



The Long Island Extension to the Empire State Trail

A Feasibility Study & Preliminary Route Alignment

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Acknowledgements

Presented by:



Prepared by:



Special Thanks

Nassau County Department of Public Works, Suffolk County Department of Public Works, Long Island Power Authority, Long Island Rail Road, Hauppauge Public Library

Project Team

Trust for Public Land
Carter Strickland
Danny Gold
Grace Healy

New York Bicycling Coalition
Paul Winkeller
Hal Terry
Howie Mann

TransPro Consulting
Dan Suraci, AICP
Lyndsey Scofield, PMP



The Empire State Trail Extension project was supported with funding from the New York State Conservation Partnership Program (NYSCPP) and New York's Environmental Protection Fund. The NYSCPP is administered by the Land Trust Alliance, in coordination with the New York State Department of Environmental Conservation.

The Trust for Public Land and New York Bicycling Coalition are also indebted to the Long Island Community Foundation and Rauch Foundation for their generous support of this project.





Dear Friends,

The Trust for Public Land creates parks and protects land for people, ensuring healthy, livable communities for generations to come. Our mission is to connect people to nature -- and in so doing, connect people to each other. We plan and build green spaces because they improve physical and mental health, provide cool shade and absorb stormwater, revitalize communities, and facilitate recreational tourism.

Trails are a great example of how open space provides many benefits. These “linear parks” allow for a range of activities, from a healthy commute to a weekend adventure with families and friends, and can tie together walkable, bikeable, and vibrant downtowns. As Long Island looks to the future, a long distance trail can help attract and retain residents, businesses, and visitors, and greatly benefit the seven million people who live in Suffolk, Nassau, Queens, and Kings (Brooklyn) Counties. This report shows that a trail is possible, even through this densely populated area, and can tie into the Empire State Trail that will be completed in 2020. We hope that this study inspires further action and the construction of a world-class trail from New York City through Bethpage State Park, the Pine Barrens, Greenport, and Shelter Island to Montauk, and all the unique places in between.

Kind Regards,

Carter Strickland
New York State Director
Trust for Public Land



The New York Bicycling Coalition (NYBC) is thrilled to be partnering with The Trust for Public Land and is committed to identifying a realistic alignment which extends the magnificent Empire State Trail into Nassau and Suffolk counties. NYBC draws upon nearly thirty years of experience working in the bicycling, pedestrian and active transportation space to engage a range of our organization's partners, in both the public and private sectors, on Long Island to provide valuable feedback and guidance to this important first stage effort.

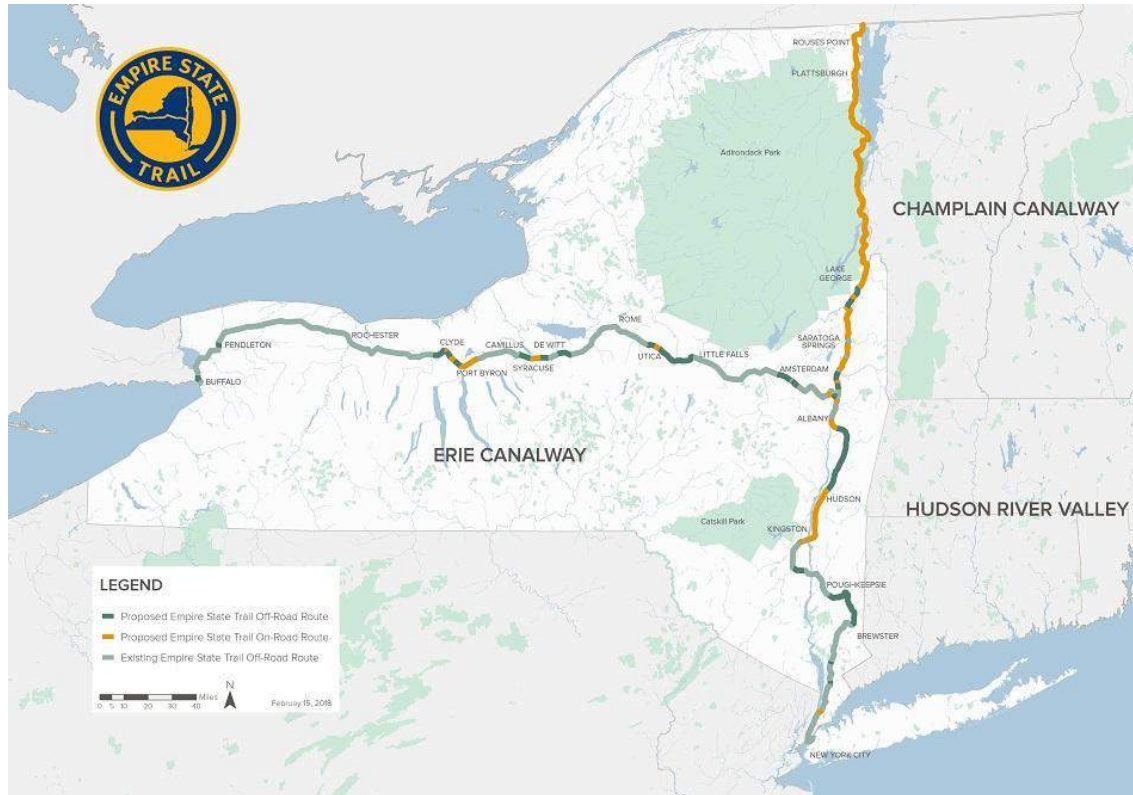
We are at the beginning of an exciting and complicated process that will ensure that the Empire State Trail is not just an end-to-end New York State asset, but will be an irresistible magnet for global tourism and an engine of sustainable economic development. As we move in to additional planning, design, fund development and actual build out we are committed to emulate the approach taken by the Empire State Trail launching in 2020 - identify a compelling spine for the Long Island Empire State Trail Extension and strive to incorporate other trails and off-road assets to provide a full range of bike, hike and other active recreation and transportation opportunities for visitors and the millions of New Yorkers who reside on Long Island.

Handwritten signature of Paul Winkeller.

Paul Winkeller, Executive Director
New York Bicycling Coalition



The Empire State Trail



The Empire State Trail (EST) is the country's longest statewide trail and represents an unprecedented investment in active transportation and recreation across New York State. The EST is...

750 Miles

60% Off-road (approximate)

\$200M Investment

Background

The Empire State Trail (EST), announced early in 2017 during Governor Cuomo's State of the State message, is a bold vision: a world class multi-use path combining on and off-road paths to span from the Canadian borders near both Plattsburgh and Buffalo to New York City. The EST provides an innovative and uniquely New York response to explosive interest in bicycling and walking-hiking for recreation, health, and sustainability, and in driving local as well as regional economic development through enhanced tourism-related opportunities. While geographically extensive, the EST “ends” at Battery Park at the southern tip of Manhattan, excluding Long Island and the seven million residents of Brooklyn, Queens, Nassau, and Suffolk.



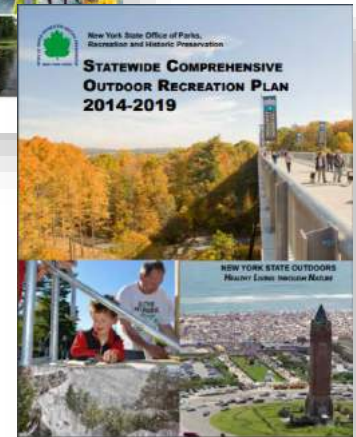
The purpose of this project is to identify a feasible extension of the EST through Long Island and to facilitate public engagement around walking, hiking and bicycling on the corridor. This proposed trail alignment will take advantage of utility corridors and existing trails to maximize off-street segments to the greatest extent possible. This approach optimizes safety for all users and serves a dual purpose as both a recreational asset and active transportation corridor.



State and Local Context

A long distance trail is consistent with the New York State Comprehensive Outdoor Recreation Plan because it supports outdoor recreation and bringing people closer to the land to interact with nature and the environment. The planned recreational off-road biking and walking path will be accessible to everyone and will welcome people of varying abilities, encouraging them to be active in outdoor recreation. In addition, the State Open Space Conservation Plan prioritizes trails and greenways for non-motorized travel corridors for people and wildlife and to link recreational, natural and cultural attractions.” According to the Long Island Advisory Committee to the Open Space Plan:

Additional public lands are needed now to ease the burden on existing public lands. Long Island’s 2.8 million residents and 5.1 million tourists are overburdening Long Island’s protected open spaces. Overcrowding is common and user conflicts are on the rise... As health costs soar and the economy falters, public parklands provide inexpensive venues for healthful outdoor recreation and peaceful connection to nature. Acquisition and development of land for outdoor recreation, such as hiking, biking, horseback riding, hunting, fishing, swimming, boating, and more, will ultimately result in a lower medical costs and a happier and healthier public.





Project Goals

The Trust for Public Land and New York Bicycling Coalition (NYBC) collaborated in this effort to develop a route alignment and identify next steps. The proposed route was developed to address three primary goals:



INCREASE:

Connectivity

The proposed route will serve as a transportation resource, connecting communities as well as existing trails throughout Long Island.

FOSTER:

Equity & Public Health

The proposed route will be accessible to all users, and promote positive health outcomes via active transportation/recreation.

PROMOTE:

Community Vitality

The proposed route will take advantage of Long Island's unique parks and cultural resources to promote active recreation and tourism.



Project Objectives

1

Identify a preliminary route alignment through Nassau and Suffolk Counties that maximizes off-road segments.

3

Identify next steps to implementing the proposed Long Island extension to the Empire Trail.

2

Identify a connecting route from Battery Park (the current terminus of the Empire State Trail) to the proposed Long Island extension route.

4

Catalyze public and private stakeholder engagement around active transportation, tourism and recreation on Long Island.

A photograph of two bicycles leaning against a wooden bridge railing. The bridge has a dark brown metal railing with a diagonal lattice pattern. The bicycles are positioned on the wooden deck of the bridge. In the background, there is a large body of water, likely a lake or reservoir, surrounded by lush green trees. The sky is a pale, hazy blue, suggesting a clear day. The overall scene is peaceful and scenic, highlighting the recreational aspects of the trail.

Biking & Walking on Long Island

Biking on Long Island

Overview

Bicycling has been occurring on Long Island since the 1890s. At that time the bicycle saw increasing use as a practical transportation solution as well as a recreational option for Long Islanders. Early partnerships arose between cyclists and the Long Island Rail Road that enabled cyclists to bring their bikes from New York City to the roads of Long Island. This relationship continued until the 1960s when the automobile began to dominate the transportation landscape.

More recently, in response to recreational demand, biking and hiking trails have been built within state and local parks, as well as several north-south routes including the Bethpage Bikeway and Nassau-Suffolk Greenbelt Trail. The following analysis provides a snapshot of the current state of bicycling and walking on Long Island from a variety of sources.



Cyclists on Long Island, 1897. Photo by Hal Fullerton. Courtesy of the Queens Borough Public Library, Long Island Division, Hal B. Fullerton Collection.

Overview of Metrics

Despite a high population density in Nassau and Suffolk and a tight road system that has only begun to address moving toward Complete Street standards that will result in more and safer bicycling, the current state of bicycling on Long Island is quite strong.

The combined metrics for the 2018 riding season provided to the New York Bicycling Coalition by five active clubs on Long Island: Suffolk Bicycle Riders Association; Huntington Bicycle Club; Massapequa Park Bicycle Club; Long Island Bicycle Club and Concerned Long Island Mountain Bicyclists, are illuminating:

2550 Active bike club members

3000 Organized bike rides, across all levels of cycling abilities, on and off road

625000 total miles ridden

Bike Club Events

Each club has at least one major cycling event during the riding season - e.g., SBRA Super Cycling Saturday, Huntington's Gold Coast Tour and CLIMB's Fat Tire Fest each fall. Other major annual rides - club, cause or private tour operators - on Long Island include the: SBRA Bike Boat Bike; Massapequa Bicycle Club Tour of the Hamptons; ALS ride; MS Ride; Cystic and Guide Dog Foundation rides; and CycleNY Stony Brookside Tour.



Tourism and Recreational Opportunities on Long Island

The tourism industry, promoted by Discover Long Island, actively promotes bicycle-based tourism. Vision Long Island's annual Complete Streets conference, involving hundreds of local and regional elected officials and key public and private stakeholders, addresses quality of life issues in Nassau and Suffolk, including road and trail opportunities on Long Island that respond to a growing interest in bicycling, walking, hiking and active living.

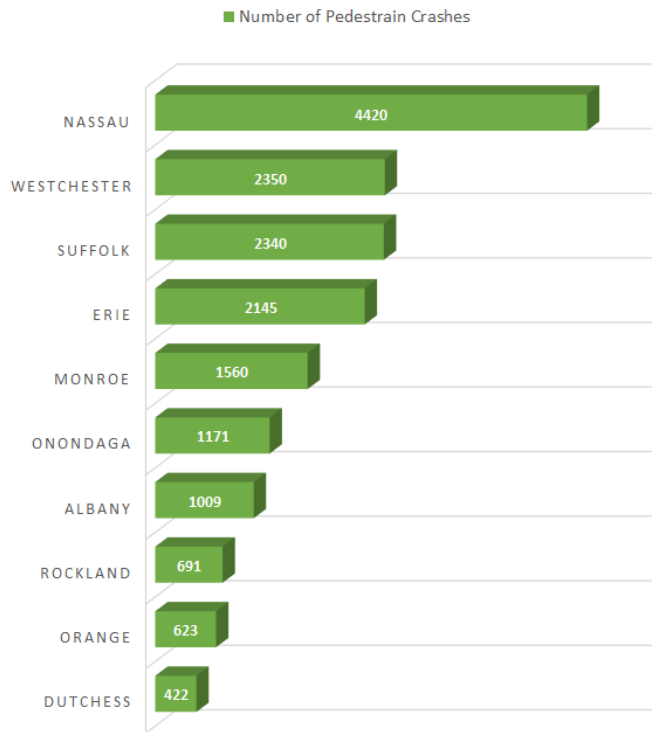


Bicycle & Pedestrian Safety on Long Island

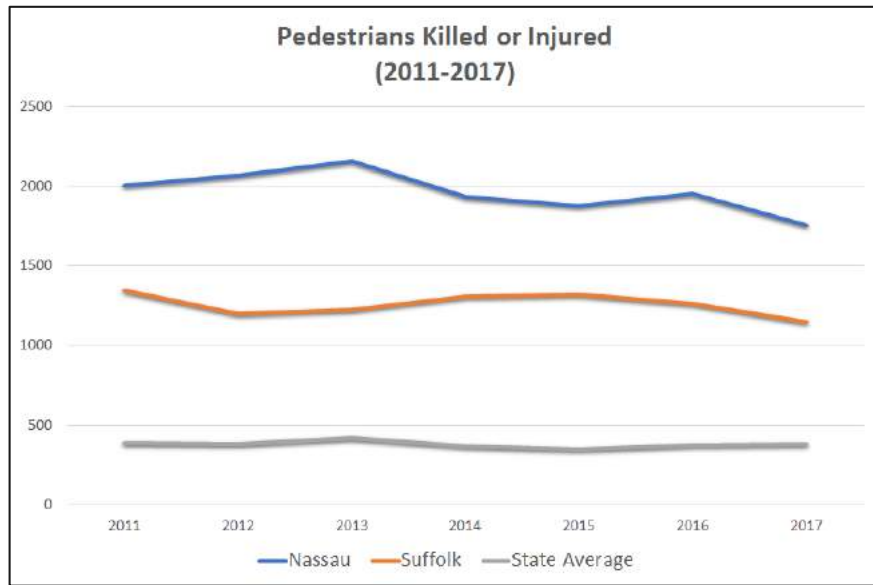
According to data from The Institute for Traffic Safety Management and Research, the total number of bicycle and pedestrians killed or injured in both Nassau and Suffolk County is well above the state average (by county). While this does not account for relative population density - King County, for example, has a higher number of crashes, but lower rate of crashes relative to population - it does illustrate a clear need to enhance bicycle and pedestrian safety. Nassau County has a higher number of pedestrian fatalities or injuries than Suffolk County. This is likely a function of decreased population density in Eastern Suffolk County relative to the county's geographic size. However, the number of bicycle injuries or fatalities have been relatively similar in both counties since 2011, suggesting a similar set of conditions for cyclists in Nassau and Suffolk County. Similar to pedestrian numbers, bicycle fatalities and injuries are well above the county average across New York State.



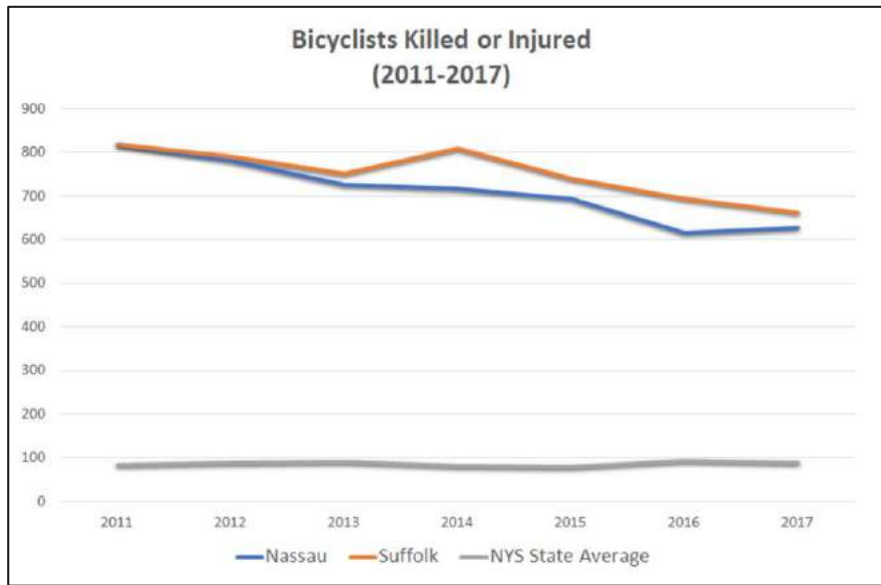
TOP 10 NEW YORK COUNTIES BY NUMBER OF PEDESTRIAN CRASHES



According to the NYS Pedestrian Safety Action Plan, Nassau and Suffolk Counties rank first and third respectively (outside of New York City) in terms of the total number of pedestrian crashes.



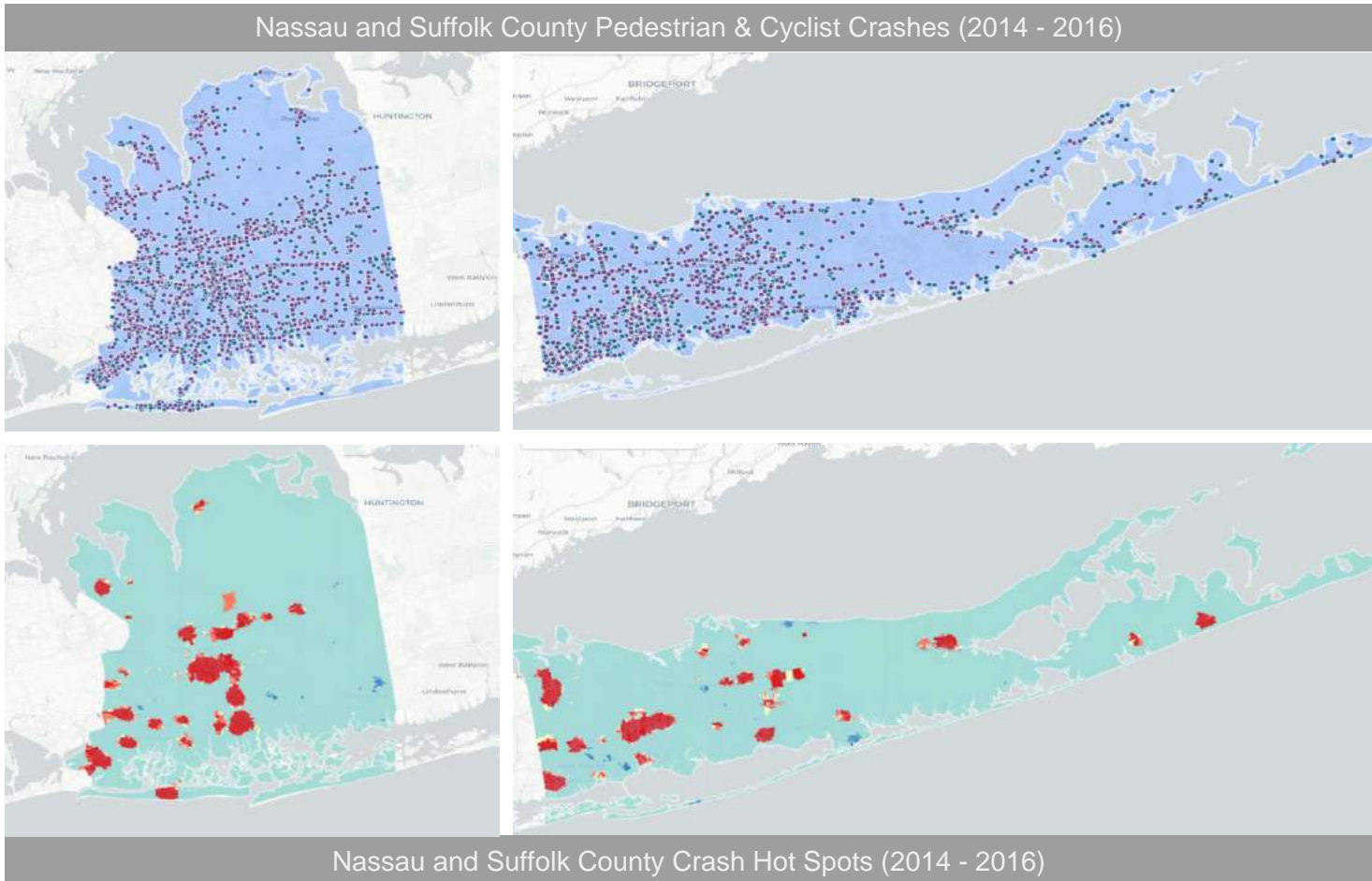
- Compared to the state average across all counties, Nassau and Suffolk Counties have consistently had a higher number of pedestrians injured or killed since 2011.
- Nassau County has consistently maintained a higher number of pedestrians killed or injured than Suffolk County.



- Compared to the state average across all counties, Nassau and Suffolk Counties have consistently had a higher number of bicyclists injured or killed since 2011.
- Both counties have maintained similar numbers of bicycle injuries and fatalities since 2011, with Suffolk County reporting slightly higher numbers.

The density of bicycle and pedestrian crashes is consistent with the spread of population density, with the majority of bicycle and pedestrian incidents occurring in Nassau and western-Suffolk County.

- COLLISION WITH PEDESTRIAN
- COLLISION WITH CYCLIST



The Nassau County & Suffolk County Crash Maps, created by Tri-State Transportation Campaign, highlight injuries and fatalities between 2014-2016. These maps were part of their [We're Walking \(and Biking\) Here!](#) analysis released September 2017.

A photograph of two bicycles leaning against a dark metal railing on a wooden deck. The railing has a repeating triangular pattern. In the background, a large body of water, likely a lake or reservoir, is visible under a warm, golden sunset sky. The water reflects the light, and there are green trees and a small island in the distance. The overall scene is peaceful and scenic.

Process & Engagement

Process



01

Stakeholder Interviews

The project team leveraged its extensive network of grassroots contacts to assemble a robust stakeholder advisory group consisting of bike clubs, hiking clubs, individual advocates, nongovernment organizations and public agency staff, including meetings with Long Island Power Authority and Long Island Rail Road.

Trail Alignment

The initial trail alignment was developed with a visual survey of above-ground utility corridors and existing bike routes on Google Earth and utility corridors via OpenStreetMap Foundation. The route was then refined and expanded based on stakeholder input.



02



03

On-Site Survey

The team conducted a series of tactical on-site existing conditions surveys in key challenge areas to determine trail feasibility. Adjustments to the route and/or recommendations for further study were detailed in the report.

Stakeholder Engagement



The Trust for Public Land and NYBC met with more than 60 stakeholders throughout the course of this project. This includes public agencies, local planning departments, bike-hike clubs and other grassroots interests, as well as leadership in both Nassau and Suffolk County, including the Long Island Rail Road and the Long Island Power Authority. The figures below provide a snapshot of the breadth of engagement:

Public Agencies

16

Including Nassau and Suffolk County staff as well as Long Island Power Authority (LIPA) and Long Island Rail Road (LIRR).

Organizations & Elected Officials

121

Including the Towns of Southampton and Easthampton, Long Island Association, LI Bldrs Assoc, CLIMB, Vision LI, Discover LI, NYSDOT, Carless LI, LI Greenbelt Conf, LI Bicycle Club, GPI, RXR, Suffolk Bicycle Riders Assoc, and LI YMCA

Individuals

60+

Three public meetings for public, private, NGO and individual stakeholders - one preliminary session in the late spring and two county-specific sessions in the fall.



Route Overview & Development

Route Overview



The proposed Long Island Extension to the Empire State Trail route spans nearly 175 miles connecting five counties and 27 communities. The route provides a complete east to west connection from Battery Park in Manhattan through the center of Long Island to the north and south forks, terminating in Montauk. This path connects several existing north to south trails that intersect the proposed route, including the Bethpage Bikeway, Nassau-Suffolk Greenbelt Trail, and the Long Island Greenbelt Trail. It also connects many parks that have internal trail systems, as well as the Paumanok Path, providing even greater access to active recreational and transportation corridors. In keeping with the design of the Empire State Trail, the proposed route emphasizes off-road trails (indicated in green on the map) where possible, and especially where necessary for safety. It also includes on-street connections (indicated in yellow on the map) when there are no

available off-road choices; these are concentrated on the less dense East End. The majority of off-road routes in Nassau and Suffolk county take advantage of LIPA utility corridors to maximize the route's off-road mileage throughout Nassau and Suffolk Counties. While the focus of this study was a route through Nassau and Suffolk County, the Trust for Public Land and NYBC also developed a connecting route from the current terminus of the EST in Battery Park, through Brooklyn and Queens to the Nassau County border. We also identified an alternative route (indicated with dashed lines on the map), that warrants further investigation as an additional shared use trail with recreational transportation and tourism potential. The use of LIRR corridors should be studied, as there are many successful existing "rail with trail" corridors throughout the U.S. that could serve as a model. These corridors could provide more direct, off-road routes in key locations.



Empire State Trail Plan & Design Standards



In January 2017, Governor Cuomo announced the Empire State Trail, a new initiative placing New York State at the forefront of national efforts to enhance outdoor recreation, community vitality, and tourism development. Approximately 400 miles of the Trail already exists in discrete but still disconnected segments. When completed by the end of 2020, the Empire State Trail will be a continuous 750-mile route spanning the state from New York City to Canada and Buffalo to Albany, creating the longest multi-use state trail in the nation. The trail's current southernmost terminus is Battery Park in Manhattan, excluding Long Island.

An Empire State Trail design guide was prepared to help guide state agencies,

local governments, engineering design firms, and trail organizations charged with designing, building, and operating segments of the Empire State Trail. This document provides a comprehensive summary of the current guidelines for developing off-road “shared use paths” and on-road bicycle and pedestrian routes. The Design Guide builds upon bicycle and pedestrian guidelines issued by the American Association for Highway and Transportation Officials (AASHTO), which is the national standard for multi-use trail facilities.

This project and proposed trail alignment was created with these trail standards in mind to ensure that a fully built out New York State “end-to-end” trail adheres to these guidelines in the future.

Transforming Utility Corridors to Trails

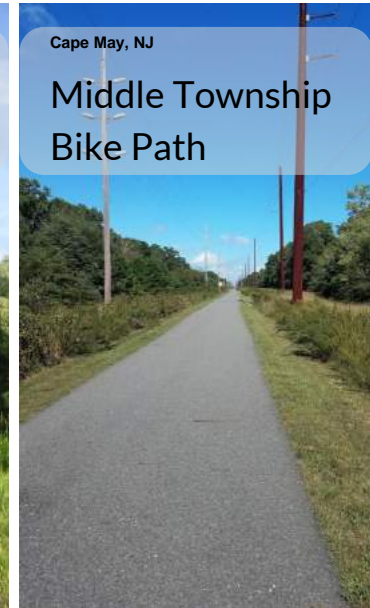
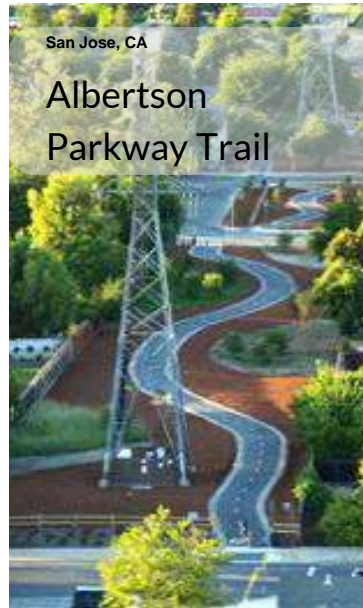


Courtesy of OpenStreetMap Foundation

The Long Island Power Authority (LIPA) owns or operates a significant network of linear above ground rights of way (ROW) for its transmission lines. The linear nature of these corridors and open ground space make these corridors ideal for mixed use paths. The map to the left outlines the map of both elevated and below-ground utilities throughout Nassau and Suffolk County.

Shared Use Paths in Utility Corridors

One of the core elements of this Empire Trail Extension feasibility study is an alignment that maximizes off-street segments to enable a safer, more enjoyable user experience for all Long Islanders and visitors. Shared use paths in utility corridors have been designed and implemented across the country, in New York State, and even on Long Island. This report presents two case studies to discuss the challenges, opportunities and precedent for sharing mixed-use paths with utility corridors: the Albany-Hudson Electric Trail (a planned segment of the Empire State Trail) and the Port Jefferson to Wading River Trail under construction in Suffolk County.



Successful examples of utility trails across the country include the Washington and Old Dominion Trail (VA), Middle Township Bike Path (NJ) and Albertson Parkway Trail (CA).

Suffolk County,
NY

Port Jefferson to Wading River Trail



Overview & Scope:

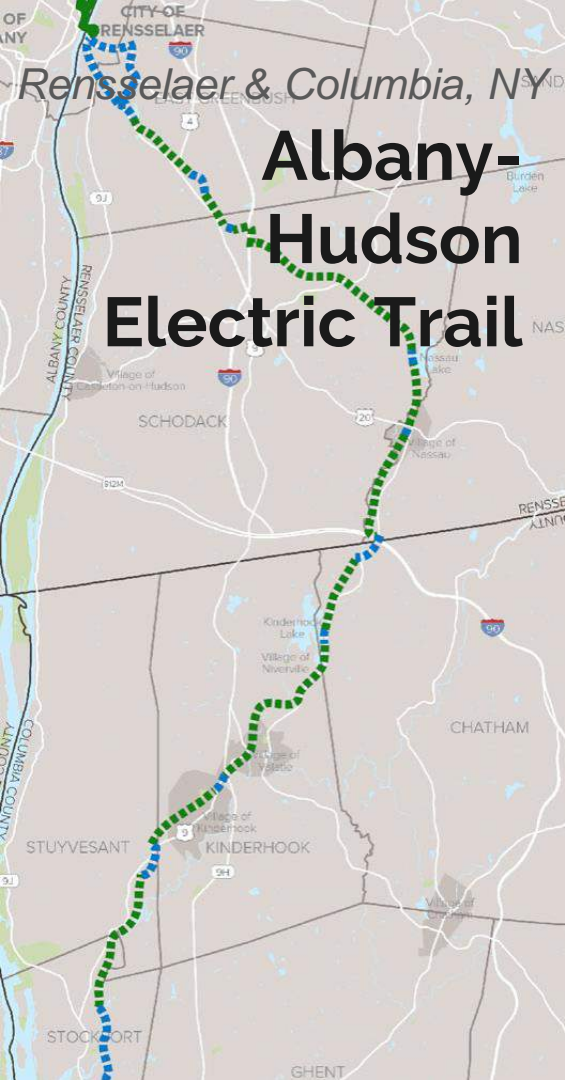
This 10-mile trail will connect Port Jefferson Station, Mount Sinai, Miller Place, Sound Beach, Rocky Point, Shoreham and Wading River and would feature kiosks at trailheads, quarter-mile markers and railings on inclines. This trail also provides bicycle and pedestrian connectivity to numerous hamlets, downtowns and cultural assets -- most notably, the Tesla Science Center, a museum at a former laboratory in Shoreham. The trail is situated in a former rail right of way abandoned since 1938 that is owned and used by LIPA. The trail is in its final design phase and the county plans to release a bid for construction in late 2018, with a contract expected to be awarded by the end of the year. Construction is anticipated to begin in early 2019.

Funding:

This trail will cost \$882,000 per mile. The federal government will fund 94 percent of the project (\$8,320,000) under a Surface Transportation Program grant and the County will fund the remaining 6 percent (\$500,000) for a total project cost of \$8,820,000.

Liability:

Suffolk County first began discussing the project in the 1970s, but there was little movement until the original Rails to Trails path was proposed in 2001 by advocates of the Setauket-Port Jefferson Station Greenway Trail. One of the most challenging barriers to advancing this project was the question of liability on non-county-owned property. Suffolk County negotiated an agreement that indemnifies LIPA from user-related liability. This particular multi-use path provides important precedent for the Empire Trail extension as it establishes a legal framework for additional mixed-use utility corridor paths in Suffolk County. In addition, this trail lays the foundation for a similar agreement between Nassau County and LIPA that will be a critical factor in advancing the proposed Long Island Extension to the Empire State Trail route.



Rensselaer & Columbia, NY

Albany-Hudson Electric Trail

Overview & Scope:

The Empire State Trail already uses utility corridors for some segments. The Albany-Hudson Electric Trail (AHET) will be a shared-use bicycling and pedestrian trail along the 35-mile Albany-Hudson Electric Trolley corridor from Hudson, NY to Rensselaer, NY. When complete, this trail will be integrated into the Empire State Trail network. The AHET Trail crosses through two counties (Rensselaer and Columbia), eight towns, and five cities and villages. At the northern end, the trail begins near the Albany-Rensselaer Amtrak station. At the southern end, the City of Hudson provides a trail destination with shops, galleries and restaurants in a vibrant historic downtown. Combining both on and off-road segments, the off-road sections of the trail are being developed on a utility corridor owned by National Grid, which maintains electric transmission lines and associated infrastructure along the corridor (formerly an electric trolley route).

Trail Maintenance:

The AHET Trail will be operated and maintained by a collaborative partnership including the Hudson River Valley Greenway, local county, town and village governments, and interested trail groups and volunteers. The Greenway/New York State retains responsibility for long-term capital maintenance such as resurfacing with asphalt and stonedust or replacement of safety fencing (typically once every 15+ years). Local governments will assume responsibility for the maintenance of the trail within their jurisdictions. Volunteer maintenance efforts may be organized under the umbrella of each municipal entity. Any local government and/or non-profit organizations accepting responsibility for maintaining sections of the AHET Trail will be required to provide insurance and liability protection to National Grid. The Long Island Extension to the Empire State Trail project will require a similar plan for maintenance across both counties and local jurisdictions.



Proposed Trail Alignment

The proposed Long Island Extension to the Empire State Trail maximizes off-street opportunities by capitalizing on existing trails and utility corridors. The following analysis explains how the route was optimized to increase connectivity, foster equity, and promote active recreation.

Proposed Long Island Extension to the EST



Proposed Route: Battery Park to Nassau County



Route Highlights

Counties

5

Suffolk
Nassau
Queens
Kings
New York

Communities*

27

New York City, Town of Brookhaven,
East Hampton, Town of Easthampton,
Garden City, Greenport, Hempstead,
Huntington, Islandia, Islip, Lake Grove,
Lake Success, Mineola, North Haven,
North Hempstead, North Hills, Oyster
Bay, Riverhead, Russell Gardens, Sag
Harbor, Shelter Island, Smithtown,
Southampton, Southold, Westbury,
Williston Park

Miles**

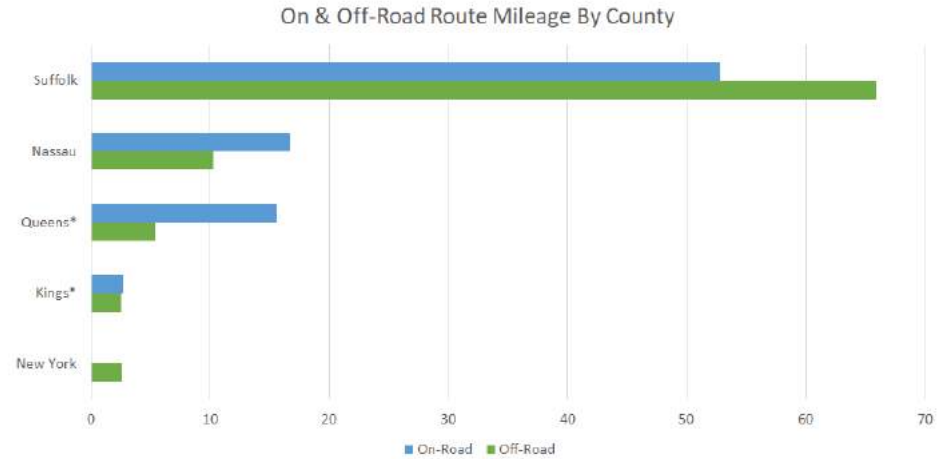
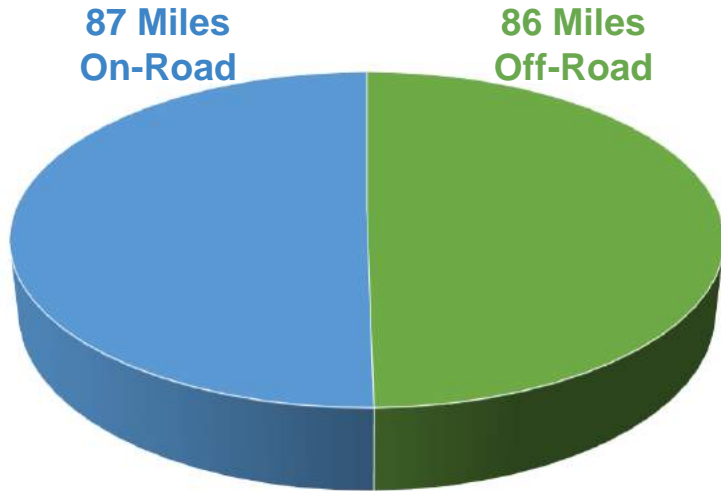
175

From Battery Park to
Montauk

*Communities is defined as census places as designated by the US Census Bureau.

**Mileage is approximate.

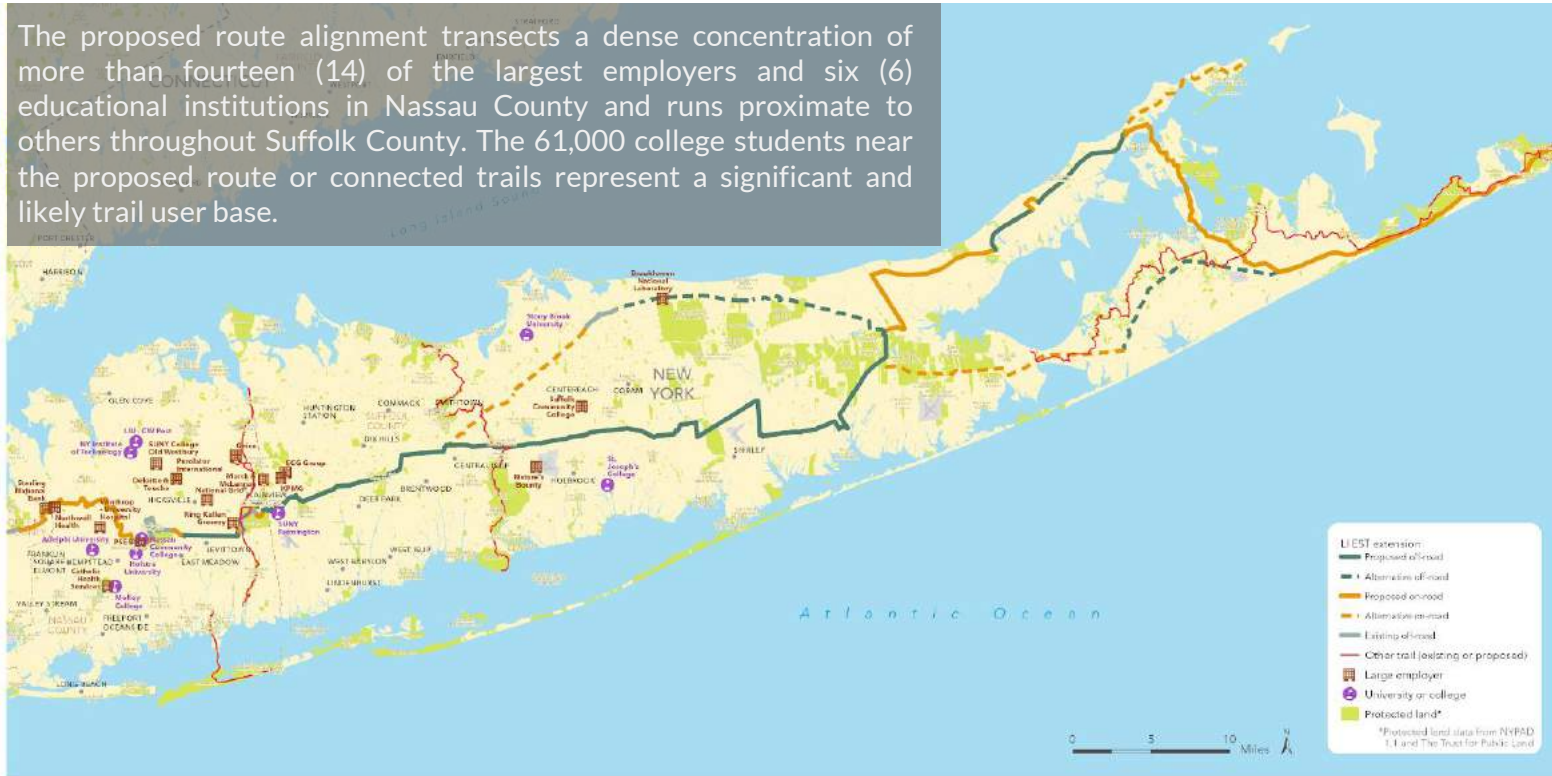
Route Highlights



**Some on-road routes, while still within the street right of way, are designated as "protected" bike lanes. These are physically separated from traffic, thus providing similar safety accommodations to off-road trails.*

Access to Institutions & Employment

The proposed route alignment transects a dense concentration of more than fourteen (14) of the largest employers and six (6) educational institutions in Nassau County and runs proximate to others throughout Suffolk County. The 61,000 college students near the proposed route or connected trails represent a significant and likely trail user base.



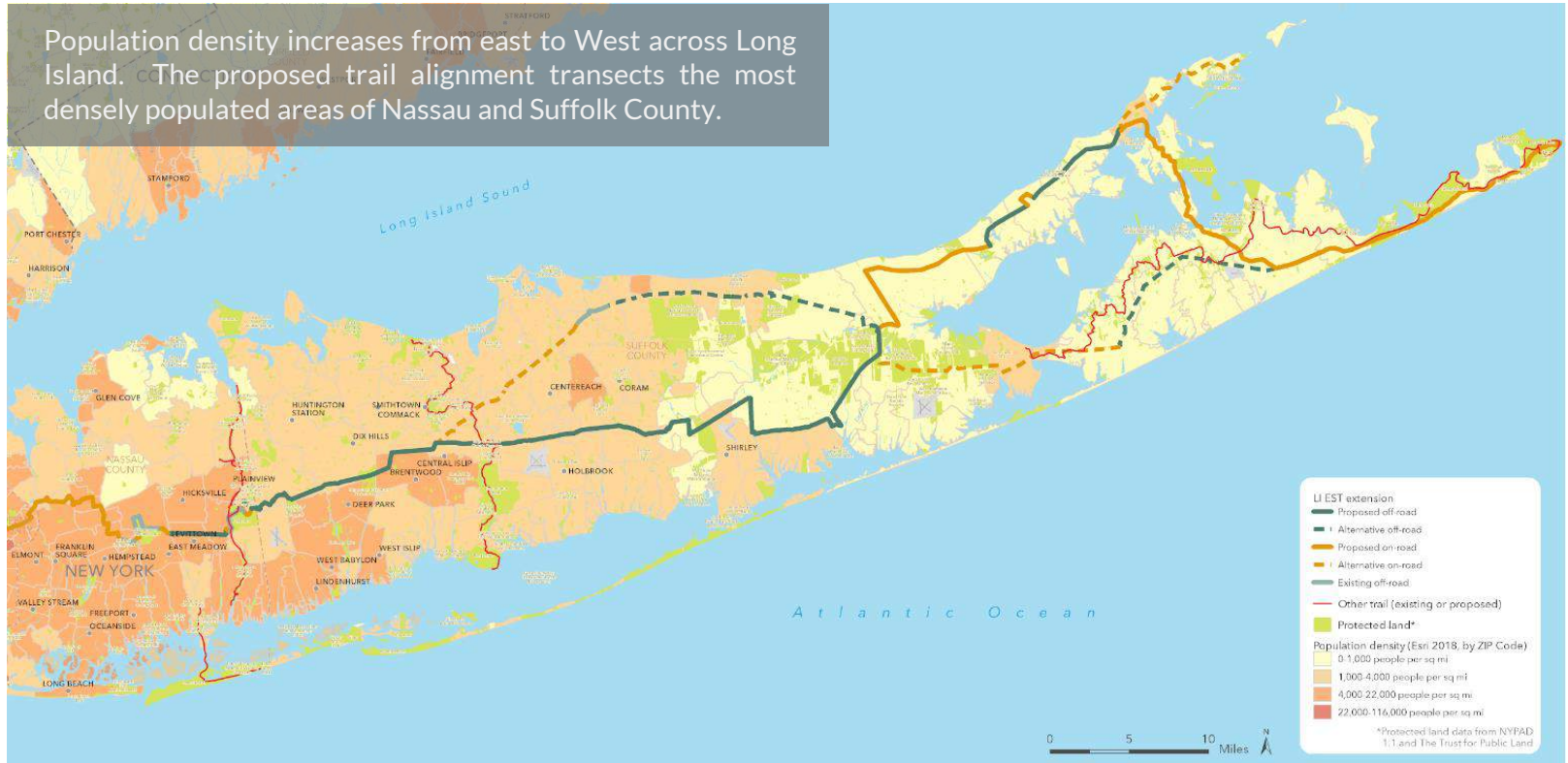
Transit Connectivity

The proposed empire trail extension route provides access to rail and bus facilities. Ferry connections provide a critical linkage between the North and South Forks on the proposed trail. Future phases of trail implementation will make recommendations to facilitate trail connections through amenities and wayfinding assets.



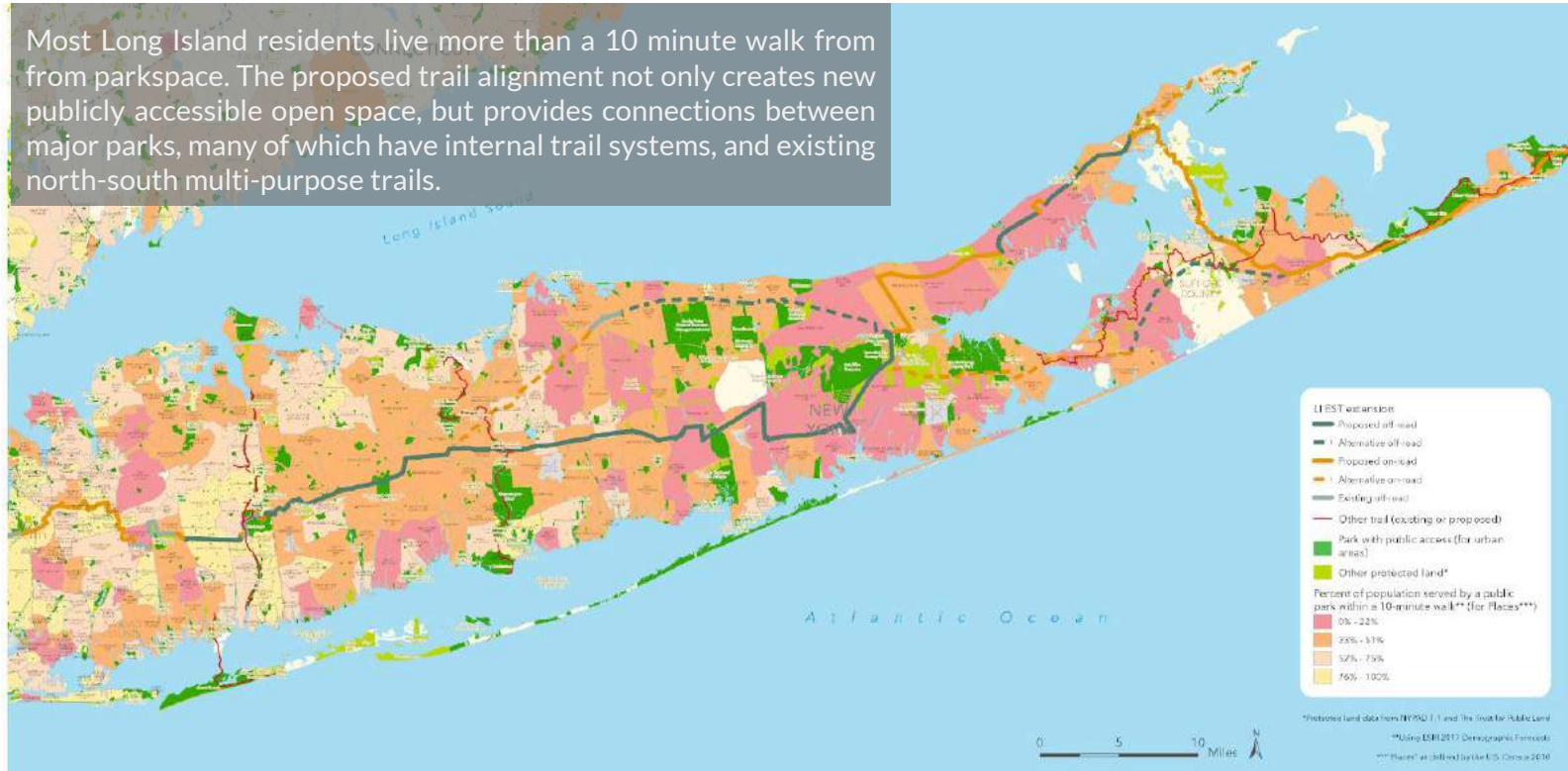
Population Density

Population density increases from east to West across Long Island. The proposed trail alignment transects the most densely populated areas of Nassau and Suffolk County.



Park Equity

Most Long Island residents live more than a 10 minute walk from from parkspace. The proposed trail alignment not only creates new publicly accessible open space, but provides connections between major parks, many of which have internal trail systems, and existing north-south multi-purpose trails.

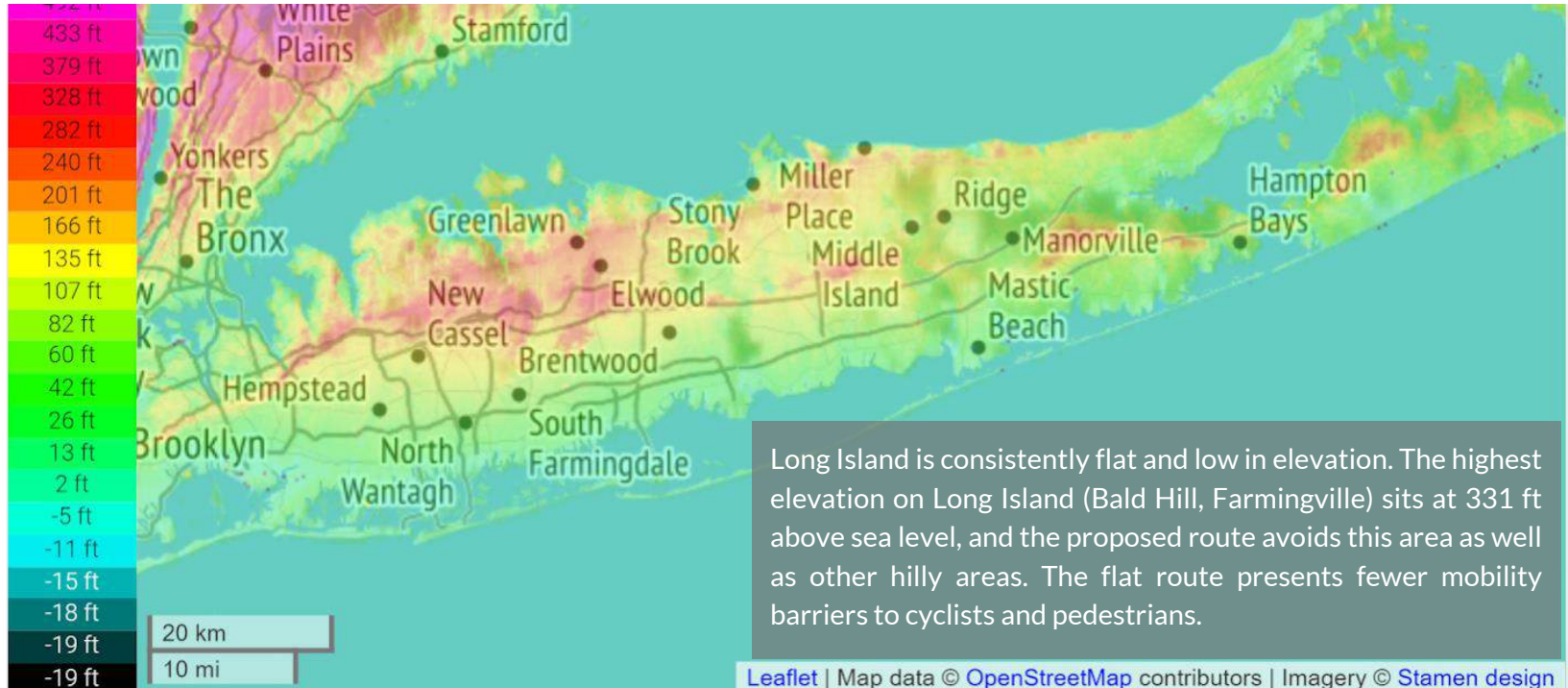


*Protected land data from NYSDEC 1.1 and The Trust for Public Land

**Using ESRI 2013 Demographic Statistics

***Places as defined by the U.S. Census 2010

Long Island Topography



Segment 01:

Nassau County

Total Off Road: **10.3 Miles**

Total On-Road: **16.7 Miles**

Nassau County's Motor Parkway Trail Vision Plan, published in 2012, proposes a plan to redevelop portions of the Long Island Motor Parkway into a mixed use path for bicycling and walking. The proposed route in Nassau County uses the 2012 study recommendations, following the same alignment from the Queens border to Eisenhower Park. The proposed EST route takes advantage of existing trails in Eisenhower Park, before continuing eastward in a LIPA-owned utility corridor toward Bethpage State Park where the route intersects the Bethpage Bikeway and Nassau-Suffolk Greenbelt Trail. This section of the proposed route aligns closely with key Long Island Rail Road stations including Mineola, Carle Place, Westbury and Country Life Press as well as Little Neck on the Port Washington Branch.



Segment 02:

Suffolk County West

Total Off Road (all Suffolk County): **50.5 Miles**

Total On-Road (all Suffolk County): **0 Miles**

From Bethpage Park, the proposed EST Extension route continues east into Suffolk County in off-road utility corridors. The route passes Long Island National Cemetery and intersects existing trails in Butterfly Park and Strathmore Park before continuing through the Edgewood Oak Brush Plains Preserve. The trail continues in utility corridors parallel to the long Island Expressway (Route 495) before entering Southaven County Park. The route then turns south at Weeks Ave, following a utility corridor, before continuing east along Sunrise Highway (Route 27). The proposed alignment continues in a utility corridor parallel with Moriches-Riverhead Rd before a sharp turn North in the Peconic Hills County Park.

This segment of the proposed trail parallels LIRR's Ronkonkoma Line with direct access to Yaphank and Riverhead stations. All other stations are within five miles of the proposed route.



Segment 03:

Suffolk County East

Total Off Road (all Suffolk County): **15.4 Miles**

Total On-Road (all Suffolk County): **52.7 Miles**

The route crosses the Peconic River at Middle Country Road, where it turns east and transitions on-road along NY State Route 25. It then turns north northwest on Roanoke Ave before heading east on Sound Avenue. The route turns on Cox Neck Road before crossing the Mattituck Inlet. While the routing across or around the inlet requires further study, the proposed trail alignment picks up on the east side, following a utility corridor. There is a brief on-road spur north on Depot Lane which turns east on Oregon Road and then south on Cox Lane before returning to the utility ROW. This ROW will require further study to determine the extent of private property easements along the corridor. The route links with Main Road and continues to North Ferry Terminal.

The remainder of the route runs on-road through Shelter Island and North Haven leveraging Ferry connections in between. This portion of the proposed route runs proximate to the Southold and Greenport stations on the Long Island Rail Road's Ronkonkoma Branch as well as three stations on the Montauk Branch (East Hampton, Amagansett and Montauk stations).



The Brooklyn-Queens Connection

Total Off Road: **10.5 Miles**

Total On-Road: **18.3 Miles**

The route begins in Battery Park and continues up the east side bike path in Manhattan, before connecting with the Manhattan Bridge bike path. In Brooklyn, the route turns east in a separated off-street bike path on Sands Street. The route shifts into a southbound bike lane on Navy Street before turning north into a bike lane on Flushing Ave. At Kent Avenue, the route transitions into a fully protected off-street route heading north. At North 14th Street, the route becomes a bike lane on Franklin Avenue. The route turns onto Eagle Street (or Freeman Street if heading westbound) before crossing the Pulaski Bridge. Now in Queens, the route continues in a bike lane on 11th Street before turning east on 44th Drive and north on Vernon Blvd. The route then turns east at Queens Plaza following a protected bike lane to Skillman Avenue. The route continues in a bike lane on 43rd Avenue (or Skillman Avenue if heading westbound). The route turns south on 50th Street (or 51st Street if heading westbound) before turning



onto Queens Blvd. At Jewel Avenue, the route turns into Flushing Meadows Park where it continues northeast. The route continues in a bike route along Kissena Corridor Park before moving off-road through Kissena Park. The route stays east on Underhill Avenue before heading off-road in Cunningham Park. The route continues off-road in the Brooklyn-Queens Greenway before turning north along Alley Pond Park. The route turns east at Northern Blvd before turning north on 247th Street and finally east again on low-traffic streets to the Nassau County border.

Alternative Suffolk County Trail

Total Off Road: **31.9 Miles**

Total On-Road: **38.6 Miles**

An alternative route (indicated in dashed lines on the map) diverts northward to take advantage of major parklands and recreational assets such as Rocky Point Pine Barrens State Forest, Calverton National Cemetery and the Peconic Bog County Park. This portion of the route combines on and off-road segments currently in various phases of design and construction. This includes the Port Jefferson to Wading River Utility Trail (noted in detail on page 25 of this report) and NYSDOT's safety and mobility improvements on NY Route 347. This mileage is not included in the other calculations of the recommended route, but runs 70.5 miles in total. It would not link with more densely populated portions of the county. The alternative route diverts south before turning east in an on-road trail running through the Sarnoff Preserve and Maple Swamp County Park. The route then heads east on the Montauk Highway crossing into Shinnecock



Hills where it turns North into a utility corridor in South Hampton. This corridor requires further study to determine the feasibility of a trail in light of numerous private property easements along the utility corridor. In addition to this southern route, NYBC and The Trust for Public Land investigated the possibility of an on-road spur from the proposed route on the north fork to Orient Point.

A photograph of two bicycles leaning against a wooden bridge railing. The bridge has a dark brown metal railing with a diagonal cross-brace pattern. The bicycles are positioned on a wooden deck. The background shows a calm lake with a small island in the distance, surrounded by lush green trees under a clear sky. The text "Next Steps" is overlaid in white on the left side of the image.

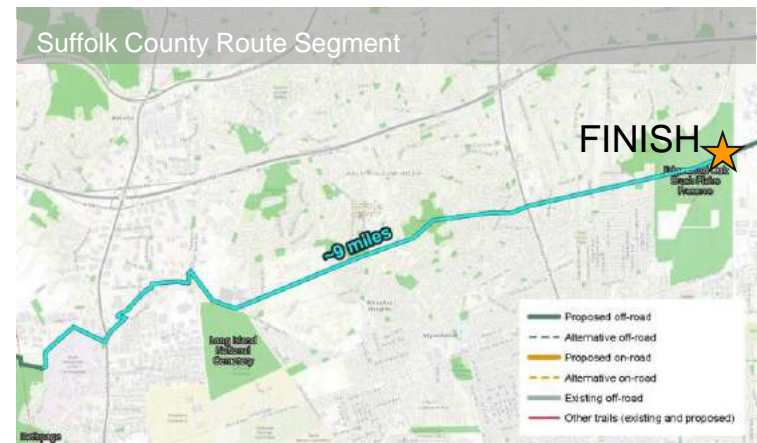
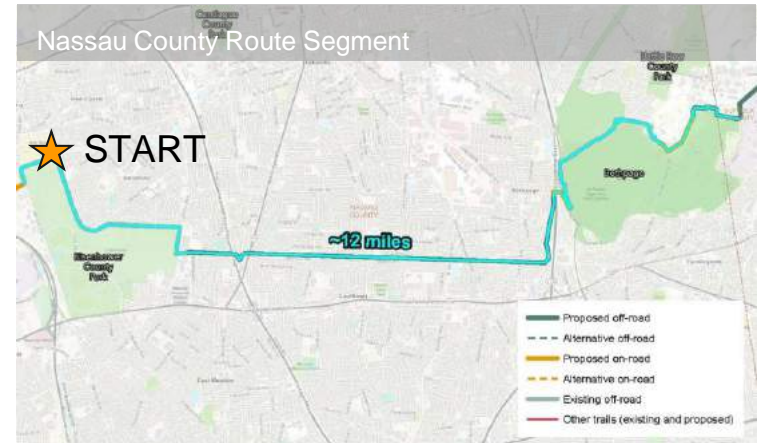
Next Steps

The Long Island Extension to the Empire State Trail will require a detailed design study. As a first step, we recommend a detailed feasibility study of a segment of moderate length and cost that can be a pilot project for full build out of the entire route and adoption into the Empire State Trail network.

Recommended Pilot Project

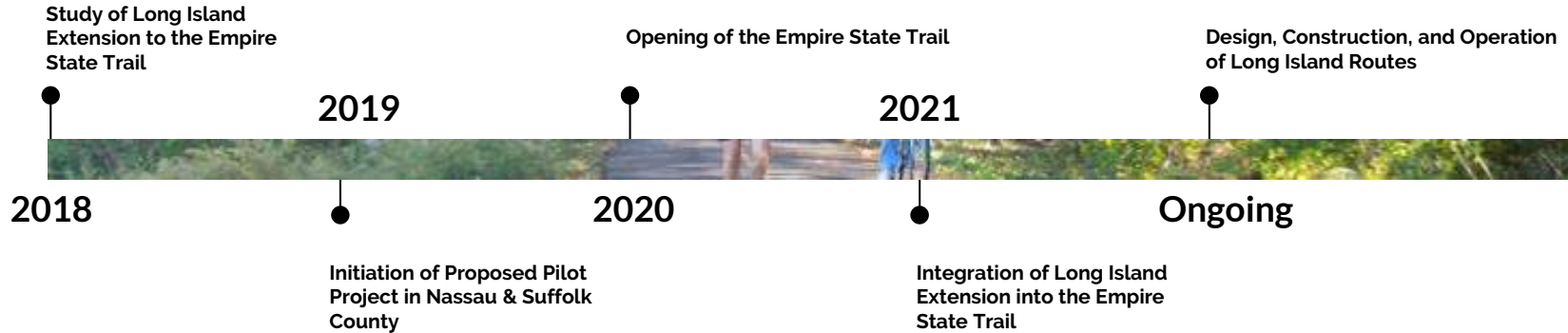
Eisenhower to Oak Brush Plains Preserve

As an immediate follow up to this feasibility study, The Trust for Public Land and NYBC recommend the implementation of a pilot section of the route between Eisenhower Park and Bethpage State Park in Nassau County and between Bethpage State Park and Edgewood Oak Brush Plains Preserve in Suffolk County. This route spans approximately 21 miles and is a combination of utility corridors and off-street paths. This 21-mile route has independent utility as it also connects three state parks and Long Island National Cemetery, but it is also a proof-of-concept for the full 175-mile Long Island Extension to the Empire State Trail. The estimated implementation cost for this pilot is approximately \$20 million, based on cost figures from the Port Jefferson to Wading River trail project and a 20% margin for planning and design. The next step will be a detailed planning study of this route, including extensive on-site surveying and route verification as well as an implementation and operations plan.





Prospective Timeline



A photograph of two bicycles leaning against a wooden bridge railing. The bridge has a dark brown metal railing with a diagonal cross-brace pattern. The bicycles are positioned on a wooden deck. The background shows a calm lake with a small island in the distance, surrounded by lush green trees under a clear sky. The text "Cost Estimates" is overlaid in white on the left side of the image.

Cost Estimates



Preliminary Cost Estimate

The cost for this proposed Empire State Trail Extension route alignment in Nassau and Suffolk County was estimated using figures from the Port Jefferson to Wading River trail project, and in consultation with EST project managers working on the formal 2020 launch. As a utility trail in the region, the Port Jefferson-Wading River project provides a good cost comparison. The cost for mile for on-road routes is based on the national average cost of similar projects. Including a 20% margin for planning, and engineering, the total estimated cost for this project is \$114 Million.

Utility Corridor Conversion
Construction Cost Per Mile:

\$882K

Cost per mile based on the Port Jefferson to Wading River project's reported cost.

On-Road Route Conversion Cost
Per Mile:

\$25K

Based on national average cost per mile for signed bike routes.

Total Estimated Implementation
Cost

\$114M

Includes engineering and construction of the proposed route in Nassau and Suffolk Counties. Excludes routes in Manhattan, Brooklyn and Queens as well as existing trails in Nassau and Suffolk County.

A photograph of two bicycles leaning against a dark metal railing on a wooden deck. The railing has a repeating triangular pattern. In the background, a large body of water, likely a lake or reservoir, is visible under a warm, golden sunset sky. The water reflects the light, and there are green trees and a small island in the distance. The overall scene is peaceful and scenic.

Additional Recommendations

The Long Island Extension to the Empire State Trail represents an opportunity to enhance active transportation and recreation across Long Island. The following recommendations are designed to maximize the proposed trail's utility, beyond the scope of implementation.

Additional Recommendation

Secure Bike Parking

The proximity of the proposed trail to LIRR facilities presents an opportunity to facilitate first and last mile connections with transit. This not only provides transit commuters with an alternative to driving, but can extend the reach of transit to communities without access to cars. It can also facilitate tourism by enabling visitors to leverage transit connections to access different sections of the Long Island Extension to the Empire State Trail. From an operational perspective this can help decrease demand for automobile parking at transit stations and potentially increase ridership. Transit agencies across the country have observed tremendous success in providing customers with multimodal linkages. The bicycle is ideal for short trips of one to three miles and can provide an inexpensive, healthy, carbon-neutral option for commuting. One of most successful strategies for facilitating this connection is with secure bicycle parking facilities at transit stations.



These facilities empower transit customers by providing a safe, secure place to park one's bicycle for the day. Unlike conventional open-air bike racks or bike lockers, secure bike cages can hold a high volume of bikes in a relatively small space. NYBC and The Trust for Public Land recommend the installation of two secure bike parking cages at LIRR stations in Nassau and Suffolk County that have a high demand for automobile parking.

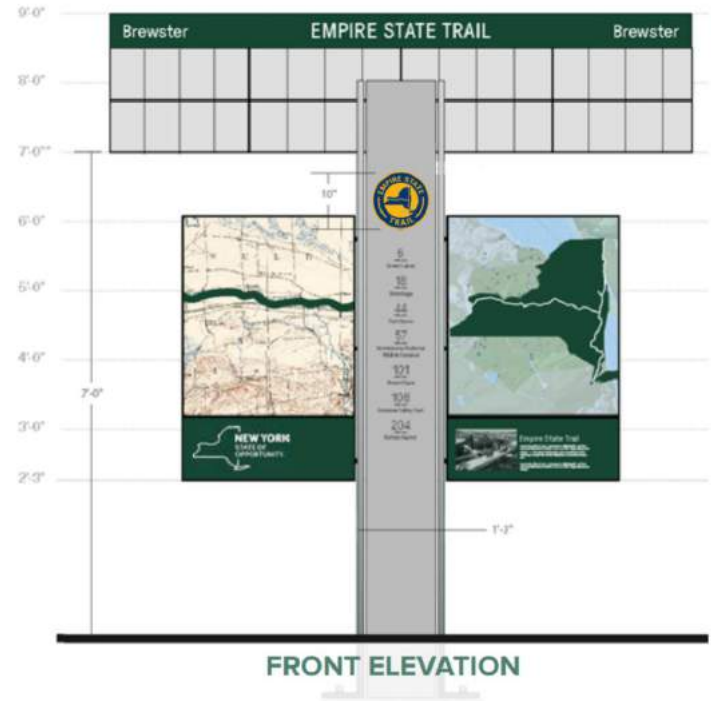
Additional Recommendation

Local Wayfinding

Wayfinding and related signage is a major asset in tying trail segments together. As the trail is implemented, The Trust for Public Land and NYBC recommend a comprehensive wayfinding plan which adheres to the standards set forth in the Empire State Trail Design Guide. This will include:

- Branded wayfinding at trail heads.
- Context maps including current location and local community.
- Periodic wayfinding signs for on-road routes.
- Periodic mileage markers.
- Rules of conduct posted in appropriate locations.

In addition to wayfinding maps, The Trust for Public Land and NYBC recommend working with local tourism agencies to develop local informational kiosks attracting trail users to downtown areas and resources.



Additional Recommendation

Designated Campgrounds

Reserved campgrounds for cyclists promote bicycle tourism by providing specific amenities such as bike racks and repair trees (complete with pumps, a repair stand and secured tools). These campgrounds offer a more intimate camping experience without interference from automobiles, RVs and pop-up campers.

The Trust for Public Land and NYBC recommend that campgrounds in state and county parks near the trail allocate reserved space for cyclists with these amenities.



Appendix A: Literature Review



Overview

The team consulted many sources as inputs to this project. These sources provided background information on a range of topics addressed in this study including existing trails, utility corridors, development strategy, economic benefits of tourism, detailed maps of Nassau and Suffolk County bikeways, community outreach and implementation considerations. Sources include:

- New York Metropolitan Transportation Council
- Regional Planning Association
- New York State Empire Design Guide
- Long Island Index
- Rails to Trails Conservancy
- Planning documents from Nassau and Suffolk Counties
- NYS Department of Transportation
- Long Island Greenbelt Trail Conference
- American Trails

Document Summaries

The New York Metropolitan Transportation Council's Plan 2045 published in 2017 described Nassau and Suffolk pedestrian and bicycle paths and included a list of "Vision Projects".

The Regional Planning Association's Fourth Regional Plan published in 2017 included recommendations for Nassau and Suffolk trails.

The New York State Empire Trail Design Guide provided specifications for trail design, color coding on maps and other important guidelines.

The OpenStreetMap Foundation's website showed Long Island Power Authority utility lines which was used to identify potential utility corridors.

The Long Island Index's website provided interactive maps displaying the region's data and characteristics including housing, land use and utility routes.

Newspapers including the Suffolk Times, Newsday and Riverhead News had many stories about the Wading River to Port Jefferson utility trail.

Bikeitorhikeit.org provided detailed maps of on-road and off-road shared paths in Nassau and Suffolk Counties.

Rails to Trails Conservancy has many articles on utility trails that were very useful in providing examples of current trails and other practical information.

Suffolk County's Comprehensive Master Plan 2035 published in 2015 provided plans for economic growth, transportation initiatives and housing.

Nassau County's Motor Parkway Trail Vision Plan published in 2012 contains a detailed analysis of the Vanderbilt Parkway and became a major part of our report's proposed trail.

Connect Long Island published in 2011 described a regional transportation and development strategy.

The Trust for Public Land's Report on the Economic Benefits and Fiscal Impact of Parks and Open Space in Nassau and Suffolk Counties published in 2010 describes how parks and open space reduce the cost of government services, increases tourism and promotes health benefits.

The Long Island Non-Motorized Transportation study by the NYS DOT and NYMTC from 2007 included 113 proposed corridors and details on 10 prioritized segments.

The Long Island Greenbelt Trail Conference maps provided details on significant Suffolk County trails.

American Trails article on Using Utility Corridors for Trails published in 2004 is an informative article about issues and concerns for utility trails.

Florida Power and Light Greenway proposal in 2004 is a comprehensive shared use corridor study including a discussion of utility corridors, community outreach and implementation considerations.

APTA's Bicycle and Transit Integration Guide provides detailed information on bicycle parking at transit facilities as well as connecting with both bus and rail transit.

Appendix B: Route & Data Maps





Long Island Empire State Trail (LI EST) extension

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THE TRUST FOR PUBLIC LAND



LI EST extension, connection to planned Empire State Trail

MANHATTAN/BROOKLYN/QUEENS, NEW YORK

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Long Island Empire State Trail (LI EST) extension

NASSAU COUNTY, NEW YORK

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Long Island Empire State Trail (LI EST) extension

WEST SUFFOLK COUNTY, NEW YORK

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Long Island Empire State Trail (LI EST) extension

EAST SUFFOLK COUNTY, NEW YORK

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Large employers and universities/colleges

LONG ISLAND EMPIRE STATE TRAIL (LI EST) EXTENSION

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Transit

LONG ISLAND EMPIRE STATE TRAIL (LI EST) EXTENSION

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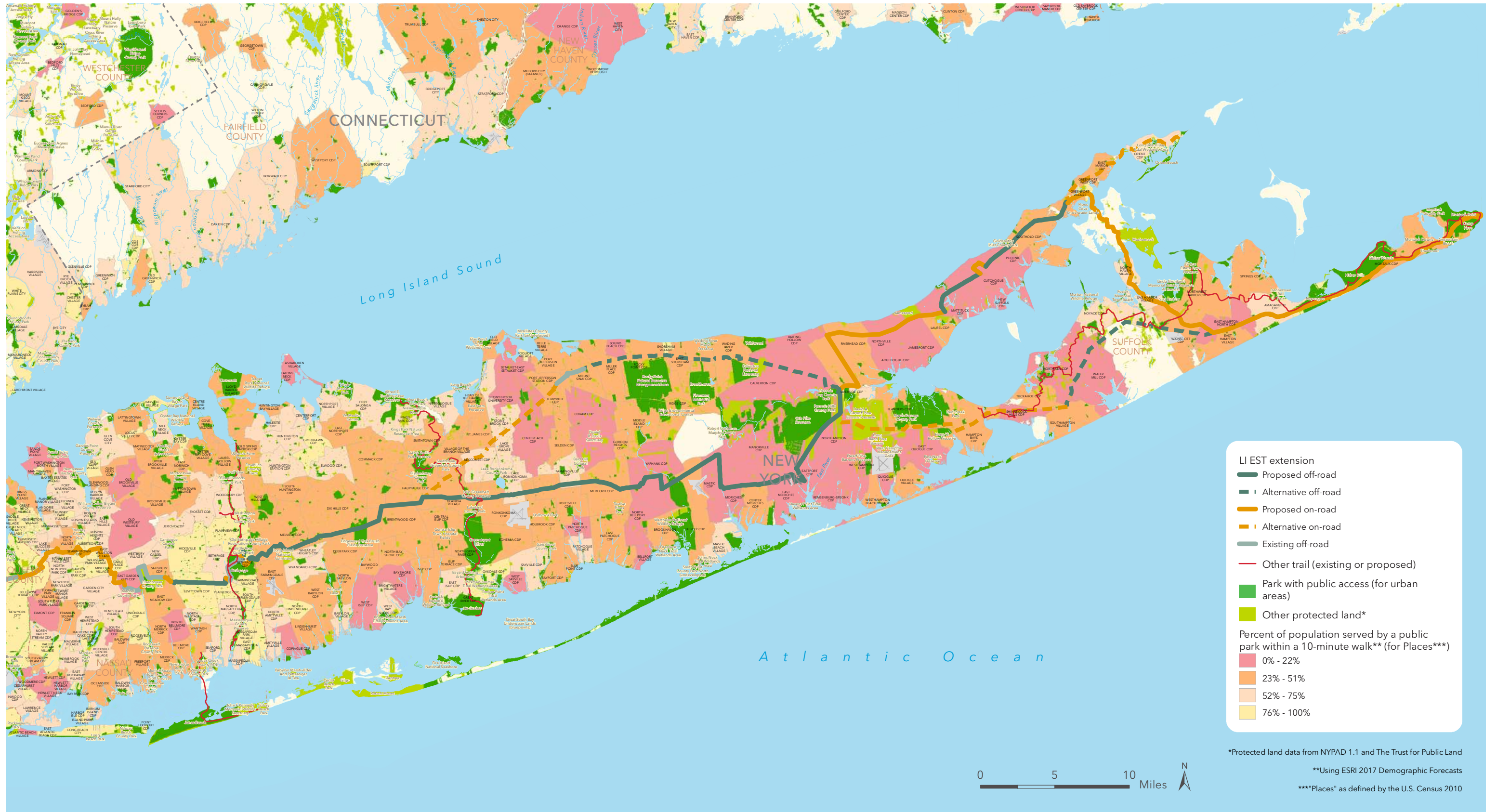


Population density

LONG ISLAND EMPIRE STATE TRAIL (LI EST) EXTENSION

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Percent of population served by a public park within a 10-minute walk

LONG ISLAND EMPIRE STATE TRAIL (LI EST) EXTENSION

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