Economic Impact of the Empire State Trail
Appendices

PARKS & TRAILS
NEW YORK

Contents

The following appendices document the methodology and technical data used in the creation of The Economic Impact of the Empire State Trail, produced by Parks & Trails New York with the support of statewide agencies and local partners. Consultant support was provided by LaBella Associates, The Institute for Transportation Research and Education at NC State University, and Verity Engineering.

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Appendix 1: METHODOLOGY DETAIL

Empire State Trail Methodologies

Economic Analysis Methodology

This study estimates the economic impacts associated with trail use through the application of an input–output modeling framework using IMPLAN. An input–output (I–O) model is a quantitative economic tool that represents the interdependencies between industries within an economy. It tracks how spending in one sector circulates through others via supply chains and household spending, thereby capturing the ripple effects of an initial expenditure. IMPLAN organizes the economy into 528 industry sectors, allowing for a highly detailed representation of economic activity and sector-specific interactions.

The analysis begins with the estimation of direct expenditures generated by trail users. These expenditures were derived from primary data collected through trail user surveys. Survey respondents provided information on their spending behavior across a range of categories, including meals and drinks, groceries, retail purchases, entertainment, bike rentals, and other miscellaneous expenditures. Responses were analyzed to develop user expenditure profiles that reflect both the likelihood of making a purchase in each category (purchase probability) and the average amount spent when a purchase occurs. These two components were combined to estimate the expected (average) expenditure per user for each spending category. The resulting expenditure profiles form the basis of the direct economic inputs into the IMPLAN model.

Within the input–output framework, these direct expenditures generate additional economic activity through indirect and induced effects. Indirect effects represent business-to-business transactions that occur when industries purchase goods and services from their suppliers in response to increased demand. For example, increased spending at restaurants leads those establishments to purchase more food, utilities, and services from other sectors. Induced effects capture the household spending that results from increased labor income generated by the direct and indirect activities. Employees in affected industries spend their wages on goods and services such as housing, healthcare, and retail, further stimulating the economy. Together, direct, indirect, and induced effects provide a comprehensive measure of total economic impact.

To spatially allocate and refine these expenditure estimates, a geographic information systems (GIS) analysis was conducted. This analysis evaluated population distribution along trail corridors to account for variation in potential spending intensity across different areas. Census block-level population data were used as the foundation for this analysis. These data were converted into population centroids, which represent the geographic center of population within each block. The centroids were then assigned to a grid of uniform geographic cells, allowing for consistent spatial analysis across the study area.

Population within each cell was aggregated and used to classify areas into low-, medium-, and high-density categories. These classifications were used as a proxy for expected spending levels, with higher-density areas assumed to support greater levels of economic activity due to increased access to services and amenities. Expenditure estimates derived from user profiles

were then apportioned across these spatial categories to better reflect localized economic conditions along the trail corridors.

Finally, estimated expenditures were aggregated geographically to align with administrative and trail-specific boundaries. Spending was summed at the county level to estimate the economic impacts for counties intersecting the Empire State Trail. In addition, expenditures were grouped by major trail corridors to estimate impacts for the Champlain Canalway Trail, the Erie Canalway Trail, and the Hudson River Valley Greenway Trail. These aggregated expenditure inputs were then entered into IMPLAN to model the corresponding direct, indirect, and induced effects, resulting in estimates of total economic output, employment, and labor income associated with trail use.

Physical Health Analysis Methodology

The estimation of physical health benefits associated with the Empire State Trail is grounded in a combination of primary survey data and established federal appraisal methods. Trail user surveys were first used to determine the proportion of users engaging in different activity types, specifically identifying the share of cyclists and pedestrians. This distinction is important because the frequency, duration, and intensity of physical activity, and therefore the associated health benefits, vary between these user groups.

To quantify the health benefits generated by trail use, the analysis applies the U.S. Department of Transportation's (USDOT) Benefit-Cost Analysis (BCA) methodology. This framework provides standardized monetary values for the health benefits associated with active transportation, enabling consistent evaluation across infrastructure projects. Within this methodology, each additional walking or cycling trip is assigned a per-trip health benefit value that reflects the expected reduction in health risks attributable to increased physical activity.

The USDOT BCA approach to physical health benefits is largely based on the World Health Organization's Health Economic Assessment Tool (HEAT). HEAT is designed to estimate the economic value of reduced mortality resulting from regular walking and cycling. It does this by linking physical activity levels to epidemiological evidence on all-cause mortality risk. Specifically, HEAT uses dose-response functions derived from public health research to estimate how incremental increases in physical activity—such as those gained from routine trail use—reduce the likelihood of premature death.

In practice, the methodology assumes that individuals who engage in regular walking or cycling experience a measurable reduction in mortality risk compared to inactive individuals. This reduction is then monetized using the value of a statistical life (VSL), a standard economic metric used in public policy analysis to quantify the benefits of risk reductions. By combining the estimated reduction in mortality risk with VSL, HEAT produces a per-user or per-trip economic value for physical activity.

Applying this framework, the analysis multiplies the number of cycling and pedestrian trips on the Empire State Trail—derived from survey-informed user shares and usage estimates—by the

corresponding USDOT BCA health benefit values. The result is an aggregate estimate of the physical health benefits generated by trail use, expressed in economic terms. This approach captures one of the most significant societal benefits of trail infrastructure: its contribution to improved public health outcomes through increased physical activity and reduced mortality risk.

Carbon Benefits - Reductions in Vehicle Miles Traveled

The assessment of the Empire State Trail's impact on carbon emissions is based on a comparative travel behavior analysis using data collected through a trail intercept survey. This approach focuses on how the presence of the trail influences vehicle travel distances, and in turn, associated greenhouse gas emissions. Specifically, the analysis evaluates the distance trail users travel by car to access the trail and compares it to the distance those same users report they would have traveled to reach an alternative recreational destination if the trail did not exist.

Survey respondents' actual travel distance to the trail and their likely travel distance to a substitute location were evaluated. These data points enabled the estimation of a net change in vehicle miles traveled (VMT) attributable to the trail. Because vehicle travel is a primary source of carbon emissions, changes in VMT serve as a proxy for estimating the trail's impact on emissions.

Findings from the survey indicate a mixed effect across users, but with a net reduction in travel distances on average. Approximately 11.4 percent of trail users traveled farther by car to access the trail than they would have to reach an alternative destination, with an average increase of 11.1 miles per trip. Another 20.3 percent of users indicated that their travel distance would be the same regardless of whether the trail existed. Meanwhile, the majority of users, approximately 68.3 percent, traveled shorter distances to access the trail compared to an alternative, with an average reduction of 16.3 miles per trip.

By weighting these shares and associated distances, the analysis estimates the average net change in VMT per trail trip. This net change is then used to infer the overall impact on carbon emissions, with reductions in travel distance corresponding to emissions savings. The results suggest that, despite some users traveling farther, the Empire State Trail overall contributes to a decrease in vehicle travel and thus a reduction in carbon emissions due to its proximity and accessibility relative to alternative destinations.

Property Value Methodology

The property value analysis examined whether residential parcels located closer to the Empire State Trail exhibited higher assessed property values than comparable parcels located farther from the trail. Parcel-level property assessment data were obtained and spatially analyzed using geographic information systems (GIS) to determine each parcel's distance from the trail. Residential parcels were then assigned to one of three proximity zones: Zone A (0–0.25 miles from the trail), Zone B (0.25–1 mile from the trail), and Zone C (2–5 miles from the trail). Zone C served as the control group because these parcels were located far enough from the trail to be less likely to experience direct trail-related influences. To ensure meaningful comparisons, parcels were grouped according to New York State property classification codes and further segmented by lot size. This approach controlled for key factors that influence property values and allowed parcels near the trail to be compared with similar residential properties located farther away.

Only residential parcel classifications and lot size groups containing at least 100 observations were included in the analysis to ensure sufficient sample sizes for reliable comparisons. For each qualifying parcel group, average assessed property values were calculated and compared across the three proximity zones. Property value premiums or discounts associated with trail proximity were identified by comparing average values in Zones A and B to those observed in the control group (Zone C). This methodology provided a consistent framework for evaluating whether proximity to the Empire State Trail was associated with differences in residential property values while minimizing the influence of parcel type and size on the results.

Appendix 2: STATEWIDE DATASETS

Empire State Trail - Impacts By Trail Corridor

Trail	Day-Trip Visits (Annual)	Tourism Visits (Annual)	Total Annual Visits	Jobs				Employee Earnings				Economic Output				State & Local Taxes				Trail Benefits		
				Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Physical Health	VMT Eliminated	Emissions Savings
Champlain Valley Trail	427,702	98,298	526,000	375	70	85	530	$22,727,300	$5,923,000	$6,581,800	$35,232,100	$64,027,700	$17,758,600	$19,858,500	$101,644,800	$8,588,700	$948,900	$1,422,600	$10,960,200	$4,220,000	5,191,000	$617,000
Erie Canalway Trail	2,979,276	684,724	3,664,000	2,550	435	570	3,555	$150,971,700	$39,896,700	$43,309,200	$234,177,600	$435,594,400	$120,455,100	$131,373,000	$687,422,500	$59,316,100	$6,515,000	$9,589,400	$75,420,500	$29,390,000	36,155,000	$4,299,000
Hudson Valley Greenway Trail	4,520,954	1,039,046	5,560,000	3,995	685	925	5,605	$239,525,100	$62,813,200	$69,144,700	$371,483,000	$681,964,600	$188,961,300	$208,729,900	$1,079,655,800	$94,034,800	$10,163,200	$15,168,200	$119,366,200	$44,599,000	54,864,000	$6,524,000
Empire State Trail	**7,927,932**	**1,822,068**	**9,750,000**	**6,920**	**1,190**	**1,580**	**9,690**	**$413,224,100**	**$108,632,900**	**$119,035,700**	**$640,892,700**	**$1,181,586,700**	**$327,175,000**	**$359,961,400**	**$1,868,723,100**	**$161,939,600**	**$17,627,100**	**$26,180,200**	**$205,746,900**	**$78,209,000**	**96,210,000**	**$11,440,000**

Economic Impact Per Trail Mile Considerations

Trail Miles	*Miles*	*Impact Multiplier*	*Impact Miles*
Off-Road	*479.0*	*1.00*	*479.0*
On-Road	*277.8*	*0.25*	*69.5*
Total	*756.8*		*548.4*

Physical Health Benefits per Trip Factors

Benefit	*Cyclist Share*	*Pedestrian Share*	*Other (Active) Share*	*Other (Non-Active) Share*
Physical Health	*61.4%*	*37.0%*	*1.5%*	*0.2%*
Benefit per Trip	*$7.67*	*$8.61*	*$8.61*	*$0.00*

Vehicle Miles Traveled Considerations

Attribute	*Percentage of Users*	*Average Distance in miles*
Users traveling greater VMT by car due to trail use	*11.4%*	*11.1*
Users traveling same VMT by car due to trail use	*20.3%*	*0*
% of users traveling lesser VMT by car due to trail use	*68.3%*	*16.3*

Emissions Costs Per Vehicle Mile Traveled

Pollutant	*Cost per Vehicle Mile Traveled (2025$)*
NO_x	*$0.010190*
SO_x	*$0.000192*
$PM_{2.5}$	*$0.000246*
CO_2	*$0.108278*

Revised*

Impacts from ***Non-Tourism*** *Visitor Spending Along the Empire State Trail*

Impact Categories	*Low*	*Med*	*High*
Meals & Drinks			
Expenditure per Storefront Visit	*$15.62*	*$20.35*	*$25.09*
Storefront Purchase Probability	*40.8%*	*42%*	*43%*
Expenditure per Trail Visit	***$6.37***	***$8.52***	***$10.77***
Groceries			
Expenditure per Storefront Visit	*$6.67*	*$17.78*	*$28.89*
Storefront Purchase Probability	*20.4%*	*21%*	*22%*
Expenditure per Trail Visit	***$1.36***	***$3.81***	***$6.48***
Retail			
Expenditure per Storefront Visit	*$19.44*	*$30.94*	*$42.45*
Storefront Purchase Probability	*6.68%*	*7.89%*	*9.09%*
Expenditure per Trail Visit	***$0.82***	***$2.44***	***$3.86***
Entertainment			
Expenditure per Storefront Visit	*$12.15*	*$15.61*	*$19.08*
Storefront Purchase Probability	*5.4%*	*5.8%*	*6.3%*
Expenditure per Trail Visit	***$0.19***	***$0.91***	***$1.20***
Bike Rental			
Expenditure per Storefront Visit	*$33.17*	*$38.62*	*$44.07*
Storefront Purchase Probability	*5.1%*	*5.6%*	*6.2%*
Expenditure per Trail Visit	***$0.32***	***$2.17***	***$2.72***
Other			
Expenditure per Storefront Visit	*$25.66*	*$76.07*	*$126.48*
Storefront Purchase Probability	*9.2%*	*10%*	*11%*
Expenditure per Trail Visit	***$2.35***	***$7.62***	***$13.75***
Estimated Expenditure per Trail Visit	*$11.42*	*$25.47*	*$38.78*

Explanation of "Other" Category

The "Other" spending category includes miscellaneous trip-related purchases and services that do not fall within meals & drinks, groceries, retail, entertainment, or the bike rental categories. Examples reported by respondents include fuel/gasoline purchases, fishing gear and equipment, kayak-related expenses, spa services, bus and train fares, other transportation costs, merchandise or souvenir tent purchases, and general miscellaneous expenses. This category captures incidental and supplemental expenditures made during the trip experience.

Appendix 3: PARTNER-LEVEL DATA

RESULTS

Canalway Trail: Buffalo to Whitehall | Erie Canalway Trail + CVT (Albany County) + CVT (Saratoga County) + CVT (Part of Washington County)

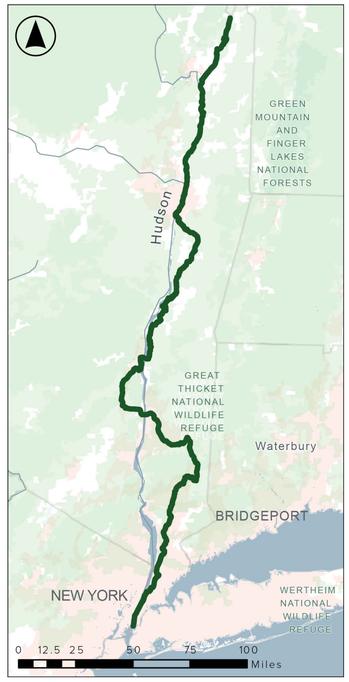
Segment	Day-Trip Visits (Annual)	Tourism Visits (Annual)	Total Annual Visits	Jobs				Employee Earnings				Economic Output				State & Local Taxes				Trail Benefits		
				Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Physical Health	VMT Eliminated	Emissions Savings
Erie Canalway Trail	2,979,276	684,724	3,664,000	2,550	435	570	3,555	$150,971,700	$39,896,700	$43,309,200	$234,177,600	$435,594,400	$120,455,100	$131,373,000	$687,422,500	$59,316,100	$6,515,000	$9,589,400	$75,420,500	$29,390,000	$36,155,000	$4,299,000
Champlain Canalway Trail Segment Addition	342,845	78,796	421,641	295	50	65	415	$17,574,800	$4,629,600	$5,052,500	$27,256,900	$50,535,700	$13,979,100	$15,310,900	$79,825,600	$6,918,700	$754,100	$1,116,200	$8,789,000	$3,382,500	$4,160,900	$494,900
Canalway Trail	3,322,121	763,519	4,085,641	2,845	485	635	3,970	$168,546,500	$44,526,300	$48,361,700	$261,434,500	$486,130,100	$134,434,200	$146,683,900	$767,248,100	$66,234,800	$7,269,100	$10,705,600	$84,209,500	$32,772,500	$40,315,900	$4,793,900

Hudson River Valley Greenway: NYC to Whitehall | Hudson River Valley Greenway + CVT (Albany County) + CVT (Saratoga County) + CVT (Part of Washington County)

Segment	Day-Trip Visits (Annual)	Tourism Visits (Annual)	Total Annual Visits	Jobs				Employee Earnings				Economic Output				State & Local Taxes				Trail Benefits		
				Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Physical Health	VMT Eliminated	Emissions Savings
Hudson Valley Greenway Trail	4,520,954	1,039,046	5,560,000	3,995	685	925	5,605	$239,525,100	$62,813,200	$69,144,700	$371,483,000	$681,964,600	$188,961,300	$208,729,900	$1,079,655,800	$94,034,800	$10,163,200	$15,168,200	$119,366,200	$44,599,000	$54,864,000	$6,524,000
Champlain Canalway Trail Segment Addition	342,845	78,796	421,641	295	50	65	415	$17,574,800	$4,629,600	$5,052,500	$27,256,900	$50,535,700	$13,979,100	$15,310,900	$79,825,600	$6,918,700	$754,100	$1,116,200	$8,789,000	$3,382,500	$4,160,900	$494,900
Hudson River Valley Greenway	4,863,799	1,117,841	5,981,641	4,290	735	990	6,020	$257,099,900	$67,442,800	$74,197,200	$398,739,900	$732,500,300	$202,940,400	$224,040,800	$1,159,481,400	$100,953,500	$10,917,300	$16,284,400	$128,155,200	$47,981,500	$59,024,900	$7,018,900

Canalway Trail: Buffalo to Whitehall

Hudson River Valley Greenway + Champlain Canalway Trail Segment: NYC to Whitehall



Appendix 4: COUNTY LEVEL DATA

Trail County	Trail Segment	Annual Visits	Direct Expenditure Per Trail Visit							Visit Type		Population Density			Spend Profile		
			Meals & Drinks	Groceries	Retail	Entertainment	Bike Rental	Other	Total	Daily	Overnight / Tourism	High	Medium	Low	High	Med	Low
Erie	ECT	711,913	$9.44	$4.93	$2.96	$0.92	$2.06	$10.28	$30.60	578,872	133,041	6.1	0.9	2.3	64.9%	10.1%	25.0%
Niagara	ECT	151,409	$8.07	$3.31	$2.05	$0.68	$1.53	$6.63	$22.26	123,114	28,295	1.0	2.3	2.3	18.4%	41.4%	40.2%
Orleans	ECT	117,831	$6.37	$1.36	$0.82	$0.19	$0.32	$2.35	$11.42	95,811	22,020	0.0	0.0	3.2	0.0%	0.0%	100.0%
Monroe	ECT	675,838	$9.78	$5.32	$3.20	$1.02	$2.31	$11.13	$32.77	549,538	126,300	5.5	1.6	1.0	68.1%	19.4%	12.5%
Wayne	ECT	178,722	$6.38	$1.37	$0.82	$0.20	$0.33	$2.37	$11.46	145,323	33,399	0.0	0.0	4.9	0.1%	0.0%	99.9%
Seneca	ECT	5,780	$6.37	$1.36	$0.82	$0.19	$0.32	$2.35	$11.42	4,700	1,080	0.0	0.0	2.1	0.0%	0.0%	100.0%
Cayuga	ECT	81,606	$6.93	$2.00	$1.24	$0.38	$0.80	$3.72	$15.07	66,355	15,250	0.0	0.8	2.3	0.0%	26.0%	74.0%
Onondaga	ECT	589,815	$8.92	$4.31	$2.63	$0.87	$1.98	$8.83	$27.54	479,591	110,224	2.4	2.4	1.3	38.5%	39.8%	21.7%
Madison	ECT	98,822	$6.37	$1.36	$0.82	$0.19	$0.32	$2.35	$11.42	80,354	18,468	0.0	0.0	1.7	0.0%	0.0%	100.0%
Oneida	ECT	205,299	$7.91	$3.14	$1.90	$0.58	$1.26	$6.29	$21.09	166,933	38,366	1.5	0.8	3.2	27.7%	14.8%	57.4%
Herkimer	ECT	129,935	$6.96	$2.03	$1.25	$0.38	$0.81	$3.80	$15.22	105,653	24,282	0.1	0.8	2.5	1.5%	24.2%	74.3%
Montgomery	ECT	129,849	$6.73	$1.77	$1.09	$0.31	$0.63	$3.24	$13.78	105,583	24,266	0.0	0.8	4.0	0.0%	16.9%	83.1%
Schenectady	ECT	223,038	$9.40	$4.86	$2.97	$0.98	$2.26	$10.07	$30.54	181,357	41,681	0.9	0.8	0.2	47.8%	42.9%	9.2%
Albany	ECT	364,142	$9.65	$5.18	$3.09	$0.95	$2.11	$10.85	$31.83	296,092	68,050	2.6	0.0	0.9	74.6%	0.0%	25.4%
Erie Canalway Trail	**ECT**	**3,664,000**	**$8.72**	**$4.09**	**$2.47**	**$0.78**	**$1.73**	**$8.38**	**$26.16**	**2,979,276**	**684,724**	**20.1**	**11.3**	**32.0**	**44.1%**	**19.2%**	**36.8%**
Albany	CVT	272,004	$9.65	$5.18	$3.09	$0.95	$2.11	$10.85	$31.83	221,172	50,832	2.6	0.0	0.9	74.6%	0.0%	25.4%
Saratoga	CVT	94,629	$8.55	$3.88	$2.38	$0.78	$1.78	$7.89	$25.27	76,944	17,684	1.3	1.7	1.3	30.4%	39.5%	30.1%
Washington	CVT	73,761	$6.57	$1.59	$0.95	$0.24	$0.43	$2.86	$12.65	59,976	13,784	0.2	0.0	4.1	4.5%	0.0%	95.5%
Essex	CVT	25,904	$6.37	$1.36	$0.82	$0.19	$0.32	$2.35	$11.42	21,063	4,841	0.0	0.0	1.5	0.0%	0.0%	100.0%
Clinton	CVT	59,703	$8.52	$3.81	$2.44	$0.91	$2.17	$7.62	$25.47	48,545	11,157	0.0	0.8	0.0	0.0%	100.0%	0.0%
Champlain Valley Trail	**CVT**	**526,000**	**$8.73**	**$4.10**	**$2.48**	**$0.78**	**$1.73**	**$8.41**	**$26.23**	**427,702**	**98,298**	**4.1**	**2.5**	**7.8**	**44.7%**	**18.5%**	**36.9%**
Rensselaer	HRVG	178,232	$8.23	$3.51	$2.16	$0.71	$1.62	$7.05	$23.29	144,924	33,308	0.9	1.6	1.4	22.0%	41.6%	36.4%
Columbia	HRVG	215,366	$6.37	$1.36	$0.82	$0.19	$0.32	$2.35	$11.42	175,119	40,247	0.0	0.0	3.8	0.0%	0.0%	100.0%
Ulster	HRVG	398,177	$7.66	$2.86	$1.74	$0.54	$1.17	$5.64	$19.61	323,766	74,411	1.0	1.1	3.2	19.3%	20.8%	59.9%
Dutchess	HRVG	415,777	$7.84	$3.04	$1.90	$0.64	$1.46	$6.00	$20.88	338,077	77,700	0.5	3.0	2.5	9.2%	49.5%	41.3%
Putnam	HRVG	244,708	$7.86	$3.06	$1.92	$0.66	$1.51	$6.04	$21.05	198,977	45,731	0.2	1.8	1.2	6.7%	55.5%	37.8%
Westchester	HRVG	647,623	$10.36	$5.99	$3.60	$1.15	$2.62	$12.62	$36.33	526,596	121,027	3.0	0.7	0.0	81.6%	18.4%	0.0%
Bronx	HRVG	524,304	$10.77	$6.48	$3.86	$1.20	$2.72	$13.75	$38.78	426,323	97,981	1.0	0.0	0.0	100.0%	0.0%	0.0%
New York	HRVG	2,935,813	$10.77	$6.48	$3.86	$1.20	$2.72	$13.75	$38.78	2,387,172	548,641	1.8	0.0	0.0	100.0%	0.0%	0.0%
Hudson Valley Greenway Trail	**HRVG**	**5,560,000**	**$9.90**	**$5.46**	**$3.27**	**$1.03**	**$2.32**	**$11.46**	**$33.44**	**4,520,954**	**1,039,046**	**8.4**	**8.1**	**12.0**	**74.81%**	**11.10%**	**14.09%**
															High	Med	Low
Empire State Trail	*EST*	*9,750,000*	*$9.39*	*$4.87*	*$2.93*	*$0.92*	*$2.07*	*$10.14*	*$30.32*	*7,927,932*	*1,822,068*	*33*	*22*	*52*	*61.6%*	*14.5%*	*23.8%*

Empire State Trail - Impacts by County

County	Day-Trip Visits (Annual)	Tourism Visits (Annual)	Total Annual Visits	Jobs				Employee Earnings				Economic Output				State & Local Taxes				Trail Benefits		
				Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Physical Health	VMT Eliminated	Emissions Savings
Albany	*221,172*	*50,832*	*272,004*	*195*	*35*	*45*	*275*	*$11,538,300*	*$3,029,400*	*$3,319,300*	*$17,887,000*	*$33,053,300*	*$9,157,600*	*$10,053,400*	*$52,264,300*	*$4,581,300*	*$493,000*	*$732,900*	*$5,807,200*	*$2,182,000*	*2,684,000*	*$319,000*
Saratoga	*76,944*	*17,684*	*94,629*	*65*	*10*	*15*	*90*	*$3,937,800*	*$1,035,600*	*$1,139,000*	*$6,112,400*	*$11,297,300*	*$3,122,200*	*$3,435,500*	*$17,855,000*	*$1,532,800*	*$168,300*	*$249,200*	*$1,950,300*	*$759,000*	*934,000*	*$111,000*
Washington	*59,976*	*13,784*	*73,761*	*50*	*10*	*10*	*70*	*$2,814,100*	*$757,100*	*$796,800*	*$4,368,000*	*$8,293,600*	*$2,278,600*	*$2,443,100*	*$13,015,300*	*$1,078,900*	*$124,400*	*$179,800*	*$1,383,100*	*$592,000*	*728,000*	*$87,000*
Essex	*21,063*	*4,841*	*25,904*	*20*	*5*	*5*	*30*	*$1,316,000*	*$328,800*	*$391,700*	*$2,036,500*	*$3,364,400*	*$945,500*	*$1,169,200*	*$5,479,100*	*$395,000*	*$49,200*	*$76,500*	*$520,700*	*$208,000*	*256,000*	*$30,000*
Clinton	*48,545*	*11,157*	*59,703*	*45*	*10*	*10*	*65*	*$3,121,100*	*$772,100*	*$935,000*	*$4,828,200*	*$8,019,100*	*$2,254,700*	*$2,757,300*	*$13,031,100*	*$1,000,700*	*$114,000*	*$184,200*	*$1,298,900*	*$479,000*	*589,000*	*$70,000*
Champlain Valley Trail Subtotal	***427,702***	***98,298***	***526,000***	***375***	***70***	***85***	***530***	***$22,727,300***	***$5,923,000***	***$6,581,800***	***$35,232,100***	***$64,027,700***	***$17,758,600***	***$19,858,500***	***$101,644,800***	***$8,588,700***	***$948,900***	***$1,422,600***	***$10,960,200***	***$4,220,000***	***5,191,000***	***$617,000***
Erie	*578,872*	*133,041*	*711,913*	*505*	*85*	*115*	*705*	*$30,404,700*	*$7,981,800*	*$8,764,600*	*$47,151,100*	*$86,638,500*	*$24,005,700*	*$26,497,300*	*$137,141,500*	*$11,923,000*	*$1,289,600*	*$1,922,500*	*$15,135,100*	*$5,710,000*	*7,025,000*	*$835,000*
Niagara	*123,114*	*28,295*	*151,409*	*105*	*20*	*25*	*150*	*$6,369,800*	*$1,672,300*	*$1,838,400*	*$9,880,500*	*$18,085,300*	*$5,006,300*	*$5,555,400*	*$28,647,000*	*$2,411,200*	*$267,900*	*$399,400*	*$3,078,500*	*$1,214,000*	*1,494,000*	*$178,000*
Orleans	*95,811*	*22,020*	*117,831*	*75*	*15*	*15*	*105*	*$4,380,400*	*$1,185,200*	*$1,238,400*	*$6,804,000*	*$13,083,300*	*$3,602,500*	*$3,799,600*	*$20,485,400*	*$1,694,100*	*$197,400*	*$280,400*	*$2,171,900*	*$945,000*	*1,163,000*	*$138,000*
Monroe	*549,538*	*126,300*	*675,838*	*485*	*85*	*110*	*680*	*$29,110,100*	*$7,631,800*	*$8,405,800*	*$45,147,700*	*$82,816,800*	*$22,947,700*	*$25,375,000*	*$131,139,500*	*$11,433,300*	*$1,233,500*	*$1,842,500*	*$14,509,300*	*$5,421,000*	*6,669,000*	*$793,000*
Wayne	*145,323*	*33,399*	*178,722*	*115*	*20*	*25*	*160*	*$7,036,800*	*$1,859,500*	*$2,009,700*	*$10,906,000*	*$20,376,200*	*$5,633,500*	*$6,130,000*	*$32,139,700*	*$2,596,100*	*$306,500*	*$440,800*	*$3,343,400*	*$1,434,000*	*1,764,000*	*$210,000*
Seneca	*4,700*	*1,080*	*5,780*	*5*	*<5*	*<5*	*5*	*$205,000*	*$53,000*	*$54,000*	*$312,000*	*$618,800*	*$172,400*	*$173,200*	*$964,400*	*$82,900*	*$8,300*	*$11,800*	*$103,000*	*$46,000*	*57,000*	*$7,000*
Cayuga	*66,355*	*15,250*	*81,606*	*55*	*10*	*10*	*75*	*$3,038,000*	*$822,800*	*$857,700*	*$4,718,500*	*$9,099,800*	*$2,502,700*	*$2,630,100*	*$14,232,600*	*$1,210,500*	*$138,400*	*$196,200*	*$1,545,100*	*$655,000*	*805,000*	*$96,000*
Onondaga	*479,591*	*110,224*	*589,815*	*415*	*70*	*95*	*580*	*$25,180,900*	*$6,599,700*	*$7,269,600*	*$39,050,200*	*$71,476,900*	*$19,806,300*	*$21,957,700*	*$113,240,900*	*$9,698,600*	*$1,060,700*	*$1,585,400*	*$12,344,700*	*$4,731,000*	*5,820,000*	*$692,000*
Madison	*80,354*	*18,468*	*98,822*	*65*	*10*	*15*	*90*	*$3,581,900*	*$971,300*	*$1,002,500*	*$5,555,700*	*$10,835,400*	*$2,981,600*	*$3,096,100*	*$16,913,100*	*$1,414,700*	*$165,500*	*$231,200*	*$1,811,400*	*$793,000*	*975,000*	*$116,000*
Oneida	*166,933*	*38,366*	*205,299*	*140*	*25*	*30*	*195*	*$8,208,800*	*$2,183,500*	*$2,340,000*	*$12,732,300*	*$23,884,500*	*$6,587,900*	*$7,133,700*	*$37,606,100*	*$3,230,800*	*$358,700*	*$522,000*	*$4,111,500*	*$1,647,000*	*2,026,000*	*$241,000*
Herkimer	*105,653*	*24,282*	*129,935*	*85*	*15*	*20*	*120*	*$4,829,600*	*$1,296,700*	*$1,360,500*	*$7,486,800*	*$14,499,700*	*$3,990,800*	*$4,185,000*	*$22,675,500*	*$1,931,800*	*$218,400*	*$312,300*	*$2,462,500*	*$1,042,000*	*1,282,000*	*$152,000*
Montgomery	*105,583*	*24,266*	*129,849*	*85*	*15*	*20*	*120*	*$4,852,800*	*$1,308,200*	*$1,378,700*	*$7,539,700*	*$14,488,900*	*$3,987,300*	*$4,202,100*	*$22,678,300*	*$1,911,200*	*$220,300*	*$311,800*	*$2,443,300*	*$1,042,000*	*1,281,000*	*$152,000*
Schenectady	*181,357*	*41,681*	*223,038*	*160*	*25*	*35*	*220*	*$9,452,700*	*$2,486,100*	*$2,724,000*	*$14,662,800*	*$27,030,400*	*$7,483,500*	*$8,225,300*	*$42,739,200*	*$3,715,700*	*$403,900*	*$599,100*	*$4,718,700*	*$1,789,000*	*2,201,000*	*$262,000*
Albany	*296,092*	*68,050*	*364,142*	*255*	*40*	*55*	*350*	*$14,320,200*	*$3,844,800*	*$4,065,300*	*$22,230,300*	*$42,659,900*	*$11,746,900*	*$12,412,500*	*$66,819,300*	*$6,062,200*	*$645,900*	*$934,000*	*$7,642,100*	*$2,921,000*	*3,593,000*	*$427,000*
Erie Canalway Trail Subtotal	***2,979,276***	***684,724***	***3,664,000***	***2,550***	***435***	***570***	***3,555***	***$150,971,700***	***$39,896,700***	***$43,309,200***	***$234,177,600***	***$435,594,400***	***$120,455,100***	***$131,373,000***	***$687,422,500***	***$59,316,100***	***$6,515,000***	***$9,589,400***	***$75,420,500***	***$29,390,000***	***36,155,000***	***$4,299,000***
Rensselaer	*144,924*	*33,308*	*178,232*	*120*	*20*	*30*	*170*	*$7,366,600*	*$1,942,200*	*$2,109,500*	*$11,418,300*	*$21,134,000*	*$5,851,200*	*$6,405,300*	*$33,390,500*	*$2,850,500*	*$314,900*	*$460,000*	*$3,625,400*	*$1,430,000*	*1,759,000*	*$209,000*
Columbia	*175,119*	*40,247*	*215,366*	*140*	*25*	*30*	*195*	*$8,278,900*	*$2,205,700*	*$2,349,900*	*$12,834,500*	*$24,270,000*	*$6,691,200*	*$7,192,600*	*$38,153,800*	*$3,113,500*	*$364,700*	*$522,500*	*$4,000,700*	*$1,727,000*	*2,125,000*	*$253,000*
Ulster	*323,766*	*74,411*	*398,177*	*270*	*45*	*65*	*380*	*$16,335,400*	*$4,300,000*	*$4,690,600*	*$25,326,000*	*$46,835,900*	*$12,958,600*	*$14,233,000*	*$74,027,500*	*$6,228,400*	*$697,500*	*$1,027,900*	*$7,953,800*	*$3,194,000*	*3,929,000*	*$467,000*
Dutchess	*338,077*	*77,700*	*415,777*	*280*	*45*	*60*	*385*	*$16,108,600*	*$4,308,300*	*$4,567,400*	*$24,984,300*	*$47,650,000*	*$13,131,600*	*$13,975,700*	*$74,757,300*	*$6,470,600*	*$718,600*	*$1,038,400*	*$8,227,600*	*$3,335,000*	*4,103,000*	*$488,000*
Putnam	*198,977*	*45,731*	*244,708*	*165*	*30*	*40*	*235*	*$10,028,200*	*$2,644,100*	*$2,875,700*	*$15,548,000*	*$28,825,800*	*$7,970,200*	*$8,733,600*	*$45,529,600*	*$3,843,700*	*$430,000*	*$633,600*	*$4,907,300*	*$1,963,000*	*2,415,000*	*$287,000*
Westchester	*526,596*	*121,027*	*647,623*	*470*	*80*	*110*	*660*	*$28,079,500*	*$7,362,200*	*$8,109,600*	*$43,551,300*	*$79,975,800*	*$22,156,700*	*$24,467,500*	*$126,600,000*	*$11,136,800*	*$1,193,000*	*$1,783,900*	*$14,113,700*	*$5,195,000*	*6,390,000*	*$760,000*
Bronx	*426,323*	*97,981*	*524,304*	*380*	*65*	*85*	*530*	*$21,717,500*	*$5,770,400*	*$6,220,100*	*$33,708,000*	*$63,535,500*	*$17,545,700*	*$18,856,300*	*$99,937,500*	*$9,055,500*	*$957,800*	*$1,407,400*	*$11,420,700*	*$4,206,000*	*5,174,000*	*$615,000*
New York	*2,387,172*	*548,641*	*2,935,813*	*2,170*	*375*	*505*	*3,050*	*$131,610,400*	*$34,280,300*	*$38,221,900*	*$204,112,600*	*$369,737,600*	*$102,656,100*	*$114,865,900*	*$587,259,600*	*$51,335,800*	*$5,486,700*	*$8,294,500*	*$65,117,000*	*$23,549,000*	*28,969,000*	*$3,445,000*
Hudson Valley Greenway Trail Subtotal	***4,520,954***	***1,039,046***	***5,560,000***	***3,995***	***685***	***925***	***5,605***	***$239,525,100***	***$62,813,200***	***$69,144,700***	***$371,483,000***	***$681,964,600***	***$188,961,300***	***$208,729,900***	***$1,079,655,800***	***$94,034,800***	***$10,163,200***	***$15,168,200***	***$119,366,200***	***$44,599,000***	***54,864,000***	***$6,524,000***
Empire State Trail Total	***7,927,932***	***1,822,068***	***9,750,000***	***6,920***	***1,190***	***1,580***	***9,690***	***$413,224,100***	***$108,632,900***	***$119,035,700***	***$640,892,700***	***$1,181,586,700***	***$327,175,000***	***$359,961,400***	***$1,868,723,100***	***$161,939,600***	***$17,627,100***	***$26,180,200***	***$205,746,900***	***$78,209,000***	***96,210,000***	***$11,440,000***

Appendix 5: VISITOR COUNT METHODOLOGY

TECHNICAL MEMORANDUM

TO: Parks and Trails New York (PTNY)

FROM: Lindsay Zefting, PE; Verity Engineering, D.P.C.

RE: Empire State Trail User Estimate

The purpose of this memorandum is to document the results and methodology used to estimate the total number of annual users for the Empire State Trail. This methodology and report does not claim to identify total use for any given year. Rather, it calculates an overall "Estimated Annual Use" figure, based on calculating the total annual use at locations and missing intervals along the trail.

Count Location Annual Trail Estimate Methodology

Full year or partial counts were available for 78 locations along the Empire State Trail taken between 2020 and 2025. Previous adjusted counts were utilized at 19 locations along the Erie and Champlain Canalways. An additional 17 full and partial count locations were completed in 2024 and 2025 by PTNY. Counts from 42 locations along the Hudson Valley Greenway corridor were also received from Hudson River Valley Greenway (HRVG). These count locations are shown in Map 1.

Counts that spanned the full year were used without modifications. Counts that spanned two years but included all twelve months were used without modifications. Missing months were calculated for 16 of the count locations using the methodology described below.

HRVG:
Count Locations with Full Years: 6
Count Locations Spanning Two Years: 32
Count Locations with Partial Years: 4
PTNY:
Count Locations with Full Years: 4
Count Locations Spanning Two Years: 1
Locations with Partial Years: 12

Month Calculation

Using the count locations with full years, a monthly average percentage of trail users was determined. This percentage was used to calculate missing or partial months data to arrive at a yearly estimate for these partial year locations. August was the month with the most consistent trail usage as a percentage of the annual usage, so it was used as the base month to calculate others when available.

Month	Ave % of Annual Trail Users
Jan	3.4%
Feb	4.5%
Mar	5.2%
Apr	7.0%
May	10.3%
Jun	11.3%
Jul	14.3%
Aug	11.4%
Sep	13.0%
Oct	10.3%
Nov	6.2%
Dec	3.1%

Detailed Methodology

Previous methodologies utilized a correlation between population density and existing counts to estimate trail users. This resulted in a factor to be able to estimate trail usage at any given point along the trail by sampling population density from the surrounding area. Sample points are then collected along the trail and then added together for total trail usage.

Additional count data is available from when this methodology was originally developed, allowing the current methodology to be further defined. Key changes include separate trendlines for urban and rural areas, a correlation between trail usage and municipal density, and more reliance on count data.

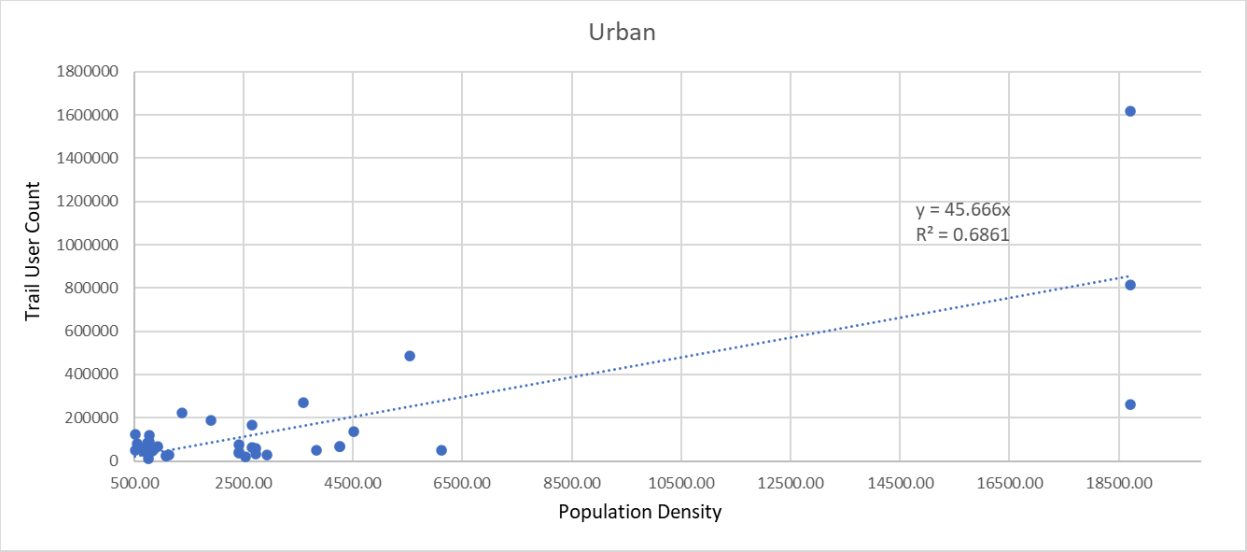
Population Density

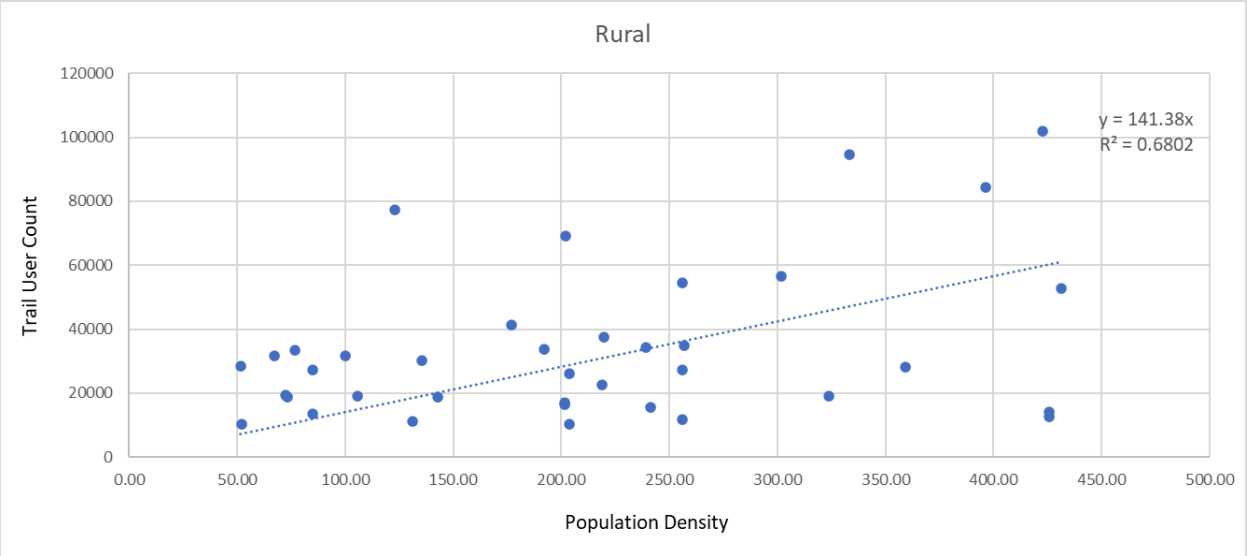
The correlation between population density of municipal density and census block density within 3 miles of the count location resulted in similar correlations and more accuracy when comparing urban versus rural density. Municipal density using 2020 population data was used for this analysis.

Urban Versus Rural Density

Trail counts completed in rural areas (defined here as a population density less than 500 people per square mile) were consistently above the trendline. As most of the estimated locations would be in these rural areas, it would result in an underestimation of overall trail users for the Empire State Trail. Instead, two trendlines were developed.

For an urban context, trail users = 45.666 * population density. This linear trendline has an R^2 value of 0.6861. For a rural context, trail users = 141.38* population density. This linear trendline has an R^2 value of 0.6802.





Count Data and Estimate Locations

The number of calculated points was reduced due to the higher number of count locations along the trail. To generate trail user estimates in the gaps between count locations, it was assumed that the average trip distance for a pedestrian or cyclist on the Empire State Trail is 5 - 10 miles. Points along the Empire State Trail were generated at these two intervals, then points within 5 or 10 miles of count locations were removed. Note that in areas of the Empire State Trail where there are significant lengths of on-road facilities, this interval was further increased to 20+ miles to account for the limited number of pedestrians likely on these portions of the trail. These count estimate locations are shown in Map 2.

Manhattan Count Adjustments

There are three count locations in Manhattan in close proximity to each other relative to other count locations, totalling 7,517,830 users. NYCDOT also supplies their own estimate of 7,000 users per day, or 2,555,000 users, which exceeds data at any one count location. To avoid duplicating user counts. This lower user estimate was used.

Trail User Estimates

Trail user estimates were developed for the Empire State Trail in total and for four subsections of the EST: Erie Canalway Trail, Hudson River Valley Greenway, Champlain Canalway (Whitehall south), and Champlain Canalway (Whitehall north). These estimates are shown in the table below. Column 1 is the total of the count data. Column 2 is the total of the count data plus the calculated locations at 5 mile intervals. Column 3 is the total of the count data plus the calculated locations at 10 mile intervals.

These user estimates were checked against an estimate of trail users just using the formula trendline at an interval of 5 miles.

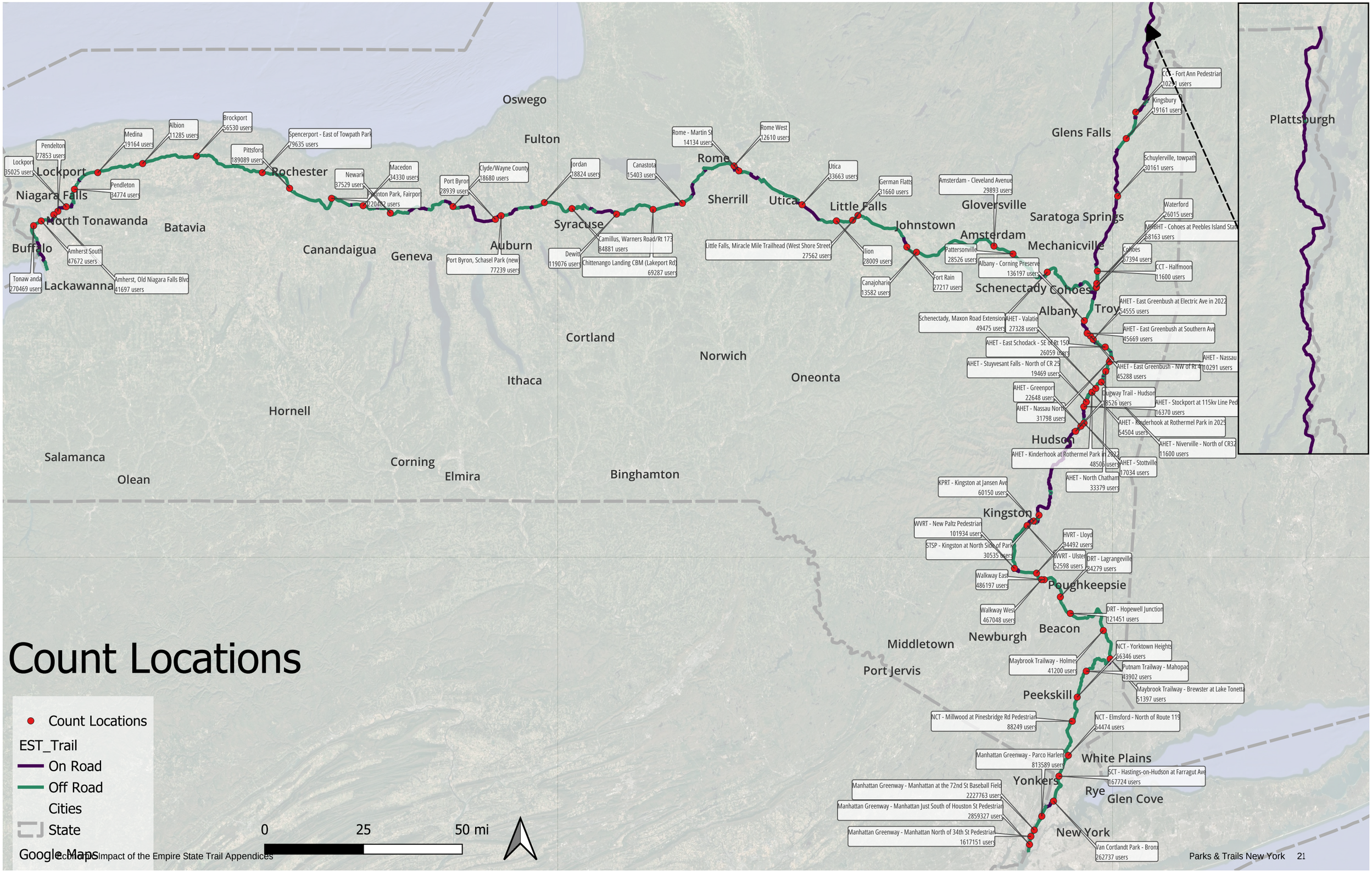
	Count Data	Count + 5 Mile Analysis	Count + 10 Mile Analysis	*5 mile interval*
ECT	1,884,190	**3,664,100**	2,280,403	*3,445,650*
HRVG	5,458,970	6,547,280	**5,559,693**	*3,654,420*
CCT (South of Whitehall)	232,785	**445,598**	261,635	*508,362*
CCT (North of Whitehall)	-	93,269	**79,405**	*93,269*

Based on this, as well as local knowledge of the corridor and their unique contexts, a combination of Count + 5 mile and Count + 10 mile are used for an overall Empire State Trail user estimate. For the Erie Canalway Corridor and Champlain Canalway Corridor (South), the Count + 5 mile analysis is used. This is more accurate due to the context of the corridor and current frequency of count locations. For the Hudson River Valley Greenway and Champlain Canalway Trail (North), the Count + 10 mile analysis is used. For HRVG, this is due to the current higher frequency of count locations and for Champlain Canalway Trail (North), this is due to the frequency and length of on-road segments.

The total estimated trail users for the Empire State Trail is 9,748,796. As this is an estimate, it should be assumed that the estimate actually ranges from 9 million to 10.5 million annual trail users.

Appendix 6: VISITOR COUNT DATA

Count Locations



Count Estimates