Recommendations for Teutopolis, Illinois
Bicycle and Pedestrian Plan

League of Illinois Bicyclists
and LYKAH Consulting

February 17, 2010

Introduction

The Village of Teutopolis would like to make the choice to walk or bicycle around Teutopolis more inviting, while better serving those who bike or walk by necessity. It is desired to improve conditions for residents of all ages using these modes for either recreation or transportation.

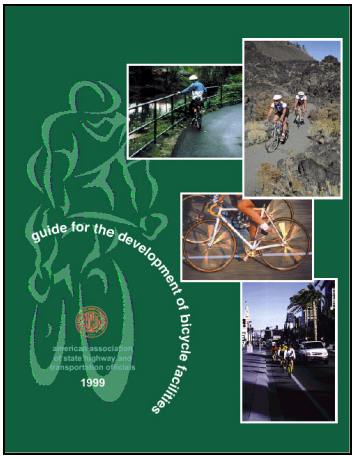
The League of Illinois Bicyclists (LIB) was retained to provide technical assistance to the Village for a Village bicycle and pedestrian plan. LIB would like to offer Teutopolis the following report detailing a variety of bicycle and pedestrian infrastructure recommendations, along with policy and implementation suggestions.

It is recommended that the Village use this report as the basis for a bicycle and pedestrian plan, formally adopted as part of the Village's comprehensive plan. Doing so will facilitate more cost-efficient plan implementation, by putting Teutopolis into a better position to win available state and federal grants and by ensuring that future development and road projects routinely include relevant improvements listed in the plan.

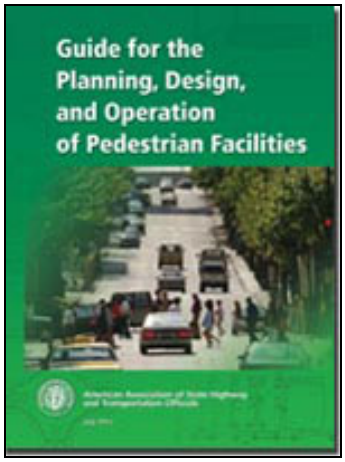
The scope of the plan consists of:

- Specifying high priority pedestrian improvements, including sidewalk gaps, intersections, and crossings of busy roads
- Selecting appropriate routes for a bicycle network to destinations around town, and specifying the improvements to make these routes more bike-friendly
- Identifying "non-infrastructure" resources which Teutopolis may use for education, encouragement, and enforcement
- Strategizing a realistic implementation plan, including coordination with upcoming roadwork, advice on state and federal grants including Safe Routes to School, and policy initiatives

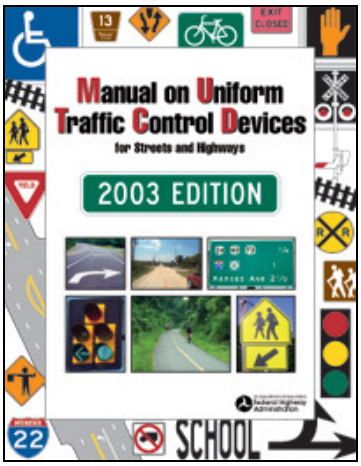
National guidelines and standards used to make these recommendations include AASHTO's Guide for the Development of Bicycle Facilities, AASHTO's Guide for the Planning, Design, and Operation of Pedestrian Facilities, and the Manual on Uniform Traffic Control Devices.



Left: AASHTO bike guide.



Center: AASHTO ped guide.



Right: MUTCD.

Public Input Process

This study relied heavily on residents' identification of existing issues and improvement ideas. On July 17, 2009, a "Teutopolis Bike/Pedestrian Plan – Public Brainstorming Workshop" was held to gather resident suggestions. The results were used to narrow the focus on which corridors and intersections to study and prioritize.

After learning about the plan's scope of work and types of improvements that are possible, each attendee marked individual maps with their ideas. A total of 138 comments were received from 26 residents. These comments are summarized in the report's two "Public Input" maps, in which the number of attendees marking each specific intersection, crossing, roadway corridor, or sidewalk is denoted by different colors and line widths. The maps attempt to separate suggestions relevant to either bicycles or pedestrians, with the bike map being the default for road corridor comments relevant to both.

The meeting concluded with a group prioritization exercise, with attendees self-selecting tables focused primarily, but not exclusively, on either the north or south side of town. The tables' priority issues:

North (of US40/Main Street):

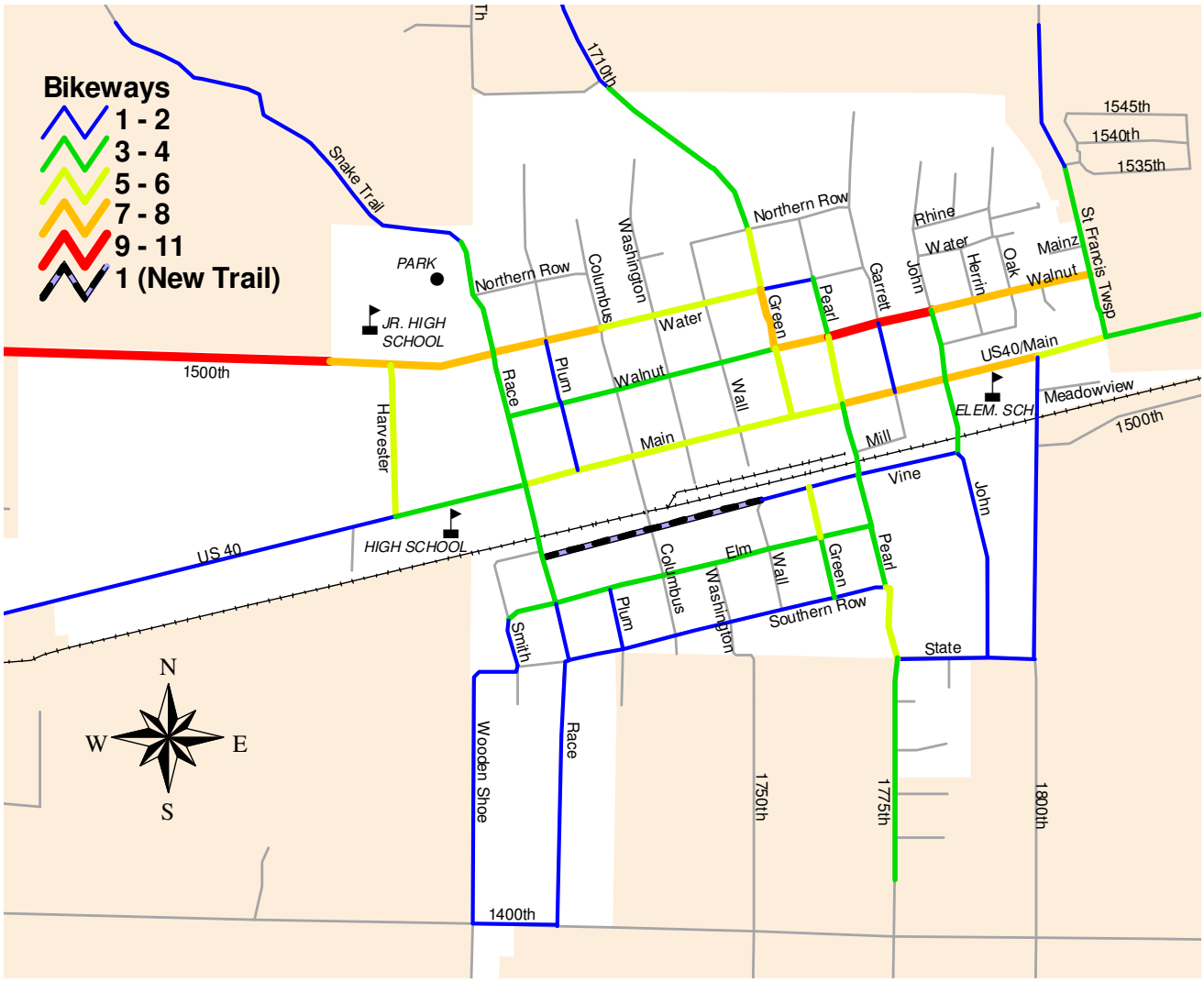
- Need bike route between "Missing Mile" and Teutopolis Grade School
- Add US 40 crossings at St. Francis, Race, and John
- Need Water Street on-street markings by Teutopolis Junior High School
- Need US 40 crossing by high school towards junior high school; near Stevens Industries
- Need Green and Walnut bicycle crossing for kids – continuing the route to Washington
- Need sidewalk or bike path east of town to K-N subdivision

South (of US40/Main Street):

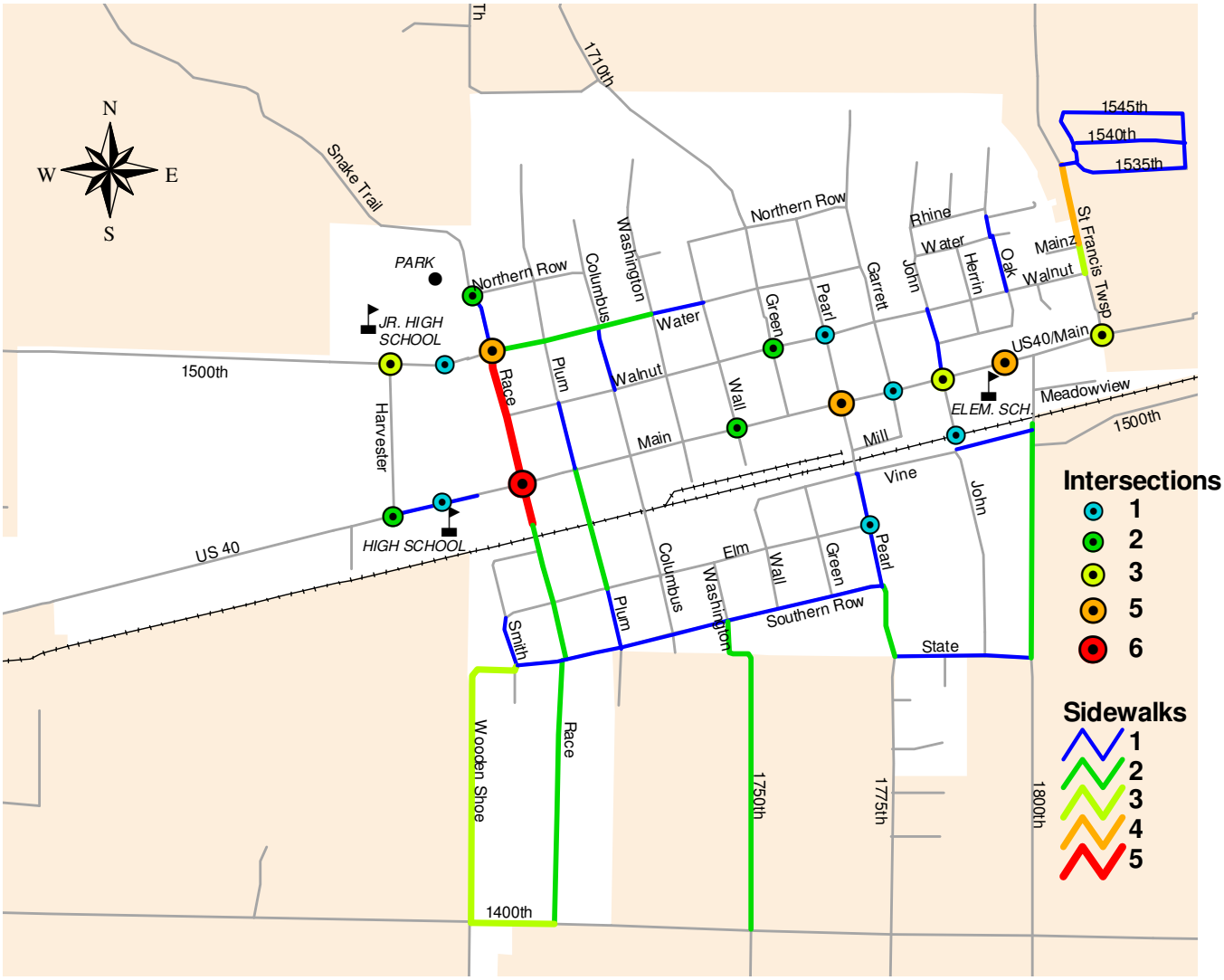
- Need crossing of Race Street by Stevens, from south side of railroad to Teutopolis Junior High School
- Address southwest side of town to grade school – disconnected sidewalks
- Need sidewalks or bike route along Wooden Shoe Road
- Need sidewalks or route from August Winds subdivision to Oak to Teutopolis Grade School
- Need north-side designated bikeway to Teutopolis Junior High School or Teutopolis Grade School
- Need railroad crossing by John Street

Attendance and participation level at the workshop was excellent, resulting in a wealth of valuable public input used as the starting point in the study.

Public Input - Road Corridors for Possible Bicycle Improvements



Public Input - Pedestrian and Intersection/Crossing Improvements



Recommended Improvements

The following recommendations are offered for priority locations identified through public input and in-field analysis. Also included at the end of this document are policy and implementation suggestions.

Main Street – Striping and Curb Bulb-Outs

Main Street (US 40) presently has high-visibility, midblock crosswalks at the high school, at the church between John St. and Garrett St., and at the grade school. Pearl St. and John St. have crosswalks at intersections. Further improvements are desired, as crossing Main Street was a prevalent theme in resident input. With 44 feet of pavement width, no striping, and low parking occupancy, Main Street

presents incoming motorists with the impression of a freeway. Following are several tools to create "friction" in the streetscape to slow traffic down and give pedestrians a safer place to walk and cross US 40. These recommendations are consistent with the MUTCD.

Recommendations:

- Stripe lane lines on Main Street, 11' from the centerline (solid white stripe).
- Stripe parking lanes with a T-marking, 8' from the curb.
- Stripe a hashed-triangle to delineate where parking begins.
- Curb extensions[1] should be placed at regularly spaced intervals along Main Street. The western and eastern locations should serve the high school and grade schools, respectively, and could be further embellished to create a 'gateway' into Teutopolis, with landscaping and a welcome sign to the community. The curb extensions should protrude no more than 6' from the curb face. This provides a clear delineation for parked cars, adequate space for vehicle operation (critical truck movements should be examined), as well as room for bicyclists to operate between parked cars and passing vehicles. Following are recommended locations for extensions and marked crosswalks:
  - Race Street *
  - Columbus Street
  - Wall Street *
  - Pearl Street *
  - Garrett Street
  - John Street *
  - St Francis Township Road

  * Priority

<u>Main Street – High School Crossing</u>

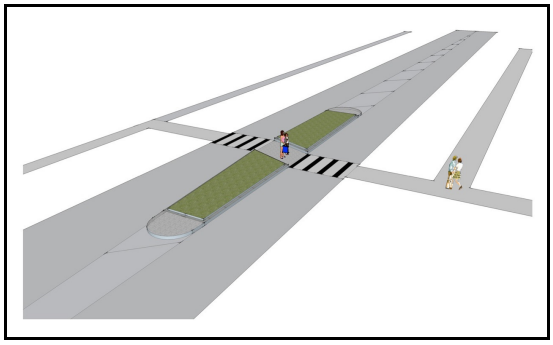
While there is an existing crossing of Main Street in front of Teutopolis High School, the lack of continuous sidewalk on the north side of the street results in users crossing at Harvester or Race, instead. The crossing's location would work well if improvements are made.

[1] Curb Extensions, (also called Curb Bulb-outs), which are essentially extensions of the curb-line, offer many advantages for enhancing pedestrian safety: 1) They shorten the distance that pedestrians have to walk, once they step off the curb, thus reducing the pedestrian's exposure time to traffic. 2) They place the pedestrian in better view of oncoming cars, particularly as they wait behind a parked car at the edge of the curb. 3) They place the pedestrian where they can better view oncoming cars, and make better decisions about whether they can safely cross the street. 4) They delineate the parking spaces, effectively preventing a car from parking close to the crosswalk, or obstructing the crosswalk. 5) They often provide needed additional space for accessible curb ramps, particularly in tight rights-of-way conditions.

Recommendations:

- The current high school crossing needs a continuous sidewalk on the north side of Main Street, connecting to Race on the east and Harvester to the west (it now dumps into a parking lot at the corner). The new Main Street sidewalk should connect with the existing sidewalk along the east side of Harvester.

- The existing striped median is a good start, but the stripes should be supplemented with a raised median (6" barrier curb). The median should be 6' wide minimum (curb-face to curb-face), and approximately 60-70' long. The barrier could be planted, but only with low plants. The noses would taper with a rumble strip (IDOT Standard). The cut-through should be 6' minimum width, flush with the roadway pavement. The existing stripes would remain, and would warn drivers of the approaching obstacle.



- This location should be supplemented with a HAWK, or hybrid signal[2], along with a high visibility pavement marking for the crossing.

Harvester Street

Harvester Street is a two-lane truck route with 15' lanes and no parking. A sub-standard curb-attached sidewalk exists on much of the east side of the road (it does not extend to Main Street), with curbing narrowing the effective width at each of the many commercial entrances. There is little to no right-of-way available to expand the sidewalk, which is used by school children and others.

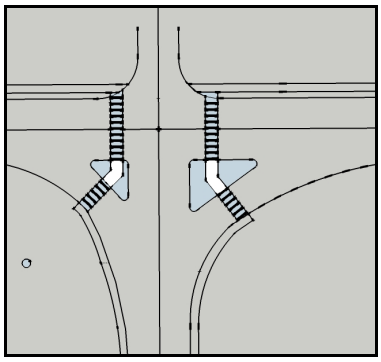
Recommendation: Harvester Street should be marked with lane/fog lines, 11' off the centerline. This will provide more separation for pedestrians as they walk (and ride) along the sidewalk. In addition, it provides an unmarked area for on-road bicyclists riding between the junior high and the high school.

[2] HAWK signals (High intensity Activated crossWalK), or hybrid signals, are essentially pedestrian (pushbutton) activated signals that progress from flashing yellow, to solid yellow, to solid red, and then to flashing red to warn motorists to stop when pedestrians are entering the crosswalk. They turn off automatically (time is set by local agency based on time to cross the street) following activation. These signals have been installed in many locations nationally, but are currently 'experimental'; they will be more readily available after they appear in the 2010 edition of the MUTCD. See HAWK Signal

Water and Harvester Intersection

This intersection, at the south end of the junior high school, was clearly designed to maximize movements for trucks. The large corner radii that allow trucks to turn unimpeded create difficult conditions for pedestrians, including students traveling between the high school and junior high.

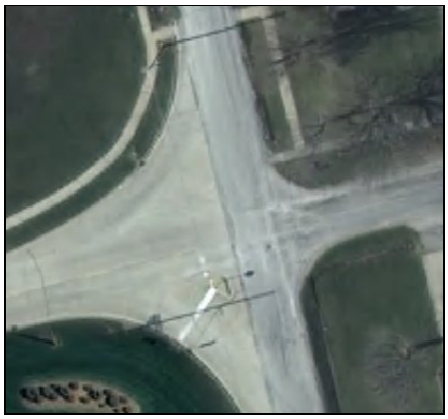
Recommendation:



- Construct larger corner ("pork chop") islands at the southeast corner to provide a refuge area for pedestrians. Currently, the distance from the curb face to the island is approximately 30'; this distance should be reduced to 16', with the island enlarged appropriately. The islands should provide flat cut-throughs that connect to a marked crosswalk.

- The eastern leg of the intersection should have a high-visibility marked crosswalk.

- The southeast corner and the north side connection should provide ADA ramps.



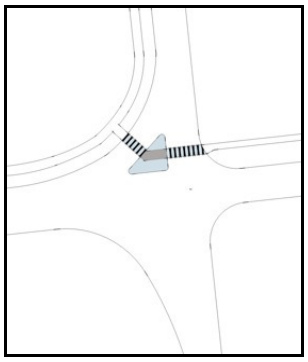
Water and Race Intersection

This is a key intersection serving both the junior high and park. It, too, was clearly designed for efficient truck movements, even though large trucks are quite rare here. The large corner radii that allow trucks to turn unimpeded create difficult conditions for pedestrians. For example, the crosswalk on the north leg of the intersection is placed unrealistically far back from Water Street – and from where cars are more likely to stop. This compromises pedestrian visibility, setting up the hazardous situation of pedestrians walking through (and emerging from) a queue of cars, especially during school arrival or departure.

Recommendations:

- Construct a corner ("pork chop") island at the northwest corner to provide a refuge area for pedestrians. The islands should provide flat cut-throughs that connect to marked crosswalks.

- As an alternate, reconstruct the northwest corner to reduce the corner radius to 20 feet (from ~60 feet). Rationale: does truck traffic need to use this corner? What is the destination north of this intersection? If there is a valid destination, then the pork chop island is the proper choice.



- The northwest and northeast corners should provide sidewalk approaches and ADA ramps.

- The north approaches should have high-visibility marked crosswalks. Using either option above, the crossings will be much closer to the intersection than the present configuration on the intersection's north leg.

Northern Row and Race Intersection

Pedestrian crossings of this skew intersection, at the entrance to the park and the northeast corner of the Junior High School property, is made more difficult by the crossing placement and by poor stop sign adherence by north-south motorists on Race.

Recommendation:

- The sidewalk on the south side of Northern Row should be realigned to enter Race Street just south of the corner radius.

- A high-visibility crosswalk should be provided across the south leg of Race Street.

- Provide a sidewalk connection to the existing sidewalk along the west side of Race St. Use a pair of small diameter culverts or a short pedestrian bridge to cross the drainage ditch.

- "Pedestrian crossing ahead" signs should be provided in advance of both the southbound and northbound stop signs. The southbound sign should use the rural MUTCD standard (750').

Race Street Sidewalks

Race Street is a primary connecting street between Main Street and the high school, junior high school, and Teutopolis Park. No sidewalks exist from Main north to Water. A sidewalk exists along most of the east side of Race, south of Main.

Recommendation:

North Race Street should have a sidewalk along at least one side so that pedestrians, including kids and handicapped users, do not have to walk in the street. For most of the stretch from Water to Main, a sidewalk appears feasible on the east side of the street. Near Main, a clearly delineated, continuous sidewalk should be constructed, and will necessitate reconfiguration of existing parking practices – from perpendicular parking to parallel parking on the east side.

On the southeast corner of Main, a curb cut is needed. A short link is needed at the southeast corner of Elm. Parts of the existing sidewalk south of main can be improved further, including maintenance and better delineation from parking areas.

On-Road Bicycle Network

A network of bicycle routes is proposed for bike travel throughout town. In some cases, there are opportunities for off-road trails in appropriate places. However, for other segments, national guidelines suggest on-road bikeways as more appropriate. Traffic and speeds are generally low on Teutopolis streets and these conditions are very favorable for bicycling.

Where the network calls for on-road segments, the target audience includes adult bicyclists and older children who are mentally and physically ready to bike on roads. For these segments, younger children may use the sidewalks along these roads.

Recommendation:

- For an east-west route north of Main, sign the following with "Bike Route" signs: Water (Junior High School to Green), Green (Water to Walnut), Walnut (Green to St. Francis Township). Water's and Walnut's 20'-21' width precludes marked on-road bicycle lanes. Sidepath off-road trails along these roads would be inadvisable for two main reasons. First, for low-speed locations with many cross-streets and driveways, it's actually safer on-road than off (most crashes occur at intersections and driveways, not from being hit from behind.) Second, widening to sidepath trail standards (10' width) is often politically unpopular when residential front yards are involved.

- Green Street from Main to north of town is 44' wide from curb to curb, with low parking occupancy and problems with speeding motorists. While only Water to Walnut would be on the proposed northern bike route, adding stripes to "narrow" the lanes should

Simulation. (Note: Not all parking stall "T's" shown).

provide a traffic calming benefit in addition to making the road more bicycle-friendly. The Main Street recommendations could also apply here, with 11' lanes, 8' parking areas, and even 6' curb bulb-outs at Walnut and possibly Water. A lesser option is to add only the striped lane lanes, 9' from the curbs.

- For an east-west route south of Main, use "Bike Route" signs on Elm (Smith to Pearl), Pearl (Elm to Vine), and Vine (Pearl to Oak).

- For north-south routes, one option is to sign Race (Water to Elm) and Pearl (Walnut to Elm) with "Bike Route" signs. Again, each is too narrow for dedicated bicycle lanes, but their traffic levels – somewhat higher than the east-west routes – may suggest additional measures. These may include "Share the Road" signs or Shared Lane Markings, pavement markings indicating bicyclist position on the road. Shared Lane Markings (also called "sharrows") will be in the 2010 MUTCD.

- Columbus Street from Water to Elm may serve as a different option to the north-south "Bike Routes" suggested. Traffic is lighter than Race or Pearl, but access to significant destinations is less direct.

- See the Main Street and Harvester Street recommendations earlier in the report for striping recommendations which will make these roads more bicycle-friendly. Main Street, which already has paved shoulders west of town, is used by traffic-tolerant bicyclists as a route to get to Effingham.

Trails

There are at least three off-road trail opportunities.

Recommendation:

- The sidewalk heading west from Teutopolis Junior High School towards the "Missing Mile" is narrow and prone to frequent flooding. This can be raised and widened to standard multi-use (bicycle and pedestrian, etc.) trail width, nominally 10'.

- Vine Street from John to Wall is a low-traffic road. If either Vine were extended to Race, or if a multi-use trail were built there, this could replace Elm as the east-west route on the south side.

- The Vine route would be further enhanced with a new John Street trail crossing of the railroad tracks, greatly improving the south side's access to Teutopolis Grade School.

Other Spot Improvements

Recommendation:

- Provide curb cuts to current ADA standards where needed, starting at locations of higher pedestrian activity and/or marked crosswalks (e.g., Pearl and Main, shown) and continuing to lesser-used locations.
- Provide links from sidewalks to roadways (e.g, Pearl and State, shown).
- Adopt design policies to prevent these obstacles from recurring in future developments or road projects.

St. Francis Township Road Sidewalks

St. Francis Township Road lacks a sidewalk north of Mainz to the "K&N" subdivision.

Recommendation:

- Construct a sidewalk along the east side of St Francis, from Mainz Circle to the K&N subdivision. Note that the sidewalk on St Francis is outside the Village boundaries, requiring township cooperation.
- Provide a marked crosswalk of St Francis on the south leg of the 'T' intersection with Mainz Circle. This location avoids a sight-restriction issue near the K&N subdivision.

Wooden Shoe Area Sidewalks

On the far southwest part of town, both Wooden Shoe Road and Race Street lack sidewalks. There is adequate space available for retrofitting sidewalks.

Recommendation:

Install sidewalks, with Wooden Shoe Road having higher priority.

Policy: Speed Limit

The default[3] speed limit for village streets is 30 mph, instead of 25 mph.

[3] State statute regulates the speed limit to 30 MPH in an urban district '625 ILCS 5/11-601(b) & (c)(1)

Recommendation:

Speeding is a significant factor in the severity of crashes between vehicles and pedestrians, as shown in the graphic at right. Reduced speeds also result in less traveled distance in any given reaction, thus helping motorists to avoid a crash entirely. Any effort to reduce the overall speed limit within Teutopolis would increase pedestrian and bicycle safety. Many communities around the nation have taken proactive stances to modify ordinances to reduce speeds throughout the community[4]. This typically is done by posting signs at the entrances to the community stating "Speed Limit 25, unless otherwise posted."

Policy: Sidewalk Installation

Recommendation:

The Village should adopt the Federal Highway Administration's *New Sidewalk Installation Guidelines*, which specify sidewalks (or other pedestrian accommodation) as function of land use and density and roadway classification. Following such a standard assures appropriate sidewalks are installed consistently, and not subject to developer negotiation.

Policy: Sidewalk Width

Many relatively new sidewalks are being built 4' wide.

Recommendation:

The Village should adopt IDOT's sidewalk standard of 5'. This width provides sufficient room for two pedestrians to pass; but moreover, this width provides room for a pedestrian and wheelchair (or stroller) to pass without one stepping off the sidewalk. An additional benefit is to allow two wheelchairs to pass each other (two wheelchairs cannot pass in a 48" width).

[4] Illinois statute language on Posted (Maximum) Speed Limit:
III. Based on engineering and traffic investigations, a local government may either increase or decrease the maximum speed on highway, streets or roads within its jurisdiction. However, the following limitations apply. (1) The speed limit in an urban district cannot be less than 20 MPH. (2) A speed limit cannot be more than 55 MPH. (3) The speed limit outside of an urban district cannot be less than 35 MPH. (4) And, except as provided in (1), the speed limit in a residential district cannot be less than 25 MPH. '65 ILCS 5/11-40-1 and "625 ILCS 5/11-208 & 5/11-604

Non-infrastructure Programs

In addition to infrastructure improvements, non-infrastructure efforts are a necessary component of a more bicycle and pedestrian-friendly Teutopolis. Existing resources are available from the League of Illinois Bicyclists and other private and public entities.

Recommendations (* - available from LIB):

- Routinely distribute bicycle and pedestrian safety information to grade school students, including LIB's kids' bicycle safety sheets*. Provide training and resources* to police, teachers, or parent volunteers on conducting an annual bike rodeo.

- Ensure that Teutopolis High School driver education classes include LIB's 20-30 minute lesson* on sharing the road with bicycles, including the 7-minute Share the Road video. Publicize this information to existing drivers, as well.

- Provide Share the Road enforcement resources* to police, including a Power Point presentation and poster, Illinois bike law cards, and warning citations for motorists and cyclists. Publicize basic information to local motorists and cyclists. Also, consider a collaboration between police and local merchants to provide token "rewards" for young cyclists exhibiting safe behaviors.

Safe Routes to School Program

Illinois' Safe Routes to School program is a 100% federal share grant program administered by IDOT, and an excellent potential source of funding for some of the recommended improvements in this report. The most recent grant cycle, with December 2008 applications awarded in late summer 2009, had only a 2:1 demand for funds, and a maximum award of $250,000. Eligible projects are within two miles of a K-8 school. Well-rounded applications covering "the 5 E's" are required, including Engineering (infrastructure), Education, Encouragement, Enforcement, and Evaluation.

Recommendation:

Prepare for the next Safe Routes to School (SRTS) grant cycle, possible in late 2010 or 2011 (subject to federal legislation continuing the program). Formally adopt this bicycle and pedestrian plan. Prioritize and estimate costs of the recommendations relevant to grades K-8. Review IDOT's existing SRTS "School Travel Plan" (subject to change) to guide a well-rounded application.

Other Implementation

Recommendations:

- For small projects, including signage and striping and many spot improvements, try to accomplish with Village funds. For those projects on the US system (US 40), approach IDOT for funding options, including safety striping, or curb reconstruction. Some funding categories (safety

engineering, for example), could be used for the US 40 improvements. As of late 2009, the American Recovery and Reinvestment Act (ARRA) could be a potential funding source for a number of these recommended projects, particularly because they are relatively easy to design and implement. For larger projects, consider various grant sources including the Transportation Enhancements program (administered by IDOT, irregular grant cycles) and the Illinois State Bike Path Grant Program (administered by IDNR annually). An example: the "Missing Mile" trail would be a good candidate for IDNR's grant program. Having an adopted plan is one of the selection criteria for these grant sources.

- Be opportunistic, incorporating improvements into resurfacing projects or other developments.