



MEMORANDUM

SCHREIBER
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ASSOCIATES

To: Village of Riverwoods

Date: March 4, 2003

From: Jim Neidhart

Project: Village of Riverwoods
Bicycle Facility Plan

Project Number: 1831

SCHREIBER ANDERSON ASSOCIATES, INC.
MARCH 04 2003

The following discussion will explain the inventory, analysis and recommendations of the Bicycle Facility Plan for Riverwoods, Illinois.

Inventory and Analysis (Please refer to the Bike Plan Inventory and Analysis graphic.)

Destinations have been selected during public meetings by Village officials, staff and community representatives. They were selected as places that people will want to reach by bicycle or by walking. Wilmot Elementary and Caruso Junior High were given the highest priority. As shown on the graphic, destinations are indicated by green rectangles. Destinations include the following:

- Wilmot Elementary School
- Caruso Junior High School
- Laura B. Sprague School
- Bannockburn Elementary School
- Ryerson Woods Conservation Area
- Meadowlake Subdivision
- Colonial Court
- Village Hall
- Thorngate Subdivision0
- Tenaqua Subdivision

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- Downtown Deerfield
- Ravinia Green Country Club
- Deerfield Park District Golf Course

Road data for each road is indicated by yellow rectangles. The information includes pavement width, speed limit and average daily traffic volume.

Right-of-way (ROW) data is indicated by magenta rectangles. The information includes both the ROW width as measured from the electronic parcel drawing and the width for a path next to the roadway. When roads are oriented east to west, distance is indicated as feet to the north (N) and feet to the south (S) as measured from the road edge to edge of ROW. Dimensions are similarly identified for roads with a north to south orientation.

Hazard descriptions are shown in red rectangles and correspond to red spike graphics. Hazards include the Deerfield Road I-94 onramp crossing where there is a 60 foot offset, missing curb cuts on Saunders Road, and a broken barrier post east of I-94 on Riverwoods Road. These should be given particular emphasis, even though in the case of the I-94 crossing and the barrier post they are outside of Riverwoods. Discussions with the Illinois Department of Transportation (IDOT), Lake County Department of Transportation (LCDOT) and the Village of Deerfield are highly recommended. LCDOT is planning path improvements along the north side of Deerfield Road from Wilmot Elementary School to Saunders Road, and continuing approximately 500 feet to the north along the east side of Saunders Road. Details are limited, however an 8 foot path is planned as well as a tunnel under the I-94 ramp. The improvements by LCDOT are very encouraging because of the previously mentioned importance in providing a safe connection to the schools.

Existing Riverwoods paths are shown on the Inventory and Analysis graphic as solid yellow lines. These are located: along the north side of Deerfield Road from the I-94 crossing to Portwine Road; along the east side of Saunders Road from Deerfield Road to Orphans of the Storm; along the south side of Riverwoods Road from Hiawatha Lane to Woodland Lane; and along the north side of Riverwoods Road from Woodland Lane to the 8 foot wide Village of Lincolnshire path. American Association of State Highway and Transportation Officials (AASHTO) guidelines call for a minimum of 8 foot paths. All existing Riverwoods paths are a maximum of 5 feet in width. The asphalt paths are in fair condition, with some cracking. The frequency of curves is excessive, in

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order to accommodate the many trees along its length, with the trees acting as obstacles because of their close proximity to the path.

Users of the shared path include bicyclists, walkers, joggers, in line skaters, skate boarders and people walking dogs. Ideally, a shared use path has its own right-of-way and minimal cross traffic flow by motor vehicles. AASHTO guidelines highlight a number of problems that occur when paths are located immediately adjacent to roadways. Perhaps the most pertinent problems for Riverwoods are the following:

- At intersections, motorists entering or crossing the roadway often will not notice bicyclists approaching from their right, as they are not expecting contra-flow vehicles. Motorist turning to exit the roadway may likewise fail to notice the bicyclist. Even bicyclists coming from the left often go unnoticed, especially when sight distances are limited.
- Although the shared use path should be given the same priority through intersections as the parallel roadway, motorists falsely expect bicyclists to stop or yield at all cross-streets and driveways. Efforts to require or encourage bicyclists to yield or stop at each cross-street and driveway are inappropriate and frequently ignored by bicyclists.
- When a sidewalk is used as a shared use path, conflicts can occur between pedestrians moving at lower speeds and with greater maneuverability than the bicyclist. Lack of predictability is a concern. Sight distance is often impaired by a property's hedge or fence. In addition, bicyclists or pedestrians often like to be side-by-side. However, 5 foot sidewalk widths are too narrow to accommodate such use.

The existing path is essentially a sidewalk. Unfortunately, Riverwoods does not have the luxury of building a shared use path with its own right-of-way. An improved path system will require people to use caution when crossing private driveway intersections and streets. The challenge will be to build the path with the safest possible design elements in conjunction with education of the users and Village residents.

Design Recommendations

Although it is not the intent of this report to design the shared use path and bike system, the

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following design recommendations should be considered during the design process.

- When two-way shared use paths are located adjacent to a roadway, wide separation between a shared use path and the adjacent highway is desirable to demonstrate to both the bicyclist and the motorist that the path functions as an independent facility for bicyclists and others. When not possible to have good separation, a barrier should be provided.
- Periodic warning signs are useful for intersections, sharp curves and obstacles.
- Good sight distances are important for both the bicyclist and the motorist.
- Curb cuts are required, with ramp widths at least equal to the width of the path.
- Refuge islands in the roadway can make it easier for slower individuals, such as children and handicapped, to safely cross the street.
- Pavement marking across the path at driveway intersections can be useful to show motorists that others are present. Perhaps the best markings are the so called 'zebra' style crosswalks. They are more visible than the standard markings and last longer because they are parallel to the flow of motor vehicles' travel.
- A raised platform crosswalk can also prove helpful to define the path as a caution zone.

Bike Plan Recommendations (Please refer to the Bike Plan Recommendations and Typical Road Sections graphics.)

Increasingly, bicycling is being recognized as a preferred alternative to motorized methods of transportation. While reducing congestion and pollution, it contributes to the health of the individual. Riverwoods' overall goals for transportation improvements should include provisions for bicycle travel. Generally, adult bicyclists should not ride on the sidewalk. When the roadway is properly designed for shared use by motorists and bicyclists, it is recommended that the roadway accommodate the majority of the bicycle traffic. Hence, it is important to provide adult bicyclists with bike lanes along the busy Deerfield and Riverwoods Roads. Their existing width of 24 feet is insufficient for safe shared travel of bicyclists and motorized vehicles. Both being without curb and gutter, AASHTO guidelines recommend 5 foot bike lanes adjacent to the motor vehicle travel lanes. (If the County rebuilds the roads with curb and gutter, AASHTO guidelines call for a 3 foot bike lane to be provided, not including the width of the gutter pan.) The bike lanes should be built when the roads are resurfaced. According to discussions between the

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Village Engineer and LCDOT, Riverwoods Road may be resurfaced within the next 5 years. It is unlikely that Deerfield Road will be included in the County's 5 year plan, however a formal request should be placed by the Village for improvements when resurfacing is performed. Bike lanes are established with appropriate pavement markings and signing along streets to improve conditions for the cyclist on the street. Bike lanes define the right-of-way assigned to bicyclists and motorists and aid the predictability of both. In addition to markings and signing, signals need to be responsive to cyclists and the lanes must be maintained free of pot holes and debris. Duffy Lane, Saunders Road and Portwine Road have a low enough motorized traffic volume that they do not warrant bike lanes.

Sidewalk riding is acceptable for children and their parents when the children cannot practice the rules of the road and are not developmentally ready to safely ride alongside motorized traffic. Although they are on a sidewalk, their slower speeds allow motorists and pedestrians more time to react. Nevertheless, according to AASHTO guidelines, it is inappropriate to sign these facilities as bicycle routes. Until the roadway is widened for bike lanes, the path will at least accomplish the community's primary stated objective - to facilitate the safe travel of the students to their schools. It will also allow pedestrians to walk throughout the community without having to be on roadways.

As a minimum, AASHTO guidelines require 8 foot wide shared use paths. Paths should be provided on Deerfield Road, Riverwoods Road, Duffy Lane, Saunders Road and Portwine Road. When possible, the improved paths may be located on the existing path base, but the proposed path should be straighter in its alignment. AASHTO guidelines call for a minimum of a 100 foot radius for typical design speeds. Because it will be wider and straighter than the existing path, trees will need to be removed. AASHTO guidelines also call for a 2 foot clear zone graded to a maximum of 1:6 slope on each side of the path. Furthermore, 3 feet from the path should be devoid of any obstacles such as trees or fences.

Along Deerfield Road, the proposed improved Village of Riverwoods path should connect to the proposed 8 foot wide LCDOT path. The County path, to be built along the north side of Deerfield Road, will extend from Wilmot Elementary School to Saunders Road and north to the Orphans of the Storm property along the east side of Saunders Road. It will also include a tunnel underneath the I-94 on ramp. From the County path, the Village path will extend along the north side of Deerfield Road to Portwine Road. The path will then cross to the south side of the road where it will connect to proposed Des Plains River Trail on the west side of the river. Lake

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County is building a construction and service connection to the trail. The County has offered the connection to the Village, however the Village will need to pave the path. A removable barrier will also be needed to prevent unauthorized use. From the trail, the shared use path will continue along the south side of Deerfield Road to meet up with the 5 foot wide Village of Buffalo Grove path at Milwaukee Avenue.

Along Riverwoods Road, the proposed 8 foot Village of Riverwoods path will connect to the previously described Lake County path at the Orphans of the Storm. It is to continue along the north side of the road where it will meet the existing path at Woodland Lane. From Woodland Lane, the path will continue along the north side until it meets up with the 8 foot wide Village of Lincolnshire path.

Along Duffy Lane, the 8 foot path will be located along the north side of the road, matching up with the 10 foot LCDOT bridge path, followed by the 5 foot Bannockburn path to the east.

Along Saunders Road, the 8 foot path will be located along the west side of the road where there are fewer property owners due to the golf course frontage.

Along Portwine Road, the 8 foot path will be located along the west side of the road from Riverwoods Road to Chianti Trail at the Village Hall.

A spur that is approximately 1,000 feet long is recommended to connect the Thorngate Subdivision to the path network. It may be located between residential parcels at 761 Links Court and 2346 Congressional Lane, extend behind the parcels along Congressional Lane and cross Deerfield Road at Saunders Road. It will meet up with the path on the north side of Deerfield Road.

Throughout the existing road system, the paved road surface alignments vary as they pass through the road ROWs. The cross sections shown on the Typical Road Sections graphic are intended to help visualize how the existing road ROWs will accommodate path and bike lane additions of prescribed widths. They are not meant to be used as engineering drawings. Engineering analysis should be undertaken to accommodate site specific considerations such as utilities and storm water. The engineering analysis should also be used to help determine cost.

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Education

As previously discussed, because the proposed path does not have its own separate ROW, there will be the potential for greater conflict between path users and motorized vehicles. Therefore, it is particularly important for the Village of Riverwoods to facilitate education of their residents. A bicyclist who understands the rules of the road is more likely to be a safe bicyclist. Bicycles are classified as vehicles in Illinois, and must follow the same traffic laws as automobiles. A motorist who understands that bicycles are vehicles and treats them as such is more likely to drive safely when in the presence of bicyclists. In the Village of Riverwoods, bicyclists and motorists must be aware that they may encounter each other around any turn or at any intersection. Focused educational efforts are necessary to make motorists and bicyclists aware of this reality so they may operate their vehicles safely. An effective, ongoing educational initiative has a different message and delivery technique for each audience it is directed. The Village of Riverwoods can target three groups:

- young bicyclists and their parents
- adult bicyclists
- motorists

Basic bike safety courses for children will reach most children and their parents if offered through their schools. The Illinois Department of Transportation (IDOT) offers curriculum for teachers, such as 'Kids on Bikes in Illinois', aimed at school aged children. Physical education teachers can teach this hands-on curriculum that will increase a child's cycling abilities, teach them the rules of the road and help them avoid danger. Some communities in Illinois offer bicycle safety education during popular, optional summertime classes such as Safety Town or Safety Camp. They are coordinated by civic groups, such as Junior Women's Clubs and conducted by law enforcement officers.

Park and recreation departments around the state are beginning to sponsor bike safety classes taught by instructors certified by the League of American Bicyclists (LAB). A course for children in kindergarten through third grade covers bike and helmet fit, safety checks and basic bike handling skills. A course for children in fourth, fifth and sixth grades teaches basic traffic laws, in-depth bike handling, group riding and how to select the safest route. It includes on-road riding and parking lot exercises to both test student comprehension and allow for practice of the skills

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learned in the classroom. The Chicagoland Bicycle Federation (www.biketraffic.org) or the League of Illinois Bicyclists (www.bikelib.org) can provide a list of instructors.

Adult cyclists are much more difficult to reach with a safety message. The League of American Bicyclists offers safety classes for this age group. Most adults believe they know how to ride a bike despite perhaps riding on the wrong side of the road or ignoring stop signs. Effective ways to educate adults include point of sale safety information, presentations at bike club meetings and organized bike rides that emphasize bike safety (wearing a helmet, stopping at stop signs, riding on the right, correct lane position, signaling, etc.). Public education campaigns, discussed below, are also effective.

Brand new motorists can learn about bike safety during driver's education classes, provided the instructor has the necessary information to teach the subject. Other motorists can learn about bike safety through public information campaigns. Senior centers often sponsor safe driving classes for older adults.

Ideas for public education campaigns include:

- Publicizing safe driving tips during bicycle season (via newspaper articles, public service announcements)
- Distributing bike safety materials from IDOT
- Asking service groups, injury prevention groups or local hospitals to sponsor and staff bike safety booths at public events or to sponsor a bike safety fair
- Asking the Public Health Department to hold a summer safety fair and include bike safety materials and demonstrations
- Asking libraries to display and distribute safety materials during the bicycling season and encouraging libraries to purchase educational videotapes and books about bike safety and maintenance
- Distributing bike safety materials in other locations such as the Village Hall, motor vehicle registration office, bike shops and local libraries

Summary

When implemented, the Village will have a network of paths and bike lanes that effectively

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connect the residents of the Village to each other and the preferred destinations. It has the potential of enhancing the sense of community in Riverwoods. These improvements, along with education, will enable children to have a safe route that they may travel whether going to Wilmot Elementary, Caruso Junior High, Bannockburn Elementary or Laura B. Sprague School. Particularly vital to the success of the system will be the planned improvements to the Deerfield Road path by the Lake County Department of Transportation. Bike lanes will allow adult bicyclists to safely travel on the busy Deerfield and Riverwoods Roads. Additionally, the cyclist will be able to access the proposed Des Plaines River Trail that will reach the Wisconsin state line to the north and extend to the south into Cook County and ultimately to the Mississippi River via the Grand Illinois Trail.

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