Miami Valley Trail User Survey Report

November 15, 2013
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Xenia, Ohio
Summary

- The survey process was conducted in the same manner as the 2009 survey, but with fewer survey/count locations.

- The two largest trail managing agencies in Montgomery County (Five Rivers MetroParks and the Miami Conservancy District) did not participate in the 2013 survey. These absences skewed the survey data away from Montgomery County residents and trail users. All Montgomery County results are from the Washington-Centerville Park District survey on the Iron Horse Trail.

- Numerical comparisons between the surveys are not presented because of the smaller number of surveys collected in 2013. Percentage comparisons are reported, instead. County by County breakdowns are not presented in the 2013 report because of the relative under-survey in Montgomery County.

- An extensive review of the on-site counts is not included in this report in lieu of a broader review of the trail-managing agencies’ automated counts. This review will be reported separately.

- While fewer surveys were collected in 2013 (569 vs. 1,754) the survey findings were very similar. Statistical comparisons of survey results found very few statistically significant changes in survey results throughout the questions.
  - Trail usage questions (primary activity, length of use, time of use, purpose of use) showed no significant difference in responses from 2009.
  - As in 2009, over 90 percent of survey respondents answered either excellent or good when rating trail maintenance, safety and security, and cleanliness.
  - Three questions showed statistically significant shifts in responses: Age Group, Road Cycling and Trail Knowledge.
    - There was an increase in the portion of the survey respondents who reported their age as 46 or above.
    - The percentage of trail cyclists who reported that they also are road/street cyclists increased from 49 percent to just under 60 percent.
    - Fewer survey respondents indicated that they learned about the trail from the newspaper (9.3 % to 4.9%), and more respondents indicated that they learned about the trail on the internet (8.9% to 13%).

- As in 2009, the Rails-to-Trails methodology for calculating economic impact from the trails network was employed. In 2013, the use of automated trail counters by all park agencies enhanced the estimates of total annual trail visits. Total regional economic impact from the network is estimated at just over $13 million per year.
Background

An annual count program was recommended in the Comprehensive Local-Regional Bikeway Plan (CLRBP) approved by the MVRPC Board of Directors in December 2008. The high-priority program elements from Chapter 6 included a recommendation that MVRPC perform “annual bicycle user counts and surveys at set locations to provide for evaluation over time.” The plan suggests that MVRPC take the lead role in standardizing a regional approach to counts and surveys, and handle tracking and reporting. In this way, the region can track ridership trends over time, and evaluate the impact of new projects and policies.

Trail user surveys represent a first step in fulfilling the intent of the CLRBP recommendation. Over time, as more and more on-street bicycle facilities are built in the Miami Valley, a regular program of roadway bicycle counts would provide regional and local decision makers valuable information about the usage of these facilities - and the potential value of additional facilities. This is the second regional trail user count and survey. A prior survey project was completed in 2009.

Since 2009 most of the trail managing agencies, as well as some cities have installed automated counters at numerous locations along the trails. These automated counts are a significant improvement over the two-day hand counts performed as a part of the two trail surveys. Automated counters are operated in all seasons, 365 days per year and provide a direct tally of all uses. While the counters do not differentiate between user types (bicyclists vs. walkers for example), having daily, even hourly counts provide invaluable data about usage patterns, including commuting patterns.

Trails

The Miami Valley is home to over 240 miles of connected multi-use trails, following two major river corridors and several former railroad corridors. Built over the past 45 years, these trails are the ongoing responsibility of numerous agencies (mostly park-management agencies) across the three counties covered in this year’s project.

There were 7 counting sites over three counties on most of the major, connected trail segments. The trails included were:

- Great Miami River Recreation Trail (2 count locations)
  - Lock Nine Park
  - Dye Mill Road, Concord Township
- Ohio-to-Indiana Trail (1 count location)
  - French Park
- Little Miami Scenic Trail (2 count locations)
Train Station, Yellow Springs
Xenia Station, Xenia
Iron Horse Trail (1 count location)
Whipp Road (north and south of the trail crossing), Centerville
Ohio To Erie Trail (1 count location)
Community Park, Cedarville

The trail network is better connected today than in 2009, particularly in Miami County. In the prior survey, there were still disconnected pieces of the Great Miami River Trail in Miami County, but in 2013 only one gap remains, roughly at Peterson Road. Therefore, having fewer count and survey locations still provided a good sampling of the users on the count days. Unfortunately, a lack of participation within Montgomery County (specifically Five Rivers MetroParks and the Miami Conservancy District) left large portions of the Great Miami River Trail, and all of the Wolf Creek and Mad River Trails without coverage for this project.

The trail network has been built out over time, with the sections in downtown Dayton and along the Little Miami Scenic Trail having the oldest infrastructure. The trail conditions can vary from area to area in the region. All of the trails are classified as “shared use paths,” meaning that they are designed and open to many types of users: pedestrians, bicyclists, and users of mobility devices (e.g. powered chairs). All of the trails forbid the use of motorized vehicles; only Greene County allows horseback riding on their trails. The amount of connectivity is highest in the Greene County trails, moderate in the Miami County network, and lowest in Montgomery County where significant gaps in the Wolf Creek, Iron Horse and Stillwater Trails remain yet to be constructed.

**Partnerships**

Several agencies came together under the umbrella of the MVRPC Regional Bikeways Committee to plan and implement this count. Each agency is an owner and manager of a portion of the trail system, and was asked to provide their own volunteers to implement the count and surveys. MVRPC’s partners were:

- Centerville-Washington Park District
- City of Piqua
- Greene County Parks and Recreation Department
- Miami County Park District
Process

The count and survey process and forms closely followed a methodology published by the Rails-To-Trails Conservancy. The participating agencies agreed to use identical survey forms from 2009 in order to allow for comparisons to the prior results. The volunteers were recruited by individual agencies but all given the same training write-up provided by MVRPC staff. The “Regional Trail Survey and County Project Training Guide” is included (Appendix A) at the end of this document.

The partner agencies decided to hold the count and survey on a Sunday and a Wednesday in August to determine typical weekend and mid-week usage. The Sunday count took place on August 4, 2013 from 6:00 am until 9:00 pm. The Wednesday count was held on August 7, 2013 in most locations. In Piqua, the counts were each one week later, August 11 and 14, 2013.

Volunteers were stationed at the count locations in pairs, working 2.5 to 3 hour shifts running from 6:30 am until 9:00 pm. The trails are open during daylight hours, so the 14.5 hour day was needed. Blank samples of the Tally form and the Survey form are attached (Appendix B, Appendix C). Volunteers made continuous counts of all trail users as they passed the count location and made the survey forms available to users who wished to fill out a survey. Trail users had the option of taking the survey and mailing it directly to MVRPC, but the overwhelming majority of completed surveys were left with the volunteers.

The count tallies and surveys were collected by MVRPC staff and entered into a database for analysis. In total 569 surveys were collected from trail users on the two days of the project. In total 8,976 trail users were counted, resulting in a 6.3 percent survey rate. It should be noted that trail users may have been counted more than once if they passed more than one count site, and therefore the survey rate may be higher than 6.3 percent.

In Montgomery County, surveys were only collected on the Iron Horse Trail in Centerville. This section is physically isolated from the rest of the network as of the survey dates, and the users may not be representative of all Montgomery County trail users.

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### Table 1

<table>
<thead>
<tr>
<th></th>
<th>User Count</th>
<th>Survey Count</th>
<th>Percent Surveyed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greene</td>
<td>5,247</td>
<td>292</td>
<td>5.6%</td>
</tr>
<tr>
<td>Miami</td>
<td>2,866</td>
<td>164</td>
<td>3.9%</td>
</tr>
<tr>
<td>Montgomery</td>
<td>863</td>
<td>113</td>
<td>13.1%</td>
</tr>
<tr>
<td>Regional</td>
<td>8,976</td>
<td>569</td>
<td>6.3%</td>
</tr>
</tbody>
</table>

All of the largest trail managing agencies have installed automated counters at locations throughout the Miami Valley trail network. Instead of reviewing the findings of the hand counts done in conjunction with the 2013 survey, MVRPC will separately report on the data from the regional automated counter network. This report will be developed once all 2013 counter data is available.

#### 2013 Survey Report

Because the survey sample size in 2013 is considerably smaller than that of 2009, and is skewed away from Montgomery County, straight numerical comparisons between the surveys will largely be avoided in this report, while emphasizing percentage comparisons instead. Readers will see looking at the first two demographic questions (gender and age group) that even with the smaller sample the two surveys have very similar demographics, which increases the confidence that the other findings can be similarly comparable to the 2009 findings.

In addition, the 2009 survey report broke out much of the data by county. Because of the lack of Montgomery County data, this has not been done for the 2013 report.

The report is followed by four appendices. The volunteer training guide, survey and count forms are attached as appendices A, B, and C, respectively. Appendix D is a report of all the survey “Other” responses and the additional comments provided by survey takers. Questions 6, 9, 10, 12, 14, 15, and 16 each included an opportunity to supply additional information. These responses and the “Additional Comments” responses are recorded in Appendix D.
Question 1: What is your Zip Code?

The responses from this question are mapped in the figure on the next page. Just over 81 percent of surveys were completed by trail users from within the four-county region (Clark, Greene, Miami and Montgomery Counties). Just over 2 percent of surveys were filled out by trail users from outside of Ohio. The balance, about 16 percent were from Ohioans, but not from the Miami Valley region.

In 2009, 2.2 percent of responses were from outside of Ohio.

Piqua, Ohio
2013 Trail Survey Zip Codes

Survey Responses
- 1 - 4
- 5 - 10
- 11 - 17
- 18 - 38
- 39 - 54

469 survey responses (83.8%) were from within the four-county region. 12 survey responses (2.1%) were from outside Ohio.

Figure 1
Question 2: What is your gender?

Most (550) but not all of the 569 surveys included an answer to this question. Similar to the 2009 survey results the trail survey respondents were mostly men (58% to 42%). This represents a slight shift from 2009 when over 60% of respondents were male, however analysis shows this is not a statistically significant difference (95% confidence interval).

![Gender by Percent, Survey Comparison](image_url)

**Figure 2**
Question 3: Please identify your age group.

Responses to this question were provided by 563 of the 569 surveys collected in 2013. The data indicate that the survey respondents have skewed slightly older, with fewer responses in the four younger categories and more responses in the categories aged 46 and higher. Fully 71 percent of respondents (400 out of 563) in 2013 reported their age at 46 or above, compared with 66 percent (1,153 out of 1,742) in 2009. Analysis found this to be a statistically significant increase at the 95 percent confidence interval.

The population of survey takers is skewed toward the older age groups compared with the population in general of the Miami Valley. The chart on the following page presents 2010 Census data for age groups in four counties within the Miami Valley: Clark, Greene, Miami and Montgomery. Recall that 82 percent of survey respondents identified their home zip code as within these four counties. Because the survey procedure discourages having children complete the survey, the Census figures for children under 15 years of age are excluded from the chart. Therefore, for example, the population aged 35 to 44 represented 15.0 percent of the Miami Valley’s population aged 16 years and above. (Children under 15 represented 18.9 percent of the population in these Miami Valley counties according to the 2010 Census.)
In this figure, the age groupings are matched to those provided by the Census, and are off by 1 year from those used in the survey forms. Thus the 15-24 category here is roughly comparable to (but not exactly the same as) the 16-25 category used in the survey. As compared to the general population, younger age groups, those under 45 years of age are underrepresented in the population of trail survey respondents. Those in age groups at age 45 and above are over represented in the population of trail user survey respondents.

Because the age profiles of the two surveys are so similar, it may be reasonable to conclude that the age profiles of the survey respondents is a fair representation of trail users. The average age of the 2013 survey takers was estimated at 49 for women and 51 for men. This final chart breaks out the age and gender for the 2013 survey respondents.
Question 4: Were any children under the age of 15 with you today?

Similar to 2009 results, only a small percentage of trail users were accompanied by children. Fewer than 10 percent of survey respondents indicated they were with children, and this follows logically from the prevalence of higher age groups surveyed (see question 3). The decrease from 11.6 percent “yes” responses in 2009 to 8.4 percent in 2013 was found to be a statistically significant reduction.

![Accompanied by Children, Survey Comparison](image)

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No</strong></td>
<td>1550</td>
<td>521</td>
</tr>
<tr>
<td><strong>Yes</strong></td>
<td>203</td>
<td>48</td>
</tr>
</tbody>
</table>

Figure 6
Question 5: How often, on average, do you use the trail?

The responses to this question are used to complete the frequency calculations used in the economic impact analysis. Responses from Questions 13 through 15 are also used for the economic impact analysis.

Responses in 2013 were similar but showed some differences with a lower percentage of daily users and a higher percentage of responses for “A couple of times a week.” Still, as in 2009, over 70 percent of survey respondents reported using the trails at least once per week.

![Frequency of Use, by Percentage](image-url)  
*Figure 7*
Question 6: What is your primary activity on the trail?

This question allowed respondents to choose all options that applied to their use of the trail. Results in 2013 showed a very similar pattern to 2009, with bicycling the dominant activity for trail use. As in 2009, over 90 percent of survey respondents indicated at least one of biking, walking or running as an activity they pursue on the Miami Valley Trails.

![Primary Activities, by Percentage](image)

Activities reported under the “Other” category included photography, fishing, volunteering and geocaching.
Question 7: Generally, when do you use the trail?

This question showed no significant change since 2009, as nearly 70 percent of respondents reported trail use “both” weekends and weekdays. However, the balance of respondents showed a decrease in weekday-only use and a higher percentage of weekend-only users.

![Time of Use, By Percentage](Figure 9)

<table>
<thead>
<tr>
<th>Time of Use</th>
<th>2009</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekends</td>
<td>358</td>
<td>137</td>
</tr>
<tr>
<td>Weekdays</td>
<td>194</td>
<td>35</td>
</tr>
<tr>
<td>Both</td>
<td>1174</td>
<td>387</td>
</tr>
</tbody>
</table>
Question 8: How much time do you generally spend on the trail each visit?

This question showed some change compared to 2009, with longer trail outings (more than two hours) having a higher response rate. Statistical analysis indicates this is a significant increase in the response rate for longer duration use (95% confidence interval). This difference may be due to the lack of participation of Montgomery County trail managing agencies. In 2009 the shorter duration choices were more preferred in Montgomery County compared to the others; 45 percent of Montgomery County respondents chose durations of 60 minutes or less in 2009. That said, the survey responses in 2013 indicate that about 69 percent of trail users are spending more than an hour on the trail each visit.

![Length of Use, by Percentage](image)

Figure 10

Longer trail visits (more than one hour) were favored by all age groups save one: trail users aged 26 to 35. This group favored trail visits of 30 minutes to an hour, which may anecdotally explain their under-representation among survey takers. With less time to devote to trail activities, perhaps they did not want to stop to fill out a survey.
Question 9: Are you a member of a club or association related to your trail use?

As the chart below indicates, responses to this question were not noticeably different from responses in 2009. Statistical analysis indicates that 2013’s 11.6 percent response rate is not significantly different from the 9.1 percent response rate from 2009.

The most commonly mentioned club or association names were the Dayton Cycling Club, Cincinnati Cycling Club, Friends of Xenia Station, the Ohio River Road Runners Club, and the various park district volunteer trail patrol organizations.
Question 10: Would you consider your use of the trail to be for...

This question is seeking to get at why the survey respondent uses the trail. The options provided are:

- Recreation
- Health and Exercise
- Commuting
- Fitness Training (marathon or triathlon)
- Other

Each respondent is asked to pick only one response.

Results from 2009 and 2013 are very similar. In fact statistical analysis finds no significant difference between the two sets of results (95% confidence interval). Commuting represents the smallest share of use at about 4 percent of responses. The preponderance of responses were in the exercise, fitness, and recreation categories.

It may be worth considering allowing respondents to choose more than one response in the future based on the different ways they use the trails at different times.
Question 11: If you use the trail for bicycling do you also bike on streets and roads?

This question seeks to find out what portion of the trail biking community is also sharing the Miami Valley’s roads with motor traffic. The responses indicate an increase in those who do ride on both roads and trails in our region from 49 percent (2009) to just under 60 percent (2013) of survey respondents. The analysis finds this to be a statistically significant increase in the proportion of road cyclists surveyed (95% confidence interval).

![Bicycling on Streets and Trails](Figure13.png)
Question 12: How did you find out about the trail?

This question is seeking to discover what trail marketing approaches are most effective, or at least have the widest reach. Respondents were allowed to make more than one selection.

There are a couple of interesting comparisons between the 2009 and 2013 responses, and both were found to be statistically significant changes at the 95% confidence interval. First was the drop in newspaper responses from 9.3 percent of respondents in 2009 to 4.9 percent in 2013. This decrease mirrors anecdotal information about the drop in newspaper use, generally, and may be connected with the significant rise in responses indicating use of the Internet. “Internet Web Site” was chosen by only 8.9 percent of survey takers in 2009, but by 13 percent in 2013.
“Other” responses continued to be just about a fifth of all responses in the 2013 survey. The most common write-in description of “other” was “live nearby” the trail. There were also many “Other” responses that could be reasonably interpreted to be “Word of Mouth.”
Question 13: Has your use of the trail influenced your purchase of any of the following?

This question, in conjunction with questions 5, 14, and 15 are inputs to the economic impact analysis found in this report. This question explores purchases of hard, durable goods such as bicycles, clothing, footwear and similar type goods related to trail use.

The relative proportions of hard good purchases closely mirror the findings of the 2009 survey. The “nothing” response represented 27 percent and 31 percent of the responses, respectively (a difference
that was not statistically significant). The only change between the surveys that was a statistically significant difference was in the response rate for “Clothing,” which increased from 23 percent of respondents in 2009 to 35 percent in 2013.

The average of reported dollar spending on hard goods was $563.04.
Question 14: In conjunction with your most recent trip on the trail, did you purchase any of the following?

This question, in conjunction with questions 5, 13, and 15 are inputs to the economic impact analysis found in this report. This question explores purchases of soft goods such as beverages and foods on the respondents’ current trail visit.

The relative proportions of the various choices remained stable from the 2009 to 2013 surveys. The portion of “None” responses dropped from 56 percent to 53 percent – a difference not found to be
statistically significant – indicating that still more than half of trail users are not making purchases during trail use.

The average reported amount of money spent on soft goods was $15.78.
Question 15: Did your visit to the trail involve an overnight stay in one of the following accommodations?

This question, in conjunction with questions 5, 13, and 14 are inputs to the economic impact analysis found in this report. This question explores spending on hotels, bed and breakfasts, and campgrounds related to the respondents’ current trail visit. There were no statistically significant differences in the response rates for the two studies on this question.

![Figure 19: Trail-Related Overnight Stays, 2009](image19.png)

<table>
<thead>
<tr>
<th>Accommodation</th>
<th>2009 Overnight Stay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bed and Breakfast</td>
<td>19</td>
</tr>
<tr>
<td>Friend or Relatives Home</td>
<td>34</td>
</tr>
<tr>
<td>Motel/Hotel</td>
<td>44</td>
</tr>
<tr>
<td>Other</td>
<td>9</td>
</tr>
<tr>
<td>Campground</td>
<td>24</td>
</tr>
</tbody>
</table>

![Figure 20: Trail-Related Overnight Stays, 2013](image20.png)

<table>
<thead>
<tr>
<th>Accommodation</th>
<th>2013 Overnight Stay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bed and Breakfast</td>
<td>9</td>
</tr>
<tr>
<td>Friend or Relatives Home</td>
<td>14</td>
</tr>
<tr>
<td>Motel/Hotel</td>
<td>17</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
</tr>
<tr>
<td>Campground</td>
<td>13</td>
</tr>
</tbody>
</table>

The average accommodation duration reported by respondents in 2013 was 2.4 nights. The average reported cost per night for these overnight stays was $76.81.
Question 17: In your opinion, the maintenance of the trail is...

This question, and the two following, seeks judgments from the respondents about the quality of the trail experience on the Miami Valley Trails. As can be seen from the chart below, trail users are very satisfied with the overall maintenance of the trail facilities in the Miami Valley.

![View of Trail Maintenance Chart]

While well over 90 percent of respondents rated trail maintenance of the trails as either good or excellent, there was a statistically significant decrease in the portion of respondents rating the trails as excellent (from 61 percent to 52 percent). There were numerous comments regarding the condition of the portion of the Little Miami Scenic Trail owned and maintained by the Ohio Department of Natural Resources. Cracking and slumping issues between Richland and Hedges Roads are a serious concern for trail users.
Question 18: In your opinion, safety and security along the trail is...

This question, with questions 17 and 19, seeks judgments from the respondents about the quality of the trail experience on the Miami Valley Trails. As can be seen from the chart below, trail users are very satisfied with the overall safety and security of the trail facilities in the Miami Valley.

![View of Trail Safety](chart.png)

There was a statistically significant increase in the portion of respondents selecting “Good,” apparently at the expense of both the “Excellent” and “Fair” categories. As in 2009, over 90 percent of respondents rated the safety and security of the trails as either excellent or good.
**Question 19: In your opinion, the cleanliness of the trail is...**

This question, with questions 17 and 18, seeks judgments from the respondents about the quality of the trail experience on the Miami Valley Trails. As can be seen from the chart below, trail users are very satisfied with the overall cleanliness of the trail facilities in the Miami Valley.

![View of Trail Cleanliness](image)

There were no statistically significant differences in response rates between the two surveys. Well over 90 percent of survey respondents rated trail cleanliness as either excellent or good.
Findings: Economic Impacts

The survey and count project included elements that matched the methodology developed by the Rails-to-Trails Conservancy to measure the economic impact of trails. The methodology is described in the 2005 publication, “Trail User Survey Workbook,” available from the Rails-to-Trails web site. The method is designed to measure three separate aspects of economic activity related to trail usage: Hard Goods, Soft Goods and Overnight Accommodations. Hard goods are defined as purchases of goods that are used and depreciate over an extended period of time. Hard goods include bicycles, jogging strollers, running shoes and clothing, auto accessories (such as bike racks) and the like. Soft goods, in contrast, are purchased and consumed at once, typically foods, beverages and snack foods. The assessment of overnight accommodations attempts to measure the hotel/bed-and-breakfast or campground revenue from trail-related tourism.

Questions 5, 13, 13-A, 14, 14-A, 15, 15-A and 15-B each provided information that factors into the economic impact analysis. From these questions the following information was determined:

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Data Source</th>
<th>Data Analysis</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hard Goods % Usage</td>
<td>13</td>
<td>1 – (percent of “Nothing” response)</td>
<td>68.9%</td>
</tr>
<tr>
<td>Hard Goods Average Spending</td>
<td>13-A</td>
<td>Average of responses greater than zero</td>
<td>$563</td>
</tr>
<tr>
<td>Average number of trips per trail user per year</td>
<td>5</td>
<td>Calculation of overall average based upon weighted frequency responses (assumes seasonal use, i.e. less use in Winter)</td>
<td>8.3</td>
</tr>
<tr>
<td>Soft Goods % Usage</td>
<td>14</td>
<td>1 – (percent with no response)</td>
<td>47.3%</td>
</tr>
<tr>
<td>Soft Goods Average Spending</td>
<td>14-A</td>
<td>Average of responses greater than zero</td>
<td>$15.78</td>
</tr>
<tr>
<td>Overnight Accommodations % Usage</td>
<td>15</td>
<td>Percent of all responses that indicated an overnight stay.</td>
<td>8.3%</td>
</tr>
<tr>
<td>Average cost of accommodations per night</td>
<td>15-B</td>
<td>Average of responses greater than zero</td>
<td>$76.81</td>
</tr>
<tr>
<td>Average number of nights</td>
<td>15-A</td>
<td>Average of responses between 1 and 99</td>
<td>2.4</td>
</tr>
<tr>
<td>Unique Trail Users</td>
<td>5</td>
<td>The range of annual trail visits (from agency counts/estimate) divided by average number of trips per trail user per year.</td>
<td>79,000 to 107,000</td>
</tr>
</tbody>
</table>

Total trail visits estimates were developed for each separated section of the trail network. These estimates were derived from a number of sources. The basis of the estimate comes from count data

2 http://www.railstotrails.org/ourWork/trailBuilding/toolbox/informationSummaries/trailuser_surveys.html
provided by the trail managing agencies for sites with automated counters for the entirety of 2012. In addition, estimates were derived from partial year counts for 2013 for the Miami County Park District section of the Great Miami River Trail. Finally, estimates were made for the Piqua Section and the Iron Horse Trail in Centerville on the basis of the two day counts completed in conjunction with the survey. Estimates derived from partial counts were scaled up based upon the fraction of a full year the partial counts represented. For example, Miami County Park District provided counts for January through September. Full year counts from 2010 through 2012 found a very consistent result: by the end of September, each counter location had counted about 83 percent of what would end up as the annual total count. Therefore the partial count reported by Miami County Park District was scaled up assuming the current count is 83 percent of the annual number. A similar (though certainly less reliable) method was used to scale up the two-day counts in Piqua and Centerville.

The totals for the year are indicated in the table below, divided by managing agency.

<table>
<thead>
<tr>
<th>Agency</th>
<th>Annual Visits Estimates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Five Rivers MetroParks</td>
<td>243,145</td>
</tr>
<tr>
<td>Greene County Parks &amp; Trails</td>
<td>343,000</td>
</tr>
<tr>
<td>Miami Conservancy District</td>
<td>27,450</td>
</tr>
<tr>
<td>Miami County Park District</td>
<td>31,883</td>
</tr>
<tr>
<td>City of Piqua</td>
<td>51,405</td>
</tr>
<tr>
<td>Centerville-Washington Park District</td>
<td>47,549</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>772,353</strong></td>
</tr>
</tbody>
</table>

The automated counters provide a more reliable estimate of total uses on the trails than was available in 2009, though shortcomings remain. It is not possible to know how many users may have passed more than one counter per day; that is certainly possible on a bicycle. There is also no way to know how many users did not pass any counters. In addition, there are periodic failures of the counters with anomalous zero readings or outlier high readings.

The annual visits estimate is lower than what was used in 2009, but represents a conservative estimate of total trail visits for 2013.

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3 Trail visits for the Miami County Park District were estimated based upon a partial 2013 automated count (January 1 through September 30).
4 Trail visits for the City of Piqua section were estimated based on manual counts taken on the August 11 and 14 survey days.
5 Trail visits for the CWPD portion of the Iron Horse trail were estimated based on the manual counts made on the August 4 and August 7 survey days.
The figures listed in the tables above are inserted into the equations developed by the Rails-to-Trails Conservancy to estimate total economic impact from the trails, including purchases of hard goods, consumable soft goods, and lodging. The figures below detail the findings based upon the 2013 survey.

<table>
<thead>
<tr>
<th>Table 4</th>
<th>Annual Visits</th>
<th>Annual Visits</th>
<th>Annual Visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category</td>
<td>% Usage</td>
<td>Avg. $</td>
<td>Avg. Life</td>
</tr>
<tr>
<td>Hard Goods</td>
<td>68.89%</td>
<td>$563.04</td>
<td>6 years</td>
</tr>
<tr>
<td>Soft Goods</td>
<td>47.27%</td>
<td>$15.78</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 5</th>
<th>Unique Trail Visitors</th>
<th>Unique Trail Visitors</th>
<th>Unique Trail Visitors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category</td>
<td>% Usage</td>
<td>Avg. $</td>
<td>Avg of Nights</td>
</tr>
<tr>
<td>Overnight Stays</td>
<td>7.56%</td>
<td>$76.81</td>
<td>2.4</td>
</tr>
</tbody>
</table>

The tables provide three sets of estimates because of the uncertainty surrounding the total annual trail visits estimate. The center blue columns provide the economic impact estimate based upon the total visits estimate. The lower and higher estimates are simply derived from 15 percent lower and 15 percent higher estimates of total trail system visits.

Overall annual economic impact from the trails in the Miami Valley is estimated to be just over $13 million.