Application form:
Community Planning program and
Local Technical Assistance program

DEADLINE: Noon on Wednesday, June 26, 2013

This application form is online at www.rtachicago.com/applications. You may submit the form by email to applications@rtachicago.com. Upon receipt of application, you will receive an e-mail verifying that your application has been received.

1. Name of Applicant:
   South Suburban Mayors and Managers Association

2. Main Contact for Application (please include name, phone number and email):
   Thomas Vander Woude
   708-922-4677
   thomas.vanderwoude@ssmma.org

3. Type of Applicant (please check any that apply):

   ____ Local government

   ___x_ Multijurisdictional group*  Please list the members of the group (including government and nongovernmental organizations):
   SSMMA on behalf of its 43 member municipalities in the South Suburbs.

   ___ Nongovernmental organization*  Name of local government partner(s):
   
   ________________________________
   ________________________________
   ________________________________

*Applications submitted by multijurisdictional groups and nongovernmental organizations must include a letter indicating support from each relevant local government. See the FAQs for more information. Nongovernmental applicants are strongly encouraged to contact CMAP or the RTA prior to submitting their application to discuss their project and the demonstration of local support.
4. Project Type (please check any that apply):
Please check all statements below that describe characteristics of your project. (This will help us determine whether your project is best handled by CMAP or RTA.)

___X___ My project involves preparation of a plan.
____ My project helps to implement a past plan.
___X___ My project links land use, transportation, and housing.
___X___ My project has direct relevance to public transit and supports the use of the existing transit system.
____ My project is not directly related to transportation or land use, but implements GO TO 2040 in other ways.

5. Project Location:
Please provide a brief description of the location of your project. You may include a map if that helps to describe location, but this is not required. If your project helps to implement a past plan, please include a link to that plan.

The location of the project is the entire SSMMA region, but will focus on major highway, transit and trail corridors.

6. Project Description:
Please tell us what you would like to do in your community, and what assistance is needed. If you have more than one idea, please submit a separate application for each project. Please be specific, but also brief (less than two pages per project idea)—we simply want to have a basic understanding of what you want to do. CMAP and RTA staff will follow-up with you if we need any additional information to fully understand your proposed project.

(Please include any additional information that is relevant, preferably by providing links to online documents.)

South Suburban Complete Streets and Trails Plan

This proposed project is a South Suburban Complete Streets and Trails Plan, which will serve as an update and expansion of the 2008 South Suburban Mayors and Managers Association (SSMMA) Bicycle Plan. The proposed plan will identify priority regional corridors and develop recommendations for improving pedestrian conditions and access to public transit along them.

SSMMA has a demonstrated commitment to planning for all modes of transportation and has established a planning and economic development framework called the Green TIME Zone ([https://sites.google.com/a/chicagosouthlandedc.org/chicago-southland-economic-development-corporation/green-time-zone](https://sites.google.com/a/chicagosouthlandedc.org/chicago-southland-economic-development-corporation/green-time-zone)). The framework is built on three linked mechanisms for sustainable redevelopment: Transit-oriented development (TOD) to establish livable communities, Cargo-oriented development (COD) to capture the economic benefits of intermodal freight movements, and Green Manufacturing to build a healthy economy with a bright future. These mechanisms lead to the acronym TIME: communities and economies are rebuilt around TRANSIT, INTERMODAL facilities and MANUFACTURING, all founded on a commitment to preserve and improve the natural ENVIRONMENT.
The existing bicycle plan, however, focuses only one on facet of non-motorized transportation. To achieve the broader goal of developing biking, walking and public transit as meaningful transportation options within the context of the Green TIME Zone, the plan will have three targeted objectives.

The first objective is to identify a comprehensive complete street and trail network, which will allow for the efficient and safe use of non-motorized transportation. This proposed network will include on and off-street bikeways, signed routes, and multi-use trails. The highway portion of the network will consist of corridors that link regional trails including the Cal-Sag Trail, the Old Plank Road Trail, the Burnham Greenway and the Thorn Creek Trail with transit stations, population centers and employment centers. The plan will consider existing and planned transit service and ridership information and SSMMA TOD plans in the determination of high priority corridors. Second, the plan will analyze the existing pedestrian network along these corridors to identify gaps in the networks and potential conflicts between pedestrians and other modes of transportation. Finally, the plan will include policy and program recommendations that address implementation of complete streets along major corridors. Special consideration will be given to maintaining safe pedestrian movement along major freight corridors.

As stated above, this project will expand upon existing plans in the SSMMA region. In 2008, consultants prepared a bicycle plan for the region which proposed a number of bicycle routes in order to increase regional connectivity. While this was an effective planning document, routes were not prioritized and a strong implementation section was needed. An update of this plan would establish key regional corridors rather than many local routes in order help the region improve its local network and strengthen connections to regional destinations. SSMMA has in the past received funding from the RTA to conduct several TOD studies and a number of South Suburban municipalities also recently completed active transportation plans. The proposed Complete Streets Plan would build upon the successes of these plans to establish new connections to and from these new TOD destinations.

The plan will implement a number of recommendations of GO TO 2040 related to promoting livable communities. The plan will promote infill and compact development as a way to foster walkability; promote increased access to jobs and educational facilities through new infrastructure; provide new and efficient routes to public transit in order to increase ridership; support healthy lifestyles and environmentally conscious decisions; and coordinate cross jurisdictional decisions.

This plan will focus on the development of multimodal regional corridors. A major principle of Regional Mobility promoted by GO TO 2040 is the creation of a unified transportation network characterized by multiple transportation choices. To that end, GO TO 2040 supports enhanced regional connectivity, increased bicycling, walking and public transit use; and financing and land use reforms that increase density surrounding public transit and along key corridors.

All of the core goals of the RTA Strategic Plan will be addressed with the adoption of the SSMMA Complete Streets and Trails Plan. The most important goal of the proposed plan is to increase transportation options and mobility. Currently most of the bicycle options in the region are trails; and while these are an important part of any bicycle network they generally do not allow for direct travel to and from important regional destinations. Creating a new network of direct, on-street corridors will make bicycle commuting a more realistic option and improve access to Metra and Pace stations.
South Suburban Bicycle Plan
2008

Facilities and programs to expand and improve the bicycle network

JULY 2008
Also available as a PDF at:
www.ssmma.org
Executive Summary

The 2008 South Suburban Bicycle Plan identifies a proposed bicycle network anchored by a completed regional trail network and routine accommodation of cycling in major local, county and state resurfacing and reconstruction projects. The plan establishes priorities among the many programming and infrastructure opportunities that make bicycling safer, more convenient, more popular and more fun. The plan also recommends both funding and implementation strategies.

The South Suburban Mayors & Managers Association [SSMMA] produced the plan as an update to the 2001 South Suburban Bicycle Plan. Its bicycle network recommendations will be incorporated into the Chicago Metropolitan Agency for Planning’s [CMAP’s] regional transportation planning program. GIS data and full size plots of existing facilities and the proposed bicycle network are available from the Chicago Metropolitan Agency for Planning, http://cmap.il.gov.

SSMMA’s goal is to use the plan to develop a bicycle-friendly Southland that:
- Fully leverages the economic, wellness and environmental opportunities of a completed regional trail network
- Provides communities with a flexible, resilient and accessible transportation system
- Encourages its residents to bicycle for transportation, recreation and good health

The plan includes a map of the proposed bicycle network, with routes color-coded by facility type and their status as planned or existing. It includes a recommended prioritization of projects based on their projected impact on the three goals above and their viability for implementation:

1. Complete the regional trail network - Close the remaining gaps in the Burnham Greenway, Plank Road Trail, Calumet-Sag Trail, Lincoln Oasis/Thorn Creek Trail and Tinley Creek Trail
2. Sign the bicycle network - Focus first on travel between the regional trail network and nearby retail, amenities, attractions and population centers, and secondly on the remaining on-street network
3. Create the on-street network - Capitalize on local, state and county road maintenance and construction schedules to maximize best-practice opportunities and cost efficiencies

The plan also makes program and staffing recommendations that will facilitate the completion of the bicycle network and further meets the three goals outlined above. These recommendations include:

1. Create a South Suburban Bicycle Coordinator position at SSMMA
2. Expand bikes on transit services
3. Establish a bicycle parking program
4. Produce a car-free regional bicycling event that utilizes a major arterial
5. Seek out partnerships and opportunities with other transportation agencies, park districts and advocacy organizations
Each of these program recommendations creates significant opportunities for partnerships among communities and with other organizations.

SSMMA contracted with the Chicagoland Bicycle Federation to create this plan. Robinson Engineering participated as a sub-contractor, lending its GIS expertise to the project.

The plans and priorities were developed through public participation at a charette on April 9, 2007 at SSMMA in East Hazel Crest, Ill., and through review of this draft by bicycling members of the public. In addition, municipal staff representing planning, development and law enforcement from multiple communities and agencies helped shape this plan by giving input at three meetings in East Hazel Crest on priorities and existing/planned facilities and by reviewing the Plan.

South Suburban Bicycle Plan meeting attendees include:
- Karen Hoffschmidt, South Suburban Mayors & Managers Association
- Adam Dotson, City of Oak Forest
- Robert Palmer, Village of Hazel Crest
- Jim Marino, Village of Homewood
- Joe Jacobowski, Village of Homewood
- Janice Morissy, Village of Riverdale
- Jim Gannon, Homewood Police Department
- John Wilson, Lan-Oak Park District
- Roy McKinney, Riverdale Park District
- Mike Leonard, Village of Palos Heights
- Pam Sielski, Forest Preserve District of Cook County
- Al Sturges, League of Illinois Bicyclists

Consultants: Nick Jackson, Director of Planning, Chicagoland Bicycle Federation
Steve Buchtel, Southland Coordinator, Chicagoland Bicycle Federation

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South Suburban Bikeway Network - Northeast
Prioritized Network Recommendations

1. Complete the regional trail network

- Close the Burnham Greenway gap, Burnham, Ill.
- Finish the Old Plank Road Trail, Chicago Heights, Ill.
- Construct the Calumet-Sag Trail
- Establish bicycle access to the Southland Lincoln Oasis, South Holland/Thornton, Ill.
- Complete the Tinley Creek south extension, Tinley Park, Ill.
- Seek partnerships with economic development and tourism efforts, businesses and foundations to accelerate network completion and promote its use

South Suburban communities are blessed with three existing trails that are regional in scope - the Burnham Greenway, the Old Plank Road Trail [both segments of the Grand Illinois Trail] and the Tinley Creek Trail. Furthermore, the Thorn Creek Connector Trail will connect the Thorn Creek North Trail system in Lansing with the Thorn Creek South trail system in Chicago Heights by 2010, and the future Calumet-Sag Trail will see significant completion by 2012.

This system of multi-use trails provides enough connections for users within and outside the region to serve as a backbone for non-motorized travel and as a substantial recreational and economic development opportunity.

Yet persistent gaps in all three existing trails, while small and localized, disrupt critical connections in the network, capping trail use and its impact on the region’s economy and quality of life far below similar trail systems in the Midwest.

Closing the gaps in the regional trail network and aggressively pursuing the completion of the Calumet-Sag Trail and the Southland Lincoln Oasis trail access provides the largest opportunity for South Suburban communities to reap the economic, recreational and environmental benefits of bicycling.

Economic development and business partners have much to gain from the network’s completion, yet the potential for partnerships to complete regional trails remains largely untapped. South Suburban communities should proactively solicit partnerships among the business community for trail sponsorship, advocacy and promotion.

2. Sign the regional bicycle network

- Sign bike-accessible routes to and from the regional trail network and nearby [< 3 miles] population centers, transit locations, business districts, schools, attractions and other trails
- Sign existing on-street routes including those recommended by this plan as “Signed Only”
- Sign the on-street network recommended in this plan for shared lanes or dedicated bike lanes as these facilities become available
In addition to identifying a bike route, all signing should incorporate distance, destination and direction information.

Bike route identification including wayfinding information is critical to the successful exploitation of the regional trail network, directing users between the trail and shopping, jobs, transit, schools and many other important destinations. Signing the network overall also plays a role in raising drivers’ awareness of cyclists and helping on-street cyclists to make appropriate route choices.

3. Implement on-street bicycle facilities & separated side paths

- Routinely incorporate the on-street bicycle facility and sidepath recommendations of this plan into major local, county, and state resurfacing and reconstruction projects
- Follow established guidance in the selection and design of the appropriate facility, including the AASHTO Bicycle Facilities Design Guide [1999 or later], the Manual for Uniform Traffic Control Devices [July 2008 or later], and the FHWA Bicycle Lane Design Guide
- Adjust Surface Transportation Program project scoring to reflect the prioritization of projects incorporating on-street bicycle accommodations
- Promote and pursue road diets - the subtraction of motor-vehicle lanes to gain space for dedicated bike lanes and turn lanes - where appropriate [ADT < 18,000] as a strategy for traffic calming and bicycle accommodation on multi-lane roadways
- Target for stand-alone projects streets that provide the most direct connections between a regional trail system and population centers, businesses and other important destinations

The on-street network provides nearly all the day-to-day connections for South Suburban residents to homes, jobs, stores, schools and transit connections. South Suburban communities should partner with county and state agencies to incorporate the installation of appropriate on-street facilities into major resurfacing and construction projects when cost efficiency is highest and the resulting pavement is new. This coordination will also allow local communities to tap federal and state funding programs for non-motorized transportation projects, off-setting the additional costs of accommodation.
Marked on-street facilities on recommended routes should include:

- Dedicated bike lanes where a lane of 4’-6’ width can be striped in each direction of travel for exclusive bicycle use
- Shared lane markings where adequate width for dedicated bike lanes is unavailable

Some South Suburban multi-lane arterial segments serve much fewer motor vehicles than their designed capacity. Where excess capacity exists [typically four lanes with ADT < 18,000], road diets should be considered. A Road diet typically removes a motor vehicle lane in each direction and reallocates excess capacity to accommodate dedicated bike lanes and a center turn lane.

When connecting along street routes, on-street facilities should always be given preference and first consideration over separated side path facilities. In established guidance such as AASHTO’s Bicycle Facilities Design Guide [1999], side paths adjacent to roadways are advised against in almost every situation due to conflicts the paths create with motor vehicles at intersections and other inherent design faults.

However, this plan recognizes that separated side paths are reasonable facilities in the South Suburbs along arterial segments featuring high posted speeds [> 40 MPH] and/or significant heavy truck traffic with limited driveway access and few intersections. The Chicagoland Bicycle Federation’s “Tech Sheet 1: Side Path Bicycle Facilities” [Appendix] provides detailed guidance regarding side path suitability.

**Prioritized Program Recommendations**

1. **Staff a South Suburban Bicycle Coordinator position**

   Capitalize on the region’s opportunities for collaboration and coordination by assigning the plan’s implementation to a paid staff or consulting position within South Suburban Mayors and Managers Association, or by working to create a similar position at the county or regional level.

   Implementation of the bicycle network and program recommendations relies entirely on collaboration and coordination among a multitude of communities, agencies and projects over several years. In Northeast Illinois, the presence of a staffed bicycle coordinator position has defined the successful implementations of bicycle plan recommendations for counties, communities, and the City of Chicago. Currently, no bicycle program coordinator exists at the municipal or sub-council level in the south suburbs, nor at Cook or Will County.

   The cost of the position could be shared by the SSMMA, the Southwest Council of Mayors [who also have produced a regional bicycle plan], and the Chicago Metropolitan Agency for Planning. The cost savings generated by timely coordination of bicycle projects with larger road projects alone could be worth tens to hundreds of thousands of dollars per project per...
year to the region. And a bicycle coordinator could aid communities and the region in aggressively pursuing millions of dollars of federal and state grants available for bikeways and bicycle programming annually.

SSMMA and its member communities should also advocate with other Cook County municipalities for creating a bicycle coordinator position at the Cook County Highway Department. DuPage County offers an excellent model of how the creation of such a position can catalyze the accommodation of cycling and the expansion of regional trail networks.

This plan recommends staffing a South Suburban Bicycle Coordinator position as a top priority.

2. Expand capacity for bikes on transit

Encourage Pace and Metra to expand the bike-carrying capacity of their buses and trains, and expand Metra’s Bikes on Trains service to all trains at all times.

In the suburbs, Pace was the first transit agency to allow bikes to travel on its buses, and is the only agency to offer the services at all times. Each vehicle is limited, however, to carrying two bicycles at a time, limiting the utility of the service should bicyclists’ needs for transit connections rise. SSMMA should work with Pace to explore expanding the bike carrying capacity of its buses.

Metra’s Bikes on Trains program has become an essential service to the region’s bicyclists, and Metra has been pleased by the response since offering the service a few years ago. Yet remaining restrictions on travel times and scarce bicycle carrying capacity cap the utility of the program and limit its use as a tool to encourage more bicycling.

SSMMA should work with Metra and other interested groups to expand the Bikes on Trains program by lifting time restrictions and expanding the bike-carrying capacity of each train.

3. Establish a bicycle parking program

Establish an annual program that utilizes federal Congestion Mitigation & Air Quality funding and other sources to purchase and distribute bicycle parking racks to SSMMA member communities, park districts and school districts.

Adequate bicycle parking is a necessity to encourage residents to bicycle. The threat of bicycle theft is one of the largest deterrents to bicycling.

To be successful, a bicycle rack program at the regional level must involve staff who can proactively market the rack program and provide installation guidance to potential participants.

4. Produce a regional car-free bicycling event

Create a committee to explore the creation and production of a major South Suburban family cycling event that utilizes a major arterial closed to car traffic.

Car-free cycling events, particularly on routes normally unaccommodating to bicycle travel [such as Roll the Tollway or Chicago’s Bike the Drive], are very popular events that draw participants from a large radius and create momentum for other bicycling initiatives.
Additionally, funds raised from the event can be used toward establishing the regional trail and bicycling network.

5. Seek out partnerships and opportunities with other transportation agencies, park districts and advocacy organizations

Look for opportunities to fulfill the goals of this plan through partnership with other agencies and participation in their programming.

Transit, parks and recreation programs, and advocacy efforts are all potential partners and resources for the implementation of the network or program recommendations in this plan.

This plan is available in full electronically at [http://ssmma.org](http://ssmma.org). GIS data and full size plots of existing facilities and the proposed bicycle network are available from the Chicago Metropolitan Agency for Planning, [http://cmap.il.gov](http://cmap.il.gov).
Appendix A: Bicycle Facilities Guidance and Resources


Chicagoland Bicycle Federation - 9 W Hubbard, Ste. 402, Chicago, IL 60610; 312/427-3325; http://biketraffic.org

League of Illinois Bicyclists - 2555 Cheshire Dr., Aurora, IL 60504; 630/978-0583; http://bikelib.org

Appendix B: Funding Sources

Congestion Mitigation and Air Quality Program [CMAQ] - An annual program administered by the Chicago Metropolitan Agency for Planning that funds transportation facilities and programs that show an air quality improvement through the reduction of motor vehicle use. Requires 20% local matching funds.

Program information: http://www.cmap.illinois.gov/

Surface Transportation Program [STP] - STP assists municipalities with local surface transportation improvements. Administered by South Suburban Mayors and Managers Association. Requires 30% local matching funds.

Program information: http://ssmma.org

Transportation Enhancements Program [TE] - Administered by the Indiana Department of Transportation [IDOT]. TE funds bicycle and pedestrian facilities, bicycle education programs, and transportation-related beautification and restoration projects. Requires 20% local matching funds.

Program information: http://www.dot.il.gov/opp/itep.html

Illinois Bicycle Path Grant Program - State funding administered by the Illinois Department of Natural Resources [IDNR] for the construction and improvement of multi-use trails and facilities. Requires 50% local matching funds; $200,000 award maximum per project per year.

Program information: http://dnr.state.il.us/ocd/newbike2.htm
Tech Sheet #1

Sidepath Bicycle Facilities

by Randy Neufeld and Terri Musser

In the interest of sharing information and ensuring that public investments are spent in the best way possible, the Chicagoland Bicycle Federation, in conjunction with the consulting firm of Bicycles &; Pedals, has developed this Tech Sheet to call attention to several design factors that result in the success or failure of a bicycle facility known as the sidepath.

Running immediately parallel to a street or roadway, like an extra wide sidewalk, the sidepath is one of the more controversial types of bicycle facilities. Motorists seem to like them because they get bicycles off the roadway. Pedestrians don’t because they place faster moving bicycle traffic into the space traditionally reserved for walking.

Many bicyclists who are uncomfortable operating in traffic think that sidepaths are a good idea because of the perceived safety of being removed from the traffic stream. Safety professionals and experienced bicyclists tend to disagree because crash statistics indicate that sidewalk riders are more frequently involved in bicycle/motor vehicle collisions at intersections. This, coupled with travel delays, causes many cyclists to continue to use the roadway where sidepaths are present.

With recent opportunities to fund bicycling enhancements provided by federal and state programs, many municipalities desire to build sidepaths to improve conditions for area bicyclists. However, national guidelines for bicycle facility design are quick to note several problems with two-way paths located immediately adjacent to roadways, and thus recommend that bicycle lanes, wide curb lanes or paved shoulders may be the best way to accommodate bicycles within roadway corridors.

So what should you do?

Before proceeding to construct a sidepath in your community, assess whether or not the facility is warranted, what other design options may be available, and how the end product can best be designed for the safety of the intended users.

To assist with this process, consider the factors presented in this Tech Sheet, consult the recommended references, and always use site-specific engineering judgment to attain a good design that is sensitive to the needs of bicyclists, motorists, and pedestrians.

Quick Check for Sidepath Feasibility

- Does the combination of roadway traffic volumes, speeds, and curb lane widths create poor conditions for cycling?
- Is it impossible to restripe to create wider outside lanes or slow traffic to improve bicycling on the road?
- Are a majority of destinations located on the same side of the roadway as the proposed path?
- Will the path cross few driveways and/or street intersections?
- Is there at least 18 feet of right-of-way width?
- Can changes be made to signal timing and turning movements to allow bicycles adequate time across intersections without causing traffic congestion?
- Can the areas around all driveways and intersections be cleared of visual obstructions?
- Can bicyclists safely transition to other bikeways where the sidepath begins and ends?

If you answered NO to two or more of the above, it is advisable to reassess the feasibility of constructing a sidepath.
1. Can Bicycles Safely Use the Roadway?

Bicyclists have the same rights and responsibilities as do operators of other vehicles, which includes full use of our streets and roadways. However, a cyclist’s comfort level and perceived safety when using a roadway are influenced by three factors: how many cars are using the roadway, how fast those cars are traveling, and how much space is available to be shared with the cars.

Low-volume neighborhood and collector streets are usually very compatible for bicycling due to the infrequent number of vehicles using these routes. Sidewalks usually are not warranted along such streets, and investments to improve cycling conditions are best used in areas of greater need.

High-volume roadways, such as two-lanes carrying more than 8,000 average daily traffic (ADT) or four-lanes with 16,000 ADT, are compatible for on-road bicycle use when lower traffic speeds and adequate pavement widths are present. To assess the bicycle compatibility of a high-traffic roadway, use the chart at right to examine the mix of speed and curb lane width. (Exclude curb-and-gutter and on-street parking space; include paved shoulder if present.) If the road rates near to poor, some type of improvement for bicycle access is definitely warranted.

2. Can The Roadway Be Improved?

Explore whether it may be more desirable and cost effective to accommodate bicycles on the roadway with other vehicles than to construct a separate parallel path.

Both the American Association of State Highway and Transportation Officials (AASHTO) and Illinois Department of Transportation (IDOT) have established guidelines for providing three basic types of on-road bicycle improvements:

1) Wide outside lanes: where the right lane is a min. of 14’ wide (4.2 m) excluding curb and gutter.

2) Bicycle lanes: a signed and striped lane for bicycle use, a minimum of 4’ wide (1.2 m) excluding curb and gutter, located on either side of the street.

3) Paved shoulders: 4’ to 6’ (1.2 to 1.8 m) wide.

Modifying roadway cross-sections by shifting lane striping, reconfiguring center turn lanes, moving on-street parking, and/or adding extra pavement width can provide space for on-street bicycle accommodations. Lowering speed limits through design or enforcement can also make a roadway more compatible for bicycling.

Examine your alternatives and again, use the chart above right to assess the modified bicycle compatibility for various combinations of outside lane width and vehicular speed. If other options effectively meet bicyclists’ needs within your corridor, you may find that a sidewalk is not needed.

3. Access to Destinations

Bicyclists have both mobility and access needs. Sidewalks may improve a cyclist’s mobility to travel distance within a corridor, but often do little to improve access to businesses and other destinations.

When destinations are located on the opposite side of the street from a sidewalk facility, riders often must double back, hop curbs and cross at mid-block, or ride in the street against traffic to get to where they want to go. Such practices should be discouraged as unexpected bicycle movements are major causes of bicycle/motor vehicle crashes.

By comparison, bicyclists riding in the street have the ability to predictably merge lanes and complete turning movements just as any other vehicle would. Therefore, planners and engineers need to carefully assess the adjacent land uses to determine whether a sidewalk adequately accommodates bicycle access needs.

4. Conflicts At Intersections

Studies show that bicyclists who ride on sidewalks or sidepaths incur a greater risk of being involved in a collision with a motor vehicle than those who ride on the roadway (on average of 1.8 times as great), most likely because of blind conflicts at intersections. Intersections are especially hazardous for wrong-way sidewalk riders, who have been found to be 4.5 times at risk as right-way sidewalk travelers.

Motorists are normally looking for moving vehicles on intersecting roadways. As depicted in the illustration below,
Car A, making a right-hand turn, is only looking for traffic to the left. Car B, making a left hand turn, is only looking for traffic ahead.

Sidepath Bicyclist B is riding just outside of each driver's focus, and may or may not be seen. Wrong-way Bicyclist C is not even close to either driver's focus. Bicyclist A, riding with traffic on the roadway, is easily spotted by both drivers.

The more often a bike path crosses a driveway or street intersection, the greater the risk exposure for users of the facility. Commercial strips with multiple drives and a lot of vehicular activity are particularly dangerous corridors for sidepaths. Bicycle planners must use engineering judgment to determine if introducing a sidepath into a corridor is feasible based upon the number and type of intersections. The following may be used as a guide in this effort:

<table>
<thead>
<tr>
<th>Driveway Type</th>
<th>Points Per Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Driveway</td>
<td>1 pt.</td>
</tr>
<tr>
<td>Commercial Driveway</td>
<td>2 pts.</td>
</tr>
<tr>
<td>Minor Street (&gt;1,000 ADT)</td>
<td>2 pts.</td>
</tr>
<tr>
<td>Major Street (&gt;1,000 ADT)</td>
<td>4 pts.</td>
</tr>
</tbody>
</table>

- 1 - 8 pts. = low risk; use special care to treat intersections
- 9 - 16 pts. = moderate risk; pursue alternatives
- > 16 pts. = high risk; path not recommended

* crossing of a street with >10,000 ADT without a signal automatically moves the proposed path into the high risk category

The above scoring is based upon a threshold of 12 residential driveways or 6 minor streets per mile. Beyond this, a cyclist would face more than 1 driveway every 30 seconds, or 1 street every 5 minutes, at which point the safety and the utility of the sidepath deteriorates dramatically.

5. Right-of-Way Considerations

A final physical constraint that may limit the ability to construct a bicycle path within a street right-of-way is the amount of space available. According to AASHTO and IDOT guidelines, a bike path must be separated horizontally from motorized traffic to protect cyclists. This separation must be as wide as practicable and still allow the bicyclist to be visible to the motorist, but no less than 5 feet. Bikeways located less than five feet from the roadway should be protected by a 4.5 feet high physical barrier.

To facilitate safe two-way bicycle travel and allow for multiple use by pedestrians and others, paths should be a minimum of 10 feet wide, and have an additional 3 feet of clearance to lateral obstructions such as signs, fences, trees, and buildings. This demands a total sidepath right-of-way width of no less than 18 feet.

Full details of bike path design and right-of-way requirements are presented in the AASHTO Guide for the Development of Bicycle Facilities.

6. Adequate Signal Timing

Modifying signal phases may be required to provide safe bicycle access where a path crosses a signalized intersection.

Conflicts may be especially prevalent at crossings where the path is controlled by a "walk/don't walk" signal phase with the parallel roadway. The sidepath user may be given a false sense of security by a "walk" signal while turning motorists from the parallel roadway simultaneously have a green light. Right turns on red present another hazard, as do large turning radii that encourage fast turning traffic.

Another important conflict to resolve is created by a left turning motorist whose attention is focused on gaps in approaching traffic. Upon finding a gap, the motorist often accelerates through the turn and is then faced with an unexpected trail crossing.

Design solutions to these problems include use of appropriate warning signs, all red signal phases, right-on-red prohibitions, tightening of turning radii, and light cycles that permit adequate time for bicycles and pedestrians to cross.
7. Sight Triangles & Crossing Placement

Safety at intersections will be improved if bicyclists are able to see approaching cars, and motorists are able to see cyclists on the path. This is best accomplished by providing an area free from visual obstructions at each corner of all driveway and street intersections. The minimum size of the sight triangle may be determined by the AASHTO stop control intersection recommendation of 20 feet back from the edge of a travelway. No signs, structures, parked cars or vegetation which blocks views should be permitted within this area.

Parallel arterials and rural areas with high travel speeds will require larger sight triangles based upon drivers’ stopping sight distances as per AASHTO guidelines.

To further improve visibility and user safety, separation distances between the street and trail at intersections should fall into one of three categories, as depicted at right.

8. The End

How bicyclists enter and leave the bicycle path must also be considered. The design of the transition must encourage bicyclists to approach and leave the path traveling on the right side of the roadway, with the traffic flow. Wrong-way bicycle riding is a major cause of bicycle/motor vehicle crashes and should always be discouraged. Safe transitions to an on-road facility or bicycle-compatible street route require appropriate signing, curb cuts, and merge areas.

9. Other Considerations

YOUNG CHILDREN

Substituting on-road accommodations may be suitable for teens and adults, but is usually not recommended for young children. Well-designed on-road accommodations can safely meet the needs of children after around age 10. For younger children riding their own bikes, choices are extremely limited and parental supervision is extremely important.

Sidewalks are often the best facilities for young children. But of course, sidewalks have all of the liabilities previously ascribed to sidepaths, and in some locations, multiple driveways may make even the sidewalk unsafe for young children. If the children are permitted to cross intersections, it is critical that they are taught to stop and follow safe pedestrian procedures.

Even separated bicycle trails may not be a good choice for kids. Trail intersections and conflicts with faster, older cyclists will likely prove difficult for children without developed control and anticipation of the movements of other vehicles, bicyclists, and pedestrians.

DEVELOPING A BIKEWAY SYSTEM

No one type of bikeway is likely to meet the needs of the broad range of skill levels and traffic tolerances that exist among bicyclists. When working to develop a safe and cost-effective bikeway system, follow these three key principles to benefit the largest number of cyclists:

1) Integrate bicycle consideration into the overall road improvement process. Improvements for bicyclists are easier and cheaper when other changes are simultaneously being made.
2) Target resources to overcome the most significant barriers for the broadest possible range of bicyclists.
3) Maintain as many travel and routing options as possible, allowing people to ride where they feel most comfortable as long as they follow the rules.

Finally, please note that in most instances sidepath facilities are not recommended to be signed as bicycle routes, and development of a sidepath should never preclude bicyclist use of the parallel roadway.

REFERENCES

This Tech Sheet is not intended to address all aspects of bicycle path design, but rather to present some general issues that need to be taken into account during the planning stages of a project, as well as to provide some supporting technical information. The references that follow discuss other details of bikeway projects such as curb cuts, maintenance, signing, and pavement marking.

► Effective Cycling, John Forester. The MIT Press, Cambridge, MA.
► Trail Intersection Design Guidelines, June 1996, by Wayne E. Pein, University of North Carolina Highway Safety Research Center, Chapel Hill, NC, for the State Bicycle/Pedestrian Program, Florida Department of Transportation, Tallahassee, FL.