VILLAGE OF BUFFALO GROVE
BICYCLE PLAN

April 21, 2014

Village of Buffalo Grove, Illinois
50 Raupp Boulevard
Buffalo Grove, IL 60089

Approved by Ordinance No. 2014 - 35

Prepared By: League of Illinois Bicyclists

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1 Introduction/Executive Summary

The Village of Buffalo Grove is located approximately 33 miles northwest of downtown Chicago and 20 miles north of O'Hare International Airport. The Village's land area is 9.3 square miles, with 21.7 percent of the area in Cook County and 78.3 percent in Lake County. Neighboring communities include Arlington Heights, Lincolnshire, Long Grove, Riverwoods, Vernon Hills and Wheeling. The Village's current population is 41,715 (2012 U.S. Census Bureau estimate).

Buffalo Grove was incorporated in 1958 and experienced strong growth in population and land area for several decades. The Village's Comprehensive Plan projects the Village's land area could reach approximately 11.2 square miles with a total population of 48,000.

The Village has excellent transportation access for residents, businesses, employees and visitors. The Village is served by the Metra North Central rail line connecting to downtown Chicago and O'Hare airport. Pace bus service provides access to adjacent communities, the Metra Milwaukee District North rail line and the Skokie Swift CTA Yellow Line. The regional road system serving the Village includes Aptakisic Road, Buffalo Grove Road, Lake Cook Road, and state routes 21, 22, 45 and 68, with direct links to Route 53 and Interstate 94.

Biking is a popular activity in communities such as Buffalo Grove. Cycling is a moderate form of exercise within the physical capabilities of most people. However, it need not be limited to weekend outings on designated trails. Although bicycling is often thought of as just for recreation and exercise, nearly half (43%) of all bike trips are destination-based[1]—and many more would be if better facilities existed.

Biking can be a great form of transportation, especially for short, local trips. National data indicate that 27% of all car trips are one mile or shorter; 40% are less than two miles. When cycling conditions are improved, people are more willing to use bikes instead of cars for these short trips—which benefits their health, pocketbooks and surrounding air quality.

Besides those who bicycle by choice, there are residents – including children, many teenagers, and some low-income workers – who depend on cycling as a transportation necessity.

For all these reasons and more, the Village of Buffalo Grove has invested in an extensive bicycle network. The Village's bike path system includes over 50 miles of off-road multi-use paths and sidepaths (widened sidewalks) along most major roads.

The positive community response to Buffalo Grove's bikeways led to a Village Bicycle Committee and a desire to achieve "Bicycle Friendly Community" (BFC) designation. The award, from the national League of American Bicyclists, goes to towns with well-developed and diverse bikeway networks, education and enforcement programs, and more. In 2011, the

[1] 2001 National Household Travel Survey

Bicycle Committee recommended creation of this comprehensive bicycle plan to prioritize the steps needed to join eight other Illinois cities with BFC designation.

The Village is committed to improving the bike path and pedestrian system. The current planning effort will offer guidance in making strategic improvements, including safer street crossings for bicyclists and pedestrians, completion of the path and sidewalk network, wayfinding signage at key locations, and links to paths and trails in adjacent communities.

Chapter 2 of the plan explains the types of on-road and off-road bicycle facilities needed for a denser and more complete bikeway network in Buffalo Grove. The primary target audience for the additions is the "casual adult" bicyclist, although the needs of advanced cyclists and children are both addressed. A thorough analysis is used to determine which option is appropriate for each of the "routes to study" suggested by the public. As described in Chapter 3, criteria include need, cost, technical factors, and strategies to gain public support while avoiding common bike plan pitfalls.

Chapter 4 details the specific recommendations for the bikeway network. These include completion of a few major roads' sidepaths where gaps exist, expansion of some existing trails on their own rights-of-way, crossing and crosswalk improvements, trail signing and maintenance, remedying demand-actuated stoplights not triggered by on-road bicycles – and posting wayfinding signage for the network. However, the main suggestion is to add on-road bikeways on most of the Village's residential collector roads, choosing whichever of a menu of "collector options" is most suitable for each location. The chapter includes maps and tables for easier viewing of the recommendations.

Chapter 5 suggests changes to the Village's road standards and development ordinances to automatically add bikeways as part of future road projects by Buffalo Grove and county/state road jurisdictions. A "complete streets" policy is recommended.

Chapter 6 identifies easy-to-use (and free) resources and strategies to supplement infrastructure investment with bicyclist education, motorist education, enforcement, and encouragement efforts. In addition, recommendations are offered on retrofitting bicycle parking where needed and adding bike parking requirements to the Village development ordinance.

Chapter 7 focuses on strategies to ensure the plan is implemented after adoption. Primary recommendations call for naming of a staff Bicycle/Pedestrian Coordinator and establishment of an ongoing Bicycle and Pedestrian Advisory Commission. The plan recommends a multi-year implementation work plan with opportunistic and stand-alone projects in the Village's Capital Improvement Program. Costs of various bikeway types are listed, along with funding and grant suggestions. Buffalo Grove's present and future chances for Bicycle Friendly Community designation are assessed. Finally, the plan calls for an annual plan implementation report to track progress.

2 Bikeway Types in the Buffalo Grove Plan

Standards and Guidelines

The 2012 *Guide for the Development of Bicycle Facilities* by the American Association of State Highway and Transportation Officials (AASHTO) forms the technical basis for the plan's recommendations.

The AASHTO guidelines are generally recognized by the industry – and the court system – as the standard for bicycle facility design. The Illinois Department of Transportation encourages communities to consult these guidelines and the Manual of Uniform Traffic Control Devices (MUTCD) when developing bicycle plans.

A general overview of bicycle facility options follows; more engineering details are in the publications.

Trails

Multi-use trails are physically separated from motor vehicle traffic, except at road crossings. Trails accommodate a variety of users, including pedestrians, bicyclists, and others, for both recreation and transportation purposes. Trails away from roads, on easements or their own rights-of-way, tend to be more pleasant and popular. Examples in Buffalo Grove include the Elliott Hartstein Trail, other trails built and maintained by the Village and the Buffalo Grove Park District, and the Des Plaines River Trail.

Figure 2.1. Multi-use trail on its own right-of-way

Sidepaths

Sidepaths are trails running immediately parallel to a roadway, essentially a widened sidewalk. Buffalo Grove has an extensive network of 8' concrete sidepaths along most of the major roads in the village. Compared to trails on their own rights-of-way, a larger fraction of sidepath use is for transportation purposes.

While the physical separation from traffic provides a sense of security to sidepath users, intersections present inherent conflicts and visibility problems – especially for sidepath cyclists riding against the flow of adjacent traffic. In fact, all but two of Buffalo Grove's 34 car-bike crashes the past three years occurred at intersections, usually on sidepaths along major roads and involving child or casual adult bicyclists (see map in Appendix 1). Understanding these inherent conflicts can help in efforts to improve sidepath safety.

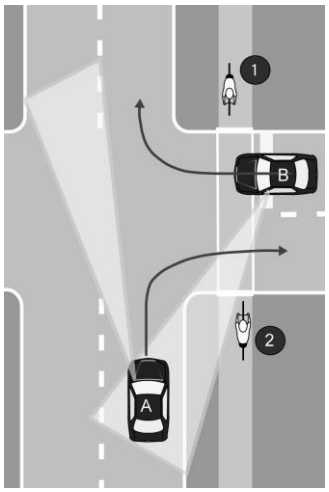


Figure 2.2. Right turns across sidepaths.

Figures 2.2 and 2.3 illustrate the visibility problems leading to the intersection conflicts. In Figure 2.2, Car B crosses the sidepath to turn right onto the parallel street. Rarely do motorists stop at the stopline – usually stops are in the crosswalk or at the street edge. Many do not fully stop. Many will look only to their left. Cyclist 2 might be seen. Cyclist 1 is much less likely to be seen.

Car A turns right off the parallel road then crosses the sidepath. Again, Cyclist 2 might be seen but Cyclist 1 is less visible. Particularly where a large turning radius permits fast turns, many motorists do not yield to cyclists entering or already in the crosswalk.

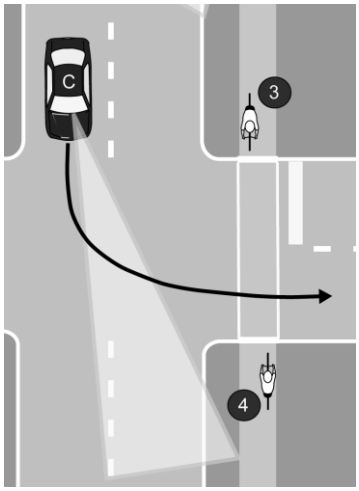


Figure 2.3. Left-turn across sidepath.

In Figure 2.3, Car C looks ahead, waiting for a traffic gap to turn left, then accelerates through the turn while crossing the crosswalk. Cyclist 4 might be seen. Again, the contra-flow cyclist (3) is less likely to be seen. If the traffic gap is short, sudden stops would be difficult.

It should be noted that a contributing factor in at least some of these conflicts is disregard of pedestrian crosswalk laws and possibly traffic controls by bicyclists. Education and enforcement of both motorists and bicyclists can help somewhat in controlling sidepath problems. Chapter 6 provides some recommendations.

In addition, sidepath conflicts can be reduced through engineering by:

- Bringing the sidepath closer to the road at intersections, for better visibility during all turning motions and better stopline adherence for right-turners
- Using pedestrian refuge islands to break up major crossings and right-in-right-out entrances – right-turn corner islands ("porkchops") are particularly effective
- Using higher visibility crosswalks – see the recommendations in Chapter 4
- Using experimental signs, such as those used in St. Charles and elsewhere

These treatments are illustrated in Figures 2.4 and 2.5.

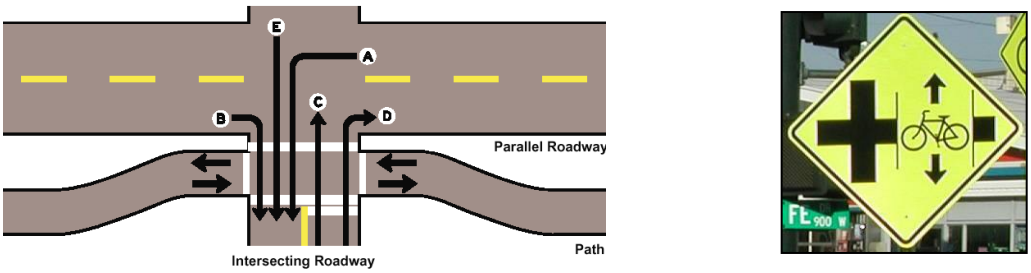


Figure 2.4. Left: Bringing sidepath crossings closer to the parallel road. Right: Signage.

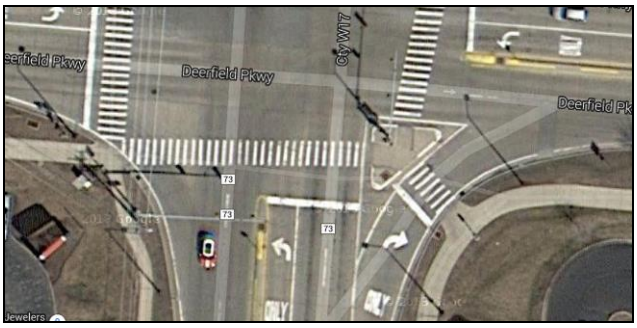


Figure 2.5. Right-turn corner island and high-visibility continental crosswalks, southeast corner of Deerfield and Weiland

On-road Bikeways

Expanding Buffalo Grove's bicycle network beyond its sidepath system requires the determination of appropriate bikeway choices for residential collector roadway corridors having lower traffic volumes.

Many believe sidepaths or sidewalks are *always* safer than on-road bicycling. Surprisingly, this is *not* the case where there are many side streets, residential driveways, and commercial entrances – especially for "contra-flow" cyclists biking against the flow of traffic. The visibility issues described above are a prime reason. Note that for each motorist turning motion illustrated in Figures 2.2 and 2.3, an on-road cyclist on the right side of the road is within the motorist's viewing area. It is fairly rare for a bicyclists to be struck from behind in towns, especially during the day or when the bicycle is well lit at night.

The AASHTO guide describes the above and other sidepath issues in discouraging their use in inappropriate locations. In general, sidepaths may be better choices than on-road bikeways for faster, busier roads without lots of crossings – as seen frequently in Buffalo Grove. Since that is not the case for the village's residential collectors and some other roads, various on-road bikeway options are considered in this plan.

Bike Lanes

Bike lanes are portions of the roadway designated for bicyclist use. Bike lanes are between five and six feet wide (including gutter pan) on each side of the road with a stripe, signage, and pavement markings. Cyclists in each bike lane travel one-way with the flow of traffic. Sample results around the country for roads with bike lanes include:

- More predictable movements by both cars and bikes
- Better cyclist adherence to laws about riding on the right side of the road
- Dramatic increases in bike usage with lower car-bike crash rates
- Decreased car-car crashes, too – possibly from a traffic calming effect

Figure 2.6. Bike lanes (other side not shown).

Parking is not permitted in designated bicycle lanes. When a road has bike lanes and adjacent parking, the bike lanes should be striped between the parking space and the travel lanes. Regular sweeping is important, as bike lanes tend to collect debris.

Figure 2.7. Bike Route wayfinding sign options.
Top: D11-1/D1-1
Middle: D11-1c
Bottom: D1-2b

Signed Bike Routes

Some roads may be identified by signage as preferred bike routes, because of particular advantages to using these routes compared to others. These "signed shared roadways" may be appropriate where there is not enough room or less of a need for dedicated bike lanes. A road does not require a specific geometry to be signed as a Bike Route, providing flexibility. A Bike Route may be a striped or unstriped street, or a road with paved shoulders.

It is recommended to use the updated signage styles available in the Manual of Uniform Traffic Control Devices (MUTCD). Some can also provide wayfinding assistance at intersections with supplemental destination plates and arrows placed beneath them. The 2009 version of the MUTCD manual includes signs that combine bike route designation with wayfinding information. Some Illinois towns have put two or three destinations on a single sign, with mileages. Figure 2.7 illustrates some examples.

Wayfinding signs are useful throughout the bikeways network, whether along a trail, sidepath, bike lane or route. Consult MUTCD for spacing and placement specifications.

Further recommendations on a bikeway network wayfinding system for Buffalo Grove are in Chapter 4.

Combined Bike/Parking Lanes

Some residential collector streets with wide lane widths permit on-street parking, but parked cars are sparse – under 5% or 10% occupancy – except perhaps on special occasions ("party-parking"). While this may be an opportunity for dedicated bike lanes, removal of parking on even one side may be politically infeasible – even though the wider lanes often encourage faster traffic speeds through neighborhoods.

Figure 2.8. Combined Bike/Parking Lanes.

A fallback option is to stripe off 7-8 feet (including gutter pan) for the occasional parked car. This space, essentially an "urban paved shoulder", may be used by bikes, too. Sign the road as a Bike Route, but do not include any designated Bike Lane signage or pavement markings. Cyclists in this space would pass parked cars just as they do on road shoulders and unstriped roads. Benefits include:

- An increased perception of comfort by the cyclist
- Lower likelihood of the occasional parked car being hit by another car
- The traffic-calming effect of narrower lanes, i.e., slowing car speeds

Westbound Pauline, west of Weiland, is a current example – minus the Bike Route signage.

"Combined Bike/Parking Lanes" (CBPLs) allow parking, but Bike Lanes do not. Steps should be taken to avoid confusion. Combined Bike/Parking Lanes should use signage indicating parking permission information. Bike Lanes should use "no parking" signs (where there is no adjacent on-road parking).

Shared Lane Markings

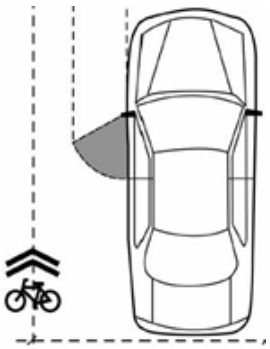


Figure 2.9. Shared Lane Marking (or "Sharrow").

Pavement markings inform cyclists of optimum lane positioning. Also, markings are more effective than signage alone in reminding drivers of the possibility that they will see a bicyclist in the road.

Bicycle positioning on the roadway is important to avoiding crashes with cars turning at intersections and doors opening on parked cars. Figure 2.9 shows a Shared Lane Marking (or "sharrow"), approved in the MUTCD. Elgin and Northbrook are two of several Illinois cities using these.

The "SLM" marking is used primarily for streets with speed limits below 40 mph having insufficient width (or need) for bike lanes. On such roads with significantly occupied on-street parallel parking, the center of the marking shall be 11 feet (or more) from the curb; with no occupied parking, the center of the marking shall be 4 feet (or more) from the curb.

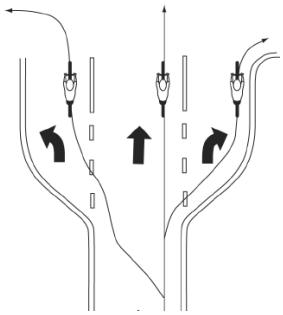


Figure 2.10.

The markings should be placed right after an intersection and spaced at intervals of 250 feet thereafter. See MUTCD chapter 9 for more installation guidance. The shared lane marking also can be used to indicate correct straight-ahead bicycle position (middle cyclist in Figure 2.10) at intersections with turn lanes, where bike lanes or combined bike/parking lanes have been temporarily dropped.

SLMs should be supplemented with wayfinding signage.

Figure 2.11. Signal activation marking and sign.

Signal Activation by Bicycles

Both bicycles and motorcycles have difficulty activating demand-actuated traffic signals. Cars may not be present to trip the signal, or cars may be stopped too far back of a bike. Pedestrian push-button actuation, if present, is often inconveniently located for on-road bikes.

Illinois now has a law by which bicyclists and motorcyclists may treat stoplights like stop signs, after two minutes of not being detected. Engineering solutions are safer and preferred.

For existing intersections, the MUTCD-approved Bicycle Detector Pavement Marking (MUTCD Fig. 9C-7) in Figure 2.11, together with the R10-22 Bicycle Signal Actuation Sign, can indicate a detector trigger point for actuating the signal. For standard detectors, the detector's perimeter – such as its right edge – is more sensitive to bicycles. Correct tuning of the detector may be needed, too.

For new intersections, quadrupole loop detectors or new camera detection technology could be used, as they are more sensitive to bikes and motorcycles.

The detector marking also serves to indicate proper bicycle position at an intersection.

Chapter 4 identifies and prioritizes intersections to study and possibly resolve this issue.

3 Guidelines For Bikeway Recommendations

Introduction

A bikeways network is comprised of routes that are particularly important because they serve key destinations and facilitate travel across barriers. Although all village streets, except where prohibited, will be used by cyclists, a designated bikeways network helps direct them to particularly favorable routes, especially for mid- and long-distance trips. Developing a plan for a bikeways network establishes priorities for improvements, such as striping for bike lanes or combined bike/parking lanes, completing sidepaths and trails, adding wayfinding signs and improving crossings.

Buffalo Grove's bikeways network was developed with a variety of inputs:

- **Public Involvement:** On May 2, 2013, a "Public Brainstorming Workshop" was attended by 25 residents. The purposes of the workshop included: a) gather local resident knowledge on biking needs; b) prioritize road corridors and other routes to study for potential improvements; c) build community support for the plan and its implementation. Each attendee marked individual maps with suggestions. A group exercise followed in which top priorities from three geographic regions of the Village were discussed and reported. See Appendix 2 for results.

- **Consultation with Village Staff Steering Committee**: In addition to the workshop, meetings were held with the Steering Committee of the Buffalo Grove Bicycle Plan, consisting of Village staff (see Appendix 1). The committee guided the project approach and recommendations, while providing much valuable input on existing conditions, data collection, and more.

- **Review of Northwest Municipal Conference and neighboring towns' plans**: Incorporated were connections to neighboring communities' existing and planned bikeways. Recommendations for bikeways along Dundee Road and Deerfield Parkway were given extra consideration due to their inclusion in the two regional corridors through Buffalo Grove in the 2010 Northwest Municipal Conference Bicycle Plan.

- **Bicycle Level of Service Analysis:** The Bicycle Level Of Service[2] (BLOS) measure quantifies the "bike-friendliness" of a roadway, helping to remove a wide range of subjectivity on this issue. The measure indicates adult bicyclist comfort level for specific roadway geometries and traffic conditions. Roadways with a better (lower) score are more attractive – and usually safer – for cyclists. BLOS has been used in IDOT's bicycle maps for years, and it was recently added to the Highway Capacity Manual. More information and an on-line calculator is at http://www.bikelib.org/bike-planning/bicycle-level-of-service/ BLOS is used in the Buffalo Grove Bicycle Plan to measure existing

[2] Landis, Bruce, "Real-Time Human Perceptions: Toward a Bicycle Level of Service," Transportation Research Record 1578 (Washington DC, Transportation Research Board, 1997).

and future conditions, to set standards for the bikeway network, and to justify recommendations.

- **Review of standards, guidelines and best practices**: The plan draws heavily from AASHTO, MUTCD, FHWA and other nationally recognized resources for bicycle facility design. See Bikeways Types discussion in the previous section.

Guiding Principles and Selecting Bikeway Type

The following general guiding principles were used for the plan's recommended improvements to Buffalo Grove's bikeway network.

- Plan for a target audience of casual adult cyclists. At the same time, address the needs of those who are more advanced and those who are less traffic-tolerant, including children.
- Strive for a network that is continuous, forming a grid of target spacing of ½ to 1 mile to facilitate bicycle transportation throughout the Village.
- As much as possible, choose direct routes with lower traffic, ample width, stoplights for crossing busy roads – and at least some level of traffic control priority (minor collectors or higher classification) so that cyclists do not encounter stop signs at every street.
- Look for spot improvements, short links, and other small projects that make an impact.
- Be opportunistic, implementing improvements during other projects and development. An example is restriping during resurfacing. Widening a road to add an on-road bikeway will be considered as part of a major road reconstruction, but not as a standalone project.

These guidelines were used for making recommendations for specific route segments:

- Consider both on-road and off-road improvements, as described in Chapter 2. Narrowing lane width below 12' will be considered if necessary to implement an on-road bikeway on local roads with lower speed and lower truck traffic.
- Where on-road bikeways are recommended, try to achieve a BLOS rating of High C (marginal), B (ideal), or better for designation in the network. This is an appropriate goal for accommodating the casual adult bicyclist. Depending on the situation, use Bike Lane or Bike Route signage, plus wayfinding signage to indicate inclusion in the network.
- For the on-road segments designated as being in the network, raise the priority of filling sidewalk or sidepath gaps on at least one side of the road. This recognizes that children – and more traffic-intolerant adults – will ride on the sidewalk. However, sidewalks with width under sidepath standards should not be designated or marked as part of the bikeway network.
- Do not recommend sidepaths where there are too many crossing conflicts (driveways, entrances, cross streets). Where sidepaths are recommended, use the design techniques described above to somewhat reduce the risks at intersections.
- Where there is sufficient width and need, and speeds are moderate to low, use striping to improve on-road cyclist comfort level. Depending on available width and parking

occupancy, the striping may be in the form of either dedicated bike lanes or combined bike/parking lanes. Where such roads have insufficient width for striping, shared lane markings or simply Bike Route wayfinding signs are recommended, depending on parking occupancy and assuming an on-road comfort level meeting the target BLOS.

- Use Shared Lane Marking and bike signal actuation pavement markings to indicate proper on-road bicycle position, especially where heavy bicycle traffic is expected. Shared Lane Markings should be used in straight-ahead lanes, at intersections where turn lanes require the interruption of striped bike lanes or Combined Bike/Parking Lanes.

Generating Public Support

To improve public support for plan implementation, these additional approaches are suggested:

- Achieve early, easy successes ("low-hanging fruit") to gather momentum.
- Avoid removing on-road parking if at all possible, especially by businesses.
- Where appropriate, use road striping to serve not only bicyclists but adjacent residents, as well. Cite the traffic calming (slowing) and other benefits of striped, narrower roads.
- Do not widen 4'-5' sidewalks to 8'-10' sidepath widths where at least some residential front yards would be impacted.
- Do not widen residential roads solely for bikeways.
- Work with local businesses and media outlets to help promote the plan and highlight progress.

"Collector Options"

Buffalo Grove's current bikeway system consists primarily of off-road sidepaths along busier and arterial roads, plus several trails on their own rights-of-way.

The Village's network of residential collector roads – including Bernard, Brandywyn, Farrington, Checker, Highland Grove, Old Checker, Pauline Raupp/Golfview, Thompson, Weidner – are excellent candidates to add to the network, for the following reasons:

- A denser bikeway network of roughly half-mile spacing is usually considered ideal
- These roads provide access to most of the neighborhoods in the community
- Collector roads generally have stoplights to help in crossing busier roads

Buffalo Grove's residential collector roads (sample photo, below) are fairly homogeneous:

- 35' total width including 16' lanes and 18" gutter pans
- 25 mph speed limits
- Daily traffic counts between 2000-4400
- On-street parking typically permitted, but very sparsely occupied
- Little to no truck traffic
- Bicycle Level of Service of low B or very high C.

Figure 3.1. Typical residential collector street in Buffalo Grove.

The guidelines above are used to present the Village with options on how best to add these roads to the bikeway network, on a case-by-case basis.

If no parking was allowed on these streets, then a very feasible bikeway option – also having passive traffic calming benefits to reduce speeding – would be to stripe 5' bike lanes on each side, for the exclusive use of bicycles. Since that is not the case, and since residents generally desire on-street parking for special occasions and other times, other "Collector Options" must be considered, on a case-by-case basis.

Three options involving striping are illustrated below. A fourth option maintains the current lane configuration, with no striping. Note that each of the three striping options involves a "Combined Bike/Parking Lane" (CBPL) – described in Chapter 2, and like an urban paved shoulder – on at least one side of the road. CBPLs can only function as a bikeway when parking occupancy is normally very low, as is the case on Buffalo Grove's residential collectors except at some times by schools.

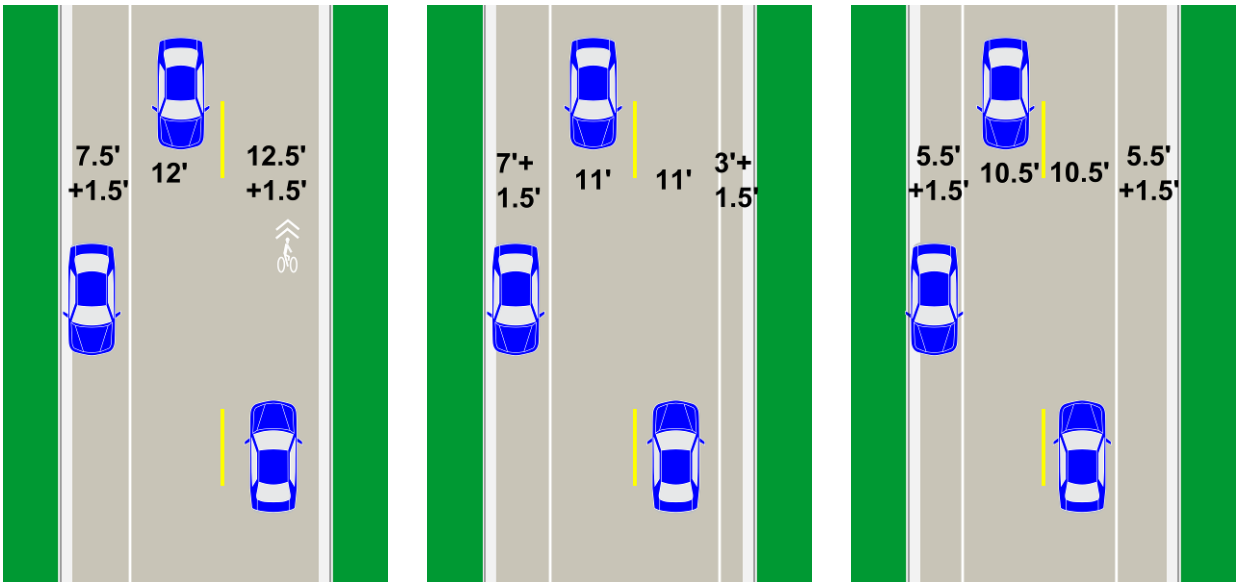


Figure 3.2. Collector Options. Left: Option 1 – CBPL + SLM.
Center: Option 2 – CBPL + shoulder. Right: Option 3 – CBPL both sides

Option 1: In this case, parking is allowed on one side but prohibited on the other side, where a Shared Lane Marking is added 4' from the curb face. BLOS comfort levels would be an "A" on the side with the CBPL lane and a mid-"C" (below the plan's target) on the non-parking side.

Option 2: Lanes are narrowed somewhat, leaving room for a striped, no-parking shoulder on the other side. Signage should clearly indicate that parking is permitted on the CBPL side, but not the other. Resulting BLOS ratings: an "A" for the CBPL lane, mid-"B" for the shoulder.

Option 3: Here, two CBPLs are striped, thus maintaining parking on both sides. Bicyclists on both sides would be comfortable ("A" BLOS). While this option may be the best politically, one consideration is that the parking and travel lanes both would be near or at minimum widths.

Option 4 ("as-is"): Wayfinding "Bike Route" signage would be added – as it would for any of the other options. However, with no striping added, bicyclist comfort levels would remain at low-"B" or high-"C" levels – near or below the minimum target of the plan. Shared Lane Markings would not work well – on-street parking prevents their placement 4' from the curb, but the 11' with-parking minimum would be unreasonable with such a low parking occupancy.

The Village already has experience with Option 1 on Pauline, east of Weiland. There, striping was added on the north (westbound) side of the road. However, no parking was removed on the south (eastbound) side, since no houses fronted the road there. Striping was added primarily as a traffic calming measure. The Buffalo Grove Police Department reports that this narrowing of traffic lanes was effective at reducing speeding – consistent with results seen in some other Chicago area communities. The police report that most of the residential collectors listed above are problem roads for speeding, and so they would support the striping options.

The plan recommends careful consideration of these options on a case-by-case basis.

4 Bikeway Network Recommendations

Introduction

The Buffalo Grove Bicycle Plan proposes an expanded network of bicycle routes to facilitate travel to all sections of the village and beyond. The proposed network builds on the existing sidepath and trail system developed over the years by the Village. The recommended projects in this section will help fill gaps, tackle barriers and improve conditions to complete the network. Most projects are relatively easy, such as striping residential collector roads throughout town. See the earlier Bikeways Guidelines section for more information on how routes and projects were selected.

Understanding the Maps

The plan's maps provide a snapshot of needs and recommendations.

- **Figure 4.1) Existing Conditions -- Trails and On-Road Comfort Level:** Shows *existing* on-road conditions for bicyclists on studied roads, including, but not limited to, all routes studied for the network. It also provides information on existing trails and sidepaths.
- **Figure 4.2) Bikeway Recommendations – All, with Priorities:** Includes recommended on- and off-road bike facilities. Superimposed on the recommendation type is the suggested project priority, from high to low. Low priority indicates projects resulting in only a minor improvement, or routes resulting in a slightly denser network.
- **Figure 4.3) Bikeway Recommendations – High and Medium Priorities:** A subset of the map above, without the project priority superimposed.
- **Figure 4.4) Bikeway Recommendations – High Priority Only:** A further subset of the map above.
- **Figure 4.5) Future Conditions -- Trails and On-Road Comfort Level:** Portrays how the off-road trail system and on-road bicycle level of service will change, if the recommended projects are implemented (all priorities).

Consider Raupp as an example in using the maps and the spreadsheet in Appendix 3. The existing conditions map shows an on-road comfort level ranging from low B, high C, and low B again, in terms of Bicycle Level of Service. A BLOS of C is considered acceptable for experienced cyclists, as is B for casual adult cyclists – the minimum target of this plan.

The recommended bikeways maps calls for striped bike lanes from Church to Lake-Cook, with details described in the spreadsheet. Directly south, where the road is narrower, Bike Route wayfinding signs are suggested. Further south, Raupp is wide with sparse parking – ideal for whichever of the "Collector Options" is selected for this case. Each segment is a high priority.

The future conditions map and spreadsheet show that bike lane striping would improve north Raupp to an A, as would the Collector Option of combined bike/parking lanes, with striping, on each side. The signed segment between Lake-Cook and St. Mary's remains a High C.

Existing Conditions: Trails and On-Road Comfort Level

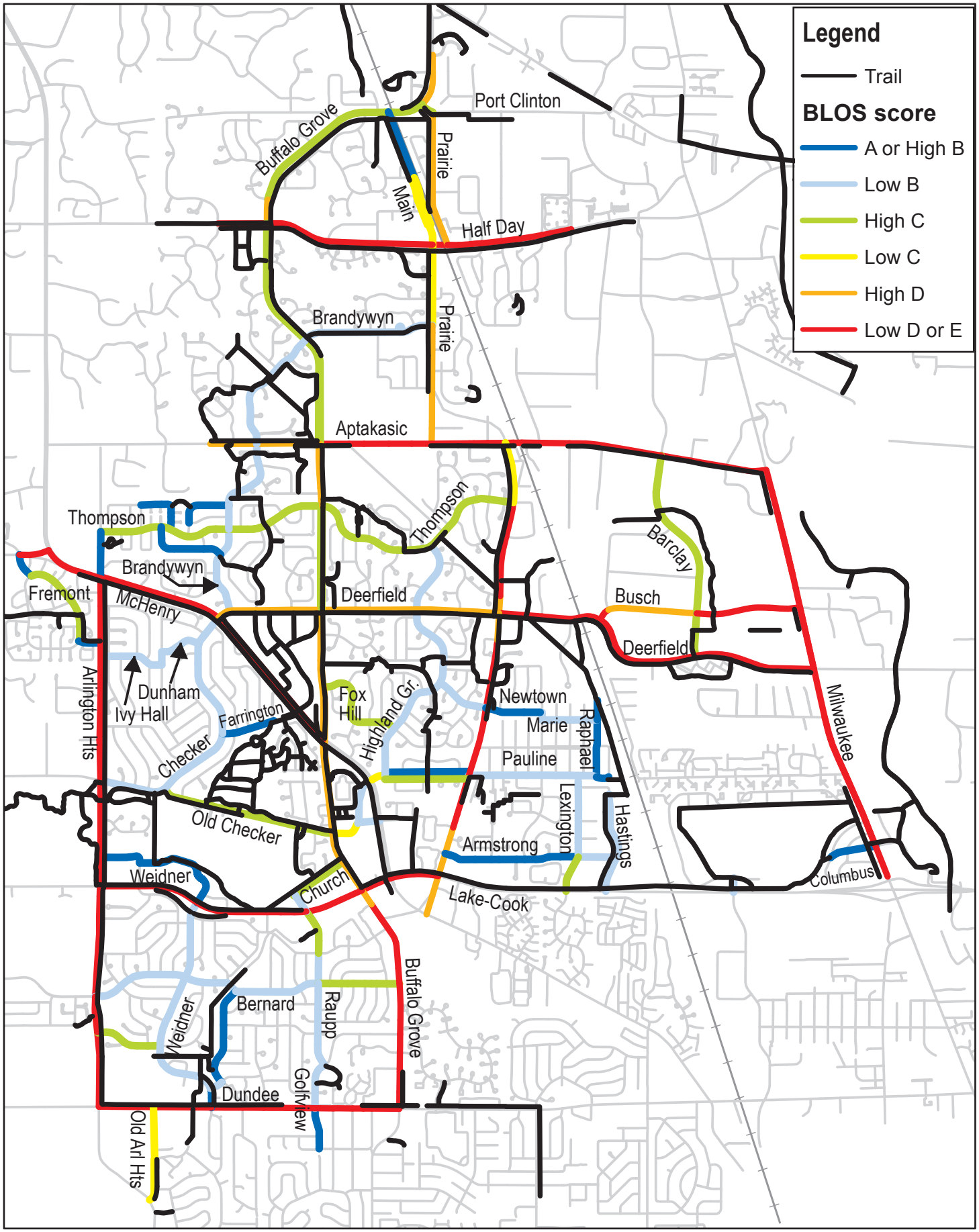


Figure 4.1

Bikeway Recommendations - All, with Priorities

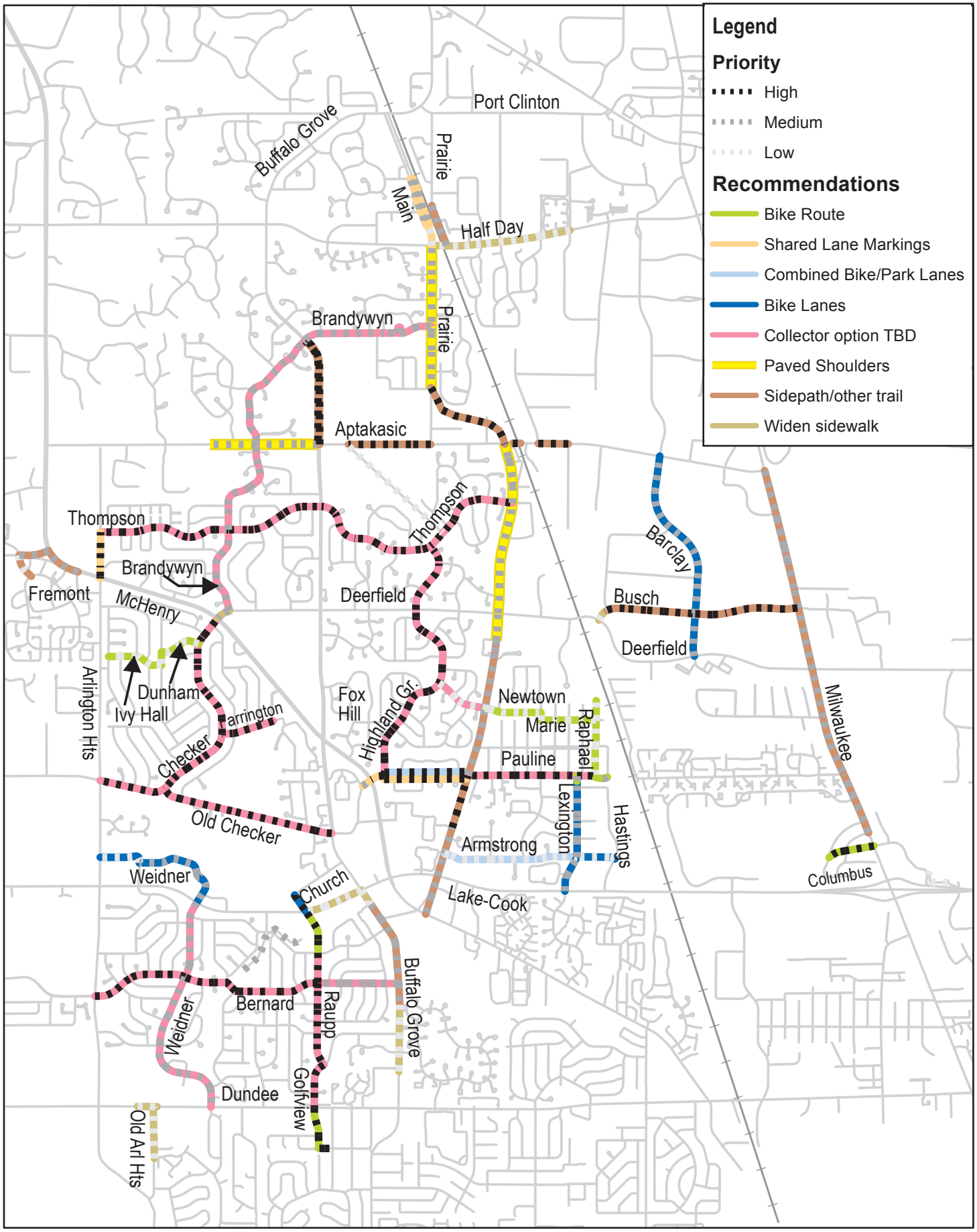


Figure 4.2

Bikeway Recommendations - High and Medium Priorities

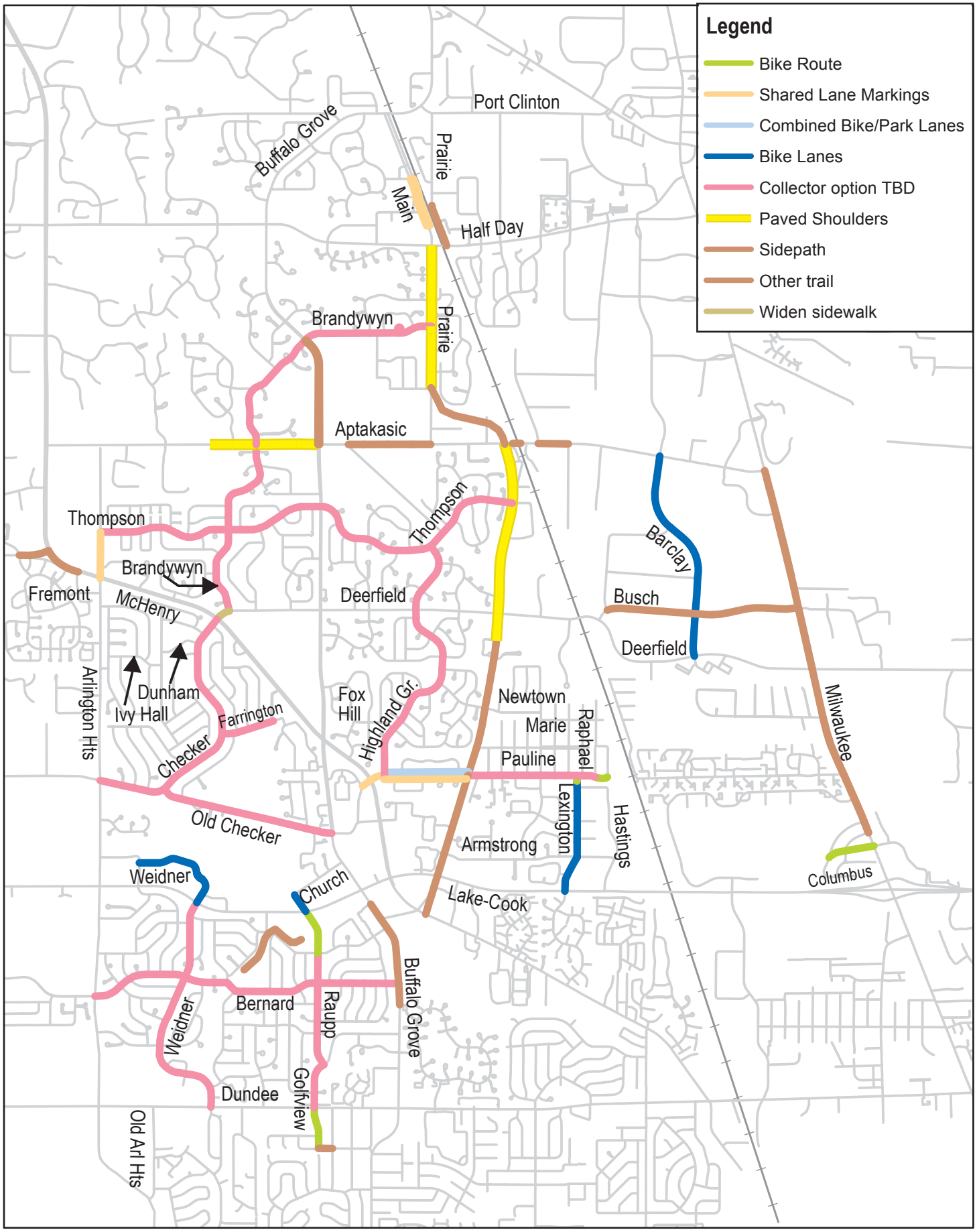


Figure 4.3

Bikeway Recommendations - High Priority Only

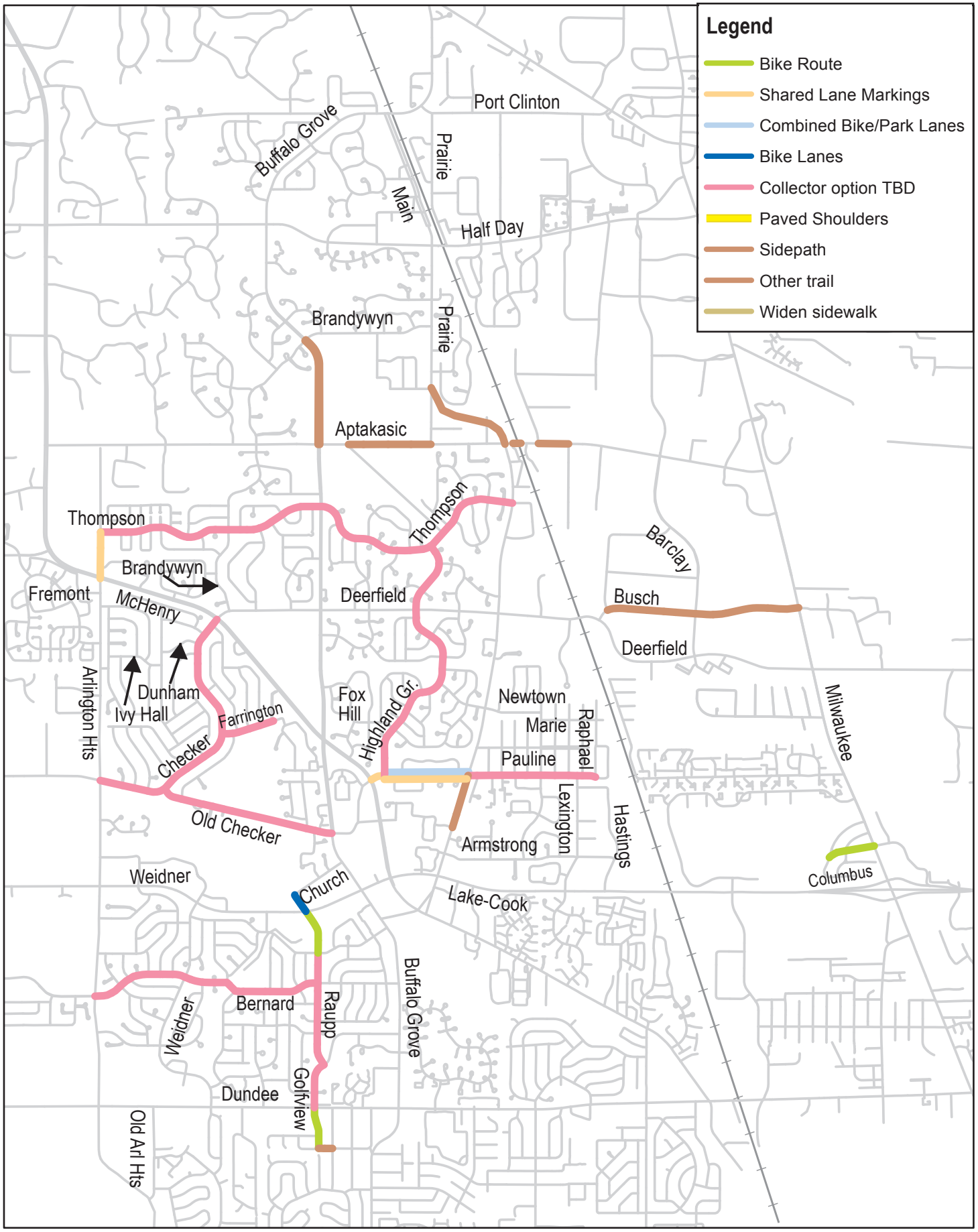


Figure 4.4

Future Conditions: Trails and On-Road Comfort Level

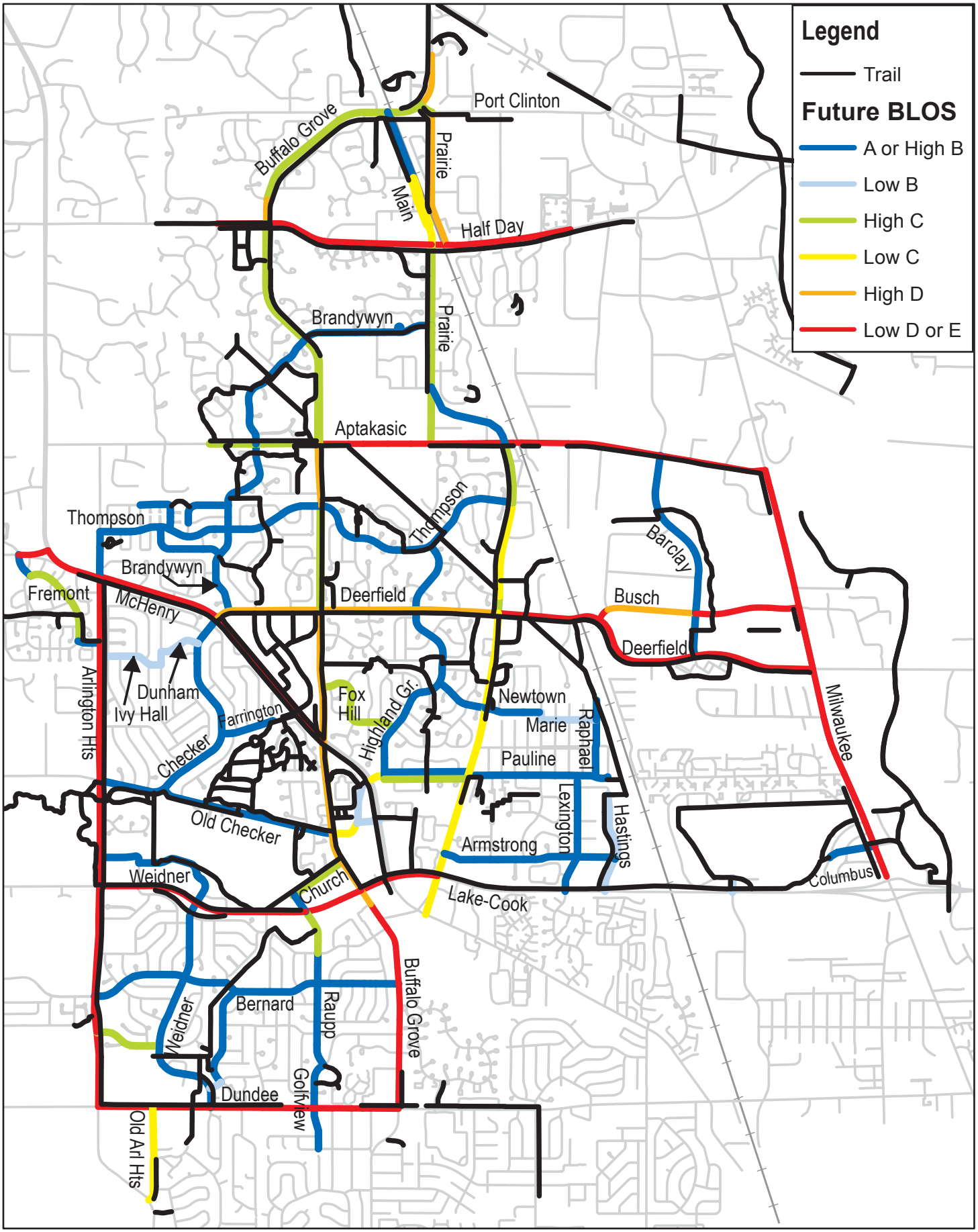


Figure 4.5

Understanding the Project List

Extensive data collection on existing bicycling conditions informed the development of this plan. Most of this information, such as roadway geometry, traffic conditions, Bicycle Level of Service scores, sidewalk coverage, recommendation details and implementation notes, is housed in a spreadsheet that helps generate the maps. See Appendix 3 for the entire dataset by road segment. The table that follows summarizes recommended projects by road name. Listed at the end are low priority routes less important to the network. Asterisks (*) indicate: 1) projects outside the Village; or 2) projects in which the Village is not the lead implementation agency.

Table 4.1. Recommended Projects - High and Medium Priorities

Segment	From (W/N)	To (E/S)	On Road Recommendation	Off Road Recommendation	Priority	Lead Agency
Aptakisic	Trail W of Brandywyn	Buffalo Grove	Paved shoulders		Medium	LCDOT
Aptakisic	ComEd Trail	Prairie		Sidepath (south side)	High	LCDOT
Aptakisic	E of Weiland	W of Roadway		Sidepath (south side)	High	LCDOT
Aptakisic	Bond	Industrial		Sidepath (south side)	High	LCDOT
Arlington Hts.	Thompson	IL-83	Bike Route wayfinding signage. Shared Lane Markings (4-lane segment only)		High	VBG
Barclay	Aptakasic	Corporate Grove	Bike Lanes		Medium	VBG
Barclay	Corporate Grove	Deerfield	Bike Lanes	Complete east sidewalk	Medium	VBG
Bernard	Arlington Hts.	Raupp	*Collector bikeway options*		High	VBG
Bernard	Raupp	Buffalo Grove	*Collector bikeway options*		Medium	VBG
Brandywyn	Prairie	Deerfield	*Collector bikeway options*		Medium	VBG
Brandywyn	at Buffalo Grove			Rapid Rectangular Flashing Beacon crossing	Medium	LCDOT
Buffalo Grove	between railroad and Port Clinton			Better crossing between south, north sidepath	High	LCDOT
Buffalo Grove	Brandywyn	Aptakisic		Sidepath (east side)	High	LCDOT
Buffalo Grove	500' S of Lake-Cook	350' S of Bernard		Sidepath (east side)	Medium	CCDOTH
Busch	Corporate Grove	Milwaukee		Sidepath (south side)	High	VBG
Checker	Arlington Hts.	IL-83	*Collector bikeway options*		High	VBG
Columbus	Chevy Chase	Milwaukee	Bike Route wayfinding signage		High	VBG
Deerfield	IL-83	Brandywyn		Widen north sidewalk	Medium	LCDOT
Farrington	Checker	Crown Point	*Collector bikeway options*		High	VBG

Segment	From (W/N)	To (E/S)	On Road Recommendation	Off Road Recommendation	Priority	
Golfview	Raupp	Dundee	*Collector bikeway options*		High	VBG
Golfview	Dundee	S-end	Bike Route wayfinding signage		High	VBG
trail link	Golfview's south end	Dun-Lo/Betty		Trail link	High	Wheeling Twsp.
Highland Grove	Thompson	Pauline	*Collector bikeway options*		High	VBG
IL 53	Old McHenry	McHenry		Sidepath (south side)	Medium	IDOT
IL-83	IL-53	Bristol's bend		Sidepath (south side)	Medium	IDOT
Lexington	Pauline	S of Pauline		Open access to bicycles, repave and sign as Bike Route	Medium	VBG
Lexington	S of Pauline	Lake Cook	Bike Lanes		Medium	VBG
Main	Park	Metra lot	Shared Lane Markings	Sidewalk (west side, if feasible)	Medium	VBG
Milwaukee	Aptakasic	Deerfield		Complete, widen west sidewalk	Medium	IDOT
Old Checker	Checker	Buffalo Grove	*Collector bikeway options*		High	VBG
Pauline	Town Place	IL-83	Shared Lane Markings		Medium	VBG
Pauline	IL-83	Highland Grove	Shared Lane Markings		High	VBG
Pauline (E-bd)	Highland Grove	Weiland	Shared Lane Markings		High	VBG
Pauline (W-bd)	Highland Grove	Weiland	Combined Bike/Parking Lane		High	VBG
Pauline	Weiland	Raphael	*Collector bikeway options*		High	VBG
Pauline	Raphael	Carman	Bike Route wayfinding signage		Medium	VBG
Prairie	curve	Half Day		Sidepath (west side)	Medium	VBG
Prairie	Half Day	Olive Hill	Paved shoulders		Medium	LCDOT
Prairie	at Brandywyn			Rapid Rectangular Flashing Beacon crossing	Medium	LCDOT
Prairie (new)	Olive Hill	Aptakisic	Paved shoulders	Sidepath (west side)	High	LCDOT
Hartstein Trail extension	Alcott Comm. Center	Emmerich Pk W (by Raupp)		Trail	Medium	VBG
Raupp	Church	Lake Cook	Bike Lanes		High	VBG
Raupp	Lake Cook	St. Mary's	Bike Route wayfinding signage		High	VBG
Raupp	St. Mary's	Golfview	*Collector options*		High	VBG
Thompson	Arlington Hts.	Weiland	*Collector options*		High	VBG
Weidner	West edge, BG golf course	Lake Cook	Bike Lanes		Medium	VBG
Weidner	Lake Cook	Dundee	*Collector options*		Medium	VBG
Weiland	Aptakasic	Pauline	Paved shoulders	(Maintain sidepath - west side)	Medium	LCDOT
Weiland	Pauline	Woodstone	Paved shoulders	Sidepath (west side)	High	LCDOT
Weiland	Woodstone	Lake Cook	Paved shoulders	(Maintain sidepath - west side)	Medium	LCDOT
Weiland	at Newtown and by Schwaben Center/Grove Banquets			Rapid Rectangular Flashing Beacon crossing	Medium	LCDOT

Table 4.2. Recommended Projects - Low Priority

Segment	From (W/N)	To (E/S)	On Road Recommendation	Off Road Recommendation	Priority	Lead Agency
Arlington Hts	At Heritage			Link, road Xing to east sidepath	Low	LCDOT
Arlington Hts.	at Happfield			Link, road Xing to east sidepath	Low	CCDOTH
Armstrong	Weiland	Lexington	Combined Bike/Parking Lanes		Low	VBG
Armstrong	Lexington	Hastings	Bike Lanes		Low	VBG
Buffalo Grove	at Dunstan, Sandalwood, Birchwood, LaSalle, Larraway, Common Way, and Manor			Link, road Xing to east sidepath	Low	LCDOT
Buffalo Grove	Lake Cook	500' S of Lake-Cook		Widen sidewalk (east side)	Low	VBG & Wheeling
Buffalo Grove	350' S of Bernard	900' N of Dundee		Widen sidewalk (east side)	Low	Wheeling
Busch	Deerfield	Corporate Grove		Widen sidewalk (south side)	Low	VBG
Carlton-Aspen-Ivy Hall-Indian Spring-Dunham	Arlington Heights	Brandywyn	Bike Route wayfinding signage		Low	VBG
Deerfield	at Larraway and Old Barn			Link, road Xing to south sidepath	Low	LCDOT
Dundee	Buffalo Grove HS stoplight	Old Arlington Heights		Widen sidewalk (south side)	Low	IDOT
Half Day	at Easton			Link, road Xing to south sidepath	Low	IDOT
Half Day	Prairie	high school		Widen sidewalk (north side)	Low	IDOT
IL-83	at Ranchview and Devlin			Link, road Xing to south sidepath	Low	IDOT
Lake Cook	Raupp	Buffalo Grove		Widen sidewalk (north side)	Low	
Main	Metra lot	Half Day	Shared Lane Markings		Low	VBG
N Fremont Way	IL-53	Fremont circle		Sidepath (west side)	Low	VBG
Newtown	Highland Grove	Weiland	*Collector options*		Low	VBG
Newtown-Horatio-Marie	Weiland	Raphael	Bike Route wayfinding signage		Low	VBG
Northgate	Johnson and trail	Lake Cook	Bike lane (N-bd), Shared Lane Marking (S-bd)		Low	VBG
Old Arlington Heights	Dundee	Miller		Widen sidewalk (east side)	Low	IDOT
Prairie	at Brockman			Link, road Xing to south sidepath	Low	VBG
Raphael	trail near Metra	Pauline	Bike Route wayfinding signage		Low	VBG & Vernon Twp
private road north of Lake-Cook	Arlington Heights	Weidner	Bike lanes		Low	Property owner
ComEd trail	Aptakasic	Thompson		Trail	Low	VBG
DesPlaines River Trail link	Riverwalk	Des Plaines River Trail		Trail link	Low	LCFPD

Access Links to Sidepaths

In several places in the Village, access is lacking to a sidepath on the far side of a 3-way intersection. Where a near-side continuous sidewalk (with low pedestrian use) exists both north and south to the next 4-way intersection or other sidepath access, this is a relatively minor issue.

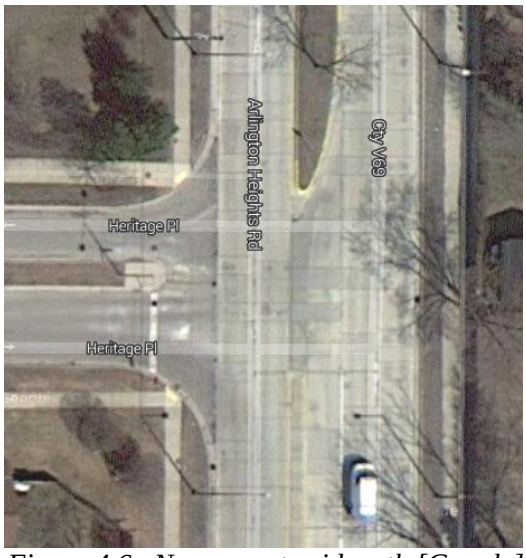


Figure 4.6. No access to sidepath [Google]

Fifteen such locations are listed in the "Recommended Projects – Low Priority" table above.

Where there is no near-side sidewalk, or it is not continuous to the next crossing, adding access increases in priority. Such is the case between the south and north sidepaths along Buffalo Grove Road between the railroad and Port Clinton.

Access can be provided with a curb cut and short trail link. An engineering study would be needed in each case to determine whether a (high-visibility) crosswalk, signage, and possibly further crossing treatments are appropriate.

Sidepath Crosswalks

Buffalo Grove's system of sidepaths along busier roads is where most of the Village's car-bike crashes occur. The engineering treatments described in Chapter 2 can help in somewhat alleviating the inherent sidepath conflicts leading to crashes. So, too, can crosswalks – especially high-visibility styles such as the continental crosswalk.

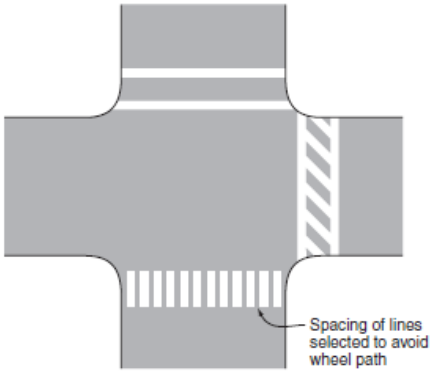


Figure 4.7. Crosswalk styles. Clockwise, from top: transverse (standard), diagonal ("zebra"), and continental

Crosswalk striping along the Village's sidepaths now range from continental, to standard, to none. In general, county-maintained roads have more and higher-visibility striping than state roads. Minor and, especially, major cross roads had better striping than commercial and other entrances.

The plan recommends consistent use of continental crosswalks, with higher priority given to:

- Sidepaths prioritized over sidewalks, due to higher bicycle use
- Those sidepath locations with a history of car-bike crashes
- Sidepaths along Deerfield and Dundee – regional corridors in the Northwest Municipal Conference Bike Plan
- Locations – including commercial entrances – with higher turning and cross traffic
- Other locations suggested by the proposed Bicycle and Pedestrian Advisory Commission

Mid-Block Trail Crossings

There are several locations in Buffalo Grove in which a trail (on its own right-of-way) intersects a road. The recommended design features will vary depending primarily on the width and traffic level of the road being crossed.

For trail crossings of residential collector streets and even quieter roads, the plan suggests crosswalks with the MUTCD's W11-15 Bicycle/Pedestrian warning and W16-7P arrow signs – both in fluorescent yellow-green background color. Higher-visibility continental crosswalks should be used, especially for the collector streets. The Village already is using this treatment for many, but not all, such crossings.

For busier roads, a menu of more effective options exists for various situations:

- Crosswalks on raised speed tables, for lower volume and speed roads
- Curb extensions, for lower speed roads with significant on-street parallel parking
- Median refuge islands, which lower the crash rate by 40%
- Advance stoplines, to reduce multiple-threat crashes at multilane roads
- (Where warrants are met) Pedestrian Hybrid Beacon (aka "HAWK") traffic signals, activated by pedestrians and bicyclists
- Rectangular Rapid Flashing Beacon (RRFB) signs, activated by pedestrians and cyclists, with vehicular stopping rates approaching that of HAWK signals – at lower cost
- Trail grade separations (tunnels or bridges, e.g. under Arlington Heights Road, south of Old Checker; over IL 83, east of Farrington), ideal for the busiest roads and trails, but very costly and not feasible at many locations

Figure 4.8. W11-15 and W16-7p signs.

The Rectangular Rapid Flashing Beacon is recommended for Buffalo Grove Road at Brandywyn, Prairie at Brandywyn, and Weiland at Newtown and north of Woodstone at Schawben Center/Grove Banquets. The Weiland and Prairie RRFBs are already being planned.

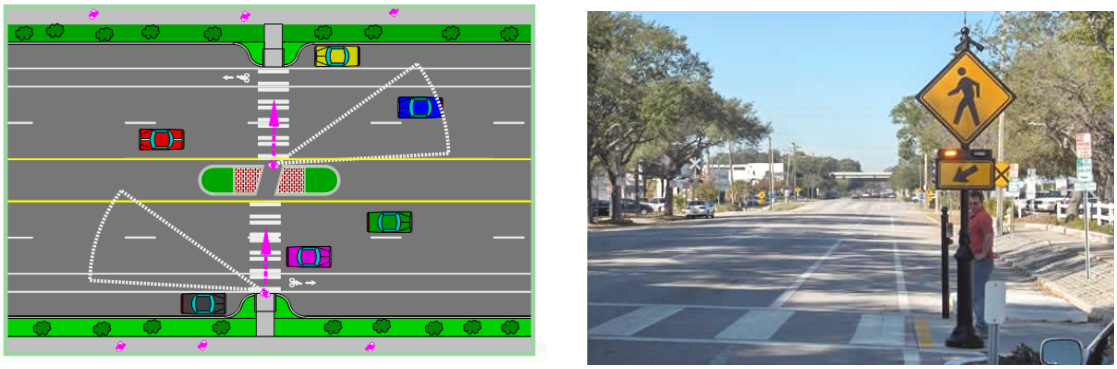


Figure 4.9. Left – median refuge island (courtesy PBIC). Right – Rapid Rectangular Flashing Beacon (courtesy FHWA).

Traffic Signals for Bicycle Actuation Study

An advantage of using residential collector streets in a bikeway network is that these roads often have traffic signals to aid in crossing busier, arterial roads. There is a strong possibility that these stoplights are demand-actuated for those traveling on the collectors. Bicycles must be able to actuate the traffic signals' detectors – otherwise the routes become less useful to the network.

It is recommended that the signals below be tested for bicycle actuation. This could be a task of the proposed Bicycle and Pedestrian Advisory Commission, with staff from the Village and/or county or state agency of jurisdiction then checking those signals found to be unresponsive. Chapter 2 lists some possible remedies.

The assigned priority below corresponds to the implementation priority for that bikeway network segment. Stoplight agency of jurisdiction is in parentheses:

High Priority:

- Bernard @ Arlington Heights (CCHD)
- Checker @ IL83 (IDOT)
- Golfview @ Dundee (IDOT)
- Highland Grove @ Deerfield (LCDOT)
- Old Checker @ Buffalo Grove (LCDOT)
- Pauline @ Weiland (LCDOT) and IL83 (IDOT)
- Raupp @ Lake-Cook (IDOT)
- Thompson @ Buffalo Grove (LCDOT) and Weiland (new signal planned)

Medium Priority:

- Brandywyn @ Aptakasic (LCDOT)
- Lexington @ Lake-Cook (IDOT)
- Weidner @ Lake-Cook (IDOT) and Dundee (IDOT)

Bikeway Wayfinding Signage System

The Northwest Municipal Conference (NWMC) North and Northwest Cook County Bicycle Signage Plan details signage for its system of regional bikeway corridors. According to that plan, signage can serve both wayfinding and safety purposes including:

- Helping to familiarize users with the bikeway system
- Helping users identify the best routes to significant destinations
- Helping to overcome a "barrier to entry" for people who do not bicycle much, but who want to get started
- Alerting motorists to expect bicyclists on the route

It is recommended that Buffalo Grove follow the conventions of the NWMC signage plan in its own wayfinding signage system for the local on-road and off-road bikeway network. The NWMC plan uses national/state standards, plus other best practices, to specify sign type (such as Figure 2.7 in this plan); destination guidance; sign layout, design, and appropriate locations.

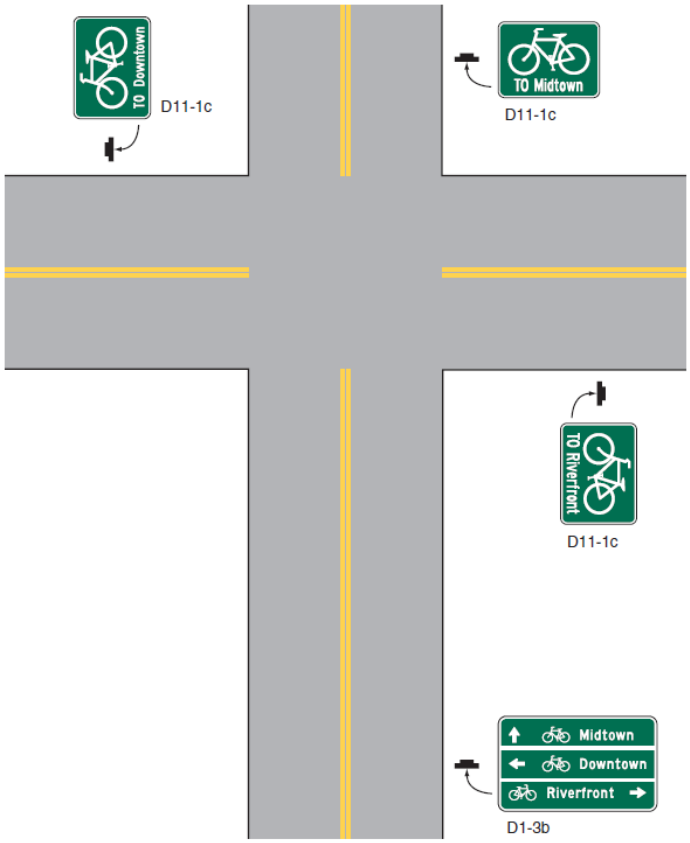


Figure 4.10. Example of bikeway wayfinding signage.

In general, signs should be placed where a route turns at an intersection, crosses another route, and crosses major intersections. Confirmation signs should be placed periodically, too.

The NWMC signage plan focuses on regional bikeway corridors, mileages, and destinations. It includes signs with unique logos for NWMC regional bikeways. While Buffalo Grove should use the same hierarchy system, its primary, secondary, and tertiary destinations will be more local in nature. For example, a destination on an on-road bikeway's sign may be the major road – and its sidepath – at the end of that road segment. The proposed Buffalo Grove Bicycle and Pedestrian Advisory Commission could assist in determining appropriate destinations.

Ideally, wayfinding signage would be installed for the entire Buffalo Grove bikeway network, during the same time period. However, if priorities must be set, or if phasing will be done, then a suggested order or prioritization is as follows:

1. Trails on their own rights-of way, especially trails with confusing decision points
2. On-road bikeway sections implemented by that time
3. Sidepaths along major roads

Finally, Des Plaines provides an interesting example to consider: proposed 7.5" X 4" stickers on the backs of their bikeway wayfinding signs. The city's bicycle webpage and corresponding QR code are listed. The webpage has background information – and bikeway maps.

Figure 4.11

Trail Usage Signage and Striping

In 1999, the State's Interagency Bikeways Council Working Group adopted the following recommended trail signage text, to encourage better sharing of multi-use trails:

- All users keep right
- Pass on the left
- Announce intentions to pass
- Move off trail when stopped.

It is recommended that this standard be used on signs to be installed at a few key trail locations, particularly along trails on their own rights-of-way.

Centerline striping can further enhance sharing of the trail. The AASHTO bike guide says:

> *"A 4 to 6 in. wide, yellow centerline stripe may be used to separate opposite directions of travel where passing is inadvisable. The stripe should be dotted where there is adequate passing sight distance, and solid in locations where passing by path users should be discouraged",*

such as:

- *For pathways with heavy user volumes*
- *On curves with restricted sight distance, or design speeds less than 14 mph*
- *On unlit paths where night-time riding is not prohibited.*

Also,

> *"A solid yellow centerline stripe may be used on the approach to intersections to discourage passing on the approach and departure of an intersection. If used, the centerline should be striped solid up to the stopping sight distance from edge of sidewalk…. A consistent approach to intersection striping can help to raise awareness of intersections."*

Trail Maintenance

Buffalo Grove's extensive trail and sidepath network needs ongoing maintenance of its surface condition. A portion of the Village's 2014-2018 Capital Improvement Program $325,000/year "Annual Sidewalk/Bike Path Maintenance" line item is used for this purpose.

In January 2011, Buffalo Grove's Bicycle/Pedestrian Path Ad Hoc Sub-Committee highlighted the need for more routine vegetation maintenance of the Village's off-road bikeway system. While much has been done on this issue, such maintenance is an ongoing need. It is recommended that the proposed Bicycle and Pedestrian Advisory Commission be tasked with periodically reviewing conditions and prioritizing maintenance recommendations. In addition the Village's website should provide an input form for other residents to submit maintenance requests.

5 Standards for Road Design and Development

Introduction

Complete Streets refers to road designs that accommodate the safety needs of all the people who travel along and across them—whether they are in a car, on a bike, on foot, in a wheelchair, or pushing a stroller.

Figure 5.1. Filling in sidewalk gaps and improving intersections helps complete a street.

In recent years, agencies from all levels of government have developed policy and planning tools to ensure that road project designs accommodate those who walk or bike by choice or necessity. In 2010, IDOT adopted design policy changes to implement a new Complete Streets law for their roads. That same year, the US Department of Transportation also voiced support for Complete Streets with a new bicycle and pedestrian accommodation policy statement:

> *"Every transportation agency, including DOT, has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems. Because of the numerous individual and community benefits that walking and bicycling provide — including health, safety, environmental, transportation, and quality of life — transportation agencies are encouraged to go beyond minimum standards to provide safe and convenient facilities for these modes."*

By developing this Bicycle Plan, the Village of Buffalo Grove has established priorities for road corridors that need improvement. However, to ensure that all road projects—whether or not they are addressed specifically in this plan—consider the needs of all potential travelers, the plan recommends adopting "Complete Streets" policies and favorable road design standards.

Plan Recommendations

Village-Maintained Roads: Pass a Complete Streets Policy to help guide transportation and development projects in Buffalo Grove. Suggested language:

> *The Village of Buffalo Grove establishes a "policy statement" to ensure that all streets shall be designed, built, maintained and operated to enable safe and convenient access for all users, to the extent practical. Pedestrians, bicyclists and motorists of all ages and abilities, including people who require mobility aids, must be able to safely move along and across Buffalo Grove's streets.*

In addition to passing an overall Complete Streets resolution setting Village philosophy, modify the Village's road design standards to implement the policy on a practical level. As a major part of that, the tables below may be used to specify appropriate bikeway accommodation and conditions for sidewalk construction.

Table 5.1. Suggested Bicycle Accommodation in Road Designs

Minor urban 25-30 mph roads			
	No parking	*Sparse (<10%) parking*	*Heavy (>25%) parking*
Local Residential	None	None	None
(Preferred route)	SLM-4	CBPL	SLM-11
Minor Collector	None	None	None
(Preferred route)	SLM-4 (or BL-5*)	CBPL	SLM-11 (or BL-5*)

Arterial or Major Collector *(Urban unless noted)*			
	2000-8000 ADT	*8000-15000 ADT*	*Over 15000 ADT*
<35 mph	BL-5	BL-5 (or BL-6*)	BL-6 (or SP) *Note A*
35-40 mph	BL-5 or SP *[Note A]*	SP (or BL-6) *Note A*	SP (or BL-6) *Note A*
>40 mph	SP	SP	SP
55 mph rural	SH-4 (or SH-6*)	SH-6 (or SH-8*)	SH-8

- (Parentheses) indicate the secondary recommendation, if certain conditions are met.
- An asterisk* indicates the secondary recommendation may be used at the higher ends of a range and/or where the need is greater.

SLM-4: Shared Lane Markings 4' from curb faces. MUTCD D1 or D11 wayfinding signage preferred as a supplement.
SLM-11: Shared Lane Markings 11' from curb faces (on-street parking present). D1 or D11 wayfinding signage preferred as a supplement.
CBPL: Combined Bike/Parking Lanes, solid stripes 7'-8' from curb faces. Parking permission indicated with signage. D1 or D11 wayfinding signage preferred as a supplement.
BL-5 or BL-6: Bike Lanes of width 5 or 6 ft, respectively, with pavement stencils and signage per AASHTO. Where there is no parallel on-road parking next to the bike lane, indicate through signage that parking is not permitted in the bike lane.
SP: Off-road sidepath trail designed per AASHTO, on at least one side of road.
SH-4, SH-6, or SH-8: Paved shoulders of width 4, 6, or 8 ft, respectively. Any rumble strips should have longitudinal breaks and a minimum 4 ft clear zone for bikes.

Note A: As the frequency of crossings (side streets, commercial entrances, driveways) increase, the choice of bike lanes or sidepath moves closer to bike lanes.

Table 5.2. Federal Highway Administration's Guidelines for New Sidewalk Installation

Roadway Classification and Land Use	Sidewalk Requirements	Future Phasing
Highway (rural)	Min. of 1.525 m (60 in) shoulders required.	Secure/preserve ROW for future sidewalks.
Highway (rural/suburban - less than 2.5 d.u./hectare (1 d.u./acre))	One side preferred. Min. of 1.525 m (60 in) shoulders required.	Secure/preserve ROW for future sidewalks.
Suburban Highway (2.5 to 10 d.u./hectare (1 to 4 d.u./acre))	Both sides preferred. One side required.	Second side required if density becomes greater than 10 d.u./hectare (4 d.u./acre).
Major Arterial (residential)	Both sides required.	
Collector and Minor Arterial (residential)	Both sides required.	1.525 m (60 in)
Local Street (Residential - less than 2.5 d.u./hectare (1 d.u./acre))	One side preferred. Min. of 1.525 m (60 in) shoulders required.	Secure/preserve ROW for future sidewalks.
Local Street (Residential - 2.5 to 10 d.u./hectare (1 to 4 d.u./acre))	Both sides preferred. One side required.	Second side required if density becomes greater than 10 d.u./hectare (4 d.u./acre).
Local Street (Residential - more than 10 d.u./hectare (4 d.u./acre))	Both sides required.	
All Streets (commercial areas)	Both sides required.	
All Streets (industrial areas)	Both sides preferred. One side required.	

Note: *d.u. stands for dwelling unit*

Development Ordinances: Create development guidelines to help new developments contribute to Buffalo Grove's efforts to become more pedestrian and bicycle friendly. Suggested content:

Developments shall contribute to the Village of Buffalo Grove's efforts to become more pedestrian and bicycle friendly. This includes:

- *Considering bicycle and pedestrian traffic and facilities during the traffic impact analysis process.*
- *Installing bikeways as part of any required roadway improvements, per the table above, and consulting Buffalo Grove's Bicycle Plan for specifically-defined bikeway improvements.*
- *Installing sidewalks (with a minimum preferred width of 5 ft.) according to FHWA New Sidewalk installation guidelines, above.*
- *Considering pedestrian and bicycle access within the development as well as connections to adjacent properties.*
- *Considering connectivity between developments for pedestrians and bicyclists to minimize short-distance trips by motor vehicles. These can be provided as "cut through" easements in suburban cul-de-sac developments, and as part of connected street grids in traditional neighborhood development.*
- *Building out pedestrian and bicycle facilities concurrent with road construction, or in an otherwise timely manner, to prevent gaps due to undeveloped parcels.*

IDOT and Other Agency Roadways: Work closely with IDOT, Lake County Division of Transportation, and the Cook County Highway Department to identify opportunities to improve roadways as part of new, reconstruction and maintenance projects. Each road occasionally has to be maintained, and sometimes intersection or expansion projects are done. These are the most cost-efficient opportunities to also make improvements (as needed) for those walking and biking. The Complete Streets philosophy is that a roadway's condition should not only be measured by motorist level-of-service and pavement condition, but also by safe accommodation of other users. Suggested policy content:

Resurfacing: *When Buffalo Grove works with other agencies (IDOT, LCDOT, or CCHD) to do a simple resurfacing (overlay) of an arterial road through Buffalo Grove, with no widening of the asphalt, seek opportunities to include bicycle and pedestrian improvements, such as:*

- *For multilane roads, installing 5-ft (with gutter pan) bike lanes. If needed, travel lanes can be narrowed, particularly inside lanes. If there is not sufficient width for striping a bike lane, stripe a wide outside curb lane, with no less than 14 usable feet, or a narrow shoulder of 3 feet or more (without seams), to at least accommodate more advanced cyclists. These treatments also provide larger turning radii for right-lane trucks.*
- *Filling sidewalk or sidepath gaps wherever a sidewalk exists but is incomplete. If no sidewalk exists on either side of the road, consider at least one side in the project scope. The preferred minimum width for sidewalks is five feet. Consult the FHWA "New Sidewalk Installation" guidance on the number of sides with sidewalks as a function of various roadway classifications and land uses. (see table above).*
- *Improving crossings: Examples at signalized intersections include ADA retrofits, pedestrian signalization and crosswalks, and (if possible at larger intersections) right-turn corner islands. Priority mid-block crossings may also be improved through raised median islands, pedestrian hybrid beacons, pavement markings and/or other treatments.*

Reconstruction/Expansion: *When Buffalo Grove works with another agency (IDOT, LCDOT, or CCHD) to do a reconstruction or expansion of an arterial road through Buffalo Grove, include bicycle and pedestrian improvements such as:*

- *Fill sidewalk or sidepath gaps wherever a sidewalk exists but is incomplete.*
- *If sidewalks are lacking on one or both sides, add sidewalks as part of the project consulting the FHWA "New Sidewalk Installation" guidance (as a function of roadway classification and land use). The preferred minimum width for sidewalks is five feet.*
- *Include crossing improvements in scope. Examples at signalized intersections include ADA retrofits, pedestrian signalization and crosswalks, and (if possible at larger intersections) right-turn corner islands. Priority mid-block crossings may also be improved through raised median islands, pedestrian hybrid beacons, Rectangular Rapid Flashing Beacons, and/or other treatments.*
- *Consult AASHTO bicycle facility guidelines and either IDOT's bikeway selection table or the table above for the appropriate bikeway treatment for the situation. For sidepath trails separate but parallel to the road, design to reduce the inherent conflicts at intersections and entrances. For bike lanes, either reconfigure and narrow travel lanes or widen pavement to allow the 5 or 6-ft (with gutter pan) for bike lanes. If there is not sufficient width for striping a bike lane, stripe a wide outside curb lane, with no less than*

14 usable feet, to at least accommodate more advanced cyclists. These treatments also provide larger turning radii for right-lane trucks.

Additional Policies and Ordinances: Other policies and ordinances may be adopted by the Village of Buffalo Grove to make adequate bicycle and pedestrian accommodation part of standard practice for any improvement in town.

Appropriate topics and documents may include:

- The Village comprehensive plan
- Subdivision regulations and site plan review
- Zoning laws
- School board policy on Safe Routes to School

The bicycle parking section of this plan suggests modifying the parking development ordinance to include bicycle racks.

6 Other Recommendations

Introduction

Engineering improvements to the physical environment for cycling should be accompanied by work in the "other E's": Education, Encouragement and Enforcement. The recommendations below will raise awareness of new facilities and motivate more people to safely and comfortably bike in Buffalo Grove. Bicycle Parking is treated as a separate category, given the breadth of the topic and its relationship to both engineering and encouragement.

Bicycle Parking

Secure bicycle parking is a necessary part of a bikeway network, allowing people to use their bikes for transportation and reducing parking in undesirable places. Successful bicycle parking requires a solid bike rack in a prime location. It is recommended that the Village address bike parking by adopting a development ordinance requirement and by retrofitting racks at strategic locations in town.

Figure 6.1. Inverted U, single (top) and in a series (bottom).

General bicycle parking considerations are covered below. For more details, consult *Bicycle Parking Guidelines, 2nd Edition: A Set of Recommendations from the Association of Pedestrian and Bicycle Professionals*, at www.apbp.org.

Style: A good bicycle rack provides support for the bike frame and allows both the frame and wheels to be secured with one lock. The most common styles include the inverted "U" (two bikes, around $150-300) and "post and loop". The preferred option for multiple spaces is a series of inverted "U" racks, situated parallel to one another. These can be installed as individual racks, or as a series of racks connected at the base, which is less expensive and easier to install and move, if needed. See Figure 6.1.

Old-fashioned "school racks," which secure only one wheel, are a poor choice for today's bicycles (Figure 6.2). Securing both the wheel and frame is difficult, and bicycles are not well supported, sometimes resulting in bent rims.

Figure 6.2. "Schoolyard" rack, not recommended.

Locations: The best locations for bike parking are near main building entrances, conveniently located, highly visible, lit at night, and—when possible—protected from the weather. When

placing a bicycle rack in the public right-of-way or in a parking lot, it should be removed from the natural flow of pedestrians, avoiding the curb and area adjacent to crosswalks. Racks should be installed a minimum of 6 feet from other street furniture and placed at least 15 feet away from other features, such as fire hydrants or bus stop shelters.

The installation recommendations below are from the Kane County Bicycle & Pedestrian Plan:

- Anchor racks into a hard surface
- Install racks a minimum of 24" from a parallel wall
- Install 30" from a perpendicular wall (as measured to the closest inverted U.)
- Allow at least 24" beside each parked bicycle for user access, although adjacent bicycles may share this access.
- Provide a 6 feet aisle from the front or rear of a bicycle parked for access to the facility.

Ordinances: Ideally, all multi-family and non-residential buildings should provide bike parking. A simple ordinance may call for one bike parking space for every 10 or 20 required car spaces, with a minimum of two spaces. The City of Naperville has a very good ordinance (Section 6-9-7) specifying bike rack standards and a detailed list of required spaces per land use. Most uses call for 5% of car spaces, with higher amounts for multi-family dwellings, schools, recreation facilities, etc. For suggestions on bike parking requirements according to land use type, consult the APBP bicycle parking guide referenced above.

The bicycle parking section in the City of Champaign's zoning ordinance (Section 37-376 to 37-379) not only specifies amount of bike parking per land use, but also bike rack type and general requirements for on-site location.

Metra Station: Due in large part to the cost and scarcity of parking a car, suburban Metra stations often have high existing and latent demand for bicycling. Recent Metra station bicycle parking inventories[3] have found a steady growth in parked bikes at the Buffalo Grove Metra Station: 3 in 1998, 10 in 2003, 13 in 2008, and 15 in 2013. Over the same time, Prairie View bike parking has risen from 2 and peaked at 7. While the 2008 inventory found enough parking capacity at both stations, the racks at the Buffalo Grove station are either easily broken (22 "Bike Bank" racks) or substandard ("school rack" space for 12). It is recommended that racks meeting current standards be installed.

Particularly as this plan is implemented, it is important to keep ahead of the demand for secure bike parking. Plan ahead before a bike rack is at capacity. It is recommended to annually examine bike rack parking usage, adding more racks where needed around the station. Also, as several Metra towns have done, consider installing bike lockers, rented daily or by the year.

Other Retrofits: Retrofit bike parking is recommended in places of latent demand, including public buildings, recreation facilities, and commercial centers. The Buffalo Grove Bicycle Task Force – or a permanent Bicycle and Pedestrian Advisory Commission recommended in Chapter

[3] 1998 by Metra; 2003 and 2008 by Metra, League of Illinois Bicyclists and Active Transportation Alliance; 2013 by League of Illinois Bicyclists

7 – should be tasked with providing suggestions. Note that retrofitting racks on commercial properties and other private property will require cooperation from the property managers.

Education

There is a big educational gap – for both bicyclists and motorists – on how to legally and properly share the road. The result: avoidable crashes, too many people afraid to bike, and lots of anger and resentment. Education of both road user types is crucial to improving real and perceived bicycling safety in Buffalo Grove. Investing some resources on public outreach and education would greatly leverage the Village's infrastructure investment.

Many of the safety resources listed below are free, except for the time to get and use them. Much of this time could come from the proposed Bicycle and Pedestrian Advisory commission and other volunteers.

Bicyclists: Many people are afraid to bike, or bike only on off-road trails, because of their concern about safety. Improving education can lessen these concerns and instill the skills and confidence to bike to more places around town, more safely.

The following safety materials could be distributed through schools and PTAs; at public places such as Village Hall and the library; and on the Village's and park districts' websites:

- *Bicycle Rules of the Road*, a free guide from the Illinois Secretary of State: www.cyberdriveillinois.com/publications/pdf_publications/dsd_a143.pdf
- *Bike Safety*, a free brochure from the Illinois State Police: www.isp.state.il.us/docs/5-035.pdf
- League of Illinois Bicyclists' (LIB) single-page summaries for children and their parents. www.bikelib.org/safety-education/kids/bike-safety-sheet
- Illinois Bicycle Law cards, free from LIB. Relevant state laws, folds to business-card size. www.bikelib.org/wp-content/uploads/2013/02/BikeLawCard2013.pdf
- *Kids on Bikes in Illinois* (www.dot.state.il.us/bikemap/kidsonbikes/cover.pdf), a pamphlet for ages 9-11, from IDOT's Division of Traffic Safety. Now online-only.
- *Safe Bicycling in Illinois* (www.dot.state.il.us/bikemap/safekids/cover.pdf), a booklet directed to teens and adults, from IDOT Traffic Safety. Now online-only.
- LIB offers free bike safety articles for newspapers, village newsletters and websites, and other municipal outreach. www.bikelib.org/other-advocacy/news-columns

In addition, the region has a network of bicycle safety instructors, nationally-certified by the League of American Bicyclists to teach a menu of classes for children and adults. These classes – or training of new instructors – could be conducted in Buffalo Grove. Details are at www.chicagobicycle.org and www.bikeleague.org/bfa/search/list?bfaq=illinois#education.

A new, online interactive resource on relevant laws and safety techniques is LIB's www.bikesafetyquiz.com. Concise quiz-based lessons are freely available for Adult Bicyclists, Child Bicyclists, and Motorists. Besides individual use, the application has functionality for easy use by schools, driver education programs, scouts, YMCAs, and more.

If needed, grant funding for grades K-8 education programs may be available from the Illinois Safe Routes to School program. See Appendix 4 for details.

Motorists: Drivers not trained on car-bike interactions are much more likely to make mistakes that are dangerous to people on bikes. The following safety resources are available from LIB, for driver education programs and existing motorists:

- "Share the Road: Same Road, Same Rights, Same Rules", a 7-minute video seen at www.bikelib.org/safety-education/motorists/driver-education and available as a DVD
- The "Motorist Quiz" in the www.bikesafetyquiz.com resource mentioned above.
- Motorist-relevant articles among the bike safety articles mentioned above.

The plan recommends that local high schools and private driver education programs be encouraged to use www.bikesafetyquiz.com and/or the video and its accompanying lesson. Both resources could be added to the Village website. During warmer months, the video could be shown on the local cable channel and the articles could be published for residents.

Enforcement

A vital component of a safe bicycling environment is enforcement with education, to reduce common car-bike collision types.

According to Illinois law, bicyclists have both the rights and responsibilities of other vehicle users. Many cyclists do not know about the law as it applies to bikes, and how following the law leads to safe cycling. Other cyclists ignore the law while riding in traffic, not only creating dangerous situations but also causing motorist resentment toward other cyclists trying to share the road safely.

Police are encouraged to stop cyclists if the situation dictates, to educate, issue warning citations, or issue tickets. Changing their behavior could save their lives. The aforementioned Illinois bike law cards are available from LIB. Also, LIB has piloted a bicycle ticket diversion program in Champaign, Urbana, and Highland Park. To reduce a ticket to a warning, offenders take the Adult Bicyclist quiz at www.bikesafetyquiz.com, emailing their completion certificate to the police department. This has been received well, and is suitable for Buffalo Grove, too.

In a car-bike crash, the motor vehicle does the most damage. Some aggressive motorists intentionally harass cyclists, while others simply don't know how to avoid common crash types. As with cyclists, police are encouraged to stop motorists if needed, to educate, issue warnings, or issue tickets.

The Police Department was receptive to a suggestion of an annually-conducted, brief but well-publicized targeted enforcement campaign (aka "sting) meant to raise community awareness. Since the vast majority of Buffalo Grove car-bike crashes occur at sidepath intersections along busy streets (see map in Appendix 1), the focus would be motorist and bicyclist actions leading to this type of crash. Warning tickets would be issued, along with instructions to complete the appropriate www.bikesafetyquiz.com lesson.

Officers are encouraged to learn or refresh their own knowledge on the common crash types, through completion of the Motorist and Adult Bicyclist quiz lessons.

Finally, Police Chief Casstevens suggested a plan recommendation for a "bike safety kit", citing his experience with this from Hoffman Estates. There, the police regularly noticed 50-60 mostly low-income workers, relying on their bicycles for year-round transportation to their jobs. These residents, riding at dark on busy roads, were often at risk due to a lack of bike lights and reflective clothing. Officers distributed a kit of these items when they witnessed a cyclist in that situation. This low-cost program was a much-appreciated success that could be duplicated in Buffalo Grove.

Encouragement

Suggestions for encouraging visitors or residents to explore Buffalo Grove by bicycle include:

- Distribute the Village's new Bike to Metra guide at the two Metra stations, at public buildings, and during events.
- Proclaim the Village's observance of National Bike Month, Week, or Day. As part of the event, challenge residents to do the www.bikesafetyquiz.com. Have the Village President lead by example, holding his own certificates of completion from the Adult Bicyclist and Motorist quizzes in a press release photo publicizing the event.
- On Bike to Work day, encourage bicycling to work, errands, or other destinations. Offer token incentives, such as refreshments at Village Hall or coupons for ice cream, for example.
- Work with the school district to observe National Bike to School Day, in early May.
- Promote Buffalo Grove as a bicycle-friendly community in the Village's advertising.

7 Plan Implementation

Introduction

A key recommendation of this plan is to develop a way to ensure its implementation. Continued progress will require a commitment of time and financial resources over many years. Little by little, project by project, the Village of Buffalo Grove will become even more bike-friendly.

Bicycle and Pedestrian Advisory Commission and Coordinator

Perhaps the most important implementation tool is time. The plan recommends dedicating some fraction of a staff member's time as the Village's Bicycle and Pedestrian Coordinator. This individual would work on plan implementation and other active transportation issues. Also, the coordinator would regularly collaborate with other Village staff and relevant agencies to ensure their work conforms to the goals of the plan. Routine review of development plans and road project designs is a prime example.

In addition, the plan recommends the establishment of an ongoing Buffalo Grove Bicycle and Pedestrian Advisory Commission (BPAC), reporting to the Plan Commission or directly to the Village Administrator/President's Office. Volunteer involvement by a few energetic, knowledgeable, and dedicated residents can greatly leverage the staff time investment of the Bicycle/Pedestrian Coordinator, who would serve as the lead staff liaison to the BPAC. Usually, BPACs focus more heavily on bicycle than pedestrian issues. However, there is much overlap in Buffalo Grove, particularly with its extensive off-road multi-use bikeway system.

BPAC membership should be limited to roughly 8 residents, consisting of at least 4-5 bicyclists ranging in experience. Some may come from the Buffalo Grove Bicycle Task Force, the bike plan's May 2, 2013 public brainstorming meeting, and/or local bicycling clubs or advocacy organizations. If these individuals lack interest in pedestrian-only issues, too, then at least 1-2 members should specifically represent these topics. Ideally, the residents who volunteer for BPAC should have some relevant, specialized expertise – and/or be willing to work on tasks outside of the meetings.

Other BPAC members may come from other Village departments (Police, Public Works, Planning and Economic Development) or relevant agencies (such as the Park District and School District). However, it may be best for these departments and agencies to name representatives as "ex-officio" members, attending only when relevant topics are discussed. Meetings should be held every one, two, or three months, depending on level of activity.

The BPAC should routinely be given the opportunity to provide input into these Village processes:

- Capital Improvement Program – How can designs of the CIP's road projects and other capital projects implement bicycle plan recommendations or otherwise impact bicycling

(and walking) positively? For example, the 2014 resurfacing of much of Raupp and Golfview can be a cost-efficient opportunity to implement one of the "collector options" recommended for these roads. Also, the BPAC should propose stand-alone bike and/or pedestrian projects as priorities for the next CIP, each year.

- Site design and other development review – Provide bicycle and pedestrian perspective to the Plan Commission's review of new development or re-development projects.
- Maintenance – The BPAC should periodically review conditions on the Village's bikeway system and make prioritized maintenance recommendations.

In addition, the BPAC members should be empowered to work on several one-time and ongoing recommendations from this plan and other efforts. Examples include:

- Prioritize specific locations where bicycle parking is needed.
- Prioritize Buffalo Grove bikeways needing wayfinding signage, and specifying destination content for each sign based on general guidelines from this plan.
- "Field test" demand-actuated traffic signals listed earlier in the plan to determine and prioritize where bicycle-actuation improvements are needed.
- Bring or apply a variety of available education, enforcement, and outreach resources – such as those detailed earlier in the plan – to Buffalo Grove.
- Act as volunteer "bicycle ambassadors" at community events.
- Lead bike-related events, such as Bike to Work Day/Week/Month or Bike to School Day.
- Put together Safe Routes to School programming and grant applications
- Head the effort to win national Bicycle Friendly Community designation, including filling out the application, and strategizing which areas need improvement.

It is strongly recommended that each commission member should have "ownership" of at least one topic or effort. This will keep members energized and ensure the commission is a net positive in Village time investment.

Technical Resources and Training

The Bicycle and Pedestrian Coordinator should have access to up to date resources to help with the details of design and implementation. In addition to adding the printed resources below to the village planner's and engineer's library, seek out opportunities to participate in webinars and workshops on best practices. Not only do these events provide useful information, they are an opportunity to interact with other planners and engineers grappling with similar issues.

Manuals and Guidelines:

- *AASHTO Guide for the Development of Bicycle Facilities*, 4th Edition, 2012. Available at www.transportation.org
- *Bicycle Parking Guidelines, 2nd Edition: A Set of Recommendations from the Association of Pedestrian and Bicycle Professionals***,** 2010, available at www.apbp.org.

Websites and Professional Organizations:

- The Pedestrian and Bicycle Information Center: Offers a wealth of information on engineering, encouragement, education and enforcement, including archived webinars and quarterly newsletters: www.pedbikeinfo.org
- The Association of Pedestrian and Bicycle Professionals: provides continuing education, technical resources and an online forum for exchanging questions and ideas. www.apbp.org
- League of Illinois Bicyclists: A planning and advocacy resource, with many on-line materials focused on best practices nationally as well as issues unique to Illinois: www.bikelib.org

Multi-Year Work Plan

This plan recommends a variety of strategies, from adopting policies to coordinating with other agencies, to quickly implementing "high priority, ready to go" projects. One of the first steps of plan implementation should be to go through the listed recommendations and draft a five year work plan. Some projects may be components of larger road projects in Buffalo Grove's Capital Improvement Program, others may be stand-alone retrofit projects. Projects that do not get completed on a given year move into a future year's work plan. Dividing plan implementation across a span of years makes it more manageable, especially in terms of funding.

Implementation Funding

Recommendations in this plan range from low-cost or no-cost improvements to major capital investments. Project costs depend on myriad factors. It is usually most cost effective to address bicycling improvements as part of larger projects, instead of retrofitting. Estimates for projects are below.

- **Trail or Sidepath:** The cost of developing trails varies according to land acquisition costs, new structures needed, the type of trail surface, the width of the trail, and the facilities that are provided for trail users. Construction costs alone can run $40,000 per mile for a soft surface trail to more than $1,000,000 per mile in an urban area for a paved trail.
- **Bike Lanes (and Combined Bike/Parking Lanes):** The cost of installing a bike lane is approximately $5,000 to $50,000 per mile, depending on the condition of the pavement, the need to remove and repaint the lane lines, the need to adjust signalization, and other factors. It is most cost efficient to create bicycle lanes during street reconstruction, street resurfacing, or at the time of original construction.

- **Signed Bike Routes and Shared Lane Markings:** Signs and pavement stencils are even less expensive than designated bike lanes. Again, shared lane markings can be done with other roadwork, while sign installation can be done at any time.

These may be funded in a number of ways. First, the Village of Buffalo Grove may dedicate an annual budget for a bicycle implementation program. If needed, one strategy may entail a smaller first year budget for the highest priority projects, as a way to build momentum for following years. Additional funding may come from Buffalo Grove Park District and other relevant agencies.

Another major builder of bikeways is developers. Plan recommendations may be implemented opportunistically when a new subdivision or commercial development is added.

Other opportunities include road projects by the Village, Lake or Cook County, or State. Addressing intersection improvements, bikeways, and sidewalks as part of a larger road project is substantially cheaper and easier than retrofitting. Even resurfacing work can be used to add on-road bikeway striping, sometimes at no additional cost. Chapter 5 has policy suggestions to ensure these opportunities are seized.

Finally, outside government funding sources can be used for bikeway retrofit projects. A number of state and federal grant programs are available and summarized in Appendix 4.

Bicycle-Friendly Community Designation

A goal of plan implementation should be official designation as a "Bicycle Friendly Community" (BFC). This national League of American Bicyclists award program has Honorable Mention, Bronze, Silver, Gold, Platinum, and Diamond gradations. The program comprehensively assesses a community based on Engineering, Education, Enforcement, Encouragement, and Evaluation. Appendix 5 is an infographic summarizing how Bronze and higher communities have fared in key criteria.

Winning designation is not easy, in fact, the only Bronze or higher BFCs in Illinois are Schaumburg, Naperville, Urbana, Champaign, Batavia and Elmhurst (Bronze); and Chicago and Evanston (Silver). However, the recommendations in this plan encompass most of the award criteria.

The League of Illinois Bicyclists, a longtime observer of and "local reviewer" for the BFC program, believes that Buffalo Grove could achieve the Bronze level relatively soon. Buffalo Grove already has an impressive system of off-road sidepaths and trails, as the highlight of its bicycle-related accomplishments. However, this alone historically has not been enough to win Bronze or higher. LIB suggests that Bronze status could be achieved with steps such as:

- Adopting this plan, officially naming a Bicycle/Pedestrian Coordinator, and creating a Bicycle (or Bicycle/Pedestrian) Advisory Commission – described later.

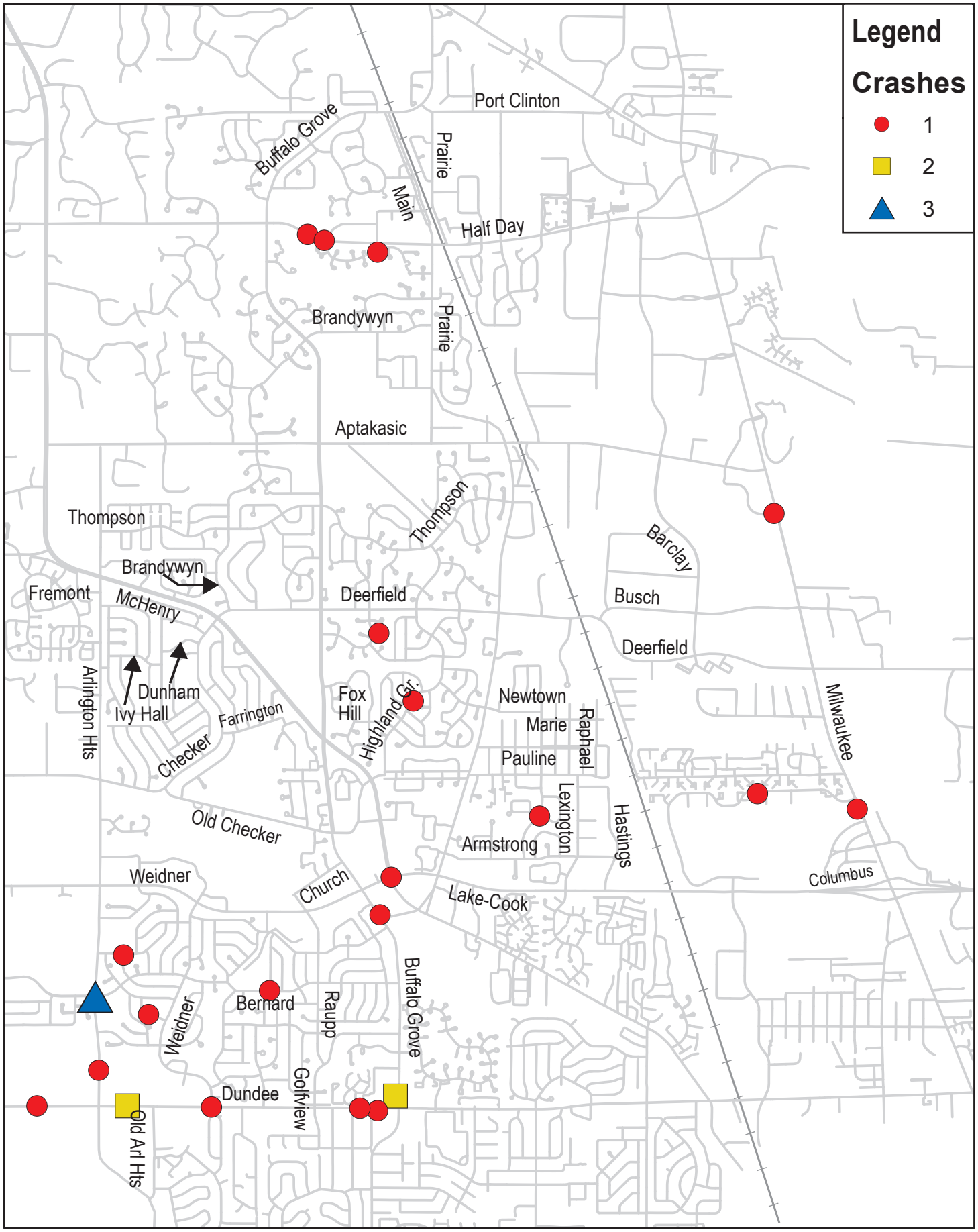
- Implementing one of the "Collector Options" having striping and signage, for at least one or two of the collector streets where this is a high priority recommendation.
- Distributing Buffalo Grove's new "Bike-to-Metra" guides at Metra stations, Village Hall, and community buildings.
- Implementing at least two of the Education recommendations from this plan.
- Implementing at least one of the Enforcement recommendations from this plan.
- Proclaiming Bike to Work Day, Week, or Month, with some accompanying public educational outreach.

As suggested later, Bicycle and Pedestrian Advisory Commission members could lead several of these efforts.

Annual Evaluation

Another way to keep up momentum and public support is to plan for a yearly evaluation (often called the fifth "E") and celebration of plan progress. For example, work with the proposed Buffalo Grove Bicycle and Pedestrian Advisory Commission to publish a yearly plan status report in conjunction with a ribbon cutting ceremony or community event, Bike to Work Day or Bike to School Day, a community bike ride, or other event. This keeps local stakeholders focused on the progress that has been made and energizes everyone to keep moving forward. Also, consider updating this plan every 5-10 years to reflect progress and reevaluate priorities.

Appendix 1: Car-Bicycle Crashes 2011-2013



Appendix 2
Buffalo Grove Bicycle Plan
Steering Committee and Other Plan Participants

STEERING COMMITTEE

Jenny Maltas, Deputy Village Manager
Mike Rodriguez, Police Sergeant, Traffic Unit
Darren Monico, Village Engineer
Michael Reynolds, Director of Public Works
Ed Barsotti, Consultant – League of Illinois Bicyclists
Robert Pfeil, Village Planner
Nidhi Vaid, Associate Planner
Mark Biederwolf, Civil Engineer

PARTICIPANTS AT FEBRUARY 25, 2014 PUBLIC REVIEW OF DRAFT PLAN

** serves on Ad Hoc Bicycle Committee*

Steve Attenberg	John A. Barr	Jim Boyer
Betsy Burtelow	Mike Jeschke	Craig Lane*
Robert Malinowski*	Jerry Meyerhoff*	John Naylor
Lynne Schneider*	Jason Star	Jamie Susal-Barr
Stan Zoller		

Steve Trilling, Village Trustee
Darren Monico, Village Engineer
Bob Pfeil, Village Planner

PARTICIPANTS AT MAY 2, 2013 PUBLIC INPUT WORKSHOP

** serves on Ad Hoc Bicycle Committee*

John Barr	Joe Beemster	Frank Bing
Jim Boyer	Betsy Burtelow	Steven Flack*
Theresa Kotecki*	Craig Lane*	Robert Malinowski*
Bruce D. Matthews	Jerry Meyerhoff*	Marjorie McKee
Sandy Mills	John Naylor	Sheri Rosenbaum*
Elizabeth Schiele	Lynn Schneider*	Dave Simmons
Lee Skinner	Jason Star	Jamie Susal
Sean Zoller*		

Steve Trilling, Village Trustee
Mike Skibbe, Deputy Director, Public Works
Nidhi Vaid, Associate Village Planner
Bob Pfeil, Village Planner
Mark Biederwolf, Village Civil Engineer

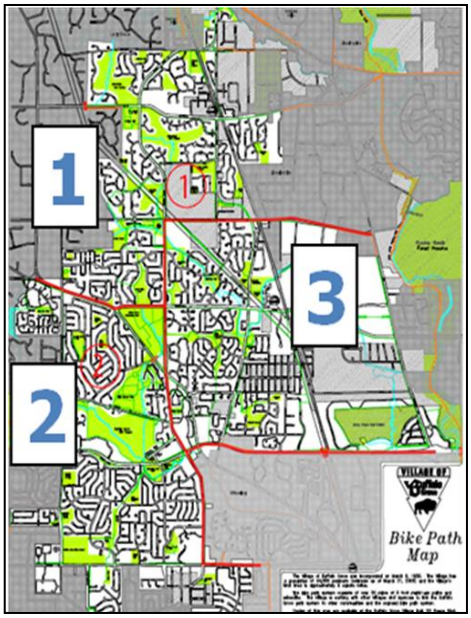
VILLAGE AD HOC BICYCLE COMMITTEE

Steven Flack	Richard Hoffman	Theresa Kotecki
Craig Lane	Robert Malinowski	Larry Meyer
Jerry Meyerhoff	Sheri Rosenbaum	Lynn Schneider
Eric Scott	Marc Stookal	Stan Zoller

Appendix 3
Public Brainstorming Workshop Results

On May 2, 2013 a "Public Brainstorming Workshop" was attended by 25 Buffalo Grove and nearby residents. The purposes of the workshop included: a) gather local resident knowledge on biking needs; b) prioritize road corridors and other routes to study for potential improvements; c) build community support for the plan and its implementation.

Each attendee marked individual maps with suggested "routes to study" for improvements. The map on the following page shows the results of this input, with each recommended segment color-coded by the number of participants suggesting that it be considered. A group exercise followed in which top priorities of two tables each from three geographic regions of the Village were discussed and reported. These include, in priority order:



Region 1 (North of an IL83/Deerfield/Buffalo Grove/Aptakisic line):

1. Access along Buffalo Grove Rd., from Thompson north to Vernon Hills
2. Bike lanes on Thompson, Arlington Heights Rd. to Weiland
3. Improve access at the Brandywyn/Aptakasic
4. Deerfield Pkwy. crossing at Green Lake Park/Green Knolls

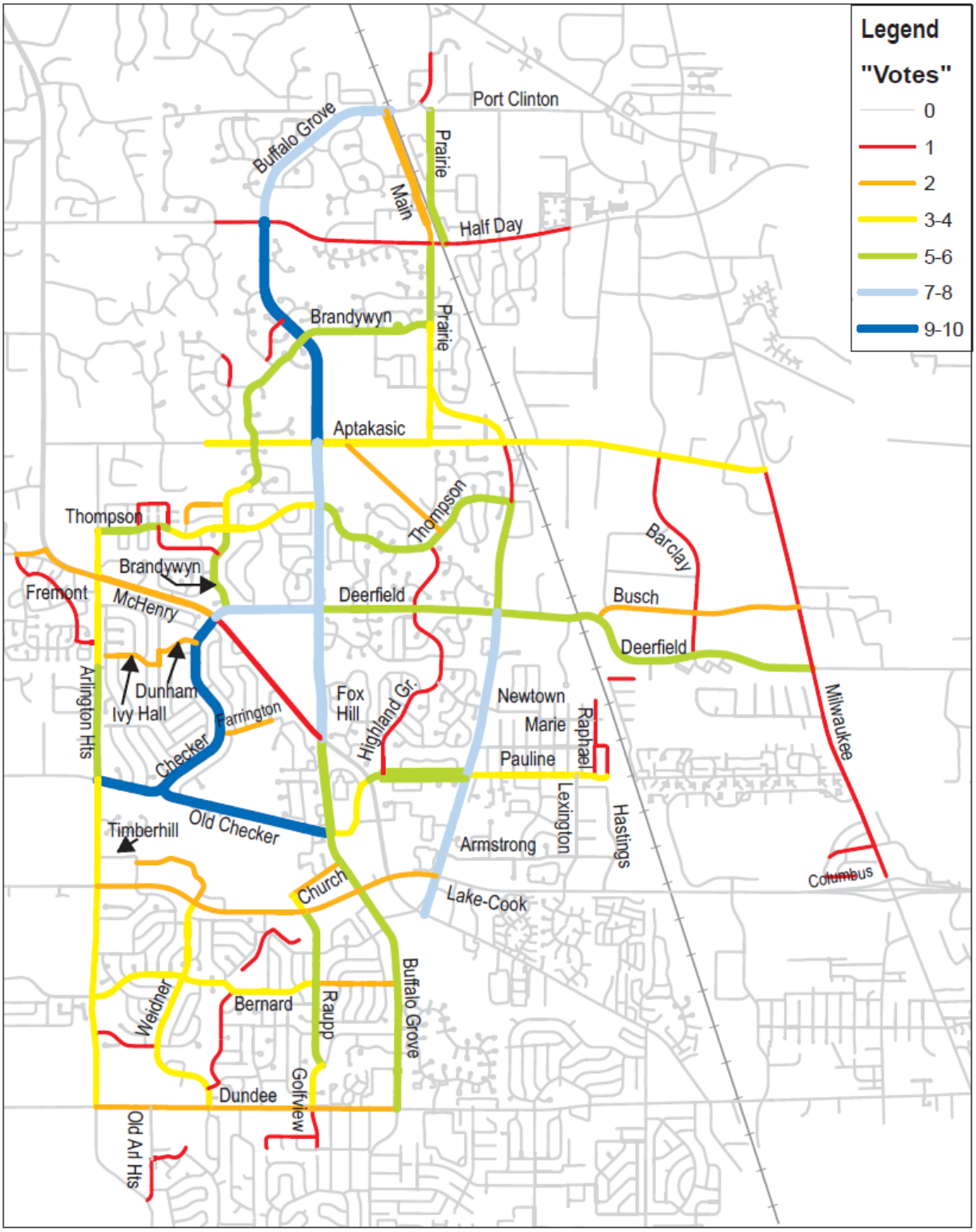
Region 2 (South and west of an IL83/Deerfield/Buffalo Grove/Lake-Cook line):

1. On-demand pedestrian crossing signal, at Arlington Heights Rd. and Heritage
2. Bike lanes on Brandywyn, Old Checker to Prairie
3. Bike lanes on Thompson, Arlington Heights Rd. to Weiland (same as Region 1)
4. Sidepath along west side of Arlington Heights Rd., Old Checker to south of Heritage
5. Bike lanes on Raupp (Village Hall to Dundee) and Bernard (Arlington Heights Rd. to Buffalo Green Rd.)
6. Bicycle actuation of Weidner traffic signals at Dundee and Lake-Cook

Region 3 (South of Aptakasic, East of Buffalo Grove, North of Lake-Cook):

- Fill sidepath gaps along Weiland Rd.
- Aptakasic's sidepath from Buffalo Grove Rd. to Barclay – fill gaps, improve condition
- Improve bicycle actuation at traffic signals – e.g., eastbound Pauline at IL83
- Improve access on Lake-Cook's sidepath to Milwaukee, for the Des Plaines River Trail

Public Input: Routes to Study for Bike Network



Appendix 4: Road Segment Data

Extensive data collection on existing bicycling conditions informed the development of this plan. Most of this information, such as roadway geometry, traffic conditions, Bicycle Level of Service scores, sidewalk coverage, recommendation details and implementation notes, is housed in the spreadsheet beginning on the next page. The legend for the spreadsheet is below:

Segment Definition	
Street	Street name of road segment
From (W/N)	West or North segment end
To (E/S)	East or South segment end
Existing Conditions	
Lanes	Number of through lanes (excludes center/other turn lanes)
Traffic ADT	Traffic count in vehicles/day. Gray or blue indicate estimates.
Speed Limit	Posted speed limit
Lane Width	Width from lane edge (often the gutter seam/pavement edge) to next lane, in feet
Extra Width	Pavement width from outer lane edge to gutter seam/pavement edge. May include paved shoulders, parking areas, bike lanes.
Gutter Pan	Width of cement gutter pan in feet
Parking Occ%	Estimated % occupancy rate of on-street parking - excludes driveway areas. Averaged over 2-sides unless noted.
% Truck	Estimated % of heavy truck traffic
BLOS score	Bicycle Level of Service score of road segment - measure of on-road comfort level for a range of adult cyclists, as a function of geometry and traffic conditions
BLOS grade	BLOS converted to a grade range. B (or better) might be considered "comfortable" for casual adult cyclists, C (or better) for experienced cyclists
Comments	Further details
Sidewalk Status	Are there sidewalks (SW) or sidepaths (SP) on each side (N-north, S-south, E-east, W-west)
Recommendations	
Primary Recommendation	Description of the recommendation (if any) considered best for this segment.
Other options and notes	Either further detail on the primary recommendation, or "fallback" recommendation(s) if the primary cannot be achieved.
Recommendation	Description of any off-road or on-road recommendation
New BLOS score	Shown only if an on-road, primary recommendation bikeway is implemented.
Implementation	
Public priority points	Number of 5-2-13 public brainstorming workshop attendees suggesting this segment
Priority	Recommended implementation priority of segment

Street	From (N/W)		Lanes	Traffic ADT	Speed Limit	Lane Width	Extra Width	Gutter Pan	Park Occ %	% Truck	BLOS score	BLOS grade	Comments	Sidewalk Status	Primary recommendation	Other options and notes	New BLOS score	Public priority points	Priority
Port Clinton	Buffalo Grove	Prairie	2	*8000*	35	12	3.5	0	0	1.5	2.77	C	Turn lanes.	Both SPs	none			0	
Half Day	Acacia	Buffalo Grove	4	20300	45	12	0	1.5	0	3	4.46	D	Separated road. Std Xwalks @lights, some others	Both SPs	none			1	
Half Day	Buffalo Grove	Prairie	4	20300	45	12	0	1.5	0	3	4.46	D	Separated road. Std Xwalks @lights, some others	S-SP, N-SW	Consider south sidepath link and road Xing @Easton			1	Low
Half Day	Prairie	Railroad	4	22900	45	12	0	1.5	0	3	4.52	E	Separated road. Std Xwalks @lights, some others. N-SW W of Easton only	S-SP, some N-SW	Widen north sidewalk to sidepath width			1	Low
Half Day	Railroad	Millbrook	4	22900	35	12	0	1.5	0	3	4.32	D	Separated road. Std Xwalks @lights, some others	S-SP, most N-SW	Widen north sidewalk to sidepath width, Prairie to high school			1	Low
Aptakisic	Trail	Brandywyn	2	12000	45	12	2	0	0	1.5	3.65	D	Turn lanes. Extra stone shoulder width. Continental Xwalk all 4 legs @Brandywyn.	N-SP, S-SW	Pave 4' shoulders during LCDOT's IL83-BG Rd project, matching its endpoints.		2.93	3	Medium
Aptakisic	Brandywyn	W. of Buffalo Gr	2	12000	45	12	2	0	0	1.5	3.65	D	Extra stone shoulder width	N-SP, S-SW	Pave 4' shoulders during LCDOT's IL83-BG Rd project, matching its endpoints.		2.93	3	Medium
Aptakisic	W. of Buffalo Gr	Buffalo Grove	4	12000	45	12	5	0	0	1.5	2.16	B	Shoulders transition into 2' gutter @BG Rd. Continental Xwalk all 4 legs @BG Rd.	Both SPs	During LCDOT project, add paved shoulders at BG Rd intersection.			3	Medium
Aptakisic	Buffalo Grove	ComEd Trail	4	18000	45	12	0	1.5	0	1.5	4.06	D	Left turn lanes	S-SP	none	Add north sidewalk when area is incorporated		4	
Aptakisic	ComEd Trail	Prairie	4	18000	45	12	0	1.5	0	1.5	4.06	D	Painted median, turn lanes. W,N continental Xwalks at Prairie.	None	Add south sidepath (partnering with township/county, if needed)	Add north sidewalk when area is incorporated		4	High
Aptakisic	Prairie	E of Weiland	4	19400	45	12	0	1.5	0	2	4.21	D	Continental Xwalks at intersections	S-SP	none	Add north sidewalk when area is incorporated		4	
Aptakisic	E of Weiland	W of Roadway	4	19400	45	12	0	1.5	0	2	4.21	D	Railroad crossing. LCDOT intends to close sidepath gap in 2014.	None	Add south sidepath	LCDOT intends to construct in 2014		4	High
Aptakisic	W of Roadway	Bond	4	19400	45	12	0	1.5	0	2	4.21	D	Industrial	S-SP	none			4	
Aptakisic	Bond	Industrial	4	19400	45	12	0	1.5	0	2	4.21	D	Industrial	None	Add south sidepath			4	High
Aptakisic	Industrial	Barclay	4	19400	45	12	0	1.5	0	2	4.21	D	Continental Xwalks at intersections	S-SP	none			4	
Aptakisic	Barclay	Milwaukee	4	18700	45	12	0	1.5	0	3	4.42	D	Industrial. Continental Xwalks at intersections. Red brick pavers at S-leg at Parkway.	S-SP	none			3	
Knollwood	Larchmont	Thompson	2	400	25	12	0	1	5	0	1.89	B	Residential. Knollwood to SW link through park not too useful/feasible.	Both SWs	none			1	
Kingsbridge	Sidewalk	Brandywyn	2	400	25	12	0	1	5	0	1.89	B	Residential. Knollwood to SW link through park not too useful/feasible.	Both SWs	none			2	
Thompson	Arlington Heights	Larchmont	2	4400	25	16	0	1.5	3	0.25	2.56	C	Residential.	Both SWs	***Collector bikeway options***		1.34	6	High
Thompson	Larchmont	Knollwood	2	4400	25	16	0	1.5	3	0.25	2.56	C	Residential.	Both SWs	***Collector bikeway options***		1.34	6	High
Thompson	Knollwood	Brandywyn	2	4400	25	16	0	1.5	3	0.25	2.56	C	Residential.	Both SWs	***Collector bikeway options***		1.34	3	High
Thompson	Brandywyn	Trail	2	4400	25	16	0	1.5	3	0.25	2.56	C	Residential. No N parking allowed. Standard Xwalk at trail Xing.	Both SWs	***Collector bikeway options***		1.34	4	High
Thompson	Trail	Buffalo Grove	2	4400	25	16	0	1.5	3	0.25	2.56	C	Residential. (Demand-actuated?) light at BG Rd. No N parking allowed.	Both SWs	***Collector bikeway options***		1.34	4	High
Thompson	Buffalo Grove	Highland Grove	2	4400	25	16	0	1.5	3	0.25	2.56	C	Residential. Bike Route sign to trail by Copperwood, but no link to road (only to SW). Stop @Highland Grove.	Both SWs	***Collector bikeway options***		1.34	5	High
Thompson	Highland Grove	ComEd Trail	2	4400	25	16	0	1.5	3	0.25	2.56	C	Residential. Bike Route sign to Com Ed trail, but no link to road (only to SW).	Both SWs	***Collector bikeway options***		1.34	5	High
Thompson	ComEd Trail	Weiland	2	4400	25	16	0	1.5	3	0.25	2.56	C	Residential. Stops @Madison, Weiland (check LCDOT Weiland plan).	Both SWs	***Collector bikeway options***		1.34	5	High
Chaucer	Thompson	Brandywyn	2	400	25	12	0	1	5	0	1.89	B	Residential.	Both SWs	none			1	
IL 53	Old McHenry	McHenry	4	17200	45	12	0	1.5	0	3	4.37	D	Turn lanes.	None	Add south sidepath			2	Medium
Busch	Deerfield	Corporate Grove	4	*10000*	40	12	0	1	0	3	4.01	D	Light industrial.	Both SWs	Widen S sidewalk to sidepath width			2	Low
Busch	Corporate Grove	Barclay	2	*10000*	40	17.7	0	1	0	3	3.52	D	Light industrial, many driveways.	None	Add south sidepath	Or, if other Busch segments reconfigured similarly: add south sidewalk, and bike lanes 5.5-13-13-5.5		2	High
Busch	Barclay	500' W of Milwaukee	4	*13000*	40	12	0	1	0	3	4.15	D	One lane W-bd	Some N-SW	Add south sidepath			2	High
Busch	500' W of Milwaukee	Milwaukee	4	*13000*	40	12	0	1	0	3	4.15	D	Separated road. Two lanes E-bd becomes turn lanes. One wider W-bd lane.	None	Add south sidepath			2	High
Deerfield	IL-83	Brandywyn	4	13700	35	12	0	1.5	0	1.5	3.77	D	No Xwalks along this stretch, including IL 83.	S-SP, N-SW	Widen N sidewalk to sidepath width	Deerfield is a NWMC bike plan "Tier 1" corridor, in BG		7	Medium
Deerfield	Brandywyn	Green Knolls	4	13700	35	12	0	1.5	0	1.5	3.77	D	N-SW Laraway continental Xwalk.	S-SP, N-SW	RRFB crossing @Green Knolls			7	High
Deerfield	Green Knolls	Buffalo Grove	4	13700	35	12	0	1.5	0	1.5	3.77	D	Continental Xwalks all 4 legs @Buffalo Grove.	S-SP, N-SW	Consider S sidepath link and road Xing @ Larraway			7	Low
Deerfield	Buffalo Grove	Highland Grove	4	14700	40	12	0	1.5	0	1.5	3.89	D	Continental Xwalks all 4 legs @Highland Grove, but no other Xwalks.	S-SP, N-SW	Consider S sidepath link and road Xing @ Old Barn			5	Low
Deerfield	Highland Grove	Weiland	4	14700	40	12	0	1.5	0	1.5	3.89	D	Lake Co. Hwy. Median, turn lanes. Continental Xwalks all 4 legs @Weiland, but no other Xwalks.	S-SP, N-SW	none			5	
Deerfield	Weiland	Busch	4	18300	40	12	0	1.5	0	1.5	4.00	D	Weiland has SE corner island for S-SP. Median, turn lanes. New B/P sign for trail Xing (need RRFB)	S-SP, N-SW	none			6	
Deerfield	Busch	Barclay	4	18300	40	12	0	1.5	0	1.5	4.00	D	Continental Xwalk across, std Xwalk along @Barclay; otherwise almost none	S-SP, N-SW	none			6	
Deerfield	Barclay	Milwaukee	4	15600	40	12	0	1.5	0	2	4.02	D		S-SP, N-SW	none	LCDOT's sidepath extension IL21-DesPlaines River Trail is high priority		5	

Street	From (N/W)		Lanes	Traffic ADT	Speed Limit	Lane Width	Extra Width	Gutter Pan	Park Occ %	% Truck	BLOS score	BLOS grade	Comments	Sidewalk Status	Primary recommendation	Other options and notes	New BLOS score	Public priority points	Priority
Heritage	Fremont	Arlington Heights	2	1000	25	16	0	1	0	0.5	1.79	B	Separated road.	N-SP, S-SW	Add E sidepath link and road Xing @ Heritage			1	High
Ivy Hall	Aspen	Indian Spring	2	800	25	12	0	1	3	0	2.22	B	Residential, except Ivy Hall School. No S parking. Same on jog S on Aspen, Carlton to AH Rd.	Both SWs	Add Bike Route wayfinding signage			2	Low
Dunham	Indian Spring	Checker	2	1000	25	12	0	1	3	0	2.33	B	Residential. No S parking.	Both SWs	Add Bike Route wayfinding signage			2	Low
link	Railroad	Deerfield											Did not appear to be feasible (easement, RR Xing)		none			1	
Farrington	Checker	Crown Point	2	1000	25	16	0	1.5	2	0	1.77	B	Residential. No parking S? Swimming pool S. New B/P trail Xing signs. Checker, Woodhollow stop.	Both SWs	***Collector bikeway options***		0.54	2	High
Fox Hill	Buffalo Grove	Highland Grove	2	1500	25	12	0	1	1	0.5	2.57	C	Residential. Off-road trail nearby to the north.	Both SWs	none	Signing as a Bike Route could save some distance for some of the nearby trail's users		0	
Newtown	Highland Grove	Weiland	2	2000	25	16	0	1.5	2	0.5	2.18	B	Residential. Future Weiland stoplight makes for better route to Metra than trail to north	Both SWs	***Collector bikeway options***	More feasible after Weiland RRFB Xing added. Other routes are relatively close.	0.95	0	Low
Newtown (and Horatio)	Weiland	Marie	2	800	25	16	0	1	2	0.5	1.71	B	Residential. Could be part of route to Metra, but this would require unincorporated segment.	Both SWs	Add Bike Route wayfinding signage	More feasible after Weiland RRFB Xing added. Other routes are relatively close.		0	Low
Marie	Horatio	Raphael	2	400	25	11	0	1	2	0.5	2.02	B	Unincorporated residential, requires township partnership. Could be part of route to Metra.	none	Add Bike Route wayfinding signage	More feasible after Weiland RRFB Xing added. Other routes are relatively close.		0	Low
Old Checker	Checker	Springside	2	3000	35	16	0	1.5	2	0.5	2.65	C	Residential N, multi-family S. No S parking. No driveways.	N-SW, S-SP	***Collector bikeway options***		1.42	10	High
Old Checker	Springside	Trail	2	3000	35	16	0	1.5	2	0.5	2.65	C	Residential N, multi-family S. No S parking. No S-SP Xwalks. New B/P signs at Xings. No driveways.	N-SW, S-SP	***Collector bikeway options***		1.42	10	High
Old Checker	Trail	Buffalo Grove	2	3000	35	16	0	1.5	2	0.5	2.65	C	Parks W, multi-family E. No S parking. No driveways.	N-SP, some S-SW	***Collector bikeway options***		1.42	9	High
Old Checker	Buffalo Grove	post office back entrance	2	*2500*	25	11.8	0	1	0	2	3.02	C	Private road. Post office north side.	Some S-SW, some N-SW	none - from Old Checker/BG Rd, use and possibly sign east sidewalk, trails through Village Green, and sidepath to Pauline/IL 83.	Provide a continuous sidewalk, with Xing between sides. Shared Lane Markings (4' from curb) feasible, but use paths through Village Green instead		3	
Old Checker	post office back entrance	IL-83	2	*2000*	25	16	0	0	0	2	2.32	B	Mostly separated road through shopping center (private road). Turn lanes, width varies.	none	none			0	
Alley (S-bd only)	post office east entrance	Town Place	1	*400*	25	12	0	0	0	1	2.30	B	One-way S-bd in back of shopping (private property?). Much of the segment has lightly-used perpendicular parking. Stop signs. 10mph officially.	Most E-SP	None. Instead, add wayfinding on E-SP, through Village Green and Buffalo Grove E-SP, to Old Checker stoplight.	Completing E-SP not feasible - use wayfinding		3	
Pauline	Town Place	IL-83	2	*800*	25	12	0	1	2	1	2.32	B	Short segment, median. E-bd turn lane. Various widths.	N-SP	Add Shared Lane Markings 4' from curbs, plus Bike Route wayfinding signage	Better to transition to SP at Town Place, not IL83		3	Medium
Pauline	IL-83	Highland Grove	2	4000	25	12	0	1	2	0.5	3.08	C	Residential. No driveways. W-bd turn lane. Light @83 (demand-actuated?, bad button access)	Both SWs	Add Shared Lane Markings 4' from curbs, plus Bike Route wayfinding signage			5	High
Pauline (W-bd)	Highland Grove	Weiland	2	2000	25	12	8	1.5	2	0.5	0.36	A	Residential. Striped parking lane. No stops.	Both SWs	Striped area is a combined bike/parking lane (CBPL). Supplement with Bike Route wayfinding signage	With above: 7' CBPL, 11' travel lanes, 3' E-bd shoulder (not including 1' gutter pans)		5	High
Pauline (E-bd)	Highland Grove	Weiland	2	2000	25	12	0	1.5	2	0.5	2.73	C	Residential. No S-driveways. By Woodbury, trail Xing has new B/P Xing sign but standard Xwalk.	Both SWs	Add Shared Lane Markings 4' from curbs, plus Bike Route wayfinding signage	Another option: restripe for 1' gutter, 3' shoulder, 11' lane		5	High
Pauline	Weiland	Raphael	2	2000	25	16	0	1.5	2	0.5	2.18	B	Residential. No driveways, S-SP width, left-turn lane near Weiland; stoplight (demand-actuated?, poor button access).	S-SW	***Collector bikeway options***		0.95	4	High
Pauline	Raphael	Carman	2	300	25	16	0	1.5	2	0.5	1.21	A	Residential N, light industrial S, no driveways. East end Bike Route sign to trail.	Both SWs	Add Bike Route wayfinding signage		-0.02	4	Medium
Columbus	Chevy Chase	Milwaukee	2	300	25	12	0	1	2	0.5	1.77	B	Residential. Estimates due to construction.		Add Bike Route wayfinding signage			1	High
Riverwalk	Milwaukee	S-end of 2-way	2	3000	30	18.2	0	1	1	0.5	2.16	B	Office buildings. S-bd dead ends. Link to DesPlaines River Trail planned.	N/E-SP	Work with Cook Co Forest Preserve to link to DesPlaines River Trail	See segment 3130		0	Low
Linden	Chevy Chase	Milwaukee	2	300									Not a realistic route.					1	
Church	Raupp	Buffalo Grove	2	1500	25	12	0	1.5	0	1	2.62	C	Non-residential. No parking.	N-SP,S-SW	none			2	
Armstrong	Weiland	Le Jardine	2	3000	25	18.2	0	1	1	0.5	1.99	B	Mostly residential, includes driveways (mostly N). Recently paved.	N-SW	Stripe combined bike/parking lanes, 7.5-11.7-11.7-7.5. Supplement with Bike Route wayfinding signage.	On Bike Route sign posts, indicate in some way that parking is permitted	0.73	0	Low
Armstrong	Le Jardine	Lexington	2	3000	25	18.2	0	1	1	0.5	1.99	B	Mostly residential, no driveways. Recently paved.	Both SWs	Stripe combined bike/parking lanes, 7.5-11.7-11.7-7.5. Supplement with Bike Route wayfinding signage.	On Bike Route sign posts, indicate in some way that parking is permitted	0.73	0	Low
Armstrong	Lexington	Hastings	2	2500	25	18.2	0	1	0	3	2.20	B	Light industrial. No parking.	N-SW	Add bike lanes, 5.5-13.7-13.7-5.5	Include No Parking signs on Bike Lane sign posts	0.92	0	Low
Lake Cook	Arlington Heights	Weidner	4	36600	45	12	0	1.5	0	2.5	4.64	E	N,W continental Xwalks @Arl Hts, otherwise none	N-SP,S-SW	none			2	
Lake Cook	Weidner	Trail	4	36600	45	12	0	1.5	0	2.5	4.64	E	Lake-Cook separated except left turn lanes	N-SP,S-SW	none			2	
Lake Cook	Trail	Raupp	4	36600	45	12	0	1.5	0	2.5	4.64	E	Continental Xwalks across @Lake-Cook	N-SP,S-SW	none			2	
Lake Cook	Raupp	Buffalo Grove	4	36600	45	12	0	1.5	0	2.5	4.64	E	N,W continental Xwalks @BG Rd, otherwise none	Both SWs	Widen north sidewalk to sidepath width			2	Low
Lake Cook	Buffalo Grove	Weiland	4	36600	45	12	0	1.5	0	2.5	4.64	E	N,E std Xwalks @83, otherwise none	N-SP, S-SW	none			2	
Bernard	Arlington Heights	Estate	2	3500	25	16	0	1.5	4	0.25	2.46	B	Residential. Light @Arl Hts (demand-actuated?), stop @Weidner.	Both SWs	***Collector bikeway options***		1.26	4	High

Street	From (N/W)		Lanes	Traffic ADT	Speed Limit	Lane Width	Extra Width	Gutter Pan	Park Occ %	% Truck	BLOS score	BLOS grade	Comments	Sidewalk Status	Primary recommendation	Other options and notes	New BLOS score	Public priority points	Priority
Bernard	Estate	Hartstein Trail	2	3500	25	16	0	1.5	4	0.25	2.46	B	Residential. Striped.	Both SWs	***Collector bikeway options***		1.26	4	High
Bernard	Hartstein Trail	White Pine	2	3500	25	16	0	1.5	4	0.25	2.46	B	Residential.	Both SWs	***Collector bikeway options***		1.26	4	High
Bernard	White Pine	Raupp	2	3500	25	16	0	1.5	4	0.25	2.46	B	Residential. Stop @Raupp.	Both SWs	***Collector bikeway options***		1.26	4	High
Bernard	Raupp	Buffalo Grove	2	4000	25	16	0	1.5	5	0.25	2.55	C	Residential. 3-way light @BG Rd.	Both SWs	***Collector bikeway options***	Higher priority if Buffalo Grove Rd east sidepath built	1.35	2	Medium
Beechwood	Arlington Heights	Weidner	2	1500	25	12	0	1	2	0.25	2.55	C	Residential. Only stop @Weidner. Continental Xwalk @Arl Hts. School parking restrictions.	Both SWs	none			1	
Hapsfield	Weidner	White Pine	2	1200	25	12	0	1	4	0.25	2.46	B	Duplexes. No parking N-side, none seen S-side.	Both SWs	none			1	
Dundee	Arlington Heights	Buffalo Grove HS stoplight	4	30700	35	12	0	2	0	3	4.47	D	Divided road. High School N, commercial S. SP standard Xwalk @HS entrance. 4 continental Xwalks @AH. Cont Xwalk across @HS.	N-SP, S-SW	none	Dundee is a NWMC bike plan "Tier 2" corridor, in BG		2	
Dundee	Buffalo Grove HS stoplight	Old Arlington Heights	4	30700	35	12	0	2	0	3	4.47	D	Divided road. High School N, commercial S.	N-SP, S-SW	Work with Arlington Heights to widen south sidewalk to sidepath width	Very low priority: consider link and road Xing to N sidepath at Old Arl Hts Rd		2	Low
Dundee	Old Arlington Heights	Weidner	4	30700	35	12	0	2	0	3	4.47	D	Divided road. SP standard Xwalk @Weidner.	N-SP, S-SW	Very low priority: consider link and road Xing to N sidepath at Bison Park			2	
Dundee	Weidner	Golfview	4	30700	35	12	0	1.5	0	3	4.47	D	Commercial. Divided road, w/raised, painted medians, turn lanes. N-SP narrows E of Vernon. Sparse standard Xwalks along.	N-SP, S-SW	Consider link and road Xing to north sidepath at Carriageway Drive	Proposed is widening north sidewalk to sidepath width		2	
Dundee	Golfview	Buffalo Grove	4	30700	35	12	0	1.5	0	3	4.47	D	Commercial. Divided road, w/raised, painted medians, turn lanes. N-SW widens to SP E of Oak Creek. Sparse standard Xwalks along.	Both SWs	none	Proposed is widening north sidewalk to sidepath width		2	
Parkview	S-end	Golfview		300									Not possible to get an easement south into AH.		none			1	
Miller	Old Arlington Heights	Mill Creek	2	500									Internal road for apartment complex, w/ speed bumps. No trail connection seen.		none			1	
N Fremont Way	IL-53	Fremont circle	2	2000	25	24.5	0	1	2	0.5	0.47	A	Separated road. Stoplight @ IL53.	None	West sidepath already proposed	Bike Route wayfinding signage, or Combined Bike/Parking Lane, both possible if no sidepath.		1	Low
Fremont circle	N Fremont Way	park	2	2000	25	12	0	0	2	0.5	2.73	C	Residential. No parking E.	Both SWs	no recommendation	Bike Route wayfinding signage possible		1	
Fremont circle	park	Heritage	2	2000	25	12	0	0	2	0.5	2.73	C	Residential. No parking E.	E-SP, W-SW	no recommendation	Bike Route wayfinding signage possible		1	
IL-83	IL-53	Bristol's bend	4	32500	45	12	0	1.5	0	2	4.47	D	No intersections (short stretch).	None	South sidepath already proposed			2	Medium
IL-83	Bristol's bend	Arlington Heights	4	32500	45	12	0	1.5	0	2	4.47	D	S-SP link to Bristol. (Faded) std Xwalks, turn lanes, SE & SW corner islands @AH skew intersection.	S-SP, N-SW	none			2	
IL-83	Arlington Heights	Deerfield	4	23200	45	12	0	1.5	0	2	4.30	D	Only Xwalks @Deerfield.	S-SP, N-SW	Consider link and road Xing to south sidepath at Ranchview and Devlin			2	Low
IL-83	Deerfield	Trail	4	23200	45	12	0	1.5	0	2	4.30	D	Links to trail, Farrington. No Xwalks.	Both SPs	none			1	
IL-83	Trail	Buffalo Grove	4	23200	45	12	0	1.5	0	2	4.30	D	BG skew intersection: continental Xwalks along, NW & SE corner islands	Both SPs	none			1	
Arlington Heights	Thompson	IL-83	2	3250	30	12	7	0	0	0.5	0.96	A	Merges from 4L (IL83) to 2L. Residential W, park E. Varying shoulder width in 2L section.	E-SW, some W-SW	Add Shared Lane Markings 4' from curbs on 4-Lane part, and Bike Route wayfinding signage for entire segment			4	High
Arlington Heights	IL-83	Heritage	4	18500	45	12	0	1.5	0	2	4.18	D	No E-SP Xwalks @strip mall entrances.	E-SP, W-SW	Add link and road Xing to east sidepath at Heritage			4	High
Arlington Heights	Heritage	Carlton	4	18500	45	12	0	1.5	0	2	4.18	D	Heritage Xwalk across and E-SP needed.	E-SP, most W-SW	none			4	
Arlington Heights	Carlton	Checker	4	18500	45	12	0	1.5	0	2	4.18	D	E-Xwalks: cont (2), std (Auburn). Xwalks across needed @Woodbine, Brittany (link to E-SP, too)	E-SP	Add link and road Xing to east sidepath at Brittany			5	Medium
Arlington Heights	Checker	Lake Cook	4	19400	45	12	0	1.5	0	2	4.21	D	Trail off-road on W side. Trail underpass w/ link to E-SP	E-SP	none			3	
Arlington Heights	Lake Cook	Bernard	4	18500	35	12	0	1.5	0	2	4.02	D	Raised median, left-turn lanes. Striped gutter pans. ROW lacking for SP width (fences, etc.). Cont. Xwalks @Plum Grove (3), along Whitehall (2). Xwalks missing @entrance S of Lake-Cook.	E-SP, W-SW	none			3	
Arlington Heights	Bernard	Beechwood	4	18500	35	12	0	1.5	0	2	4.02	D	Std Xwalks @E entrances. 4 cont Xwalks @Bernard.	E-SP, W-SW	none			4	
Arlington Heights	Beechwood	Dundee	4	18500	35	12	0	1.5	0	2	4.02	D	Cont. Xwalks: Dundee (4), across AH @HS, along sidestreets. No Xwalk at one HS entrance. Needs SP link @Happfield, Beechwood closer to AH.	E-SP, W-SW	Consider link and road Xing to east sidepath at Happfield			4	Low
Larchmont	Knollwood	Thompson											Residential. Knollwood to SW link through park not too useful/feasible.		none			1	
Old Arlington Heights	Dundee	Miller	2	4000	40	12	0	0	0	1	3.49	C	Proposed E-SP; now E-SW and most W-SW. Various turn lanes.	E-SW, most W-SW	Widen east sidewalk to sidepath width			0	Low
Old Arlington Heights	Miller	Arlington Heights	2	4000	40	12	0	0	0	1	3.49	C	Tapers 4 lanes (12' + 2' pans) to 2 lanes (12', no gutters) N of Arl Hts. Continental Xwalk @Thurston, nothing @Miller.	E-SP	none			1	
Indian Springs	Dunham	Ivy Hall	2	800	25	12	0	1	3	0	2.22	B	Residential.	Both SWs	Add Bike Route wayfinding signage			2	Low
private road N of Lake-Cook	Arlington Heights	Weidner	2	*3000*	25	18.5	0	1	1	1	1.99	B	Offices. Parking not banned, but none seen, lots off-road. Continental Xwalk @Arl Hts.	None	Add bike lanes, 5-13.5-13.5-5	Include No Parking signs on Bike Lane sign posts	0.95	0	Low
Weidner	Timberhill	Lake Cook	2	*3000*	25	18.5	0	1	0	1	1.98	B	Offices, also hotels, golf course. Median, higher ADT by Lake-Cook. N-trail by golf course. E-parking not allowed, none seen W.	S/E-SW, some N-SP	Add bike lanes, 5-13.5-13.5-5	Include No Parking signs on Bike Lane sign posts	0.93	2	Medium

Street	From (N/W)		Lanes	Traffic ADT	Speed Limit	Lane Width	Extra Width	Gutter Pan	Park Occ %	% Truck	BLOS score	BLOS grade	Comments	Sidewalk Status	Primary recommendation	Other options and notes	New BLOS score	Public priority points	Priority
Weidner	Lake Cook	Bernard	2	3500	25	16	0	1.5	0	0.5	2.43	B	Residential. (Demand-actuated?) light at Lake-Cook, poor ped button access.	Both SWs	***Collector bikeway options***		1.18	3	Medium
Weidner	Bernard	Beechwood	2	3500	25	16	0	1.5	3	0.5	2.48	B	Residential. Very few stops.	Both SWs	***Collector bikeway options***		1.26	3	Medium
Weidner	Beechwood	Hapsfield	2	3500	25	16	0	1.5	0	0.5	2.43	B	Duplexes E, apartments W. School parking restrictions.	E-SP, W-SW	***Collector bikeway options***		1.18	3	Medium
Weidner	Hapsfield	Dundee	2	4000	25	24	0	1	0	0.5	0.90	A	Divided road, 24'/side. Near Dundee: S-bd turn lanes. Light @Dundee (demand-actuated?).	E-SP, W-SW	***Collector bikeway options***		0.00	3	Medium
Brandywyn	Prairie	Buffalo Grove	2	2000	25	16	0	1.5	2	0.25	2.15	B	No driveways. Vacant most S. E-end S-parking by middle school. No Prairie stoplight.	N-SW, some S-SW	***Collector bikeway options.*** Also, add RRFP at Buffalo Gr Rd crossing.		0.92	5	Medium
Brandywyn	Buffalo Grove	Birchwood	2	2000	25	16	0	1.5	2	0.25	2.15	B	Residential. Somewhat tough 2-way stop at Buffalo Grove Rd.	Both SWs	***Collector bikeway options***		0.92	5	Medium
Brandywyn	Birchwood	Aptakisic	2	2000	25	16	0	1.5	2	0.25	2.15	B	Residential. New B/P Xing signs. (Demand-actuated?) light @Aptakasic, inaccessible button	Both SWs	***Collector bikeway options***		0.92	5	Medium
Brandywyn	Aptakasic	Trail	2	3000	25	16	0	1.5	2	0.25	2.35	B	Residential. New B/P Xing signs.	Both SWs	***Collector bikeway options***		1.12	5	Medium
Brandywyn	Trail	Kingsbridge	2	3000	25	16	0	1.5	2	0.25	2.35	B	Residential. New B/P Xing signs.	Both SWs	***Collector bikeway options***		1.12	4	Medium
Brandywyn	Kingsbridge	Thompson	2	3000	25	16	0	1.5	2	0.25	2.35	B	Residential.	Both SWs	***Collector bikeway options***		1.12	4	Medium
Brandywyn	Thompson	Chaucer	2	3000	25	16	0	1.5	3	0.25	2.37	B	Residential. No stops. Signed Bike Route signs @Chaucer for trail.	Both SWs	***Collector bikeway options***		1.15	5	Medium
Brandywyn	Chaucer	Deerfield	2	3000	25	16	0	1.5	3	0.25	2.37	B	Residential. No stops; no light @Deerfield.	Both SWs	***Collector bikeway options***		1.15	5	Medium
Checker	IL-83	Dunham	2	2200	25	16	0	1.5	3	0.5	2.24	B	Residential. No E parking.	Both SWs	***Collector bikeway options***		1.02	9	High
Checker	Dunham	Farrington	2	2200	25	16	0	1.5	3	0.5	2.24	B	Residential. No E parking; high W parking by school, sometimes. No stops.	Both SWs	***Collector bikeway options***		1.02	9	High
Checker	Farrington	Old Checker	2	2200	25	16	0	1.5	3	0.5	2.24	B	Residential. No SE parking. No stops.	Both SWs	***Collector bikeway options***		1.02	10	High
Checker	Arlington Heights	Old Checker	2	2550	25	16	0	1.5	3	1	2.37	B	Residential N, park S. (Demand-actuated?) light @Arl Hts. No S-parking. No driveways W of Burnt Ember, 3% N-parking E of there.	N-SW, most S SW/SP	***Collector bikeway options***		1.15	10	High
White Pine	Bernard	Hapsfield	2	500	25	12	0	1	4	0	1.99	B	Residential. No stops.	Both SWs	none			1	
Sheridan	Beverly	Beverly													none			1	
Satinwood	Buffalo Grove	Birchwood													none			1	
Raupp	Church	Lake Cook	2	3000	25	16	0	1	0	0.5	2.35	B	Civic. Light @Lake-Cook. No parking.	Both SWs	Add bike lanes, 5-12-12-5	Include No Parking signs on Bike Lane sign posts	1.21	3	High
Raupp	Lake Cook	St. Mary's	2	3000	25	12	0	1	4	0.5	2.96	C	Residential S, park and etc N. No W parking. Light @Lake-Cook; stop @St. Mary's.	Both SWs	Add Bike Route wayfinding signage	If no parking, then can use Shared Lane Markings 4' from curbs		6	High
Raupp	St. Mary's	Bernard	2	2500	25	17.5	0	0	3	0.5	2.06	B	Residential. Gutter pans paved over.	Both SWs	***Collector bikeway options***		1.09	6	High
Raupp	Bernard	Golfview	2	2500	25	17.5	0	0	3	0.5	2.06	B	Residential. Gutter pans paved over.	Both SWs	***Collector bikeway options***		1.09	5	High
Golfview	Raupp	Dundee	2	2500	25	16	0	1.5	3	0.5	2.30	B	Residential. (Demand-actuated) light @Dundee w/ bad push button placement.	W-SW, some E-SW	***Collector bikeway options***		1.09	4	High
Golfview	Dundee	S-end	2	1000	25	16	0	1.5	1	0.5	1.81	B	Off-street parking sufficient. S-end: easement link to Dun-Lo Dr (Arl Hts bike route network) feasible.	W-SW	Add Bike Route wayfinding signage.	Coordinate with Arl Hts to add short trail link on easement from S-end to Dun-Lo/Betty (local bikeway network)		1	High
trail link	Golfview	Dun-Lo/Betty													Coordinate with Arl Hts to add short trail link on easement from S-end to Dun-Lo/Betty (local bikeway network)			0	High
Buffalo Grove	US 45	Port Clinton	2	9800	35	12	0	2	0	1.5	3.95	D	Median	W-SP, E-SW	none			1	
Buffalo Grove	Port Clinton	Railroad	2	9800	35	12	4	2	0	1.5	2.67	C	Various turn lanes. Awkward Xing from S to N-SP at church entrance (saw cyclist go through grass)	S-SP, some N-SP	Add better crossing from S to N-SP at church entrance.	Add RRFB for that same crossing, if the road is widened to 4 lanes		0	High
Buffalo Grove	Railroad	Port Clinton	2	13000	40	12	4	0	0	1.5	2.90	C	Buffalo Grove's 4' shoulders drop for turn lanes, 4 Lane tapers. Extra stone shoulder width.	S-SP	none			7	
Buffalo Grove	Port Clinton	Sandalwood	2	13000	40	12	4	0	0	1.5	2.90	C		S/E-SP, N/W-SW	Add link and road Xing to south/east sidepath at Dunstan and Sandalwood			7	Low
Buffalo Grove	Sandalwood	Half Day	4	13000	40	12	0	2	0	1.5	3.83	D		E-SP,W-SW	none			7	
Buffalo Grove	Half Day	Satinwood	2	13000	40	12	4	0	0	1.5	2.90	C	4 Lanes at Half Day.	E-SP,W-SW	Add link and road Xing to east sidepath at Birchwood			9	Low
Buffalo Grove	Satinwood	Brandywyn	2	13000	40	12	4	0	0	1.5	2.90	C		E-SP,W-SW	Add RRFP for Brandywyn's crossing			9	Medium
Buffalo Grove	Brandywyn	Aptakisic	2	13000	40	12	4	0	0	1.5	2.90	C	4 Lanes at Aptakasic.	W-SW, some E-SP	Add (already-proposed) east sidepath during LCDOT road project			10	High
Buffalo Grove	Aptakasic	Thompson	4	13000	40	12	0	2	0	1.5	3.83	D	Tapers from 4 lanes to 2.	E-SP,W-SW	Add link and road Xing to east sidepath at LaSalle			8	Low
Buffalo Grove	Thompson	Deerfield	2	13000	40	12	4	0	0	1.5	2.90	C	Tapers from 2 lanes to 4.	E-SP,W-SW	Add link and road Xing to east sidepath at Larraway			8	Low
Buffalo Grove	Deerfield	Fox Hill	4	12500	40	12	0	2	0	1.5	3.81	D		E-SP, some W-SP	none			8	
Buffalo Grove	Fox Hill	IL-83	4	12500	40	12	0	2	0	1.5	3.81	D		E-SP, some W-SP	none			8	
Buffalo Grove	IL-83	Old Checker	4	15000	40	12	0	2	0	1.5	3.90	D		E-SP,W-SW	Add link and road Xing to east sidepath at Common Way, Manor			5	Low
Buffalo Grove	Old Checker	Church	4	15000	30	12	0	2	0	1.5	3.70	D		E-SP,W-SW	none			5	
Buffalo Grove	Church	Lake Cook	4	15000	30	12	0	2	0	1.5	3.70	D		E-SP,W-SW	none			5	
Buffalo Grove	Lake Cook	500' S of Lake-Cook	4	20300	35	12	0	2	0	1.5	3.97	D		Both SWs	Widen east sidewalk to sidepath width			5	Low
Buffalo Grove	500' S of Lake-Cook	Bernard	4	20300	40	12	0	2	0	1.5	4.06	D		W-SW	Add east sidepath			6	Medium

Street	From (N/W)		Lanes	Traffic ADT	Speed Limit	Lane Width	Extra Width	Gutter Pan	Park Occ %	% Truck	BLOS score	BLOS grade	Comments	Sidewalk Status	Primary recommendation	Other options and notes	New BLOS score	Public priority points	Priority
Buffalo Grove	Bernard	350' S of Bernard	4	20300	40	12	0	2	0	1.5	4.06	D		W-SW	Add east sidepath			6	Medium
Buffalo Grove	350' S of Bernard	900' N of Dundee	4	20300	40	12	0	2	0	1.5	4.06	D		Both SWs	Widen east sidewalk to sidepath width			6	Low
Buffalo Grove	900' N of Dundee	Dundee	4	20300	40	12	0	2	0	1.5	4.06	D		W-SW, E-SP	None			6	
Highland Grove	Thompson	Deerfield	2	2000	25	16	0	1.5	2	0.5	2.18	B	Residential, apartments, park W-side. No E-parking or driveways, N of Sandhurst.	Both SWs	***Collector bikeway options***		0.95	1	High
Highland Grove	Deerfield	Pauline	2	3000	25	16	0	1.5	2	0.5	2.38	B	Residential, Tripp School. Stops @Fox Hill, Fabish. School Xing sign @trail (diagonal) Xing. Light (demand-actuated?), turn lanes @Deerfield.	Both SWs	***Collector bikeway options***		1.15	1	High
Main (S-bd)	Buffalo Grove	Park	2	*3500*	30	10.5	0	0	0	1	3.40	C	Stone shoulders (sloping)	W-SP	none	Shared Lane Markings are feasible		2	
Main (N-bd)	Buffalo Grove	Park	2	*3500*	30	11.5	8.7	0	10	1	1.11	A	Metra parking stalls marked, but unused except near station (S).	W-SP	none	Shared Lane Markings are feasible		2	
Main (S-bd)	Park	Metra lot	2	*3500*	30	10.5	0	0	0	1	3.40	C	Not in Buffalo Grove. Stone shoulders (sloping)	None	Add Shared Lane Markings 4' into lane, plus Bike Route wayfinding signage. Also, try to fit in west sidewalk.			2	Medium
Main (N-bd)	Park	Metra lot	2	*3500*	30	11.5	8.7	0	100	1	3.29	C	Not in Buffalo Grove. Metra parking stalls filled near station.	None	Add Shared Lane Markings 4' into lane, plus Bike Route wayfinding signage.			2	Medium
Main	Metra lot	Half Day	2	*3500*	30	10	0	0	0	1	3.45	C	Parts not in BG. Metra station. Varies: some parallel, perpendicular parking; curbs, shoulders	Wide E-SW	Add Shared Lane Markings 4' into lane, plus Bike Route wayfinding signage.			2	Low
Prairie	Port Clinton	curve	2	5300	40	12	0	0	0	1	3.63	D	Various turn lanes, painted median	W-SP	Add link and road Xing to west sidepath at Brockman			6	Low
Prairie	curve	Half Day	2	5300	40	10.5	0	0	0	1	3.80	D	Not accessible from E-bd Half Day. Metra station (ramp, at-grade Xing). Some stone shoulder.	W-SW, some E-SW	Add west sidepath	Metra station access - although west side is primary		6	Medium
Prairie	Half Day	Brandywyn	2	7200	40	11.5	2	0	0	1	3.31	C	Various turn lanes. Shoulder width varies.	W-SP, some E-SW	Planned: complete east sidewalk, add 3' shoulders, RRFB at Brandywyn		2.89	5	Medium
Prairie	Brandywyn	Olive Hill	2	7200	40	10.5	1	0	0	1	3.73	D	Shoulder width varies, more away from turn lanes. Usually, plenty of stone shoulder width.	W-SP, E-SW	Planned: add 3' shoulders		2.89	3	Medium
Prairie (current)	Olive Hill	Aptakisic	2	7200	40	10.5	1	0	0	1	3.73	D	Shoulder width varies, more away from turn lanes. Usually, plenty of stone shoulder width. Turn lane at Aptakasic.	Most E-SW	Planned new road to meet Weiland. Old road: Complete east sidewalk.		2.89	3	
Prairie (new)	Olive Hill	Aptakisic											Planned new alignment to meet Weiland at Aptakasic		Planned: add west sidepath, east sidewalk, 3' shooulders.		2.89	3	High
Weiland	Aptakasic	Thompson	4	11400	40	12	2	2	0	1.5	3.20	C	Frequent turn lanes. Road re-design coming from Aptakasic to Lake-Cook.	W-SP, some E-SW	Planned: complete east sidewalk, add 3' shoulders, new light at Thompson		2.86	1	Medium
Weiland	Thompson	ComEd Trail	2	11400	40	12	0	1.5	0	1.5	4.12	D	Varies from curbed to uncurbed. When uncurbed, various shoulder width (usually 2') with extra stone width.	W-SP, E-SW	Planned: add 3' shoulders		3.22	6	Medium
Weiland	ComEd Trail	Deerfield	4	11400	40	12	0	1.5	0	1.5	3.76	D		W-SP, E-SW	Planned: add 3' shoulders		2.86	6	Medium
Weiland	Deerfield	Bentley	4	15400	40	12	0	2	0	1.5	3.92	D		E-SP, W-SW	Planned: switch to west sidepath and east sidewalk, add 3' shoulders		3.02	7	Medium
Weiland	Bentley	Pauline	2	15400	40	12	0	2	0	1.5	4.27	D	E-SP stops at Newtown.	W-SW, some E-SP	Planned: switch to west sidepath and east sidewalk, add 3' shoulders, add RRFB at Newtown		3.37	7	Medium
Weiland	Pauline	Woodstone	2	15400	40	12	0	2	0	1.5	4.27	D	Fogline incl. gutter and some asphalt.	Some E-SP, most W-SW	Planned: switch to west sidepath and east sidewalk, add 3' shoulders, add RRFB at Woodstone		3.37	7	High
Weiland	Woodstone	Lake Cook	4	15400	40	12	0	1.5	0	1.5	3.92	D		W-SW, some E-SP	Planned: switch to west sidepath and east sidewalk, add 3' shoulders		3.02	7	Medium
Lexington	Pauline	S of Pauline											Blocked to traffic except authorized vehicles. Bad pavement and narrow.	none	Open access to bicycles and sign as Bike Route. Consider repaving.			0	Medium
Lexington	S of Pauline	Armstrong	2	1500	25	17.1	0	1	0	3	2.13	B	Light industrial. No parking.	W-SW	Add bike lanes, 5.5 (incl gutters)-12.6-12.6-5.5.	Bike Route signage would suffice, but use bike lanes for consistency further south	0.93	0	Medium
Lexington	Armstrong	Lake Cook	2	4000	25	17.1	0	1	0	3	2.63	C	Light industrial. No parking. L,R turn lanes @Lake-Cook.	W-SW	Add bike lanes, 5.5 (incl gutters)-12.6-12.6-5.5.		1.42	0	Medium
Raphael	Railroad	Pauline	2	300	25	12	0	1	1	0.5	1.75	B	Residential	Both SWs	Add Bike Route wayfinding signage.	More direct, all-season option than the trail west. Requires township(?) participation.		1	Low
Carman	Raphael	Pauline													none			1	
Hastings	trail Xing	Lake Cook	2	2500	25	17.7	0	1	0	3	2.29	B	Light industrial. No parking.	W-SP	none	Bike lanes 5.5 (incl. gutter pan)-13.2-13.2-5.5 are feasible		0	
Barclay	Aptakasic	Corporate Grove	2	5300	30	17.7	0	1	0	3	2.93	C	Light industrial. No parking. Turn lanes by Aptakisic	E-SW	Add bike lanes, 5.5 (incl gutters)-13.2-13.2-5.5.		1.69	1	Medium
Barclay	Corporate Grove	Busch	2	5300	30	17.7	0	1	0	3	2.93	C	Light industrial. No parking.	Some E-SW	Add bike lanes, 5.5 (incl gutters)-13.2-13.2-5.5. Complete east sidewalk.		1.69	1	Medium
Barclay	Busch	Deerfield	2	5300	30	17.7	0	1	0	3	2.93	C	Light industrial. No parking. Turn lanes by Deerfield	Some E-SP	Add bike lanes, 5.5 (incl gutters)-13.2-13.2-5.5. Complete east sidewalk.		1.69	1	Medium
Northgate	Johnson and trail	Lake Cook	2	*2500*	30	18	0	1	0	2	2.32	B	Light industrial. 24' N-bd, 12' S-bd w/ turn lanes. Wheeling-proposed bike lanes S of Lake Cook.	E-SP	If Wheeling adds proposed bike lanes south of Lake-Cook, then add N-bd 5' bike lane and S-bd shared lane marking in straight-ahead lane	This would make for a smoother transition with Wheeling's bike lanes		0	Low

Street	From (N/W)		Lanes	Traffic ADT	Speed Limit	Lane Width	Extra Width	Gutter Pan	Park Occ %	% Truck	BLOS score	BLOS grade	Comments	Sidewalk Status	Primary recommendation	Other options and notes	New BLOS score	Public priority points	Priority
Milwaukee	Aptakasic	Busch	4	32200	45	12	0	0	0	3.5	4.81	E	Stone shoulders, except curbs near Busch	Some W-SW	Where no west sidewalk, add sidepath. Lower priority is widening existing sidewalk to sidepath width.	Simply completing west sidewalk is an alternative		1	Medium
Milwaukee	Busch	Deerfield	4	34200	40	12	0	0	0	3.5	4.75	E		Some W-SW	Where no west sidewalk, add sidepath. Lower priority is widening existing sidewalk to sidepath width.	Simply completing west sidewalk is an alternative		1	Medium
Milwaukee	Deerfield	Columbus	4	34200	40	12	0	1.5	0	3.5	4.75	E	Shifts to 6 lanes at Chevy Chase. W-goat path.	Some W-SP, E-SW	Complete west sidepath			1	Medium
Milwaukee	Columbus	Linden	6	34200	40	12	0	1.5	0	3.5	4.54	E		W-SP, some E-SW	none			1	
Proposed ComEd trail	Aptakasic	Thompson											Would need LCDOT partnership		Construct trail			2	Low
Proposed Hartstein Tr. N extension	Alcott Comm. Center	Emmerich Park West (by Raupp)													Construct trail			1	Medium
Proposed DesPlaines River Trail link	Riverwalk	Des Plaines River Trail											Mostly redundant with link 0.4 miles north. Would need LCFPD partnership		Construct trail link			0	Low

Appendix 5
Summary of Major Funding Sources

Some of the most commonly used funding sources for bicycle and pedestrian projects are listed below. The funding landscape is always evolving. Check www.bikelib.org/bike-planning/bikeway-funding-tips for updates.

Illinois Transportation Enhancements Program (ITEP)

- Federal source with 80% federal/state, 20% local cost shares.
- ITEP is one component of the federal Transportation Alternatives Program (TAP), along with Safe Routes to School, Recreational Trails Program, and suballocated TAP dollars administered by Illinois' five largest MPOs (including CMAP).
- Administered by IDOT. Recently moved to annual grant cycles (spring applications).
- Less ITEP money administered by IDOT than pre-2013 – estimate $16M/year, compared to $28M/year – but a higher fraction will go to bicycle-related projects.
- Very high funding demand to supply ratio (estimated 15:1 in 2013).
- Emphasis on transportation potential and inclusion in a larger, officially-adopted plan.

With more stringent federal engineering standards and review processes, this source is better suited for significant ($400K to $1M+) bikeway projects and those requiring substantial engineering work, such as bridges. In part to accommodate the tremendous demand, medium-sized projects are usually funded more than very large projects.

CMAP Transportation Alternatives Program (CMAP-TAP)

- Federal source with 80% federal/state, 20% local cost shares, administered by the Chicago Metropolitan Agency for Planning (CMAP).
- $17M soon to be awarded for initial two-year (FY13-14) program, all for bicycle-related projects. Next cycle depends on continued federal funding past September 2014.
- Nearly half of applications funded in initial grant cycle.
- Emphases on projects implementing the Regional Greenways and Trails Plan, population and employment density, improvement over current conditions, completed right-of-way acquisition and engineering.

Five of the proposed eight FY13-14 grants range from $1.6M to $5.9M, indicating a willingness to fund large, regionally significant projects. Like ITEP, the federal process must be followed.

Congestion Mitigation and Air Quality (CMAQ)

- Federal source with 80% federal/state, 20% local cost shares, administered by the Chicago Metropolitan Agency for Planning (CMAP).
- Typically, annual grant cycles with applications due at the end of January.
- $18M awarded to 12 bicycle-related projects in 2013, out of 42 applications.
- Emphases on having a low cost-per-emission reduction ratio.

- Emissions reduced per project cost is the priority. This is strongly related to population density. Projects implementing CMAP's "Go To 2040" plan are also a priority.
- Other eligible categories include bike encouragement programs and bike parking.

Except for regionally-significant projects, low density suburbs like Buffalo Grove are at a disadvantage in winning large CMAQ grants. However, medium-sized projects ranging from $150-400K may be good candidates. Again, this is federal money, subject to more stringent standards and review processes, like ITEP.

Illinois State Bike Grant Program

- State source with 50% state, 50% local cost shares and a $200K grant ($400K project) limit.
- Reimbursement grant administered annually (March 1) by IDNR.
- Pre-2007 average of $2.5M per year, with a $200K limit (except for land acquisition projects). After a five year hiatus due to the State's financial crisis, the program was reinstated in 2013 with $1M in grants.
- Typically a 2:1 ratio of applications to grants.
- Only off-road trails and bikeways are eligible.

Much simpler process and standards as these remain local, not IDOT/federal, projects. Good for simpler projects and those that can easily be phased. Many agencies prefer these over ITEP/TAP, even though the cost share is higher, due to grant administrative burden and costs.

Recreational Trails Program

- Federal source with 80% federal/state, 20% local cost shares.
- Administered by IDNR with IDOT. Annual March 1 deadline.
- $1.5M per year. About half is dedicated for non-motorized, off-road trails emphasizing underserved user types. $200K limit (except for land acquisition projects).
- Much less competitive, with application demand usually not much more than grant supply.

This has been an underutilized source. Because of the decline of the Illinois State Bike Path Grant program, more standard multi-use (bike) trails are getting funded recently. A good target range is $100-200K.

Illinois Safe Routes to School program

- Federal source with 80% federal/state, 20% local cost shares; reimbursable grants. SRTS is a component of Transportation Alternatives Program funding.
- Administered by IDOT.
- An application cycle for $6M, or two years of funding, is due January 31, 2013. $5M will go to for infrastructure projects ($200K limit each) within 2 miles of schools

serving any K-8 grades. $500K will go for education and encouragement programs for the same grades, with an application maximum of $30K.

- Demand to supply ratio was 2:1 in 2008 and 2011. Non-infrastructure grants are much less competitive.
- The next cycle depends on continued federal funding past September 2014.

Sidewalk/sidepath, trail link, and road crossing projects fare well under the SRTS program.

Non-Government Sources

Private foundations, local businesses and individual donors can be another resource, especially for high profile projects. The national focus on public health is also creating more opportunities for active transportation. Many high profile organizations, such the Robert Wood Johnson Foundation, are committing resources to projects that promote public health.

THE BUILDING BLOCKS OF A BICYCLE FRIENDLY COMMUNITY

Appendix 6

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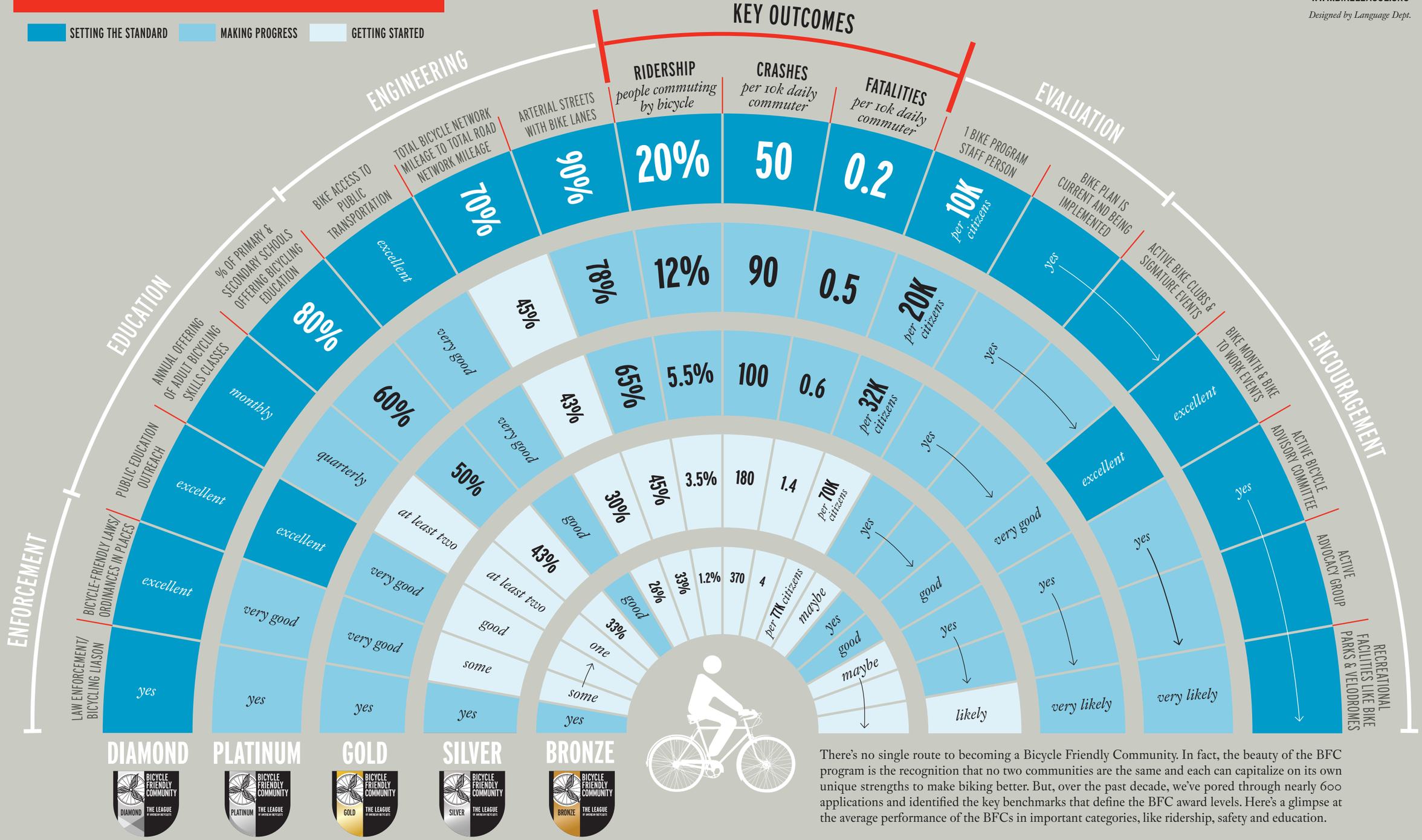

There's no single route to becoming a Bicycle Friendly Community. In fact, the beauty of the BFC program is the recognition that no two communities are the same and each can capitalize on its own unique strengths to make biking better. But, over the past decade, we've pored through nearly 600 applications and identified the key benchmarks that define the BFC award levels. Here's a glimpse at the average performance of the BFCs in important categories, like ridership, safety and education.