BARRINGTON
BICYCLE & PEDESTRIAN TRANSPORTATION PLAN

2012

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VILLAGE OF BARRINGTON

2012 BICYCLE AND PEDESTRIAN TRANSPORTATION PLAN

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VILLAGE HALL

200 South Hough Street

Community & Financial Services	(847) 304-3400
Economic & Community Development	(847) 304-3460
Engineering & Building	(847) 304-3460
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PUBLIC WORKS

300 North Raymond Avenue (847) 381-7903

PUBLIC SAFTEY

400 North Northwest Highway

Fire Department	(847) 304-3600
Police Department	(847) 304-3300

The Bicycle and Pedestrian Transportation Plan was approved by the
Corporate Authorities on October 8, 2012.
Ordinance No. 12-3708

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EXECUTIVE SUMMARY

The Village Board created a Bicycle and Pedestrian Advisory Committee (BPAC) in 2011 to respond to the citizen's comments at the Comprehensive Plan update in 2010 for a more cohesive bicycle and pedestrian network in the Village. The Committee, made up of residents who have a vested interest in the transportation network of Barrington, was charged with updating the 1998 Bicycle Transportation Plan. This group provided guidance on the priorities for facilities and projects moving forward. The goal was to provide Barrington with a plan which will help create a cohesive system of bikeways and walkways throughout the Village.

There are two types of facilities which improve the connectivity of Barrington: On-Street and Off-Street. On-street are those where the bicycle travels with traffic within the street pavement area. The on-street facility promotes alternative modes of transportation while alerting motorists to the possible presences of bicyclists or pedestrians. There are three types of on-street facilities that should be used in Barrington: bicycle lanes, bicycle routes and shared lane markings or sharrows. Several off-street facilities are available to bicyclists and pedestrians as well. There are many types of off-street facilities but the ones most pertinent to Barrington and the surrounding environment are shared use paths, side paths, bike trails, rails-with-trails, sidewalks and hiking trails.

The Village currently has approximately one (1) mile of bike lanes on Hillside Road and South Grove Avenue; eight tenths (.8) of a mile of shared use path; and over seventeen (17) miles of off-street facilities within the surrounding forest preserve and park district areas. This plan identifies many projects which will improve upon the network already in place and connect all Barrington residents to the surrounding area facilities. The projects may take five years or more to complete but should improve the quality of transportation in and around Barrington. At full build out the proposed projects will ad 3.71 miles of bike lanes and 4.71 miles of shared us paths. The projects are categorized by district and each street in the network is quantified using a Bicycle Level of Service (BLOS) rating system. The rating uses several variables such as average daily traffic counts, speed limit, width of outside lane and pavement rating to categorize each street's "bike-friendliness" for the average adult, the target audience for this transportation plan. The scores range from A to F, and the streets with a score of C or better can be considered for an on-street facility.

However, building a great network for connectivity must be accompanied by education, encouragement and enforcement. This plan details several educational programs and materials which should be implemented to teach residents about the network. It also outlines many ideas for encouraging people to get outside and take a walk or go for a bike ride. Then, the plan gives several program ideas to help enforce this plan and the rights of those not in a motorized vehicle. Finally the plan outlines several sources of funding other than the Village budget and provides guidance on maintaining all facilities.

Chapter 1:

Introduction

Background

The Village of Barrington has been conscious of the need to connect the community for more than twenty years. In 1993, the Village applied for an Illinois Transportation Enhancement Program (ITEP) Grant administered through the Illinois Department of Transportation (IDOT). This grant was to add bicycle route signage and add new paths to connect various residential neighborhoods with key parks and commercial areas in Barrington. Although the Village was not awarded the grant it opened the door to explore alternative ways to connect Barrington for more than the automobile.

In 1998, the Village hired TranSystems Corporation to conduct a Barrington Bikeway Study. The final product identified a strategy for the planning and construction of marked bikeway routes throughout the Village. At that time the Village had a total of 0.5 miles of bikeways, none of which were marked or designated as bikeway routes. The study identified approximately 13.4 miles of new bikeways which would create a network of safe facilities throughout the Village's roadway network. The Bikeways Study was prepared in response to availability of federal funding and public interest expressed from the Village residents. The bikeway plan recommendations provided in the 1998 study identified off-street bike paths, on-shoulder bike lanes, on-road signed and striped bike lanes, and on-road signed bike routes as ways to connect the Village with a network of bikeway corridors to encourage bikeway use for the casual user, children, adults, and the experienced bicyclists.

New Committee Formation

In 2010, the Village began an update of the Village's Comprehensive Plan. The Comprehensive Plan is a planning document which sets forth land use and planning policy for the community. This plan is updated every 10 years to keep it current with market trends and land use alternatives. As part of this update, the Village held several neighborhood meetings to receive resident input for this long-range planning document. Much of the input focused on the need to strengthen the bicycle and pedestrian connectivity throughout the Village, along with making it safer to get from one area to another when bicycling and walking around the Village. The Plan Commission as part of their review, recommended that the Village Board consider establishing a Bike and Pedestrian Advisory Committee to review and recommend an updated plan for the Village. In response to this request the Village Board created the Bicycle and Pedestrian Advisory Committee (BPAC). The Committee is charged with updating the Bikeways Plan and promoting the use of alternative modes of transportation for the benefit of all Barrington residents from first grade to retirement and developing educational programming to encourage the proposed plan.

New Plan Features

The update to the 1998 Barrington Bikeway Plan will bring the purpose and goals, analysis of the existing conditions and corridors and recommendations for future improvements into compliance with updated state and federal standards as well as look at the overall connectivity to form a regional plan. The new plan will promote overall safety throughout the community by featuring a complete Bicycle Level of Service (BLOS) analysis; a priority and phasing plan

for short and long term planning; a section which identifies funding options outside of the Village of Barrington fiscal budget; a maintenance alternative for the entire system; an educational program to encourage and inform the public on bicyclist, pedestrian and motorist rights as well as their responsibilities; and performance measures to gauge the effectiveness of this plan.

In addition, the plan will take into account the following user groups to bicycling and pedestrian connectivity.

- **Recreational User:** Bicycling is a very popular activity among both recreational riders of all age and sport enthusiasts.
- **Alternative transportation:** Bicycling is also used as alternative transportation for short, local trips throughout town. It is especially popular among commuters going to and from the Metra train station.
- **Transportation necessity:** Besides those who bicycle by choice, there are residents who depend on bicycling as a transportation necessity, including children, adolescents, and commuters.

Barrington hosts and connects many bicycle riding clubs, who have avid riders, to routes and destinations in the area. Therefore, one of the main challenges of this plan will be to provide a network of connections that will allow all types of riders, from the most avid, bike club enthusiast to the casual family out for a recreational ride to the children riding to and from school. This plan will also promote sustainability and healthy lifestyles in and around the community by providing better connectivity for alternative modes of transportation.

Chapter 2:

Purpose & Goals

This section sets forth the purpose and goals for the Barrington Bikeway Plan.

Purpose of a Bicycle and Pedestrian Plan

The purpose of the Village Bicycle & Pedestrian Plan is to identify and outline recommendations to improve connectivity in and around the Village of Barrington based on the following components:

- Encourage alternative modes of transportation by improving the connectivity of Barrington for all bicyclists and pedestrians.
- Incorporate connectivity elements into transportation land use and development planning.
- Coordinate with other agencies, advocacy groups and surrounding municipalities and other jurisdictions to create a bicycle and pedestrian friendly network that connects to other northwest communities.
- Identify capital programming and prioritization of program improvements.
- Promote safety campaigns and education programs for bicyclists, pedestrians and motorists.

Goals for the Bicycle and Pedestrian Plan

The goal of the Village Bicycle & Pedestrian Plan is to provide a cohesive system of bikeways and walkways throughout the Village. These are measurable and attainable goals that when implemented will achieve a desired result. The following goals should guide the overall bicycle and pedestrian plan.

- Advocate programs to encourage safe and responsible bicycling and walking as healthy alternative modes of transportation.
- Identify a bicycle routes and pedestrian network connection improvements.
- Develop a connectivity plan to link village facilities, park lands, forest preserves, transit facilities, and residential, commercial, retail, and office destinations.
- Link the Village of Barrington to the regional bikeway connection and the county bikeway system, forest preserve systems and adjacent municipal bikeway systems.
- Identify project costs to establish recommendations for an annual Capital Improvement Program (CIP) budgets, and proposed cost-sharing alternatives.
- Develop educational materials for distribution throughout the community which may be used to increase public safety and awareness.

Chapter 3:

Bikeway & Pedestrian Analysis

TYPICAL BICYCLE FACILITIES & DESIGN SCHEMATICS

Before building a system of bicycle and pedestrian facilities which connect the Village, careful consideration must be taken to properly design the network. The design must take into consideration the physical space available and the type of rider and their ability.

The 1999 American Association of State Highway and Transportation Officials (AASHTO) *Guide for the Development of Bicycle Facilities* defines three types of bicycle users:

1. Type A (Advanced)
2. Type B (Basic)
3. Type C (Children)[1]

Based on the defined types, the Village of Barrington Bicycle and Pedestrian Plan intends to serve Type B (Basic) bicycle users; which are defined as, basic or less confident adult riders which may also be using their bicycles for transportation purposes, but prefer to avoid roads with fast and busy motor vehicle traffic[2]. However, in certain areas, such as in the immediate vicinity of schools and parks the plan should try to accommodate Type C riders. While this plan begins to design a comprehensive network to connect Barrington, it is important to remember that no one type of bicycle facility suits every bicyclist and no designated bicycle facility can overcome a lack of bicycle operator skill.

In addition to the type of rider, the physical characteristics and volume of traffic must be considered when designing the bicycle and pedestrian network. The Village used a tool known as the Bicycle Level of Service (BLOS) to assist in determining which facilities would be appropriate for the desired user and route. The formula and calculations of this technique are discussed at the end of this chapter.

The following publications are the foremost references for use in the design and designation of bicycle and pedestrian facilities.

Guide for the Development of Bicycle Facilities, American Association of State Highway and Transportation Officials (AASHTO), 1999.

Urban Bikeway Design Guide, National Association of City Transportation Officials (NACTO), 2011.

Manual on Uniform Traffic Control Devices (MUTCD), Federal Highway Administration, 2009.

Detailed information on these publications can be found on their respective websites. These documents may be updated from time to time, so the current version should be used for all facility development and maintenance. In addition, any new publications that address bicycle

[1]American Association of State Highway and Transportation Officials, (1999). *Guide for the development of bicycle facilities*. Washington, DC
[2]IBID

or pedestrian planning, design, operation and maintenance should be considered for local implementation.

Bicycle Facilities

Bicycle facilities are any type of road, track, path or marked lane designated for use by cyclists or any improvement to encourage bicycling, including parking and storage facilities[3]. These facilities are typically divided into two categories; on-street and off-street. There are several types of facilities within these categories such as bike lanes, routes, shared use paths and others. Along the same lines, pedestrian facilities are sidewalks, trails, curb ramps, traffic calming and control devices, grade separated crossings and other design features and strategies intended to encourage safe pedestrian travel. This plan recommends a cohesive mixture of both types of facilities to safely connect all parts of Barrington.

On-Street Bicycle Facilities

On-street bicycle facilities are becoming more desired by the public, and are being installed in more places around the country. The on-street facility promotes alternative modes of transportation while alerting motorists to the possible presences of bicyclists or pedestrians. Using the roadway often improves safety by increasing cyclist visibility, particularly at intersections, where most crashes/accidents occur. On-street facilities are most effective on moderate to lower speed roadways. These types of facilities keep sidewalks clear of cyclists so pedestrians can safely move about and are typically less expensive than off-street facilities.

Bike Lane

According to the AASHTO Guide, bike lanes are portions of the roadway designated by striping, signing and pavement markings for bicyclist use. Bike lanes are five (5) feet wide on each side of the road (including gutter pans) but can be anywhere from four (4) feet to seven (7) feet depending on the section of the road[4]. If there is additional space on the road the bike lane should be widened first and the remaining space may be allocated to automotive lanes. Bike lanes give bicyclists dedicated road space that is adjacent to, but separated from other vehicle traffic lanes, parking stalls and pedestrian sidewalks.

Figure 3.1: *Bike lanes provide a safer riding space guiding bicyclists and motorists.*

Bicycle lanes provide travel one-way, typically in the direction of the flow of traffic. The lanes are identified by white pavement stripes on the road with a sign indicating "Bike Lane". Additionally, lane markings are provided with a "helmeted bicyclist symbol" and an arrow showing which way the traffic travels (see figure 3.11). Bike lane markings facilitate predicable behavior by increasing a bicyclist's confidence in motorists to not stray into their path and, likewise, help a motor-

[3]U.S. Department of Transportation, Federal Highway Administration. (2009). *Manual on uniform traffic control devices for streets and highways*
[4]American Association of State Highway and Transportation Officials, (1999). *Guide for the development of bicycle facilities*. Washington, DC

ist by providing a visual separation of the bicyclist's path of travel which reduces automobile swerving. Where roadway width and financial budget permits, bike lanes are recommended on collectors, arterials and other roads in high-use bicycling areas. Typical streets with bike lanes have posted speed limits of 25-35 mph or less. Refer to the latest version of the AASHTO *Guide for the Development of Bicycle Facilities* for any further design guidelines.

Bike Route

Bike routes, also known as "shared roadways", are preferred travel routes by bicycle travel for recreation or transportation purposes. The streets are signed to inform a rider of the recommended route. Bike routes are appropriate on streets where there is not enough room for a dedicated bike lane and are typically used to connect other bicycle facilities to neighborhood destinations like a park or school. Often, bicycle routes are designated by green and white "Bike Route" signs. At times striping the parking lane or outside lane of a bike route can complement signage to guide and protect riders. This practice should be reviewed periodically for implementation on all bike routes.

Figure 3.2: *Bike routes are typically found on lightly travelled streets.*

Off-Street Bicycle Facilities

Several off-street facilities are available to bicyclists and pedestrians. These facilities can be safer for the user but only when used properly, where there are fewer sides streets, commercial entrances, driveways and other intersections, which can cause crashes due to visibility and expectations. There are many types of off-street facilities but the ones most pertinent to Barrington and the surrounding environment are shared use paths, side paths, bike trails, rails-with-trails, sidewalks and hiking trails. They are designed to be bi-directional, multi-modal facilities, whereas on-street facilities typically are not.

Figure 5.3 *Shared use path in Langendorf Park*

Shared Use Path

Shared use paths are facilities on exclusive rights-of-way and with minimal cross flow by motor vehicles. They do not share a road way, nor are they necessarily parallel to the roadway. Shared use paths should be thought of as a complementary system of off-street transportation routes for bicyclists and others that serve as part of the entire connectivity network. Shared use paths should not be used instead of on-street facilities, but rather to supplement the whole system. Users are non-motorized and may include but are not limited to: bicyclists, in-line skaters, roller skaters, wheelchair users and pedestrians, including walkers, runners, people with baby strollers, people walking dogs, etc. These paths can be constructed of

asphalt, concrete, gravel or stone depending on the purpose and the intended user. Most of the paths constructed in the Village are, and should be, asphalt, like the path connecting Barrington High School and Langendorf Park. The ideal width for all shared-use paths is ten (10) feet, with a minimum recommendation of eight (8) feet, in order to facilitate bi-directional and multi-modal traffic.

Bike Trail

The bike trail refers to off-street shared-use paths within the jurisdiction of the park district, forest preserve districts or other governmental entities apart from the Village of Barrington. Trails typically have similar characteristics of the shared-use path in that they can be constructed of asphalt, concrete, gravel or stone but they do not always follow the same alignment as the roadway system. Bike trails support two-way, multi-modal travel.

Rails-with-Trails

A "rail-with-trail" is a shared-use trail that parallels active rail tracks, sometimes as an easement on railroad right-of-way. The Federal Highway Administration's *Rails with Trails: Lessons Learned* provides best practices information.

Sidewalks

Sidewalks are predominantly a pedestrian facility; however, in Barrington bicyclists are allowed, by law (see the Barrington Village Code - Title 6, Chapter 6, Section 7-C), to ride on them. Sidewalks encourage non-driving trips and increase pedestrian safety by keeping walkers off the roads. Sidewalks can be a popular cycle facility for the novice or younger rider if they do not feel comfortable enough to use an on-street facility. However, also part of the Village Code (Title 6, Chapter 6, Section 7-B) "all persons riding bicycles or skateboards or roller skates upon any sidewalk shall yield the right of way to pedestrians"[5]. Still, no matter whom they are, all sidewalk users should be conscious of conflicts at intersections and driveways, and the limited width or deteriorating surface condition of the sidewalk they are using. Most sidewalks within Barrington are five (5) feet wide with the exception of older sidewalks that were built at four (4) feet. All sidewalks in Barrington should be built at five (5) feet unless Village Staff determines the area is heavily trafficked, usually in the Village Center or near schools and parks. In that case, if possible, the sidewalk should be widened to eight (8) feet and used as a multi-modal path where bicycling is encouraged alongside pedestrians.

"All persons riding bicycles or skateboards or roller skates upon any sidewalk shall yield the right of way to pedestrians"

[5]Village of Barrington, (2011). *Barrington, Illinois village code.*

Figure 3.4: Hiking trail cut through the prairie grass in Baker's Lake Forest Preserve

Hiking Trails

There are several hiking trails in and around the Barrington area, mostly within the jurisdiction of the Park District and Forest Preserve Districts. These are trails, typically cut in the grass, which promote pedestrian activity and may prohibit any cycled vehicle. Trails typically have similar characteristics of the shared-use path in that they do not follow the same alignment as the roadway system and often venture off into a scenic surrounding.

Facility Cross Sections & Signage

Almost all the facilities discussed above should be properly signed to maximize their potential. Barrington currently has several standard "Bike Route" signs displayed, yet they are not always in the proper location and none of them are identified within the GIS system. As part of this Bicycle and Pedestrian Connectivity Plan, a master sign plan for bicycle connectivity should be created and implemented, along with cataloging all installed signage, both existing and future locations.

Some facilities require more signage to direct the user every quarter mile, like a bike route; while others may only need to direct the user at the beginning of the path and when there is a decision point, like a bike path, others still may not need signage at all and are universally understood by the user, such as a sidewalk. Nevertheless, the following signage or a combination of these signs should be used, in conformance with the MUTCD standards for bicycle signage, on all facilities where appropriate.

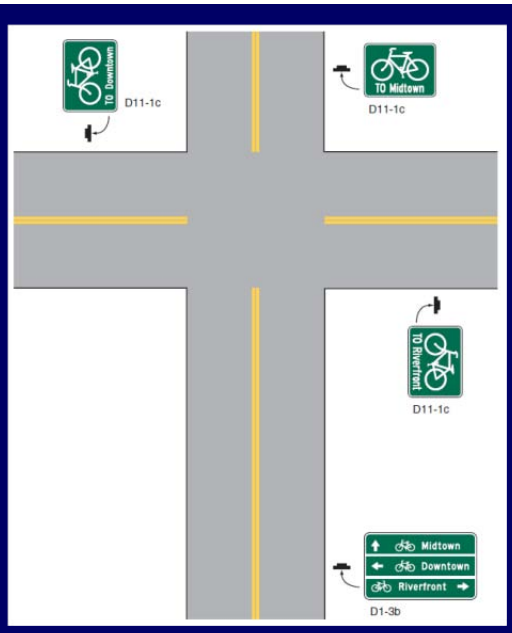


Figure 3.5: Proper route signage can enhance a community's network by making it easier for everyone to travel throughout the area with guidance.

Bike Route

Bike route signs should serve as a guide for users, not only directing them when the route turns or changes but affirming them after a turn has been made or simply when they continue straight on the route. Bike Route signs (Fig. 3.6) should be provided at decision points along the bike route and should be installed at periodic intervals so that bicyclists entering from side streets know they are on a bike route. See Figure 3.5 for an example of where bike route signs should be placed to inform and confirm the decision of a rider.

Figure 3.6: Signage is important to guide the user along the proper designated routes.

MUTCD recommends that bike route signs be placed every 1/4 mile, at turns in the route, and at signalized intersections. Adherence to a spacing standard helps create a legible network and prevents sign clutter.

Figure 3.7

Figure 3.8

Figure 3.9

Regardless of the type of facility or roadway on which they are used, it is recommended that Bike Route signs always include destination, direction, and distance information. Figures 3.7, 3.8 and 3.9 depict typical bicycle route wayfinding signage, as compliant with MUTCD standards. All sign types installed should be consistent.

Bike Lane

Bike lanes can exist on several types of roadways; because of this there are many different designs for a street with a bike lane. Figure 3.10 (see next page) shows the various street sections with a bike lane that may occur in the Village of Barrington. As seen in the section view, all bike lanes on streets with curbs should be a minimum of five (5) feet wide, including the curb gutter and those lanes on unimproved roads should be a minimum of four (4) feet. Design criteria for bike lanes also include features such as types of on-street parking and the design of inlet grates. If on street parking is allowed, the bike lane should always be located to the left of the parking lane. If additional space on a road where parking is permitted is available, the parking lane should be widened first then the remaining space equally divided amongst the other lanes. Parking should not be permitted within any marked bike lane throughout the Village. All bike lane slopes, drainage and sub-grades should follow the road engineering standards for the Village. It should be noted that these sections are standards throughout bike industry and are used all over the country and they may not fit on all Barrington roadways. This is due to the historic feel of Barrington with closer building setbacks, property lines and certain road infrastructure constraints. Thus, it will not be possible to retrofit all roads with bike lanes, nor would it be practical as many roads are comfortable enough without a bike lane. Still, the Village should strive to implement these road sections where possible, as these are ideal widths for bike lanes.

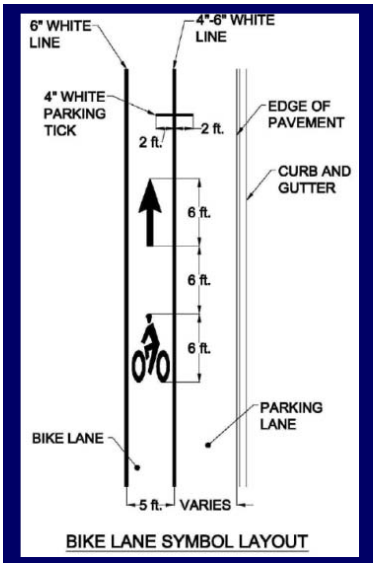
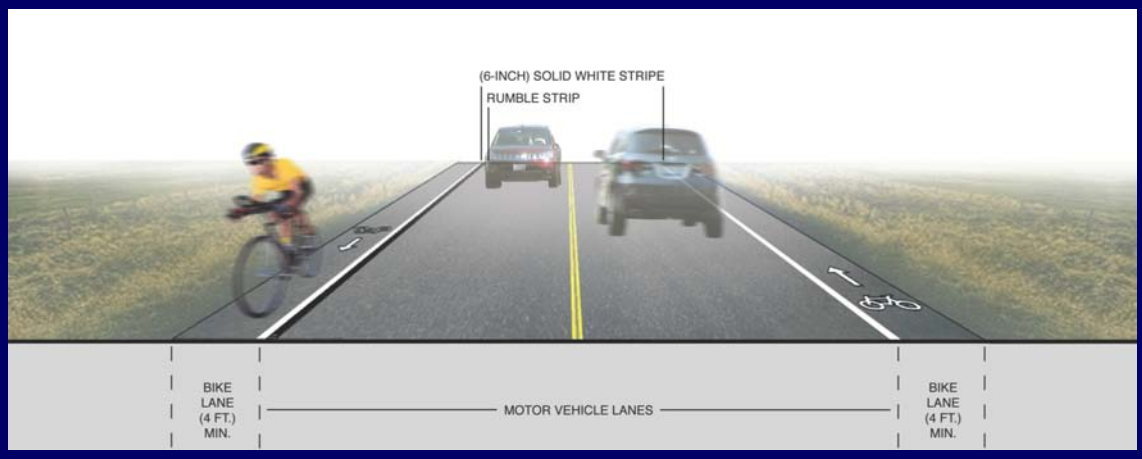
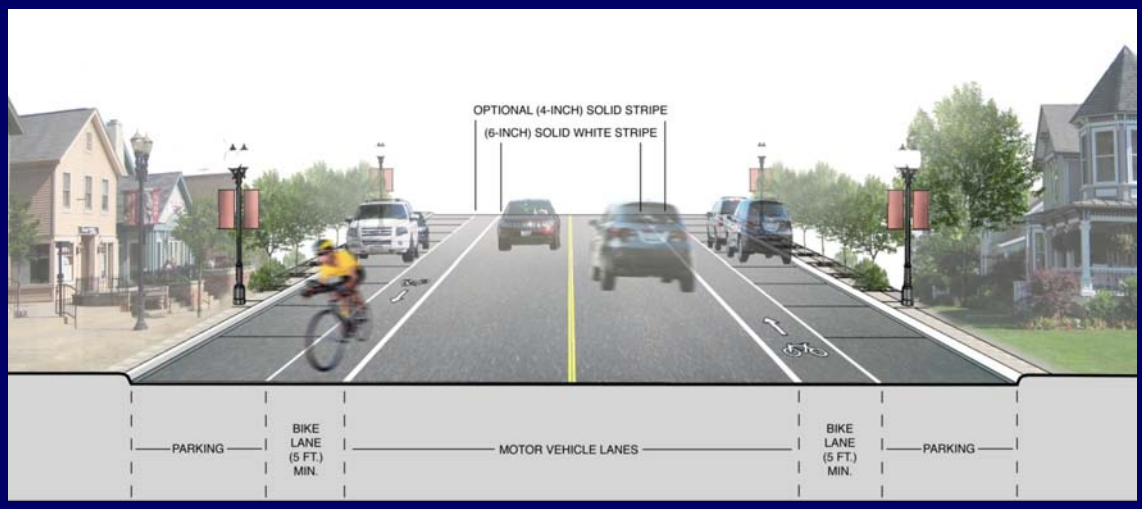


Figure 3.11: *Bike lanes have specific dimensions, even down to the width*

Bike lanes should be marked with bike route signs along with additional signs to inform both bicyclists and motorists of the rules associated with bike lanes on streets. Per AASHTO, "bike route signs may also be used on streets with bike lanes as well as on shared-use paths." The latest version of the MUTCD sign standards shall be used. While any of the three symbols cited in the 2009 MUTCD may be used to label a bike lane, the Village recommends that "B – Helmeted Bicyclist Sym-

Figure 3.10: *Various on-street facility section views. The lane criteria is per AASHTO's requirements and the views were designed by the Village of Barrington.*





bol" be used on all Village bike lanes and marked using paint, as seen in Figure 3.11. Also all lanes should have a 6" white line separating the bike lane from the motoring traffic and, at minimum, a 4" white line separating the bike lane from the parking lane, if applicable. In addition to the striping, the following list represents other MUTCD approved signs that should be used when implementing a bicycle lane.

- Figure 3.12 shall be used in conjunction with the "B – Helmet Bicyclist Symbol" pavement marking to identify the bicycle lane. They shall be placed at periodic intervals along the lane as determined by the village engineer based on speed of traffic, block length and other considerations.
- Figure 3.13 shall be mounted below Figure 3.12 in advance of the beginning of a marked bike lane.
- Figure 3.14 shall be mounted below Figure 3.12 at the end of a marked bike lane.
- Figure 3.15 may be used where motor vehicles entering an exclusive right-turn lane must pass across bicycle traffic.
- Figure 3.16 may only be used mounted below Figure 3.17 where wrong way traffic is a problem and should be placed facing wrong-way bicycle traffic.
- Figure 3.18 shall be installed along all bicycle lanes to restrict parking, standing or stopping in a bicycle lane.
- Figure 3.19 may be used to show the direction to the nearest bicycle parking.
- Figure 3.20 shall be installed with Figures 3.21, 3.22 and 3.23 along the bike lane to confirm an existing bike route and to inform of a decision point on the route.
- Figure 3.24 may be installed along bike routes along with limited riding space to remind motorists of the law to share the road. Figure 3.25 where there is

R3-17
Figure 3.12

R3-17aP
Figure 3.13

R3-17bP
Figure 3.14

R4-4
Figure 3.15

R9-3cP
Figure 3.16

M6-3
Figure 3.21

M6-1
Figure 3.22

R5-1b
Figure 3.17

R7-9a
Figure 3.18

D4-3
Figure 3.19

D11-1
Figure 3.20

D1-1
Figure 3.23

Figure 3.24

W16-1P*
Figure 3.25

Shared-Use Path

Shared-use paths, which include side paths and rail-with-trail paths, have specific design specifications to maximize their use. The ideal width for all shared-use paths is ten (10) feet, with a minimum recommendation of eight (8) feet, in order to facilitate bi-directional and multi-modal traffic. However, under certain conditions it may be necessary to increase the width of a shared-use path to twelve (12) or fourteen (14) feet due to substantial use by bicyclists, joggers, skaters and pedestrians or even if large maintenance vehicles will be using the path. A three (3) foot wide graded area should be maintained on either side of the path, but in certain cases, two (2) feet could be acceptable. The vertical clearance to obstructions, such as trees, signs or bridges shall be at least eight (8) feet with a preferred height of ten (10) feet.

Figure 3.26 and 3.27: These signs should be installed at shared-use path access points.

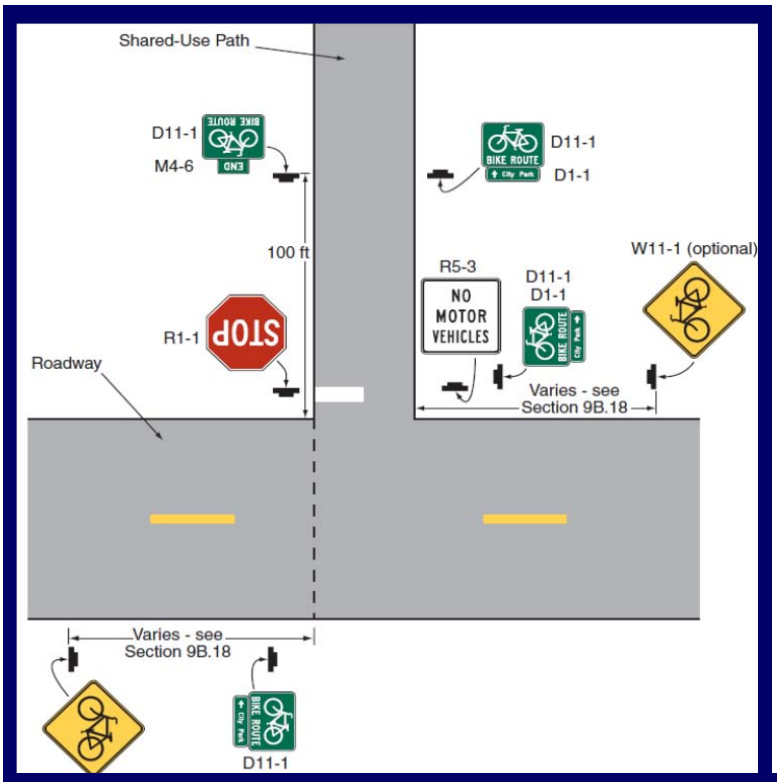


Figure 3.24 shows the signage requirements for a shared-use path intersecting a street. Figure 3.25 demonstrates the design recommendations for an ideal shared-use path. For more information on the dimensions, stopping distances and ideal grade slopes see the most recent AASHTO Guide for the Development of Bicycle Facilities.

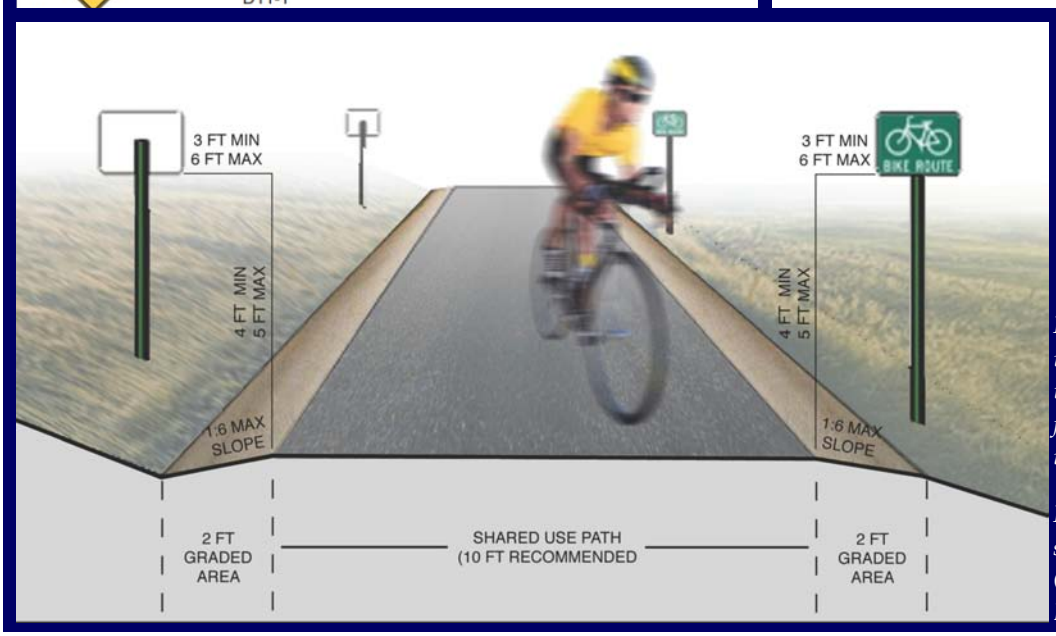


Figure 3.28 (Top Left): *Shared use paths can be dangerous when they intersect a roadway. Therefore, proper signage for all parties is very important. (MUTCD)*

Figure 3.29 (Bottom): *Dimensions of a shared use path (AASHTO & Village of Barrington)*

Bicycle Shared Lane Markings ("Sharrows")

Bicycle positioning and awareness on the road is instrumental in reducing accidents with automobiles. Shared Lane Markings ("SLM"), or "sharrows," are road markings used to indicate a shared lane environment for bicycles and automobiles. Sharrows are used when there is not enough width for a bike lane but the road is wide enough to share with bicycles. Similar markings are used on shared-use paths to indicate where a bicycle rides and a pedestrian walks. Among other benefits shared lane markings reinforce the legitimacy of bicycle traffic on the street and recommend proper bicyclist positioning. The shared lane marking is not a facility type; it is a pavement marking and may be supplemented with signage indicating to motorists the importance of yielding to bicyclists. Also, SLM should not be placed on roadways that have a speed limit greater than thirty-five (35) mph and should not be used on shoulders or in bike lanes. The markings can be used on streets with or without parking. On roads with parking the sharrow can show bicyclists where to position themselves to stay out of the way of a parked car's door opening. It is important to understand this is not a bike lane marking which designates a specific dimensioned space to be used by bicyclists. Sharrows are a new concept introduced in the 2009 MUTCD standards. See the most recent MUTCD for further guidelines on where and when to properly utilize sharrows.

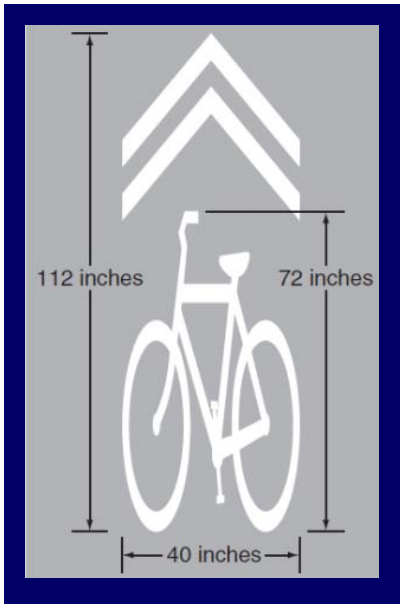


Figure 3.30 (Top Right): *Sharrow in use on the street*
Figure 3.31 (Middle Left): *Dimensions of a sharrow (AASHTO)*
Figure 3.32 (Bottom): *Section view of shared lanes (Village of Barrington)*

EXISTING CONDITIONS

Current State of Facilities

Upon a preliminary review of the pedestrian and bikeway system in and around Barrington it appears that several recommendations of the 1998 plan have been implemented. The Village currently has approximately one (1) mile of bike lanes on Hillside Road and South Grove Avenue; eight tenths (.8) of a mile of shared use path extending from Barrington High School east toward Langendorf Park and half a mile of shared use path adjacent to Lines School on Eastern Ave; and over seventeen (17) miles of off-street facilities within the surrounding forest preserve and park district areas with over thirteen (13) miles in Deer Grove Forest Preserve and four (4) miles in Cuba Marsh Forest Preserve, and one (1) mile of bike path and .75 miles of bike trails in Citizens Park. The initial review of the existing network also showed a major deficiency with the current signage and striping. Some of the signs were improperly installed and point users in the wrong direction while other signs were altogether missing at key decision intersections. An inventory of the current signage verified that the signage is inconsistent, thus not accurately depicting the connectivity plan. Barrington also has an extensive network of sidewalks, most of which are located in the Village Center and the surrounding neighborhood districts. The full map of existing facilities can be found in Appendix A.

Corridor & District Review

The following review is a more detailed analysis of the bike and pedestrian connections within the Village. The 1998 Bikeway study identified several corridors within Barrington for bikeway facilities. This updated plan recognizes those corridors and rearranges them into both Corridors and Districts. Each district was chosen based upon the facilities already in place and the natural barriers to movement. For all district and corridor boundaries see the map in Figure 3.33.

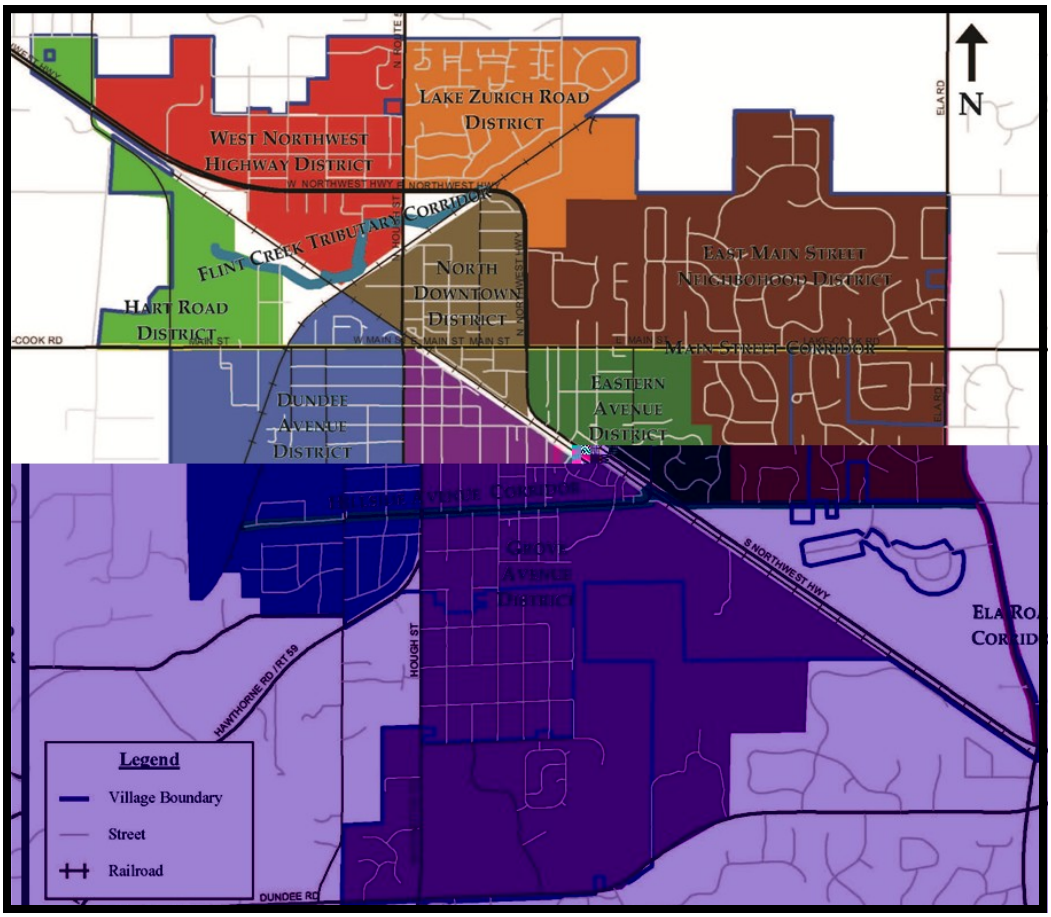


Figure 3.33: District and Corridors Boundary Map

Dundee Avenue District

The Dundee Avenue District ("Dundee District") covers the entire southwestern quadrant of Barrington. The south end begins at Otis Road and continues north past West Main Street to the south junction of the EJ&E/CN and UP Railroad tracks. It stretches from the west boundary of the Village to IL-Route 59 on the east.

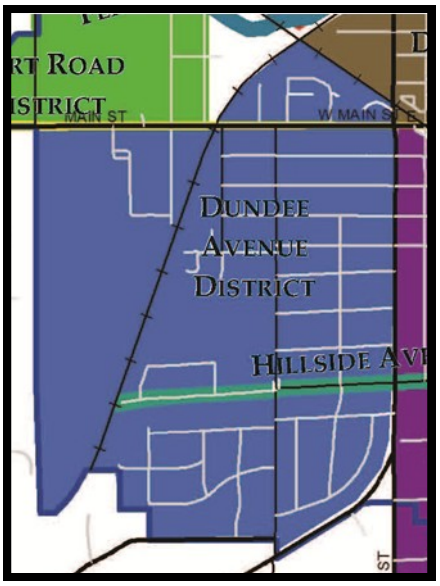


Figure 3.34: *Dundee Avenue District*

Currently the Dundee District has 1.3 miles of bike facilities. All identified facilities are bike routes and are located along Otis Road, Dundee Avenue and West Station Street. Most of the streets on the northern half of the Dundee District have sidewalks. There are a few exceptions where sections of the sidewalk are missing or not there at all, like Lageschulte Street, South Hager Street and Sturtz Street. However, south of East Hillside Avenue there are no sidewalks in the neighborhoods.

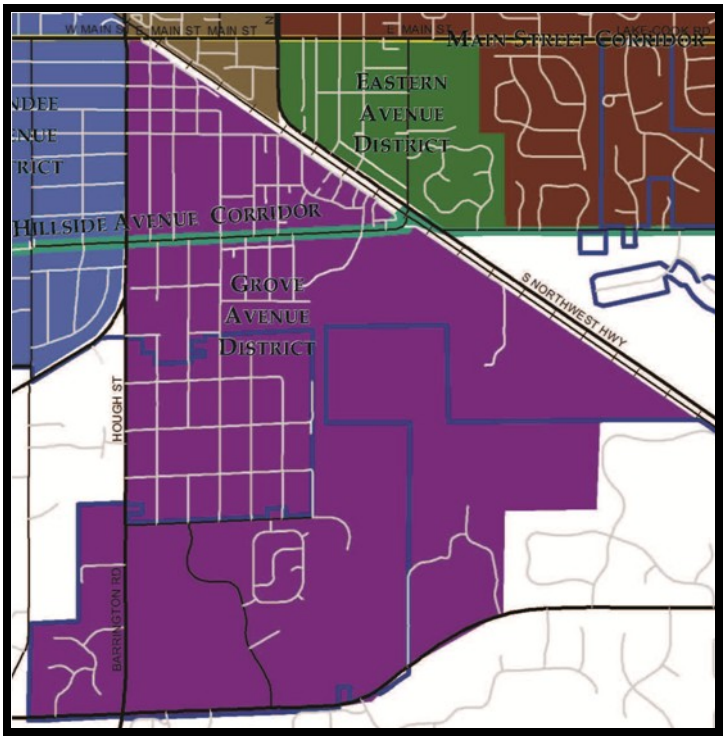


Figure 3.35: *Grove Avenue District*

Grove Avenue District

The Grove Avenue District ("Grove District") stretches from the southeast corner of South Hough Street and East Main Street and abutting the Union Pacific tracks to Baker's Lake Forest Preserve District. The Grove District extends south, to the southernmost border of the Village to the Dundee Road-Barrington Road intersection.

This district has the most types of bicycle and pedestrian facilities located within its boundaries. There are 2.18 miles of bike routes, .6 miles of bike lane on South Grove Avenue, 2.36 miles of hiking trails throughout Baker's Lake, .4 miles of shared-use paths and .75 miles of bike trail in Beese Park, which connect to the Baker's Lake facilities. The district has an extensive sidewalk network, especially near the Village Center, which connect the neighborhoods to the Village Center and the rest of Barrington. The streets south of Hillside Avenue have some sidewalks but the network is not complete as many dead end at various property lines. The Park Barrington and The Oaks of Barrington subdivisions both have sidewalks throughout but none of the other streets south of Cornell Avenue have sidewalks.

Eastern Avenue District

Eastern Avenue ("Eastern District") divides the district into half. The Eastern District encompasses the entire Lakeview Subdivision and the Lines School Campus, then passes west of Eastern Avenue and continues to South Northwest Highway. It is bound by East Main Street on the north and Hillside Road and South Northwest Highway on south.

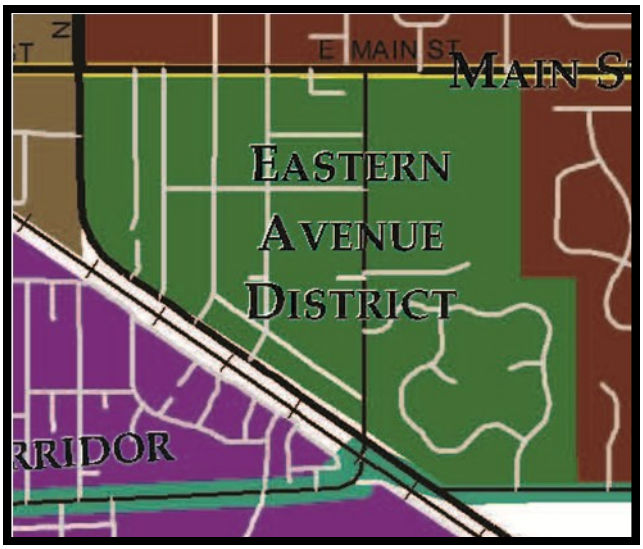


Figure 3.36: *Eastern Avenue District*

Eastern Avenue and Lakewood Drive are designated as bike routes. This consists of .9 miles of on-street signed bike facilities in the Eastern District. In addition, .25 miles of sidewalk and shared-use path connectors are present for the primary purpose of connecting neighborhoods so students can safely walk or bike to school.

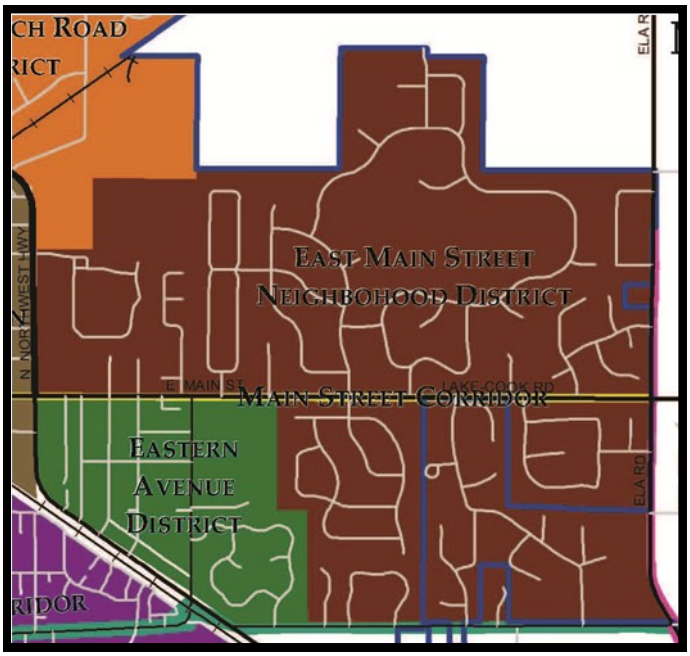


Figure 3.37: *East Main Street Neighborhood District*

East Main Street Neighborhood District

The East Main Street Neighborhood District ("East Neighborhood District") is located on the east side of Barrington. It encompasses all of the residential neighborhoods north of East Main Street between North Northwest Highway and Ela Road, and the residential neighborhoods south of East Main Street between Lines School and Ela Road.

Many of the neighborhoods in the district have similar street designs in that they do not have sidewalks and have similar street widths. The district contains about a quarter mile of on-street bicycle routes through Tall Trees Drive. The only sidewalks which exist are a few pieces which connect the Tall Trees and Fox Point North Subdivisions to Fox Glove Lane; and another connect the Fox Point South and subdivision to Lines School.

Lake Zurich Road District

The Lake Zurich Road District ("Lake Zurich District") is located in the northeast corner of the Village boundary. The Lake Zurich District runs parallel to IL-Route 59 north of Northwest Highway then turns east along Providence Road. The network continues to Citizens Park and

surrounds the Barrington Area Public Library.

Several bicycle and pedestrian facilities exist in the Lake Zurich District since the redevelopment of Citizen's Park. There are 1.5 miles of bike routes, 1 mile of bike path and .75 miles of bike trail in Citizen's Park with another .65 miles of gravel bike trail connecting the Hospice, Garlands, Library and Pepper Construction facilities.. Currently there is a continuous sidewalk on Lake Zurich Road from Northwest Highway to the office building at 777 Lake Zurich Road. The sidewalks continue on Providence Road, but not in the Chippendale subdivision. Finally, the sidewalks continue on the exterior of the district by traveling along IL-Route 59 from Providence Road south, but it stops short of the intersection at Northwest Highway.

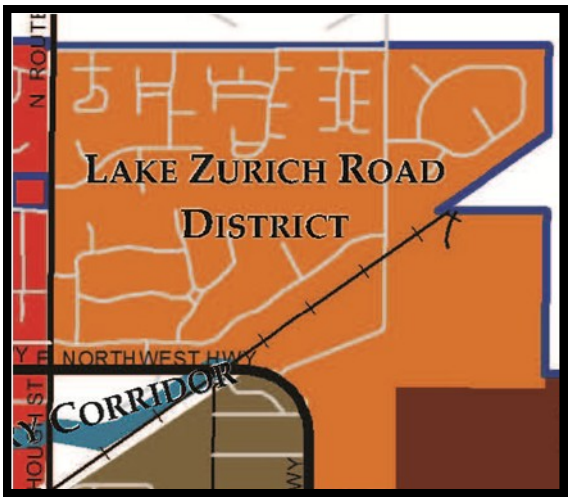


Figure 3.38: *Lake Zurich Road District*

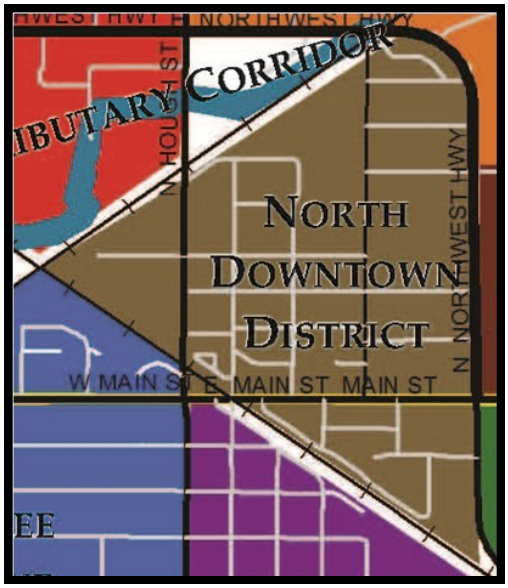


Figure 3.39: *North Downtown District*

North Downtown District

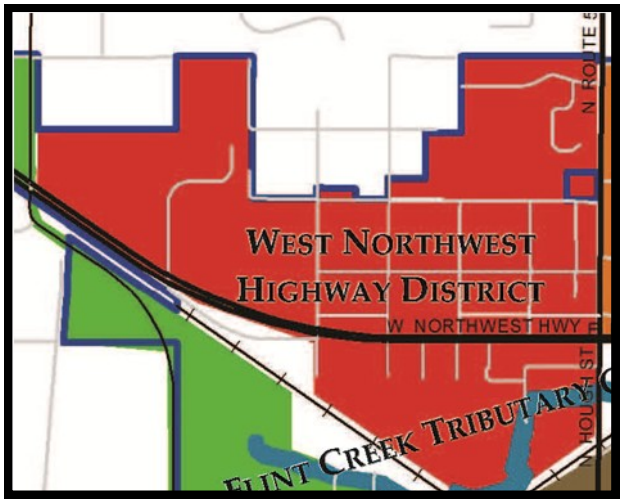
The EJ&E/CN railroad tracks are the northwestern most boundary of the North Downtown District, while the Union Pacific tracks provide the southwestern most boundaries. North Northwest Highway is the eastern boundary, so the district resembles a triangle.

Due to the district being almost entirely developed in a grid pattern all the bike facilities are located on-street and all pedestrian connections are sidewalks. Every street within the district, with the exception of James Street, has sidewalks on either one or both sides of the street. Also, as presently constructed, there is .9 miles of bike routes designated which help to connect users to the Village Center.

West Northwest Highway District

The West Northwest Highway District ("West Northwest District") covers the entire Roslyn Road neighborhood that is north of Northwest Highway. It also extends south to include Langendorf Park and west to include the frontage and corporate campuses along Northwest Highway to the Hart Road intersection.

Figure 3.40: *West Northwest Highway District*



Currently this district has very few connections for

bicyclists or pedestrians. No lanes, paths or routes exist and only a few sidewalks along Northwest Highway and near the Roslyn Road School are currently constructed.

Figure 3.41: *Hart Road District*

Hart Road District

The Hart Road District ("Hart District") primarily includes the Barrington High School campus, the neighborhood along North Hager Street and Raymond Avenue and the business corridor along Hart Road which crosses the Union Pacific tracks to the Foundry Shopping Center. Similar to the West Northwest Highway District, the Flint Creek path is not included in this district.

Sidewalks line both sides of North Hager Avenue and Raymond Avenue. In addition, a shared-use path is available to both pedestrians and bicyclists in this district extending from the Field of Dreams parking lot off of Hart Road down to the Field itself, and eventually connecting to the Flint Creek Tributary path (which is a shared-use path that connects the High School to Langendorf Park). Sidewalks are constructed along Main Street but only run from the CN/EJ&E railroad tracks to the first entrance of the high school, not along the entire frontage of the school. A cross walk exists at Hager Street on West Main Street. No pedestrian facilities are provided along Hart Road for pedestrians walking from the north high school parking lot to the school itself.

Ela Road Corridor (South Northwest Highway – Long Grove Rd)

The Ela Road Corridor ("Ela Corridor") runs north and south along Ela Road throughout the entire eastern boundary of Barrington. It begins at Long Grove Road in the north and follows Ela Road south to its end at South Northwest Highway. The corridor encompasses the entire right-of-way along Ela Road. Ela Road is a county highway road and is not maintained or controlled by the Village.

This area does not have any sidewalks or other pedestrian facilities. Ela Road does not have gutters and only has a four foot gravel shoulder. North Ela Road has .33 miles of bike lane from Tall Trees Drive north to Long Grove Road, while the portion from Tall Trees Drive south to Hillside Road is designated as a bike route for more advanced riders. No bicycle facilities are designated south of Hillside Road on Ela Road.

Figure 3.42: *Ela Road Corridor*

Hillside Corridor (Dundee Avenue – Ela Road)

The Hillside Corridor is located along Hillside Avenue beginning west of Dundee Avenue and continuing east toward South Hough Street. The corridor continues along Hillside Avenue to South Northwest Highway. Then Hillside Corridor follows Hillside Road east to Ela Road.

Hillside Corridor has sidewalks along the entire corridor west of Northwest Highway. Sidewalks continue east of Northwest Highway but end at Fairfield Drive. The entire corridor is designated as a bicycle route, except for a 1,000 foot area between the Union Pacific tracks and Lakewood Drive. Nearly .9 miles of bike lane are constructed and striped from Fairfield Drive to Ela Road, this abuts the north side of the Makray Memorial Golf Course. The bike lane continues east toward the Deer Grove Forest Preserve but is not within the Village of Barrington boundaries.

Figure 3.43: *Hillside Avenue Corridor*

Flint Creek Tributary Corridor (Barrington High School – Citizens Park)

The Flint Creek Tributary Bike Corridor ("Flint Creek Corridor") starts on the Barrington High School property near the Field of Dreams and extends east under the Union Pacific Railroad and through Langendorf Park, and crosses the bridge to connect at the Shops at Flint Creek. The corridor continues across Hough Street and follows the creek until Northwest Highway but no facilities are present along this area.

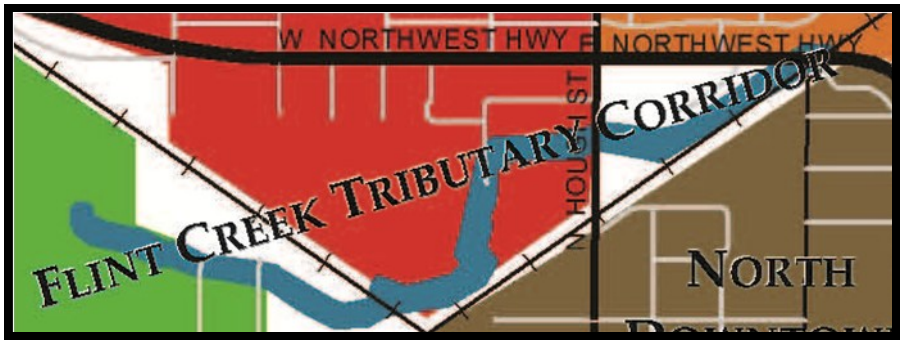


Figure 3.44: *Flint Creek Tributary Corridor*

Throughout most of the corridor is some type of bicycle or pedestrian facility. From the start of the corridor in the west is .5 miles of shared-use path. When the corridor crosses the creek into the shops of flint creek a sidewalk path will direct users through the development to Hough Street. The construction of this path was all due to a partnership between the Union Pacific, School District 220, the Barrington Park District and the Village of Barrington and is considered the most important project that was implemented from the 1998 Bikeway Plan. No pedestrian crossing is available at Hough Street. The corridor has no other facilities constructed at this time.

Main Street Corridor (Hart Road – Ela Road)

The Main Street Corridor begins on West Main Street at Old Hart Road and extends east along Main Street (Lake-Cook Road) to Ela Road on the easternmost boundary of the Village. The corridor includes all right-of-way along Main Street.

Figure 3.45: *Main Street Corridor*

The entirety of Main Street has sidewalks on both sides of the street, with the exception of 1,200 feet in front of Barrington High School on the west end of the corridor and 800 feet on the east end of the corridor near the Tall Trees subdivision. No bicycle facilities exist along this corridor; however several connect to it or pass through it going north and south. According to the 2010 Comprehensive Plan states that the sidewalks along Main Street should be used as connectors for bicyclists to reach their destinations.

REGIONAL CONNECTIVITY

A key goal of this connectivity plan is to link the Village of Barrington to the regional, forest preserve and adjacent municipal bikeway systems. It is important first to identify the systems in place around the Village boundaries to help create a seamless transition from local to regional networks. Throughout the update of this plan Village staff and members of the BPAC met with neighboring municipalities and regional agencies to understand goals and plans for bicycle and pedestrian facilities in their jurisdictions. The Northwest Municipal Conference (NWMC) Bike Committee provided the opportunity to meet with the surrounding municipalities to coordinate plans and facility connections. The following descriptions present the external connections which are currently in place in 2012. The Bikeway Planning Map adopted in the 2010 Comprehensive Plan visually depicts this information.

Hoffman Estates

The Village of Hoffman Estates has an extensive network of bicycle and pedestrian facilities already in place. Many of their facilities are outlined in their Bicycle Plan, adopted in 2010. The most important facility where Barrington can connect to the Hoffman Estates system is a sidepath located along Algonquin Road which connects to the Paul Douglas Forest Preserve path and continues north, toward Barrington. The Village of Hoffman Estates adopted a Bicycle Transportation Plan in 2010 and should be consulted when attempting to make connections to the south.

Palatine

Palatine has expressed an interest in improving bicycle facilities between municipalities and has been working with the Northwest Municipal Conference to develop the Northwest Highway Regional Corridor connection. The Village of Palatine adopted a Bicycle Transportation Plan in 2011 and should be consulted when attempting to make connections to Palatine along South Northwest Highway.

Forest Preserve District of Cook County

The Forest Preserve District of Cook County (FPDCC) has over three thousand (3000) acres immediately bordering Barrington. Baker's Lake has over 309 acres of preserved land where several hiking trails are cut into the prairie grass built on foot bridges crossing marshy areas. The Deer Grove Forest Preserve has 13.6 miles of shared use paths and bike paths spread throughout its more than 1700 acres. Finally the Crabtree Nature Center, on the southwest corner of Barrington and Dundee Roads, has no bicycle facilities in the 1400 plus acre land-

scape but does have several hiking trails. However, the Paul Douglas Forest Preserve has a paved shared-use path running from Palatine Road south which connects with the side path along Algonquin Road in the Hoffman Estates network.

Forest Preserve District of Lake County

The Forest Preserve District of Lake County (FPDLC) has over seven hundred (700) acres immediately bordering Barrington, all in the Cuba Marsh Forest Preserve. Within the Cuba Marsh there is about four (4) miles of bike trails, some on a gravel path and other parts are on a boardwalk which crosses over the marsh. Entrances to this path are located at Citizens Park off of Lake Zurich Road, at North Ela Road and Long Grove Road, or at the preserve's main entrance off of Cuba Road.

Northwest Municipal Conference (NWMC)

In 2010 the Northwest Municipal Conference (NWMC) adopted their first Bicycle Plan for the northwest suburban Chicago region. The plan identifies Northwest Highway (Route 14) and Dundee Road (Route 68) as Tier Two regional corridors in Barrington. NWMC defines Tier Two corridors as having a high percentage of planned bicycle facilities with good connectivity to destinations but may have significant barriers to implementation and are thus not the first type of corridor to be completed. In 2012 the NWMC created a comprehensive bicycle signage plan to supplement the 2010 bike plan. A Northwest Highway Facility Plan was also adopted in 2012 as a summary of long- and short-term alignment recommendations for the entire corridor, including Barrington. Municipalities are encouraged to review this plan when installing signage along the regional bike corridors.

Chicago Metropolitan Agency for Planning (CMAP)

The Chicago Metropolitan Agency for Planning (CMAP) created a Regional Greenways and Trails Plan for the seven county region in 2009. The plan aims to assist municipalities and agencies in advancing greenway preservation and reducing conflicts with other development activities. This plan should be consulted when planning for future developments in the Village.

Chapter 4:

Recommendations

This plan is designed to encourage a wide range of users and, while there are many existing facilities in Barrington to support the mobility of the community, expanding the network and diversifying the types of facilities is necessary to improve connectivity and safety. This chapter contains recommendations to make walking, jogging, bicycling and rollerblading safer and more attractive for residents in and around Barrington. Included are a list of projects to be considered for upgrading the connectivity of the community, ideas to improve the signage of bicycle facilities, recommendations for bicycle parking, and future planning techniques and trends that may benefit bicyclists and pedestrians.

In 2000, the Federal Highway Administration (FHWA) provided the following guidance: "Bicycling, walking, and transit facilities will be incorporated into all new transportation projects unless exceptional circumstances exist."[1] Since then, cities and counties throughout the country have started working towards providing "complete streets" in their communities. Recently Illinois created a state law to abide by these regulation and the Illinois Department of Transportation (IDOT) reflects this desire by adopting their own Complete Streets policy. For Barrington, this means that any IDOT roadway within the Village that is reconstructed should incorporate facilities for bicyclists and pedestrians. If sufficient room is not available, IDOT will either work to acquire the land or make adjustments to best accommodate the alternative modes of transportation. The Village of Barrington should look into adopting a complete streets policy as well.

Complete Streets: "Building road networks that are safer, more liveable and welcoming to all modes of transportation"[2]

Projects

In 2010, the Village began the process to update its Comprehensive Plan which included eight neighborhood meetings where public input was encouraged to fully address all issues; the majority of the comments from those meetings centered on bicycle and pedestrian connectivity and safety throughout Barrington. Several of the comments focused on specific projects the Village should undertake and others were general comments on signage or a need for bicycle racks in the community. At a public meeting of the Bicycle and Pedestrian Advisory Committee (BPAC) a discussion was held to identify projects which would improve the connectivity and safety of Barrington. The input from community members at the neighborhood meetings were used as a starting point for the residents of the BPAC who are familiar with the existing conditions of the routes and sidewalks in the Village. The following projects (Figure 6.1) were prioritized by the BPAC and Village Staff at a regularly scheduled public meeting of the BPAC. The projects listed as high priority are those that could be done in 1 to 5 years. The projects listed as low priority are those that have a higher cost value and could be done in 5 to 10 years, or as funds permit. These projects should be reviewed every two years to be updated and reviewed as part of the annual road program and sidewalk program.

[1]Federal Highwawy Administration, U. D. O. T. (2011). A US DOT policy statement integrating bicycling and walking into transportation infrastructure. In *Design Guidance Accommodating Bicycle and Pedestrian Travel: A Recommended Approach.* Retrieved from http://www.fhwa.dot.gov/environment/bikeped/design.htm
[2]*Understanding the complete streets approach*. (2011). Retrieved from http://www.completestreets.org/changing-policy/model-policy/

High Priority	Low Priority
• Complete the connection between Beese Park and Prairie Middle School with the Park District and the School District • Add sharrows on East Hillside Road as a short term solution, west of Northwest Highway • Improve pedestrian crossing at Hough and Station Streets • Crosswalk and Sidewalk at Hough Street & Northwest Highway • Add sidewalks on Lageschulte Street* • Restriping the road for bicyclist protection, on Hillside Avenue* • Add a bikeway connection along Barrington Road aligned with Crabtree Nature Preserve to connect to the Hoffman Estates facilities • Continue the sidewalk along Lake Zurich Road from Citizens Park going north to Providence Road* • Improve the pedestrian crossing at the Library • Improve the crossing at West Main Street and Hager Street to make it more noticeable* • Add a shared-use path along West Northwest Highway from Hart Road to Cumnor Avenue* • Add a shared-use path along Hart Road from the Field of Dreams south to Main Street,, and on Main Street in front of the High School • Add sidewalks in the Roslyn Rd Neighborhood* • Complete gaps in the sidewalk grid near Sturtz Avenue* • Improve Dundee Avenue with sharrow markings and eventually a bike lane	• Improve the Watchman's Path along Prairie Middle School in Baker's Lake • Complete bike lane on East Hillside Rd, since road widening is necessary for a bike lane • Extend the bike lane on North Ela Rd and add a bike lane to South Ela Rd • Add a pedestrian actuated signal on Hough St between railroad tracks • Add sidewalks along Main Street by the High School • Explore the possibility of a rail-with-trail along South Northwest Highway connecting to Palatine • Explore the possibility of adding a path from Fox Point into Cuba Marsh • Complete the Flint Creek path to Citizens Park • Improve the sidewalks along East Main Street to accommodate bicycles • Improve the pedestrian crossing at Lake-Cook Road and Cook Street near the railroad tracks • Explore a road diet for Main Street near Hough Street

Figure 4.1: **Denotes a project which is in the planning stage during the creation of this plan*

Signage

A bicycle and pedestrian network will not function properly if users do not know where to go or which street is designated as a bike route. Therefore, in addition to the projects listed above a complete review of the network signage is necessary and will occur as a high priority. Visual communication is a key in providing good connectivity for users of the system. This process includes initial evaluation and surveying of the existing signs, reviewing their condition, location and design layout, and inputting this data into the Geographic Information Systems (GIS) database. After analyzing the existing network of signs a plan should be created to relocate

signs which are in the wrong place and install new signs where gaps occur; this new information should also be tracked in the GIS database. Signs, like every other bicycle improvement, will be installed as funds become available; however, these are cost-effective improvements which can have a major and immediate impact on the network and safety. This project should occur as early as possible for Village Staff so an accurate understanding of current signage can be evaluated.

All signs installed should follow the guidelines set in the latest MUTCD signage standards which include sign placement along routes and sign layouts on the poles. For example: "Bike Route Guide (D11-1) signs may be provided along designated bicycle routes to inform bicyclists of bicycle route direction changes and to confirm route direction, distance, and destination. If used, Bike Route Guide signs may be repeated at regular intervals so that bicyclists entering from side streets will have an opportunity to know that they are on a bicycle route."[3] Eventually, along each bike route, lane or shared-use path these signs should be installed when (1) a decision point arises, (2) an action is required (like a turn) and (3) after the action has occurred confirming the route. See figure 6.2 as an example. While along a consistent stretch of route, confirmation signs should be placed every .25 miles or as decision points occur.

Bicycle Parking

Efforts should be coordinated throughout the Village to provide secure bicycle parking to signify that Barrington is a bicycle friendly community. By identifying key locations for bike racks, it will allow people to use their bikes for transportation and help to reduce parking congestion.

As part of the Village Center Master Plan, a Streetscape Plan has been adopted and implemented that includes design standards for streetscape pavers, light poles and street furniture, including bike racks. Only bike racks or lockers with designs similar to the approved streetscape plan should be used within the Village. The list of approved bike racks is listed below, along with pictures to depict the style and design. In the future if a new or improved bike rack is available; this design should be reviewed and approved by Staff, the BPAC and the Village Board.

[3]U.S. Department of Transportation, Federal Highway Administration. (2009). *Manual on uniform traffic control devices for streets and highways*

Approved Bike Rack Design Standards

Figure 4.2: *Inverted "U"*

Figure 4.3: *Bike Bollard*

Figure 4.4: *Wave*

Figure 4.5: *Bike Lockers*

Locations of bike racks are key to utilization by bikers and should be placed for convenience of the rider. The following areas within the Village should be considered to have bike racks or upgraded facilities to meet the Village design standard.

- Barrington Train Station
- Commercial areas within the Village Center (South Cook Street District, Ice House Mall, Shops at Flint Creek, The Foundry, Barrington Village Center)
- Government Offices, such as Village Hall
- Neighborhood and Community Parks
- Barrington Park District
- Barrington Area Library
- Schools
- Churches
- Banks

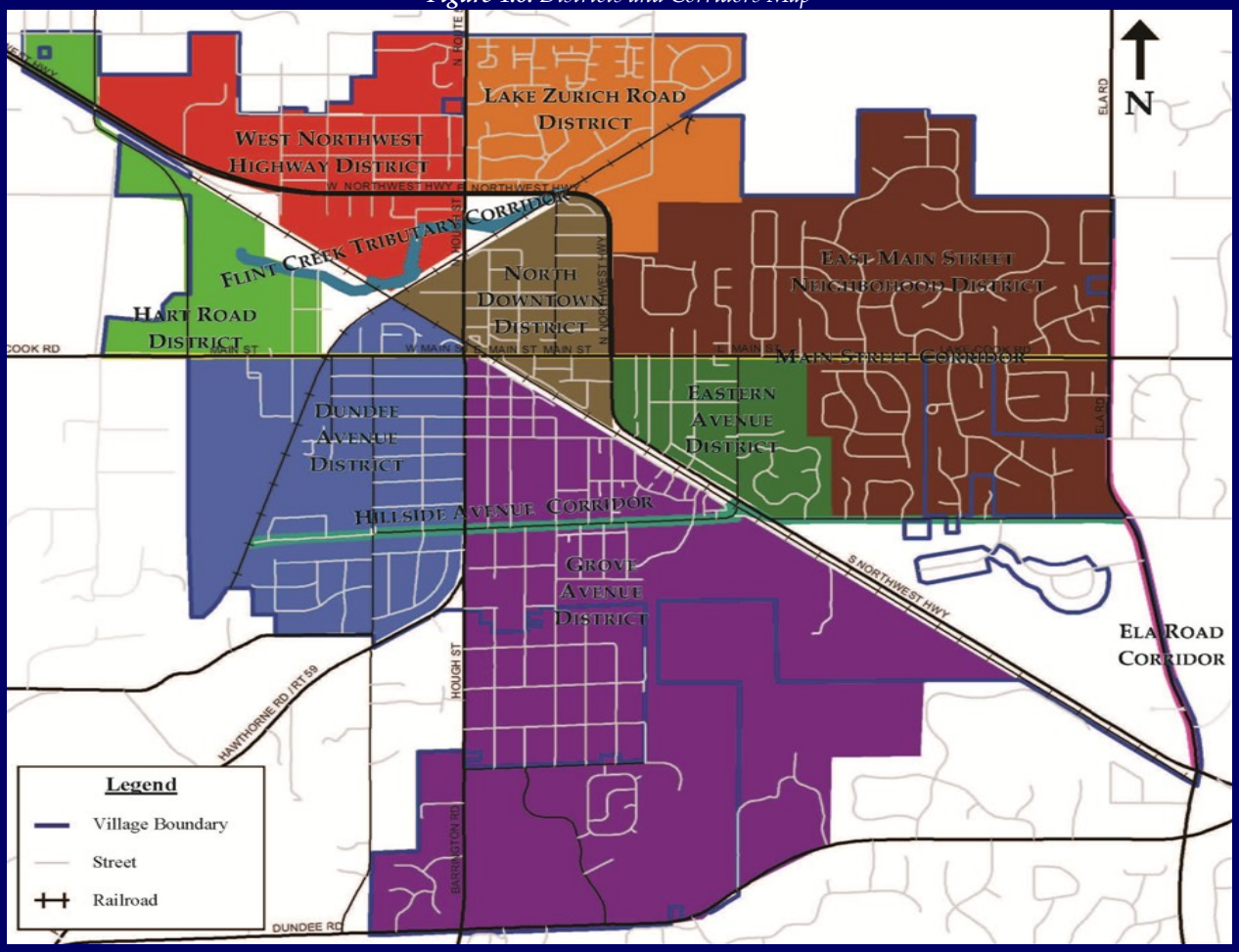
Bike Rack Installation Requirements:

- For All Racks – install racks a minimum of 24″ from a parallel wall and 30″ from a per-

pendicular wall. Racks should be a minimum of six (6) feet from other street furniture and at least fifteen (15) feet from fire hydrants. All racks should avoid interference with any underground utility.

- In the Village Center, it is recommended that permanent racks be strategically placed near destinations or temporary, portable racks which can be moved during the winter months so as not to impede the natural flow of pedestrians or snow plowing procedures should be set up. If the racks are permanently anchored they should be removed from the natural flow of pedestrians and avoid being adjacent to crosswalks.

Figure 4.6: *Districts and Corridors Map*



Proposed Facilities Plan By Corridor

The recommendations set forth in this chapter were developed based on input from the community members at neighborhood meetings conducted in 2010 while updating the Village of Barrington Comprehensive Plan, the Bicycle and Pedestrian Advisory Committee, the results of the Bicycle Level of Service (BLOS) evaluation for on-street facilities (see Chapter for more details on BLOS), inspections of existing field conditions, and a review of all adopted planning documents of the Village of Barrington. All changes to BLOS ratings can be found in Appen-

dix D and all recommendations can be found on the proposed facilities map in Appendix B.

Dundee Avenue District

A. *Sidewalks on Lageschulte Street*: Add new sidewalks along Lageschulte Street from West Main Street south to West Lincoln Avenue (400 Lageschulte Street). Currently, no sidewalks exist on the east or west side of Lageschulte Street forcing pedestrians, most of whom are high school students, to walk in the street. When sidewalks are added, crosswalks should be explored and implemented.

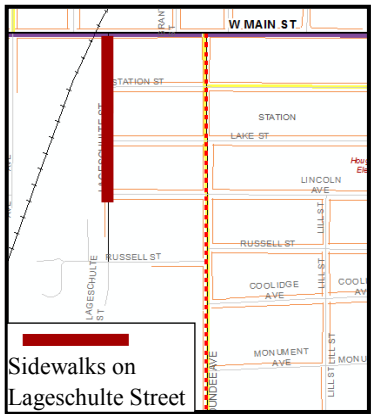


Figure 4.7

B. *Complete Gaps in Sidewalk Grid*: Various gaps exist in the sidewalk network in the neighborhood, which are located west of Hough Street in close proximity to the Village Center. Sidewalk gaps on Monument Avenue, Sturtz Avenue, Dundee Avenue and Lill Street should be filled in. This area is an ideal candidate for Safe Routes to School funding.

Figure 4.8

C. *Improve Dundee Avenue*: Dundee Avenue is a key bicycle connector for the Dundee Avenue District and has outside lanes at least 15 feet the entire length from West Main Street to Otis Road. Therefore bike lanes (of at least 4 feet) should be implemented at either 10 foot traffic lane and 5 foot bike lanes or 11 foot traffic lanes and 4 foot bike lane dimensions. The bike lane would take Dundee Avenue from a 2.83 (C) BLOS rating to a 2.15 (B) rating.

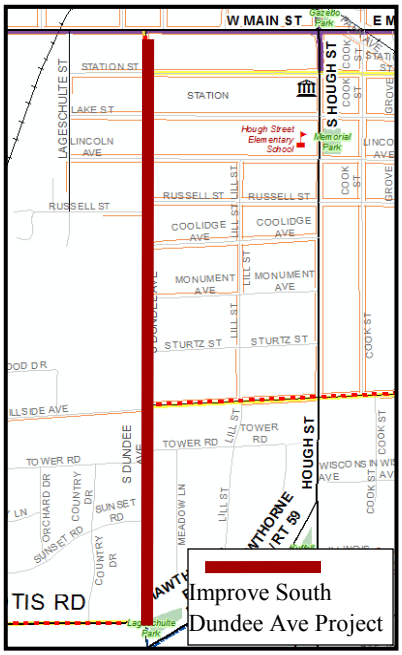


Figure 4.9

Grove Avenue District

A. *Beese Park and Prairie Middle School Sidewalk Connection*: Complete the sidewalk connection between Beese Park and Prairie Middle School. On the northside of the school property a sidewalk extends north to Beese Park but dead ends at the football field, within the Park. This sidewalk should continue east by the football field and parking lot to the existing trail network so as to complete the connection. As this is Barrington Park District (BPD) jurisdiction the Village should work with the BPD to complete this project and improve the safety of the bicycle and pedestrian network within the park, especially along the road.

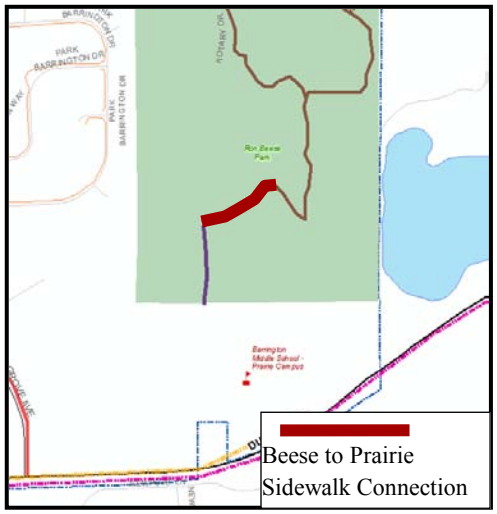


Figure 4.10

B. Dundee Road Connection: As intersection improvements are made at South Barrington Road and Dundee Road (Route 68), accommodations for bicycles and pedestrians should be made as well. An off-street, shared-use path should be added along the north side of Dundee Road connecting South Barrington Road over to the Prairie Middle School campus. Pedestrian intersection improvements should also be made to connect The Oaks of Barrington subdivision to this new path. Both roadways are in the IDOT jurisdiction so the Village should work with them to complete this project.

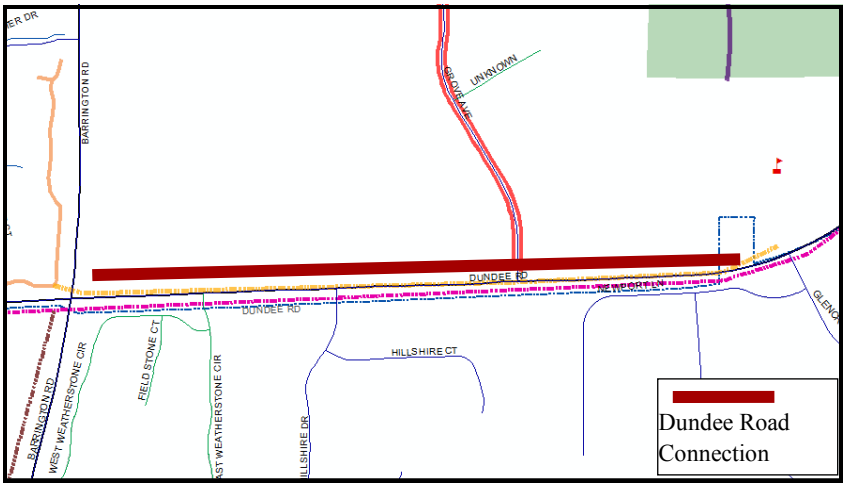


Figure 4.11

C. *Hough and Station Streets Pedestrian Crossing*: All efforts should be made to improve the pedestrian crossing at Hough Street and Station Street. The current pedestrian crosswalk warning sign receives about 18% compliance but adding a pedestrian actuated, rapid flash beacon could increase driver compliance to 81%, for a relatively low cost.[4] If this is not allowed on the IDOT right-of-

Figure 4.12

[4]Federal Highwawy Administration. (2009, May).*Rectangular rapid flash beacon (rrfb)*. Retrieved from http://safety.fhwa.dot.gov/intersection/resources/techsum/fhwasa09009/

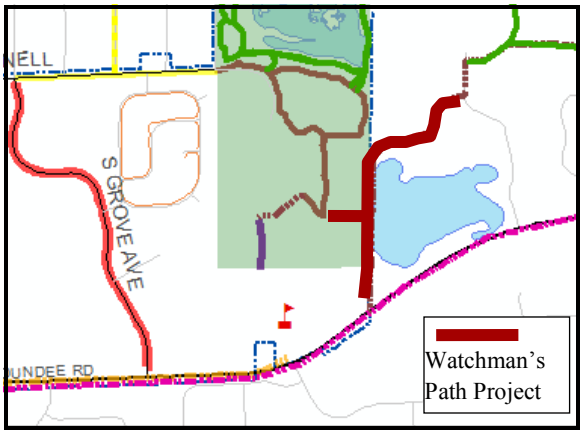


Figure 4.13

way the Village should find another means to improve the safety of the intersection.

C. *Watchman's Path*: Work with the Forest Preserve District of Cook County (FPDCC) to improve the driveway path along the west side of Baker's Lake Younghusband Prairie, next to Prairie Middle School. This path would connect the Village's bike and pedestrian system to the Cook County system along Dundee Road and could also connect to the west directly into the Beese Park path near the community garden and baseball fields.

D. *South Northwest Highway Rail with Trail*: As a regional connector, explore the possibility of a shared-use path on South Northwest Highway along the Union Pacific Rail line. This is a key connection point to Palatine, Arlington Heights and all communities along Northwest Highway. NWMC has identified this connection as part of the regional corridor plan that connects Barrington to Chicago and is identified in the NWMC Northwest Highway Plan.[5] South Northwest Highway has a BLOS rating of 4.20 (D) and due to the high traffic volume and speed limit an off-street facility is the best option for this area.

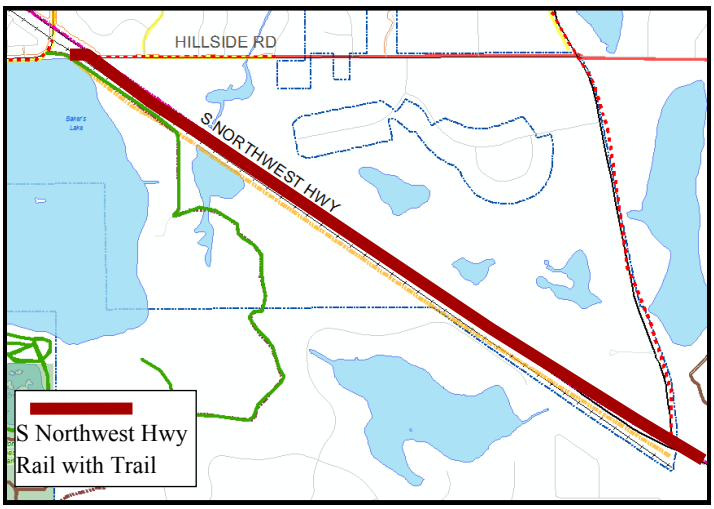


Figure 4.14

Eastern Avenue District

A. *Improve Eastern Avenue*: Eastern Avenue is a key north-south bicycle connector for the Eastern Avenue District and has outside lanes of 18 feet from Harriet Lane to Lakewood Drive. However, due to the traffic from two schools entering and exiting from and parking along Eastern Avenue, an on-street facility may not be the safest lane of travel for bicyclists. Therefore as a long term goal, the sidewalks on the eastern side of Eastern Avenue should be widened to ten (10) feet. The eastern side of the street has fewer driveways and thus is the safer option for children going to and from school.

Figure 4.15

[5]See the Northwest Municipal Conference Bikeway Plan at http://www.nwmc-cog.org/Transportation/Bike-Planning.aspx

East Main Street Neighborhood District

A. *Cuba Marsh Connection*: Review the possibility of adding a shared-use path which would connect the Fox Point North neighborhood to the Cuba Marsh paths, within the Lake County Forest Preserve.

Figure 4.16

Lake Zurich Road District

A. *Hough and Northwest Intersection*: Add a sidewalk on the northeast corner of Hough St and Northwest Highway. A crosswalk from the northeast corner to the southeast corner should also be added to improve pedestrian connectivity from the Roslyn Road neighborhood (Neighborhood 10) and Jewel Park (Neighborhood 5) the Lake Zurich Road and West Northwest Highway Districts into the Village Center. Also, the intersection should be reviewed for improving crossing measures which draw attention to the pedestrians from motorists turning right on a red light. Northwest Highway is an IDOT road so this project will need coordination with IDOT.

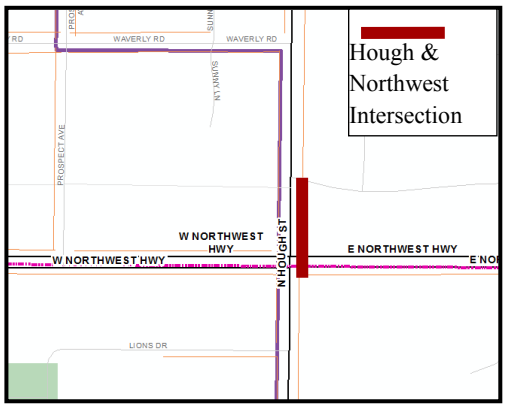


Figure 4.17

B. *Lake Zurich Road Path*: In order to connect the neighborhoods on the north side (Neighborhood 11) of the Lake Zurich Road District a sidewalk or shared-use path should be built along either side of Lake Zurich Road from Providence Road to Citizens Park. It should connect to the trail network in place at Citizen's Park. The roadway north of Providence is in Cuba Township jurisdiction; they should be consulted when extending facilities north to Cuba Road.

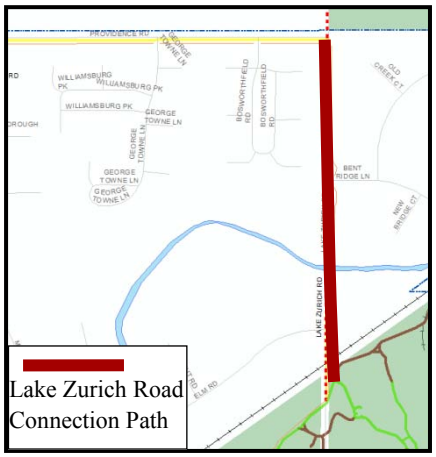


Figure 4.18

C. *Improve Library Intersection*: As part of the goal of this plan to safely connect Barrington residents to parks, shopping areas, the library and other amenities in town the intersection at North Northwest Highway and Barry Road, leading to the Barrington Area Library and Citizen's Park. Improve the pedestrian crossing and sidewalk on the south side of the intersection by restriping the crosswalk already in place and increasing the responsiveness of the pedestrian actuated signal in conjunction with IDOT.

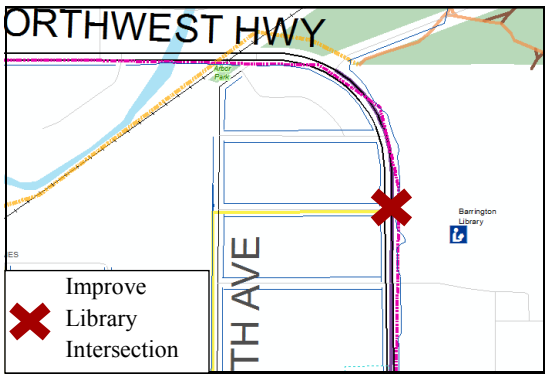


Figure 4.19

North Downtown District

A. *Hough Street Crossing:* When the area along West Liberty Street area develops, it is recommended that consid-

eration be given to installing a pedestrian actuated signal to provide a safe crossing. This would connect the commercial downtown to surrounding neighborhoods to the east and north.

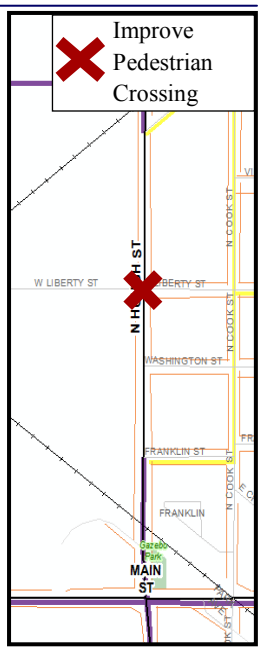


Figure 4.20

West Northwest Highway District

A. *Roslyn Road Crossings*: Efforts should be made to improve the pedestrian crossings at Hough Street and Roslyn Road and at Prospect Avenue and Roslyn Road. The current pedestrian crosswalk warning sign at Hough Street receives about 18% compliance when a crossing guard is not present but adding a pedestrian actuated, rapid flash beacon could increase driver compliance to 81%, without the crossing guard.[6] This improvement should supplement the crossing guard attendant and not replace the position. The intersection in front of the school entrance at Prospect Avenue should be explored for a possible crossing guard, flashing beacon or another improvement due to the high number of child pedestrians and vehicles passing by during the peak school hours.

Figure 4.21

B. *West Northwest Highway Connection*: A sidewalk or shared-use path should be added along West Northwest Highway from Cumnor Avenue to Hart Road to complete a circular connection on the west side of the Village. This connection is being considered as part of the Hart Road and Route 14 Intersection Improvement Project and will be added as a result of the Complete Street Program, being implemented by IDOT. As with all IDOT Complete Streets improvements this project will require a 20% local cost share by the Village. This connection will serve to complete the bike plan on the northwest side of the Village.

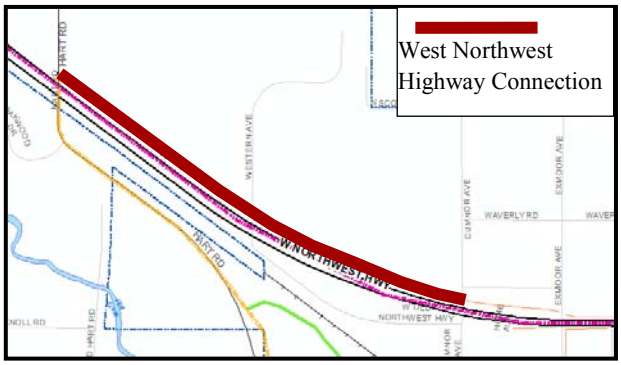
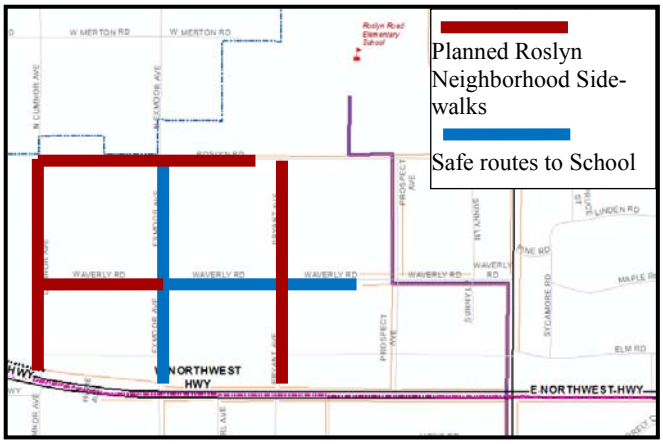


Figure 4.22

C. *Roslyn Neighborhood Sidewalks*: Add sidewalks in the Roslyn Road neighborhood, especially near the school, but anywhere that an unfinished connection should be completed with respect to the existing trees and drainage. Adding sidewalks to the neighborhood will help to improve pedestrian safety, as many people currently walk on the side of the road next to the moving vehicles. Part of

Figure 4.23



[6]Federal Highwawy Administration. (2009, May).*Rectangular rapid flash beacon (rrfb)*. Retrieved from http://safety.fhwa.dot.gov/intersection/resources/techsum/fhwasa09009/

this project is being completed with federal funding from Safe Routes to School. This improvement will add value to the neighborhood, provide a safer place for residents to walk and is a start to completing the goal of providing safe passage to neighborhood schools.

Hart Road District

A. *High School Connection*: This area is one of the most walked areas with pedestrians going to the High School. A shared-use path along West Main Street in front of the high school, connecting North Hager Avenue to Hart Road is recommended. The path should continue from the West Main Street and Hart Road intersection north on Hart Road to the Field of Dreams entrance. At this connecting point a sidewalk or shared-use path should continue north along Hart Road to the intersection at West Northwest Highway.

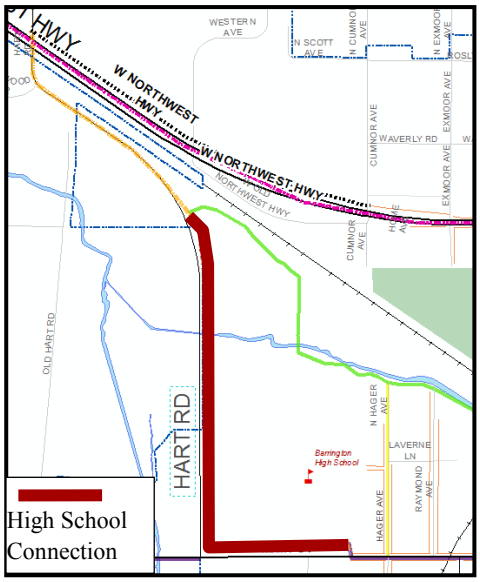


Figure 4.24

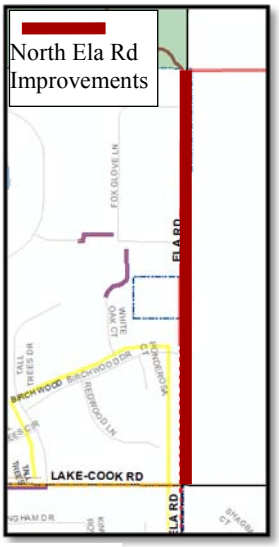


Figure 4.25

Ela Road Corridor

A. *North Ela Road Improvements*: Ela Road, between East Main Street and Long Grove Road, is an important area worthy of improvement as it provides the most used area for bicyclist and connections to a regional system. To improve North Ela Road area, between East Main Street and Long Grove Road the entire section should be resurfaced. (This project was in the process of being completed when the plan was adopted.) Additionally, the existing bike lane should be extended from Birchwood Drive down to East Main Street to make a smoother connection to South Ela Road. The recommended improvement would be to widen the road from 14.5 feet to 17 feet and striping the bike lane properly on both sides of the street. These improvements would greatly increase the BLOS from East Main Street to Birchwood Drive to a 2.48 (B) from a 3.61 (D), and Birchwood Drive to Long Grove Road to a 2.48 (B) from a 2.64 (C). Ela Road is not within the jurisdiction of the Village of Barrington but rather controlled by the respective county. Therefore to make these improvements the Village should work with the county to see they are implemented.

B. *South Ela Road Improvements*: Currently lanes on South Ela Road are 15 feet wide which is wide enough to share the road with bicyclists and motorists yet with a speed limit of 40 mph, it's not wide

Figure 4.26

enough to add a bike lane. As a long term goal, if South Ela Road is resurfaced and widened to 17 feet a bike lane should be added. This would improve the BLOS rating from 3.21 (C) to 2.41 (B). Another long term goal would be to explore the possibility of a connection to the CCFPD Deer Grove bike trail directly from Ela Road. Additionally, as a short term goal, even if the road is not widened, "Share the Road" signs should be added every mile south of East Main Street and a 3 foot shoulder should be painted along with having an 11.5 foot lane to increase motorist awareness of bicyclists. Ela Road is not within the jurisdiction of the Village of Barrington but rather controlled by the respective county. Therefore to make these improvements the Village should work with the county to see they are implemented.

Hillside Corridor

A. *Hillside Road Improvements*: The eastern part of Hillside Road has a bike lane on both sides of the road leading to Ela Road. The bike lane continues on the north side of Hillside Road east of Ela and connects to the Deer Grove Forest Preserve paths. This is a key connector for Barrington residents into the forest preserve. Therefore, as a short term goal, sharrow markings should be painted along the entire stretch of Hillside Road not improved with a bike lane. As a long term goal, the bike lane on the eastern portion of the road which currently ends just west of Haven Drive should be completed on the west end of Hillside Road along with a street resurfacing. This section of the Hillside Road will need to be widened to at least 15 feet with a minimum 4 foot bike lane. If these long term improvements are made the BLOS rating will increase from 2.53 (C) to 1.29 (A).

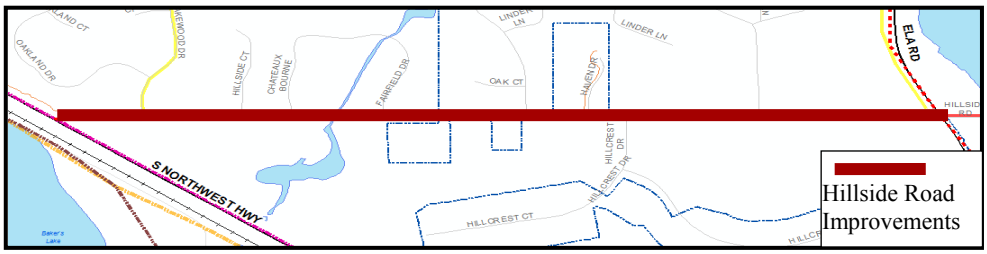


Figure 4.27

B. *Hillside Avenue Improvements*: Improving Hillside Avenue from South Hough Street to South Northwest Highway can be accomplished by painting a centerline stripe and either adding sharrow markings every .25 miles or painting an outside lane stripe 4 feet from the edge of the curb. Since the lanes on Hillside Avenue are 15 feet this would still leave the a 11 foot lane for motor vehicles. Also, the section of road between South Northwest Highway to South Bristol Drive and South Grove Avenue to South Hough Street should be resurfaced. These improvements would improve E Hillside Avenue to a BLOS rating of 1.74 (B)

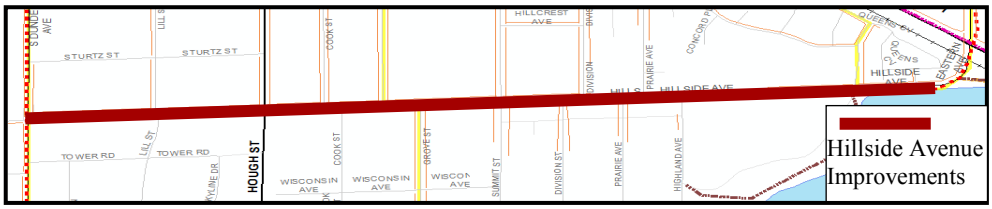


Figure 4.28

from the current 2.53 (C) at its worst.

Flint Creek Tributary Corridor

A. *Complete Tributary Path*: If an underpass beneath the CN/EJ&E tracks at Northwest Highway occurs, a shared-use path should be incorporated running along the creek from North Hough Street, under the tracks and connect to the Lake Zurich Road shared-use path. This would complete the Tributary Corridor path throughout Barrington. The creek may be rerouted as part of the project so the path may not follow the map as shown. In conjunction, the Village should also explore a pedestrian activated, rapid flashing beacon crossing Hough Street when this path develops to provide a safe crossing area at Hough Street.

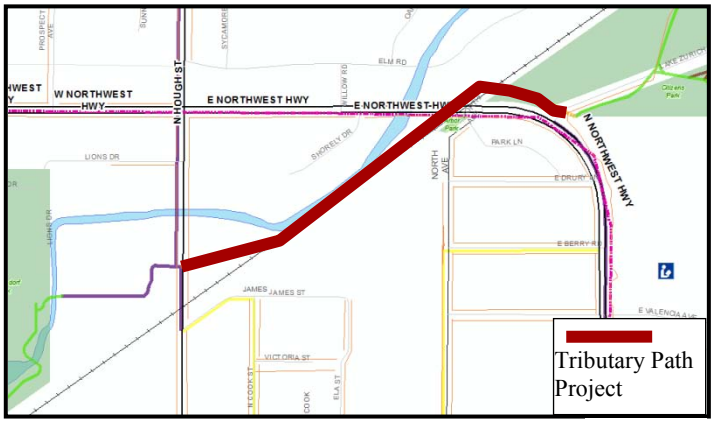


Figure 4.29

Main Street Corridor

A. *Hager Street Crossing*: All efforts should be made to improve the pedestrian crossing at West Main Street and Hager Street. The current pedestrian crosswalk warning sign receives about 18% compliance but adding a pedestrian actuated, rapid flash beacon could increase driver compliance to 81%, for a relatively low cost.[7] Due to a high number of high school students crossing here in the morning and afternoon each day, an improved intersection would be most beneficial to the safety of the youth of the Barrington area.

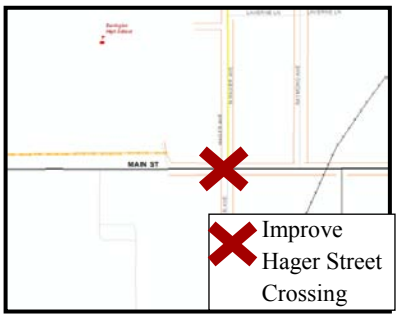


Figure 4.30

B. *Pedestrian Underpass on Main*: Explore the possibility of installing a grade separated pedestrian crossing at the CJ&E/CN Railroad tracks and West Main Street. As many high school students walk past this crossing to go to school each day this project could be very beneficial to the safety of the youth of the community. Coordination with the railroad and IDOT should occur to ensure all vested parties are involved.

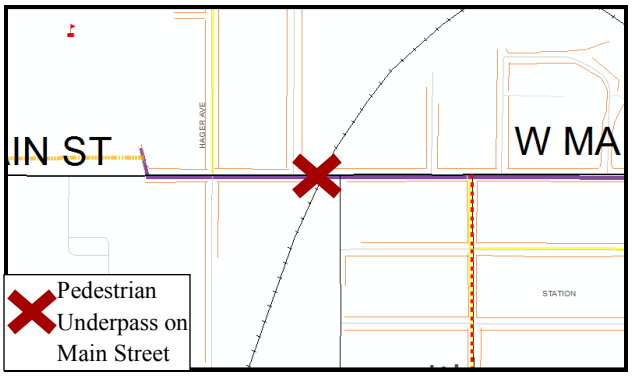


Figure 4.31

[7] IBID

C. *East Main Street Path*: Due to the high traffic counts along East Main Street the most beneficial improvement for connectivity along this part of the corridor would be to add a shared-use path from Eastern Avenue to Ela Road. The path should be on both sides of the street and involves widening the sidewalks which are currently in place from 5 feet to 10 feet. This is a pivotal east/west link which will connect the eastern half of Barrington to the Village Center.

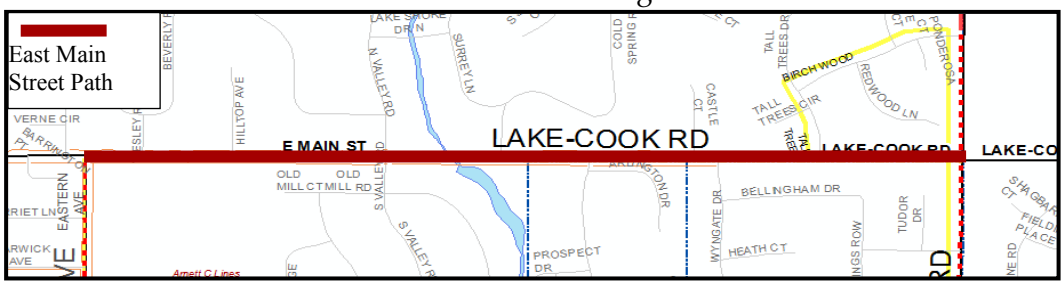


Figure 4.32

D. *Hough and Main Road Diet*: If the Village Center becomes over parked and parking spaces along the 100-200 blocks of East and West Main Street become unnecessary then a road diet for those two blocks is recommended. A road diet is a technique whereby a road is reduced in number of travel lanes in order to achieve systematic improvements and often increase bicyclist and pedestrian safety. This diet involves eliminating the two outside lane/parking spots, converting both sides into bike lanes, lengthening the turn lanes and increasing the motorist lane. The road would not need to be resurfaced nor would it need to be widened. These improvements would increase the streets BLOS from a D to a B (2.40). As an alternative to the road diet sharrow markings could be painted 11 feet away from the curb to allow for parking and still guide bicyclists.

Figure 4.33

Regional Connectivity

As stated in the previous chapter a key goal of this connectivity plan is to link the Village of Barrington to the regional network of bicycle and pedestrian facilities. In order to accomplish that goal the following recommendations should be considered to unite the Barrington facilities with the external connections which are currently in place in 2012.

Municipalities

Hoffman Estates

The Village of Barrington can connect to an extensive network of bicycle and pedestrian facilities in Hoffman Estates through a shared-use path along South Barrington Road on the edge of the Crabtree Nature Preserve property. Details of this project are listed below in the Forest Preserve. This connectivity project would require intergovernmental cooperation with the Cook County Forest Preserve.

Palatine

The Village should explore safe options to connect to Palatine, in particular along South Northwest Highway. A project proposed in the South Grove Avenue District outlines a rail-with-trail located along the Union Pacific tracks. This project would provide the safest connection to shared-use path along the north side of the road on Northwest Highway in Palatine beginning at Doe Road, just south of Dundee Road (Route 68).

BACOG Communities

The Village of Barrington is open to connecting to all surrounding Barrington Area Council of Governments (BACOG) communities through shared-use paths or on-street bike lanes. Ideas should be explored to safely and reasonably create a cohesive network of bicycle and pedestrian facilities for the entire area. Implementation of a safe route will require intergovernmental cooperation with neighboring communities to make all areas of Barrington connect to the "Hub".

Forest Preserves

Crabtree Nature Preserve

The Village should work with the CCFPD to add a shared-use path along South Barrington Road and Palatine Road on the edge of the Crabtree Preserve property so as to provide a connection from the Barrington network to the Hoffman Estates network of facilities. The Village is grateful for the many facilities the CCFPD provides in and around Barrington and for the beautiful scenic views which are preserved. That is why the Village of Barrington is willing to work with the Forest Preserve to keep those views and unique natural features and letting citizens enjoy them along a shared-use path.

Deer Grove Forest Preserve

Currently users can connect to the Deer Grove facilities from the bike lane on Hillside Road. After leaving the Village boundary a bike lane exists on the south side of Hillside Road east of Ela Road. If a shared-use path along South Northwest Highway is developed, the Village should explore the possibility of connecting to the preserve trails from Dundee Road using one of the vehicular entrances to Deer Grove along Dundee Road.

Cuba Marsh Forest Preserve

Barrington's bikeways are connected to the Cuba Marsh by two means of access, through Citizens Park and off of Ela Road. The paths through Cuba Marsh are an excellent asset. Therefore, the Village should look to improve the connection points along Ela Road and explore the possibility of adding another directly from the Fox Point North neighborhood, as outlined in the East Main Street Neighborhood District.

Future Considerations

This plan, and all bicycle and pedestrian projects, should be reviewed on an annual basis to maintain that all routes, paths, sidewalks and lanes are properly designated along the safest

routes. In addition to reviewing all routes and projects, new techniques, treatments, and trends may emerge after the adoption of this plan which could benefit bicyclists and pedestrians. Some may be applicable to the existing facilities while other may be appropriate for future planning projects. New concepts should be brought to the BPAC and the Village Board after sufficient research and case studies have been completed. The following examples provide insight into the types of future enhancements which could benefit bicyclists and pedestrians.

HAWK Signals – A **H**igh-intensity **A**ctivated Cross**W**a**lK**, or a hybrid beacon, are over-street signal-head lights with two red lenses over a single yellow lens. Hybrid beacons are used to improve pedestrian crossings of major streets in locations where street volumes do not support a conventional signal or in a mid-block where high pedestrian traffic occurs. Currently HAWK signals get 100% compliance but cost about fifteen (15) times more than a pedestrian actuated beacon signal which gets about 85% compliance. The HAWK is slightly different in appearance but acts much like a conventional signal. The HAWK remains dark until a pedestrian presses the button. The yellow light begins to flash then is solid to warn drivers to slow down. The double red light is solid until the pedestrian is safely across then the red lights flash alerting drivers they may proceed as long as they stop for any other pedestrians still in the crosswalk. The Village currently uses two pedestrian activated traffic lights on East Main Street near Lines School Campus and on South Hough Street next to Hough Street School.

Figure 4.34: *HAWK signals cost more but receive full compliance by motorists.***

Colored Bike Lanes – "Colored pavement within a bicycle lane increases the visibility of the facility, identifies potential areas of conflict, and reinforces priority to bicyclists in conflict areas. Colored pavement is commonly applied at intersections, driveways, conflict areas and along non-standard facilities."[8] Colored bike lanes currently are more popular in Europe but have begun to appear in larger cities such as New York, San Francisco and, closer to Barrington, Chicago. This application could be useful along high trafficked areas such as Northwest Highway or Lake-Cook Road.

Figure 4.345 *Colored lanes draw a motorist's attention to sharing the road with bicyclists.***

[8] *Urban Bikeway Design Guide*, National Association of City Transportation Officials (NACTO), 2011.
**Photo courtesy of NACTO.

Bike Boxes – "A bike box is a designated area at the head of a traffic lane at a signalized intersection that provides bicyclists with a safe and visible way to get ahead of queuing traffic during the red signal phase."[9] These boxes are beginning to be used in the United States but only in larger cities like Chicago who has a higher volume of bicycle traffic.

Figure 4.36: *Bike boxes give riders a head start through intersections.***

Bicycle Actuated Signals – "Bicycle detection at traffic signals is used to alert the signal controller of bicycle crossing demand on a particular approach. Bicycle actuated signals occur either through the use of push-buttons or by automated means (in-pavement loops)."[10] This type of signal helps to change the light for bicyclists when a car is not present to weigh the sensor. They are expensive to install if a new detection loop is added but a low cost improvement is to use the existing detection loop and add the MUTCD marking over the right perimeter wire. These are very effective in areas of high bicycle traffic and lower automobile traffic.

*Figure 4.37: Bike buttons help to change the light when a car is not present.***

Bike Corrals – On-street bicycle parking corrals make efficient use of a parking space in areas of high bicycle parking demand. Typically having 6 to 12 racks in a row up to 20 bicycles could be parked. These are being used more frequently around the US in areas friendly to bicyclists. A positive promotional tool to encourage more biking and ldess driving.

Figure 4.38: *Bike corrals provide multiple parking in a small space.***

[9] *Urban Bikeway Design Guide*, National Association of City Transportation Officials (NACTO), 2011.
[10] IBID
**Photo courtesy of NACTO.

Chapter 5:

Bicycle Level of Service (BLOS)

Bicycle Level of Service Rating System (BLOS)

Understanding BLOS

Evaluating a street's overall compatibility as a bicycle facility helps to make an informed decision on whether to designate the street a facility. It is important to pair each street with its proper designation so that users can make informed decisions when choosing a route to their destination. The Bicycle Level of Service (BLOS) measure is an emerging national standard for quantifying the "bike-friendliness" of a roadway for the average adult rider. It indicates bicyclist comfort level for specific roadway geometries and traffic conditions. Roadways with a better (lower) score are more attractive – and usually safer – for cyclists. An online calculator can be found at http://www.bikelib.org/roads/blos/losform.htm.

Calculating BLOS (Variables)

The BLOS calculation classifies a street into one of six categories (A through F). Streets that have a high level of service for bicycles will be in the A category and have a low score. Streets in the E or F categories are not suitable for an on-street bicycle facility under the current conditions, typically a roadway like Northwest Highway. The average adult cyclists feel comfortable on A and B streets while more experienced riders like A, B or C streets, with each rider willing to go somewhat into the next grade lower if necessary.

Level of Service	BLOS Score
A	≤ 1.5
B	> 1.5 to ≤ 2.5
C	> 2.5 to ≤ 3.5
D	> 3.5 to ≤ 4.5
E	> 4.5 to ≤ 5.5
F	> 5.5

Figure 5.1: BLOS Categories

The following variables are used to determine a street's BLOS:

- Number of through lanes
- Width of outside lane
- Width of extra area (paved shoulder, bike lane, parking lane, ect.)
- Average Daily Traffic (ADT) counts
- Posted speed limit
- Percentage of heavy vehicles (trucks)
- Pavement condition rating (1 – 5, 5 being the best)
    - Newly constructed or repaved streets = 5.0
    - Most streets = 4.0
    - Brick streets = 3.0
    - Gravel streets = 2.0
- On-street, occupied parking percentage (estimated)

A table containing the different values collected for each of the variables was created in a similar way to the online calculator. This table was used to obtain the BLOS for all the roadway segments that are a part of the Barrington bicycle network. The full explanation of the methodology to estimate BLOS and the entire table of raw data can be found in Appendix D.

Existing BLOS	Number of Street Segments	Miles of Road	Percentage of Miles of On-Street Facilities
A	13	3.01	10.5%
B	60	10.61	36.9%
C	28	4.31	15.0%
D	21	6.12	21.3%
E	8	3.60	12.5%
F	2	1.07	3.7%
Total	132		100%

Figure 5.2: Existing BLOS

Existing BLOS

While BLOS can provide a reasonable rating for comfort and compatibility on a street not all criteria important to bicyclists are included in the calculations, such as frequency of driveways and intersections or sightlines and visibility. Thus, further evaluation of each street is required before improvements are made. The majority of existing roadway segments measured in Barrington achieved a BLOS score of A or B (rated lower than 2.50). This means the casual adult rider would feel comfortable riding on many segments in their current state.

Most residential streets in Barrington are bike and pedestrian friendly due to their low traffic volumes and quality pavement condition. However, since Barrington has a large grid network of residential streets not every one was included in the network or given a BLOS rating as the network is intended to be direct and easy to follow.

Some roadway segments received a BLOS grade of D, E or F (rated 3.50 or higher), due mainly to high traffic counts or high heavy vehicle usage or poor pavement condition, or in some cases, all three variables. The majority of these segments are the three largest state right-of-ways in Barrington – Lake-Cook Road, Northwest Highway and IL-Route 59 – where on-street treatment is not possible to improve the BLOS rating to an acceptable level for inclusion in the Barrington bicycle network. However, some segments in the D range can be improved to an acceptable rating with minor striping changes or repaving projects.

Figures 5.3-14 depicts various examples of streets in Barrington for each BLOS rating. Figures 5.15-17 show the existing and future BLOS for all Village streets within the bicycle system as well as the change in BLOS rating.

BLOS Examples in Barrington

BLOS A

Figure 5.3: *Hillside Rd. at Grace Ln. Looking East*

Figure 5.4: *Providence Rd. at N. Hough St. Looking East*

BLOS B

Figure 5.5: *N. Cook St. at E. Liberty St. Looking South*

Figure 5.6: *Hard Rd. at Flint Creek Looking South*

BLOS C

Figure 5.7: *S. Dundee Ave. at W. Lincoln Ave. Looking South*

Figure 5.8: *S. Ela Rd. at Hillside Rd. Looking South*

BLOS Examples in Barrington

BLOS D

Figure 5.9: *S. Hough St. at Russell St. Looking South*

Figure 5.10: *W. Main St. at S Dundee Ave. Looking East*

BLOS E

Figure 5.11: *Hough St. at Shops at Flint Creek Looking North*

Figure 5.12: *S. Barrington Rd. at the Barn of Barrington Looking South*

BLOS F

Figure 5.13: *Northwest Hwy. at Prospect Ave. Looking West*

Figure 5.14: *Northwest Hwy. at Western Ave. Looking West*

Figure 5.15: *Existing Bicycle Level of Service Map*

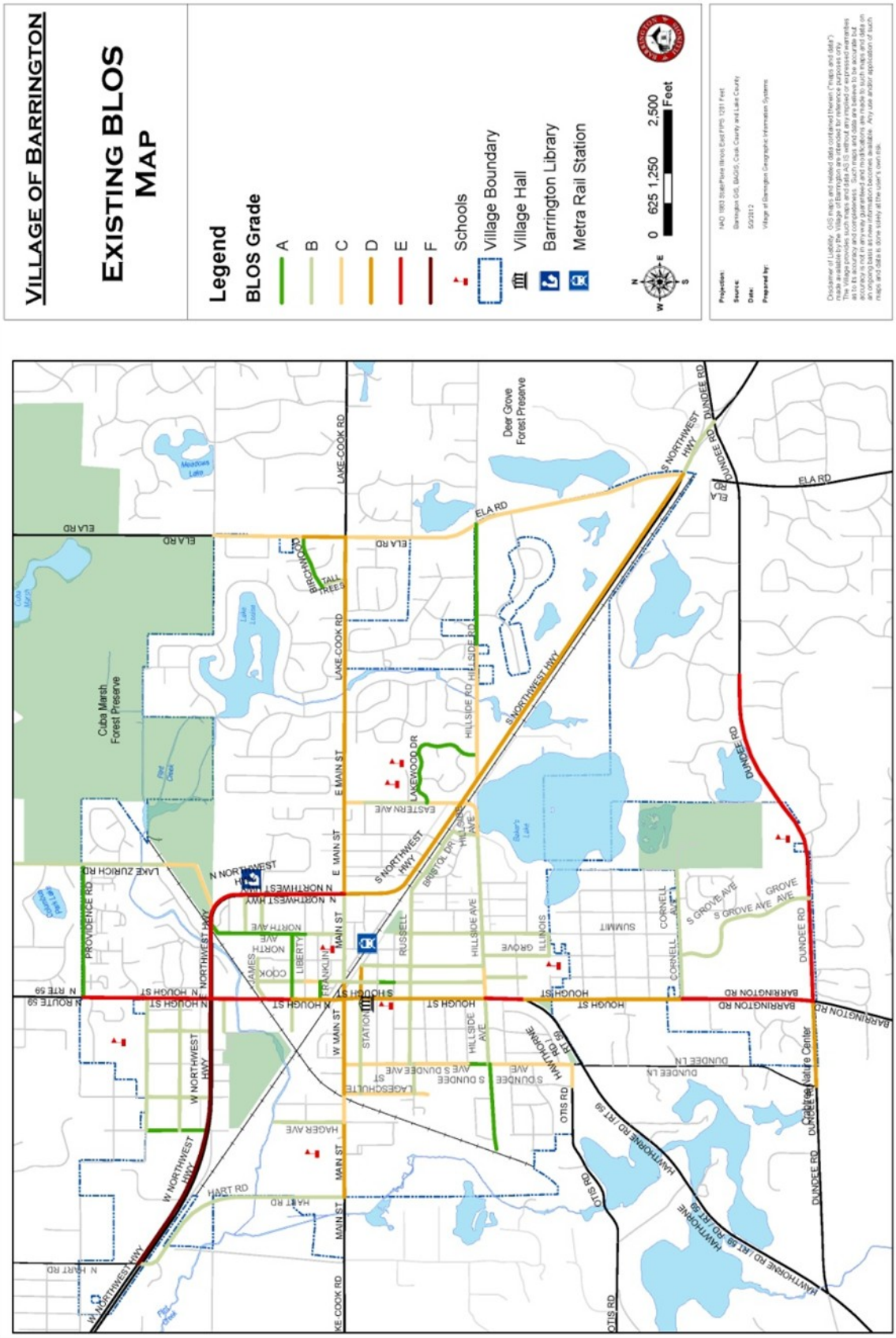


Figure 5.16: *Future Bicycle Level of Service Map*

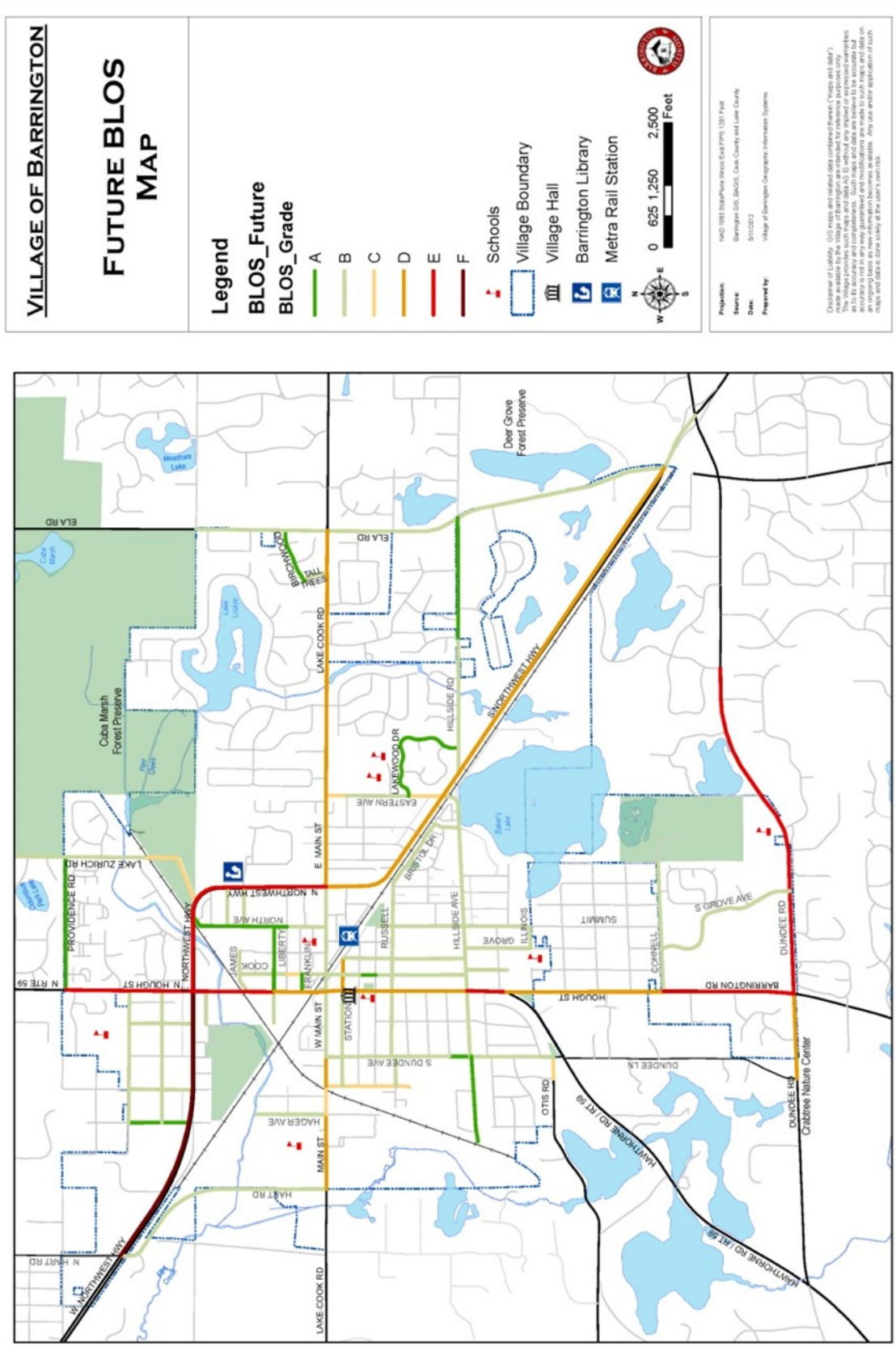
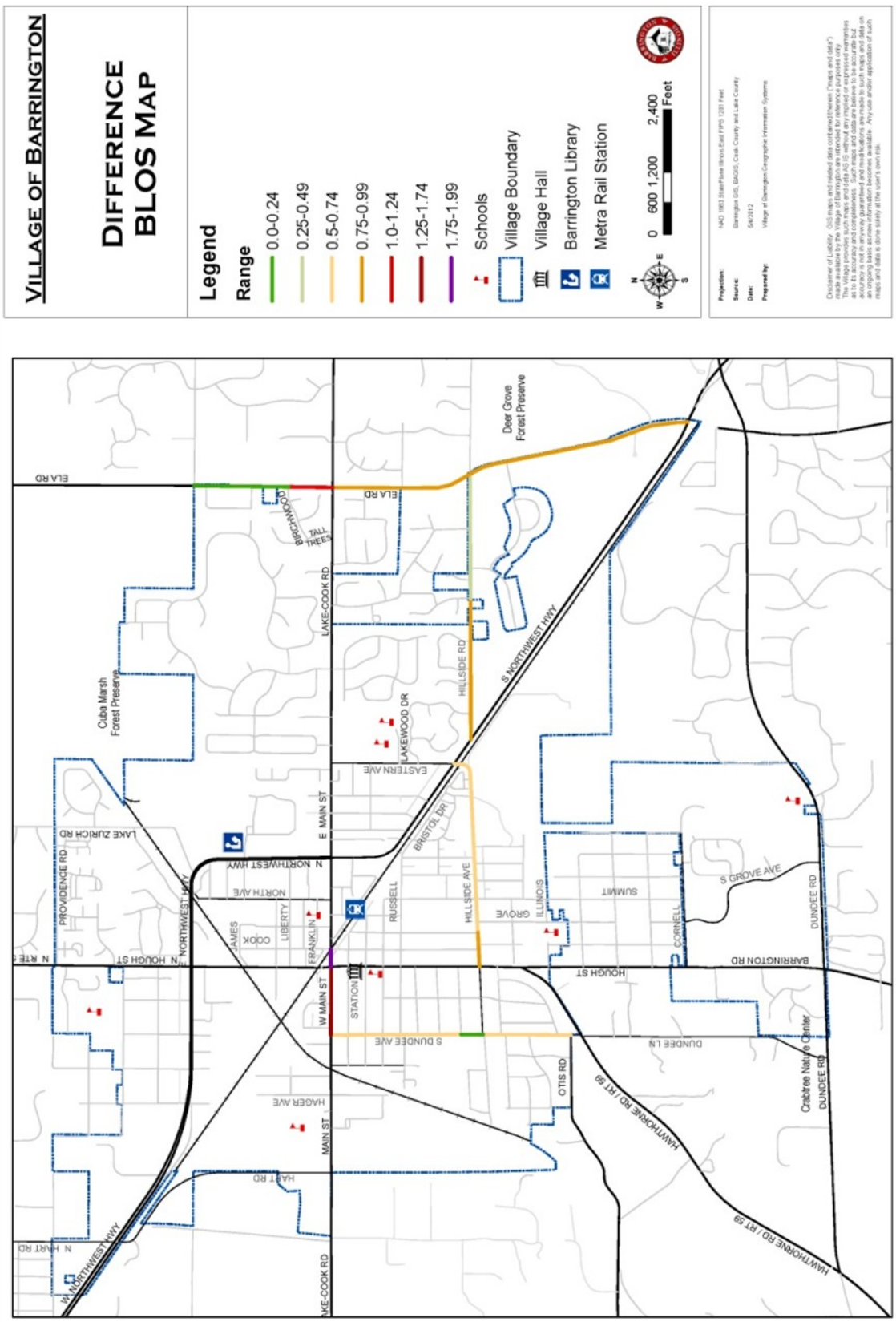


Figure 5.17: *Bicycle Level of Service Difference Map*



Chapter 6:

Funding

A goal of this plan is to identify project costs and propose cost-sharing alternatives. This can be accomplished by completing projects that are less expensive – "low hanging fruit" –by utilizing Village funds and labor or to obtain outside grant monies. This chapter presents various alternatives for funding related projects identified in this plan to achieve an overall connectivity plan for Barrington.

Grants

The federal and state governments offer grant programs which are available to municipalities to help promote alternative modes of transportation, educate residents, and build connectivity infrastructure. The Village should take advantage of these grant programs by identifying the funding sources which are most appropriate for the particular bicycle and pedestrian projects and apply, when available, for grants that meet our objectives.

Congestion Mitigation/ Air Quality Program (CMAQ)

The CMAQ program was conceived to support surface transportation projects and other related efforts that contribute air quality improvements and provide congestion relief. Jointly administered by FHWA and the Federal Transit Administration (FTA), the CMAQ program has provided just under $9 billion in authorizations to State Department of Transportation's (DOT.) DOTs. Each year CMAQ funding is distributed to the States via a statutory formula based on population and air quality classification as designated by the EPA. The funds may be used for infrastructure and non-infrastructure projects. The funding criteria for this program are:

- 100% federal/state, 0% local; CMAP administered (All projects that do not use CMAQ funding for Phase I engineering will be funded at 100%. Several other funding stipulations are defined so refer to the latest policy changes from CMAP.)
- Five year funding cycle (2012-2016)
- Competitive program with a demand to supply ratio around 3:1
- Projects subject to federal and state design standards and review
- Also funds non-infrastructure bicycle education and encouragement programs, as well as large-scale bike parking programs.
- Population density per cost is important

Figure 6.1: *The U.S. and Illinois Departments of Transportation fund grants which improve the movement of all types of traffic.*

Transportation Alternatives (TA)

The Transportation Alternatives program was established as part of the Moving Ahead for Progress in the 21st Century Act (MAP-21) signed into law in July 2012. MAP-21 creates a streamlined, performance-based, and multimodal program to address the many challenges facing the U.S. transportation system. These challenges include improving safety, maintaining infrastructure condition, reducing traffic congestion, improving efficiency of the system and

freight movement, protecting the environment, and reducing delays in project delivery. The TA is just one of the new programs created to provide for a variety of alternative transportation projects that were previously eligible activities under separately funded programs. Due to the States flexibility in use of the federal funds it has not been stated, at the time of this plan, who will administer the grant or how much the grant will be funding. Eligible projects will includes transportation alternative projects, recreational trails and safe routes to school projects. It is estimated that this funding program will be in high demand.

Illinois Transportation Enhancements Program (ITEP)

The Illinois Transportation Enhancement Program (ITEP) provides funding for community based projects that expand travel choices and enhance the transportation experience by improving the cultural, historic, aesthetic and environmental aspects of our transportation infrastructure. A project must qualify as one of the 12 eligible categories listed in the ITEP Guidelines Manual and it must relate to surface transportation to be eligible for funding. With stringent engineering standards and review processes, this source is better suited for larger ($500K to $1M+) bikeway projects and those requiring substantial engineering work such as grade separations. In 2010, the state announced nearly $90 million in federal transportation enhancement funds would be awarded to communities across Illinois for improvement projects. Continuation of ITEP is contingent upon federal funds. The funding criteria for this grant program are:

- 80% federal/state, 20% local; IDOT administered
- Two year application cycle restarting in 2012
- Application must be submitted through an on-line process
- Projects subject to federal and state design standards and review
- Very high demand to supply ratio (almost 10:1); IDOT may not fully fund a grant

Safe Routes to School (SRTS)

The SRTS Program supports projects and programs that enable and encourage walking and bicycling to and from school. Between 70% and 90% of projects supported are for infrastructure improvements, while the remaining projects are non-infrastructure related, which would include Encouragement, Enforcement, Education and Evaluation programs. Documentation of the process used to identify needs and evaluate the implementation of the projects is a major part of SRTS. The program criteria are:

- 100% federal/state, 0% local; IDOT administered
- Typically a two year application cycle
- All applications must be submitted on-line with an approved Illinois School Travel Plan
- Extremely competitive
- Multiple projects may be applied for on a single application

Figure 6.2: Barrington has received two Safe Routes to School grants.

The Village has received $250,000 in funding from this program for the Roslyn Road and Grove Avenue School areas, as part of the 2008 application. In 2012 the Village received another $250,000 grant to build more sidewalks near Hough Street and Grove Avenue Schools. If

this program is continued by the State, this would be a good source of funding for future connectivity plans.

Illinois Recreation Trails Program (IL RTP)

RTP was created through the National Recreational Trail Fund Act to provide funding for acquisition, development, rehabilitation and maintenance of both motorized and non-motorized recreation trails. Eligible project activities include trail construction and rehabilitation, restoration of areas adjacent to rails damaged by unauthorized users, construction of trail-related facilities, and acquisition of trail corridors through easements. The program criteria are:

- 80% federal/state, 20% local; IDNR administered
- Applications are due March 1 each year and typically announced six months later
- Typically $1 million are awarded each year for non-motorized and motorized trails
- Bike trails are not usually funded unless combined with other user groups

Figure 6.3: *The Department of Natural Resources often funds the development of shared-use paths.*

Illinois State Bike Path Grants

The Illinois Bicycle Path Grant Program was created in 1990 to financially assist units of government acquire, construct, and rehabilitate public, non-motorized bicycle paths. Revenue for the program comes for a percentage of vehicle title fees collected by the state. The maximum grant award for development projects is $200,000 per annual request while there is no maximum for acquisition projects. The program criteria are:

- 50% state, 50% local – reimbursement grant; IDNR administered
- Applications are due March 1 each year and typically announced six months later
- Slightly competitive with a demand to supply ration around 2:1
- Locally engineered projects provide for a quicker timeline
- Typically $2.5-3 million are awarded each year

Grade Crossing Protection Fund (GCPF)

The GCPF is an annual program created by the General Assembly to assist local jurisdictions in paying for safety improvements at highway-railroad crossings on local roads and streets. Grant cannot be used for safety improvements at highway-rail crossings located on the state road or highway system. Eligible projects include such projects as warning device upgrades, grade separations, pedestrian grade separations, remote monitoring devices, and crossing closures. The grant criteria are:

- ICC administered
- $27 million annually are provided for improvements
- Funds are allocated at 60% for grade separations and 85% for warning devices

Municipal Budgets

The Village of Barrington may dedicate a portion of the fiscal budget for a connectivity plan implementation program. Project requests can be made on a yearly basis as part of the municipal budget process. In addition, in some cases where a grant program request a local match, this item must also be put in the municipal budget. Capital projects are reviewed on a year by year basis. In addition, when new road projects are considered, the Bike and Pedestrian Plan should be consulted to make sure the new road program incorporates the connectivity plan. Additional funding may come from the Barrington Park District, Cook County Forest Preserve District, Lake County Forest Preserve District, Cook County Highway Department, Lake County Highway Department, Barrington School District 220, Illinois Department of Transportation, and other relevant agencies that promote bike and pedestrian connectivity.

VILLAGE OF BARRINGTON
a great place to live, work, and play

Annual Budget for Fiscal Year 2012

January 1, 2012 to December 31, 2012

2011 Road Program – Hillside Avenue Reconstruction Timelapse Photographs

Hillside Avenue Prior to Construction
Hillside Avenue Stormsewer Installation
Hillside & Grove Avenues Under Construction
Hillside & Grove Avenues Reconstructed

2011 Road Program Hillside Avenue Reconstruction Project Total Cost - $950,800

Public Safety Facility
400 North Northwest Highway
Barrington, Illinois 60010
(847) 304-3300

Village Hall
200 South Hough Street
Barrington, Illinois 60010
(847) 304-3400

Public Works
300 North Raymond Avenue
Barrington, Illinois 60010
(847) 304-3400

http://www.barrington-il.gov

Figure 6.4: *Project requests can be made on a yearly basis for funding from the Village budget.*

Private Sector Involvement

The recommendations of this plan may also be implemented opportunistically when a new subdivision or commercial development is added. Provisions shall be made, as part of the Planned Development, to accommodate for bicycle and pedestrian travel. All developments in the Village now require sidewalk along the street so, if appropriate, the sidewalk could be expanded to allow for a full multi-modal path for bicycles too. The Village should set expectations of a development based on the facilities nearby and the type of destination the site will become. Bike racks and other amenities should also be considered for inclusion with the development. This will add minimal cost to the developer and provide maximum benefits to the community.

Additionally, it may be possible for the private sector to sponsor programs, such as a bike to work challenge or the local share of a grant application. They could also purchase specific infrastructure items like bike racks, bike lockers or benches and donate them to the Village. The local businesses could also purchase the items and hold a contest with the school district to see which school or class could best decorate and design the items. The businesses could also participate in a cost sharing program where they split the cost of a facility or amenity with the Village in order to benefit the entire community.

Chapter 7:

Maintenance

A bicycle and pedestrian network is only as successful as the actions taken to maintain the system. Therefore, in order to achieve adequate maintenance of the Village's network, clear performance standards must be outlined and followed. These standards should include maintenance of bicycle facilities (on- and off- street), regarding surface quality, signing, pavement markings, street sweeping, intrusive vegetation, and snow and ice removal. Equally as important as the maintenance of the network is having a well publicized medium for reporting defects in the system. When users of the system notice problems they should report them through the Customer Services application on the Village website. Input from the public will be important to fully understanding the needs of the system. It is also important to note that facilities located along county roads, some paths in homeowners associations, in the Park District parks or any forest preserve is not the responsibility of the Village to maintain. All reports given to the Village regarding facilities not maintained by the Village should be passed along to the proper agency by the Economic and Community Development Department.

The Departments responsible for the overall maintenance and construction of all bicycle and pedestrian networks is as follows. The Public Works Department will be responsible for the general maintenance consisting of, but not limited to, striping, potholes, snow removal, signage the clearing of vegetation, and general pavement inspections. The reconstruction or repaving of these networks is the responsibility of the Engineering and Building Department. From time to time it will be necessary for both departments to work collectively on network projects.

Surface Quality

- Potholes and large longitudinal cracks should be repaired and left as smooth as possible.

Restriping

- Bike lanes, sharrows, shared-use path markings and any other stripping should be painted using white or yellow paint. Thermoplastic should be used to stripe bike lanes and shared-use paths as it will last longer than paint.
- Restriping should occur whenever a street is repaved, reconstructed or other road improvements are made that would allow for restriping.
- Pavement markings/striping should be repainted as Village staff deems necessary. This work will depend upon the budgeted funds for the fiscal year.

Signage

- If any bicycle or pedestrian sign is damaged, stolen or faded beyond legibility it should be repaired or replaced by the Public Works Department as soon as possible.

Street Sweeping

- Street sweeping should occur on all on-street facilities at least once a month from April to August. From September through November the Public Works Department should sweep these areas as necessary when the weather permits.

- When sweeping, on-street bicycle facilities should take precedence over other streets except during the fall season when all streets need to be cleared of leaves and debris. Care should be taken to clear out gutters and bike lanes and not sweep road debris into the bike lane.

Branch Trimming

- An eight (8) foot overhead canopy should be maintained over all on- and off-street facilities.
- Public Works will trim areas of public concern on a case by case basis. A full vegetation inspection will occur every three (3) to four (4) years.
- Residents and users should report any overgrown vegetation/foliage to the Public Works Department through the Village of Barrington Customer Service application online or by calling the Public Works Department.

Snow/Ice Removal

- On-street facilities will be cleared of snow and ice by the Department of Public Works during normal snow plowing operations.
- Sidewalks in residential districts should be cleared of snow and ice within twenty-four hours of the snowfall, while sidewalks in business or manufacturing districts should be cleared within three hours after the snowfall. As per Title 7, Chapter 1, Section 7 of the Village Code all sidewalks shall be cleared by property owners. When new sidewalks are added the owners should be made aware of this responsibility through a letter.
- The Department of Engineering and Building regulate all snow removal on sidewalks outside the Village Center.

Information Database

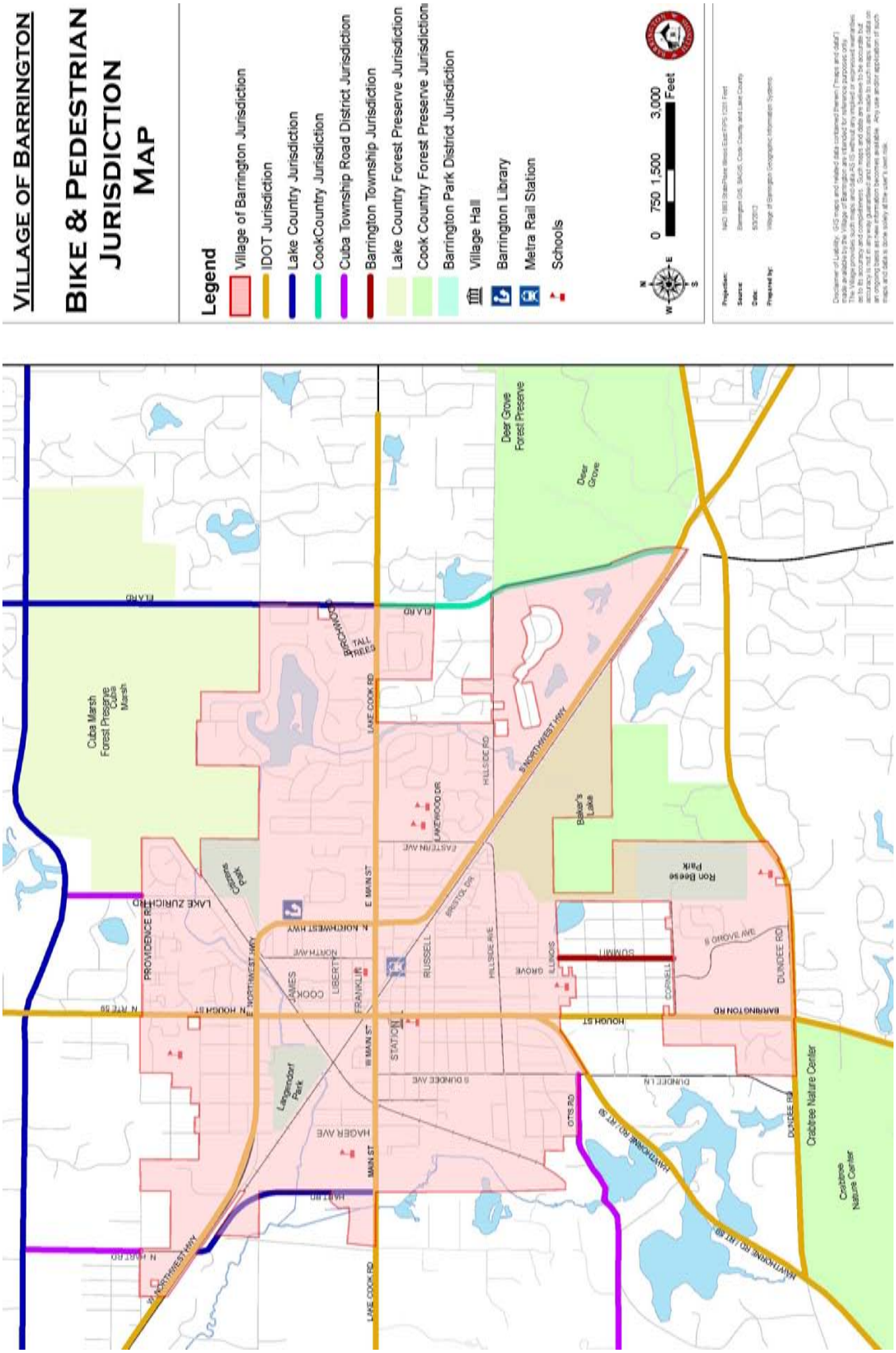
- Information needs to be updated and maintained just like physical facilities need repair. Therefore, the BLOS spreadsheet should be updated yearly with any changes that may have been made.
- The GIS database created for signage should be updated bi-yearly with any changes in signage placement or condition.

General Inspection Guidelines

Every three (3) to four (4) years the Public Works Department will physically inspect all bicycle and pedestrian networks within Village jurisdiction. Inspections will include, but are not limited to the following. All inspections will be documented on a formal inspection form.

- Longitudinal, and parallel cracks along with potholes
- Type of surface, i.e., pavement, concrete or other
- Condition of surface striping
- Any depressions on asphalt networks
- Condition of asphalt edges
- Tree and brush/vegetation inspection
- Condition of network signage

Figure 7.1: The Bike & Pedestrian Jurisdiction Map depicts which governing body controls and maintains the various bicycle and pedestrian facilities.



Chapter 8:

Education, Encouragement & Enforcement

Education

Education of pedestrians, bicyclists and motorists is critical to improving safety in the Village of Barrington. Many misconceptions exist about bicycle safety, such as riding on the street is always more dangerous. Educational programs and materials can help to reduce these concerns and instill the confidence to move around more safely. These programs develop awareness of and provide information for pedestrians and bicyclists in the community. A list of potential programs is provided below.

Events can be initiated to incorporate bike & pedestrian safety either as standalone events or incorporated into other community events. Some suggested events include, but are not limited to:

- Bike Rodeos – Clinics that teach children the importance of riding a bicycle safely, the skills and precautions they need to develop to have a safe fun time on their bike and simple maintenance skills to keep their bike in good shape.
- Safety Seminars – Incorporate these training sessions with community organizations (Library, Park District, School District) to educate the public on bike and pedestrian safety.
- Bicycle Ambassador Program – Educate residents at public events such as Cruise Nights, Farmer's Market, Art Festival, Park District events, and others
- School Assemblies – Provide guest speakers for District 220 to consider as educational topics in the fall/spring of each year on bicycle safety.
- Safety Town – Work with the Barrington Women's Club to add a bike training component to the Safety Town activities and events.

Materials should be available to the public at the Village Hall, Barrington Area Library, Barrington Park District, schools, Village Sport Cycle, online and any community event where Village staff is present.

- Brochures & Handouts
- Bicyclist Rules of the Road
- Pedestrian Rules of the Road
- Motorists Share the Road with Bicyclists and Pedestrians
- Teaching Kids Bike Safety & Maintenance
- Bike Facilities Maps
- School Travel Plans

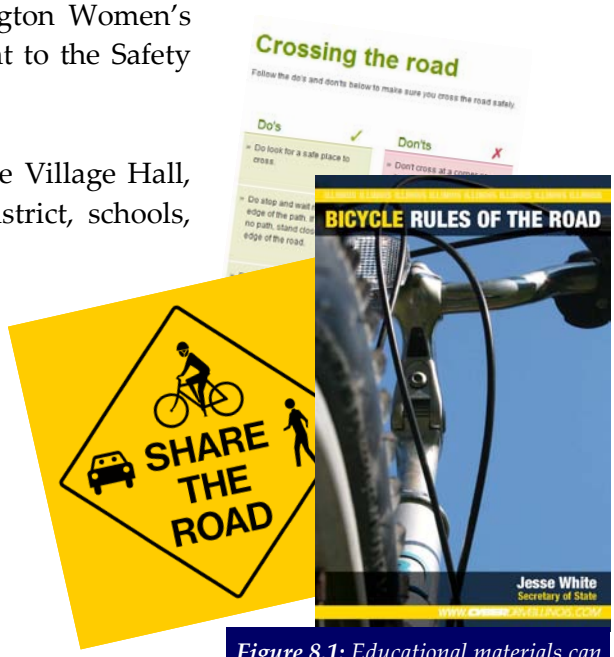


Figure 8.1: Educational materials can increase safety and lower crash rates.

Encouragement

Promotional programs and actions may be used to encourage residents, students, and visitors to explore Barrington by alternative modes of transportation. Encouragement programs promote awareness of pedestrian and bicycle activity in the community.

- Provide Bike Amenities (racks, lockers, ect.) – An effective means of providing alternate

transportation is to provide a safe location for securing a bicycle.

Figure 8.2: *International Walk to School Day occurs each year in October.*

- Walk and Bike to School Day or Week – Declare one day or week out of the year where students are encouraged to walk or bike to school. An incentive for walking or biking to school may be offered, such as stickers or coupons to local businesses. An international walk to school day is held each October. The Village should coordinate to participate in this day.
- Walk and Bike to Work Day or Week – Declare one day or week out of the year where residents are encouraged to walk or bike to work or the train station. An incentive for walking or biking may be offered. These efforts could be a part of the Healthier Barrington campaign to get everyone to walk or bike at the beginning of the school year. A regional bike to work week and bike to work challenge is organized for the Chicago land area each year. The Village should coordinate to participate in this event.

Figure 8.3: *The Bike Commuter Challenge occurs each year in the Chicagoland area*

- Village Webpage – The Village should maintain a webpage devoted to bicycle and pedestrian connections and activities within Barrington. It would contain resources for biking around the Village and update residents on current or upcoming projects.
- Proclamations from the Village – During walk and bike to school week or other key events within the Village these declarations should alert and promote the use of alternate transportation.
- Bicycle Tour of Barrington – Members of the BPAC lead a bicycle tour of the Barrington area featuring many of the facilities in and around the Village of Barrington.
- Historical Tour of Barrington – Partner with the Barrington Area Historical Society to lead a walking tour of Barrington where historically significant buildings and homes are featured.
- Coupon Incentive Program - Barrington should explore a program which positively reinforces bike riders who follow the rules. Incentives could be issued, perhaps in the form of a coupon to a local store or restaurant, to encourage following the rules of the road. For instances, the Village could partner with an ice cream shop to give coupons to kids and adults who are wearing their helmets while riding their bicycles.
- Helmet and Bike Swaps – Coordinate an event or an ongoing project where citizens can drop off used bicycles or bike helmets and swap for a new size. This would encourage growing children to have the proper equipment while riding.
- Bike & Hike Logo – Create a "Bike & Hike" logo which can be used on patches, stickers or window clings to promote alternative transportation in Barrington. These stickers can be given to kids as incentives for completing bicycle training or participating in ride/walk to school days.
- Shower Facilities – As new development occurs the Village should encourage all developers to include shower facilities for patrons to use after they ride to work. The Village should also encourage all existing office owners to add shower facilities for their tenants to use.

Enforcement

Enforcement of facility use by cyclists, motorists and pedestrians is an important component of a successful bike and pedestrian connectivity program. Enforcement programs are as much about training law enforcement as they are citing a wrongful user or ticketing a driver. Police officers must understand the code before enforcing the Illinois Vehicle Code for all users of the road. Enforcement should be integrated as part of the educational programs and should be viewed as the most effective way to reduce the frequency of bicycle/automobile accidents.

Figure 8.4: Trailers signs can be a good reminder to motorists of the law to stop for pedestrians in crosswalks.

- **Radar Speed Sign Trailers:** Decreasing speeding automobiles, especially in high pedestrian areas like the Village center, is key to bicycle and pedestrian safety. Radar speed sign trailers are ideal for this objective as they are portable and typically run on built-in solar power. The sign will display the speed of the on-coming motorist, reminding the driver of how fast they are going and often slows down the car to the posted speed limit. The Police Department should post these trailers in high pedestrian areas when the situation or public comment necessitates; such as during festivals, parades and in the springtime when more people are out walking again.
- **"Stop for Pedestrian" Trailers:** The Village of Barrington owns electric changeable copy trailers. These trailers, like the radar signs, can be placed anywhere and run on solar power. The Police Department should occasionally put the trailers near key intersections, as identified in the recommendations sections of this plan, to alert motorists of the state law to "Stop for Pedestrians" who are in a crosswalk.
- **Bicycle Enforcement Officer:** The Village currently has four (4) officers trained for bicycle enforcement. These officers are well suited to address unsafe bicycling practices and violations committed by bicyclists and pedestrians. In the future, the Village could introduce bicycle officers into their regular patrol during certain times of the year or during certain events where there is a higher number of pedestrians and bicyclists.
- **Replace tickets with education opportunities:** In some communities, citations have been replaced with mandatory educational opportunities, or seminars. The Village could develop a system to determine what violations would be eligible for this seminar and depending on the situation an office might choose a corrective action. Variables which may influence the decision include the rider or walker's age, the action of the driver and the context of where the violation occurred. This type of program could focus on bicyclists riding against traffic, disregarding traffic signals and stop signs, jaywalking, not lighting bicycles at night or motorists failing to yield to bicyclists at intersections. This could educate motorists, pedestrians, and bicyclists in the rules of the road and could reduce unsafe behaviors.

Chapter 9:

Performance Measures

The key to any plan is being able to measure its success. Therefore, this chapter identifies several factors which can be used to gauge the success of the bicycle and pedestrian program in Barrington. These performance measures quantitatively help to understand, manage and improve this plan. They answer questions like how well is the plan being implemented? Are improvements to the plan necessary? Are the goals set forth being met? A few examples of measuring the effectiveness of the plan are listed below.

Facilities

- Level of use – As part of the development of facilities, pre and post level of use counts should be conducted whenever possible as a new facility is proposed to determine the impact of the new facility. Also, a yearly count should be conducted in the same five locations to determine the level of use on existing facilities.
- Bicycle level of service – The on-street bicycle level of service can be measured to numerically show the impact a project can have on the entire network.
- Linear feet of sidewalk – Each year the amount of linear feet of sidewalk installed, engineered or planned will show the progress of the pedestrian facilities.
- Linear feet of bicycle facilities – Each year the amount of linear feet of shared-use paths installed, engineered or planned will show the progress of the off-street facilities.
- School Surveys – On a biannual basis, coordinate with the School District to survey all students and parents to understand what percentage of children within walking distance of schools actually walk, and to understand the challenges which prevent parents from allowing their children to walk.
- Bike Rack Counts – Conduct counts of bike racks in high traffic areas to understand which racks are underutilized and which areas could use more racks.

Programs

- Attendance – The turnout at events such as bicycle rodeos, walk to school days and other planned bicycle and pedestrian promotional events will help to gauge the success of the plan and the network.
- Crash Data – Data on the number of crashes between motor vehicles and bicycle riders or pedestrians will be collected each year to determine if the educational programs are successful.

The facility conditions and programs in Barrington will evolve over time and thus the plan should reflect those changes. Therefore, evaluation of the level of use, level of service, performance, maintenance costs should be performed over time and the plan should be updated every 5-10 years to reflect the progress.

Appendices:

Appendix A: Existing Facilities Map

Appendix B: Proposed Facilities Map

Appendix C: Master Sidewalk Plan

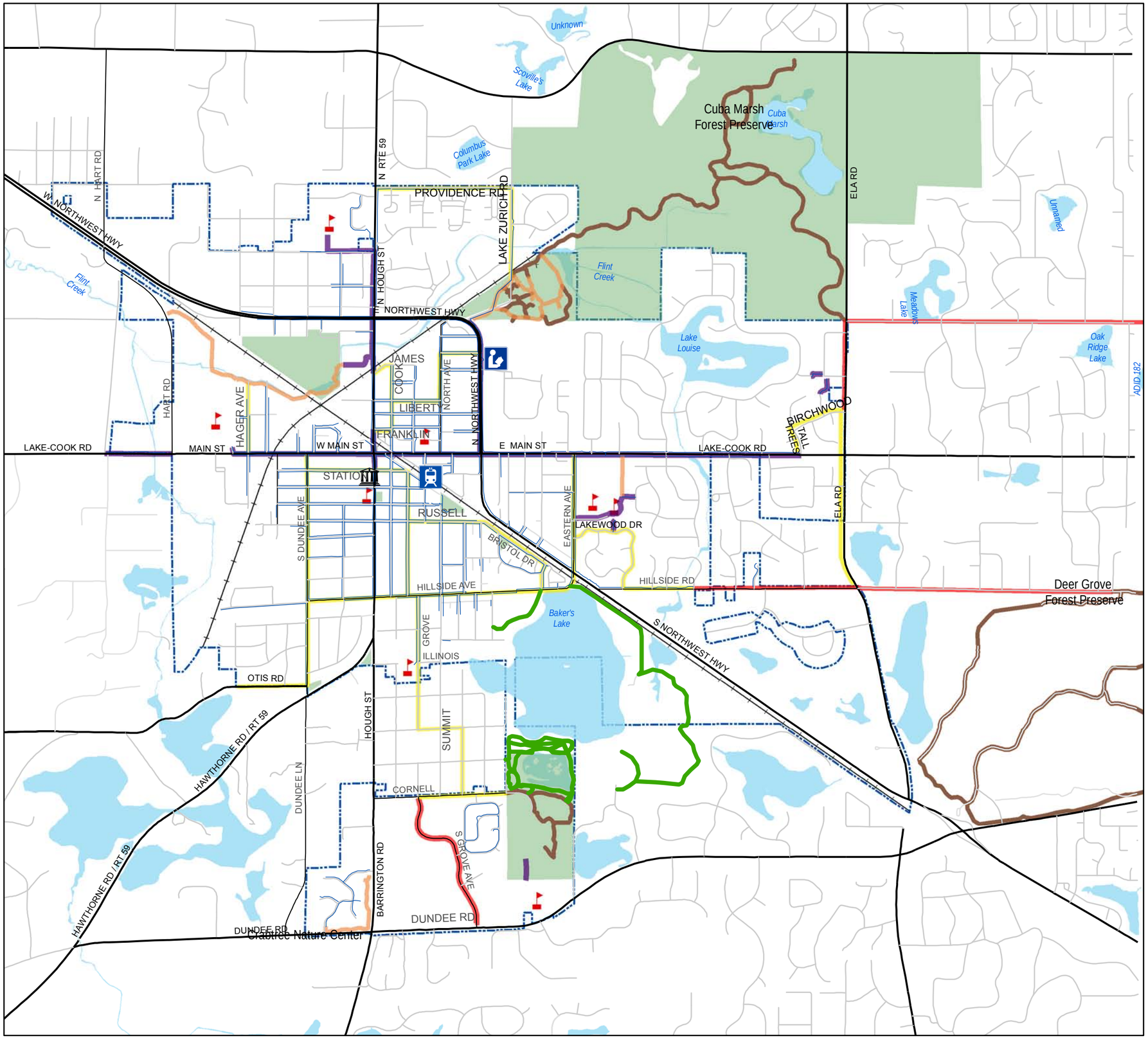
Appendix D: Bicycle Level of Service Calculations

Appendix E: Project Background Matrix

Appendix F: Existing Conditions Photos

Village of Barrington

Appendix A: Existing Facilities Map



Legend

- Sidewalks
- Hiking Trails
- Shared-Use Paths
- Bike Routes
- Bike Lanes
- Bike Trails
- Sidewalk Connector
- Schools
- Parks
- Water Areas
- Boundary
- Village Hall
- Barrington Library
- Metra Rail Station

*Please follow directions of all posted signage within the Village, Park District park or Forest Preserve.

Facility Definitions

1. Bicycle Lane: Pavement markings and signage designate at least four feet of on-street space solely for bicycle usage.

2. Bicycle Route: When there is not enough room for a bicycle lane, signage designates safe and continuous routes.

3. Shared-Use Path: Paved off-street facility for non-motorized vehicles, such as bicycles, and pedestrians.

4. Bike Trail: Non-paved off-street facility, which is widely used by bicyclists and pedestrians.

5. Hiking Trail: Grass or gravel off-street facility used by pedestrians.

Disclosure: Bikeways located outside of the Village of Barrington are maintained by others.

N W E S

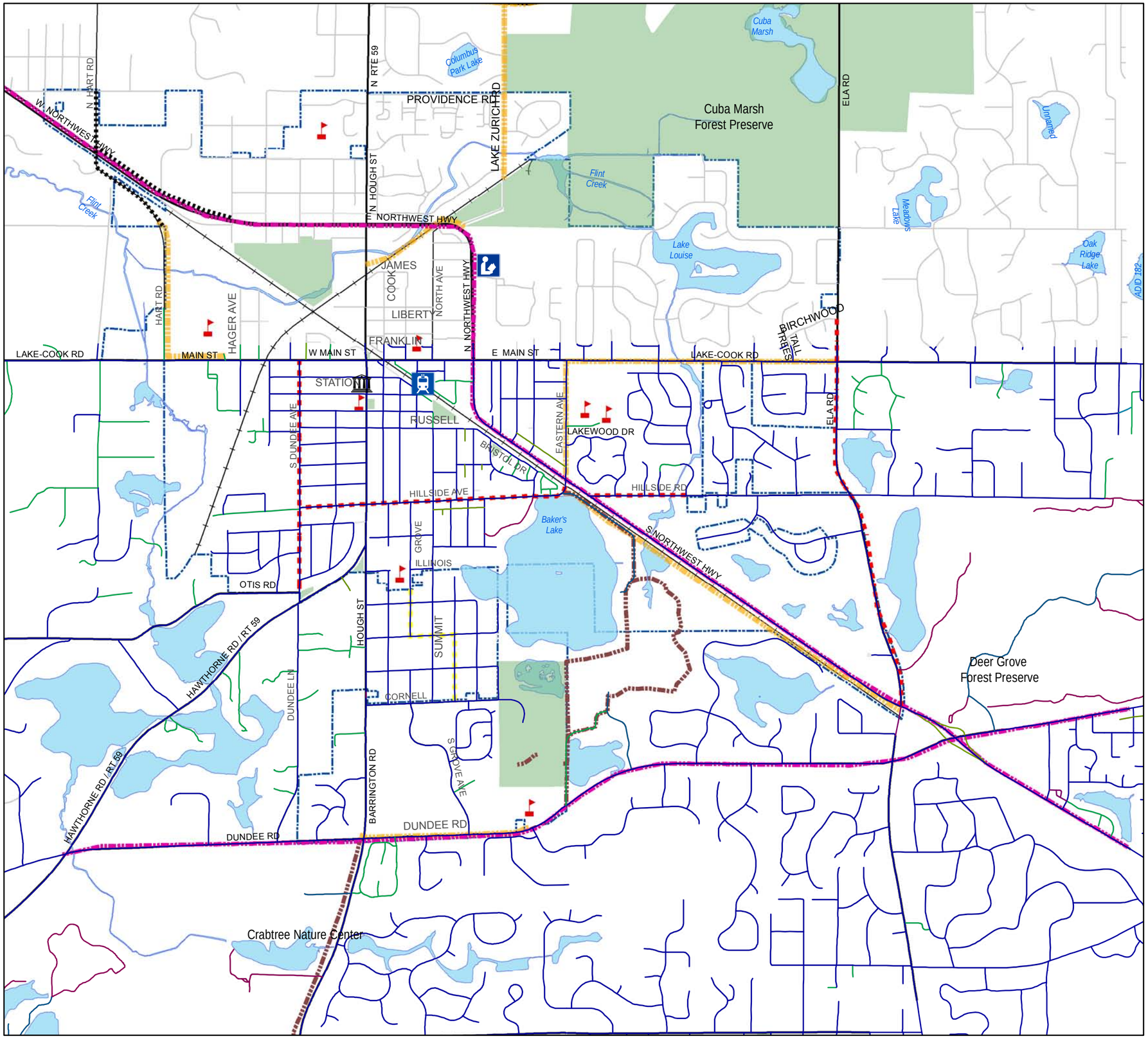
0 750 1,500 3,000 Feet

Projection:	NAD 1983 StatePlane Illinois East FIPS 1201 Feet
Source:	Barrington GIS, BAGIS, Cook County and Lake County
Date:	8/21/2012
Prepared by:	Village of Barrington Geographic Information Systems

Disclaimer of Liability: GIS maps and related data contained therein ("maps and data") made available by the Village of Barrington are intended for reference purposes only. The Village provides such maps and data AS IS without any implied or expressed warranties as to its accuracy and completeness. Such maps and data are believe to be accurate but accuracy is not in any way guaranteed and modifications are made to such maps and data on an ongoing basis as new information becomes available. Any use and/or application of such maps and data is done solely at the user's own risk.

Village of Barrington

Appendix B: Proposed Facilities Map



Legend

- Proposed Bike Routes
- Proposed Bike Lanes
- Proposed Shared-Use Path
- Proposed Bike Trails
- Proposed Sidewalk Connector
- Proposed NWMC Corridor
- Schools
- Village Hall
- Barrington Library
- Metra Rail Station
- Boundary

*The Northwest Municipal Conference (NWMC) Northwest Highway Corridor plan can be found on their website at www.nwmc-cog.org

Facility Definitions

1. Bicycle Lane: Pavement markings and signage designate at least four feet of on-street space solely for bicycle usage.

2. Bicycle Route: When there is not enough room for a bicycle lane, signage designates safe and continuous routes.

3. Shared-Use Path: Paved off-street facility for non-motorized vehicles, such as bicycles, and pedestrians.

4. Bike Trail: Non-paved off-street facility, which is widely used by bicyclists and pedestrians.

Disclosure: Bikeways located outside of the Village of Barrington are maintained by others.

N W E S

0 750 1,500 3,000 Feet

Projection:	NAD 1983 StatePlane Illinois East FIPS 1201 Feet
Source:	Barrington GIS, BAGIS, Cook County and Lake County
Date:	8/21/2012
Prepared by:	Village of Barrington Geographic Information Systems

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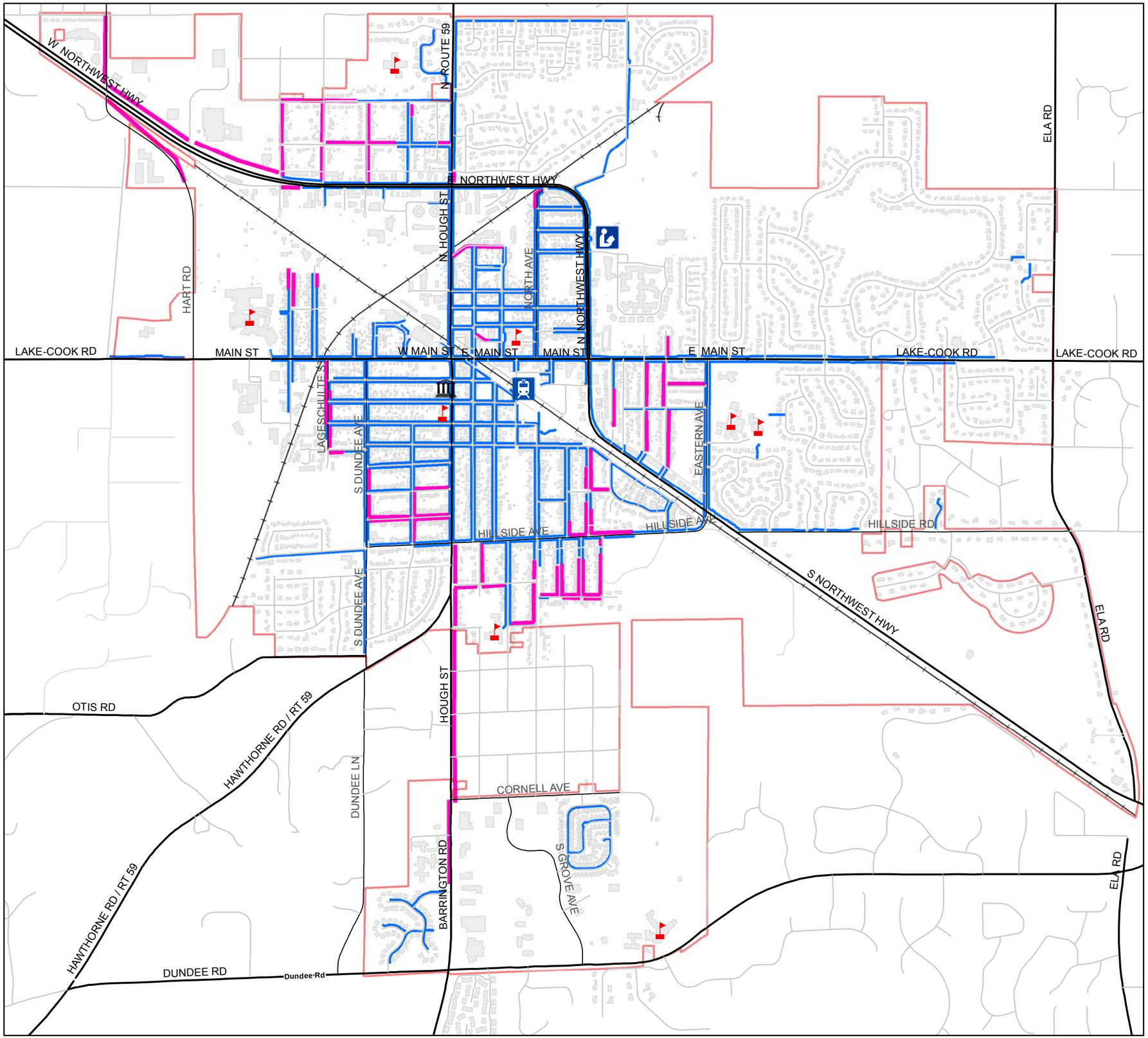

Village of Barrington

Appendix C: Master Sidewalk Plan

Legend

- Sidewalks - Existing
- Sidewalks - Proposed
- Building Footprints
- Railroad Tracks
- Schools
- Village Hall
- Barrington Library
- Metra Rail Station

*Note: Some intersections are more dangerous than others. Therefore, all pedestrians should use caution when crossing the street.If a full pedestrian crossing facility is nearby the pedestrian should cross there.

N W E S

0 500 1,000 2,000 Feet

Projection:	NAD 1983 StatePlane Illinois East FIPS 1201 Feet
Source:	Barrington GIS, BAGIS, Cook County and Lake County
Date:	9/12/2012
Prepared by:	Village of Barrington Geographic Information Systems

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Appendix D: Barrington Bicycle Level of Service Calculations

	Road Name	From	To	Lanes	Traffic Data: Volume ADT	Traffic Data: Volume Pk. Hr.	Traffic Data: Pk/Dly. Ratio	Traffic Data: Dir. Split	Traffic Data: Trucks HV	Speed limit	Width Of Pavement		% Occupied On-street Parking OSPA		Occ. Park.	Width Due to Vol.	Effec. Pvmt. Width	Pavement condition	BLOS Model Terms: Volume Term: Dir. Pk. 15 min. Vol.	BLOS Model Terms: Volume Term: Dir. Lanes	BLOS Model Terms: Volume Term: Outside Lane Vol.	BLOS Model Terms: Speed Term: Effe. Speed	BLOS Model Terms: Speed Term: Trans. Speed	BLOS Model Terms: Widh Effe. Width	BLOS Model Terms: Volume	BLOS Model Terms: Speed	BLOS Model Terms: Width
				#	ADT	Traffic	(Kd)	(D)	%	mph	ft	ft	N/EB	S/WB	(%)	(W_v)	(W_e)	1..5	(Vol_{15})	(L_n)	(Vol_{15}/L_n)	(SP_e)	(SP_t)	(W_e)	ln(Vol15/L_n)	S_t(1+10.38HV)^2	(W_e)^2
ID	Road Name	From	To	Ln	ADT				HV	Spd.	Wt	Wl	OSPA-N/E	OSPA-S/W				PCt									
1	Berry Rd	North	N Northwest Hwy	2	700	64	0.091	0.565	0.5	25	12.0	0.0	5	5	5	12.0	11.5	4.0	9	1	9	5	2.61	11.5	2.20	2.89	132.25
2	Birchwood Dr	N Ela Rd	Tall Trees Dr	2	270	25	0.091	0.565	0.5	25	13.5	0.0	0	0	0	13.5	13.5	5.0	3	1	3	5	2.61	13.5	1.24	2.89	182.25
3	Bristol Dr	S Prairie Ave	S Bristol Dr	2	570	52	0.091	0.565	0.5	25	14.0	0.0	0	0	0	14.0	14.0	4.0	7	1	7	5	2.61	14.0	1.99	2.89	196.00
4	Bristol Dr	S Bristol Dr	E Hillside Ave	2	730	66	0.091	0.565	0.5	25	13.5	0.0	0	0	0	13.5	13.5	4.0	9	1	9	5	2.61	13.5	2.24	2.89	182.25
5	N Cook St	James St	Victoria St	2	730	66	0.091	0.565	0.5	25	15.0	0.0	10	10	10	15.0	14.0	4.0	9	1	9	5	2.61	14.0	2.24	2.89	196.00
6	N Cook St	Victoria St	E Liberty St	2	730	66	0.091	0.565	0.5	25	15.0	0.0	10	10	10	15.0	14.0	4.0	9	1	9	5	2.61	14.0	2.24	2.89	196.00
7	N Cook St	E Liberty St	Washington St	2	730	66	0.091	0.565	0.5	25	15.0	0.0	0	0	0	15.0	15.0	4.0	9	1	9	5	2.61	15.0	2.24	2.89	225.00
8	N Cook St	Washington St	Franklin St	2	730	66	0.091	0.565	1.0	25	15.0	0.0	90	0	45	15.0	10.5	3.5	9	1	9	5	2.61	10.5	2.24	3.18	110.25
9	N Cook St	Franklin St	E Main St	2	730	66	0.091	0.565	1.0	25	14.0	7.0	10	80	45	14.0	14.7	3.5	9	1	9	5	2.61	14.7	2.24	3.18	216.09
10	S Cook St	E Main St	E Station St	2	1,300	118	0.091	0.565	2.0	25	22.5	9.0	80	80	80	22.5	17.1	4.0	17	1	17	5	2.61	17.1	2.82	3.81	292.41
11	S Cook St	E Station St	E Lake St	2	1,300	118	0.091	0.565	2.0	25	20.0	10.0	80	80	80	20.0	14.0	4.0	17	1	17	5	2.61	14.0	2.82	3.81	196.00
12	S Cook St	E Lake St	E Lincoln St	2	1,300	118	0.091	0.565	0.5	25	18.0	9.0	0	80	40	18.0	19.8	4.0	17	1	17	5	2.61	19.8	2.82	2.89	392.04
13	S Cook St	E Lincoln St	E Russell St	2	1,300	118	0.091	0.565	0.5	25	15.0	0.0	0	20	10	15.0	14.0	4.0	17	1	17	5	2.61	14.0	2.82	2.89	196.00
14	S Cook St	E Russell St	E Hillside Ave	2	1,300	118	0.091	0.565	0.5	25	15.0	0.0	0	20	10	15.0	14.0	4.0	17	1	17	5	2.61	14.0	2.82	2.89	196.00
15	S Cook St	E Hillside Ave	Wisconsin Ave	2	200	18	0.091	0.565	0.5	25	9.0	0.0	0	0	0	9.0	9.0	3.5	3	1	3	5	2.61	9.0	0.94	2.89	81.00
16	S Cook St	Wisconsin Ave	Dead End	2	200	18	0.091	0.565	0.5	25	9.0	0.0	0	0	0	9.0	9.0	3.5	3	1	3	5	2.61	9.0	0.94	2.89	81.00
17	Cornell Ave	S Barrington Rd	S Grove Ave	2	2,300	209	0.091	0.565	1.0	25	17.0	0.0	0	0	0	17.0	17.0	4.0	30	1	30	5	2.61	17.0	3.39	3.18	289.00
18	Cornell Ave	S Grove Ave	Rotary Dr	2	1,400	127	0.091	0.565	1.0	25	17.0	0.0	0	0	0	17.0	17.0	4.0	18	1	18	5	2.61	17.0	2.89	3.18	289.00
19	Cumnor Ave	Roslyn Rd	W Northwest Hwy	2	460	42	0.091	0.565	0.5	25	13.5	1.5	0	10	5	13.5	14.9	5.0	6	1	6	5	2.61	14.9	1.78	2.89	220.52
20	S Dundee Ave	W Main St	W Station St	2	6,100	555	0.091	0.565	1.0	25	16.0	0.0	0	0	0	16.0	16.0	4.5	78	1	78	5	2.61	16.0	4.36	3.18	256.00
21	S Dundee Ave	W Station St	W Lake St	2	6,100	555	0.091	0.565	1.0	25	15.0	0.0	0	0	0	15.0	15.0	4.5	78	1	78	5	2.61	15.0	4.36	3.18	225.00
22	S Dundee Ave	W Lake St	W Lincoln Ave	2	6,100	555	0.091	0.565	1.0	25	15.0	0.0	0	0	0	15.0	15.0	4.5	78	1	78	5	2.61	15.0	4.36	3.18	225.00
23	S Dundee Ave	W Lincoln Ave	W Russell St	2	6,100	555	0.091	0.565	1.0	25	15.0	0.0	0	0	0	15.0	15.0	4.5	78	1	78	5	2.61	15.0	4.36	3.18	225.00
24	S Dundee Ave	W Russell St	W Coolidge Ave	2	6,100	555	0.091	0.565	1.0	25	15.0	0.0	0	0	0	15.0	15.0	4.5	78	1	78	5	2.61	15.0	4.36	3.18	225.00
25	S Dundee Ave	W Coolidge Ave	Monument Ave	2	6,100	555	0.091	0.565	1.0	25	15.0	0.0	0	0	0	15.0	15.0	4.5	78	1	78	5	2.61	15.0	4.36	3.18	225.00
26	S Dundee Ave	Monument Ave	Sturtz St	2	6,100	555	0.091	0.565	1.0	25	15.0	0.0	0	0	0	15.0	15.0	4.5	78	1	78	5	2.61	15.0	4.36	3.18	225.00
27	S Dundee Ave	Sturtz St	W Hillside Ave	2	6,100	555	0.091	0.565	1.0	25	25.0	10.0	50	50	50	25.0	25.0	4.5	78	1	78	5	2.61	25.0	4.36	3.18	625.00
28	S Dundee Ave	W Hillside Ave	W Tower Rd	2	6,100	555	0.091	0.565	1.0	25	15.0	0.0	0	0	0	15.0	15.0	4.5	78	1	78	5	2.61	15.0	4.36	3.18	225.00
29	S Dundee Ave	W Tower Rd	Sunset Rd	2	6,100	555	0.091	0.565	1.0	25	15.0	0.0	0	0	0	15.0	15.0	4.5	78	1	78	5	2.61	15.0	4.36	3.18	225.00
30	S Dundee Ave	Sunset Rd	Otis Rd	2	6,100	555	0.091	0.565	1.0	25	15.0	0.0	0	0	0	15.0	15.0	4.5	78	1	78	5	2.61	15.0	4.36	3.18	225.00
31	Dundee Rd (68)	Dundee Ln	S Barrington Rd	2	9,800	892	0.091	0.565	3.0	55	15.0	3.0	0	0	0	15.0	18.0	4.0	126	1	126	35	4.79	18.0	4.84	8.24	324.00
32	Dundee Rd (68)	S Barrington Rd	S Grove Ave	2	15,100	1,374	0.091	0.565	3.0	55	10.0	0.0	0	0	0	10.0	10.0	4.0	194	1	194	35	4.79	10.0	5.27	8.24	100.00
33	Dundee Rd (68)	S Grove Ave	Carlisle Dr	2	15,100	1,374	0.091	0.565	3.0	45	13.0	0.0	0	0	0	13.0	13.0	4.0	194	1	194	25	4.42	13.0	5.27	7.59	169.00
34	Eastern Ave	E Main St	E Harriet Ln	2	2,400	218	0.091	0.565	1.0	25	12.0	0.0	0	0	0	12.0	12.0	4.0	31	1	31	5	2.61	12.0	3.43	3.18	144.00
35	Eastern Ave	E Harriet Ln	E Warwick Ave	2	2,400	218	0.091	0.565	1.0	25	18.0	0.0	0	30	15	18.0	16.5	4.0	31	1	31	5	2.61	16.5	3.43	3.18	272.25
36	Eastern Ave	E Warwick Ave	Lakewood Dr	2	2,400	218	0.091	0.565	1.0	25	18.0	0.0	0	30	15	18.0	16.5	4.0	31	1	31	5	2.61	16.5	3.43	3.18	272.25
37	Eastern Ave	Lakewood Dr	S Northwest Hwy	2	2,400	218	0.091	0.565	1.0	25	12.0	0.0	0	0	0	12.0	12.0	4.0	31	1	31	5	2.61	12.0	3.43	3.18	144.00
38	N Ela Rd	Long Grove Rd	Birchwood Dr	2	14,400	1,310	0.091	0.565	2.0	40	17.0	5.0	0	0	0	17.0	22.0	4.0	185	1	185	20	4.17	22.0	5.22	6.07	484.00
39	N Ela Rd	Birchwood Dr	E Main St	2	14,400	1,310	0.091	0.565	2.0	40	14.5	2.5	0	0	0	14.5	17.0	4.0	185	1	185	20	4.17	17.0	5.22	6.07	289.00
40	S Ela Rd	E Main St	E Hillside Rd	2	11,100	1,010	0.091	0.565	2.0	40	15.0	3.0	0	0	0	15.0	18.0	4.5	143	1	143	20	4.17	18.0	4.96	6.07	324.00
41	S Ela Rd	E Hillside Rd	S Northwest Hwy	2	11,100	1,010	0.091	0.565	2.0	40	15.0	3.0	0	0	0	15.0	18.0	4.5	143	1	143	20	4.17	18.0	4.96	6.07	324.00
42	Exmoor Ave	Roslyn Rd	W Northwest Hwy	2	380	35	0.091	0.565	0.5	25	10.0	0.0	0	0	0	10.0	10.0	4.0	5	1	5	5	2.61	10.0	1.59	2.89	100.00

Appendix D: Barrington Bicycle Level of Service Calculations

	Road Name	From	To	Lanes	Traffic Data: Volume ADT	Traffic Data: Volume Pk. Hr.	Traffic Data: Pk/Dly. Ratio	Traffic Data: Dir. Split	Traffic Data: Trucks HV	Speed limit	Width Of Pavement		% Occupied On-street Parking		Occ. Park.	Width Due	Effec. Pvmt.	Pavement condition	BLOS Model Terms: Volume Term: Dir. Pk. 15 min. Vol.	BLOS Model Terms: Volume Term: Dir. Lanes	BLOS Model Terms: Volume Term: Outside Lane Vol.	BLOS Model Terms: Speed Term: Effe. Speed	BLOS Model Terms: Speed Term: Trans. Speed	BLOS Model Terms: Widh Effe. Width	BLOS Model Terms: Volume	BLOS Model Terms: Speed	BLOS Model Terms: Width
				#	ADT	Pk. Hr. Traffic	Ratio (Kd)	Split (D)	HV %	SP_p mph	W_t ft	W_l ft	OSPA N/EB	OSPA S/WB	(OSPA) (%)	to Vol. (W_v)	Width (W_e)	PC_t 1..5	Vol $_{15}$)	(L_n)	(Vol $_{15}$/L_n)	(SP_e)	(SP_t)	(W_e)	ln(Vol15/L_n)	S_t(1+10.38HV)^2	(W_e)^2
43	Franklin St	N Hough St	N Cook St	2	1,200	109	0.091	0.565	2.0	25	22.0	7.0	0	85	43	22.0	23.1	4.0	15	1	15	5	2.61	23.1	2.74	3.81	531.30
44	S Grove Ave	E Station St	E Lake St	2	700	64	0.091	0.565	0.5	25	14.5	0.0	0	60	30	14.5	11.5	5.0	9	1	9	5	2.61	11.5	2.20	2.89	132.25
45	S Grove Ave	E Lake St	E Lincoln St	2	700	64	0.091	0.565	0.5	25	14.5	0.0	0	0	0	14.5	14.5	5.0	9	1	9	5	2.61	14.5	2.20	2.89	210.25
46	S Grove Ave	E Lincoln St	E Russell St	2	700	64	0.091	0.565	0.5	25	14.5	0.0	0	30	15	14.5	13.0	5.0	9	1	9	5	2.61	13.0	2.20	2.89	169.00
47	S Grove Ave	E Russell St	E Hillside Ave	2	700	64	0.091	0.565	0.5	25	14.5	0.0	15	10	13	14.5	13.3	3.5	9	1	9	5	2.61	13.3	2.20	2.89	175.56
48	S Grove Ave	E Hillside Ave	Illinois Ave	2	800	73	0.091	0.565	0.5	25	13.0	1.5	0	0	0	13.0	14.5	5.0	10	1	10	5	2.61	14.5	2.33	2.89	210.25
49	S Grove Ave	Cornell Ave	Dundee Rd (68)	2	1,700	155	0.091	0.565	1.0	25	14.0	5.0	0	0	0	14.0	19.0	4.0	22	1	22	5	2.61	19.0	3.08	3.18	361.00
50	N Hager Ave	Cul-de-sac	Laverne St	2	500	46	0.091	0.565	0.5	25	12.0	0.0	5	0	3	12.0	11.8	4.0	6	1	6	5	2.61	11.8	1.86	2.89	138.06
51	N Hager Ave	Laverne St	W Main St	2	500	46	0.091	0.565	0.5	25	12.0	0.0	10	0	5	12.0	11.5	4.0	6	1	6	5	2.61	11.5	1.86	2.89	132.25
52	Hart Rd	W Northwest Hwy	W Main St	2	9,500	865	0.091	0.565	2.0	40	19.0	7.0	0	0	0	19.0	26.0	3.5	122	1	122	20	4.17	26.0	4.80	6.07	676.00
53	W Hillside Ave	W Westwood Dr	Dundee Ave	2	400	36	0.091	0.565	0.5	25	15.0	0.0	0	0	0	15.0	15.0	4.5	5	1	5	5	2.61	15.0	1.64	2.89	225.00
54	W Hillside Ave	Dundee Ave	S Hough St	2	2,400	218	0.091	0.565	0.5	25	15.0	0.0	0	0	0	15.0	15.0	4.5	31	1	31	5	2.61	15.0	3.43	2.89	225.00
55	E Hillside Ave	S Hough St	S Grove Ave	2	2,400	218	0.091	0.565	0.5	25	15.0	0.0	0	0	0	15.0	15.0	3.5	31	1	31	5	2.61	15.0	3.43	2.89	225.00
56	E Hillside Ave	S Grove Ave	Highland Ave	2	2,400	218	0.091	0.565	0.5	25	15.0	0.0	0	0	0	15.0	15.0	5.0	31	1	31	5	2.61	15.0	3.43	2.89	225.00
57	E Hillside Ave	Highland Ave	S Bristol Dr	2	2,400	218	0.091	0.565	0.5	25	15.0	0.0	0	0	0	15.0	15.0	5.0	31	1	31	5	2.61	15.0	3.43	2.89	225.00
58	E Hillside Ave	S Bristol Dr	S Northwest Hwy	2	2,400	218	0.091	0.565	0.5	25	13.5	0.0	0	0	0	13.5	13.5	3.5	31	1	31	5	2.61	13.5	3.43	2.89	182.25
59	Hillside Rd	S Northwest Hwy	Fairfield Dr	2	2,100	191	0.091	0.565	0.5	25	14.5	0.0	0	0	0	14.5	14.5	3.5	27	1	27	5	2.61	14.5	3.30	2.89	210.25
60	Hillside Rd	Fairfield Dr	Grace Ln	2	2,100	191	0.091	0.565	0.5	25	14.5	0.0	0	0	0	14.5	14.5	3.5	27	1	27	5	2.61	14.5	3.30	2.89	210.25
61	Hillside Rd	Grace Ln	S Ela Rd	2	2,100	191	0.091	0.565	0.5	25	15.5	5.0	0	0	0	15.5	20.5	3.5	27	1	27	5	2.61	20.5	3.30	2.89	420.25
62	Illinois Ave	S Grove Ave	S Summit St	2	150	14	0.091	0.565	0.5	25	10.5	0.0	90	0	45	10.5	6.0	3.5	2	1	2	5	2.61	6.0	0.66	2.89	36.00
63	James St	N Hough St	N Cook St	2	380	35	0.091	0.565	1.0	25	16.0	0.0	0	80	40	16.0	12.0	3.5	5	1	5	5	2.61	12.0	1.59	3.18	144.00
64	James St	N Cook St	N Ela St	2	380	35	0.091	0.565	1.0	25	16.0	0.0	0	100	50	16.0	11.0	3.5	5	1	5	5	2.61	11.0	1.59	3.18	121.00
65	Lageschulte St	E Main St	W Station St	2	3,100	282	0.091	0.565	1.0	25	15.0	0.0	0	0	0	15.0	15.0	4.0	40	1	40	5	2.61	15.0	3.69	3.18	225.00
66	Lageschulte St	W Station St	W Lake St	2	3,100	282	0.091	0.565	1.0	25	15.0	0.0	0	90	45	15.0	10.5	4.0	40	1	40	5	2.61	10.5	3.69	3.18	110.25
67	Lageschulte St	W Lake St	W Lincoln Ave	2	3,100	282	0.091	0.565	1.0	25	15.0	0.0	0	75	38	15.0	11.3	3.5	40	1	40	5	2.61	11.3	3.69	3.18	126.56
68	Lageschulte St	W Lincoln Ave	W Russell St	2	3,100	282	0.091	0.565	1.0	25	15.0	0.0	0	0	0	15.0	15.0	4.0	40	1	40	5	2.61	15.0	3.69	3.18	225.00
69	Lageschulte St	W Russell St	Dead End	2	3,100	282	0.091	0.565	1.0	25	15.0	0.0	0	0	0	15.0	15.0	4.0	40	1	40	5	2.61	15.0	3.69	3.18	225.00
70	Lake Zurich Rd	N Northwest Hwy	RxR	2	2,400	218	0.091	0.565	1.0	25	12.0	0.0	0	0	0	12.0	12.0	4.5	31	1	31	5	2.61	12.0	3.43	3.18	144.00
71	Lake Zurich Rd	RxR	Providence Rd	2	2,400	218	0.091	0.565	1.0	25	15.0	3.0	0	0	0	15.0	18.0	4.0	31	1	31	5	2.61	18.0	3.43	3.18	324.00
72	Lake Zurich Rd	Providence Rd	W Cuba Rd	2	2,400	218	0.091	0.565	1.0	30	15.0	3.0	0	0	0	15.0	18.0	3.5	31	1	31	10	3.39	18.0	3.43	4.13	324.00
73	Lakewood Dr	Eastern Ave	E Hillside Rd	2	310	28	0.091	0.565	0.5	25	13.5	0.0	0	0	0	13.5	13.5	4.5	4	1	4	5	2.61	13.5	1.38	2.89	182.25
74	W Liberty St	Dead End	N Hough St	2	500	46	0.091	0.565	1.0	25	15.0	0.0	0	0	0	15.0	15.0	3.0	6	1	6	5	2.61	15.0	1.86	3.18	225.00
75	E Liberty St	N Hough St	N Cook St	2	500	46	0.091	0.565	0.5	25	15.0	7.0	0	0	0	15.0	22.0	4.0	6	1	6	5	2.61	22.0	1.86	2.89	484.00
76	E Liberty St	N Cook St	North Ave	2	500	46	0.091	0.565	0.5	25	15.0	7.0	10	10	10	15.0	20.6	4.0	6	1	6	5	2.61	20.6	1.86	2.89	424.36
77	Lions Dr	N Hough St	Park Dist.	2	1,400	127	0.091	0.565	2.0	25	16.0	0.0	0	0	0	16.0	16.0	4.0	18	1	18	5	2.61	16.0	2.89	3.81	256.00
78	North Ave	E Northwest Hwy	Berry Rd	2	1,100	100	0.091	0.565	0.5	25	15.0	7.0	10	10	10	15.0	20.6	4.0	14	1	14	5	2.61	20.6	2.65	2.89	424.36
79	North Ave	Berry Rd	Washington St	2	1,100	100	0.091	0.565	0.5	25	15.0	7.0	10	10	10	15.0	20.6	4.0	14	1	14	5	2.61	20.6	2.65	2.89	424.36
80	North Ave	Washington St	E Main St	2	1,100	100	0.091	0.565	0.5	25	15.0	7.0	30	60	45	15.0	15.7	4.0	14	1	14	5	2.61	15.7	2.65	2.89	246.49
81	Otis	Country	Dundee	2	700	64	0.091	0.565	0.5	25	10.0	0.0	0	0	0	10.0	10.0	3.0	9	1	9	5	2.61	10.0	2.20	2.89	100.00
82	Prospect Ave	Roslyn Rd	Waverly Rd	2	500	46	0.091	0.565	0.5	25	10.0	0.0	0	0	0	10.0	10.0	4.0	6	1	6	5	2.61	10.0	1.86	2.89	100.00
83	Prospect Ave	Waverly Rd	W Northwest Hwy	2	500	46	0.091	0.565	0.5	25	10.0	0.0	5	5	5	10.0	9.5	4.0	6	1	6	5	2.61	9.5	1.86	2.89	90.25
84	Providence Rd	N Hough St	N Lake Zurich Rd	2	460	42	0.091	0.565	0.5	25	15.0	0.0	0	0	0	15.0	15.0	4.5	6	1	6	5	2.61	15.0	1.78	2.89	225.00
85	Roslyn Rd	Cumnor Ave	Bryant Ave	2	840	76	0.091	0.565	0.5	25	11.0	0.0	0	0	0	11.0	11.0	4.0	11	1	11	5	2.61	11.0	2.38	2.89	121.00

Appendix D: Barrington Bicycle Level of Service Calculations

	Road Name	From	To	Lanes	Traffic Data: Volume ADT	Traffic Data: Volume Pk. Hr.	Traffic Data: Pk/Dly. Ratio	Traffic Data: Dir. Split	Traffic Data: Trucks HV	Speed limit	Width Of Pavement		% Occupied On-street Parking		Occ. Park.	Width Due	Effec. Pvmt.	Pavement condition	BLOS Model Terms: Volume Term: Dir. Pk. 15 min. Vol.	BLOS Model Terms: Volume Term: Dir. Lanes	BLOS Model Terms: Volume Term: Outside Lane Vol.	BLOS Model Terms: Speed Term: Effe. Speed	BLOS Model Terms: Speed Term: Trans. Speed	BLOS Model Terms: Widh Effe. Width	BLOS Model Terms: Volume	BLOS Model Terms: Speed	BLOS Model Terms: Width
				#	ADT	Pk. Hr. Traffic	Ratio (Kd)	Split (D)	HV %	SP_p mph	W_t ft	W_l ft	OSPA N/EB	OSPA S/WB	(OSPA) (%)	to Vol. (W_v)	Width (W_e)	PC_t 1..5	Vol $_{15}$)	(L_n)	(Vol $_{15}$/L_n)	(SP_e)	(SP_t)	(W_e)	ln(Vol15/L_n)	S_t(1+10.38HV)^2	(W_e)^2
86	Roslyn Rd	Bryant Ave	N Hough St	2	840	76	0.091	0.565	0.5	25	10.0	0.0	0	0	0	10.0	10.0	4.0	11	1	11	5	2.61	10.0	2.38	2.89	100.00
87	W Russell St	Dead End	S Dundee Ave	2	510	46	0.091	0.565	0.5	25	14.5	0.0	0	0	0	14.5	14.5	4.5	7	1	7	5	2.61	14.5	1.88	2.89	210.25
88	W Russell St	S Dundee Ave	S Hough St	2	510	46	0.091	0.565	0.5	25	14.5	0.0	5	0	3	14.5	14.3	4.0	7	1	7	5	2.61	14.3	1.88	2.89	203.06
89	E Russell St	S Hough St	S Grove Ave	2	940	86	0.091	0.565	0.5	25	14.5	0.0	0	0	0	14.5	14.5	4.0	12	1	12	5	2.61	14.5	2.49	2.89	210.25
90	E Russell St	S Grove Ave	S Prairie Ave	2	940	86	0.091	0.565	0.5	25	14.5	0.0	0	0	0	14.5	14.5	4.0	12	1	12	5	2.61	14.5	2.49	2.89	210.25
91	W Station St	Lageschulte St	Dundee Ave	2	770	70	0.091	0.565	1.0	25	14.0	0.0	0	0	0	14.0	14.0	4.0	10	1	10	5	2.61	14.0	2.29	3.18	196.00
92	W Station St	S Dundee Ave	S Hough St	2	770	70	0.091	0.565	1.0	25	15.0	0.0	40	40	40	15.0	11.0	4.0	10	1	10	5	2.61	11.0	2.29	3.18	121.00
93	E Station St	S Hough St	S Grove Ave	2	2,100	191	0.091	0.565	2.0	25	11.0	14.0	90	90	90	11.0	-0.2	4.5	27	1	27	5	2.61	-0.2	3.30	3.81	0.04
94	S Summit St	E Lincoln Ave	E Russell St	2	600	55	0.091	0.565	0.5	25	12.0	0.0	0	0	0	12.0	12.0	3.0	8	1	8	5	2.61	12.0	2.04	2.89	144.00
95	S Summit St	E Russell St	E Hillside Ave	2	600	55	0.091	0.565	0.5	25	12.0	0.0	20	50	35	12.0	8.5	4.5	8	1	8	5	2.61	8.5	2.04	2.89	72.25
96	S Summit St	E Hillside Ave	Illinois Ave	2	1,300	118	0.091	0.565	0.5	25	12.0	1.5	0	0	0	12.0	13.5	4.5	17	1	17	5	2.61	13.5	2.82	2.89	182.25
97	Tall Trees Dr	Birchwood Dr	E Main St	2	380	35	0.091	0.565	0.5	25	13.5	0.0	0	0	0	13.5	13.5	5.0	5	1	5	5	2.61	13.5	1.59	2.89	182.25
98	Valencia Ave	North Ave	N Northwest Hwy	2	120	11	0.091	0.565	0.5	25	12.0	0.0	10	10	10	12.0	11.0	3.5	2	1	2	5	2.61	11.0	0.43	2.89	121.00
99	Waverly Rd	Cumnor Ave	Bryant Ave	2	540	49	0.091	0.565	0.5	25	9.5	0.0	0	0	0	9.5	9.5	4.0	7	1	7	5	2.61	9.5	1.94	2.89	90.25
100	Waverly Rd	Bryant Ave	N Hough St	2	540	49	0.091	0.565	0.5	25	9.5	0.0	0	0	0	9.5	9.5	4.0	7	1	7	5	2.61	9.5	1.94	2.89	90.25
101	S Barrington Rd	Rt 59	Cornell Ave	2	12,800	1,165	0.091	0.565	3.0	35	12.0	0.0	0	0	0	12.0	12.0	4.0	165	1	165	15	3.84	12.0	5.10	6.61	144.00
102	S Barrington Rd	Cornell Ave	Dundee Rd (68)	2	12,800	1,165	0.091	0.565	3.0	40	12.0	0.0	0	0	0	12.0	12.0	3.5	165	1	165	20	4.17	12.0	5.10	7.16	144.00
103	N Hough St	Providence Rd	W Northwest Hwy	2	17,100	1,556	0.091	0.565	4.0	35	14.0	3.0	0	0	0	14.0	17.0	4.5	220	1	220	15	3.84	17.0	5.39	7.70	289.00
104	N Hough St	W Northwest Hwy	RxR	2	18,500	1,684	0.091	0.565	4.0	30	11.0	0.0	0	0	0	11.0	11.0	4.5	238	1	238	10	3.39	11.0	5.47	6.79	121.00
105	N Hough St	RxR	E Liberty St	2	18,500	1,684	0.091	0.565	4.0	30	12.0	0.0	0	0	0	12.0	12.0	4.5	238	1	238	10	3.39	12.0	5.47	6.79	144.00
106	N Hough St	E Liberty St	E Main St	2	18,500	1,684	0.091	0.565	4.0	25	12.0	0.0	0	0	0	12.0	12.0	4.0	238	1	238	5	2.61	12.0	5.47	5.23	144.00
107	S Hough St	E Main St	E Station St	2	17,000	1,547	0.091	0.565	6.0	25	14.0	0.0	0	0	0	14.0	14.0	4.0	219	1	219	5	2.61	14.0	5.39	6.88	196.00
108	S Hough St	E Station St	E Russell St	2	17,000	1,547	0.091	0.565	6.0	25	14.0	0.0	0	0	0	14.0	14.0	4.5	219	1	219	5	2.61	14.0	5.39	6.88	196.00
109	S Hough St	E Russell St	Hillside Ave	2	17,000	1,547	0.091	0.565	6.0	25	14.0	0.0	0	0	0	14.0	14.0	4.5	219	1	219	5	2.61	14.0	5.39	6.88	196.00
110	S Hough St	Hillside Ave	Rt 59	2	17,000	1,547	0.091	0.565	6.0	35	13.0	0.0	0	0	0	13.0	13.0	4.5	219	1	219	15	3.84	13.0	5.39	10.12	169.00
111	W Northwest Hwy	Hart Rd	Cumnor Ave	4	28,600	2,603	0.091	0.565	8.5	45	14.0	0.0	0	0	0	14.0	14.0	3.5	368	2	184	25	4.42	14.0	5.21	15.64	196.00
112	W Northwest Hwy	Cumnor Ave	N Hough St	4	28,600	2,603	0.091	0.565	8.5	35	14.0	0.0	0	0	0	14.0	14.0	3.5	368	2	184	15	3.84	14.0	5.21	13.62	196.00
113	E Northwest Hwy	N Hough St	Lake Zurich Rd	4	28,000	2,548	0.091	0.565	5.0	35	14.0	0.0	0	0	0	14.0	14.0	3.5	360	2	180	15	3.84	14.0	5.19	8.87	196.00
114	N Northwest Hwy	Lake Zurich Rd	Berry Rd	4	28,000	2,548	0.091	0.565	5.0	35	14.0	0.0	0	0	0	14.0	14.0	3.5	360	2	180	15	3.84	14.0	5.19	8.87	196.00
115	N Northwest Hwy	Berry Rd	E Main St	4	28,000	2,548	0.091	0.565	5.0	35	14.0	0.0	0	0	0	14.0	14.0	3.5	360	2	180	15	3.84	14.0	5.19	8.87	196.00
116	S Northwest Hwy	E Main St	George St	4	23,200	2,111	0.091	0.565	4.0	35	14.0	0.0	0	0	0	14.0	14.0	4.5	298	2	149	15	3.84	14.0	5.00	7.70	196.00
117	S Northwest Hwy	George St	Eastern Ave	4	23,200	2,111	0.091	0.565	4.0	35	14.0	0.0	0	0	0	14.0	14.0	4.5	298	2	149	15	3.84	14.0	5.00	7.70	196.00
118	S Northwest Hwy	Eastern Ave	Hillside Rd	4	23,200	2,111	0.091	0.565	4.0	40	14.0	0.0	0	0	0	14.0	14.0	4.5	298	2	149	20	4.17	14.0	5.00	8.34	196.00
119	S Northwest Hwy	Hillside Rd	Ela Rd	4	23,200	2,111	0.091	0.565	4.0	45	15.0	0.0	0	0	0	15.0	15.0	4.5	298	2	149	25	4.42	15.0	5.00	8.84	225.00
120	S Northwest Hwy	Ela Rd	Dundee Rd (68)	4	23,200	2,111	0.091	0.565	4.0	45	20.0	7.0	0	0	0	20.0	27.0	3.5	298	2	149	25	4.42	27.0	5.00	8.84	729.00
121	W Main St	Hart Rd	Hager Ave	2	10,700	974	0.091	0.565	3.0	30	12.0	0.0	0	0	0	12.0	12.0	4.5	138	1	138	10	3.39	12.0	4.92	5.83	144.00
122	W Main St	Hager Ave	Lageschulte St	2	10,700	974	0.091	0.565	3.0	25	15.0	0.0	0	0	0	15.0	15.0	4.5	138	1	138	5	2.61	15.0	4.92	4.49	225.00
123	W Main St	Lageschulte St	S Dundee Ave	2	10,700	974	0.091	0.565	3.0	25	14.0	0.0	0	0	0	14.0	14.0	4.5	138	1	138	5	2.61	14.0	4.92	4.49	196.00
124	W Main St	S Dundee Ave	S Hough St	4	13,300	1,210	0.091	0.565	3.0	25	10.0	0.0	50	0	25	10.0	7.5	4.5	171	2	85	5	2.61	7.5	4.45	4.49	56.25
125	E Main St	S Hough St	S Cook St	4	13,500	1,229	0.091	0.565	3.0	25	10.0	0.0	80	80	80	10.0	2.0	4.5	174	2	87	5	2.61	2.0	4.46	4.49	4.00
126	E Main St	S Cook St	Ela St	2	13,500	1,229	0.091	0.565	3.0	25	22.0	10.0	50	60	55	22.0	21.0	4.5	174	1	174	5	2.61	21.0	5.16	4.49	441.00
127	E Main St	Ela St	North Ave	2	13,500	1,229	0.091	0.565	3.0	25	20.0	8.0	40	40	40	20.0	21.6	4.5	174	1	174	5	2.61	21.6	5.16	4.49	466.56
128	E Main St	North Ave	S Northwest Hwy	2	13,500	1,229	0.091	0.565	3.0	25	20.0	8.0	60	0	30	20.0	23.2	4.5	174	1	174	5	2.61	23.2	5.16	4.49	538.24

Appendix D: Barrington Bicycle Level of Service Calculations

	Road Name	From	To	Lanes	Traffic Data: Volume ADT	Traffic Data: Volume Pk. Hr. Traffic	Traffic Data: Pk/Dly. Ratio (Kd)	Traffic Data: Dir. Split (D)	Traffic Data: Trucks HV %	Speed limit SP_p mph	Width Of Pavement W_t ft	Width Of Pavement W_l ft	% Occupied On-street Parking OSPA N/EB	% Occupied On-street Parking OSPA S/WB	Occ. Park. (OSPA) (%)	Width Due to Vol. (W_v)	Effec. Pvmt. Width (W_e)	Pavement condition PC_t 1..5	BLOS Model Terms: Volume Term: Dir. Pk. 15 min. Vol. (Vol_{15})	BLOS Model Terms: Volume Term: Dir. Lanes (L_n)	BLOS Model Terms: Volume Term: Outside Lane Vol. (Vol_{15}/L_n)	BLOS Model Terms: Speed Term: Effe. Speed (SP_e)	BLOS Model Terms: Speed Term: Trans. Speed (SP_t)	BLOS Model Terms: Widh Effe. Width (W_e)	BLOS Model Terms: Volume ln($Vol15/L_n$)	BLOS Model Terms: Speed S_t(1+10.38HV)^2	BLOS Model Terms: Width (W_e)^2
129	E Main St	S Northwest Hwy	Eastern Ave	2	15,700	1,429	0.091	0.565	3.0	35	13.0	0.0	0	0	0	13.0	13.0	4.0	202	1	202	15	3.84	13.0	5.31	6.61	169.00
130	E Main St	Eastern Ave	S Valley Rd	2	15,700	1,429	0.091	0.565	3.0	35	15.0	2.0	0	0	0	15.0	17.0	4.5	202	1	202	15	3.84	17.0	5.31	6.61	289.00
131	E Main St	S Valley Rd	Tall Trees Dr	2	15,700	1,429	0.091	0.565	3.0	35	15.0	2.5	0	0	0	15.0	17.5	4.5	202	1	202	15	3.84	17.5	5.31	6.61	306.25
132	E Main St	Tall Trees Rd	Ela Rd	2	15,700	1,429	0.091	0.565	3.0	40	16.0	2.5	0	0	0	16.0	18.5	4.5	202	1	202	20	4.17	18.5	5.31	7.16	342.25

Enter values in the white fields - grey fields are constants or calculations.

Lane # is total number of lanes on the road

ADT is the average daily trips made by vehicles, or traffic counts

HV % is the percent of heavy vehicles which use the road. These numbers came from IDOT or a standard for smaller streets was used

Wt is pavement width from center line to edge (including parking and shoulders); **Wl** is pavement width of striped parking or paved shoulders.

% On-street Parking is the average percentage of occupied on-street parking spaces

Pavement Condition is a 1-5 rating scale developed by FHWA. More information can be found on their website: http://www.fhwa.dot.gov/policy/1999cpr/ch_03/cpm03_3.htm

BLOS ranges: 1.50 and below = A, 1.51-2.50 = B, 2.51-3.50 = C, 3.51-4.50 = D, 4.51-5.50 = E, over 5.50 = F

Note: This calculation agrees with the web-based form at www.bikelib.org/roads/blos/losform.htm, but be careful that Wt here is the sum of the two width terms on the form.

	Raw BLOS	Existing Bicycle LOS	
Pvmt. (PF)^2	Score	Score	Grade A..F
		BLOS	BLOS grade
0.0625	2.23	**2.23**	**B**
0.0400	1.34	**1.34**	**A**
0.0625	1.81	**1.81**	**B**
0.0625	2.00	**2.00**	**B**
0.0625	1.93	**1.93**	**B**
0.0625	1.93	**1.93**	**B**
0.0625	1.79	**1.79**	**B**
0.0816	2.55	**2.55**	**C**
0.0816	2.02	**2.02**	**B**
0.0625	1.93	**1.93**	**B**
0.0625	2.41	**2.41**	**B**
0.0625	1.24	**1.24**	**A**
0.0625	2.22	**2.22**	**B**
0.0625	2.22	**2.22**	**B**
0.0816	1.99	**1.99**	**B**
0.0816	1.99	**1.99**	**B**
0.0625	2.11	**2.11**	**B**
0.0625	1.86	**1.86**	**B**
0.0400	1.42	**1.42**	**A**
0.0494	2.67	**2.67**	**C**
0.0494	2.83	**2.83**	**C**
0.0494	2.83	**2.83**	**C**
0.0494	2.83	**2.83**	**C**
0.0494	2.83	**2.83**	**C**
0.0494	2.83	**2.83**	**C**
0.0494	2.83	**2.83**	**C**
0.0494	0.83	**0.83**	**A**
0.0494	2.83	**2.83**	**C**
0.0494	2.83	**2.83**	**C**
0.0494	2.83	**2.83**	**C**
0.0625	3.67	**3.67**	**D**
0.0625	5.01	**5.01**	**E**
0.0625	4.54	**4.54**	**E**
0.0625	2.85	**2.85**	**C**
0.0625	2.21	**2.21**	**B**
0.0625	2.21	**2.21**	**B**
0.0625	2.85	**2.85**	**C**
0.0625	2.64	**2.64**	**C**
0.0625	3.61	**3.61**	**D**
0.0494	3.21	**3.21**	**C**
0.0494	3.21	**3.21**	**C**
0.0625	2.08	**2.08**	**B**

Appendix D: Barrington Bicycle Level of Service Calculations

	Raw BLOS	Existing Bicycle LOS	
Pvmt. (PF)^2	Score	Score	Grade A..F
0.0625	0.69	**0.69**	**A**
0.0400	2.07	**2.07**	**B**
0.0400	1.68	**1.68**	**B**
0.0400	1.89	**1.89**	**B**
0.0816	2.15	**2.15**	**B**
0.0400	1.75	**1.75**	**B**
0.0625	1.59	**1.59**	**B**
0.0625	2.03	**2.03**	**B**
0.0625	2.06	**2.06**	**B**
0.0816	1.60	**1.60**	**B**
0.0494	1.39	**1.39**	**A**
0.0494	2.30	**2.30**	**B**
0.0816	2.53	**2.53**	**C**
0.0400	2.23	**2.23**	**B**
0.0400	2.23	**2.23**	**B**
0.0816	2.74	**2.74**	**C**
0.0816	2.53	**2.53**	**C**
0.0816	2.53	**2.53**	**C**
0.0816	1.48	**1.48**	**A**
0.0816	2.06	**2.06**	**B**
0.0816	2.05	**2.05**	**B**
0.0816	2.17	**2.17**	**B**
0.0625	2.58	**2.58**	**C**
0.0625	3.15	**3.15**	**C**
0.0816	3.21	**3.21**	**C**
0.0625	2.58	**2.58**	**C**
0.0625	2.58	**2.58**	**C**
0.0494	2.76	**2.76**	**C**
0.0625	1.95	**1.95**	**B**
0.0816	2.28	**2.28**	**B**
0.0494	1.47	**1.47**	**A**
0.1111	2.00	**2.00**	**B**
0.0625	0.30	**0.30**	**A**
0.0625	0.60	**0.60**	**A**
0.0625	2.15	**2.15**	**B**
0.0625	1.00	**1.00**	**A**
0.0625	1.00	**1.00**	**A**
0.0625	1.89	**1.89**	**B**
0.1111	2.73	**2.73**	**C**
0.0625	2.22	**2.22**	**B**
0.0625	2.27	**2.27**	**B**
0.0494	1.46	**1.46**	**A**
0.0625	2.38	**2.38**	**B**

	Raw BLOS	Existing Bicycle LOS	
Pvmt. (PF)^2	Score	Score	Grade A..F
0.0625	2.48	**2.48**	**B**
0.0494	1.59	**1.59**	**B**
0.0625	1.71	**1.71**	**B**
0.0625	1.99	**1.99**	**B**
0.0625	1.99	**1.99**	**B**
0.0625	2.02	**2.02**	**B**
0.0625	2.39	**2.39**	**B**
0.0494	3.54	**3.54**	**D**
0.1111	2.44	**2.44**	**B**
0.0494	2.36	**2.36**	**B**
0.0494	2.20	**2.20**	**B**
0.0400	1.51	**1.51**	**B**
0.0816	1.53	**1.53**	**B**
0.0625	2.31	**2.31**	**B**
0.0625	2.31	**2.31**	**B**
0.0625	4.38	**4.38**	**D**
0.0816	4.63	**4.63**	**E**
0.0494	3.93	**3.93**	**D**
0.0494	4.63	**4.63**	**E**
0.0494	4.51	**4.51**	**E**
0.0625	4.30	**4.30**	**D**
0.0625	4.32	**4.32**	**D**
0.0494	4.23	**4.23**	**D**
0.0494	4.23	**4.23**	**D**
0.0494	5.01	**5.01**	**E**
0.0816	6.11	**6.11**	**F**
0.0816	5.71	**5.71**	**F**
0.0816	4.75	**4.75**	**E**
0.0816	4.75	**4.75**	**E**
0.0816	4.75	**4.75**	**E**
0.0494	4.20	**4.20**	**D**
0.0494	4.20	**4.20**	**D**
0.0494	4.33	**4.33**	**D**
0.0494	4.28	**4.28**	**D**
0.0816	1.99	**1.99**	**B**
0.0494	4.05	**4.05**	**D**
0.0494	3.37	**3.37**	**C**
0.0494	3.52	**3.52**	**D**
0.0494	3.98	**3.98**	**D**
0.0494	4.25	**4.25**	**D**
0.0494	2.41	**2.41**	**B**
0.0494	2.28	**2.28**	**B**
0.0494	1.93	**1.93**	**B**

Appendix D: Barrington Bicycle Level of Service Calculations

	Raw BLOS	Existing Bicycle LOS	
Pvmt. (PF)^2	Score	Score	Grade A..F
0.0625	4.36	**4.36**	**D**
0.0494	3.67	**3.67**	**D**
0.0494	3.58	**3.58**	**D**
0.0494	3.51	**3.51**	**D**

Appendix D: Barrington Bicycle Level of Service Calculations

	Road Name	From	To	Lanes	Traffic Data		Speed limit	Width Of Pavement		% Occupied On-street Parking		Pavement condition	Future BLOS		Existing BLOS		Difference BLOS
					Volume	Trucks											
					ADT	HV	SP_p	W_t	W_l	OSPA		PC_t	Score	Grade	Score	Grade	Score
				#	ADT	%	mph	ft	ft	N/EB	S/WB	1..5		A..F		A..F	
ID	Road Name	From	To	Ln	ADT	HV	Spd.	Wt	Wl	OSPA-N/E	OSPA-S/W	PCt	BLOS	BLOS grade	BLOS	BLOS grade	BLOS
1	Berry Rd	North	N Northwest Hwy	2	700	0.5	25	12.0	0.0	5	5	4.0	2.23	B	2.23	B	0.00
2	Birchwood Dr	N Ela Rd	Tall Trees Dr	2	270	0.5	25	13.5	0.0	0	0	5.0	1.34	A	1.34	A	0.00
3	Bristol Dr	S Prairie Ave	S Bristol Dr	2	570	0.5	25	14.0	0.0	0	0	4.0	1.81	B	1.81	B	0.00
4	Bristol Dr	S Bristol Dr	E Hillside Ave	2	730	0.5	25	13.5	0.0	0	0	4.0	2.00	B	2.00	B	0.00
5	N Cook St	James St	Victoria St	2	730	0.5	25	15.0	0.0	10	10	4.0	1.93	B	1.93	B	0.00
6	N Cook St	Victoria St	E Liberty St	2	730	0.5	25	15.0	0.0	10	10	4.0	1.93	B	1.93	B	0.00
7	N Cook St	E Liberty St	Washington St	2	730	0.5	25	15.0	0.0	0	0	4.0	1.79	B	1.79	B	0.00
8	N Cook St	Washington St	Franklin St	2	730	1.0	25	15.0	0.0	90	0	3.5	2.55	C	2.55	C	0.00
9	N Cook St	Franklin St	E Main St	2	730	1.0	25	14.0	7.0	10	80	3.5	2.02	B	2.02	B	0.00
10	S Cook St	E Main St	E Station St	2	1,300	2.0	25	22.5	9.0	80	80	4.0	1.93	B	1.93	B	0.00
11	S Cook St	E Station St	E Lake St	2	1,300	2.0	25	20.0	10.0	80	80	4.0	2.41	B	2.41	B	0.00
12	S Cook St	E Lake St	E Lincoln St	2	1,300	0.5	25	18.0	9.0	0	80	4.0	1.24	A	1.24	A	0.00
13	S Cook St	E Lincoln St	E Russell St	2	1,300	0.5	25	15.0	0.0	0	20	4.0	2.22	B	2.22	B	0.00
14	S Cook St	E Russell St	E Hillside Ave	2	1,300	0.5	25	15.0	0.0	0	20	4.0	2.22	B	2.22	B	0.00
15	S Cook St	E Hillside Ave	Wisconsin Ave	2	200	0.5	25	9.0	0.0	0	0	3.5	1.99	B	1.99	B	0.00
16	S Cook St	Wisconsin Ave	Dead End	2	200	0.5	25	9.0	0.0	0	0	3.5	1.99	B	1.99	B	0.00
17	Cornell Ave	S Barrington Rd	S Grove Ave	2	2,300	1.0	25	17.0	0.0	0	0	4.0	2.11	B	2.11	B	0.00
18	Cornell Ave	S Grove Ave	Rotary Dr	2	1,400	1.0	25	17.0	0.0	0	0	4.0	1.86	B	1.86	B	0.00
19	Cumnor Ave	Roslyn Rd	W Northwest Hwy	2	460	0.5	25	13.5	1.5	0	10	5.0	1.42	A	1.42	A	0.00
20	S Dundee Ave	W Main St	W Station St	2	6,100	1.0	25	16.0	4.0	0	0	4.5	1.95	B	2.67	C	0.72
21	S Dundee Ave	W Station St	W Lake St	2	6,100	1.0	25	15.0	4.0	0	0	4.5	2.15	B	2.83	C	0.68
22	S Dundee Ave	W Lake St	W Lincoln Ave	2	6,100	1.0	25	15.0	4.0	0	0	4.5	2.15	B	2.83	C	0.68
23	S Dundee Ave	W Lincoln Ave	W Russell St	2	6,100	1.0	25	15.0	4.0	0	0	4.5	2.15	B	2.83	C	0.68
24	S Dundee Ave	W Russell St	W Coolidge Ave	2	6,100	1.0	25	15.0	4.0	0	0	4.5	2.15	B	2.83	C	0.68
25	S Dundee Ave	W Coolidge Ave	Monument Ave	2	6,100	1.0	25	15.0	4.0	0	0	4.5	2.15	B	2.83	C	0.68
26	S Dundee Ave	Monument Ave	Sturtz St	2	6,100	1.0	25	15.0	4.0	0	0	4.5	2.15	B	2.83	C	0.68
27	S Dundee Ave	Sturtz St	W Hillside Ave	2	6,100	1.0	25	25.0	4.0	50	50	4.5	0.83	A	0.83	A	0.00
28	S Dundee Ave	W Hillside Ave	W Tower Rd	2	6,100	1.0	25	15.0	4.0	0	0	4.5	2.15	B	2.83	C	0.68

Appendix D: Barrington Bicycle Level of Service Calculations

	Road Name	From	To	Lanes	Traffic Data Volume	Traffic Data Trucks	Speed limit	Width Of Pavement		% Occupied On-street Parking		Pavement condition	Future BLOS		Existing BLOS		Difference BLOS
					ADT	HV	SP_p	W_t	W_l	OSPA		PC_t	Score	Grade	Score	Grade	Score
				#	ADT	%	mph	ft	ft	N/EB	S/WB	1..5		A..F		A..F	
29	S Dundee Ave	W Tower Rd	Sunset Rd	2	6,100	1.0	25	15.0	4.0	0	0	4.5	2.15	B	2.83	C	0.68
30	S Dundee Ave	Sunset Rd	Otis Rd	2	6,100	1.0	25	15.0	4.0	0	0	4.5	2.15	B	2.83	C	0.68
31	Dundee Rd (68)	Dundee Ln	S Barrington Rd	2	9,800	3.0	55	15.0	3.0	0	0	4.0	3.67	D	3.67	D	0.00
32	Dundee Rd (68)	S Barrington Rd	S Grove Ave	2	15,100	3.0	55	10.0	0.0	0	0	4.0	5.01	E	5.01	E	0.00
33	Dundee Rd (68)	S Grove Ave	Carlisle Dr	2	15,100	3.0	45	13.0	0.0	0	0	4.0	4.54	E	4.54	E	0.00
34	Eastern Ave	E Main St	E Harriet Ln	2	2,400	1.0	25	12.0	0.0	0	0	4.0	2.85	C	2.85	C	0.00
35	Eastern Ave	E Harriet Ln	E Warwick Ave	2	2,400	1.0	25	18.0	0.0	0	30	4.0	2.21	B	2.21	B	0.00
36	Eastern Ave	E Warwick Ave	Lakewood Dr	2	2,400	1.0	25	18.0	0.0	0	30	4.0	2.21	B	2.21	B	0.00
37	Eastern Ave	Lakewood Dr	S Northwest Hwy	2	2,400	1.0	25	12.0	0.0	0	0	4.0	2.85	C	2.85	C	0.00
38	N Ela Rd	Long Grove Rd	Birchwood Dr	2	14,400	2.0	40	17.0	5.0	0	0	5.0	2.48	B	2.64	C	0.16
39	N Ela Rd	Birchwood Dr	E Main St	2	14,400	2.0	40	17.0	5.0	0	0	5.0	2.48	B	3.61	D	1.13
40	S Ela Rd	E Main St	E Hillside Rd	2	11,100	2.0	40	17.0	5.0	0	0	4.5	2.41	B	3.21	C	0.80
41	S Ela Rd	E Hillside Rd	S Northwest Hwy	2	11,100	2.0	40	17.0	5.0	0	0	4.5	2.41	B	3.21	C	0.80
42	Exmoor Ave	Roslyn Rd	W Northwest Hwy	2	380	0.5	25	10.0	0.0	0	0	4.0	2.08	B	2.08	B	0.00
43	Franklin St	N Hough St	N Cook St	2	1,200	2.0	25	22.0	7.0	0	85	4.0	0.69	A	0.69	A	0.00
44	S Grove Ave	E Station St	E Lake St	2	700	0.5	25	14.5	0.0	0	60	5.0	2.07	B	2.07	B	0.00
45	S Grove Ave	E Lake St	E Lincoln St	2	700	0.5	25	14.5	0.0	0	0	5.0	1.68	B	1.68	B	0.00
46	S Grove Ave	E Lincoln St	E Russell St	2	700	0.5	25	14.5	0.0	0	30	5.0	1.89	B	1.89	B	0.00
47	S Grove Ave	E Russell St	E Hillside Ave	2	700	0.5	25	14.5	0.0	15	10	3.5	2.15	B	2.15	B	0.00
48	S Grove Ave	E Hillside Ave	Illinois Ave	2	800	0.5	25	13.0	1.5	0	0	5.0	1.75	B	1.75	B	0.00
49	S Grove Ave	Cornell Ave	Dundee Rd (68)	2	1,700	1.0	25	14.0	5.0	0	0	4.0	1.59	B	1.59	B	0.00
50	N Hager Ave	Cul-de-sac	Laverne St	2	500	0.5	25	12.0	0.0	5	0	4.0	2.03	B	2.03	B	0.00
51	N Hager Ave	Laverne St	W Main St	2	500	0.5	25	12.0	0.0	10	0	4.0	2.06	B	2.06	B	0.00
52	Hart Rd	W Northwest Hwy	W Main St	2	9,500	2.0	40	19.0	7.0	0	0	3.5	1.60	B	1.60	B	0.00
53	W Hillside Ave	W Westwood Dr	Dundee Ave	2	400	0.5	25	15.0	0.0	0	0	4.5	1.39	A	1.39	A	0.00
54	W Hillside Ave	Dundee Ave	S Hough St	2	2,400	0.5	25	15.0	0.0	0	0	4.5	2.30	B	2.30	B	0.00
55	E Hillside Ave	S Hough St	S Grove Ave	2	2,400	0.5	25	15.0	3.0	0	0	5.0	1.74	B	2.53	C	0.79
56	E Hillside Ave	S Grove Ave	Highland Ave	2	2,400	0.5	25	15.0	3.0	0	0	5.0	1.74	B	2.23	B	0.50
57	E Hillside Ave	Highland Ave	S Bristol Dr	2	2,400	0.5	25	15.0	3.0	0	0	5.0	1.74	B	2.23	B	0.50
58	E Hillside Ave	S Bristol Dr	S Northwest Hwy	2	2,400	0.5	25	13.5	3.0	0	0	5.0	2.00	B	2.74	C	0.74

Appendix D: Barrington Bicycle Level of Service Calculations

	Road Name	From	To	Lanes	Traffic Data Volume	Traffic Data Trucks	Speed limit	Width Of Pavement		% Occupied On-street Parking		Pavement condition	Future BLOS		Existing BLOS		Difference BLOS
					ADT	HV	SP_p	W_t	W_l	OSPA		PC_t	Score	Grade	Score	Grade	Score
				#	ADT	%	mph	ft	ft	N/EB	S/WB	1..5		A..F		A..F	
59	Hillside Rd	S Northwest Hwy	Fairfield Dr	2	2,100	0.5	25	14.5	4.0	0	0	5.0	1.58	B	2.53	C	0.95
60	Hillside Rd	Fairfield Dr	Grace Ln	2	2,100	0.5	25	14.5	4.0	0	0	5.0	1.58	B	2.53	C	0.95
61	Hillside Rd	Grace Ln	S Ela Rd	2	2,100	0.5	25	15.5	5.0	0	0	5.0	1.19	A	1.48	A	0.29
62	Illinois Ave	S Grove Ave	S Summit St	2	150	0.5	25	10.5	0.0	90	0	3.5	2.06	B	2.06	B	0.00
63	James St	N Hough St	N Cook St	2	380	1.0	25	16.0	0.0	0	80	3.5	2.05	B	2.05	B	0.00
64	James St	N Cook St	N Ela St	2	380	1.0	25	16.0	0.0	0	100	3.5	2.17	B	2.17	B	0.00
65	Lageschulte St	E Main St	W Station St	2	3,100	1.0	25	15.0	0.0	0	0	4.0	2.58	C	2.58	C	0.00
66	Lageschulte St	W Station St	W Lake St	2	3,100	1.0	25	15.0	0.0	0	90	4.0	3.15	C	3.15	C	0.00
67	Lageschulte St	W Lake St	W Lincoln Ave	2	3,100	1.0	25	15.0	0.0	0	75	3.5	3.21	C	3.21	C	0.00
68	Lageschulte St	W Lincoln Ave	W Russell St	2	3,100	1.0	25	15.0	0.0	0	0	4.0	2.58	C	2.58	C	0.00
69	Lageschulte St	W Russell St	Dead End	2	3,100	1.0	25	15.0	0.0	0	0	4.0	2.58	C	2.58	C	0.00
70	Lake Zurich Rd	N Northwest Hwy	RxR	2	2,400	1.0	25	12.0	0.0	0	0	4.5	2.76	C	2.76	C	0.00
71	Lake Zurich Rd	RxR	Providence Rd	2	2,400	1.0	25	15.0	3.0	0	0	4.0	1.95	B	1.95	B	0.00
72	Lake Zurich Rd	Providence Rd	W Cuba Rd	2	2,400	1.0	30	15.0	3.0	0	0	3.5	2.28	B	2.28	B	0.00
73	Lakewood Dr	Eastern Ave	E Hillside Rd	2	310	0.5	25	13.5	0.0	0	0	4.5	1.47	A	1.47	A	0.00
74	W Liberty St	Dead End	N Hough St	2	500	1.0	25	15.0	0.0	0	0	3.0	2.00	B	2.00	B	0.00
75	E Liberty St	N Hough St	N Cook St	2	500	0.5	25	15.0	7.0	0	0	4.0	0.30	A	0.30	A	0.00
76	E Liberty St	N Cook St	North Ave	2	500	0.5	25	15.0	7.0	10	10	4.0	0.60	A	0.60	A	0.00
77	Lions Dr	N Hough St	Park Dist.	2	1,400	2.0	25	16.0	0.0	0	0	4.0	2.15	B	2.15	B	0.00
78	North Ave	E Northwest Hwy	Berry Rd	2	1,100	0.5	25	15.0	7.0	10	10	4.0	1.00	A	1.00	A	0.00
79	North Ave	Berry Rd	Washington St	2	1,100	0.5	25	15.0	7.0	10	10	4.0	1.00	A	1.00	A	0.00
80	North Ave	Washington St	E Main St	2	1,100	0.5	25	15.0	7.0	30	60	4.0	1.89	B	1.89	B	0.00
81	Otis	Country	Dundee	2	700	0.5	25	10.0	0.0	0	0	3.0	2.73	C	2.73	C	0.00
82	Prospect Ave	Roslyn Rd	Waverly Rd	2	500	0.5	25	10.0	0.0	0	0	4.0	2.22	B	2.22	B	0.00
83	Prospect Ave	Waverly Rd	W Northwest Hwy	2	500	0.5	25	10.0	0.0	5	5	4.0	2.27	B	2.27	B	0.00
84	Providence Rd	N Hough St	N Lake Zurich Rd	2	460	0.5	25	15.0	0.0	0	0	4.5	1.46	A	1.46	A	0.00
85	Roslyn Rd	Cumnor Ave	Bryant Ave	2	840	0.5	25	11.0	0.0	0	0	4.0	2.38	B	2.38	B	0.00
86	Roslyn Rd	Bryant Ave	N Hough St	2	840	0.5	25	10.0	0.0	0	0	4.0	2.48	B	2.48	B	0.00
87	W Russell St	Dead End	S Dundee Ave	2	510	0.5	25	14.5	0.0	0	0	4.5	1.59	B	1.59	B	0.00
88	W Russell St	S Dundee Ave	S Hough St	2	510	0.5	25	14.5	0.0	5	0	4.0	1.71	B	1.71	B	0.00

Appendix D: Barrington Bicycle Level of Service Calculations

	Road Name	From	To	Lanes	Traffic Data Volume	Traffic Data Trucks	Speed limit	Width Of Pavement		% Occupied On-street Parking		Pavement condition	Future BLOS		Existing BLOS		Difference BLOS
					ADT	HV	SP_p	W_t	W_l	OSPA		PC_t	Score	Grade	Score	Grade	Score
				#	ADT	%	mph	ft	ft	N/EB	S/WB	1..5		A..F		A..F	
89	E Russell St	S Hough St	S Grove Ave	2	940	0.5	25	14.5	0.0	0	0	4.0	1.99	B	1.99	B	0.00
90	E Russell St	S Grove Ave	S Prairie Ave	2	940	0.5	25	14.5	0.0	0	0	4.0	1.99	B	1.99	B	0.00
91	W Station St	Lageschulte St	Dundee Ave	2	770	1.0	25	14.0	0.0	0	0	4.0	2.02	B	2.02	B	0.00
92	W Station St	S Dundee Ave	S Hough St	2	770	1.0	25	15.0	0.0	40	40	4.0	2.39	B	2.39	B	0.00
93	E Station St	S Hough St	S Grove Ave	2	2,100	2.0	25	11.0	14.0	90	90	4.5	3.54	D	3.54	D	0.00
94	S Summit St	E Lincoln Ave	E Russell St	2	600	0.5	25	12.0	0.0	0	0	3.0	2.44	B	2.44	B	0.00
95	S Summit St	E Russell St	E Hillside Ave	2	600	0.5	25	12.0	0.0	20	50	4.5	2.36	B	2.36	B	0.00
96	S Summit St	E Hillside Ave	Illinois Ave	2	1,300	0.5	25	12.0	1.5	0	0	4.5	2.20	B	2.20	B	0.00
97	Tall Trees Dr	Birchwood Dr	E Main St	2	380	0.5	25	13.5	0.0	0	0	5.0	1.51	B	1.51	B	0.00
98	Valencia Ave	North Ave	N Northwest Hwy	2	120	0.5	25	12.0	0.0	10	10	3.5	1.53	B	1.53	B	0.00
99	Waverly Rd	Cumnor Ave	Bryant Ave	2	540	0.5	25	9.5	0.0	0	0	4.0	2.31	B	2.31	B	0.00
100	Waverly Rd	Bryant Ave	N Hough St	2	540	0.5	25	9.5	0.0	0	0	4.0	2.31	B	2.31	B	0.00
101	S Barrington Rd	Rt 59	Cornell Ave	2	12,800	3.0	35	12.0	0.0	0	0	4.0	4.38	D	4.38	D	0.00
102	S Barrington Rd	Cornell Ave	Dundee Rd (68)	2	12,800	3.0	40	12.0	0.0	0	0	3.5	4.63	E	4.63	E	0.00
103	N Hough St	Providence Rd	W Northwest Hwy	2	17,100	4.0	35	14.0	3.0	0	0	4.5	3.93	D	3.93	D	0.00
104	N Hough St	W Northwest Hwy	RxR	2	18,500	4.0	30	11.0	0.0	0	0	4.5	4.63	E	4.63	E	0.00
105	N Hough St	RxR	E Liberty St	2	18,500	4.0	30	12.0	0.0	0	0	4.5	4.51	E	4.51	E	0.00
106	N Hough St	E Liberty St	E Main St	2	18,500	4.0	25	12.0	0.0	0	0	4.0	4.30	D	4.30	D	0.00
107	S Hough St	E Main St	E Station St	2	17,000	6.0	25	14.0	0.0	0	0	4.0	4.32	D	4.32	D	0.00
108	S Hough St	E Station St	E Russell St	2	17,000	6.0	25	14.0	0.0	0	0	4.5	4.23	D	4.23	D	0.00
109	S Hough St	E Russell St	Hillside Ave	2	17,000	6.0	25	14.0	0.0	0	0	4.5	4.23	D	4.23	D	0.00
110	S Hough St	Hillside Ave	Rt 59	2	17,000	6.0	35	13.0	0.0	0	0	4.5	5.01	E	5.01	E	0.00
111	W Northwest Hwy	Hart Rd	Cumnor Ave	4	28,600	8.5	45	14.0	0.0	0	0	3.5	6.11	F	6.11	F	0.00
112	W Northwest Hwy	Cumnor Ave	N Hough St	4	28,600	8.5	35	14.0	0.0	0	0	3.5	5.71	F	5.71	F	0.00
113	E Northwest Hwy	N Hough St	Lake Zurich Rd	4	28,000	5.0	35	14.0	0.0	0	0	3.5	4.75	E	4.75	E	0.00
114	N Northwest Hwy	Lake Zurich Rd	Berry Rd	4	28,000	5.0	35	14.0	0.0	0	0	3.5	4.75	E	4.75	E	0.00
115	N Northwest Hwy	Berry Rd	E Main St	4	28,000	5.0	35	14.0	0.0	0	0	3.5	4.75	E	4.75	E	0.00
116	S Northwest Hwy	E Main St	George St	4	23,200	4.0	35	14.0	0.0	0	0	4.5	4.20	D	4.20	D	0.00
117	S Northwest Hwy	George St	Eastern Ave	4	23,200	4.0	35	14.0	0.0	0	0	4.5	4.20	D	4.20	D	0.00
118	S Northwest Hwy	Eastern Ave	Hillside Rd	4	23,200	4.0	40	14.0	0.0	0	0	4.5	4.33	D	4.33	D	0.00

Appendix D: Barrington Bicycle Level of Service Calculations

	Road Name	From	To	Lanes	Traffic Data Volume	Traffic Data Trucks	Speed limit	Width Of Pavement		% Occupied On-street Parking		Pavement condition	Future BLOS		Existing BLOS		Difference BLOS
					ADT	HV	SP_p	W_t	W_l	OSPA		PC_t	Score	Grade	Score	Grade	Score
				#	ADT	%	mph	ft	ft	N/EB	S/WB	1..5		A..F		A..F	
119	S Northwest Hwy	Hillside Rd	Ela Rd	4	23,200	4.0	45	15.0	0.0	0	0	4.5	4.28	D	4.28	D	0.00
120	S Northwest Hwy	Ela Rd	Dundee Rd (68)	4	23,200	4.0	45	20.0	7.0	0	0	3.5	1.99	B	1.99	B	0.00
121	W Main St	Hart Rd	Hager Ave	2	10,700	3.0	30	12.0	0.0	0	0	4.5	4.05	D	4.05	D	0.00
122	W Main St	Hager Ave	Lageschulte St	2	10,700	3.0	25	15.0	3.0	0	0	4.5	2.88	C	3.37	C	0.50
123	W Main St	Lageschulte St	S Dundee Ave	2	10,700	3.0	25	14.0	2.0	0	0	4.5	3.22	C	3.52	D	0.30
124	W Main St	S Dundee Ave	S Hough St	2	13,300	3.0	25	16.0	5.0	0	0	4.5	2.40	B	3.98	D	1.57
125	E Main St	S Hough St	S Cook St	2	13,500	3.0	25	16.0	5.0	0	0	4.5	2.41	B	4.25	D	1.83
126	E Main St	S Cook St	Ela St	2	13,500	3.0	25	22.0	10.0	50	60	4.5	2.41	B	2.41	B	0.00
127	E Main St	Ela St	North Ave	2	13,500	3.0	25	20.0	8.0	40	40	4.5	2.28	B	2.28	B	0.00
128	E Main St	North Ave	S Northwest Hwy	2	13,500	3.0	25	20.0	8.0	60	0	4.5	1.93	B	1.93	B	0.00
129	E Main St	S Northwest Hwy	Eastern Ave	2	15,700	3.0	35	13.0	0.0	0	0	4.0	4.36	D	4.36	D	0.00
130	E Main St	Eastern Ave	S Valley Rd	2	15,700	3.0	35	15.0	2.0	0	0	4.5	3.67	D	3.67	D	0.00
131	E Main St	S Valley Rd	Tall Trees Dr	2	15,700	3.0	35	15.0	2.5	0	0	4.5	3.58	D	3.58	D	0.00
132	E Main St	Tall Trees Rd	Ela Rd	2	15,700	3.0	40	16.0	2.5	0	0	4.5	3.51	D	3.51	D	0.00

Enter values in the white fields - grey fields are constants or calculations.

Lane # is total number of lanes on the road

ADT is the average daily trips made by vehicles, or traffic counts

HV % is the percent of heavy vehicles which use the road. These numbers came from IDOT or a standard for smaller streets was used

Wt is pavement width from center line to edge (including parking and shoulders); **Wl** is pavement width of striped parking or paved shoulders.

% On-street Parking is the average percentage of occupied on-street parking spaces

Pavement Condition is a 1-5 rating scale developed by FHWA. More information can be found on their website: http://www.fhwa.dot.gov/policy/1999cpr/ch_03/cpm03_3.htm

BLOS ranges: 1.50 and below = A, 1.51-2.50 = B, 2.51-3.50 = C, 3.51-4.50 = D, 4.51-5.50 = E, over 5.50 = F

Note: This calculation agrees with the web-based form at www.bikelib.org/roads/blos/losform.htm, but be careful that Wt here is the sum of the two width terms on the form.

Highlights a recommended change to the on-street network

Current BLOS rating remains unchanged

25-Sep-12

	Street	From	To	% With Sidewalk
				%
	Berry Rd	North	N Northwest Hwy	
	Birchwood Dr	N Ela Rd	Tall Trees Dr	
	Bristol Dr	S Prairie Ave	S Bristol Dr	
	Bristol Dr	S Bristol Dr	E Hillside Ave	
N	Cook St	James St	Victoria St	
N	Cook St	Victoria St	E Liberty St	
N	Cook St	E Liberty St	Washington St	
N	Cook St	Washington St	Franklin St	
N	Cook St	Franklin St	E Main St	
S	Cook St	E Main St	E Station St	
S	Cook St	E Station St	E Lake St	
S	Cook St	E Lake St	E Lincoln St	
S	Cook St	E Lincoln St	E Russell St	
S	Cook St	E Russell St	E Hillside Ave	
S	Cook St	E Hillside Ave	Wisconsin Ave	
S	Cook St	Wisconsin Ave	Dead End	
	Cornell Ave	S Barrington Rd	S Grove Ave	
	Cornell Ave	S Grove Ave	Rotary Dr	
	Cumnor Ave	Roslyn Rd	W Northwest Hwy	
S	Dundee Ave	W Main St	W Station St	
S	Dundee Ave	W Station St	W Lake St	
S	Dundee Ave	W Lake St	W Lincoln Ave	
S	Dundee Ave	W Lincoln Ave	W Russell St	
S	Dundee Ave	W Russell St	W Coolidge Ave	
S	Dundee Ave	W Coolidge Ave	Monument Ave	
S	Dundee Ave	Monument Ave	Sturtz St	
S	Dundee Ave	Sturtz St	W Hillside Ave	
S	Dundee Ave	W Hillside Ave	W Tower Rd	
S	Dundee Ave	W Tower Rd	Sunset Rd	
S	Dundee Ave	Sunset Rd	Otis Rd	
	Dundee Rd (68)	Dundee Ln	S Barrington Rd	
	Dundee Rd (68)	S Barrington Rd	S Grove Ave	
	Dundee Rd (68)	S Grove Ave	Carlisle Dr	
	Eastern Ave	E Main St	E Harriet Ln	
	Eastern Ave	E Harriet Ln	E Warwick Ave	
	Eastern Ave	E Warwick Ave	Lakewood Dr	
	Eastern Ave	Lakewood Dr	S Northwest Hwy	
N	Ela Rd	Long Grove Rd	Birchwood Dr	
N	Ela Rd	Birchwood Dr	E Main St	
S	Ela Rd	E Main St	E Hillside Rd	
S	Ela Rd	E Hillside Rd	S Northwest Hwy	
	Exmoor Ave	Roslyn Rd	W Northwest Hwy	
	Franklin St	N Hough St	N Cook St	
S	Grove Ave	E Station St	E Lake St	
S	Grove Ave	E Lake St	E Lincoln St	
S	Grove Ave	E Lincoln St	E Russell St	
S	Grove Ave	E Russell St	E Hillside Ave	
S	Grove Ave	E Hillside Ave	E Wisconsin Ave	
S	Grove Ave	E Wisconsin Ave	Illinois Ave	

S	Grove Ave	Illinois Ave	Yale St	
S	Grove Ave	Yale St	Harvard Ave	
S	Grove Ave	Princeton Ave	Cornell Ave	
S	Grove Ave	Cornell Ave	Dundee Rd (68)	
N	Hager Ave	Cul-de-sac	Laverne St	
N	Hager Ave	Laverne St	W Main St	
	Hart Rd	W Northwest Hwy	W Main St	
W	Hillside Ave	W Westwood Dr	Dundee Ave	
W	Hillside Ave	Dundee Ave	S Hough St	
E	Hillside Ave	S Hough St	S Summit St	
E	Hillside Ave	S Summit St	Highland Ave	
E	Hillside Ave	Highland Ave	S Bristol Dr	
E	Hillside Ave	S Bristol Dr	S Northwest Hwy	
E	Hillside Ave	S Northwest Hwy	Fairfield Dr	
E	Hillside Rd	Fairfield Dr	Hillcrest Ct	
E	Hillside Rd	Hillcrest Ct	S Ela Rd	
	Illinois Ave	S Grove Ave	S Summit St	
	James St	Hough	Cook	
	James St	Cook	Ela	
	Lageschulte St	E Main St	W Station St	
	Lageschulte St	W Station St	W Lake St	
	Lageschulte St	W Lake St	W Lincoln Ave	
	Lageschulte St	W Lincoln Ave	W Russell St	
	Lageschulte St	W Russell St	Dead End	
	Lake Zurich Rd	N Northwest Hwy	RxR	100%
	Lake Zurich Rd	RxR	Providence Rd	33%
	Lake Zurich Rd	Providence Rd	W Cuba Rd	0%
	Lakewood Dr	Eastern Ave	E Hillside Rd	
W	Liberty St	Dead End	N Hough St	
E	Liberty St	N Hough St	N Cook St	
E	Liberty St	N Cook St	North Ave	
	Lions Dr	N Hough St	Park Dist.	
	North Ave	E Northwest Hwy	E Valencia Ave	
	North Ave	E Valencia Ave	Washington St	
	North Ave	Washington St	E Main St	
	Otis	Country	Dundee	
	Prospect Ave	Roslyn Rd	Waverly Rd	
	Prospect Ave	Waverly Rd	W Northwest Hwy	
	Providence Rd	N Hough St	N Lake Zurich Rd	100%
	Roslyn Rd	Cumnor Ave	Bryant Ave	
	Roslyn Rd	Bryant Ave	N Hough St	
W	Russell St	Dead End	S Dundee Ave	
W	Russell St	S Dundee Ave	S Hough St	
E	Russell St	S Hough St	S Grove Ave	
E	Russell St	S Grove Ave	S Prairie Ave	
W	Station St	Lageschulte St	Dundee Ave	
W	Station St	S Dundee Ave	S Hough St	100%
E	Station St	S Hough St	S Grove Ave	100%
S	Summit St	E Lincoln Ave	E Russell St	
S	Summit St	E Russell St	E Hillside Ave	
S	Summit St	E Hillside Ave	Illinois Ave	
	Tall Trees Dr	Birchwood Dr	E Main St	
	Valencia Ave	North Ave	N Northwest Hwy	
	Waverly Rd	Cumnor Ave	Bryant Ave	
	Waverly Rd	Bryant Ave	N Hough St	

Off Street Paths

Sidewalk Width (FT)	Parkway Width (FT)	Tree Spacing (FT)	Width (FT)	Lanes/Direction #	Lane-Stripe (FT)	Stripe-Edge (FT)
			24	1	12	0
			26	1		
			30	1		
			30	1		
			30	1	15	0
			30	1	15	0
			30	1	15	0
			30	1	15	0
			42	1	21	0
			45	1	22.5	0
			45	1	22.5	0
			30	1	15	0
			30	1	15	0
			30	1	15	0
			20	1	10	0
			18	1	9	0
			34	1		
			34	1		
			20	1		
			26	1		
			26	1		
			26	1		
			26	1		
			26	1		
			26	1		
			26	1		
			26	1		
			26	1		
			26	1		
			26	1		
				1		
				1		
				1		
			36	1		
			36	1		
			36	1		
			36	1		
				1		
				1		
				1		
				1		
			26	1		
			45	1		
			30	1		
			30	1		
			30	1		
			30	1		
			24	1		
			24	1		

			24	1		
			24	1		
			24	1		
			38	1		
			24	1		
			24	1		
				1		
			30	1		
			28	1		
			30	1		
			30	1		
			30	1		
			30	1		
			26	1		
			26	1		
			26	1		
			18	1		
			30	1		
			30	1		
			28	1		
			28	1		
			28	1		
			28	1		
			28	1		
12	19	0	24	1	12	0
5	20	0	24	1	12	2
0	0	0	24	1	12	0
			28	1		
			28	1		
			30	1		
			30	1		
			30	1		
			28	1		
			28	1		
			28	1		
			20	1		
			20	1		
			20	1		
5	10	45	28	1		
			20	1		
			24	1		
			28	1		
			30	1		
			28	1		
			29	1		
			24	1		
5	12	50	24	1		
5	0	0	45	1		
			22	1		
			24	1		
			20	1		
			26	1		
			24	1		
			20	1		
			20	1		

Traffic Volume	Speed Limit	Heavy Vehicles	Pavement Condition	On-Street Parking
ADT	#	%	(1-5)	%
	25	1.0%		
	25	1.0%		
	25			
	25			
	25			
	25			
	25			
1300	25			
1300	25			
1300	25			
1300	25			
1300	25			
200	25			
200	25			
6100				
6100				
6100				
6100				
6100				
6100				
6100				
6100				
6100				
6100				
6100				
9800		6.6%		
15100		5.2%		
15100		5.2%		
2400				
2400				
2400				
2400				
15100				
15100				
11100				
11100				

10700				
5100				
5100				
5100				
5100				
5100				
5100				
5100				
2400	25	1.0%	4.5	0
2400	25	1.0%	4	0
2400	30	1.0%	3.5	0
500				
500				
500				
900				
900				
900				
700				
				0
		0.0%		

APPENDIX D

BICYCLE LEVEL OF SERVICE (BLOS) CALCULATIONS

Barrington BLOS Model Variables

- Ln - Total number of lanes on the street
- ADT – Average Daily Trips made by vehicles on the street; often referred to as a traffic count.
- HV% - The percent of heavy vehicles which travel on the street. This percentage came from IDOT's traffic counts or from a standard used for smaller streets where HV% may not always be counted.
- SPp – The speed limit on the street segement.
- Wt – The pavement width from the center line to the edge, including parking lanes and paved shoulders.
- Wl – The pavement width of any paved parking area or paved shoulder.
- OSPA – The average percentage of occupied on-street parking along the stretch of road. If no parking is allowed then the number is 0.
- PCt – A 1 (worst) to 5 (best) rating scale developed by the Federal Highway Admisitration is used to rate the condition of the street pavement. For more information go to the FHWA's website: http://www.fhwa.dot.gov/policy/1999cpr/ch_03/cpm03_3.htm

Technical Note: As a general guideline for the following recommendations, a 10-11 foot lane is an acceptable width when providing strictly for motor traffic, with a 12 foot lane being used where practical on higher speed, free flowing, principal arterials[1]. Additionally, the Federal Highway Administration's (FHWA) *Selecting Roadway Design Treatments to Accommodate Bicycles* advises 14 to 16 foot outer lanes for lane sharing on two lane streets[2] and AASHTO's *Guide for the Development of Bicycle Facilities* states that 14 feet of usable lane width is the recommended width for a shared use lane.[3] AASHTO also states bicyclists require at least 30 inches, which is the width of the bicycle itself but 40 inches of operating space is preferred for maximum comfort.[4] Illinois state law requires a passing motor vehicle provide a minimum of 3 feet between the passing vehicle and the bicyclist. Finally, the 2000 Highway Capacity Manual assigns "passenger-car equivalents" for bicycles in lanes of different widths. In a lane less than 11 feet

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[1] Petritsch, T. *The truth about lane widths*. Retrieved from http://www.bicyclinginfo.org/library/details.cfm?id=4348

[2] Federal Highwawy Administration, U. D. O. T. (2011). A us dot policy statement integrating bicycling and walking into transportation infrastructure. In *Design Guidance Accommodating Bicycle and Pedestrian Travel: A Recommended Approach.* Retrieved from http://www.fhwa.dot.gov/environment/bikeped/design.htm

[3] American Association of State Highway and Transportation Officials, (1999). *Guide for the development of bicycle facilities*. Washington, DC

[4] IBID

wide, a bicycle is equal to 1.0 or 1.2 cars; a lane 11 to 14 feet, a bicycle is equal to 0.2 to 0.5 cars; and in a lane 14 feet or wider a bicycle is equal to 0.0 cars.[5] Thus, on streets 14 feet or wider a bike lane may be considered, if other conditions (traffic volume, sight distance, presence of on-street parking, ect.) permit.

[5] *Highway Capacity Manual*. Transportation Research Board, Washington, D.C.. 2000.

Catalog of Existing Conditions										Comments
Project Name	District/Corridor	Description	From	To	Approx Distance	Controlling Jurisdiction	On- or Off-Street	Type of Facility	Average Daily Traffic Source: IDOT ADT Volumes 2012, Village of Barrington	
Sidewalks on Lageschultes Street	Dundee Avenue District	Add new sidewalks along Lageschulte St on either the east or west side.	West Main Street	West Lincoln Avenue	950 ft	VOB	Off-Street	Sidewalk	3,100	Planned as part of 2010 SRTS awarded application.
Complete Gaps in Sidewalk Grid	Dundee Avenue District	Fill in gaps in the sidewalk network on Monument Avenue, Sturtz Avenue, Dundee Avenue and Lill Street.	N/A	N/A	2,575 ft	VOB	Off-Street	Sidewalk	Various Streets	This area is an ideal candidate for Safe Routes to School funding.
Improve South Dundee Avenue	Dundee Avenue District	S Dundee Ave is a key bicycle connector for the District and has room for a bike lane. Thus a lane should be implemented or at least sharrows.	West Main Street	Otis Road	4,550 ft	VOB	On-Street	Bike Lane	6,100	
Beese Park & Prairie Middle School Sidewalk Connection	Grove Avenue District	The existing sidewalk should extend east by the football field and parking lot to Rotary Drive and the existing trail network.	N/A	N/A	430 ft	BPD	Off-Street	Shared-Use Path	N/A	This project is completely within the Barrington Park District.
Dundee Road Connection	Grove Avenue District	An off-street, shared-use path should be added along the north side of Dundee Rd (68) connecting S Barrington Rd to Prairie MS.	South Barrington Road	Prairie Middle School	2,660 ft	IDOT	Off-Street	Shared-Use Path	15,100	This project is being considered with intersection improvements IDOT will be making to the Barrington Rd/Dundee Rd intersection. IDOT would complete this project with a 20% match from the Village.
Hough and Station Streets Pedestrian Crossing	Grove Avenue District	Improve the pedestrian crossing at Hough Street and Station Street.	South Hough Street	East Station Street	N/A	IDOT	On-Street	Pedestrian Crossing	17,000 Hough St	IDOT must approve any new improvements. Attempts have been made to add flashing beacons, stamped concrete and pedestrian crosswalk signs but no proposals have been approved thus far.
Watchman's Path	Grove Avenue District	Improve the driveway path along the west side of Younghusband Prairie and to connect to the Cook County system and to Beese Park.	East Dundee Road (Route 68)	Younghusband Prairie Parking Lot	2,350 ft	CCFPD	Off-Street	Shared-Use Path	N/A	
South Northwest Highway Rail with Trail	Grove Avenue District	Explore the possibility of a shared-use path along South Northwest Highway as this is a key connection point to Palatine and communities along Northwest	East Hillside Avenue	Dundee Road (Route 68)	8,712 ft	UP/IDOT	Off-Street	Shared-Use Path	23,200	Could be on the north or south side of Northwest Hwy. NWMC has identified this connection as part of the regional corridor. This project will need collaboration with other agencies to complete.
Improve Eastern Avenue	Eastern Avenue District	Widen the sidewalk on the west side of the raod into a shared-use path.	East Main Street	South Northwest Highwawy	2,250 ft	VOB	Off-Street	Shared-Use Path	2,400	Eastern Avenue could be wide enough for a bike lane without parking but high traffic volumes during school hours suggests it may not be the safest
Cuba Marsh Connection	East Main Street Neighborhood District	Review the possibility of adding a shared-use path which would connect the Fox Point North neighborhood to the Cuba Marsh paths	Indian Way	Cuba Marsh Path	950 ft	LCFPD	Off-Street	Bike Path	N/A	
Hough and Northwest Intersection	Lake Zurich Road District	Add a sidewalk on the northeast corner of Hough St and Northwest Highway and a crosswalk from the northeast corner to the southeast corner.	North Hough Street	Northwest Highway	N/A	IDOT	On-Street	Pedestrian Crossing	18,500 Hough Street 28,600 Northwest Highway	All work must be approved by IDOT
Lake Zurich Road Project	Lake Zurich Road District	Sidewalks or shared-use paths should be built along Lake Zurich Road to connect Neighborhood 11 to Citizen's Park	Railroad Tracks	Providence Road	1,500 ft	VOB	Off-Street	Sidewalk or Shared-Use Path	2,400	Part of the sidewalk is already constructed but it does not extend all the way to Providence Road.
Improve Library Intersection	Lake Zurich Road District	Add a pedestrian crossing and sidewalk on the south side of the intersection to improve pedestrian connectivity to the Library.	Berry Road	North Northwest Highway	N/A	IDOT	On-Street	Pedestrian Crossing	28,000	
Hough Street Crossing	North Downtown District	When the area along West Liberty Street develops, consideration should be given to installing a pedestrian actuated signal.	Liberty Street	North Hough Street	N/A	IDOT	On-Street	Pedestrian Crossing	18,500	
Roslyn Road Crossing	West Northwest Highway District	Improve the pedestrian crossing at Hough Street and Roslyn Road.	North Hough Street	Roslyn Road	N/A	IDOT	On-Street	Pedestrian Crossing	17,100	
West Northwest Highway Connection	West Northwest Highway District	Add a shared-use path along W Northwest Hwy from Cumnor Ave to Hart Rd to complete a connection on the west side of the Village.	Cumnor Avenue	Hart Road	3,000 ft	IDOT	Off-Street	Shared-Use Path	28,600	This connection is being considered as part of the Hart Road Reconstruction project and should be completed in 2015.
Roslyn Neighborhood Sidewalks	West Northwest Highway District	Add sidewalks in the Roslyn Road neighborhood, especially near the school and where an unfinished connection should be completed.	N/A	N/A	6,300 ft	VOB	Off-Street	Sidewalks	Various Streets	Several sidewalks have been engineered and are awaiting IDOT approval as part of a SRTS funded project.
High School Connection	Hart Road District	Add a shared-use path along W Main St in front of the high school and along Hart Rd. The path should connect Main St to the Field of Dreams	West Main Street	Field of Dreams Entrance	3,800 ft	VOB	Off-Street	Shared-Use Path	9,450 Hart Road 13,300 West Main Street	Work with the School District to complete this project.
North Ela Road Improvements	Ela Road Corridor	Improve North Ela Road by resurfacing and, when feasible extend the existing bike lane from Birchwood Drive to East Main Street.	Long Grove Road	East Main Street	2,580 ft	LCDOT	On-Street	Bike Lane	14,400	Must work with Lake County to widen the road. At the time of this plan update the resurfacing of N Ela Rd was in progress. The Village attempted to have the county widen the lanes for a bike lane.
South Ela Road Improvements	Ela Road Corridor	S Ela Rd is wide enough to share the road with bicyclists but not wide enough for a lane. The road should be widened to add a lane.	East Main Street	South Northwest Highwawy	6,864 ft	CCDOT	On-Street	Bike Lane	11,100	

Appendix E

Project Background Matrix

Project Name	District/Corridor	Description	From	To	Approx Distance	Controlling Jurisdiction	On- or Off-Street	Type of Facility	Average Daily Traffic Source: IDOT ADT Volumes 2012, Village of Barrington	Comments
Hillside Road Improvements	Hillside Corridor	Short term goal: Add sharrows along Hillside Road not improved with a bike lane. Long term goal: extend the bike lane west to Lakewood Dr.	Fairfield Drive	Lakewood Drive	1,400 ft	VOB	On-Street	Bike Lane	2,100	This section of the Hillside Road will need to be widened to at least 15 feet with a minimum 4 foot bike lane.
Hillside Avenue Improvements	Hillside Corridor	Improve Hillside Ave by painting a centerline strip and either sharrow markings or an outside lane line 3 feet from the edge of the curb.	South Hough Street	South Northwest Highwawy	3,600 ft	VOB	On-Street	Bike Route	2,400	Hillside Avenue is not wide enough for a bike lane due to the high traffic volume and speed. However, an outside stripe would help give motorists a visual separation from bicyclists.
Complete Tributary Path	Flint Creek Tributary Corridor	If an underpass beneather the CN/EJ&E tracks at Northwest Hwy occurs, a shared-use path should be incorporated to extend the current path.	North Hough Street	Northwest Highway	2,200 ft	VOB/IDOT	Off-Street	Shared-Use Path	N/A	
Hager Street Crossing	Main Street Corridor	Improve the pedestrian crossing at W Main Street and Hager St near the high school.	West Main Street	Hager Street	N/A	IDOT	On-Street	Pedestrian Crossing	13,300	During the update of this plan the Village received a grant to improve this intersection with flashing beacons and new signage.
Pedestrian Underpass on Main	Main Street Corridor	Explore the possibility of installing a grade separated pedestrian crossing at the EJ&E/CN railroad tracks and West Main Street.	West Main Street	EJ&E/CN Tracks	N/A	IDOT/CN	Off-Street	Pedestrian Crossing Grade Separation	13,300	Coordination with the railroad and IDOT will need to occur if an underpass is sought.
East Main Street Path	Main Street Corridor	Due to the high traffic counts along East Main Street a shared-use path from Eastern Ave to Ela Rd should be added on both sides of the street.	Eastern Avenue	Ela Road	5,250 ft	IDOT	Off-Street	Shared-Use Path	15,700	The path should be on both sides of the street and involves widening the sidewalks which are currently in place from 5 feet to 10 feet.
Hough and Main Road Diet	Main Street Corridor	The diet involves eliminating the two outside lanes/parking spots, converting both sides into bike lanes, and increasing the motorist lane.	Applebee Street	Cook Street	1,050 ft	IDOT	On-Street	Bike Lane	18,500 Hough Street 13,500 Main Street	This would only occur if IDOT agrees to reconfigure the roadway. The Village is not actively pursing it at this time. A road diet is a technique whereby a road is reduced in number of travel lanes in order to achieve improvements for bicyclist and pedestrian

*These projects are not in priority order but grouped by their district.

Jurisdiction Acronyms:

VOB - Village of Barrington

IDOT - Illinois Department of Transportation

BPD - Barrington Park District

CCFPD - Cook County Forest Preserve District

CCDOT - Cook County Department of Transportation

LCFPD - Lake County Forest Preserve District

LCDOT - Lake County Department of Transportation

UP - Union Pacific Railroad

Dundee Avenue District

S Dundee Ave at W Main St Looking South

W Main St at Harrison Ave Looking East

Lageschulte St at W Main St Looking South

Lageschulte St at Lincoln Ave Looking North

Dundee Avenue District

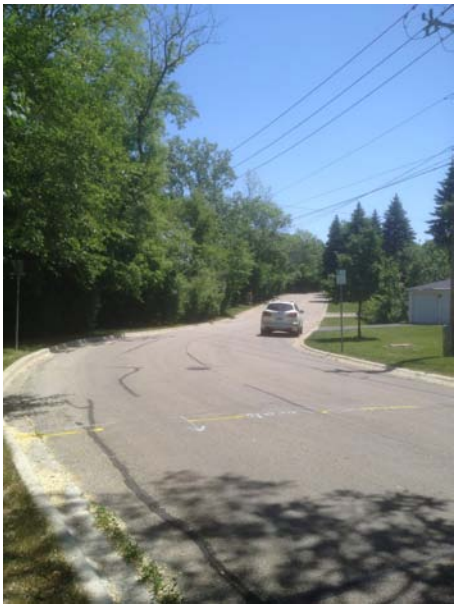
Hillside Ave at S Dundee Ave Looking East

S Dundee Ave at Hillside Ave Looking South

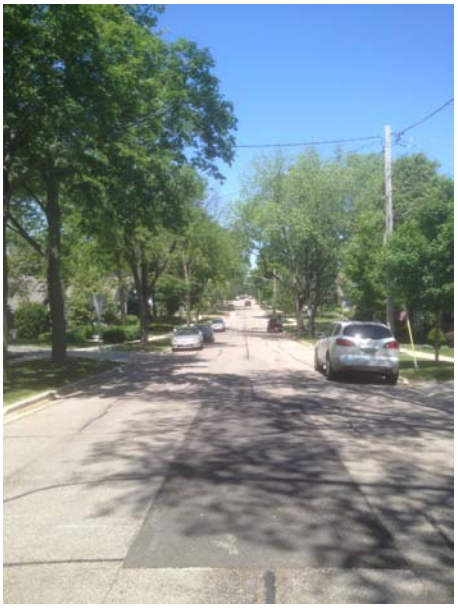
S Dundee Ave at Hillside Ave Looking North

Grove Avenue District

E Station St at Grove Ave Looking West



E Russell Ave at Prairie St Looking Southeast



Grove Ave at Highland Looking North

Summit St at Yale Ave Looking South

Grove Avenue District

S Grove Ave at Dundee Rd Looking North

S Grove Ave at Dundee Rd Looking East

S Grove Ave at Dundee Rd Looking West

Dundee Rd at S Barrington Rd Looking East

East Main Street Neighborhood District

Howe Ter at Briar Pl Looking Southeast

Indian Way at Oxbow Ln Looking North

N Valley Rd at Fox Hunt Tr Looking North

Lake Shore Dr North Looking West

East Main Street Neighborhood District

Red Barn Ln at Old Mill Rd Looking West

S Valley Rd at Old Mill Rd Looking South

Eastern Avenue District

Lakewood Dr at Eastern Ave Looking East

Lakewood Dr at E Hillside Rd Looking North

Eastern Ave at Lakewood Dr Looking North

Eastern Ave at E Main St Looking South

Eastern Avenue District

Lines School Shared-Use Path at E Main St Looking South

Lake Zurich Road District

N Hough St at Providence Rd Looking South

Hough & Northwest Hwy Looking North

N Hough St at E Northwest Hwy Crossing

N Hough St at E Northwest Hwy NE Corner

Lake Zurich Road District

Providence Rd at N Hough St Looking East

Providence Rd at Lake Zurich Rd Looking West

N Hough St at Roslyn Rd Looking West

N Hough St at Roslyn Rd Looking South

Lake Zurich Road District

Lake Zurich Rd at Citizen's Park Looking North

Lake Zurich Rd at Bent Ridge Ln Looking South

Lake Zurich Rd at Providence Rd Looking North

Lake Zurich Rd at Providence Rd Looking South

North Downtown District

James St at N Cook St Looking West

Berry Rd at N Northwest Hwy Looking West

N Cook St at James St Looking South

North Ave at Berry Rd Looking South

North Downtown District

Exmoor Ave at Waverly Ave Looking South

Exmoor Ave at Waverly Ave Looking North

West Northwest Highway District

W Northwest Hwy at Prospect Ave Looking East

W Northwest Hwy at Cumnor Ave Looking West

Flint Creek Tributary Shared-Use Path at CN Underpass

Flint Creek Tributary Shared-Use Path at Langendorf Parking Lot

West Northwest Highway District

Exmoor Ave at Waverly Ave Looking South

Exmoor Ave at Waverly Ave Looking North

Waverly Ave at Exmoor Ave Looking East

Hart Road District

Hart Rd at W Northwest Hwy Looking North

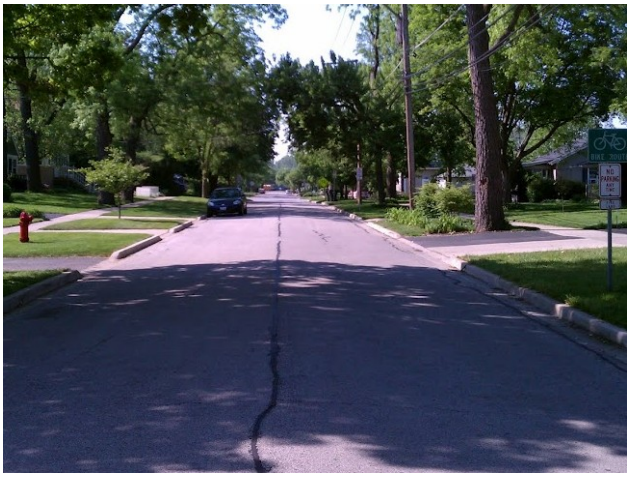
Hart Rd at W Northwest Highway Looking East

Hart Rd at W Northwest Highway Looking South

Hart Rd at W Main St Looking North

Hart Road District

W Main St at Hager Ave Looking East



N Hager Ave at Dead End Looking South

HagerAve at Dead End Looking East

Raymond Ave at Public Works Looking East

Ela Road Corridor

S Ela Rd at E Hillside Rd Looking North

S Ela Rd at Balmoral Ln Looking North

N Ela Rd at Fox Glove Ln Looking South

N Ela Rd at Long Grove Rd Looking South

Ela Road Corridor

S Ela Rd at E Hillside Rd Looking South

Main Street Corridor

Hough St and Main St Looking West

Hough St and Main St Looking South

Hough St and Main St Looking East

Hough St and Main St Looking North

Main Street Corridor

E Main St at Tall Trees Dr Looking West

E Main St at Valley Rd Looking West

E Main St at Valley Rd Looking East

E Main St at North Ave Looking West

Main Street Corridor

E Main St at North Ave Looking East

Hillside Avenue Corridor

135 Hillside Rd Looking East

E Hillside Rd at S Ela Rd Looking West

135 Hillside Rd Looking West

E Hillside Rd at S Ela Rd Looking East