Who's on the Trail?

The Erie Canalway Trail User Count 2009

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Executive Summary

Extending 524 miles across New York, the Canalway Trail system brings economic, public health, tourism, and quality of life benefits to more than one million New Yorkers living in upstate canal communities. Anecdotal evidence suggests that the 366-mile Erie Canalway Trail, the most popular and well developed segment of the system, is heavily used by walkers and cyclists. In an effort to quantify and characterize that use, the New York State Canal Corporation and Parks & Trails New York instituted an annual Canalway Trail User Count.

In 2005 and 2006, the trail count was a loosely organized effort lacking any standard counting process. Beginning in 2007, the trail count was conducted following a protocol developed and tested by Greg Lindsey and colleagues at Indiana University. Trail user counts were undertaken at five places within eastern Monroe County in that year and again in 2008 and produced estimates of between 100,000 and 200,000 annual users.

In 2009, volunteers from the Friends of the Mohawk-Hudson Bike-Hike Trail conducted counts using the same protocol as in 2007 and 2008 and at the same time of peak weekday use, 6:30 p.m. to 7:30 p.m. Four trailheads were selected for counting within a paved, 12-mile suburban to urban stretch of Erie Canalway Trail in Schenectady and Albany Counties. Estimates of annual trail traffic ranged from almost 57,000 persons at rural Kiwanis Park in Rotterdam in Schenectady County to nearly 174,000 persons at the Niskayuna Train Station, a popular suburban Schenectady County trailhead. Annual trail traffic estimates of approximately 106,000 persons were obtained for an urban trail head adjacent to Schenectady Community College and 95,000 persons for the trail head at Colonie Town Park in suburban Albany County. Estimates of the number of separate annual visits ranged from more than 28,000 in Rotterdam to almost 87,000 in Niskayuna.

As has been consistently found for each of the counts taken since 2005, the greatest percentage of trail users overall were bicyclists, this year at 53 percent, followed by walkers and joggers.

Information on number and nature of users in 2009 results were also compared with data obtained in a survey undertaken in 2006 by the Capital District Transportation Committee (CDTC). The data showed similar percentages of user types between 2006 and 2009 at each of the four count locations.

Background

Extending 524 miles across New York, the Canalway Trail system brings economic, public health, tourism, and quality of life benefits to more than one million New Yorkers living in upstate canal communities. The most well-known leg of the system, the Erie Canalway Trail, is growing in popularity and is on its way to becoming a premier tourist destination for cyclists and other outdoor enthusiasts.

Decisions regarding design, funding, operation, maintenance and promotion of the Erie Canalway Trail are based in large part on understanding the volume and nature of trail use. In these uncertain economic times, estimates of annual trail traffic are critically important to justifying current and future expenditures for construction and maintenance as well as gauging the impact that trail use can have on the economy of the counties, towns, villages, and cities along its length.

Anecdotal evidence suggests that the Canalway Trail is well-used and popular with walkers and cyclists, but until recently little information existed to substantiate those claims. To begin to quantify and characterize trail use, the New York State Canal Corporation and Parks & Trails New York instituted an annual Canalway Trail User Count in 2005 at 12 locations in Monroe County. Monroe County was selected because of its diverse rural, suburban and urban characteristics; presumed heavy volume of trail use; and the existence of a strong network of trail supporters and adopters that could be drawn upon to help conduct the count. No attempt was made to standardize the counting protocol or pre-determine count locations for this largely volunteer effort.

In 2006, counts were conducted in 14 places in Oneida, Herkimer, and Montgomery Counties, a more rural and less populated area than Monroe County. Volunteers were directed to obtain counts in one-hour intervals at the time of peak activity. Days for counting and time of peak activity were left to each volunteer's discretion.

While interesting, the results obtained from the 2005 and 2006 counts provided only a snapshot of trail use at the time the counts were taken. No attempt was made to use the data to estimate weekly, monthly, or yearly trail traffic volume.

In 2007, in an effort to generate data with greater validity and predictive value, a new approach to counting was undertaken using the methodology and equations developed by Greg Lindsey et al. (1). Lindsey used infrared counts obtained on multi-use trails in the Indianapolis area to design a counting process that can be easily undertaken by volunteers with a minimum of time expenditure while also yielding valid estimates of annual trail traffic volume. This new effort was launched in eastern Monroe County for all the same reasons that the first trail count was initiated there in 2005.

In 2008, it was decided to repeat the 2007 counting protocol, time for data collection, and count locations, resulting in a larger body of data from the Monroe County area on which to base annual trail volume predictions. The effort was aided by having a cadre of experienced volunteer trail counters who understood the need for multiple counts and standardized counting techniques and were eager to help gather the data necessary to make reasonable annual trail traffic predictions.

Methodology

Data Collection

All data collected are available in spreadsheet format in Appendix D.

Location

Counts were conducted within a paved, well-used 12 mile segment of the 42-mile section of the Erie Canalway Trail known as the Mohawk-Hudson Bike-Hike Trail. Three locations were in Schenectady County: Kiwanis Park in Rotterdam, the Train Station in Niskayuna, and Schenectady Community College. One location was in Albany County: Colonie Town Park. The area chosen is surrounded by an urban-suburban environment.

Time Frame

Counts were conducted during the six weeks between July 20 and August 27, 2009. Eleven volunteers, recruited by Friends of the Mohawk- Hudson Bike-Hike Trail member Howard Halstead, completed 49 separate counts at the four count locations.

Month

As Table One illustrates, more than three times as many counts were conducted in August than July. Counts were originally planned for more days in July but many evenings of torrential rain made it impossible to fulfill the counting schedule as planned. It was also decided not to conduct any counts at Colonie Town Park in July as the trail was closed there going east from the parking lot until the beginning of August.

Because so few counts were conducted in July, it was decided to base annual trail traffic volume estimates only on the counts taken in August.

Table One. Number of Counts by Month and Location

	July	August	Total
Kiwanis Park, Rotterdam	4	7	11
Train Station, Niskayuna	4	9	13
Schenectady Community College	3	12	15
Colonie Town Park	0	10	10
Total	11	38	49

Days of the Week

Prior to beginning the 2009 count it was decided not to collect data on Fridays because it is harder to get people to volunteer for that time. Also, this is in line with the collection protocol recommended by the National Bicycle and Pedestrian Documentation Project (4). Distribution of counts among the four days was dependent on the availability of the ten counters. As a result, very few counts were taken at any location on Thursdays.

Table Two. Number of Counts by Day of Week and Location – July and August

	Monday	Tuesday	Wednesday	Thursday	Total
Kiwanis Park, Rotterdam	4	4	2	1	**11**
Train Station, Niskayuna	3	1	6	3	**13**
Schenectady Community College	6	6	1	2	**15**
Colonie Town Park	3	4	1	2	**10**
Total	*16*	*15*	*10*	*8*	*49*

Time of Data Collection

Based on the work of Lindsey et al. (1), data were collected in one-hour intervals at the presumed time of peak weekday trail use, which was determined to be between 6:30 p.m. and 7:30 p.m. based on the time used for the 2007 and 2008 counts in Monroe County.

Weekday counts taken over a 12-hour period as part of a 2006 trail study conducted by the Capital District Transportation Committee (CDTC), which included the four 2009 count locations, lend some support for the choice of 6:30 to 7:30 p.m.as peak hour of activity at the Niskayuna Train Station and Colonie Town Park (7). At the Niskayuna Train Station, the 6:30 p.m. hour demonstrated peak usage on one weekday and only a few less than peak another day (peak was the 5:30 p.m. hour that day). At Colonie Town Park, peak usage counts were recorded at the 6:30 p.m. hour on two weekdays, but from 12:30 to 1:30 p.m. on another weekday.

As CDTC did not conduct any weekday counts at Kiwanis Park in Rotterdam after 4:30 p.m., it is impossible to know what usage was like during the 6:30-7:30 p.m. timeframe.

At Schenectady Community College, median peak hourly usage was reported from 10:30-11:30 a.m. one day and between both 12:30 and 1:30 p.m. and 4:30 and 5:30 p.m. another day. Therefore, at this location, 6:30-7:30 p.m. may not have been representative of the peak hour of usage and trail traffic estimates may be lower as a result.

Process

The volunteers were provided a count protocol identical to that developed for the 2008 count. See Appendix A.

A counting form (see Appendix B) was used to standardize data collection. This year additional categories were added to the form based on the types of users noted during the count conducted in 2008. These included recumbent cyclists, tandem bicyclists, hand cyclists, tricyclists, and cyclists with a child in a seat or trailer. The emphasis was placed on counting the number of individuals using these cycles, not the number of different cycle types.

Count Locations

- **Kiwanis Park, Rotterdam, Schenectady County.** Counts were conducted from a parking lot facing the paved trail. The parking lot serves the trail as well as the park. A U-shaped driveway to a Mohawk River boat launch crosses the trail at either end of the parking lot.

- **Train Station, Niskayuna, Schenectady County.** Volunteers were positioned to count trail users visible from in front of the former train station building that were entering, exiting, or passing through on the trail. Counters were cautioned to also watch for persons entering by the boat launch.

- **Schenectady Community College, Schenectady County.** Counters were directed to count trail users who were passing across the area by the fancy brick circle in order to account for users entering from either direction at this location within the city.

- **Colonie Town Park, Albany County.** Counters were instructed to park in the trail parking lot outside the town park and count all trail users entering, exiting or passing through on the trail.

Data Analysis

Comparison to 2006 Capital District Transportation Committee Study

In Spring 2006, the Capital District Transportation Committee's (CDTC) Bicycle and Pedestrian Issues Task Force undertook a regional trail survey in conjunction with the Capital District Regional Planning Commission (CDRPC), the Department of Geography and Planning at the University at Albany, and the Healthy Heart Program of the New York State Department of Health Data collection was conducted at the four 2009 survey locations (7). The 2006 CDTC survey differed in that counts were taken for a maximum of 12 hours on two weekdays and two weekend days between June and October. While information was gathered using a different methodology, the study results provide data on number and nature of weekday users and estimations of annual trail traffic volumes that can be used for comparison.

Trail Traffic Estimation

The Lindsey et al. (1) methodology, employed in 2007 and 2008, was once again used to estimate trail traffic volume. The Lindsey et. al. model is based on data gained from Indianapolis, Indiana.

No attempt was made to adjust Lindsey's ratios to account for temperature and precipitation differences between Indianapolis and the Capital Region. It was assumed that:

- Location - The four eastern Albany County and Schenectady County counting sites were similar to Lindsey et al.'s urban-suburban Indianapolis locations.

- Climate – Lindsey's method may generate an overestimate of Albany-area trail usage from December through March because of Albany's greater snow volume.

  As shown in Table Three, Albany's climate is less temperate but closer to that of Indianapolis than one might first imagine. Overall, average precipitation for Indianapolis is 40 inches, 3.6 inches more than Albany (36.4 inches). However, Albany's annual average snowfall of 63.9 inches is more than 40 inches greater than that of Indianapolis (23.6 inches). As also might be expected, Albany's yearly average mean temperature is 47.5 ºF, five degrees lower than the yearly average mean for Indianapolis of 52.5 ºF.

Table Three. Temperature and Precipitation Data for Indianapolis, IN and Albany, NY

Indianapolis Weather

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg. High	34°	38°	50°	64°	74°	82°	85°	84°	77°	65°	51°	38°
Avg. Low	17°	20°	31°	41°	51°	61°	65°	62°	55°	44°	34°	24°
Avg. Precip.	2.3 in	2.5 in	3.8 in	3.7 in	4.0 in	3.5 in	4.5 in	3.6 in	2.9 in	2.6 in	3.3 in	3.3 in

Albany Weather

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg. High	30°	34°	44°	57°	68°	78°	84°	81°	74°	61°	48°	34°
Avg. Low	11°	14°	24°	35°	45°	54°	58°	57°	48°	38°	30°	18°
Avg. Precip.	2.4 in	2.3 in	2.9 in	3.0 in	3.4 in	3.6 in	3.3 in	3.5 in	3.0 in	2.8 in	3.3 in	2.9 in

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Estimates of annual trail traffic were derived by following the six steps outlined by Lindsey et al (1).

1. **Sampling of trail traffic during weekday peak hour periods**

Multiple counts of trail traffic were conducted during the one-hour period of peak weekday activity whose timing was determined based on the peak hour chosen for counts conducted in 2007 and 2008. The peak hour was chosen to be 6:30 p.m. to 7:30 p.m.

2. **Estimate of average weekday daily traffic based on Lindsey's grand median peak hour proportion**

To even out any variability resulting from very high or very low counts, Lindsey (2) advised using median peak hourly counts as the basis for the calculations of average weekday daily traffic.

As in 2007 and 2008, median peak hourly counts were divided by 0.137, the grand median peak hour proportion presented in Lindsey et al. (1). The grand median peak hour proportion of 13.7 percent is the median value of the percentage of total weekday daily trail traffic represented by the counts obtained during the hour of peak activity.

3. Estimate of average weekend daily traffic based on Lindsey's weekend-weekday traffic ratios

The estimate of average weekend daily traffic was based on multiplying the calculated average weekday traffic by the grand median weekend-weekday trail traffic ratio of 1.6 as presented in Lindsey et al. The ratio of 1.6 indicates that Lindsey et al.'s data demonstrates that weekend traffic is about 60% greater than weekday traffic.

4. Estimate of monthly traffic for August

Monthly traffic calculations for August represent the sum of 1) the average weekday traffic estimate multiplied by 21, the number of weekdays in August 2009, and 2) the average weekend traffic estimate multiplied by 10, the number of weekend days in August 2009.

5. Estimate of monthly traffic for September through July

From the data Lindsey et al. obtained over several years from infrared counters located at multiple Indianapolis locations, they calculated monthly traffic ratios that represented the total monthly traffic for each month as a factor of the total monthly traffic for the month of January. Lindsey et al set January as their baseline and assigned it the value of 1.0. Lindsey et al.'s median monthly traffic ratios were used to calculate monthly traffic for all months where counts were not taken, September through July.

6. Estimate of annual trail traffic volume

An estimate of annual trail traffic was obtained by summing the estimates for each of the 12 months of the year.

Results

Modes of Use

Figure One represents the proportion of different types of trail users based on a sum of all 49 counts taken in July and August at the four survey locations. Cyclists were the most frequent trail users. The category name was changed from bicyclists to cyclists as it included those riding tandems as well as tricycles. A full breakdown of the cyclist category is found in Figure Two. Because the trail is paved, it is not unexpected that there were no equestrians. The "Other" category represents children riding in a bike-mounted seat or attached trailer and persons using scooters.

As Table Four illustrates, since counts were undertaken in 2005, cyclists have been the most numerous user group, followed by walkers and joggers. Unfortunately, there has been little change in the very low use of the trail by persons in a wheelchair despite the fact that counts conducted this year and in 2005, 2007, and 2008 were on paved, level sections of trail that present no known barriers to use for persons with disabilities.

Figure One. Trail Usage as a Percentage of Total Count
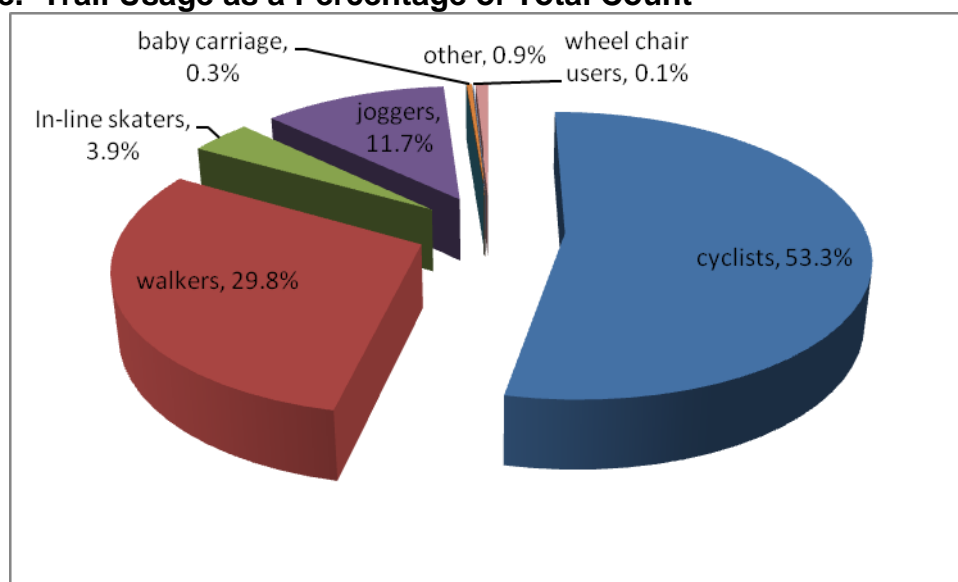
User Type	Users Counted
Cyclists	1,593
Walkers	891
In Line Skaters	116
Joggers	348
Baby Carriages	10
Wheelchair Users	2
Equestrians	0
Other	26
Total Users	*2,986*

Figure Two. Type and Number of Cyclists
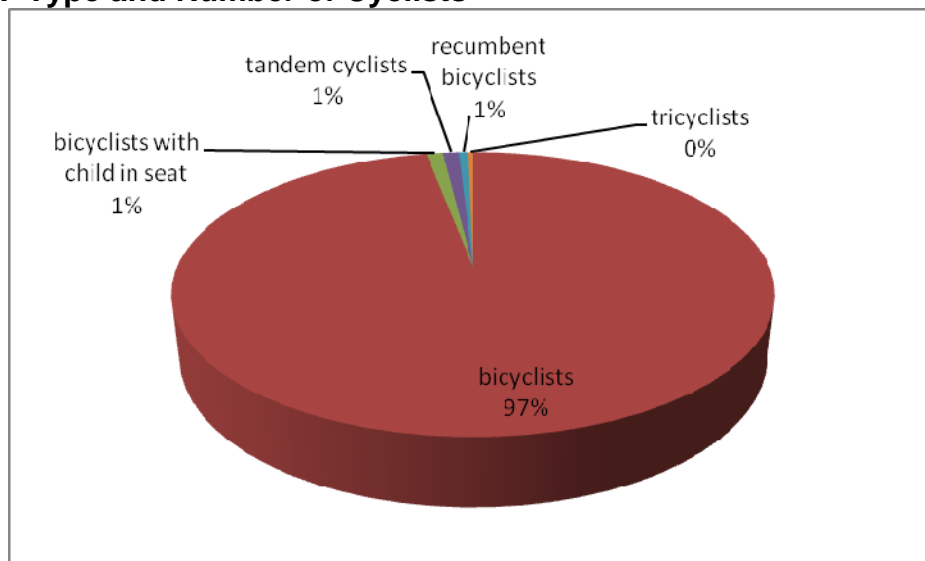
Table Four. Modes of Trail Use Comparison, 2005-2009

Type of Trail User	Percentage of Total Trail Users Counted				
	2005	2006	2007	2008	2009
Bicyclists*	64%	43%	49%	52%	53%
Walkers	24%	36%	38%	35%	30%
Joggers	8%	20%	8%	9%	12%
In Line Skaters	2%	0%	2%	2%	4%
Baby Carriages	2%	2%	3%	2%	.3%
Wheelchair Users	n/a	0%	0%	0.1%	.1%
Equestrians	0%	0%	0%	<0.1%	0%
Scooters	n/a	n/a	n/a	0.1%	n/a
Other	n/a	n/a	n/a	n/a	.9%

*The Bicyclist category for 2009 represents all cyclists including bicyclists, tricyclists, tandem cyclists, and bicyclists with a child seat or trailer.

Comparison with 2006 CDTC Study

The types of trail users observed in 2009 were compared to the types of weekday users recorded during the 2006 CDTC study at the same four locations. The 2006 CDTC study reported percentage of user types based on data obtained from weekdays and weekends, but by using the raw data presented in Appendix B of the study it was possible to focus on data from weekdays only. As Table Five indicates, the percentage of user types found across the four count locations in 2009 compares remarkably well with that obtained from the CDTC study in 2006.

Table Five. Trail User Types 2006 Compared to 2009

Type of Trail User	2009	CDTC study 2006**
Bicyclists*	53%	54%
Walkers	30%	27%
Joggers	12%	12%
In Line Skaters	4%	6%
Other	1%	1%

*The Bicyclist category for 2009 represents all cyclists including bicyclists, tricyclists, tandem cyclists, and bicyclists with a child seat or trailer.

** Percentages based on counts conducted on weekdays only.

Cyclists' Helmet Usage

While by law adult cyclists are not required to wear helmets, the majority of cyclists observed in this survey were wearing helmets. Counters were not asked to estimate the age of the persons they counted so there is no indication of how many of these helmet wearers were adults or children. The law requires a helmet for children 14 and under.

The number of riders using helmets (65%) was slightly more than that observed in Monroe County in 2007 (63%) and 2008 (61%) and 7% more than the 58% helmet usage observed by CDTC in 2006 on weekdays at these same four locations (7). Hopefully, the change observed from 2006 to 2009 reflects that helmet-wearing is becoming more of the norm.

Figure Three. Percent Helmet Usage Among Cyclists

Percent Helmet Usage - 2009

cyclists without helmets 35%

cyclists with helmets 65%
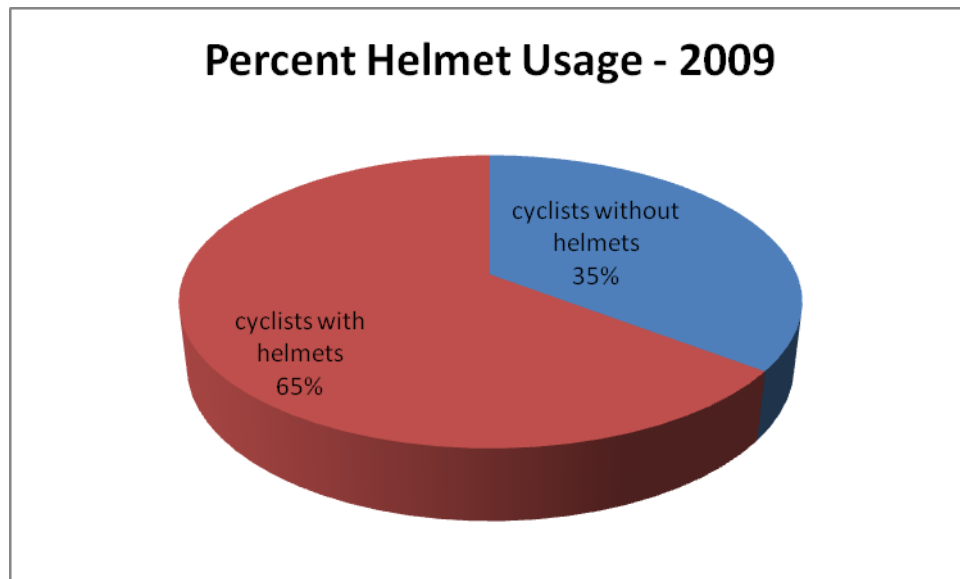
Effects on Median Peak Hourly Trail Count

Temperature

Counters were asked to record the air temperature to better understand whether temperature may affect trail use. With a mode and median of 80°F for counts conducted in August, temperature conditions were ideal most of the times that counts were taken. Half of the 38 August counts were conducted at temperatures between 80 and 89°F; 17 between 70 and 79°F, and two at 90°F.

As Figure Four indicates, median peak hourly counts at each location were highest when temperatures ranged between 70 and 79°F and decreased as temperatures climbed to the 80s and to 90°F. When temperatures were in the 80s, it is unknown why the drop off in median hourly count was much greater at Colonie Town Park than any other location.

Figure Four. August Weekday Median Peak Hourly Trail Count by Temperature
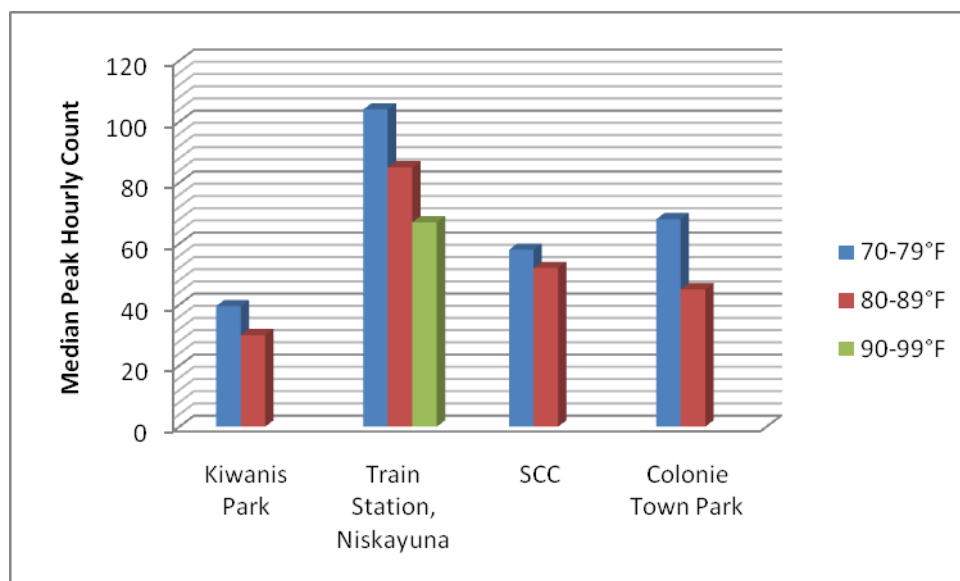
Weather Conditions

Counters were also asked to record the weather (*sunny, cloudy, partly cloudy, partly rainy* or *rain*) during the time they conducted their counts to see if weather had an impact on trail use. Based on feedback from comments from counters in 2008, the number of weather categories was expanded to include *partly rainy* as a fine mist or a sprinkle is a very different environment for walking or bicycling than a steady rain..

Figure Five. August Median Peak Weekday Hourly Counts by Weather Condition
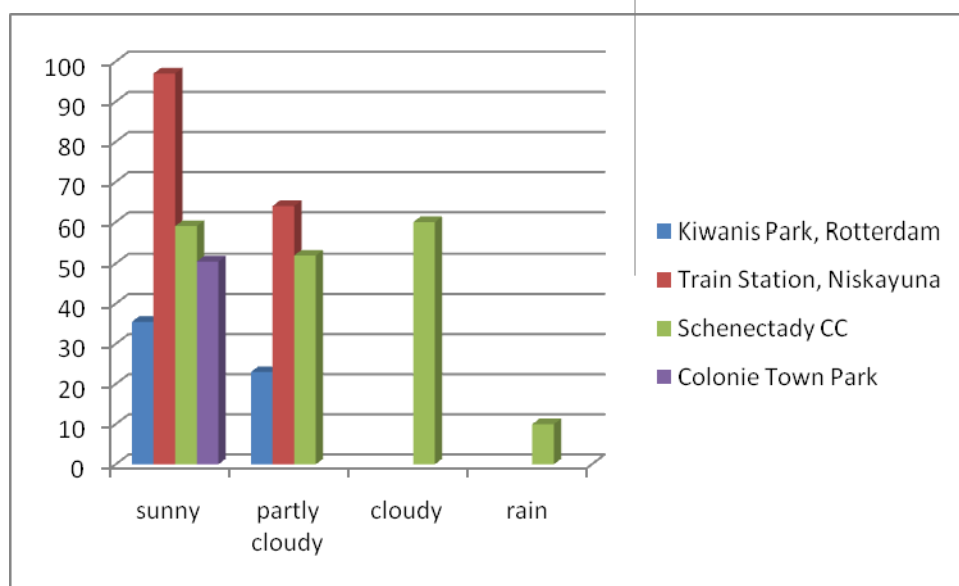
Figure Five demonstrates there was a large change in August median peak hourly usage at Kiwanis Park in Rotterdam and the Niskayuna Train Station when the weather changed from sunny to partly cloudy. At Schenectady Community College, weather did not seem to affect usage, perhaps because users there may be students or other commuters who are accessing the trail for transportation to their job or classes where at the other locations most persons are visiting the trail solely for recreation. No weather impact could be assessed at Colonie Town Park because all counts were conducted under sunny conditions.

Analysis and Comparison by Location

Trail count data was also examined to determine if the type and volume of use varied by location. While there are only 12 miles of Erie Canalway Trail between Rotterdam and Colonie Town Park, within that relatively short distance it is clear there are variations in type of trail usage and traffic volume.

Table Six. August Median Weekday Peak Hourly Traffic

Kiwanis Park, Rotterdam	30
Train Station, Niskayuna	92
Schenectady Community College	56
Colonie Town Park	50.5

Table Seven. Percentage Modes of Use by Location Compared to 2006**

Type of Trail User	Rotterdam		Niskayuna		Schenectady		Colonie	
	2009	CDTC study 2006	2009	CDTC study 2006	2009	CDTC study 2006	2009	CDTC study 2006
Cyclists*	76%	74%	54%	47%	45%	60%	48%	46%
Walkers	20%	18%	29%	30%	34%	15%	34%	42%
Joggers	1%	6%	9%	10%	19%	21%	15%	11%
In Line Skaters	1%	3%	7%	11%	1%	3%	2%	3%
Other	2%	0%	1%	2%	1%	1%	1%	0%

*Includes recumbent, tandem, tricyclists, bicyclists with child seat or trailer
** Percentages based on weekday data only.

Figure Six. Percentage of User Types - Kiwanis Park

Kiwanis Park, Rotterdam

At Kiwanis Park in Rotterdam, bicyclists predominated, representing 74% of users counted for July and August. The second most frequent user type was walkers at only 20%.

The park is located in a sparsely populated area near the western terminus of the Mohawk-Hudson Bike-Hike Trail section of the Erie Canalway Trail. (Right of Way issues need to be finalized before the trail can be extended west to link with Amsterdam in Montgomery County.) As a result, not many users may initiate their trail visit at the park as they effectively can go in only one direction, which may account for Kiwanis Park registering the lowest median peak hourly user count of all four locations. The large number of bicyclists may represent users who entered the trail at a location farther to the east and are riding out to the western terminus and back. Also, because of the more rural nature of the location, it may attract more bicyclists than walkers.
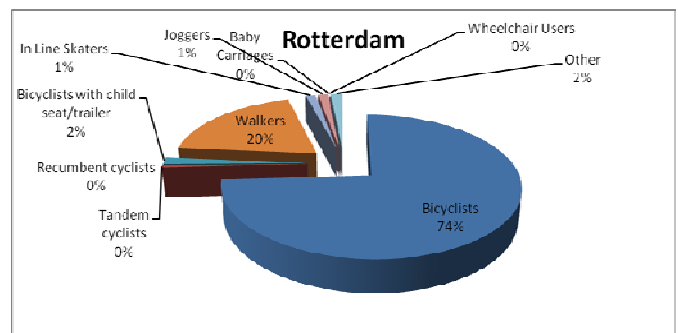
As Table Seven indicates, the 2006 CDTC study found a similar percentage of bicyclists and walkers but a larger percentage of joggers and in-line skaters.

Train Station, Niskayuna

This is a very popular trail head as evidenced by the highest median peak hourly user count of 92. Bicyclists were the majority of trail users at 52% followed by walkers at 29%. In-line skaters (7%) were a much greater percentage of users than found at the other locations. This may be because the trail is located close to a number of fairly affluent, densely settled suburban neighborhoods populated by a demographic that may be more likely to engage in this type of recreation. However, one might expect to also find more joggers, but in fact the percentage of joggers was more than 50% less than that observed at Schenectady Community College and 40% less than found at Colonie Town Park.

Figure Seven. Percentage of User Types Niskayuna Train Station
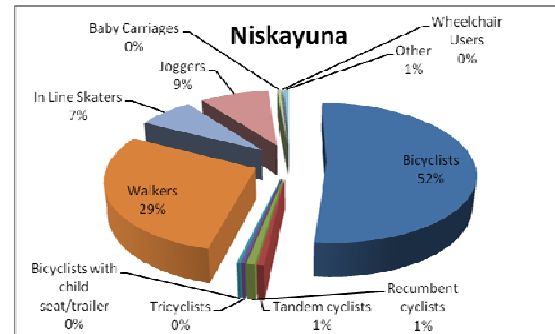
As shown in Table Seven, the 2006 CDTC study found an almost identical percentage of walkers and joggers but 7% fewer bicyclists for reasons unknown. The 4% lower percentage of in-line skaters in 2009 may reflect a decline in the popularity of in-line skating.

Schenectady Community College, City of Schenectady

Figure Eight. Percentage of User Types - SCC
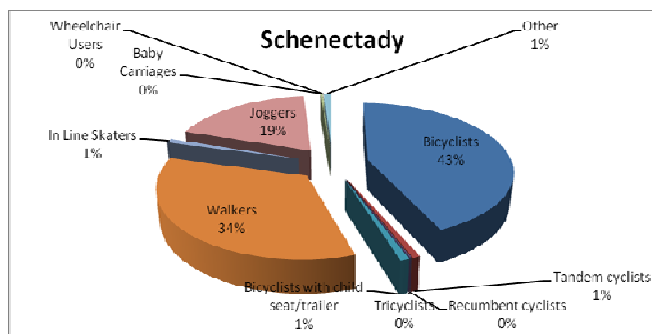
Overall, the August median peak hourly count of 56 was almost 40% less than that observed at Niskayuna but almost identical to that found at the town park in Colonie. Bicyclists still predominated at 43% of all users but they did not make up more than half of all users as found at the other locations. Because of the urban nature of the trailhead and its location adjacent to a college campus, the finding of walkers at 34% and joggers at 19% was not unexpected.

Results for 2006 compared to 2009 are different for all user categories except joggers. Most significant is the finding of 15% fewer cyclists and 19% more walkers observed in 2009. The reason for these changes is unknown.

Colonie Town Park

At 50.5 the number of August median peak hourly users was similar to that observed at Schenectady Community College. However, as a town park with playing fields and located at the end of a purpose-built access road off a suburban residential street, it was a very different type of trail location. At 48%, bicyclists were the largest category of trail users, but, as with Schenectady, they did not constitute more than half of all users. The percentage of walkers (34%) was equal to that found in Schenectady and number of joggers was similar at 15%. One might expect more in-line skaters, but their percentage was minimal at 2%. Some of the walkers may represent persons who come to the park for another purpose, such as to watch a ball game, but, during that time, also use the trail for walking.

Figure Nine. Percentage of User Types – Colonie Town Park

The percentage bicyclists observed in 2006 and 2009 was almost the same. It is unknown why there were 8% fewer walkers and 4% more joggers in 2009.

Estimates of Trail Traffic Volume

Estimation of Daily, Monthly, and Annual Use

Estimates of weekday, weekend day, monthly, and annual trail traffic volume were calculated for all four locations following the six steps outlined in Lindsey et al.(1), and summarized in the Methodology section (see pages nine and ten) using data gathered in August. All estimates were derived directly from the median peak hourly counts and the coefficients and multipliers recommended by Lindsey et al.

Table Eight. Estimated Monthly, Weekday and Weekend Daily Traffic Estimates

	Median Weekday Peak Hour Traffic	Estimated Average Weekday Daily Traffic	Estimated Average Weekend Daily Traffic	Estimated Monthly Traffic for August 2009
Kiwanis Park, Rotterdam	30	219	350	8,102
Train Station, Niskayuna	92	672	1,074	24,847
Schenectady Community College	56	409	654	15,124
Colonie Town Park	50.5	369	590	13,639

Table Nine. Estimated Daily, Monthly, and Annual Traffic by Location

2009	Median week day peak hour traffic	Average week day daily traffic	Average weekend daily traffic	Monthly traffic for July	Monthly traffic for August	Monthly traffic for September	Monthly traffic for October	Monthly traffic for November	Monthly traffic for December	Monthly traffic for January	Monthly traffic for February	Monthly traffic for March	Monthly traffic for April	Monthly traffic for May	Monthly traffic for June	Annual traffic
Kiwanis Park, Rotterdam	**30**	219	350	8,102	8,102	7,540	4,614	2,363	1,238	1,125	2,026	2,813	5,514	6,302	6,977	**56,715**
Niskayuna Train Station	**92**	672	1,074	24,847	24,847	23,121	14,149	7,247	3,796	3,451	6,212	8,627	16,910	19,325	21,396	**173,927**
SCC Trailhead	**56**	409	654	15,124	15,124	14,074	8,612	4,411	2,311	2,101	3,781	5,251	10,293	11,763	13,024	**105,869**
Colonie Town Park	**50.5**	369	590	13,639	13,639	12,692	7,766	3,978	2,084	1,894	3,410	4,736	9,282	10,608	11,744	**95,471**

Figure Ten. Yearly Change in Estimated Monthly Trail Traffic
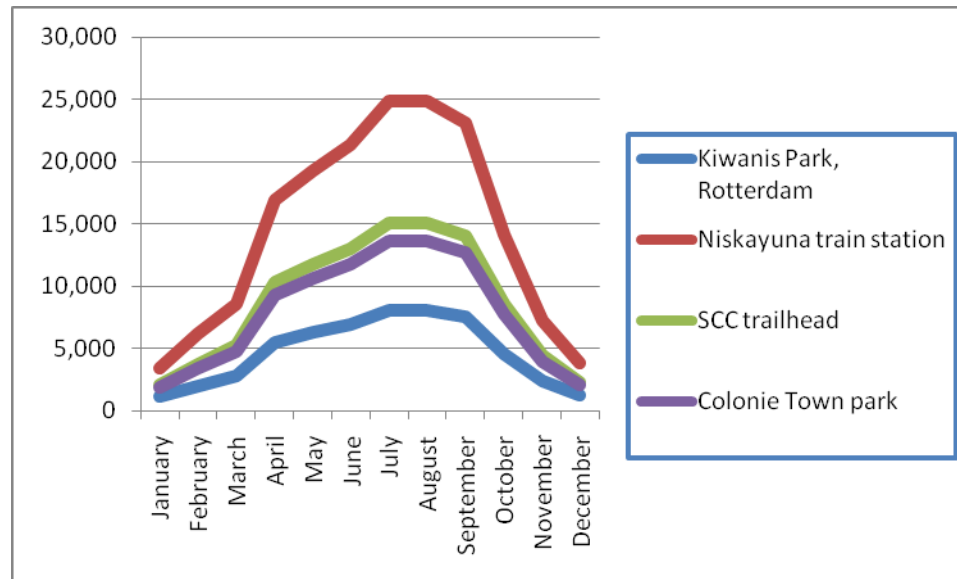
Comparison to 2006 CDTC Annual Estimates

It is impossible to fully compare the annual estimates presented in the CDTC study with the Lindsey method calculations because of differences in data collection methods and coefficients used for trail traffic estimations. Nevertheless, it is of interest to see whether the estimates are at all similar for the four counting locations.

To predict the number of warm weather trail users for the four count locations, CDTC used counts conducted on two to four week days and weekend days, an estimate of the number of nice and rainy weekdays and weekend days, the number of months of warm weather, plus an additional adjustment factor for cold weather months. The CDTC study did not calculate annual estimates for individual count locations. Instead, they presented a total annual count of 459,037 based on a summation of warm weather trail use estimates for 11 Mohawk-Hudson Bike-Hike Trail counting sites (including the four chosen for the 2009 count) plus an overall cold weather adjustment.

However, as a result of a personal conversation with one of the report authors (6), it was possible to learn the formula for the total cold weather calculation and apply that individually to each of the warm weather estimates for Rotterdam, Niskayuna, Schenectady, and Colonie.

As Table Ten demonstrates, estimates of annual trail traffic using the Lindsey et al. method were 50 to 100% greater than those calculated using the 2006 CDTC data and methods. Certainly differences in methodology and data collection procedure are a factor, but it could also signal a major increase in trail traffic over the last three years.

Table Ten. Estimated Annual Trail Traffic Volume 2006 Compared to 2009

	Estimated Annual Traffic 2009	Estimated Annual Traffic 2006
Kiwanis Park, Rotterdam	56,715	36,713
Train Station, Niskayuna	173,927	101,170
Schenectady Community College	105,869	54,909
Colonie Town Park	95,471	62,937

Estimate of annual visits

Lindsey et al. divided annual trail traffic estimates by two to get an estimate of the number of visits, based on their data that indicate that 95 percent or more of all users make return trips and therefore would be counted twice. As Table Eleven indicates, 2009 separate annual visits would range from slightly more than 28,000 to almost 87,000 in 2009 compared to a little more than 18,000 to about 51,000 using the estimated annual traffic from the 2006 study.

Table Eleven. Estimated Annual Visits by Location Compared to 2006

	Estimated annual visits 2009	Estimated annual visits 2006
Kiwanis Park, Rotterdam	28,358	18,357
Train Station, Niskayuna	86,964	50,585
Schenectady Community College	52,935	27,454
Colonie Town Park	47,736	31,469

Conclusions

This report represents a third year of using trail count data to predict the amount of trail traffic at specific locations on the Erie Canalway Trail. This year's estimates of annual trail traffic volume range from 56,715 at Kiwanis Park in Rotterdam to almost 174,000 at the Train Station in Niskayuna. These results reflect a range of annual visits from more than 18,000 to almost 87,000. The trail traffic volume and visits are less than that found at the five locations in Monroe County where counts were conducted in 2007 and 2008. The higher figures for Monroe County may be because the neighborhoods surrounding are more densely settled and, at two counting locations, additional visitors may have been attracted to the trail because of the easy access to restaurants and stores for shopping.

Economic Impact

In the summer of 2008, the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) undertook a survey of persons using eight of the state's multi-use trails. The survey's objective was to learn more about the nature of the trail visits and their impact on the local economy. The Erie Canalway Trail at Pittsford's Canal Park and the Niskayuna Train Station were two survey locations.

At the Train Station in Niskayuna, surveys were placed in a plastic box which was attached to the park sign post. The box was labeled "Trails Survey – Please Take One." It was left up to trail users to see the surveys, fill them out, and mail them to OPRHP in a postage-paid envelope. The 35 persons who indicated they had spent money during their visit out of the 136 who completed and returned surveys from this location, reported spending an average of $6.19 or median of $3.00 during their visit to the trail (5).

If 35 persons out of 136 or 25% spent money, one could assume that 25% of the estimated 87,000 annual visitors at the Train Station in Niskayuna, approximately 22,000 persons, would also spend money on their visit to the trail. If each of these persons spent an average of $6, it would represent an additional $131,000 added to the local economy.

Conservatively, if only ten other communities had similar usage and the same modest level of spending by a relatively small percent of those users, it could generate more than $13 million additional dollars each year for businesses upstate. If this scenario were replicated within only a fraction of the hundreds of Canal communities along the 366 miles of Erie Canalway Trail, it could represent millions of dollars in economic benefits for this region of the state.

Recommendations for Next Steps

Changes to Survey Methodology

It is recommended that all further Canalway Trail counts be undertaken on weekends as well as weekdays to confirm whether Lindsey's multiplier of 1.6 used to calculate weekend traffic is relevant to the usage patterns of the Erie Canalway Trail.

Serious consideration should also be given to using the annual trail usage estimation methodology developed for the National Bicycle and Pedestrian Documentation Project (4). The (NBPD) is a nationwide effort designed to provide consistent data collection as well as adjustment factors that will produce annual usage estimates based on counts conducted on multi-use paths and pedestrian districts throughout the country. The NBPD methodology differs from that presented by Lindsay et al. in that it relies on weekend as well as weekday hourly counts and weekday counts only from Tuesday to Thursday of the same week or on the same day and time in consecutive weeks. It also includes a set of Adjustment Factors that account for season (April to September or October to March), type of resource (multi-use path or pedestrian entertainment area); day of the week and month when the count was conducted; and type of climate (4).

Installation of Automated Counters

In previous years the installation of automated counters has been recommended to aid in providing another means of gathering data over a longer period of time in order to better determine time of peak hourly weekday use and generate ratios that are more accurate than those provided by Lindsey et al. for predicting weekday, weekend traffic and monthly trail traffic volume. This should still be done even though recently some researchers have questioned the accuracy of data from counters as they can often be triggered by animals, blowing leaves or other items (4). Unfortunately, the funds have not been available to purchase high quality counters.

Gathering of Demographic and Economic Data

Gathering information about trail users is equally as important as determining how many people are on the trail. It is hoped that some time in the future counters will also collect demographic information on those individuals who are counted by combining the annual count with a trail user intercept survey

Presently, the New York State Canal Corporation's biennial Customer Satisfaction Survey solicits data from trail users on residency, location of use, principal use, and use frequency. Surveys are distributed by volunteers and made available on the Canal Corporation website. To learn more about the trail users being counted, volunteers should be recruited to distribute the 2010 Customer Satisfaction Survey to users in conjunction with the trail counts.

Appendix A. Trail Count Protocol
Canalway Trail User Count – 2009

Count Protocol

Location
1. Niskayuna train station
2. Colonie Town Park
3. Schenectady Community College trail entrance
4. Kiwanis Park at Rotterdam Junction boat launch

Time
1. Counts must be taken on week days only.
2. At least one count should be taken on each week day, i.e., Monday, Tuesday, Wednesday, snf Thursday.
3. Each count must be taken during the time of peak usage. It has been estimated that this time will be from **6:30 – 7:30 p.m.** If experience indicates that another time is more representative of peak usage, please inform Parks & Trails New York.

Conducting Counts
1. **Counts should be conducted between July 20 and August 28.**
2. Count for one full hour at a time
3. A minimum of 5 counts should be taken at each location. Additional counts will add to the validity of the data.
4. Do not worry if you count someone twice because they pass you going in both directions. The formulas used at the end will take that into consideration.

Personnel Required
1. One person can conduct the counting. If you are counting at a location with significant trail traffic, it may be advisable to have two people conduct counts and average their results.

Conducting the count
1. Use a new sheet each time you count.
2. Make a tick in the boxes for the type of trail user that passes by.
3. Stand where you do not block the trail but can easily observe users as they pass.
4. If possible, send us some pictures (500 MB in size or larger) of volunteers taking the count and persons using the trail that we can include in publications and presentations.

Returning the Forms
Please mail all forms to:

<div align="center">
Canalway Trail User Count 2009
Parks & Trails New York
29 Elk Street
Albany, NY 12207
</div>

Or FAX to 518-427-0067

For more information
Contact Fran Gotcsik at Parks & Trails New York at 518-434-1583 or fgotcsik@ptny.org.

Appendix B. Trail Count Form

Who's on the Trail?
The Canalway Trail User Count – 2009

Surveyor Name: _____ **Phone:** _____ **Email:** _____

Date: _____ **Time conducted:** _____ to_____ p.m. **Location:** _____ **Town/Village:** _____

Trail surface: asphalt☐ stone dust ☐   **Weather Conditions**: sunny ☐   partly cloudy ☐   cloudy ☐   partly rainy ☐   rain ☐   **Approximate temperature:** _____

Make one "tic mark" for each person passing by in either direction engaged in each activity.

User Type	Counts		
	With helmets		**Without helmets**
Bicyclists			
Bicyclists with child in seat or trailer One tic = cyclist and child			
Tandem bicycles One tic = 2 persons			
Recumbent cycles			
Tricycles			
Hand-powered cycle			
Walkers			
In-line skaters		Joggers	
Baby carriages/ Strollers One tic = adult and child		Wheelchair users	
Equestrians		Other specify	

Thanks for your help!!! Please return the form(s) to:
Canalway Trail User Count 2009, Parks & Trails New York, 29 Elk Street, Albany, NY, 12207, 518-434-1583, FAX 518-427-0067

Questions, contact: Fran Gotcsik, Parks & Trails New York, fgotcsik@ptny.org, 518-434-1583

Appendix D. Count Data
Kiwanis Park, Rotterdam

Name	Date	Day	Time From	Time To	Weather	Approx. temp.	Cyclists	Bicyclists with helmets	Bicyclists with child in seat or trailer with helmet	Tandem bicyclists with helmets	Recumbent Bicyclists with helmet	Tricyclists with helmet	Bicyclists Without helmets	Bicyclists with child in seat or trailer without helmet	Hand powered cycle	Walkers	In Line Skaters	Joggers	Equestrians	Baby Carriages	Wheelchair users	Other	Total Users
Elaine Troy	7/20/2009	Monday	6:30 p.m.	7:30 p.m.	3	75	**27**	17	2	0	0	0	8	0	0	**17**	1	**2**	0	0	0	2	**74**
Andrew Morris	7/21/2009	Tuesday	6:30 p.m.	7:30 p.m.	4	65	**1**	1	0	0	0	0	0	0	0	**0**	0	**0**	0	0	0	0	**1**
Andrew Morris	7/28/2009	Monday	6:30 p.m.	7:30 p.m.	2	85	**56**	36	0	2	0	0	18	0	0	**3**	0	**3**	0	0	0	0	**62**
Fran Gotcsik	7/29/2009	Tuesday	6:15 p.m.	6:50 p.m.	4	73	**0**	0	0	0	0	0	0	0	0	**0**	0	**0**	0	0	0	0	**0**
Elaine Troy	8/3/2009	Monday	6:30 p.m.	7:30 p.m.	1	82	**55**	22	3	0	0	0	30	0	0	**10**	1	**0**	0	0	0	3	**66**
Andrew Morris	8/4/2009	Tuesday	6:30 p.m.	7:30 p.m.	1	80	**35**	11	0	0	0	0	24	0	0	**6**	0	**0**	0	0	0	0	**41**
Dick Westergard	8/5/2009	Wednesday	6:30 p.m.	7:30 p.m.	1	75	**37**	17	0	0	0	0	20	0	0	**16**	0	**0**	0	0	0	0	**53**
Dick Westergard	8/6/2009	Thursday	6:30 p.m.	7:30 p.m.	1	73	**24**	14	0	0	0	0	10	0	0	**2**	0	**0**	0	0	0	0	**26**
Andrew Morris	8/11/2009	Tuesday	6:30 p.m.	7:30 p.m.	2	80	**18**	11	1	0	0	0	6	0	0	**4**	1	**0**	0	0	0	1	**23**
Elaine Troy	8/17/2009	Monday	6:30 p.m.	7:30 p.m.	1	88	**17**	8	0	0	0	0	9	0	0	**11**	2	**0**	0	0	0	0	**30**
Andrew Morris	8/19/2009	Wednesday	6:30 p.m.	7:30 p.m.	1	85	**23**	12	0	0	0	0	11	0	0	**6**	0	**0**	0	0	0	0	**29**

Train Station, Niskayuna

Name	Date	Day	Time_From	Time_To	Weather Conditions	Approx. temp.	Cyclists	Bicyclists with helmets	Bicyclists with child in seat or trailer with helmet	Tandem Bicyclists with helmet	Recumbent Bicyclists with helmet	Tricyclists with helmet	Bicyclists without helmets	Bicyclists with child in seat or trailer without helmet	Hand powered cycle	Walkers	In Line Skaters	Joggers	Equestrians	Baby Carriages	Wheelchair users	Other	Total Users
Warren Lutes	7/22/2009	Wednesday	6:30 p.m.	7:30 p.m.	1	77	84	75	0	0	1	2	6	0	0	26	7	10	0	1	0	1	128
Dick Westergard	7/23/2009	Thursday	6:30 p.m.	7:30 p.m.	3	77	46	39	0	0	3	0	4	0	0	16	7	8	0	1	0	0	78
Herb Terns	7/28/2009	Tuesday	6:30 p.m.	7:30 p.m.	1	83	62	43	1	0	0	0	17	1	0	34	7	10	0	0	0	1	113
Wally Elton	7/29/2009	Wednesday	6:30 p.m.	7:30 p.m.	4	72	0	0	0	0	0	0	0	0	0	4	0	2	0	0	0	0	6
Wally Elton	8/3/2009	Monday	6:30 p.m.	7:30 p.m.	1	78	99	63	0	2	3	0	31	0	0	79	17	16	0	0	2	0	213
Wally Elton	8/5/2009	Wednesday	6:30 p.m.	7:30 p.m.	1	70	63	34	0	2	0	0	27	0	0	28	4	10	0	0	0	1	106
Gillian Scott	8/6/2009	Thursday	6:30 p.m.	7:30 p.m.	1	78	60	39	0	2	2	0	16	1	0	24	8	7	0	2	0	1	102
Wally Elton	8/12/2009	Wednesday	6:30 p.m.	7:30 p.m.	1	80	43	35	0	0	1	0	7	0	0	36	2	8	0	1	0	2	92
Gillian Scott	8/13/2009	Thursday	6:30 p.m.	7:30 p.m.	1	77	54	42	0	0	0	1	11	0	0	22	6	5	0	1	0	1	89
Warren Lutes	8/17/2009	Monday	6:30 p.m.	7:30 p.m.	1	90	28	20	0	0	0	0	8	0	0	17	17	4	0	0	0	1	67
Wally Elton	8/19/2009	Wednesday	6:30 p.m.	7:30 p.m.	1	80	38	22	1	2	0	1	12	0	0	21	7	11	0	0	0	1	78
Warren Lutes	8/24/2009	Monday	7:00 p.m.	8:00 p.m.	1	73	73	50	0	0	0	0	23	0	0	37	8	10	0	0	0	0	128
Wally Elton	8/26/2009	Wednesday	6:30 p.m.	7:30 p.m.	2	70	31	16	0	0	0	0	15	0	0	19	2	12	0	0	0	0	64

Schenectady Community College

Name	Date	Day	Time_From	Time_To	Weather Conditions	Approx. temp.	Cyclists	Bicyclists with helmets	Bicyclists with child in seat or trailer with helmet	Tandem Bicyclists with helmet	Recumbent Bicyclists with helmet	Tricyclists with helmet	Bicyclists Without helmets	Bicyclists with child in seat or trailer without helmet	Hand powered cycle	Walkers	In Line Skaters	Joggers	Equestrians	Baby Carriages	Wheelchair users	Other	Total Users
JD Oswald	8/5/2009	Wednesday	6:40 p.m.	7:40 p.m.	1	76	28	15	0	0	0	0	13			23	1	24	0	0	0	0	76
JD Oswald	7/20/2009	Monday	6:40 p.m.	7:40 p.m.	3	75	37	21	0	0	0	0	16	0	0	34	2	8	0	0	0	1	82
JD Oswald	7/22/2009	Tuesday	6:40 p.m.	7:40 p.m.	2	74	26	8	1	4	0	0	13	0	0	20	1	7	0	0	0	1	55
JD Oswald	7/23/2009	Monday	6:40 p.m.	7:40 p.m.	3	78	8	2	0	0	0	0	6	0	0	18	0	4	0	0	0	0	30
JD Oswald	8/3/2009	Monday	6:40 p.m.	7:40 p.m.	1	76	30	17	1	0	0	0	12	0	0	16	1	10	0	0	0	1	58
JD Oswald	8/4/2009	Tuesday	6:30 p.m.	7:30 p.m.	1	81	34	14	2	0	0	1	17	0	0	18	0	17	0	0	0	2	71
JD Oswald	8/5/2009	Tuesday	6:30 p.m.	7:30 p.m.	1	76	28	15	0	0	0	0	13	0	0	23	1	24	0	0	0	0	76
JD Oswald	8/6/2009	Thursday	6:40 p.m.	7:40 p.m.	2	75	27	14	0	0	0	0	13	0	0	16	0	10	0	0	0	0	53
JD Oswald	8/10/2009	Monday	6:40 p.m.	7:10 p.m.	4	83	6	3	0	0	0	0	3	0	0	2	0	1	0	0	0	1	10
JD Oswald	8/11/2009	Tuesday	6:30 p.m.	7:30 p.m.	3	82	18	12	0	0	0	0	6	0	0	35	0	7	0	0	0	0	60
JD Oswald	8/12/2009	Wednesday	6:20 p.m.	7:20 p.m.	2	80	29	14	1	0	0	0	14	0	0	9	1	12	0	0	0	1	52
JD Oswald	8/13/2009	Thursday	6:30 p.m.	7:30 p.m.	1	76	29	17	0	0	0	0	12	0	0	17	1	5	0	2	0	0	54
JD Oswald	8/17/2009	Monday	6:30 p.m.	7:30 p.m.	1	87	19	10	1	0	0	0	8	0	0	8	0	4	0	0	0	1	32
JD Oswald	8/18/2009	Tuesday	6:30 p.m.	7:30 p.m.	2	84	20	7	0	0	0	0	13	0	0	20	0	11	0	0	0	0	51
JD Oswald	8/24/2009	Monday	6:30 p.m.	7:30 p.m.	1	78	25	22	0	0	0	0	3	0	0	16	0	18	0	0	0	0	59
JD Oswald	8/25/2009	Tuesday	6:35 p.m.	7:35 p.m.	1	80	34	21	0	2	0	0	10	1	0	27	1	14	0	0	0	1	77

Colonie Town Park

Name	Date	Day	Time_From	Time_To	Weather Conditions	Approx. temp.	Cyclists	Bicyclists with helmets	Bicyclists with child in seat or trailer with helmet	Tandem Bicyclists with helmet	Recumbent Bicyclists with helmet	Tricyclists with helmet	Bicyclists Without helmets	Bicyclists with child in seat or trailer without helmet	Hand powered cycle	Walkers	In Line Skaters	Joggers	Equestrians	Baby Carriages	Wheelchair users	Other	Total Users
Natalie Nussbaum	8/3/2009	Monday	6:30 p.m.	7:30 p.m.	1	78	50	30	0	0	0	0	20	0	0	19	2	4	0	2	0	0	77
Natalie Nussbaum	8/4/2009	Tuesday	6:30 p.m.	7:30 p.m.	1	80	20	14	0	0	0	0	6	0	0	22	0	5	0	0	0	0	47
Don Odell	8/5/2009	Wednesday	6:15 p.m.	7:15 p.m.	1	70	23	11	0	0	0	0	12	0	0	31	3	18	0	0	0	2	77
Natalie Nussbaum	8/6/2009	Thursday	6:30 p.m.	7:30 p.m.	2	70	13	8	0	0	0	0	5	0	0	20	0	7	0	0	0	0	40
Natalie Nussbaum	8/10/2009	Monday	6:30 p.m.	7:30 p.m.	4	80	10	4	0	0	0	0	6	0	0	6	0	2	0	0	0	0	18
Fran Gotcsik	8/11/2009	Tuesday	6:30 p.m.	7:30 p.m.	1	77	39	33	0	0	0	0	6	0	0	14	0	6	0	0	0	0	59
Fran Gotcsik	8/12/2009	Tuesday	6:30 p.m.	7:30 p.m.	1	82	20	15	0	0	0	0	5	0	0	15	6	4	0	0	0	0	45
Natalie Nussbaum	8/17/2009	Monday	6:30 p.m.	7:30 p.m.	2	90	36	19	0	0	0	0	17	0	0	13	0	13	0	0	0	0	62
Don Odell	8/20/2009	Thursday	6:00 p.m.	7:00 p.m.	2	80	14	9	0	0	0	0	5	0	0	16	0	7	0	0	0	0	37
Don Odell	8/25/2009	Tuesday	6:05 p.m.	7:05 p.m.	1	80	24	17	0	0	0	0	7	0	0	18	0	12	0	0	0	0	54

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Acknowledgments