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entity responsible for
transportation decision-
making for the 101 cities
and towns in the MPO
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Programming

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City of Newton

City of Somerville

Town of Bedford

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MEMORANDUM

To: Transportation Planning and Programming Committee

March 28, 2011

From: Cathy Ann Buckley

**Re: Comparative Estimates of Peak-Period Ridership on Proposed
Multi-use Trails**

This memorandum is in response to a request from the Transportation Planning and Programming Committee made at its March 10, 2011, meeting. Presented here is information regarding the comparative estimated use of trails being proposed in the region's long-range plan.

There are four trails proposed for the long-range plan: Border-to-Boston, Northern Strand, and the Bruce Freeman and Assabet River Rail Trails. All of these proposed trails are components of the state's Bay State Greenway, as identified in the 2008 *Massachusetts Bicycle Transportation Plan*. Estimates of usage of these four trails were done by comparing the population, number of employed residents, and number of employees located near the proposed trails with the comparable numbers for existing trails. Counts on the existing trails were used to estimate future usage on the proposed trails.

The MPO's bicycle-pedestrian database was perused to find data for several trails that were collected simultaneously during a weekday peak period, as that time period would reflect commuter usage. On Tuesday, July 15, 2008, morning peak-period counts were done on the Nashua River Trail, the Minuteman Commuter Bikeway, and the Dr. Paul Dudley White Path in Cambridge and in Boston. The specific locations were as follows:

- Nashua River Rail Trail, Groton, Station Avenue,
- Minuteman Commuter Bikeway, Lexington, the Depot in Lexington Center,
- Dr. Paul Dudley White Path, Cambridge, near and west of Massachusetts Avenue, and
- Dr. Paul Dudley White Path, Boston, near and west of Massachusetts Avenue.

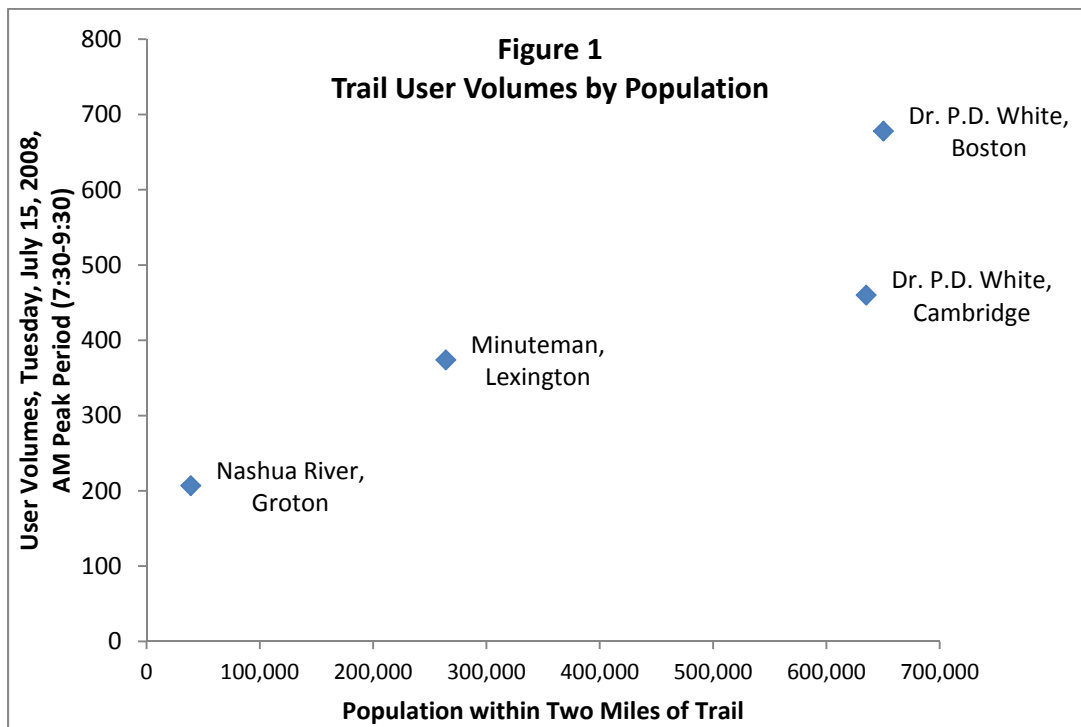
The weather that day was sunny, with temperatures around 80°F.

Table 1 indicates morning peak-period volumes of users for each trail (7:30-9:30 AM). Also included are the following for the area defined by two miles from the trail, for its entire length, on either side (four-mile width): population, employed residents, and employees, those working in the area.

Figures 1, 2, and 3 indicate the peak-period volumes as a function of each of the three parameters. As can be seen, the user volumes generally correlate with all three variables. The Nashua River Rail Trail has the lowest number of residents, employed residents, and employees within two miles, and also the lowest user volumes. The Dr. Paul Dudley White Path, Boston, has the highest volumes as well as the highest number of people living and working near the facility.

Table 1
Trail User Volumes (7:30–9:30 AM), and Population, Number of Employed Residents, and Number of Employees, within Two Miles of Facility

| Trail | Peak Period Users | Population | Employed Residents | Employees |
|------------------------|-------------------|------------|--------------------|-----------|
| Nashua River Groton | 207 | 39,100 | 19,900 | 13,800 |
| Minuteman Lexington | 374 | 264,100 | 140,300 | 136,700 |
| Dr. PD White Cambridge | 460 | 635,200 | 354,700 | 658,800 |
| Dr. PD White Boston | 678 | 650,400 | 360,600 | 671,300 |



The relationship is not linear. The population, the number of employed residents, and the number of employees along the Minuteman for example, are about an order of magnitude higher than along the Nashua River Trail, while the usage is not quite double. Likewise, the population and

number of employed residents along the Dr. Paul Dudley White Path are over twice those numbers for the Minuteman, and the number of employees along the Dr. Paul Dudley White Path is almost five times that number along the Minuteman. Compared to the volumes on the Minuteman, volumes on the Cambridge side of the Dr. Paul Dudley White are 25 percent higher and those on the Boston side almost twice as high.

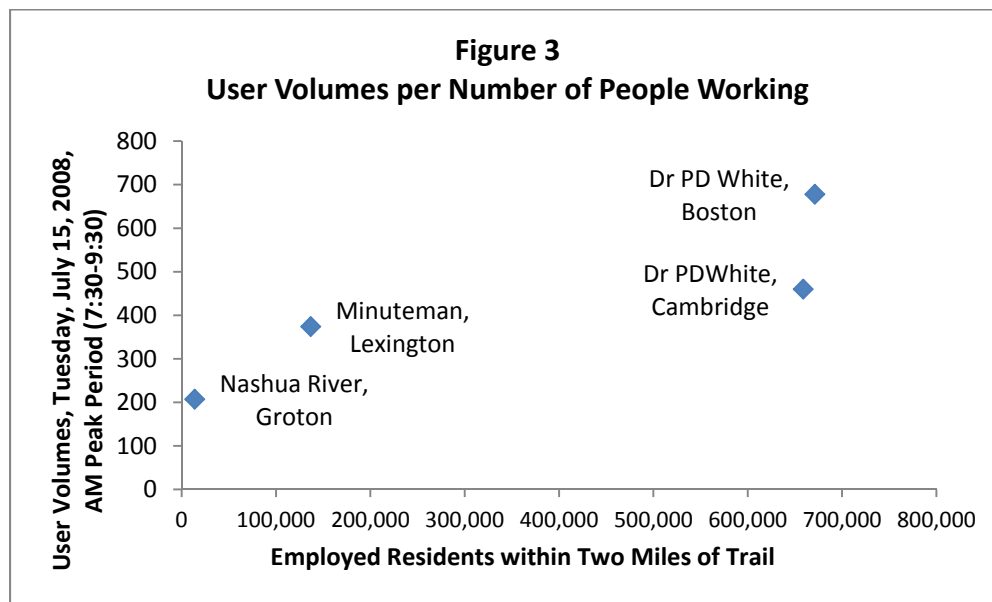
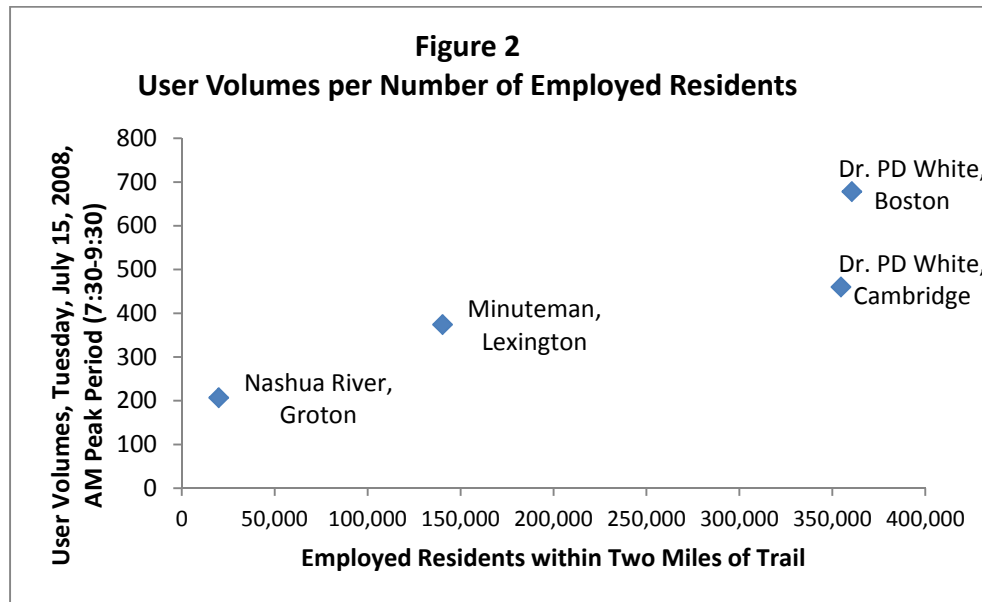


Table 2 shows the population, employed residents, and employees for the four proposed trails, for the area defined by two miles from the facility on the either side (four-mile width).

Usage on these proposed trails can be estimated by comparing the values above with the comparable values on the existing trails and interpolating trail usage volumes. Table 3 indicates estimates of the four trails by interpolating by population, by employed residents and by those employed within the trail's area.

Table 2
Population, Number of Employed Residents,
and Number of Employees, within Two Miles of Facility

| Proposed Facility | Population | Employed Residents | Employees |
|--------------------------|-------------------|---------------------------|------------------|
| Border to Boston | 129,200 | 67,100 | 63,000 |
| Northern Strand | 470,600 | 244,100 | 156,100 |
| Bruce Freeman | 57,700 | 26,700 | 27,400 |
| Assabet River | 73,100 | 37,600 | 26,100 |

Table 3
Trail Usage Estimates, AM Peak Period, Based on Population, Number of Employed
Residents, and Number of Employees, within Two Miles of Facility

| Proposed Facility | By Population | By Employed Residents | By Employees | Average |
|--------------------------|----------------------|------------------------------|---------------------|----------------|
| Border to Boston | 280 | 290 | 290 | 290 |
| Northern Strand | 510 | 500 | 400 | 470 |
| Bruce Freeman | 230 | 200 | 210 | 210 |
| Assabet River | 240 | 220 | 200 | 220 |

The estimates using population, employed residents, and employees yield close results for three of the trails. Only the Northern Strand estimate based on number of employees is lower than those using the other two methods. The average of the three methods for each trail is also shown in the table: 210 peak-period users for the Bruce Freeman Rail Trail, 220 for the Assabet River Rail Trail, 290 for the Border to Boston, and 470 for the Northern Strand.

These estimates ought to be viewed as very rough ones, for several reasons. First, data from only one day were used. Second, counts done at one point on a given trail were used, and volumes vary along the length of a trail. Third, these are estimates of present usage. Given an increasing awareness of such issues as health and climate change, non-motorized mode shares in the future might increase significantly.

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