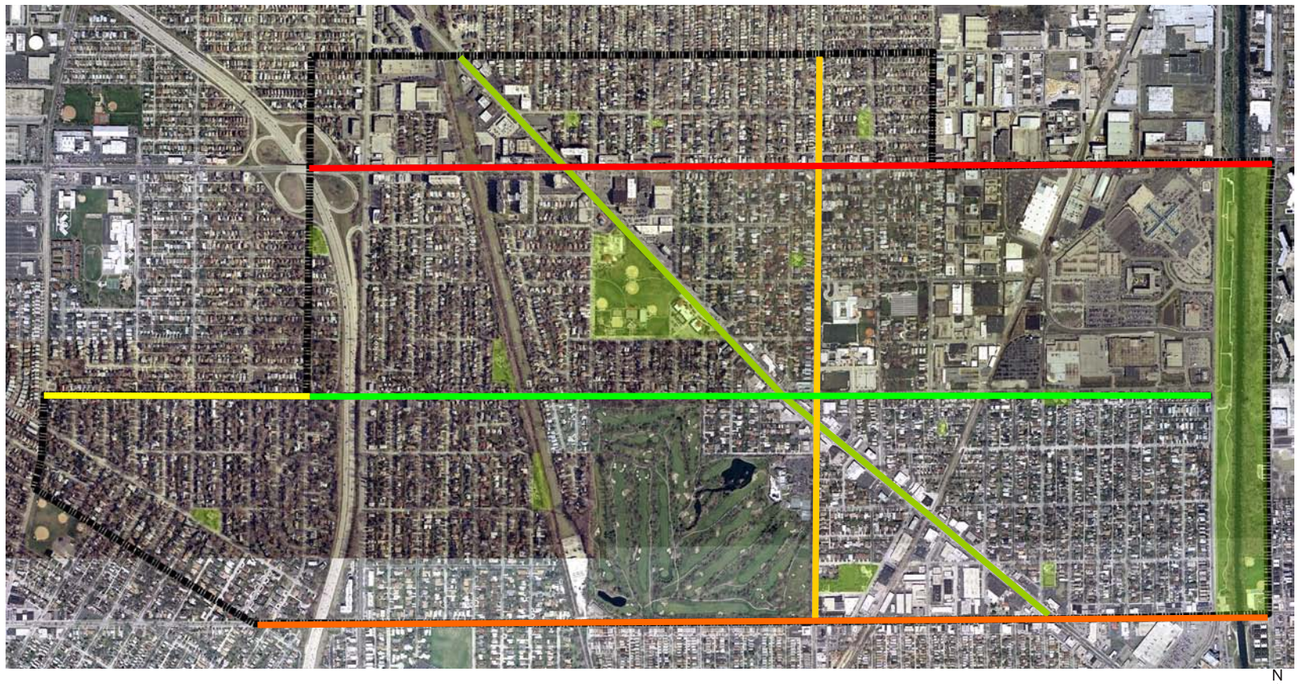
Guidelines for Installing Bike Parking Racks:

- Locate bike parking as close to building entrances as possible, making it convenient to use and reducing the possibility of theft.
- Provide lighting for bicycle areas if needed for theft deterrence and safety of cyclists.
- Install bike racks that accommodate different types of locks and allow the user to lock to the rack in multiple places.
- Install bike racks that support the frame of the bike, especially in locations where long term parking may be used. Devices that only support the wheel, such as in pictures 2 and 8, can damage the bike if it tips over. These racks are more appropriate for short term parking use.
- Single bike racks such as racks 3, 4, 6, and 9, are convenient to locate and are easily expanded to keep up with growing demand.
- Locate bicycle parking out of reach of irrigation systems.

Bike Rack Examples

Bicycle Level of Service/Bike Compatibility Index								
	Lincoln	Cicero	Crawford	Touhy	Devon	Pratt @ East Prairie	Pratt @ Navajo	Pratt @ St.Louis
Through lanes per direction	2	2	2	2	2	1	1	1
Width of outer lane	11.5	11	11	10.5	12	12	12.5	12
Width of paved shoulder	7	7.5	0	7	0	11	0	8
Average Daily Traffic	18500	22400	18500	37000	29000	9500	9000	7500
Posted Speed Limit	35	35	35	35	35	35	35	35
% Heavy Vehicles	6	6	3	10	3	3	0	
FHWA Pavement Condition 1 1=good 5=very bad	3	4	2	5	4	5	5	5
% Occupied on-street parking	1	3	15	0	1	5	0	5
Parking time limit (min)	120	120	120	0	120	120	0	120
Passes Through Residential Area	N	Y	Y	N	Y	Y	Y	Y
BLOS	2.24	2.67	4.38	6.11	4.7	-0.76	3.33	0.79
BLOS Grade	B	C	D	F	E	A	C	A
BLOS Compatibility Level	V. High	Mod High	Mod Low	Ex. Low	V. Low	Ex. High	Mod High	Ex. High

The Bike Level of Service (BLOS) index is an indicator of the potential of a road for use as a bike route. It evaluates factors such as average daily traffic, pavement condition and width, parking, and posted speed limit in order to determine the feasibility of incorporating a bike lane on an existing street. The diagram shows the suitability of major streets in Lincolnwood for use as bike routes. Pratt and Lincoln Avenue are among the best in the community for bike route designation. Touhy, Devon, and Crawford should be avoided by cyclists, largely due to high traffic volumes.



BLOS Compatability Level

	A	Extremely High
	B	Very High
	C	Moderately High
	D	Moderately Low
	E	Very Low
	F	Extremely Low

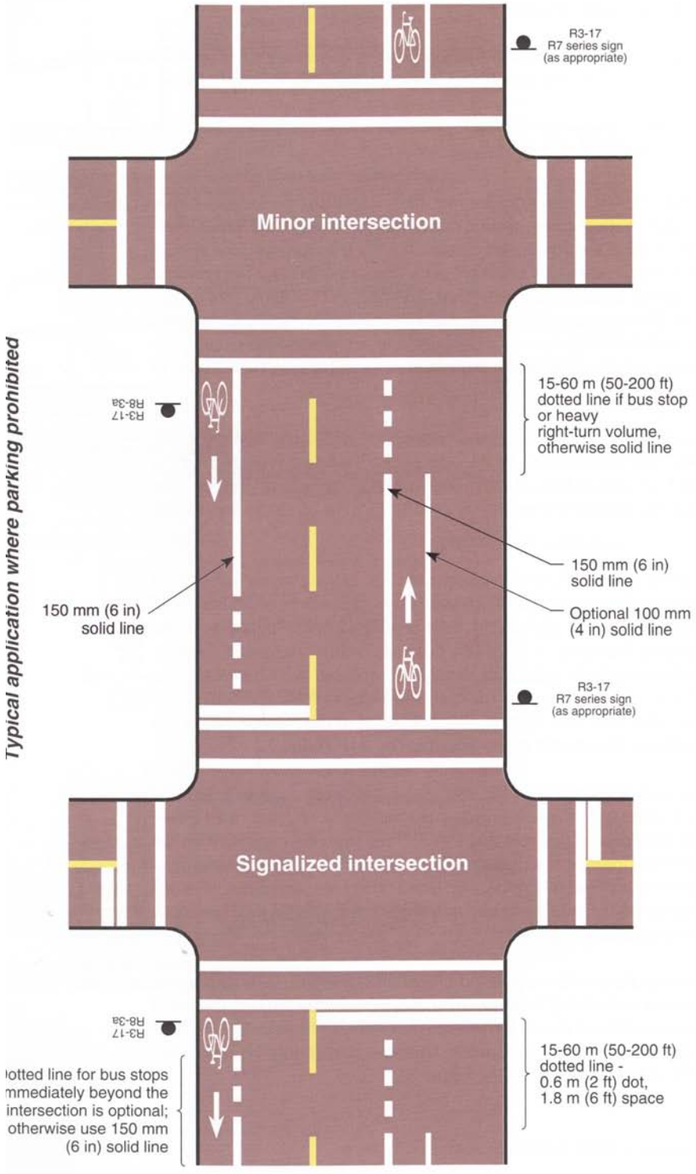


Figure 7. Typical pavement markings for bike lane on two-way street

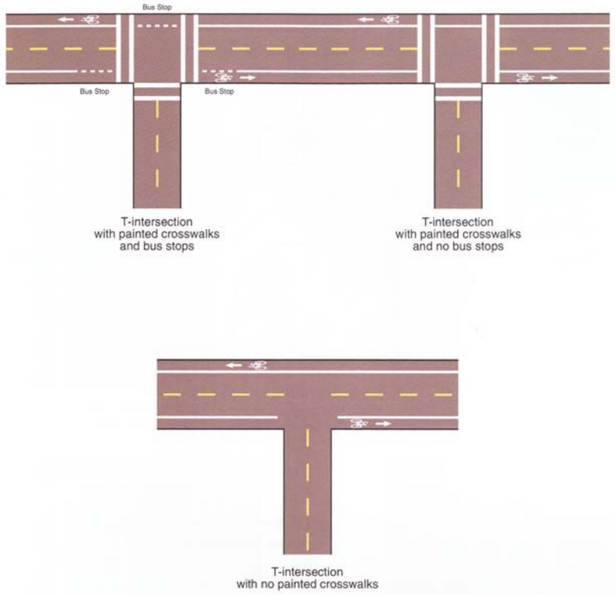


Figure 8. Typical Bike Lane Striping at T-intersections

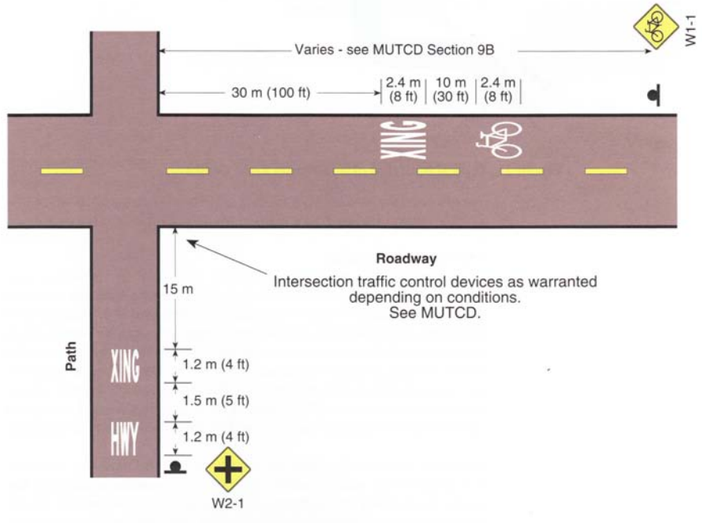
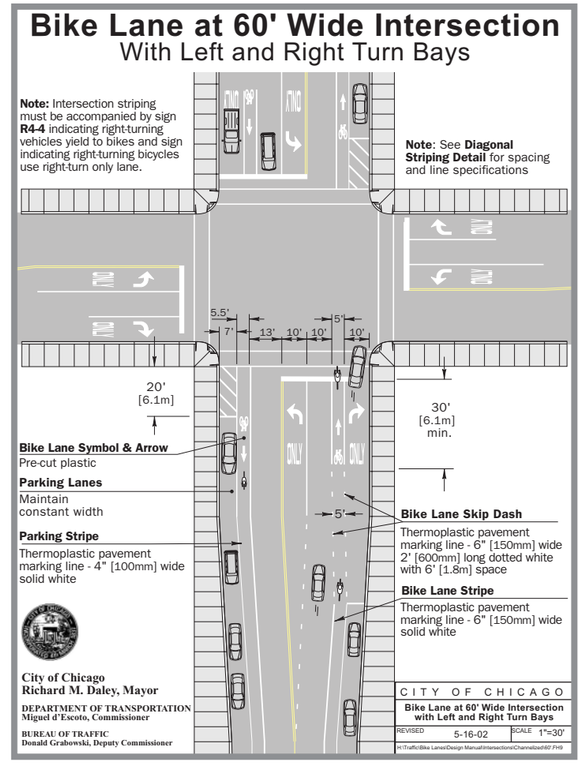


Figure 20. Midblock Type Path Crossing



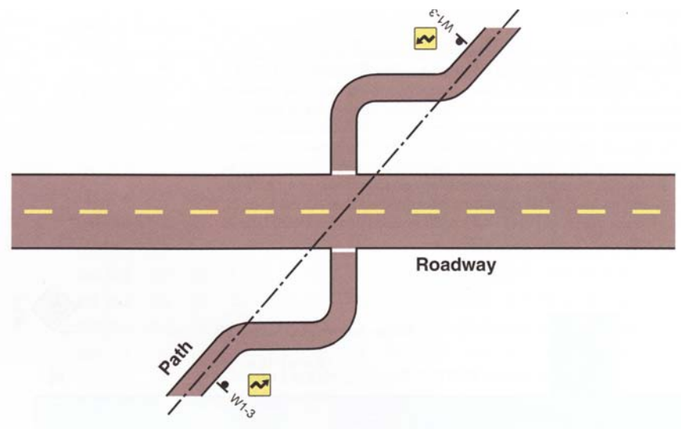


Figure 21. Typical Redesign of a Diagonal Road Crossing

Funding Programs

There are numerous grants available for the funding of bikeways and shared use trails. The highlighted programs have been identified as possible bicycle facility funding sources for Illinois bikeways. Collaboration with the Village of Skokie and the City of Chicago would improve the funding potential for joint grant applications to enhance the regional bikeway system.

Grant programs typically require a funding match by the village, usually a 50/50 match, but sometimes funding is 80% with a 20% match. The grant program applied for will be determined by the type of project, the Village's available funding, and other Village projects that may be under consideration for application to grant programs. It is seldom strategically appropriate to submit more than one project per grant type. The Chicago Bike Federation is a good resource and consultant for grant identification and proposal assistance.

Illinois Department of Natural Resources (IDNR) Illinois Bicycle Path Grant Program - Funding for the development of off-street bike trails may be possible through this funding source, the purpose of which is to provide financial assistance for acquisition, construction, and rehabilitation of bike paths and related support facilities. Up to 50% funding assistance to a maximum of $200,000 per annual request is available. Additional information regarding this program can be found in the grant section of the IDNR web site.

Illinois Department of Transportation (IDOT) Illinois Transportation Enhancement Program (ITEP) - This program provides funding for transportation related projects. On-street bike paths that provide alternative means of transportation for communities as well as railroad corridors that are being converted to trails are eligible to submit projects. Up to 50% for right-of-way and easement acquisition costs, and up to 80% for engineering, utility relocating, and construction are available.

Chicago Area Transportation Study (CATS) Congestion Mitigation & Air Quality Improvement Program (CMAQ) - This program gets its funding from federal transportation bills that set aside funds for mitigating vehicular congestion, thus improving air quality. Facilities that parallel major highways (potential Lincoln Avenue) make good CMAQ projects. The matching program provides up to 80% for transportation projects.

Illinois Tomorrow Corridor Planning Grant Program - Collaboration with Skokie or Chicago may open up the possibility to apply for this grant, which encourages multi-community corridor plans to develop efficient transportation facilities and land uses. Grantees provide only 10% of the total project funding.

The following general estimate of implementation costs assumes 2006 values and are provided, in order of magnitude amounts to be used for general planning purposes. More detailed estimates of probable construction costs will need to be generated at the time construction plans are developed and actual improvements are engineered.

On-Street Bike Route Potential Projects

I. Pratt Avenue - Area 1 - Longmeadow to Lincoln

Implementation costs:

- Thermoplastic lane striping and symbols
  Cost range of $23,000 to $28,000
- Road Signs
  Cost range of $5,000 to $6,000
- Misc. Roadway and Storm Grate Improvements
  Cost range of $9,500 to $11,500

Pratt Avenue Area 1 Total: $37,500 to $45,500

II. Pratt Avenue - Area 2 - Lincoln to McCormick

Implementation costs:

- Thermoplastic lane striping and symbols
  Cost range of $14,300 to $17,500
- Road Signs
  Cost range of $3,600 to $5,000
- Misc. Roadway and Storm Grate Improvements
  Cost range of $6,100 to $7,500

Pratt Avenue Area 2 Total: $24,000 to $30,000

III. Forest Preserve Connector

Implementation Costs

- Road signs
  Cost range of $2,500 to $3,000

Forest Preserve Connector Total: $2,500 to $3,000

IV. Lincoln Avenue - Jarvis to Devon

Implementation costs:

- Thermoplastic symbols
  Cost range of $28,000 to $34,000
- Road Signs
  Cost range of $7,500 to $9,000
- Misc. Roadway and Grate Improvements
  Cost range of $9,500 to $11,500

Lincoln Total: $45,000 to $54,500

V. East Prairie Avenue -Bikeway Boulevard

Implementation costs:

- Thermoplastic symbols
  Cost range of $7,000 to $9,000
- Road Signs
  Cost range of $4,000 to $5,000
- Misc. Roadway and Grate Improvements
  Cost range of $3,000 to $4,000

East Prairie Total: $14,000 to $18,000

VI. Northeast Parkway

Implementation costs:

- Thermoplastic symbols
  Cost range of $10,300 to $12,500
- Road Signs
  Cost range of $1,200 to $1,500
- Misc. Roadway and Grate Improvements
  Cost range of $3,000 to $4,000

Northwest Parkway Total: $14,500 to $18,000

On-Street Bike Routes Total -

$137,500 - $169,000

Off-Street Bike Route Potential Projects

Off-street costs indicated are for bike path improvements only. Additional costs will need to be calculated for improvements such as the dog park, frisbee golf, and landscape.

VII. Utility R.O.W.

Implementation costs

- 10' Asphalt path with 2' stabilized shoulders
  Cost range of $305,500 to $367,000
- Thermoplastic lane striping and symbols
  Cost range of $4,500 to $6,000
- Road Signs
  Cost range of $1,500 to$2,000

Utility R.O.W. Total: $311,500 to $375,500

VIII. Union-Pacific Railroad R.O.W.

Implementation costs

- 10' Asphalt path with 2' stabilized shoulders
  Cost range of $263,000 to $316,000
- Thermoplastic lane striping and symbols
  Cost range of $5,000 to $9,500
- Road Signs
  Cost range of $1,000 to$1,500

Union-Pacific Railroad R.O.W. Total: $269,000 to $327,000

Off-Street Bike Routes Total -

$580,500 - $702,500