

A Bicycling Plan for the Town of Needham

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Bicycle Advisory Committee

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Purpose

This plan is in response to a request from Tony Del Gaizo, Town Engineer and other town leaders to propose a set of recommendations to make Needham more bicycling friendly. Recognizing that a bicycling network in Needham will not appear as a single, large project but rather as an accumulation of smaller projects, it is important that a bicycling master plan exist to guide its incremental development. This document presents the foundation for such a master plan. It also lays out the principles that should guide bicycle planning in specific projects and in future modifications of the plan.

This document deals only with bicycle routes on existing roadways. Other aspects of bicycle planning such as bicycle parking, motorist and cyclist education and enforcement of vehicle laws are not covered. Also not covered are potential off road bicycle paths. Because of the overlap of bicycle and pedestrian needs, it also touches on pedestrian accommodation needs.

Background

In order to make sound recommendations, the committee conducted extensive research. A major source of information came from US cities that are recognized for being among the best at promoting bicycle use and safety. These cities are Boulder, CO; Santa Barbara, CA; Portland, OR; Cambridge, MA; Chicago, IL; and Tuscon, AZ. All of these cities have a full time bicycle advisory staff. We conducted phone interviews with the bicycle advisory staff and made on site visits. We also reviewed relevant academic literature and mainstream bicycling magazines.

Key Findings

Bicycling improvements can be traced to economic, environment improvements and less tangible benefits such as improved quality of life. For example, Boulder, CO has a population of 100,000 and supports 80,000 jobs. During the non-winter months, the city estimates that over 10% of all jobs are commuted to by bicycle and that 10% of all trips within the city are conducted by bicycle.

Bicycles need to be treated as vehicles with the same rights and responsibilities as vehicles.

Leading edge bicycling communities encourage police ticketing or warning of bicyclists who are not obeying the rules of the road.

A system of well designed and marked bicycle routes and lanes has been shown to dramatically increase the proportion of trips taken by bicycle, increase the percentage of cyclists who follow the rules of the road and improve overall bicycle safety.

Why Bicycle Planning

Promoting bicycle use and safety is in the interest of the Town of Needham for several reasons. The goals of the bicycle plan are:

- to reduce accident risk to cyclists;
- to make cycling an attractive means of transportation;
- to provide recreational opportunities that will improve quality of life for Needham's residents;
- to promote a healthy, active lifestyle for citizens of all ages, and especially for children; and
- to improve mobility for children, lessening society's reliance on teenage driving and on parent chauffeurs.

Bicycle Lane Design

The objectives of the Needham bicycle plan are spelled out in the following planning and design principles.

It is Needham's objective to provide reasonable bicycle accommodation on all roads in the Town on which bikes are legally allowed. Provisions that are unreasonable include those that would conflict with existing rights of way, be contrary to acceptable standards of public safety, degrade environmental quality, or damage historic structures.

Priority will be given to connectivity. Needham will work toward a continuous network of bicycle-friendly roads and ways that connect all of its neighborhoods, schools, parks, and that provide a connected network of high quality bicycle paths attractive for recreational cycling. Special attention will be given to providing access to important cycling destinations such as the, major recreation centers(Rosemary Pool), town center, library, the Heights and to neighboring communities.

Priority will be given to providing safe bicycling access to schools and playgrounds.

Bicycle ways will be designed to high standards of safety, including geometric design, paving, drainage, roadway markings, and signage. Where there are frequent intersections, bike lanes or one-way paths located close to the travel lanes are preferred in order to maximize the visibility of bicycle traffic. Where on-street parking is permitted, bicycle lanes must have adequate clearance from parked cars to avoid the hazard of car doors.

Bicycle accommodation will not have priority over needed on-street parking in commercial areas where such parking is vital to the area's economic health. Where on-street parking forces bicycles into heavy mixed traffic, measures should be taken to reduce traffic speeds to 25 mph or lower.

Three feet is the minimum width for a striped bicycle lane. Twelve feet is needed for a car lane. Thus a road that is 30' wide is wide enough to accommodate two 12' car lanes and 2 3' bicycle lanes.

The bicycle lane should be clearly marked as a bicycle lane. Arrows on the road will encourage riding in the right direction (with traffic) and adherence to stop signs and other rules of the road.

Share the road signs at regular intervals have proved effective at educating motorists. The signs should be the same size as standard road signs.

Roads that cross or intersect the bicycle lanes should have a sign advising motorists that they are about to cross a bicycle lane.

Special attention must be paid to the upkeep of the bicycle lanes to repair cracks and potholes. Since cars will not be travelling in the lanes and blowing debris off the road, additional street sweeping of the lanes may be required.

The roads that are part of the Needham Bikeway should be covered with asphalt. Alternative road coatings such as stone seal are not acceptable for cycling.

Alternative bicycle accommodation that provides similar safety and mobility may be substituted with the recommendation of the Bicycle Advisory Committee and the Town Engineer. Flexibility in providing bicycle accommodation is necessary in an established community like ours with constrained rights of way and conflicting interests for their use. Where the benchmark accommodation cannot be reasonably provided, or another design otherwise seems superior, the Bicycle Advisory Committee and the Town Engineer may recommend other designs that provide the best possible accommodation under the given constraints.

For several roads that are not wide enough for a bicycle lane but are key bicycling roads (Kendrick Street, Charles River Road), the town will place "Share the Road" and "Needham Bikeway" signs at appropriate intervals.

Signs proclaiming that "Needham is a bicycling community and please share the road" should be posted on all "Entering Needham" signs.

Implementation Principles

1. Every road repair, repaving, or rebuilding project undertaken by the Town, spot repairs excepted, will include reasonable bicycle and pedestrian accommodation. That is, when a road segment is repaved, repaired, or rebuilt, needed bicycle and pedestrian accommodation along that road segment will also be provided or, if already in existence, repaved or repaired as needed.
2. Bicycling needs will be considered in the selection of road repair and repaving projects. When appropriate, projects specifically for cycling and other non-motorized uses will be included in the annual work plan. Until the goal of providing reasonable bicycle accommodation throughout the town is met, each year's set of projects should make significant achievement towards this goal.
3. The town will seek funding from federal, state, and private sources to help speed the realization of the bicycle network.

Cost Estimates

"Share the Road" or "Needham Bikeway" signs will be placed every 1 mile to 2 miles on the appropriate roads. The cost of a sign is estimated at \$125 each. Thermo edge lines cost \$.50/foot. To stripe one mile for bike lane in each direction will cost approximately \$10,500.

Needham Bikeway Network

The network of through routes for bicycling is shown in the attached map. It provides connectivity and access throughout the town. When completed, it will make Needham one of the finest cycling towns in Massachusetts, contributing towards the town's attractiveness and the quality of life it offers its residents. An explanation of the network's elements follows.

Streets Wide Enough For Bike Lanes

1. Hunting Continuing To End of Greendale (at Dedham Line)

This stretch of road is approximately 38'-40' feet. It is a road that is currently extremely popular with cyclists, walkers and joggers. Except at the very beginning of Hunting near the Highland Avenue intersection, this road is wide enough to accommodate a 6' wide bicycle lane. In addition to the bicycle lanes. We recommend placing one "Needham Bikeway" sign between Highland and Kendrick stretch and the Kendrick and Great Plain Avenue stretch in each direction. Total length of road approximately 14000 feet.

Total cost:

- 4 signs: \$600
- Thermo striping: \$14000

2. Great Plain from Greendale To Harris. Great Plain west of Nehoiden to Wellesley line. (Lanes are already in place).

These stretches of road already have fog lines that are at least 4' from the road edge in place. There should be bicycle stencils marked every $\frac{3}{4}$ mile in the middle of the lanes. Arrows should mark the proper direction for bicycle travel (with traffic).

We recommend placing one "Needham Bikeway" sign in the stretch between Greendale to Harris, from Nehoiden to Central Ave and from Central Ave to the Wellesley line in each direction.

Cost:

- 6 Signs=\$750

3. Chestnut from Great Plain Ave to Junction St (to Dover Line when rest of Chestnut is rebuilt). Chestnut Street is a major business area and a major destination for both car and bicycle traffic. At 36' wide, the road is wide enough to support 5' wide bicycle lanes. One "Needham Bikeway" sign in each direction is needed. Length of road is approximately 2,250 feet.

- 2 signs=\$250
- Striping: \$2,250

4. Harris Ave

Harris Ave goes by the Pollard School. An interesting historical note, William Pollard former principal of Needham High for whom the Pollard School is named, did not own a car and commuted to his job almost exclusively by bicycle. Harris Ave is a boulevard that at 21' wide in each direction is wide enough for 6' bicycle lanes in each direction. One "Needham Bikeway" sign in each direction is needed. Total length of road is approximately: 5000 feet

- Two signs=\$250
 - Striping: \$5000
5. Webster Street from Great Plain Ave to Central Ave. Webster goes by the High School and provides critical north/south connectivity. It is a viable alternative to Highland Ave. The most narrow part of this stretch of Webster Street is 32' which is wide enough for a 4' bicycle lane. Needham Bikeway signs should be placed between Great Plain Avenue and West, West and Greendale, and Greendale and Central Ave stretches of Webster Street. Total length of road is approximately 9500 feet.
- 6 signs:\$750
 - Striping: \$9500
6. Central Ave from Great Plain Ave(from Marked Tree when Central is rebuilt) to Newton Line Note:Lanes are already in place. Similar to Great Plain Ave, fog lines are already in place. There should be bicycle stencils marked every ¼ mile in the middle of the lanes. Arrows should mark the proper direction for bicycle travel (with traffic). We recommend placing one "Needham Bikeway" sign in the stretch between Great Plain Ave and Forest, Forest and Hunnewell, Hunnewell and Webster St and Webster Street and the Newton line.
- 8 signs:\$1000
 - Striping already in place
7. West Street from Central Ave to Great Plain. At 30'- 32', West Street is wide enough for a 3 foot bicycle lane in each direction. However, given the steep hill, we doubt that this road would be used except by the most experienced cyclists. Total length of road:4000 feet
- 2 Signs: \$250
 - Striping:\$4000
8. Fair Oaks Park . This is a beautiful road. However, given the low volume of traffic we doubt that bicycle lanes are needed. We do recommend that one Needham Bikeway sign is placed in each direction.
- 2 signs:\$250

Other streets that will be part of the Needham Bikeway

1. Kingsbury. Kingsbury goes by the high school and the volume of traffic is fairly low. One "Share the Road" sign should be placed in each direction.
 - 2 signs:\$250
2. High Rock. High Rock is also a beautiful road. Parts are fairly wide (36') and traffic volume is low. We recommend that one "Share the Road" sign should be placed in each direction
 - 2 signs:\$250
3. Manning Ave. Since Manning runs parallel to Webster, it provides another option for cyclists that want to travel North/South. We recommend that one "Share the Road" sign should be placed between Great Plain Ave and Brookline and another between Brookline and High Street
 - 4 signs:\$500
4. Brookline St. Brookline goes past the Mitchell School and provides an East/West route from Highland Ave to Greendale. We recommend that one "Share the Road" sign should be placed in each direction.
 - 2 signs:\$250
5. Rosemary St(by the high school, pool and library). Interestingly, Rosemary Street between Webster and Highland is marked with a green "Bike Route" sign. Rosemary is a key route to bring bicyclists to the library, Memorial Park and Rosemary Pool. We recommend that one "Share the Road" sign should be placed in each direction between Webster Street and Highland Ave and Highland Ave and Nehoiden Street.
 - 4 signs:\$500
6. Charles River Road. Charles River Street is a major route from the South Western part of town to Dover and Natick.
 - 4 signs:\$500
7. Kendrick St.

Kendrick Street is a vital cycling commuter route into Boston, Newton and Brookline. It is vitually the only safe, cycling friendly route over Route 128 for miles around. The reconstruction plans must include making Kendrick Street more cycling friendly. A 5' wide bicycle lane in each direction and Needham Bikeway or Share The Road signs would be ideal. A paved 12' wide off road path would also be acceptable.

 - 2 signs:\$250
8. Great Plain Ave between Beaufort and Nehoiden (not sure what to do in the town center). The plans call for this road to be rebuilt in a manner similar to the rest of Great Plain Ave in the near future. When that happens, the recommendations listed above for Great Plain will apply to this stretch.

In the short term, we recommend that "Share the Road" signs are placed on this stretch of road.

- 2 signs:\$250

We also recommend that "Share The Road" signs be placed at the town entrances.

- 11 signs:\$1375

Total Costs

- 65 Signs=\$8125
- Striping:\$34,750
- Total cost: \$42,875

Needham Bikeway Routes

Proposed Implementation Phases

-  Phase 1: Add signage to existing bike-friendly streets
-  Phase 2: Striping and signage
-  Phase 3: Requires widening



needham bikes



Watch for Cyclists



Share the Road

