



Many Bikeway Abutters Forgo Trail Barriers

By Leah Brams and Vincent Stanton Jr.

City planners, economists, and sociologists have published many studies of the impact of recreational trails on home values, crime and other quantifiable events. But the true experts on recreational trails, it could be argued, are the people who live next to them. They have experienced the positive and negative aspects firsthand, in some cases for decades.

To learn what trail abutters think, one could conduct interviews—and that has been done—or one could study how they have behaved, on the theory that actions speak louder than words. Abutters are free to plant trees and shrubs or erect fences and walls to separate their house from the trail. Homeowners' choices of landscaping elements can reveal their attitudes towards an adjacent path.

For example, it seems fair to assume that a history of trail-associated crime or vagrancy would eventually lead to more fences and walls, and that they would be built higher and stronger in proportion to the degree of perceived threat. Likewise, trail-associated noise and privacy concerns might be addressed by planting trees and shrubs, especially evergreens that provide year-round shielding.

To investigate abutters' choices of natural and physical barriers we studied the Minuteman Bikeway in Arlington. We found that just over half of homes and businesses along the Bikeway are within 50 feet of the trail, yet few homeowners have put in fences, walls, or dense evergreen plantings. Apparently, abutters do not feel they need to make special efforts to protect their property from path users.

The Minuteman Bikeway

The Minuteman Bikeway runs for about nine miles through Arlington and Lexington and about one mile through Bedford. The trail opened in 1992, so abutters have had 21 years to adjust to the flow of bicyclists, walkers, and in-line skaters.

For this article we catalogued trees, bushes, fences, walls, and other landscaping features along the Minuteman Bikeway in Arlington, measuring their height, distance from the trail, and other properties to determine the degree of screening they provide to abutting properties. Careful inspection and photographic documentation of barriers viewed from the trail were complemented by analysis of overhead images from Google Earth, a program that allows precise

Barriers Along Minuteman Bikeway by Building Type

Type of Building	Number	No Barrier	Chain-Link Fence	Wood Fence	Wall
Single-Family Home	66	30%	46%	21%	6%
Two-Family Homes	99	23%	42%	34%	1%
All Buildings	238	31%	46%	23%	2%

Totals are greater than 100 percent due to buildings with multiple fence types. One house had two fences, another had a chain link fence anchored in a concrete wall. For complete data, see www.belmontcitizensforum.org.

measurements to be made on satellite photographs.

In Arlington, the Minuteman Bikeway passes through 12 types of zoning districts, including zones where only single-family houses are permitted, zones that allow high-density apartments, major business zones, and industrial zones. The trail is flanked by 238 abutting buildings, about 70 percent of which are single- or two-family homes.

The average distance from the edge of the paved trail to an abutting building is 51 feet. Not surprisingly, commercial buildings are closest

to the trail, with an average distance of 17.4 feet, very close to the property line. All other types of building average 50 to 59 feet from the trail (with the exception of three-family houses, which are closer, but only three abut the trail so the sample size is tiny). There is not much variation in building distances along the trail: 81 percent of the 238 abutting buildings are within 75 feet of the trail, including 86 percent of single-family houses and 72 percent of two-family houses.

Fences and Walls

No fence or wall separates 65 of 238 buildings from the trail, including 30 percent of single-family houses and 23 percent of two-family houses. Of the 165 buildings that do have a barrier, about two thirds are chain-link fences and one third wooden fences (over 90 percent picket fences). Solid concrete or stone walls are rare (2.1 percent). None of the 73 condominium, apartment, commercial, or municipal buildings have walls.

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In many trail segments, a single type of fencing—almost always chain link—runs continuously behind multiple houses. The location of fence posts suggests that property boundaries were not a consideration in fence construction. Twelve fence segments extend past at least four houses; the longest extends past 14 houses on Margaret Street. The fences in many of these areas appear old and are deteriorating. They may have been erected by the Boston & Maine Railroad Company, which ran trains along what is now the Minuteman Bikeway until 1981. Old land plans recorded with the Middlesex Registry of Deeds indicate fences along parts of the railroad right-of-way.

The average fence or wall height is 60 inches; 78 percent are between 45 and 70 inches high; only one is taller than 87 inches. Because nearly two thirds of barriers are chain-link fences, and

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Extensive foliage covers trail



Trail is visible through branches

VINCE STANTON JR./GOOGLE EARTH

Vegetation along the Minuteman Bikeway and abutting houses just north of Lake Street, Arlington, on satellite photographs from June 18, 2010 (L) and April 17, 2008 (R). The white line in the right photograph illustrates how distances from houses to the Bikeway were measured.

because the average fence is five feet high, only 13 fences and one wall provided significant visual shielding, and only five fences blocked more than 20 percent of the building as viewed from the trail. In six cases, garages partially shielded views of houses; in four cases, a house was partially screened by its location above and set back from a steep slope.

Gates

Fences built before the Minuteman Bikeway opened in 1992 almost certainly did not include gates; there is no reason to access a live train line from private property. It seems reasonable to conclude that the gates that exist today were built after 1992. Gates are only possible if there is a fence or wall, of course—31 percent of buildings abutting the trail have no fence or wall—and only if the slope of the land adjacent to the trail is compatible with a path from the house to the trail. At 11 houses, the slope is so steep that a path from the back yard to the trail would be impassable.

Taking account of those constraints, 33 of 152 buildings (22 percent) that could have gates do have gates, including 24 percent of single-family houses and 20 percent of two-family houses. (See table on page 4.) Some houses have elaborate gates with landscaping around the entrance.

A gate suggests engagement with the trail; having no barrier may suggest either engagement or indifference. Altogether 45 percent of buildings abutting the trail had either no barrier or a barrier with a gate, including 51 percent of single-family houses and 40 percent of two-family houses.

Trees and Shrubs

The average single-family house is 47 percent hidden by vegetation, and the average two-family house is 46 percent hidden based on observations made in July and August 2013.

One way to estimate the degree to which property owners have sought to increase visual shielding provided by trees and bushes is to measure the fraction of coniferous plants.

Gates Along the Minuteman Bikeway by Building Type

Building Type	Number	With Fence	Gate Possible	With Gate
Single-Family Home	66	46	37	24%
Two-Family Home	99	76	74	20%
All Buildings	238	163	152	22%

“Gate Possible” indicates properties where the slope is not too steep for a gate to the Bikeway. The “With Gate” percentage is calculated based on the “Gate Possible” totals.

Surprisingly, 96 percent of trees and bushes along the Minuteman Bikeway are deciduous and therefore provide little shielding from mid-November till mid-May. This is evident in from satellite photographs which show that the trail is completely blocked by the leaf canopy in June, but easy to see in April.

Apartment and multi-unit condo buildings have the highest fraction of coniferous trees and bushes, but still they still only account for 11 to 12 percent of vegetation.

A second way to estimate a property owner’s interest in visual shielding is to count how often trees or shrubs are planted in an arrangement designed to block the view of the adjacent building. For example, a row of closely planted yews can block any view of what is behind them. Only 8 percent of single-family homeowners and 14 percent of two-family homeowners have planted anything—even low bushes—in an organized pattern. On the other hand, 40 percent of apartment buildings and 45 percent of multi-unit condo buildings have organized plantings, including coniferous plants.

Conclusions

Buildings of all types, including homes, are quite close to the Minuteman Bikeway. Just over 50 percent of all abutting buildings are within 50 feet of the edge of the 12-foot-wide trail.

Despite their proximity to the trail, most homeowners have not erected physical barriers or planted coniferous trees to improve shielding since the Minuteman Bikeway opened in 1992.

These observations suggest that abutters have low levels of concern about vagrants, intruders, or even noise. That inference would be weakened if homes along the Minuteman Bikeway turned over quickly, or were predominantly inhabited

by renters, but, as will be explored in a subsequent article, it turns out that is not the case.

To see detailed and complete tables and graphs of the survey data, see www.belmontcitizensforum.org

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Bike Path Barrier Sources

A good summary of studies of abutter attitudes to recreational trails can be found in a 2008 masters thesis from the University of Cincinnati (see pages 17-18). www.americantrails.org/resources/economics/littlemiamipropvalue.html

Arlington GIS map: www.mapsonline.net/arlingtonma/index.html

Arlington zoning map: www.arlingtonma.gov/public_documents/ArlingtonMA_Maps/ZoningMap_11x17.pdf

Google Earth is available as a free download from: www.google.com/earth/download/ge/agree.html

More tables and data from this study are available at www.belmontcitizensforum.org. An Excel spreadsheet with all recorded observations is available from the authors on request. Contact info@belmontcitizensforum.org.