

Appendix
Newton Bicycle Network:
Routes, Priorities, Schedule and Cost*

The following table identifies the roads specified as bicycle routes in the *Newton Bicycle Network Plan* to establish priorities and a schedule and to estimate the costs for completing the physical infrastructure of Newton's primary bicycle network from 2012 through 2016. The estimated total minimum cost is \$499,419 for 94.23 bicycle route miles at \$5,300 per mile, an average of \$99,883.80 per year over the five years projected to install the network.

Except for Langley and College Roads as indicated, the estimate

encompasses one bicycle lane in each direction, a total of two lanes on each road.

The estimates are not based on surveys, assessments or analyses to determine the specific requirements for each or any of the listed streets. They are based only on an assumed equivalent-mileage allocation of the evidently available annual funding.

The estimate further assumes that only a minimum of the expenditures projected by U.S. Department of Transportation (U.S. DOT) guidelines will be required to pay for the labor and materials to

install optimum bicycle facility accommodations on all of Newton's 94.23 bicycle route miles, including planning and design, roadway surface preparation and other alterations, purchasing and applying paint and other markings, procuring and installing signage and traffic signals, and other labor and materials required to ensure bicycling in Newton is safe, convenient and attractive into the future.

Newton Bicycle Network
Priorities, Schedule, Routes and Cost

Priority	Year	Route		Cost @ \$ 5,300.00 per mile		Annual Total
		Road	Miles	Route	Cumulative	
1	2012	Commonwealth Ave	12.6	\$66,780	\$66,780	\$99,534
2	2012	Center St	6.18	\$32,754	\$99,534	
2	2013	Beacon St	8.92	\$47,276	\$146,810	\$91,796
3	2013	Washington St	8.4	\$44,520	\$191,330	
4	2014	Commonwealth Ave Carriage Lane	12.6	\$66,780	\$258,110	\$95,930
5	2014	Walnut St	5.5	\$29,150	\$287,260	
6	2015	Parker St	2.68	\$14,204	\$301,464	\$105,735
7	2015	Watertown St	4.8	\$25,440	\$326,904	
8	2015	Winchester St	3.3	\$17,490	\$344,394	
9	2015	Brookline St	2.52	\$13,356	\$357,750	
10	2015	Needham St	1.62	\$8,586	\$366,336	
11	2015	Langley Rd (1 way)	1.1	\$5,830	\$372,166	
12	2015	College Rd (1 way)	0.33	\$1,749	\$373,915	
13	2015	Crafts St	3.6	\$19,080	\$392,995	
14	2016	Dedham St	2.72	\$14,416	\$407,411	
15	2016	Eliot St	1.4	\$7,420	\$414,831	
16	2016	Grove St	3.6	\$19,080	\$433,911	\$106,424
17	2016	Hammond Pond Pkwy	3.76	\$19,928	\$453,839	
18	2016	Lexington St	4.2	\$22,260	\$476,099	
19	2016	River St	1.6	\$8,480	\$484,579	
20	2016	Nonantum Rd	2.8	\$14,840	\$499,419	
FIVE YEAR TOTAL:			94.23	\$ 499,419		\$499,419

* Alexander D. Blumenstiel, Ph.D., a retired employee of the United States Department of Transportation, John A. Volpe National Transportation Systems Center, independently prepared this Appendix on a volunteer basis at the City of Newton Bicycle Coordinator's request. It represents the author's opinion based on limited data and is not a recommendation.

If these assumptions are realistic, Newton's costs for the 94.23 bicycle infrastructure miles could be at the lower end of the U.S. DOT Federal Highway Administration's (FHWA's) range of "... approximately \$3,100 to \$31,000 per kilometer (\$5,000 to \$50,000 per mile), depending on the condition of the pavement, the need to remove and repaint the lane lines, the need to adjust signalization, and other factors".¹

However, the realism of these assumptions and, therefore, the sufficiency of such funding to meet Newton's specific requirements remain to be determined.

¹ U.S. Department of Transportation Federal Highway Administration, Pedestrian and Bicycle Information Center. <http://www.walkinginfo.org/engineering/roadway-bicycle.cfm><http://www.walkinginfo.org/engineering/roadway-bicycle.cfm>.

"It is most cost efficient to create bicycle lanes during street reconstruction, street resurfacing, or at the time of original construction."