

# Have Rail Trails Increased the Value of Your Home?

Ella Hartenian (2011), Tanya Hakim (2012), Nicholas Horton, Department of Mathematics and Statistics, Smith College



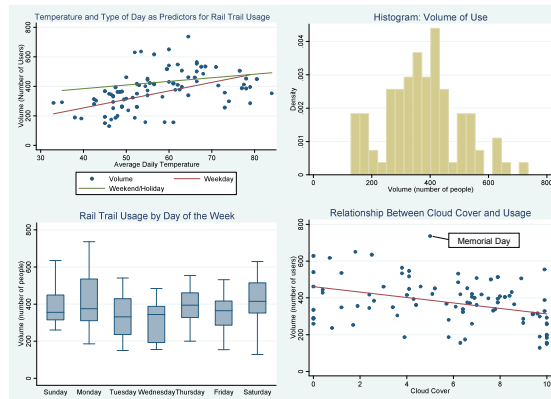
## Predictors of Rail Trail Usage

### Introduction:

The purpose of this study was to analyze the number of users of the Francis Ryan Northampton City Bikeway (Norwottuck Rail Trail, Northampton section) and to statistically measure the effect that the day of the week, the average temperature and the cloud cover have on the number of users.

### Methods:

- Data Collection From Pioneer Valley Planning Commission (PVPC), north of Chestnut Street in Florence, MA
- Measurements taken from April 5, 2005 to November 15, 2005
- A laser sensor recorded a user when the beam was broken by someone passing the data collection station
- Each day was coded as either a weekday or a weekend/holiday
- Cloud cover and average daily temperature were also measured

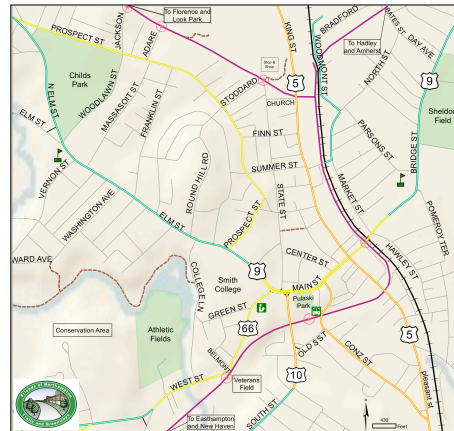


### Results:

The linear regression model found that average temperature ( $p < 0.001$ ), cloud cover ( $p < 0.001$ ) and type of day ( $p = 0.006$ ) each had a statistically significant relationship with the volume of users on the rail trail, holding all other predictors in the model constant. In addition, the interaction term between temperature and day was statistically significant ( $p = 0.016$ ), indicating that the association between temperature and trail usage was stronger on weekdays.

### Discussion:

This study found a positive relationship between rail trail usage in Northampton, MA and average daily temperature. Our study also found a negative relationship between usage and cloud cover. We found that usage is higher on weekends and holidays than on weekdays, holding all other variables constant. But, on weekdays, temperature has more of an association with usage than on weekends/holidays.



## Home Values & Proximity to Trail

### Introduction:

In the past few decades there have been many conversions of rail road tracks to paved pathways. In 1983 Northampton created such a trail. This study set out to determine if homes have increased in value due to their proximity to the paved pathways in Northampton, taking into account the different characteristics of each home and their starting price.

### Methods:

- Housing attribute information – previous price, sale price in 2007, number of bathrooms, number of rooms, number of bedrooms, number of garage spaces, square footage and acreage – was obtained for the 106 houses sold in Northampton, MA in 2007
- Estimates of sell price and price estimate as of December, 1998 were obtained from zillow.com during the week of December 1, 2008
- Distance from the rail trail was calculated in two different ways using the “my maps” feature on Google maps - one following existing roads, and one “as the crow flies”
- Houses were grouped by their proximity to the trail
  - One group for the 38 within an eight minute walk of the trail (0.4 miles at 3 mph pace)
  - Another group for those twenty minute or farther away from the trail (1 mile)
- We used a regression model to compare houses within an eight minute walk to those farther away, controlling for previous price and house characteristics
- We also did tests with propensity scores which yielded similar results (not reported here)



### Results and Discussion:

This study of all of the homes sold in Northampton, MA in 2007 shows that homes within an eight minute walk of the rail trail appreciated more than houses farther away, controlling for previous price and other house characteristics. On average, homes within an eight minutes walk of the trail appreciated by \$28,226 more than homes sold during the same period that are farther away from the trail ( $p < 0.001$ , 95% CI = \$13,864-\$42,588).

### Acknowledgements:

Rail Trail Usage project derives from joint work with Tiffany Kozash and Emily Ratner. Data comes from a Pioneer Valley Planning Committee report (pvpc.org).

Thanks to Jon Caris for his invaluable support and help putting the maps together in the Smith College Spatial Analysis Lab, to Judith Cardell for her consultation, and to Craig Della Penna for useful comments and suggestions.