

# **Analysis of User Survey Data on Extant Sections of the Naugatuck River Greenway Trail**

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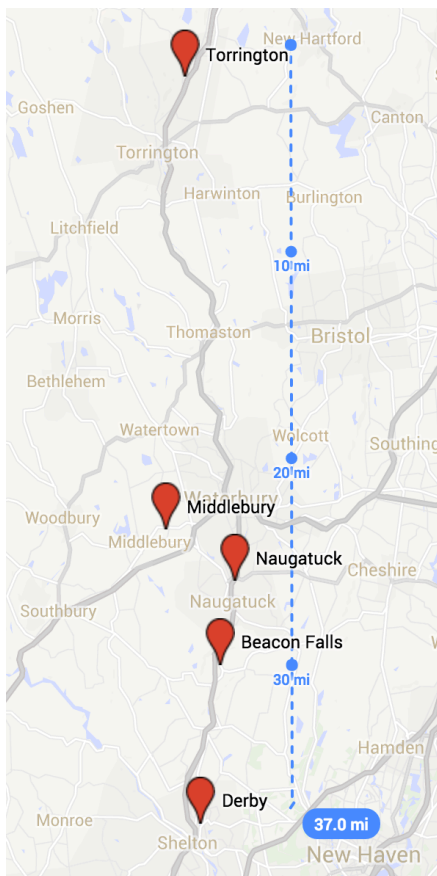




## **Overview**

The Naugatuck River Greenway Intercept Survey, completed in October, 2015 offers insights into trail use in the state of Connecticut on small, completed sections of the Naugatuck Greenway Trail. This analysis seeks to inform the Naugatuck Greenway Economic Impact Study and ongoing completion of the 44-mile proposed trail which will intersect parts of Torrington, Litchfield, Harwinton, Thomaston, Watertown, Waterbury, Naugatuck, Beacon Falls, Seymour, Ansonia and Derby. Intercept data was collected at trailheads in the communities of Naugatuck, Middlebury, Derby, Beacon Falls and Torrington. The trail sections in Middlebury and Torrington are currently not proposed sections of the Naugatuck Greenway but represent nearby trails with similar characteristics (and there are proposals to make these contiguous). Intercept sites spanned the length of the proposed trail route and are shown on the map below.

### **Map 1 Survey Intercept Sites**



The survey tool (Appendix A) included questions completed by the interceptor including time of day, apparent gender, group size, and activity. Questions completed by trail users included trail use times and seasons, trail related expenditures, transportation methods, age, income and suggested trail improvements. Users of the trail were intercepted in two-hour windows on twelve separate days throughout the month of October. These times included both weekday and weekend dates in the morning and afternoon to best represent accurate trail usage. Days and times for data collected were selected based on best practices developed by the National Bicycle and Pedestrian Documentation Project as well as preliminary infrared counts on trail points conducted in August 2015. Interceptors included staff of the Naugatuck Valley Council of Governments as well as active volunteers recruited from local trail organizations. Protocols for interceptors were developed by UConn and the staff of the Naugatuck Valley Council of Governments. To ensure consistency in survey protocols, training occurred when volunteers were on the trail with COG staff. One question regarding group gender was not included in this analysis due to unexpected inconsistencies in data collection. A total of 383 intercepts

were completed. Response rates varied by question and are given in the charts below.

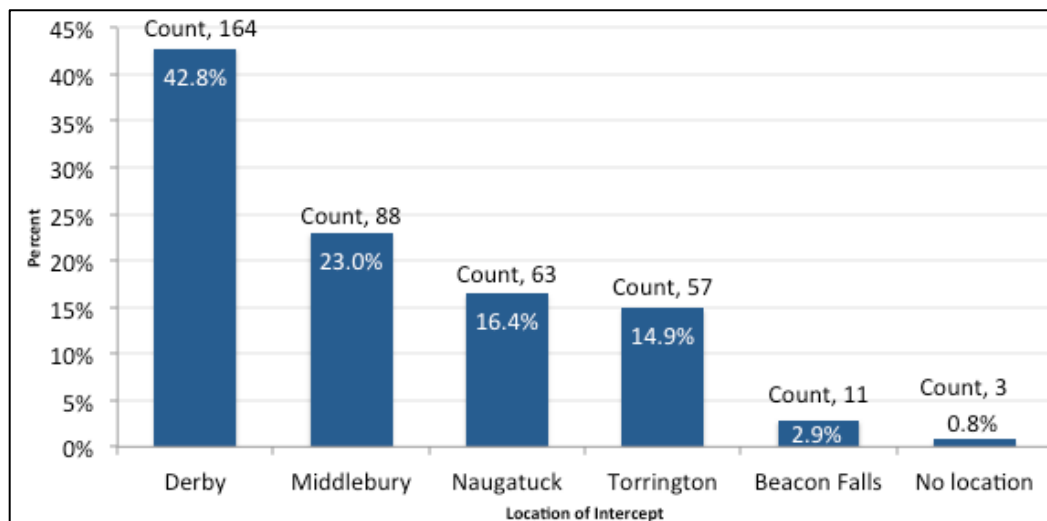
### **Location of Intercept**

There was a wide range in the volume of responses by location. Chart 1 shows the highest volume of surveys collected of individual users was in Derby with 164 respondents (42.8 %) and the lowest in Beacon Falls with 11 respondents. All other analysis of the Beacon Falls data below should be viewed in light of this extremely small sample. Over the course of the twelve intercept dates there were six weekday and six weekend dates from October 6-25, 2015. The

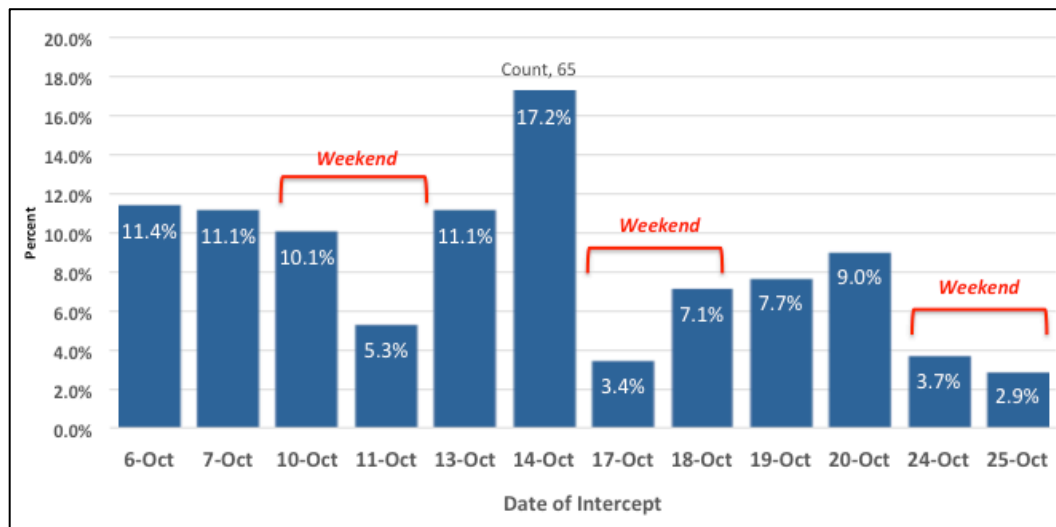


number of intercepts collected declined in the last week across all collection sites but otherwise remained within a count range of +/- 20. This shift can most likely be attributed to the seasonal change in weather occurring in the latter portion of the month. Some unseasonably high mid-month temperatures and fall outdoor events held across the region may explain spikes in respondent rates on the 13<sup>th</sup> and 14<sup>th</sup>.

**Chart 1: Surveys by Intercept Site (n=383)**



**Chart 2: Percent Respondents by Date (n=378)**



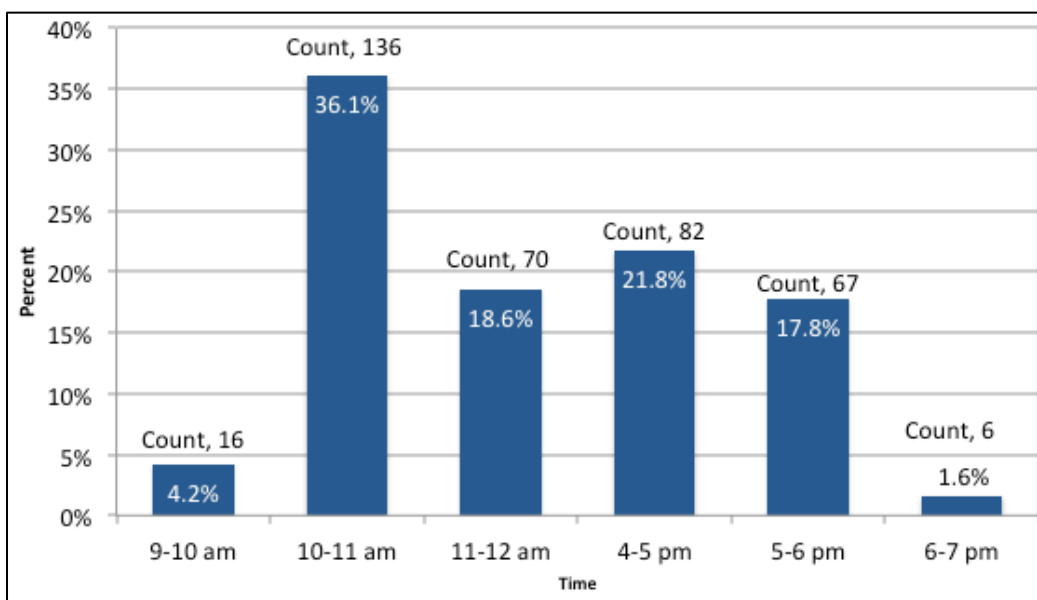
### **Time of Intercept**

The time period with the greatest percent of intercepts occurred between 10:00-11:00 am (36.1%) followed by the range between 4:00-5:00 pm (21.8%). One factor to consider in reviewing this data is that all surveys were completed in October when sunset occurs at 6:33 pm in the beginning of the month and drops to 5:41pm at the end of the month. Daylight savings time and the considerable shift in early morning and evening light throughout other parts of the year may have a significant effect on use, particularly on trails used by daily



exercisers, those working full time, or commuters. It is important to note that on several collection data collection times were adjusted to prevent data collection during dark hours so this data alone cannot be used to precisely represent overall daily trail use patterns. Given the evident bump in intercepts during after work hours it is likely that many of these trail segments see increased use in morning hours. The intercept portion of the study did not include data collection times in the early morning so the supplemental infrared trail counts are a better source of data for determining if peaks occur during before and after normal work hours (see trail count data).

**Chart 3: Respondents by Time of Day (n=377)**



### **Gender and Group Size**

Respondents to the survey were overwhelmingly female (59.7%). This was consistent across communities with the exception of Naugatuck, which demonstrated a slightly larger majority of users were male (52.5%) Naugatuck was the only community with a percentage of women larger than males at a rate of 52.5% to 47.5%. The average group size across all was 1.54 people.

### **Age and Income**

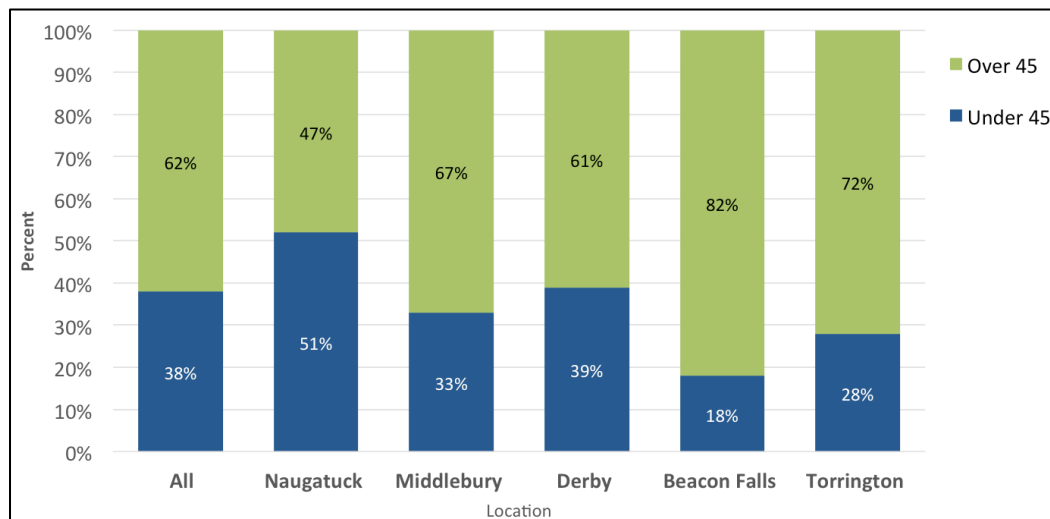
Overall, the demographics of trail users were consistent with the demographics of the population of the region. Of the 374 individuals who responded to the survey question regarding age, the majority were over the age of 45 (62%). Chart 4 shows this split by community. A total of 19% were over the age of 65, 26% were between the ages of 55-64 and 17% between the ages 45-54. Chart 5 shows the age of respondents by intercept location and age bracket. According to the Naugatuck Valley Regional Profile produced by the Council of Governments<sup>1</sup> based on US Census and American Community Survey data, 14.6% of residents in

<sup>1</sup> Naugatuck Valley Regional Profile 2014, Accessed at <http://nvcogct.org/sites/default/files/Naugatuck-Valley-Regional-Profile-2014.pdf>

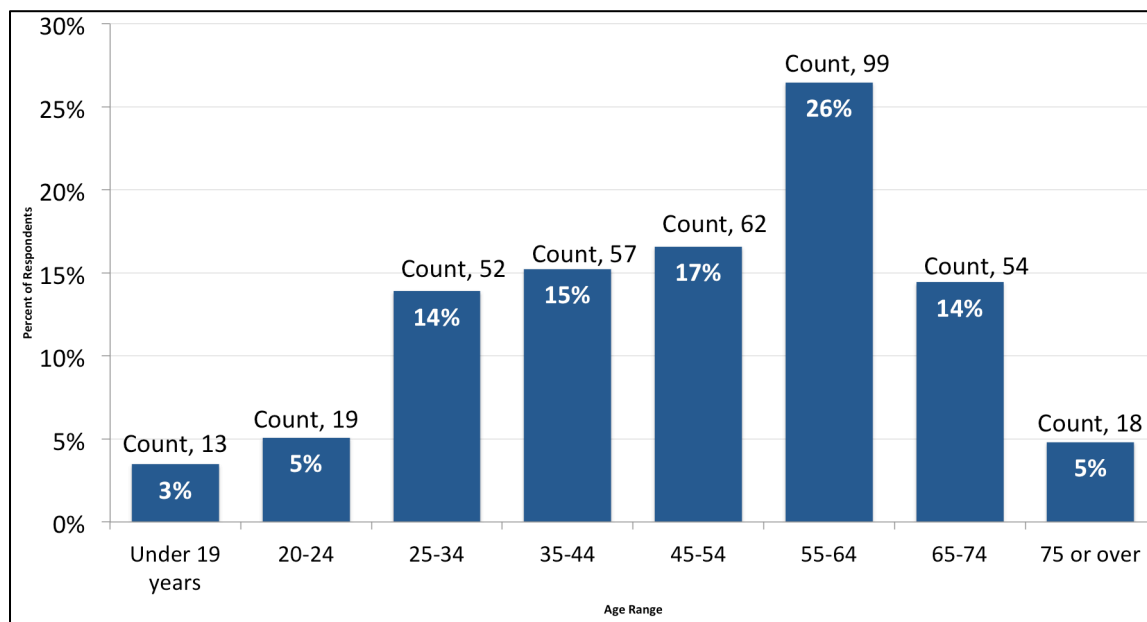


the region served by the trail are over the age of 65. This indicates that trail users, the majority of which were local, seem to generally reflect the age of the population in the region. These findings were also relatively consistent across all surveyed community locations. While young people under the age of 18 were not asked to complete this survey, 12.4% of all groups included users that appeared to be (based on interceptor judgment) under the age of sixteen.

**Chart 4: Age of Respondents Above and Under Age 45 (n=374)**



**Chart 5: Respondents by Age (n=374)**

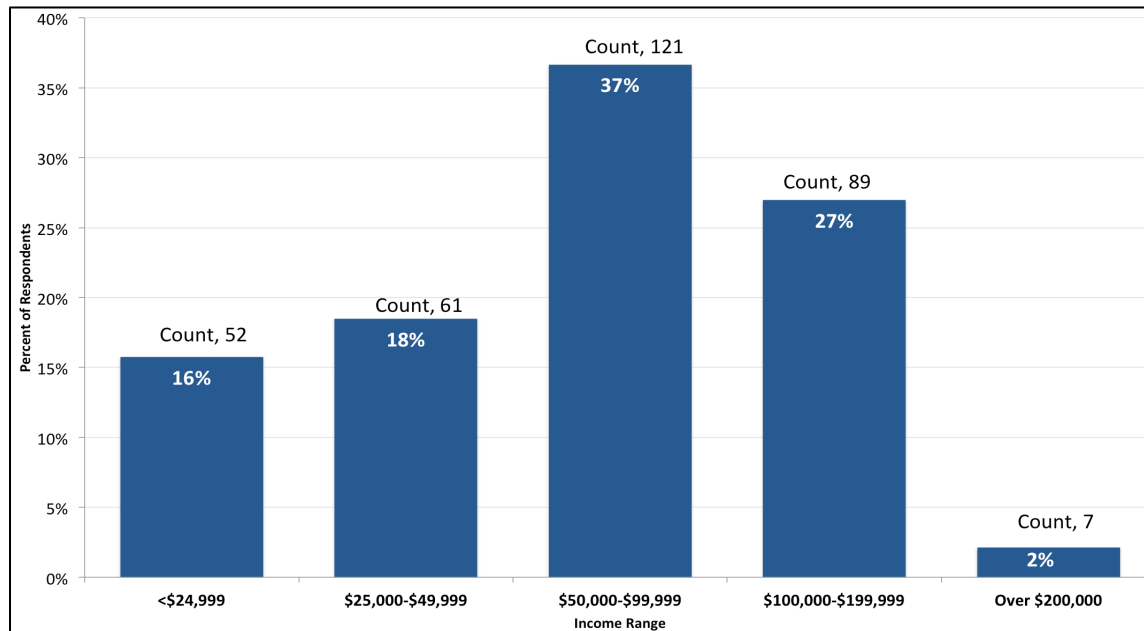


The majority of respondents (66%) indicated their household income was \$50,000 or more. In the state of Connecticut as a whole, 73.5% of households report income of greater than



\$50,000<sup>2</sup>. That these trail users have slightly lower incomes than the state as a whole is consistent with the lower incomes in the region. The median household income in the region, \$64,700, is lower than state of Connecticut's annual median income of \$69,899. Chart 6 displays the overall respondents by income range.

**Chart 6: Respondents by Income Range (n=334)**



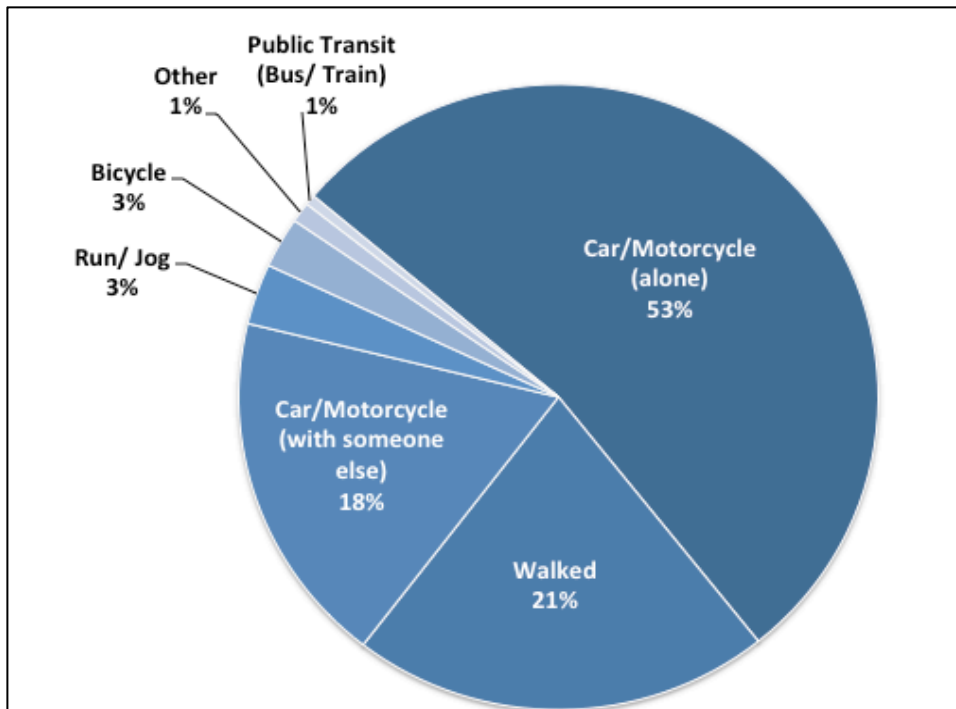
### ***Method of Transportation to the Trail***

The majority of trail users (53%) accessed the trail by car or motorcycle in which they travelled alone. The next most common mode was walking to the trail (21%). A comparison of these two methods of transportation across communities is shown in Chart 8 below. Naugatuck and Beacon Falls were the only two survey sites where the majority of users walked (61% and 55% respectively) versus using a car to access the trail. This may reflect the overall density of housing and residential areas close to these sections of the trail. Torrington, Derby, and Middlebury users were far more likely to drive to the trail. These three sections also include parking facilities which may accommodate more drivers. Based on the analysis of zip code data shown in Table 1 users of the Torrington section of the trail traveled the farthest to reach the trail, an average of 3.10 miles, followed by users in Middlebury who traveled 2.01 miles.

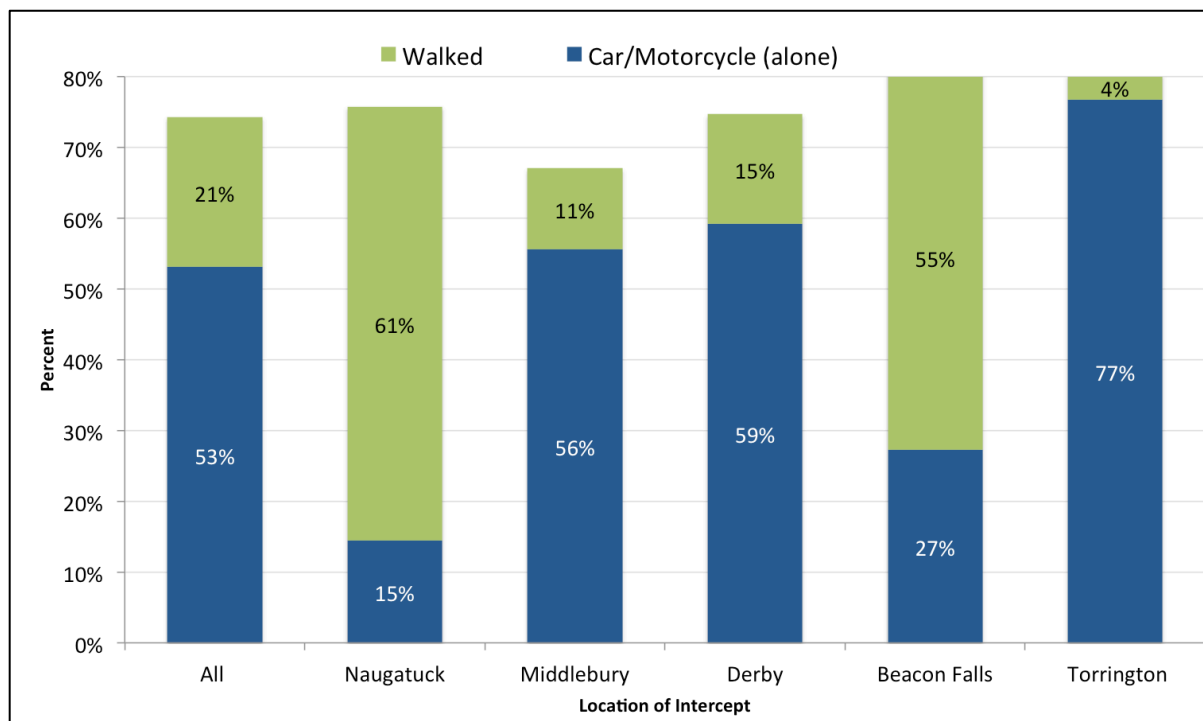
<sup>2</sup> American Fact Finder, 2014 US Census Data Accessed 3-2016 <http://factfinder.census.gov/>



**Chart 7: Method of Transportation to the Trail (n=382)**



**Chart 8: Method of Transportation to the Trail Single - Car Use & Walkers**





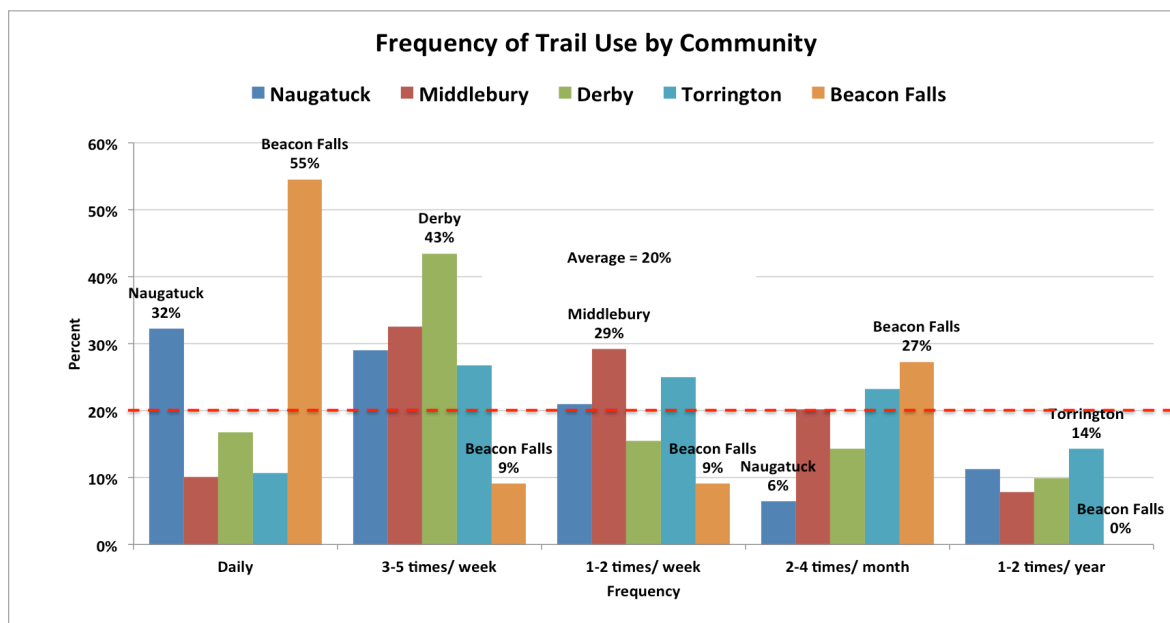
**Table 1: Average Distances Travelled in Home Zip Codes from Residence to Trailhead<sup>3</sup>**

	Home Zip Code	Square Miles	Average Distance of Resident to Trailhead
<b>Naugatuck</b>	06770	16.72	1.97
<b>Middlebury</b>	06762	17.41	2.01
<b>Derby</b>	06418	5.07	1.08
<b>Beacon Falls</b>	06403	9.67	1.50
<b>Torrington</b>	06790	41.57	3.10

### ***Frequency and Seasonality of Use***

The majority of these sections were used on a very regular basis. Across all communities 74% of all users used the trail at least one or more times per week. 35% of respondents reported using the trail 3-5 times per week. The Naugatuck section had the greatest percentage of daily users (55%). Infrequent users represented a very small percentage, 14% or under, for all sections of the trail. Chart 9 shows the frequency of trail use by community.

**Chart 9: Frequency of Trail Use by Community**



<sup>3</sup> From Carstensen, F. & P. Gunther. *Preliminary Findings on Generation of Amenity Benefits from Extant Naugatuck River Valley Trail Segments*, February 2016.



**Table 2: Frequency of Trail Use by Community**

Frequency of Trail Use	Naugatuck	Middlebury	Derby	Beacon Falls	Torrington	All
Daily	32%	10%	17%	55%	11%	18%
3-5 times/ week	29%	33%	43%	9%	27%	35%
1-2 times/ week	21%	29%	16%	9%	25%	21%
2-4 times/ month	6%	20%	14%	27%	23%	16%
1-2 times/ year	11%	8%	10%	0%	14%	10%
Average						20%
Grand Total	100%	100%	100%	100%	100%	100%

Overall respondents made use of these trail sections fairly consistently through the spring, fall, and summer. Fifty-three percent of users (53%) indicated they used the trail in the fall months. Forty-four percent (44%) used the trails in the spring 48% in summer. Only 1.3 % of users indicated use of the trail in the winter. Since this survey was conducted in the fall, it is likely that there is response bias in the types of users surveyed. Those users who might the trails in the winter (cross country skiers for instance) may not also be summer, fall, or spring users.

#### ***Primary Activity on the Trail***

Users were asked to indicate any of their primary uses on the trail during that visit. Exercise was by far the primary activity for the majority of trail users, with 88% of all users indicating this use. As shown in Table 3, twenty five percent (25%) indicated they used the trail for recreational purposes. The Naugatuck section of trail seemed to have the most diverse range of users with significantly more users than any other section indicating use of the trail for travel to work (10%), travel to shopping areas (13%), sightseeing (10%), and travel to school (2%). Other uses on the Naugatuck section of the trail were mainly dog walking. It is notable that the Naugatuck and Derby sections were the only areas where any users indicated use for travel to school or work.

**Table 3: Primary Activity on the Trail by Community**

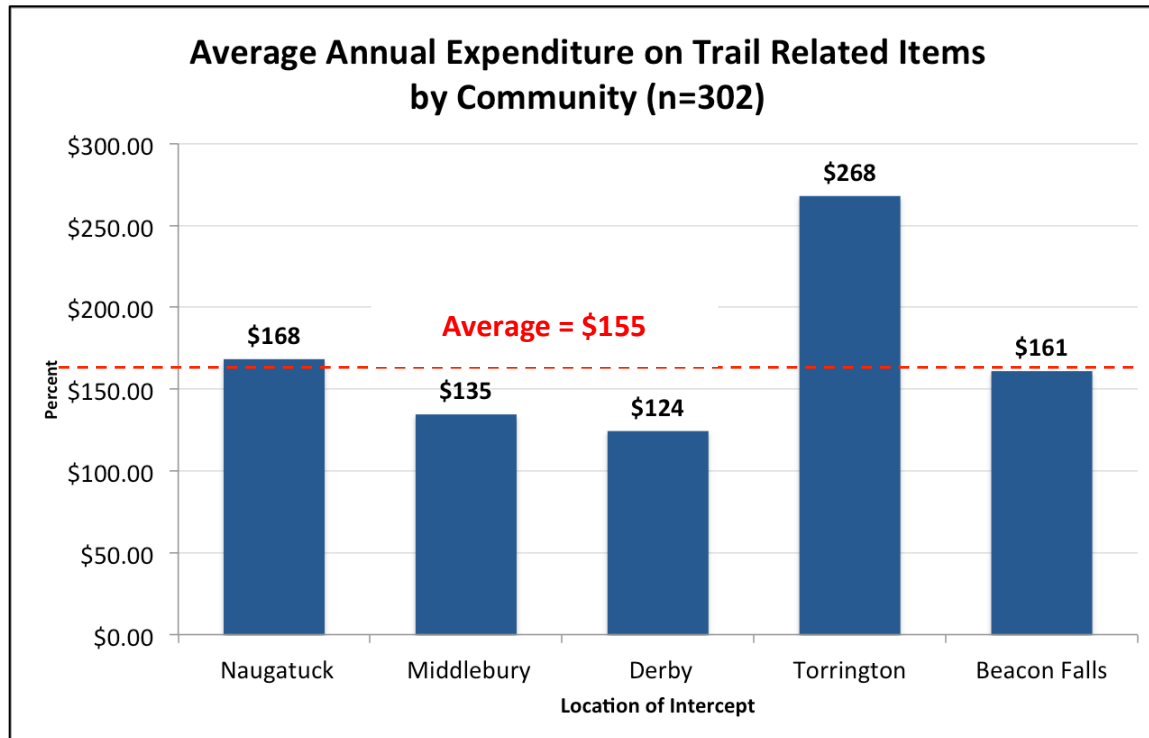
Primary activity	Naugatuck	Middlebury	Derby	Beacon Falls	Torrington	All
Exercise	58%	91%	93%	100%	98%	88%
Recreation	27%	28%	24%	27%	21%	25%
Travel to Work	10%	0%	1%	0%	0%	2%
Travel to School	2%	0%	1%	0%	0%	1%
Travel to Shopping	13%	0%	1%	0%	0%	3%
Tourism/ Sightseeing	10%	2%	6%	0%	2%	5%
Other	21%	1%	5%	27%	4%	7%



### **Trail Spending**

The survey included a number of questions regarding average expenditure by trail users both annually and per visit according to data collected by type of expense. As shown in the graph below the average amount spent by users annually on trail related items is \$155 with the lowest amount reported in Derby with expenses of \$124 and the highest from Torrington reporting \$268. Seventy-eight percent (78%) of respondents answered this question in the survey.

**Chart 10: Average Annual Expenditure on Trail Related Items by Community (n=302)**





Users were also asked how much they spent on that particular visit to the trail. Thirty-eight percent (38%) of those intercepted question reported spending money during their visit. The average spending per visit was \$11.76. This is consistent with other trails in the region with high numbers of local users. For instance, a 2009 comparison study of expenditures on twenty rail trails throughout the northeast noted that trails with a predominance of local users (defined as within the county of the trail) had per visit expenditures ranging from \$3.71<sup>4</sup> to \$13.00.<sup>5</sup>

**Chart 11: Average Per Visit Expenditure By Category (n=166)**

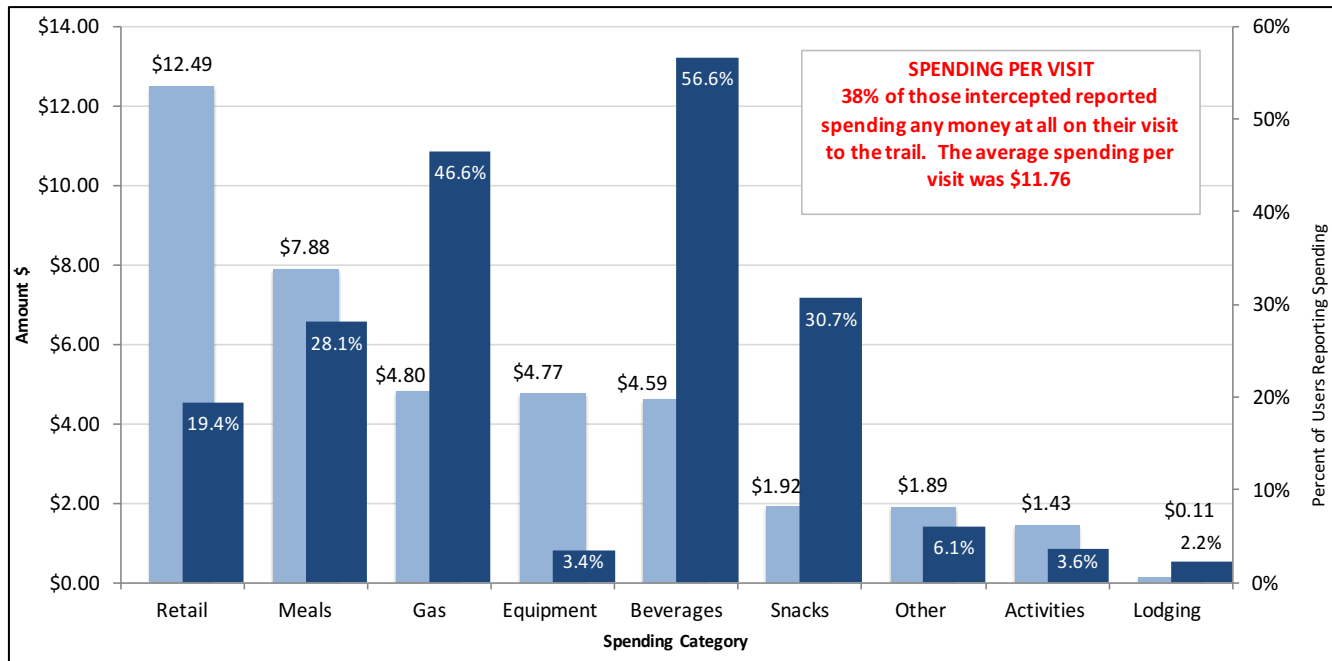


Chart 11 above compares the average spending in each category (left axis) and the percent of users who had spending in each category (right axis). For example, fifty six (56.6%) percent of visitors reported spending on beverages but the average spending on beverages was only \$4.59 per visit. In contrast, while only 19.4% of users indicated spending on retail items, the average retail spending per retail customer was the highest of all categories at \$12.49. This may suggest that increasing the percent of retail expenditures could increase overall spending by those using the trail. While other trail studies have noted significant expenditures and impacts created by lodging and other activities, it is not surprising that lodging accounted for a trivial amount of current spending on these trails given the very local nature of users. Completion of the

<sup>4</sup> *Trail Utilization Study: Analysis of Trail Systems within the Oil Heritage Region: Allegheny Valley Trails Association, 2006 cited in Tomes, P. (2009) Trail User Surveys and Economic Impact A Comparison of Trail User Expenditures. Rails-to-Trails Conservancy. Accessed 3-2016 at [www.railstotrails.org](http://www.railstotrails.org)*

<sup>5</sup> *2008 Trail Town Economic Impact Study (Phase II Trail User Survey), Progress Fund and Laurel Highlands Visitor Bureau cited in Tomes, P. (2009) Trail User Surveys and Economic Impact A Comparison of Trail User Expenditures. Rails-to-Trails Conservancy. Accessed 3-2016 at [www.railstotrails.org](http://www.railstotrails.org)*



integrated trail, or even large fully connected portions of it, has the potential to attract and/or retain overnight recreationalists.

### **Perceptions of the Trail and Improvements**

Respondents were asked if they consider the trail an asset to the community and if they felt the trail has increased property values in the area. Ninety-seven percent ( 97%) of respondents considered the trail an asset to their community. Two percent (2%) did not and 8% were not sure. Seventy four percent (74%) felt the trail had increased property values, 5% said it had not and 21% were not sure.

Respondents were also asked what could be improved about the trail. Six percent of respondents said "nothing." The word cloud below shows the prevalence of key words in the remaining responses. As shown, the most prevalent responses were regarding winter use, lengthening the trail, dog related issues (issues both positive and negative), lighting, and either lack of or comments about the care of bathroom facilities.

**Chart 12: Suggested Trail Improvements (Cleaned Data)**





## **Conclusions and Summary**

This document summarizes the results of the trail intercept survey conducted as part of the Naugatuck River Greenway Economic Impact Study. While some comparisons to other studies have been noted, such comparisons from trail to trail are particularly difficult given variations in data collection and analysis methods as well as the inherent variations in the unique nature of each trail, location, and market area. In addition, many studies completed prior to 2007 may not accurately reflect user trends and spending patterns which changed significantly in New England as a result of the economic recession.

### Highlights:

- **The majority of these sections were used on a very regular basis.** Across all communities 74% of all users used the trail at least one or more times per week.
- **Trail users reflect the general demographics (age and income) of the region.** Of the 374 individuals who responded to the survey question regarding age, the majority were over the age of 45. The majority of respondents (66%) indicated their household income was \$50,000 or more. The majority of trail users were female.
- **The majority of trail users (53%) traveled by car or motorcycle alone to access the trail followed by walking to the trail (21%).** A comparison of these two methods of transportation across communities is shown in Chart 8 below. Naugatuck and Beacon Falls were the only two survey sites where the majority of users walked
- **Overall respondents made use of these trail sections fairly consistently through the spring, fall, and summer.** Fifty-three percent of users (53%) indicated they used the trail in the fall, 44% in the spring, and 48% in summer. Only 1.3 % of users indicated use in winter.
- **Exercise was by far the primary activity for the majority of trail users (88%) followed by recreational uses (25%).** The Naugatuck and Derby sections were the only areas where any users indicated use for travel to school or work.
- **The average amount spent by users annually on trail related items is \$155** with the lowest amount reported in Derby with expenses of \$124 and the highest from Torrington reporting \$268.
- **Sixty-two percent (62%) of users reported spending any money during their visit. The average spending per visit was \$11.76** - consistent with other trails in the region with a high number of local users.
- **Ninety-seven percent ( 97%) of respondents considered the trail an asset to their community.** Seventy four percent (74%) felt the trail had increased property values, 5% said it had not and 21% were not sure.
- **Suggested improvements to the trail included lengthening, reviewing dog use policies on the trail, lighting and bathroom improvements.**



## Appendix A: Intercept Survey Tool (2 pages)



### NAUGATUCK VALLEY COUNCIL of GOVERNMENTS

49 Leavenworth Street, 3rd Floor, Waterbury, CT 06702 • 203-757-0535 • 203-735-8688 • nvcogct.org # \_\_\_\_\_

I am a volunteer conducting a survey on behalf of the Naugatuck River Greenway Steering Committee, University of Connecticut and the Naugatuck Valley Council of Governments.

We are conducting a short survey about your use of this trail and it will take about 5 minutes of your time.

Would you like to complete the survey?

#### To Be Filled Out By Surveyor:

1. Interview site: \_\_\_\_\_
2. Interceptor initials: \_\_\_\_\_
3. Date: \_\_\_\_\_
4. Primary activity (circle):  
Walk          Bike          Run/Jog          In-line skating  
Walking Dog   Walking Stroller          Equestrian  
Other \_\_\_\_\_
5. Time: \_\_\_\_\_
6. Gender: M \_\_\_\_\_ F \_\_\_\_\_
7. Number in group: \_\_\_\_\_
8. Number in group <16 years: \_\_\_\_\_





## Greenway Trail User Survey

*None of the information gathered in this survey will be used to identify you individually. All data will be kept confidential and will be aggregated for our analysis.*

1. What is your home Zip Code? \_\_\_\_\_

2. How did you get to the trail today?

- ☐ Car/Motorcycle (alone)
- ☐ Car/Motorcycle (with someone else)
- ☐ Public Transit (Bus/ Train)
- ☐ Bicycle
- ☐ Walked
- ☐ Run/ Jog
- ☐ Other \_\_\_\_\_

3. How often, on average, do you use this trail?

- ☐ Daily
- ☐ 3-5 times/ week
- ☐ 1-2 times/ week
- ☐ 2-4 times/ month
- ☐ 1-2 times/ year

4. During which seasons do you generally use the trail? (select all that apply)

- ☐ All Year
- ☐ Summer
- ☐ Fall
- ☐ Winter
- ☐ Spring

5. What is your primary purpose on the trail today? (select all that apply)

- ☐ Exercise
- ☐ Recreation
- ☐ Travel to work
- ☐ Travel to school
- ☐ Travel to shopping
- ☐ Tourism/ sightseeing
- ☐ Other \_\_\_\_\_

6. About how much do you spend each year on goods or services related to your trail use? Include gear, clothing, equipment rental, repairs, auto accessories, etc.? \$ \_\_\_\_\_

7. On this visit, how much will you spend on the following (whole dollars):

- Beverages \$ \_\_\_\_\_
- Snacks (energy bars, etc) \$ \_\_\_\_\_
- Meals at a restaurant \$ \_\_\_\_\_
- Gas \$ \_\_\_\_\_
- Retail (gifts, clothing, etc) \$ \_\_\_\_\_
- Equipment rental \$ \_\_\_\_\_
- Lodging \$ \_\_\_\_\_
- Nearby activities (recreation/ amusements) \$ \_\_\_\_\_
- Other \_\_\_\_\_ \$ \_\_\_\_\_

8. Do you consider the trail an asset to the local community?

- ☐ Yes
- ☐ No
- ☐ Not Sure

9. Do you feel that the trail has increased property values in the area?

- ☐ Yes
- ☐ No
- ☐ Not Sure

10. If there was one thing you could improve about the trail, what would it be?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

11. What is your age range?

- ☐ Under 19
- ☐ 20-24
- ☐ 25-34
- ☐ 35-44
- ☐ 45-54
- ☐ 55-64
- ☐ 65-74
- ☐ 75 or over

12. What interval best represents your household income?

- ☐ Under \$24,999
- ☐ \$25,000 - \$49,999
- ☐ \$50,000 - \$99,999
- ☐ \$100,000 – \$199,999
- ☐ Over \$200,000