Maplewood Bikeway Network Plan

Urbana Consulting, LLC

December 2010

A. Project Goal: To plan the Maplewood Bikeway Network (MBN) based on the objectives shown below.

B. Transportation Committee Bike Subcommittee – a citizen project Steering Committee that served as a local resource for planning the network

- Rich Wener – Chair
- Vicki Arlein
- Charlie Bibbins – Chair of Maplewood Transportation Committee
- Ed Bolden
- Ian Flamm
- Jonathan Poor
- Fred Profeta – Deputy Mayor for the Environment
- Sharon Roerty – Executive Director, National Center for Biking and Walking
- Kirk Sohr – Liaison to South Orange-Maplewood Bicycle Coalition
- Rob McCoy – Liaison to Maplewood Environmental Advisory Committee
- Dirk Olin

C. Project Team

- Tom Malavasi, Township Engineer
- Robert Bratt, Former Acting Township Engineer
- Mark Gordon, Principal, Urbana Consulting, LLC

This project has been advanced under direction of the Maplewood Township Engineer.

D. Objectives of Maplewood Bikeway Network

- Choose routes to serve the bikeway corridors adopted in Maplewood's 2004 Master Plan;
- Select bikeways to connect people to major destination points throughout Maplewood Township;
- Provide connections to South Orange and Millburn;
- Minimize use of certain major streets;
- Provide shoulders for cyclists on some routes;
- Provide safe places to teach riding to children and provide routes for cyclists with a range of riding skills; and
- Minimize parking restrictions.

E. Route Configuration

MBN to consist of:

- **Bike Routes** – Signed shared roadways designated by special signage and pavement stenciling

- **Bike Paths** – Off-road segments in Memorial Park, Maplecrest Park, the Waterlands area and selected other locations

F. NJDOT Guidelines for Bikeways

Shared Use Roadways

- State standards provide for the following bicycle compatible roadway widths at speeds ≤ 30 mph:

  -- Under 1,200 vehicles/day: no minimum
  -- 1,200 – 2,000 vehicles/day: 24 feet
  -- Above 2,000 vehicles/day: 28 feet

  These values are derived from Bicycle Compatible Roadway Pavement Widths provided within an excerpt from *NJDOT Bicycle Compatible Roadways – Planning and Design Guidelines* as shown in Appendix A.

  (Note: For speeds at 35 mph, impacting only Wyoming Avenue and one block of Valley Street in this report, standards are identical as above except a width of 28 feet is required for traffic volume of 1,200-2,000 vehicles/day.)

- The MBN project has measured all proposed routes using Township's GIS mapping system. Values are shown in Appendix C at the end of the report.

Off-road Bike Paths

- State standards provide that off-road bike paths should generally be 8 to 10 feet wide;

- Neighborhood linkage paths, under 400 feet long, may be 5 feet wide, provided that adequate sight distance is available.

G. Elements of Bikeways

Shoulders

- Consist of striped area at edge of roadway overlapping parking area
- Existing local examples:

  Wyoming Ave. in Maplewood; Prospect St. in South Orange

- MBN recommends providing shoulders on select streets with widths ≥ 28 feet

Signage on Poles

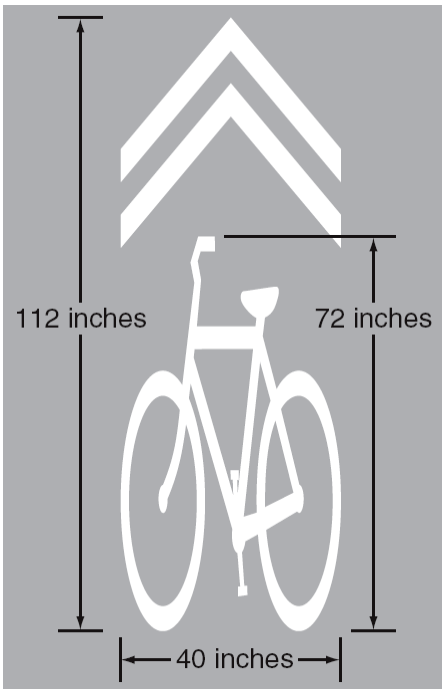
A major revision to the Federal Highway Administration's Manual of Uniform Traffic Control Devices (MUTCD) was issued in December, 2009.

The new version of the manual includes signage additions for bike facilities. The signs highlighted below are taken from the new edition:

This new sign designed in reflective yellow-green is easier to see than its predecessors. The American Association of State Highway and Transportation Officials (AASHTO) recommends placing these signs on roadways shared between motorized vehicles and bicycles.

Along with directional arrows, these signs show the beginning, end and turns for each bikeway. Interest exists in customizing these signs to brand Maplewood's bikeway network.

Pavement Stenciling



This is a new shared lane pavement marking symbol shown in the December 2009 MUTD.

Bicycle-compatible Grates

Bicycle network routes should have drainage grates that are compatible with safe cycling. The Borough of Madison specifies Campbell Foundry pattern numbers 3425 or 2618 or equivalent patterns for other manufacturers.

This is an example of a bicycle-compatible grate.

What is a Woonerf?

- Area where motorists and other users share the street without boundaries such as lanes or curbs;
- "Residential yard" or "living street" as translated from Dutch;
- ***Woonerven*** (plural of ***woonerf***) are recognized in NJDOT's bikeway design guidelines;
- Facilities are planned/implemented in Netherlands, England, Germany, Toronto, Montreal, Seattle, Portland and Boston.

By erasing the boundary between the street and sidewalk, establishment of a *woonerf* causes auto traffic to slow down to 10 mph or less with resultant priority given to pedestrians and cyclists. Inclusion of plantings, benches and/or café tables can reinforce the message that cars, bike and pedestrians need to co-exist safely in this area.

H. Local Case Studies

SUMMIT

Summit has recently developed a bike route system which connects government buildings, parks and schools. All routes have shared usage with motorized vehicles, and very few "share the road" signs and stenciling are evident. The routes are designated by rather small 4-inch diameter maroon signs that are often mounted on existing sign poles. Several kiosks showing a route map are erected at endpoint destinations (e.g., a school athletic field).

MADISON

Madison has an impressive system of bike routes. The majority of routes have "shoulders" which can be divided into three categories:

1. Major routes (e.g., portions of Main Street – Route 124) where parking is totally prohibited in bike lanes;

2. Routes where parking regulatory signs (e.g., 2-hour parking on Prospect St.) apply within areas designated as bike lanes; and

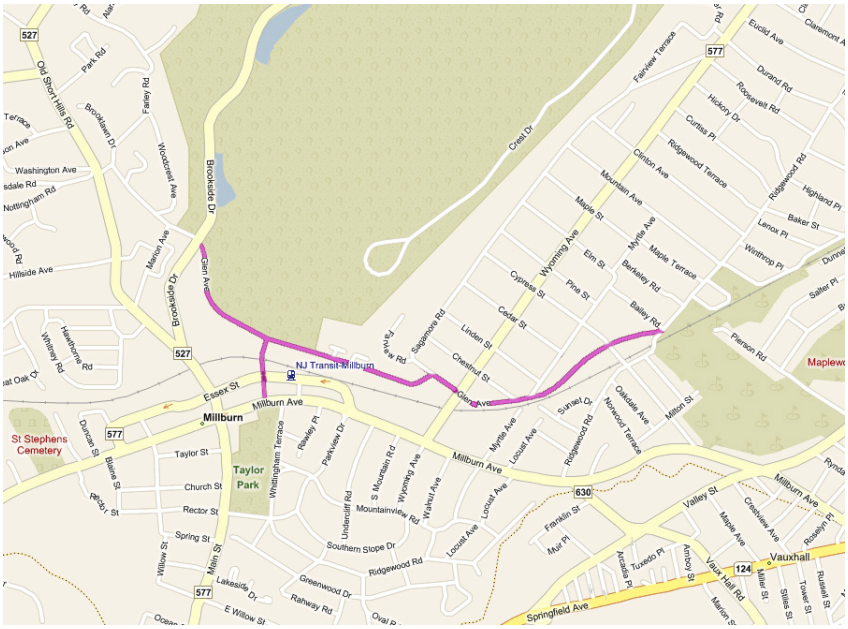
3. Routes without parking regulatory signs but which do allow parking in the bike lanes. These occur in many residential neighborhoods.

In an e-mail, Borough Engineer Robert Vogel explains the Madison system as follows:

> **"The Borough has proceeded on the basis of shared use of the newly delineated shoulders, including automotive parking, and the Bike Route was not allowed to override any prevailing parking regulations, which was also the local reason it was able to proceed to bid."**

The shoulders are from 3 feet to 5 feet wide. Where parking is allowed, the shared use stenciling should have been applied outside of the shoulders.

MILLBURN

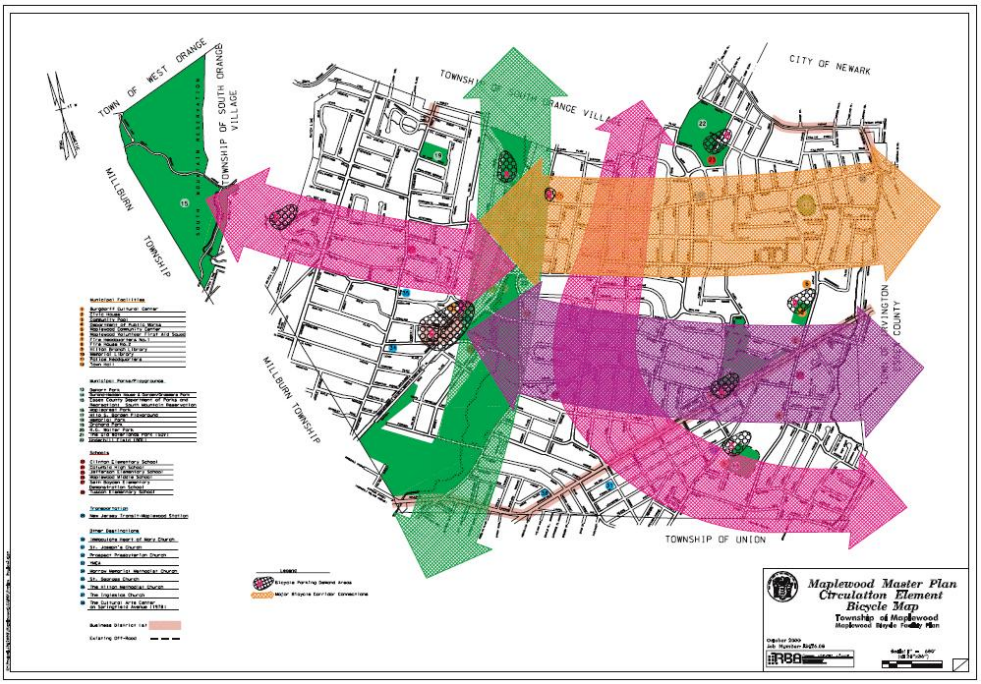


The plan for Millburn's first bikeway is outlined on the map above. It is a bike route – a shared signed roadway. The Glen Avenue segment shown above was implemented in November 2009. Maplewood's Phase I Bikeway (see below) is planned to connect with this link which most of the week ends at Brookside Drive at the South Mountain Reservation. On Sunday mornings from 7:00 a.m. to noon, motorized vehicles are prohibited to use Brookside Drive from Glen Avenue to South Mountain Avenue, so the bikeway is extended through part of the Reservation during this period.

SOUTH ORANGE

South Orange has not yet designated a bikeway system. It recently completed the first phase of a Rahway River route which was designed to accommodate bicycles. This is located in the vicinity of Meadowbrook Lane south of Mead Street. In 2005, NJDOT commissioned a South Orange and Pedestrian Circulation Plan prepared by Parsons Brinckerhoff, Quade and Douglas, Inc. Appendix D of the Parsons Brinckerhoff study is titled "South Orange Proposed Bicycle Routes". These routes do connect with the Maplewood Bikeway Network to be presented in this report. In particular, routes along Wyoming Avenue; the Waterlands and Walton Road; Prospect Street; and Irvington Avenue would continue into routes proposed for Maplewood. Additionally, the South Orange route on Ward Place can connect with a Maplewood route along Garfield Place through an added link along Radel Terrace.

I. Maplewood Master Plan Corridors



Maplewood latest Master Plan (2004) provides for bikeway corridors to connect portions of the Township. The above graphic is Figure 5.3 of the Master Plan.

Pages 71-72 of the Maplewood Master Plan state as follows:

> **"These [corridors] are intended to guide the location of a bikeway network throughout Maplewood. Within these corridors, specific roadways and facility types should be selected and implemented through a phased implementation plan. These projects can be implemented by the township as incidental features of general roadway improvements and maintenance activities. They may also be implemented as independent projects."**

The next section of this report provides a plan of specific routes to accommodate the corridors recommended above in Maplewood's Master Plan.

J. Maplewood Bikeway Network

The recommended plan for Maplewood Bikeway Network is shown in the above graphic. The pink lines designate bike routes – signed shared roadways designated by special signage and pavement stenciling. The green lines reflect bike paths – off-road segments in the Waterlands area, Maplewood's parks and selected other locations.

Several of the routes are highlighted for discussion below:

Waterlands Route

Starting Point: West Parker Avenue at the driveway entrance to the school bus parking area and Chyzowych Field

End Point: South Orange Line north of Chyzowych Field; it is intended that the bikeway will eventually proceed northward in South Orange and connect with a pedestrian path over an existing Rahway River bridge in the vicinity of a former water works facility

Route Characteristics: Bikeway to share existing asphalt pavement past entrance to school bus parking area and continue northward to edge of soccer field; then it will proceed northward on a new off-road surface to the end point

The total length of the Maplewood section is 1,050 feet (0.2 mile).

Property Reference: Block 15.07, Lot RIVER; property owned by South Orange Village Water Works even though it is located within Maplewood Township.

The Waterlands Route is an excellent project to be funded by grant funds since it is off-road (NJDOT prefers to fund off-road routes).

As part of project coordination, the Waterlands Route recommended above has been informally discussed with Board of Education staff and South Orange officials directly involved in South Orange's bikeway implementation. These staff and officials support the route shown here. In fact, as part of a recent RFP issued by South Orange for *River Greenway and Downtown Improvements along the East Branch of the Rahway River*, this route is assumed as the southernmost portion of a corridor beginning at Mead Street north of South Orange Avenue. South Orange is seeking an urban planning and design team to prepare detailed plans from Mead Street to Parker Avenue.

Off-road Bike Paths in Memorial and Maplecrest Parks: These routes would utilize existing paved paths in these parks. Most of the current paths are about six feet wide. They need to be widened to eight to ten feet to meet state standards for off-road bike paths. In the event that a tree is in the way, in most cases, the path can be curved to avoid impacting the tree. In Memorial Park, cyclists will need to walk their bikes over bridges located within the park. For this park, design issues will need to be coordinated with the Maplewood Historic Preservation Commission.

Winchester Gardens: The map shows an alternative route to Boyden Parkway which traverses several lots owned by Winchester Gardens and then makes a sharp right turn to head towards a small strip of property which goes directly to Boyden Avenue south of the Maplewood Pool. To utilize this alternative route, the Township would need to negotiate a purchase or lease of a small strip of property from Winchester Gardens. A fence could be moved to maintain the security of Winchester Gardens.

Train Station Pedestrian Tunnel: To cross the New Jersey Transit tracks, this report recommends use of the South Pedestrian Tunnel at Maplewood Station. This tunnel has five steps on the east end and one step on the west end.

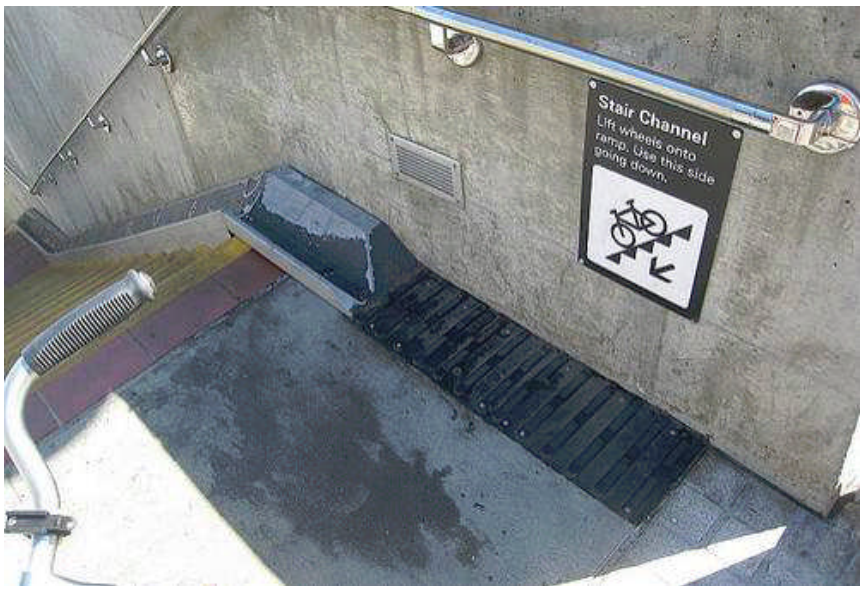
Charley Bibbins of the Maplewood Bike Subcommittee suggested that this tunnel be utilized for the bikeway since it is safer and has a better line of sight than the curved Baker Street. One way to improve the pedestrian tunnel for bicycle use would be to install a ramp that could be used to walk bicycles down the five steps at the end of the tunnel. This ramp could also be used for shopping carts from Kings and for strollers. It would be too steep for wheelchair use.

Shown below are several photos of similar ramps already installed in New Jersey and Germany provided courtesy of Sharon Roerty:

New Brunswick, New Jersey

Meckenbeuren, Germany (photos submitted by Andrew J. Besold)

16th Street BART Station – San Francisco (photo by Peter Smith, San Francisco Bike Blog)



Woonerven: After considerable deliberation, the Maplewood Bike Subcommittee believes that the benefits of *woonerven* (see above) could be best realized in Maplewood in areas of mixed-use development with adjacent active retail stores. Accordingly, establishment of *woonerven* should be considered in selected areas of Maplewood Village: Highland Place; Maplewood Avenue between Baker Street and Lenox Place; and potentially Baker Street adjacent to Maplewood Avenue.

Reverse Angle Parking: Bike routes extend along Maplewood Avenue in the Village and also along Dunnell Road just west of Maplewood Middle School. Both roadways now contain angle parking for shoppers or commuters. While beyond the scope of this report, the Subcommittee suggests that the Township consider implementing "reverse angle parking" for Maplewood Village and Dunnell Road. When a motorist backs into a space, he/she is positioned to depart from the space facing frontwards. This provides for improved driver visibility and enhanced safety to passing cyclists. Note the adjacent graphic from Syracuse, NY.

Reverse angle parking is pending implementation on Lower Broadway in Newark and in two locations in Cape May County. Existing projects are found in NY, PA and 12 other states.

K. Criteria for Selection of MBN Routes

Routes were selected by the Maplewood Transportation Committee Bike Subcommittee as facilitated by the Township's consultant based on the objectives of the MBN:

- Choose routes to serve the bikeway corridors adopted in the 2004 Master Plan;
- Select bikeways to connect major Township destinations;
- Provide connections to South Orange and Millburn;
- Minimize use of certain major streets;
- Provide shoulders for cyclists on some routes;
- Provide safe places to teach children to ride; and
- Minimize parking restrictions

Applying the Criteria to Route Selection

In selection of routes, busy streets such as Springfield Avenue and Boyden Avenue were not included and use of Valley Street and Parker Avenue was minimized.

Two routes, Summit Avenue and Kendal Avenue, were designated as lower-traffic streets to provide locations to teach children to ride. More experienced cyclists may choose parallel routes that operate at relatively faster speeds.

Shoulders may be added on many streets with a width equal to or exceeding 28 feet. Examples of routes that would benefit from shoulders include Prospect Street, Elmwood Avenue and Ridgewood Road.

Other Factors Impacting Route Selection

Routes were generally favored were those with:

- Less traffic and lower speeds (Hickory Drive was selected for this reason);
- Better sight lines (Baker Street with poor sight lines was not included);
- Lesser slope (Oakview Avenue west of Prospect Street was considered too steep);
- Good connectivity between key Township destinations; and
- An off-road bike path option – preferred by cyclists and more likely to receive state discretionary grants.

Note that Wyoming Avenue, one of Maplewood's widest streets and one with existing shoulders, is an exception to the first criterion in this section.

L. Support of Bike Subcommittee and Opportunity for Public Input

At their February 2010 meeting, Bike Subcommittee members voted to support unanimously the proposed Maplewood Bikeway Network.

A public meeting was held in June 2010 at the Maplewood Municipal Building to provide an opportunity for the public to have input into project. The meeting was advertised in the *News-Record*, *Maplewood Patch* and on the township's website. Flyers were posted at the train station and circulated through the Maplewood Village Alliance. Articles covering the meeting are shown in Appendix B.

Based on public comment at the June meeting, several new routes were added to the Maplewood Bikeway Network at the September 2010 meeting of the Bike Subcommittee. These routes would improve access to Columbia High School and Maplewood Middle School. They also include a new link to connect Prospect Avenue south of Baker Street with the Golf Course neighborhood and the Middle School.

M. Summary of Report Recommendations

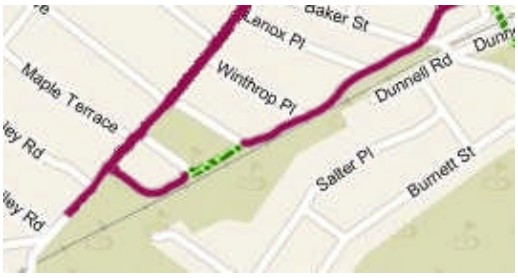
- Adopt the Maplewood Bikeway Network consisting primarily of bike routes (signed, shared roadways) and bike paths (off-road facilities);
- Provide pavement shoulders on select bike routes with roadway width ≥ 28 feet;
- Consider creating woonerven in selected areas of Maplewood Village;
- Comply with NJDOT bikeway guidelines; and
- Commence implementation this year.

N. MBN Consistent with State Plan

- Creates a more safe and secure environment for cyclists;
- Reduces VMT and air pollution thus improving health;
- Promotes Maplewood as more bicycle and pedestrian friendly;
- Provides connections to transit, parks and business districts; and
- Provides opportunities for regional cooperation & connection of adjacent towns including links to South Orange and Millburn

O. Maplewood Phase I Bikeway

- Starting Point: Maplewood Ave. & Lenox Pl. in Maplewood Village
- Via: Maplewood Ave., off-road segment on existing fenced path adjacent to railroad, Cottage Ct., Ridgewood Rd.
- End Point: Ridgewood Rd. and Glen Ave. (start of Millburn's Glen Ave. bikeway)



This route is proposed to have the following attributes:

- Delineate with "share the road" signage and pavement stenciling. Shoulders on Ridgewood Road section.
- Total Length = 0.5 mile
- Connects to Millburn's bike route, which in turn connects to the Brookside Drive segment which is car-free Sunday mornings through South Mountain Reservation.

Following on the next page is a measured drawing, prepared by Maplewood's Engineering Department, of the Phase I off-road segment.

P. Implementation of Maplewood Bikeway Network

The Maplewood Bikeway Network is recommended to be implemented within the next three to seven years based on available municipal capital resources supplemented with grant funds for some routes.

The cost of implementing bike routes (signed, shared roadways) is relatively minimal and can be included in each year's municipal road program even during a period of constrained resources. For example, the Phase I Bikeway to Millburn is estimated to cost less than $10,000. If a roadway is scheduled for resurfacing and/or reconstruction, this is the optimal time to designate it as a bike route.

The Township-adopted road program includes the following streets recommended as proposed bikeways:

2010: Summit Avenue, Hickory Drive, Orchard Road
2011: Dunnell Road, Osborne Terrace, Summer Avenue, Garfield Place
2012: Ridgewood Road, Warren Road, Burnet Street
2013: Claremont Avenue, Hudson Avenue, Dunnell Road
2014: Prospect Street, Franklin Place, Hilton Avenue
2015: Prospect Street, Essex Road, Kendal Avenue, Summit Avenue
2016: Prospect Street, Elmwood Avenue, Oakview Avenue
2017: Maplewood Avenue, Highland Place
2018: S. Crescent, North Crescent, Franklin Avenue
2019: Ridgewood Road, Jefferson Avenue, Cottage Court, Academy Street, Schaefer Road

Implementation of bikeways from each year's road program provides an incremental approach to building the network.

Notwithstanding the above schedule for roadway capital projects, the Township may choose to expedite implementation of bikeway phases which meet the following purposes, subject to availability of funds:

- Connect South Orange to Millburn via a north-south bikeway route from the Waterlands (west of Chyzowych Field) to Glen Avenue;

- Connect Maplewood Village Business District to the Springfield Avenue Business District, thus enhancing economic activity between business nodes;

- Upgrade existing pedestrian paths for bicycle usage in Memorial and Maplecrest Parks; and

- Advance routes connecting to parks, schools and the swimming pool.

Off-road bike paths are good candidates for special grants from the NJDOT Local Aid Program and from the Township's Open Land Trust Fund. One project suitable for grant funding is the Waterlands Route to the South Orange border. A second effort could be to widen existing paths in Memorial and Maplecrest Parks to meet NJDOT standards for bikeways.

As the Township is ready to implement each specific bikeway segment in the MBN plan, roadway measurements should be checked through physical verification, and the Township Engineer should assure that all federal, state and local requirements, including but not limited to traffic laws, are met for each segment before proceeding with implementation.

APPENDIX A

Bicycle Compatible Roadway Pavement Widths
(Table 1 in NJDOT Guidelines)

Condition I
AADT 1200 -2000*

	URBAN W/PARKING	URBAN W/O PARKING	RURAL
<50 km/h (30 mph)	SL 3.6m (12 ft.)	SL 3.3m (11 ft.)	SL 3.0m (10 ft.)
50 km/h-65 km/h (31-40 mph)	SL 4.2m (14 ft.)	SL 4.2m (14 ft.)	SL 3.6m (12 ft.)
65 km/h-80 km/h (41-50 mph)	SL 4.5m (15 ft.)	SL 4.5m (15 ft.)	SH 0.9m (3 ft.)
>80 km/h (50 mph)	NA	SH 1.2m (4 ft.)	SH 1.2m (4 ft.)

* For volumes less than 1200 a shared lane is acceptable.

KEY: SH=shoulder SL=shared lane

Condition II
AADT 2000-10,000

	URBAN W/PARKING	URBAN W/O PARKING	RURAL
<50 km/h (30 mph)	SL 4.2m (14 ft.)	SL 3.6m (12 ft.)	SL 3.6m (12 ft.)
50 km/h-65 km/h (31-40 mph)	SL 4.2m (14 ft.)	SL 4.2m (14 ft.)	SH 0.9m (3 ft.)
65 km/h-80 km/h (41-50 mph)	SL 4.5m (15 ft.)	SL 4.5m (15 ft.)	SH 1.2m (4 ft.)
>80 km/h 50 mph	NA	SH 1.8m (6 ft.)	SH 1.8m (6 ft.)

Condition III
AADT over 10,000 or Trucks over 5%

	URBAN W/PARKING	URBAN W/O PARKING	RURAL
<50 km/h (30 mph)	SL 4.2m (14 ft.)	SL 4.2m (14 ft.)	SL 4.2m (14 ft.)
50 km/h-65 km/h (31-40 mph)	SL 4.2m (14 ft.)	SH 1.2m (4 ft.)	SH 1.2m (4 ft.)
65 km/h-80 km/h (41-50 mph)	SL 4.5m (15 ft.)	SH 1.8m (6 ft.)	SH 1.8m (6 ft.)
>80 km/h (50 mph)	NA	SH 1.8m (6 ft.)	SH 1.8m (6 ft.)

NOTE: NJDOT minimum shoulder width of 2.4 meters (8 feet) should be provided wherever possible on roadways having an AADT greater than 10,000 vehicles.

APPENDIX B

Media Articles Regarding Maplewood Public Meeting on Bikeways

1) Drivers Move Over: Bikeways are Near

- Posted by News-Record on June 15, 2010 at 12:00pm

By Philip Sean Curran, *Staff Writer*

Maplewood wants to create a European-style bike network that will connect parts of the township and give access to neighboring towns.

Bicyclists would share roads with motor vehicles and use off-road areas, such as public parks, according to the consultant working on the project.

The first phase is proposed for this year, a .5-mile stretch linking Maplewood Village to a bike route on Glen Avenue in Millburn, said Mark W. Gordon of Urbana Consulting, LLC.

Gordon, appearing June 9 at a public forum in Town Hall, said it would cost under $10,000 to pay for signs, road striping and other improvements.

Gordon said the entire network might take three to five years to complete, though the township has no schedule in place. Later phases could come as the township resurfaces its streets and adds more bike routes, he said.

Although still needing Township Committee approval, the bike network is “something I’d like to see happen,” Deputy Mayor Fred R. Profeta Jr. said.

Encouraging bike use gets cars off the road, which would help the eco-friendly township reach its goal of lowering its green house gas emissions 20 percent by 2015, he said. Profeta, also active in statewide green efforts, called a bike network “a great fit for Maplewood.”

Residents have formed the South Orange-Maplewood Bicycle Coalition that promotes bike use. “With its network of public transit options and parks, our towns provide the potential to support commuter and recreational bicycling,” the organization’s website states.

Profeta said the township committee still has not adopted the proposal. But Gordon is due to present the plan to the governing body in September. Maplewood Police Department would also weigh in on the plan.

Gordon said the network was designed to minimize bicyclist from using busy roads, such as Parker and Springfield avenues, and avoid impinging on onstreet parking, where possible.

As part of the network, streets with higher traffic volume will need to be at least 28 feet wide, based on state Department of Transportation guidelines.

Gordon said the wider streets will give the township the option of including striped shoulders in which bicyclist would ride. Streets with less traffic do not need to be as wide, he said.

Other U.S. and European cities have extensive bike networks.

“This is not something new. People have been doing this for years,” said Vicki Arlein, a member of the township’s volunteer bike subcommittee.

She said efforts to create a bike network started in the late 1990s, although they stalled for lack of support among the governing body. “Times have changed,” she said.

Added Profeta, “We’re doing a lot to encourage the use of bicycles.”

So are other towns and cities.

A 2008 survey by the U.S. Census Bureau showed a 14 percent increase in the number of Americans who commute to work by bike form the previous year. The figure stands at .55 percent overall.

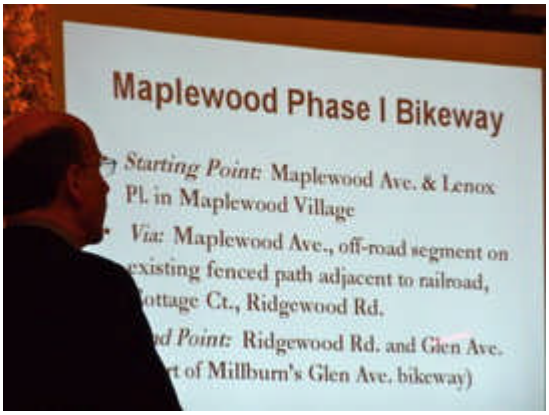
But in places like Portland, Ore. and Minneapolis, commuting by bike is higher than the national average, according to the League of American Bicyclist in its report of the government survey.

Philip Sean Curran can be reached at 908-686-7700, ext. 115, or at newsrecord@thelocalsource.com.

2) 'WOONERVEN' AND MORE DISCUSSED AT BIKEWAY MEETING

A network of bike routes on roads and off-road bike paths is proposed to link Maplewood to Millburn and South Orange, as well as interconnect the town.

By Ellen Kahaner | Email the author | June 11, 2010



Mark Gordon of Urbana Consulting, LLC presents the Maplewood Bikeway Study.
Credit Mary Mann

The dozen plus attendees at Wednesday night's "Bikeway Study" report at Maplewood Town Hall learned about proposed plans to create bike paths within Maplewood and connect those paths with trails in Millburn and South Orange.

They also learned about the "woonerf."

Mark Gordon of Urbana Consulting, LLC explained that the "woonerf" or "woonerven" (plural) are streets where pedestrians and cyclists share the road with cars. (The word is Dutch and the concept is employed in The Netherlands.) The roads employ traffic calming measures that defer to the speeds and needs of cyclists and pedestrians over cars.

A few streets in Maplewood—such as Hickory Drive—might be able to accommodate the concept.

But more importantly, Gordon presented the overall proposed network of bike routes and paths connecting Maplewood to communities to the north and south and within the township itself. Gordon elicited some pointed feedback from representatives of Maplewood and Millburn's bike committees who came out to the meeting despite the foul weather. Gordon has been developing the plan since last fall, utilizing the bike corridors identified in the Maplewood 2004 Master Plan. He has been working with Town Engineer Robert Bratt.

The objectives of the plan are to develop routes that serve all parts of the township as well as connect with South Orange and Millburn, with minimum use of major streets. For bike routes on the road, shoulders would be added where feasible while vehicle parking would not be restricted. "Share the Road" signage will be added and pavement will be stenciled so that motorists will be aware of cyclists. Some routes on quieter streets would be more appropriate for younger, less experienced cyclists. Off-road bike paths are delineated through parks and along the waterlands.

A creative approach would be taken to ramp the staircase at the pedestrian tunnel at the Maplewood Train Station. The plan also proposes obtaining easements through properties such as Winchester Gardens.

During the public input section of the meeting, questions were raised about whether parking would be allowed in road shoulders (yes) and whether the message of “Share the Road” signs is effective. When budgeting questions came up, it was pointed out some of the improvements can occur in conjunction with routine road resurfacing at little additional cost. Federal and state funds are available for some of the plan's suggestions and would be applied for.

Gordon explained that, after public input is incorporated into the plan, it will be presented to the Township Committee and voted on within the next few months. The plan will be implemented in phases. Phase 1 will link the half mile from downtown Maplewood starting on Lenox Place to the newly developed bike route in Millburn that starts on Glen Avenue and works up to Brookside Drive into the South Mountain Reservation—where there are traffic-free mornings on Sundays.

APPENDIX C

Street Widths for Maplewood Bikeway Network

	feet
Academy Street	
Beach-Parker	29.1
Beach Street	
Academy-Prospect	28.9
Berkley Street	
Van Ness-Stuyvesant	29.5
Boyden Parkway	
Maplecrest Park - Boyden	29.8
Burnet Street	
Maple-S. Mountain	33.5
S. Mountain-Pierson	33.2
Carleton Court	
Ridgewood-Cottage	26.4
Claremont Avenue	
Warner-West	27.2
West-Wyoming	27.8
Wyoming-Hemlock	28.6
Hemlock-Ridgewood	27.8
Cottage Court	
Ridgewood-Carleton	29.2
Dunnell Road	
W. Parker-Buckingham Gardens	14.8
Buckingham Gardens-Jefferson	20.3
Jefferson-Oakland	27.2
Elmwood Avenue	
Prospect-Summit	33.9
Richmond-Lancaster	34.2
Norfolk-Suffolk	33.6
Highland-Essex	32.9
Mosswood-Borden	36.2

Fleming-Boyden	35.1
Orchard/Boyden-Brookwood	34.8
Meadowbrook-Becker	34.9

Essex Road

Elmwood-Plymouth	30.2
Plymouth-Forest	29.9
Forest-end	30.0

Franklin Avenue

Prospect-Princeton	29.4

Franklin Place

North-Prospect	29.7

Garfield Place

W. of Underhill Field	30.3
E. of Underhill Field	28.8

Hickory Drive

Wyoming-Kermit	23.5
Kermit-Ridgewood	17.8

Highland Place

Ridgewood-Everitt	28.7
Everitt-Maplewood	29.3

Hillcrest Road

Fernwood-Peachtree	30.0
Cherry-Irvington	30.0

Hilton Avenue

Prospect-Princeton	27.5
Rutgers-Wellesley	28.9
Tuscan-Vermont	29.3

Hudson Avenue

Irvington-S. 4th	28.9
S. 4th-Garfield	29.9
Garfield-Parker	29.7

Inwood Place

Durand-Maplewood	25.7

Jefferson Avenue

Kendal-Walton	28.4
Woodland-Maplewood	29.6
Maplewood-Dunnell	30.0

Kendal Avenue

Audley-E. Cedar	29.3
St. Lawrence-Hoffman	28.7
Garthwaite-Jefferson	29.4

Maple Avenue

Dunnell-Burnett	35.6

Maplewood Avenue

Inwood-Highland	38.1
Highland-Baker	37.1
Baker-Lenox	37.7
Lenox-Winthrop	26.6
Winthrop-Mountain	27.6

Midland Boulevard

Summit-Richmond (North Side)	19.8
Summit-Richmond (South Side)	20.4
Lancaster-Norfolk (North Side)	19.8
Lancaster-Norfolk (South Side)	20.0
Suffolk-Highland (North Side)	20.6
Suffolk-Highland (South Side)	20.2
Highland-Warren	37.2
Warren-Boyden	35.2
Boyden-Orchard	29.5

Newark Way

Boyden-Schaffer	29.4
Schaffer-Field	30.3
Field-Melrose	29.7

North Crescent

Valley-Prospect	27.7

North Terrace

Parker-Franklin	29.4

Oakland Road

Dunnell-Valley	29.5

Valley-Kensington	20.9
Kensington-North	26.7
North-Prospect	31.4
Prospect-Summit	29.7

Oakview Avenue

Prospect-Summit	35.4
Summit-Ivy	35.4
Norforlk-Oakland	28.3

Orchard Road

Hillcrest-Parker	30.0
Parker-Woodside	30.5
Woodside-Heller	29.7
Heller-Midland	37.3

Osborne Terrace

Sommer-Park	28.9

Park Avenue

Valley-Osborne (each side of divider)	18.9

Pierson Road

Burnet-Valley	29.4

Princeton Street

Hilton-Franklin	30.0

Prospect Street

Baldwin-Sherman	34.2
Beach-Parker	35.7
Franklin-Jennifer	35.9
Oakland-Plymouth	35.9
Madison-Burnett	34.6
Oakview-Courter	36.0
N. Crescent-Tuscan	35.9
Harvard-Sommer	35.8
Bowdoin-Springfield	35.4
Hilton-Franklin	29.8

Ridgewood Road

St. Lawrence-New England	29.7
Arcularius-Hoffman	30.3
Jefferson-Claremont	30.0
Euclid-Maryland	29.3

Durand-Roosevelt	30.1
Hickory-Curtiss	29.5
Lenox-Clinton	29.4
Mountain-Carlton	29.5
Cottage-Berkeley	28.3

Schaffer Road

Hughes-Jacoby	28.8
Menzel-Van Ness	28.9

Sommer Avenue

Osborne-Prospect	28.4

South Crescent

Valley-Prospect	27.7

Summit Avenue

Baldwin-Parker	28.7
Parker-Midland	33.6
Midland-Elmwood	33.3
Elmwood-Oakland	18.4
Oakland-Plymouth	18.7
Plymouth-Madison	19.0
Madison-Burnett	28.8
Burnett-Oakview	30.1
Oakview-Courter	30.4
Courter-Tuscan	28.6

Valley Street

Park-Pierson	33.9

Vermont Street

Tuscan-Springfield	39.0
Springfield-Hilton	29.6

Virginia Road

Ridgewood-Brookside	29.0

Warren Road

Parker-Elberta	30.7
Elberta-Parker	29.5

Wellesley Street

Hilton-Franklin	28.0

Lexington-Burnett	27.8

West Parker Avenue

Buckingham Gardens-Dunnell	28.7

Woodland Road

Jefferson-Beach	28.2
Beach-Durand	29.0
Durand-Inwood	19.5

Wyoming Avenue

Cedar-Woodhill	39.8
New England-Evergreen	39.3
Sunset-Collinwood	38.6
Claremont-Euclid	39.7
Durand-Roosevelt	41.0
Hickory-Curtiss	39.2
Ridgewood-Clinton	40.1

Notes:

1. The measurements above were made by computer utilizing the Township of Maplewood's GIS System. Values should be verified by actual physical measurement prior to implementation of each applicable bikeway.

2. Routes that are narrower than 28 feet are subject to NJDOT guidelines regarding maximum permissible traffic counts (average annual daily traffic) as discussed in the main body of the report. Counts thus need to be provided prior to the implementation of such routes if a question exists regarding compliance with the traffic volume threshholds in the guidelines.