

# Memorandum

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**DATE** June 15, 2023

**TO** Keith Hamas, NJTPA

**FROM** Michael Greendyk and Michael Blau (Toole Design)

**SUBJECT** NJTPA ATP – Case Study Existing Conditions and Conceptual Recommendations

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## 1 Introduction

The purpose of this memo is to assess existing conditions for two case study locations:

- 1. Parish Drive in Wayne Township (Case Study 1)**
- 2. Main Street in the Borough of Stanhope and Netcong (Case Study 2)**

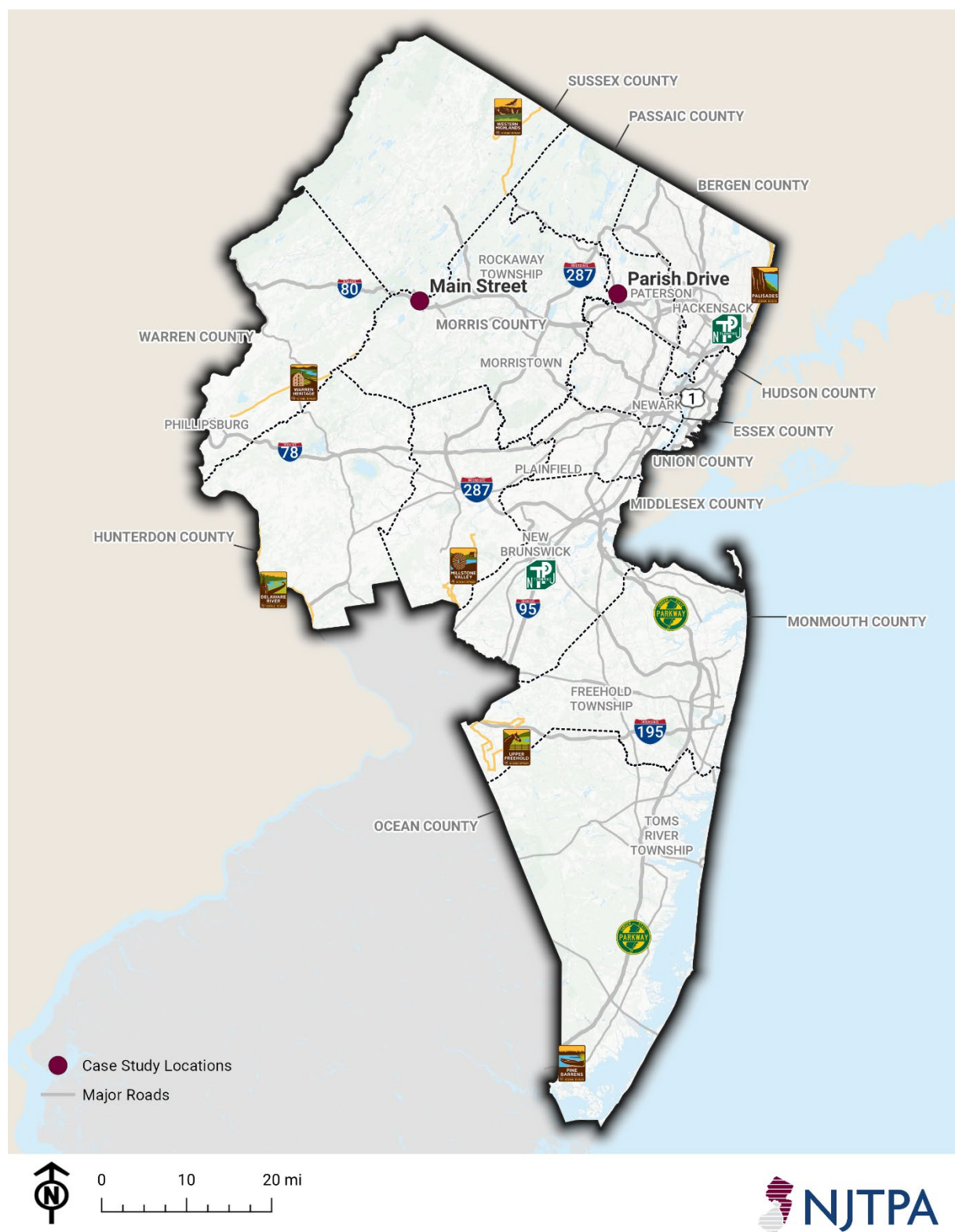
The project team assessed each location for the implementation of active transportation solutions which prioritize pedestrian and bicyclist movement and safety. The memo also identifies conceptual implementation recommendations and considerations as well as active transportation planning and design best practices more broadly.

## 2 Relevant Policy Documents

The North Jersey Transportation Planning Authority (NJTPA) is a federally funded Metropolitan Planning Organization (MPO) that serves the transportation needs of 7.7 million people and accounts for more than one-half of New Jersey's land area. The NJTPA coordinates with a broad and diverse range of constituents and stakeholders across the 13 county region. In the interest of continued support of its planning partners, the project team reviewed the following policy documents to help outline the regulatory frameworks for Case Study 1 and Case Study 2. The table below outlines the relevant policy documents reviewed for this study and they are reviewed in the subsequent sections by regional jurisdiction, county jurisdiction, and local/municipal jurisdiction.

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### Figure 2-1: Case Study Locations



**Table 2.1 Relevant Policy Documents by Jurisdiction**

Regional	County	Local/Municipal
<ul style="list-style-type: none"> <li>NJTPA Long Range Transportation Plan 2050 <ul style="list-style-type: none"> <li>Active Transportation in the NJTPA Region Plan 2050 Background Paper</li> </ul> </li> <li>Morris Canal Greenway Study</li> <li>Transit Village Initiative</li> </ul>	<ul style="list-style-type: none"> <li>Bike Passaic County</li> <li>Sussex County Complete Streets Policy</li> <li>Morris Canal Greenway Feasibility Study</li> <li>Preliminary/Final Design of the NYS&amp;W Bicycle and Pedestrian Path</li> </ul>	<ul style="list-style-type: none"> <li>Netcong Complete Streets Resolution</li> </ul>

## 2.1 Regional Policy Documents

### 2.1.1 NJTPA's Long Range Transportation Plan, *Plan 2050: Transportation. People. Opportunity*

The NJTPA Long Range Transportation Plan (LRTP) 2050 was adopted in 2021 and meets federal requirements for MPOs to update regional long-range plans every four years to receive federal funding. The document helps prioritize and plan the \$2 billion in transportation investments that the NJTPA allocates each year.

Plan 2050 was developed under the direction of the NJTPA Board of Trustees, with extensive public input, in collaboration with partner agencies that consist of member city and county subregions, the New Jersey Department of Transportation (NJDOT), NJ TRANSIT, the Port Authority of New York and New Jersey (PANYNJ), New Jersey's eight Transportation Management Associations (TMAs).. The plan is guided by seven regional goals for transportation which are:

1. Protect and improve natural ecosystems, the built environment, and quality of life.
2. Provide affordable, accessible, and dynamic transportation systems responsive to all current and future travelers.
3. Retain and increase economic activity and competitiveness.
4. Enhance system coordination, efficiency, safety, and connectivity for people and goods across all modes of travel.
5. Maintain a safe, secure, and reliable transportation system in a state of good repair.
6. Create great places through select transportation investments that support the coordination of land use with transportation systems.
7. Improve overall system safety, reducing serious injuries and fatalities for all travelers on all modes.

One of the core transportation strategies which applies to this plan is the effort to support active transportation through walking and cycling throughout the region. The NJTPA's core strategies help prioritize active transportation throughout the region and is applicable to both Case Study 1 located in Wayne Township (Passaic County) and Case Study 2 located in both Netcong Township (Morris County) and Stanhope Borough (Sussex County).

### **2.1.2 Active Transportation in the NJTPA Region (Plan 2050 Background Paper)**

*Active Transportation in the NJTPA Region* is a background paper written in support of Plan 2050 and included as an appendix. Improving walking and bicycling infrastructure supports the NJTPA's goal of creating great places to live through the coordination of land use, transportation, and economic development. The background paper describes the existing walking and biking infrastructure throughout the region and provides recommendations to promote active transportation. It highlights the Morris Canal Greenway Study as an example of a successful active transportation initiative within the region. Case Study 2 supports a bike and pedestrian connection to the Morris Canal Greenway located near Main Street in the Borough of Stanhope in Sussex County. Key recommendations from this paper include enhanced pedestrian facilities such as high-visibility crosswalks, pedestrian refuge islands, and curb extensions, as well as fully protected bicycle networks. The creation of the NJTPA's Active Transportation Plan was also a recommendation of the background paper.

### **2.1.3 Morris Canal Greenway Study**

The NJTPA's Morris Canal Greenway Study was completed in 2018. This study evaluated the entire length of the former Morris Canal for the potential to repurpose it, to the greatest extent possible, as a connected public greenway. The Morris Canal was a transportation and engineering marvel dating back to 1831, using an ingenious system of locks and inclined planes that enabled canal boats to overcome vast elevation changes and distances. It was used to transport coal, other materials, and goods across the state and helped develop North Jersey's economy and industrial cities for nearly a hundred years before being decommissioned in favor of railroads in 1924. The NJTPA is now working with the Canal Society of New Jersey, and other partners, through its Morris Canal Working Group, to preserve the former Canal's right-of-way, history, and assets as part of the ongoing Greenway conversion. The Morris Canal Greenway, once complete, will connect communities, foster pride, celebrate history, and provide economic, health and social benefits to the region. The corridor study's primary purpose was to evaluate the following:

1. Analyze the 102-mile path of the historic Morris Canal across several NJTPA counties.
2. Identify a continuous greenway for walking and bicycling that follows the original route to the greatest extent possible.
3. Identifies potential projects for short-to-medium- and long-term implementation
4. Outlines branding and marketing activities to build visibility of the Morris Canal Greenway.
5. Present design guidelines to unify the greenway, and recommend an organizational structure that coordinates implementation, helps to maintain the greenway, and promotes its benefits.

The study determined it is feasible to construct a continuous greenway following the historic canal, and about one-third of the alignment exists. The study recommends nearly seventy miles of off-road trails and more than forty-one miles of on-road shared use paths. The greenway study identifies both Case Study 1 in Wayne Township and Case Study 2 in Stanhope and Netcong as areas proposed for the Preferred Greenway alignment.

#### **2.1.4 Transit Village Initiative**

The Transit Village Initiative is a collaboration between NJDOT and NJ TRANSIT to help communities revitalize areas as transit-oriented development. Transit-oriented development is residential, commercial or mixed-use development built around transit and encourages active modes of transportation such as walking, biking, and transit ridership. Cities or towns identified as a Transit Village have demonstrated a commitment to revitalizing and redeveloping areas surrounding their transit stations towards transit-oriented development. There are 34 designated Transit Villages in New Jersey, with Netcong becoming one in 2005. The benefits of becoming a Transit Village are:

- State support for redevelopment
- Coordination among the state agencies that make up the Transit Village Task Force
- Priority funding from state agencies
- Technical assistance from state agencies

Netcong's qualification as a Transit Village allows the municipality more funding potential for supporting bike and pedestrian improvements. The Transit Village Initiative is applicable to Case Study 2 in Netcong Township.

## **2.2 County Policy Documents**

### **2.2.1 Bike Passaic County**

*BikePassaicCounty* is Passaic County's bicycle master plan, funded through the NJTPA's Subregional Studies Program. The plan was a joint effort of the Passaic County Department of Planning & Economic Development (county) and the NJTPA. The plan now serves as a guide for developing a comprehensive multimodal transportation network that meets the needs of all ages, abilities, and trip purposes, with a particular emphasis on equity and safety. The plan was completed in 2022 and outlines a range of findings and recommendations, including:

- Strong support of the vision to make bicycling safe, convenient, and enjoyable for people of all ages and abilities.
- Public engagement revealed that more people would bike if there were more bicycle lanes, and trails in Passaic County.
- High-speed, high-volume traffic, aggressive motorist behavior, and poor roadway conditions deter many people from bicycling more.

- A strong preference was indicated for bike lanes that are protected from motor vehicle traffic.
- Bicycle-related education and open streets are a priority for many.

Bike Passaic County prioritizes bicycle infrastructure within Passaic County and is applicable to Case Study 1 in Wayne Township, Passaic County.

### **2.2.2 Sussex County Complete Streets Policy and Implementation Plan**

The Sussex County Complete Streets Policy and Implementation Plan was completed in 2014 in collaboration with the NJTPA. The county's goal was to support and provide a multimodal transportation network to residents and businesses. The plan now guides Sussex County's suburban and rural communities and establishes a Complete Streets policy guide based on corridor type. The plan prioritizes multimodal access to recreational, scenic, employment, service, and shopping opportunities. Sussex County's Complete Streets Policy and Plan applies to Case Study 2, located in Stanhope within Sussex County.

### **2.2.3 Morris Canal Greenway Feasibility Study**

The Morris Canal Greenway Feasibility Study was prepared by Passaic County in 2011 with support from a grant from the Association of New Jersey Environmental Commissions (ANJEC) and the Passaic County Open Space Trust Fund. The study helped determine how areas of open space can be connected to create a contiguous recreational trail along the former route of the historic Morris Canal in Passaic County. The feasibility study identifies the Mountain View Rail Area (Pompton Feeder Connection) in Wayne Township as an area for bike and pedestrian improvement applicable to Case Study 1 in Wayne Township.

### **2.2.4 Preliminary/Final Design of the NYS&W Bicycle & Pedestrian Path**

The NYS&W Bicycle and Pedestrian Path is a planned 4.8-mile shared use path starting at River Drive in Pequannock and ending at the Mountain View-Wayne Train Station in Wayne. The path is applicable to Case Study 1, located in Wayne Township, Passaic County. The purpose of the path is to serve as a transportation and recreational facility that will connect residents, commuters, and visitors with area parks, schools, libraries, businesses, and transit. The path is planned along inactive right-of-way of the New York, Susquehanna, and Western (NYS&W) Railway. The railroad was once a commuter line and was later used as NYS&W's Pompton Industrial Spur, serving freight and industrial uses along the railroad. The paved path will be separated from automobile traffic, except where it crosses streets along the corridor. According to Morris County, the path is anticipated to be completed in 2024.

## 2.3 Local Policy Documents

### 2.3.1 Netcong Complete Streets Resolution

The Netcong Complete Streets Resolution is a policy framework for roadway design which highlights an approach for funding, planning and design of streets to be accessible for every type of user regardless of mode and ability. The aim is to create an equitable environment that acknowledges the needs of pedestrians, bicyclists, and transit riders, not just automobile drivers. In 2009, the NJDOT passed a Complete Streets Policy to promote the multi-modal movement of all people within NJDOT's transportation network regardless of age and ability. The adoption of the policy enabled NJDOT to help fund, and train engineers, planners, and policymakers throughout the state. In 2010 the Borough of Netcong adopted a complete streets policy that prioritizes pedestrian and cyclists' modes as a viable alternative to driving and creating safe corridors for all road users regardless of abilities. Netcong's Complete Streets resolution is applicable to Case Study 2 which falls within Netcong and Stanhope.

## 3 Case Study 1: Parish Drive, Wayne Township

Case Study 1 is located along Parish Drive in Wayne Township and continues along Mountainview Boulevard. It was chosen as a case study due to its proximity to the Morris Canal Greenway and potential for active transportation uses. The following sections outline existing conditions for Case Study 1, as well as Stakeholder Identification and Engagement and Conceptual Recommendations.

### 3.1 Existing Conditions

In Table 3.1, the existing conditions of Case Study 1 are outlined by showing where the Case Study is located, the roadway type, speed limit, AADT, and proximity of proposed active transportation projects.

**Table 3.1 Case Study 1 Existing Conditions**

<b>Town/Borough</b>	Wayne Township
<b>County</b>	Passaic County
<b>Case Study 1 Area</b>	The case study area encompasses the intersection of Parish Dr and Dey Rd on the eastern end and continues west along Parish Dr, going north at the intersection of Parish Dr and Mountainview Blvd. The study area then continues north and west along Mountainview Blvd. until the intersection with Erie Ave. At that intersection, the study area continues south until connecting with the NJ TRANSIT Mountain View-Wayne Station.



<b>Town/Borough</b>	Wayne Township
<b>Distance</b>	4,100 feet (0.77 miles)
<b>Roadway Type</b>	Two-lanes with a curb-to-curb width ranging from 30-feet to 41-feet
<b>Speed Limit</b>	Parish Dr from Dey Rd to Mountainview Blvd.: 35 MPH Mountainview Blvd.to Erie Avenue: 25 MPH Erie Avenue: 15 MPH
<b>AADT</b>	5,000-6,000 vehicles per day <sup>1</sup>
<b>Adjacent Proposed Active Transportation Project</b>	<ul style="list-style-type: none"> <li>• Morris Canal Greenway Located behind the Stahl Plaza Shopping Center</li> <li>• NYS&amp;W Bicycle and Pedestrian Path</li> </ul>

The project team observed limited pedestrian activity along Mountainview Blvd. during a site visit on March 15, 2023. The team noted sidewalks on both sides of the roadway along Parish Drive and onto Mountainview Blvd. to the Route 23 overpass, where the sidewalk continues along the south side of Mountainview Boulevard.

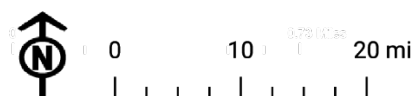
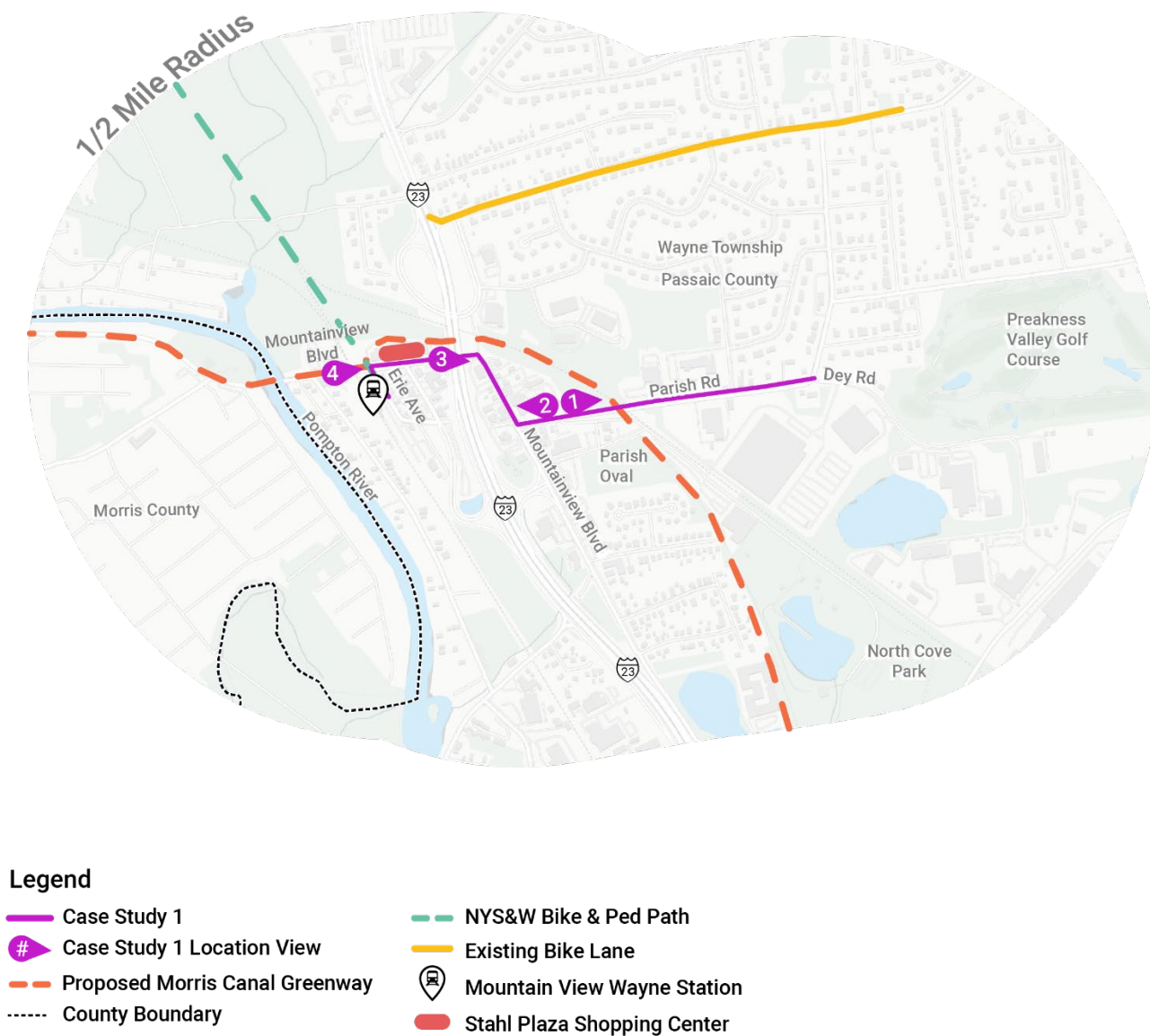
The curb ramps within the case study limits are non-ADA compliant and require upgrades to meet current ADA standards. Additionally, there is no accessible street connection from the Morris Canal Greenway and NYS&W Bicycle & Pedestrian Path to the Mountain View-Wayne Station, due to the lack of sidewalks in front of the Stahl Plaza Shopping Center. The nearest existing pedestrian crosswalks are at Sherman Street. The team also noted limited sight distance at either approach to the rail crossing on Mountainview Blvd. due to its location on a crest curve.

Overall, a high volume of vehicles was observed along the corridor. There are also several emergency services providers within the vicinity, such as Community Volunteer Fire Company No. 1 (along the corridor) and Wayne Township Memorial First Aid Squad (adjacent to the corridor). The eastern terminus of the case study includes the intersection of Parish Drive and Dey Road. Dey Road is on an incline approaching Parish Drive and could have sightline issues that may be a safety hazard and warrant further investigation.

Figure 3-1 Corridor Map below shows the existing conditions of the corridor area.

<sup>1</sup> North Jersey Transportation Planning Authority, "BikePassaicCounty," 2021-2022



**Figure 3-1 Corridor Map**

The photos below are referenced in the **Figure 3-1 Corridor Map**

**1 Photo 1 Facing east on Parish Drive**



**2 Photo 2 Facing west on Parish Drive**



**3 Photo 31 Facing east on Mountainview Boulevard**



**4 Photo 42 Facing east on Mountainview Blvd. at Erie Avenue**





The land use of the half-mile area surrounding Case Study 1 is shown in **Figure 3-2 Land Use** and **Table 3.2 Land Use**

**Figure 3-2 Land Use**



**Legend**

- Case Study 1
- Residential
- Open Space, Forest & Wetlands
- Commercial, Office & Other Urban or Built up Land
- Industrial, Manufacturing, Transportation & Utilities



0 10 20 mi

**Table 3.2 Land Use**

<b>Land Use</b>	<b>Acres</b>	<b>%</b>
Commercial, Office & Other Urban or Built-Up Land	123	4%
Industrial, Manufacturing, Transportation & Utilities	202	7%
Open Space, Forest & Wetlands	440	16%
Residential	2007	72%

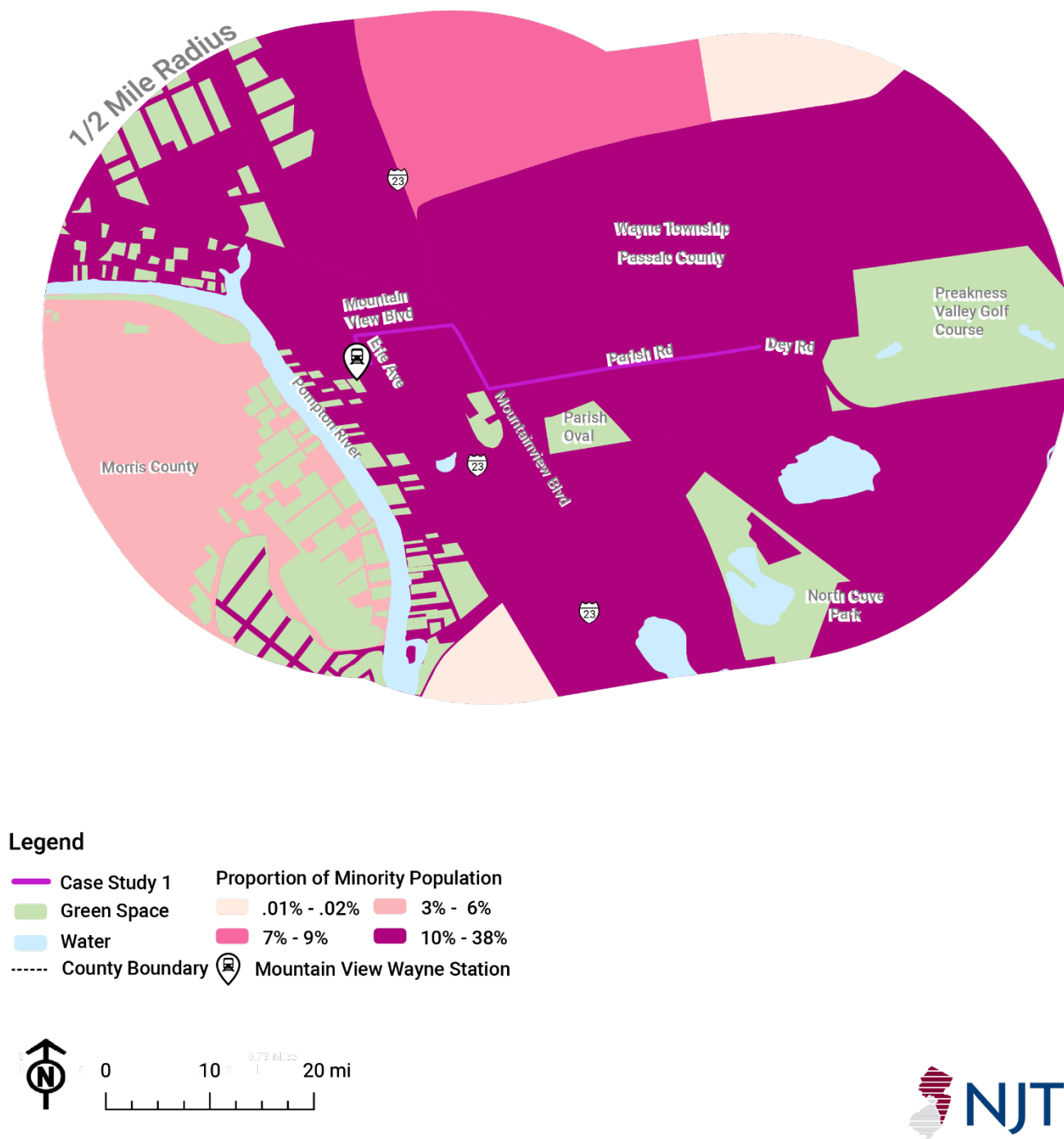
**Source Notes:** New Jersey Department of Environmental Protection (NJDEP), Division of Information Technology (DOIT), Bureau of Geographic Information Systems (BGIS) 2015

## Demographics

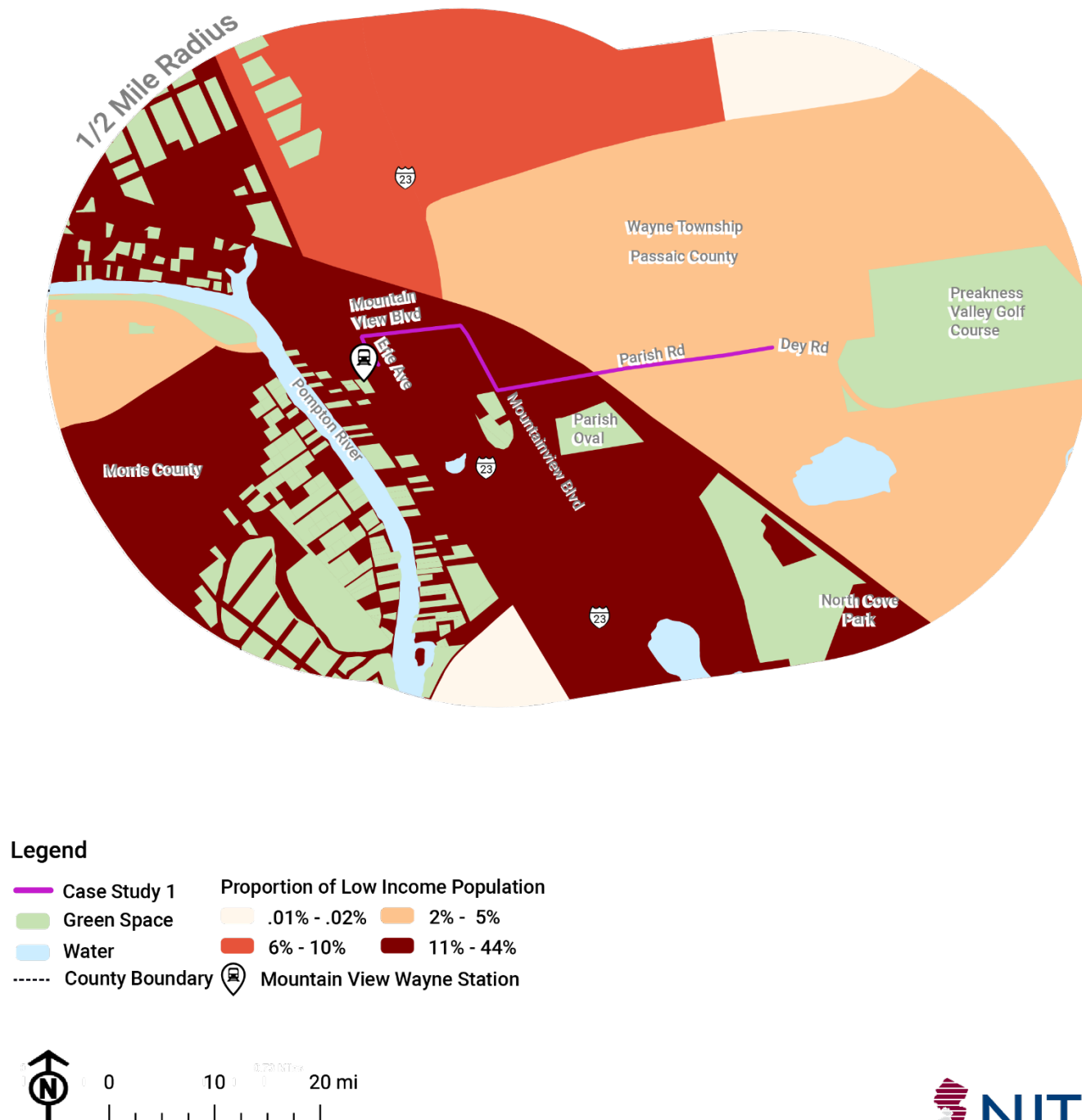
Equity is a critical component of the NJTPA's LRTP. Addressing equity means ensuring the transportation system prioritizes the needs of historically underserved communities. In 2021, the NJTPA adopted an updated Title VI plan which outlines civil rights and anti-discrimination policies and guides environmental justice efforts.

To capture the needs of historically underserved communities and advance the NJTPA's equity policies, Figure 3-3 shows minority populations, Figure 3-4 shows low-income populations, and Figure 3-5 shows limited-English-proficiency populations in Case Study 1. Overall, the immediate area consists of:

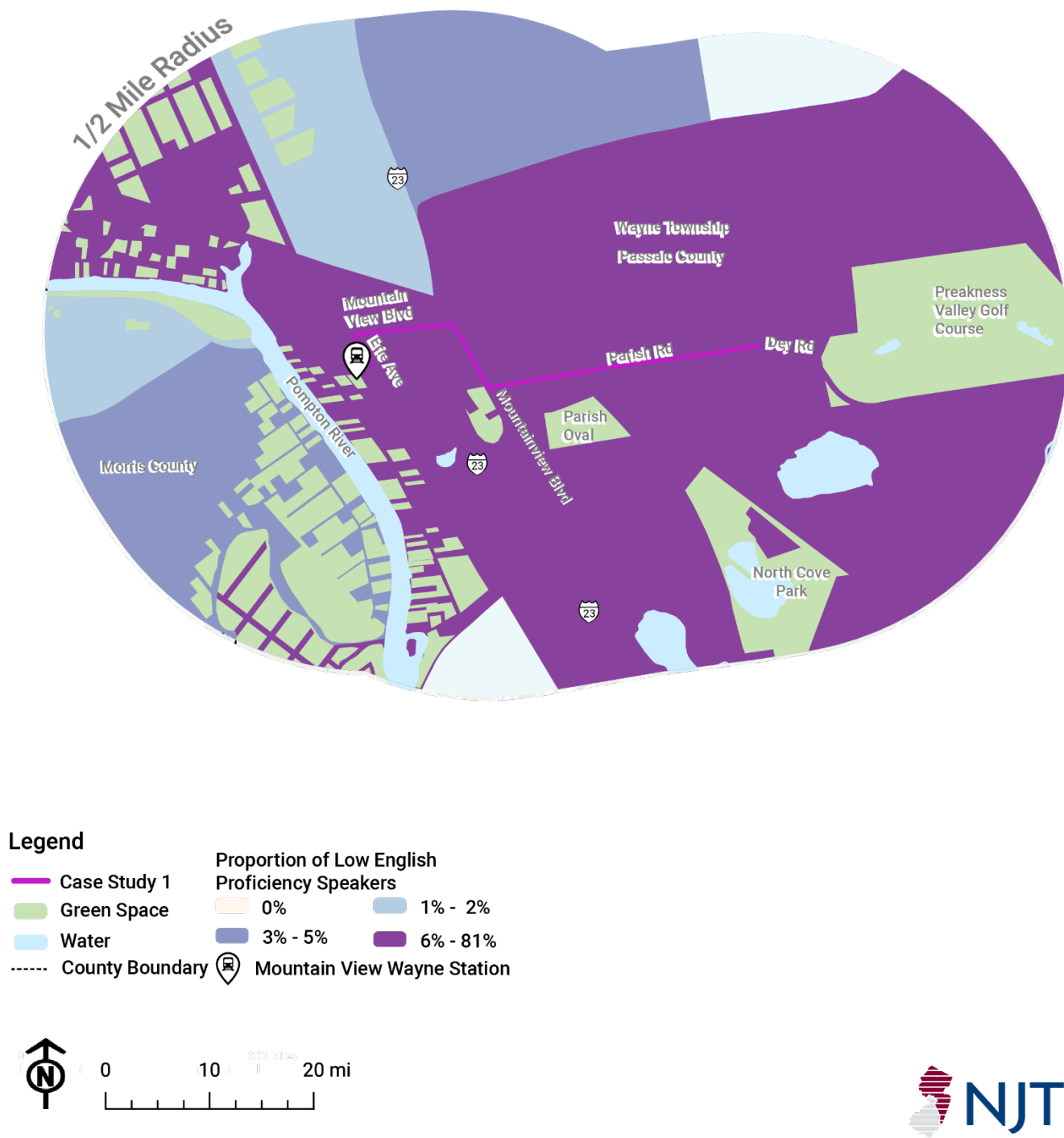
- Between 10-38 percent of the area within a half-mile of the study corridor contains minority populations
- Between 11-44 percent of the area within a half-mile of the study corridor contain low-income populations below 200 percent of the federal poverty line.
- At least 174 people live within a half-mile of the study corridor and identify as speaking English less than well.

**Figure 3-3 Minority Population, ACS 2021**

**Source Notes:** Minority: ACS 5 years 2017-2021 density of minority populations (defined as all census races but not including people who identify as white-non-Hispanic) per acre by block group. (Table: B03002).

**Figure 3-4 Low Income Population, ACS 2021**

**Source Notes:** Low Income: ACS 5 years 2017-2021 Income as a ratio to poverty individuals' 200 percent of the federal poverty line (Table C17002)

**Figure 3-5 Low English Proficiency Population, ACS 2021**

**Source Notes:** Minority: Low English Proficiency: ACS 5 years 2017-2021 for Limited English Proficiency (Table: B16004)



**Table 3.3 Minority, Low Income and Low English Proficiency People in Case Study 1**

<b>Demographic</b>	<b>Number of People</b>	<b>Percentage of the Total People in Case Study 1 Area</b>
Minority	710	6%
Low Income	266	2%
Low English Proficiency	174	2%

**Source Notes:** (1) Minority: ACS 5 years 2017-2021 density of minority populations (defined as all census races but not including people who identify as white-non-Hispanic) per acre by block group. (Table: B03002). (2) Low Income: ACS 5 years 2017-2021 Income as a ratio to poverty individuals' 200 percent of the federal poverty line (Table C17002) (3) Low English Proficiency: ACS 5 years 2017-2021 for Limited English Proficiency (Table: B16004)

### 3.2 Stakeholder Identification and Engagement

Stakeholder identification and engagement were critical in understanding the needs of each case study location and input on the proposed recommendations. The stakeholder meeting for Case Study 1 was held on April 5, 2023, as a virtual call. The meeting described existing conditions and preliminary recommendations. Much of the meeting focused on stakeholder feedback and discussion.

The following stakeholders were invited:

- Avenues in Motion TMA
- Morris County
- Morris Canal Working Group
- NJDOT
- NJTPA
- NJ TRANSIT
- Passaic County
- Township of Wayne
- Wayne Township Fire Department

Representatives from seven (7) of the identified stakeholders attended the meeting.

After presenting the proposed recommendations to the stakeholders, the project team posed the following questions to help initiate discussion:

1. What is your vision for the corridor?
2. Are there other plans/studies/policies that may impact changes in this corridor?
3. Are there any concerns about proposed facility types or other active transportation treatments?

4. Are there any funding opportunities or future planned projects that are relevant to the study area?
5. What maintenance concerns exist along the corridor?
6. Are there any missing or otherwise important factors to consider along these segments?
7. Are there other stakeholders not present here that we should talk to?

During the discussion, stakeholder feedback was collected on a virtual jam board under groupings of plan/studies/policies, maintenance, funding, facility types/treatments, safety, and equity

During the meeting, stakeholders voiced their concerns about understanding the roles and responsibilities of relevant stakeholders along the case study corridor. This is because Parish Drive and Mountainview Blvd. are within Wayne Township, but when Mountainview Blvd. travels below Route 23, the roadway is under NJDOT jurisdiction. A clear delineation of who is responsible for which segments along the case study corridor will provide a pathway for implementing active transportation treatments in the area. Additionally, reaching out to stakeholders who are not governmental groups, such as local schools and bicycle clubs, will provide greater insight into pedestrian and bicyclist needs within the corridor.

Participants also discussed funding opportunities for proposed treatments. One suggestion involved using existing planned projects to help fund active transportation treatments in the corridor, such as using the resurfacing project of Parish Drive in 2024 to implement a separated bike lane. Suggestions from the stakeholder meetings also involve incorporating traffic and collision data of the case study area to provide additional analysis of pedestrian and bicyclist safety along the corridor. Stakeholder feedback was also heard regarding separated bike lanes on Parish Road to support an interconnected bicycle network that leads to other bicycle lanes instead of ending on Dey Road. Additional feedback noted the bridge along Parish Drive and making sure there is enough space for a bike lane on that section of the roadway.

### **3.3 Conceptual Recommendations**

This section provides conceptual recommendations that prioritize bicycle and pedestrian movement for Case Study 1 based on an assessment of existing conditions and stakeholder feedback. As noted in the site observations above, the corridor has challenges for implementing bicycle and pedestrian infrastructure due to the lack of sidewalks and the heavy volume of traffic along the corridor. However, the corridor does provide some connectivity to future planned active transportation trails (Morris Canal Greenway and NYS&W Bicycle & Pedestrian Path).

As noted in the stakeholder meeting, implementing improvements in this corridor will cross jurisdictional boundaries. Another general issue to consider, also highlighted by stakeholders, is to integrate bicycle and pedestrian improvements such as high visibility crosswalks into existing planned projects, such as a resurfacing project planned for Parish Drive in 2024. This approach would be the most efficient way of supporting active transportation measures along the corridor.

Utilizing corridor wayfinding signs for pedestrians and cyclists is also a recommendation to facilitate seamless connections for all users. These signs can highlight connections to the Morris Canal Greenway, the NYS&W Bicycle & Pedestrian Path, adjacent shopping centers, and the Mountain View-Wayne Station. Effective wayfinding signs can provide a sense of place to the corridor for pedestrians and cyclists and identify clear connections to NJ TRANSIT at the Mountain View-Wayne Station. Suggestions from the stakeholder meetings also involve incorporating traffic and collision data of the case study area to provide additional analysis of pedestrian and bicyclist safety along the corridor. There are three recorded bike and pedestrian crashes on the corridor at the underpass on Mountainview Blvd. One crash was fatal and two of the crashes resulted in serious injuries. To achieve the goal of a safer and more inclusive road corridor, several site-specific recommendations for bicyclists and pedestrians are outlined below.

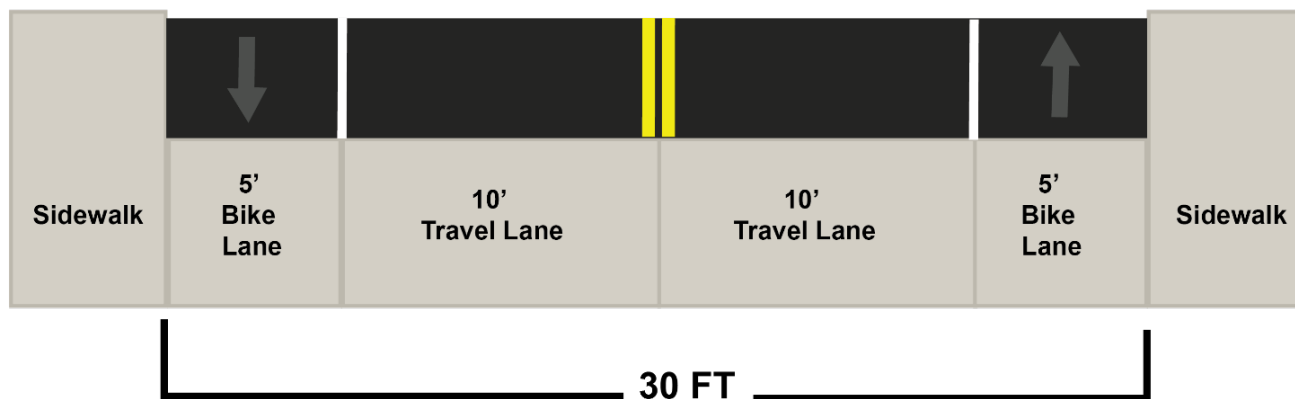
## **Bicycles**

Stakeholder feedback regarding separated bike lanes on Parish Road supported an interconnected bicycle network that leads to other bicycle lanes instead of ending on Dey Road. Additional feedback noted that the bridge on Parish Drive may be too narrow to include a bike lane on that section of the roadway.

Parish Drive is noted in the *BikePassaicCounty* study documents as an on-road connection to the Morris Canal Greenway. It is envisioned that low-cost measures to implement bike lane striping and signage are preferred with no changes to the physical roadway width. Given the existing roadway width of 30 feet, the cross-section would consist of two 11-foot lanes and a 4-foot-wide conventional bicycle lane<sup>2</sup> in each direction (see Figure 3-6 below).

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<sup>2</sup> New Jersey Department of Transportation, "Bicycle Safety Action Plan Toolbox." [www.Nj. Gov/Transportation](https://www.nj.gov/transportation/commuter/bike/pdf/Bicycle_Safety_Action_Plan_Toolbox.pdf). New Jersey Department of Transportation, October 2016.  
[https://www.nj.gov/transportation/commuter/bike/pdf/Bicycle\\_Safety\\_Action\\_Plan\\_Toolbox.pdf](https://www.nj.gov/transportation/commuter/bike/pdf/Bicycle_Safety_Action_Plan_Toolbox.pdf).

**Figure 3-6 Proposed Street Section****Figure 3-7 Existing Conditions & Proposed Treatments**

**Image Source:** Site Visit

The configuration noted above is likely only applicable to the Parish Drive portion of the case study area.

Mountainview Blvd. has on-street parking on both sides until the Route 23 overpass. The measured roadway distance on Mountainview Blvd. until the overpass is 40 feet. The figure below proposes a two-way separated bike lane while maintaining on-street parking on at least one side of the street within the 40-ft width.

Separated bike lanes for this part of the corridor can enhance bicycle and pedestrian access to commercial destinations. Protected and separated bike facilities are seen to be safer, with cities having separated bike lanes reporting 44 percent fewer bike related deaths than the average city<sup>3</sup>. In addition to providing the safety element of separating cyclists from motor vehicles, separate bike lanes also help ease perceptions of safety, for all non-motorized users<sup>4</sup>. The presence of on-street parking can also promote safety and reduced vehicle speeds by narrowing the vehicle lanes.

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<sup>3</sup>Wesley E. Marshall, Nicholas N. Ferencak, Why cities with high bicycling rates are safer for all road users, Journal of Transport & Health, Volume 13, 2019 <https://www.sciencedirect.com/science/article/pii/S2214140518301488>

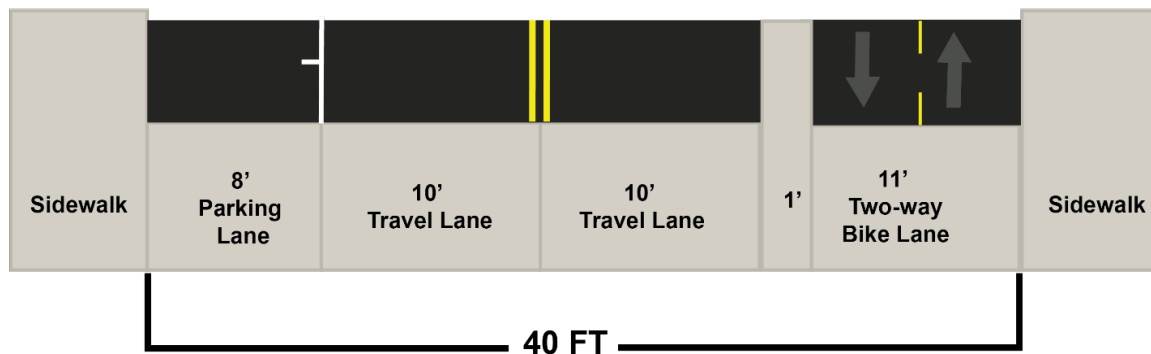
<sup>4</sup> Xiang Guo, Arash Tavakoli, Austin Angulo, Erin Robartes, T. Donna Chen, Arsalan Heydarian, Psycho-physiological measures on a bicycle simulator in immersive virtual environments: how protected/curbside bike lanes may improve perceived safety, Transportation Research Part F: Traffic Psychology and Behaviour, 2023, <https://doi.org/10.1016/j.trf.2022.11.015> .



**Figure 3-8 Existing Conditions on Mountainview Blvd**



**Image Source:** Google Earth

**Figure 3-9 Proposed Street Section on Mountainview Blvd****Figure 3-10 Proposed two-way separated bike lane with on-street parking on Mountainview Blvd**



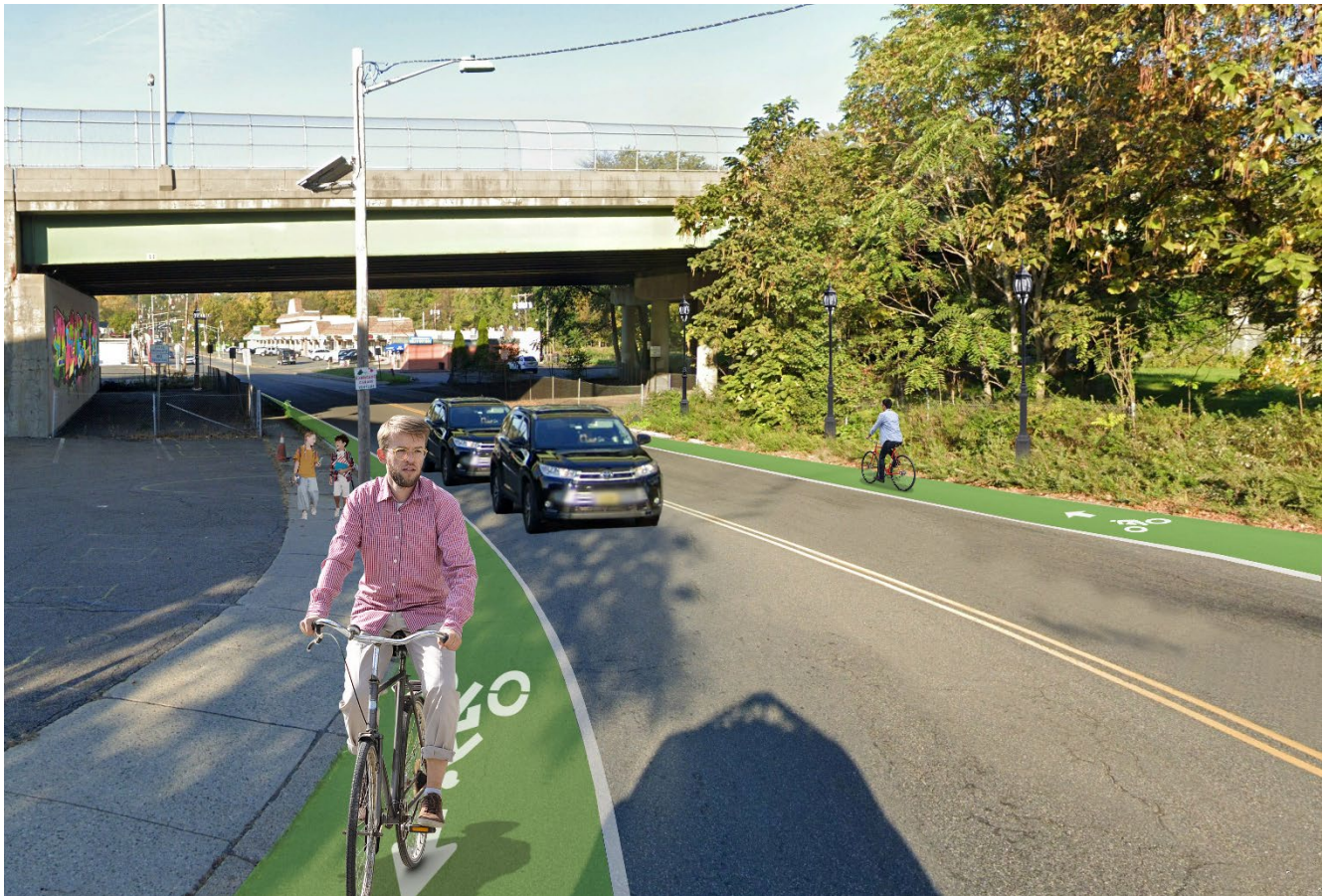
## Pedestrians

During the stakeholder meeting, it was noted that there are few observed pedestrians in the case study area. The opening of the NYS&W Bicycle & Pedestrian Path and the Morris Canal Greenway will likely attract more pedestrian activity along the corridor. Providing pedestrian-focused treatments would make this area more welcoming and appealing for people walking, especially for connection to the future trails and the Mountain View-Wayne Station.

**Figure 3-11 Existing Conditions**



**Image Source:** Google Earth

**Figure 3-12 Proposed Treatments for Underpass**

Current pedestrian facilities consist of sidewalks along Parish Drive and Mountainview Boulevard. Near the Route 23 overpass, sidewalks are only on the south side of the street. Due to the commercial land uses along Mountainview Blvd. leading up to the Mountain View-Wayne Station, the following pedestrian treatments are recommended:

- Provide sidewalks on the north side of Mountainview Boulevard.
- Update the curb ramps to be ADA-compliant, particularly for the median between the roadway and the Stahl Plaza Shopping Center parking lot.
- Provide high-visibility crosswalks at the intersection of and Erie Ave, Mountainview Blvd. and Sherman Street, and Parish Drive and Mountainview Blvd. with curb extensions.
- Provide additional lighting and public art at the Route 23 overpass.
- Ensure pedestrian signals include leading pedestrian intervals to give pedestrians of all abilities enough time to cross the road.



## 4 Case Study 2: Main Street, Stanhope & Netcong

Case Study 2 is located within Stanhope and Netcong and runs along Route 183 and continues onto Main Street. It was chosen as a case study due to its proximity to the proposed Morris Canal Greenway and potential for active transportation uses. The following sections outline existing conditions for Case Study 2 and Stakeholder Identification and Engagement and Conceptual Recommendations.

### 4.1 Existing Conditions

**Table 4.1 Case Study 2 Existing Conditions**

<b>Town/Borough</b>	Borough of Stanhope & Netcong
<b>County</b>	Sussex County
<b>Case Study 2 Area</b>	The case study area encompasses the intersection of Ledgewood Ave and Allen St at the southern end, then continues north on Ledgewood Ave with Lake Musconetcong on the right side. The study area continues north, then goes west on Main St until the intersection of Main St and Kelly Pl. The connection to the Morris Canal Greenway extends slightly beyond the end of the case study limits; along Plane St and to the end of Plane Ln.
<b>Distance</b>	1,900 ft (0.36 miles)
<b>Roadway Type</b>	<ul style="list-style-type: none"> <li>• Main St is 32 feet wide with on-street parking permitted on the eastbound side of the roadway.</li> <li>• Along Kelly Pl, the roadway is 24 feet wide with limited sight distances around the curves.</li> </ul> <p>Ledgewood Ave is 40 feet wide with no marked shoulders.</p>
<b>Speed Limit</b>	The study area encompasses roads that are two lanes with a speed limit of 25 MPH.
<b>AADT</b>	Traffic Count data from the NJDOT Traffic Monitoring System Map indicates an AADT of 1,539 vehicles per day (2019) for Main St and an AADT of 17,806 vehicles per day for Ledgewood Ave. (Route 183 – 2009).
<b>Adjacent Proposed Active Transportation Project</b>	<ul style="list-style-type: none"> <li>• Morris Canal Greenway Provides an on-road connection to the Greenway</li> </ul>

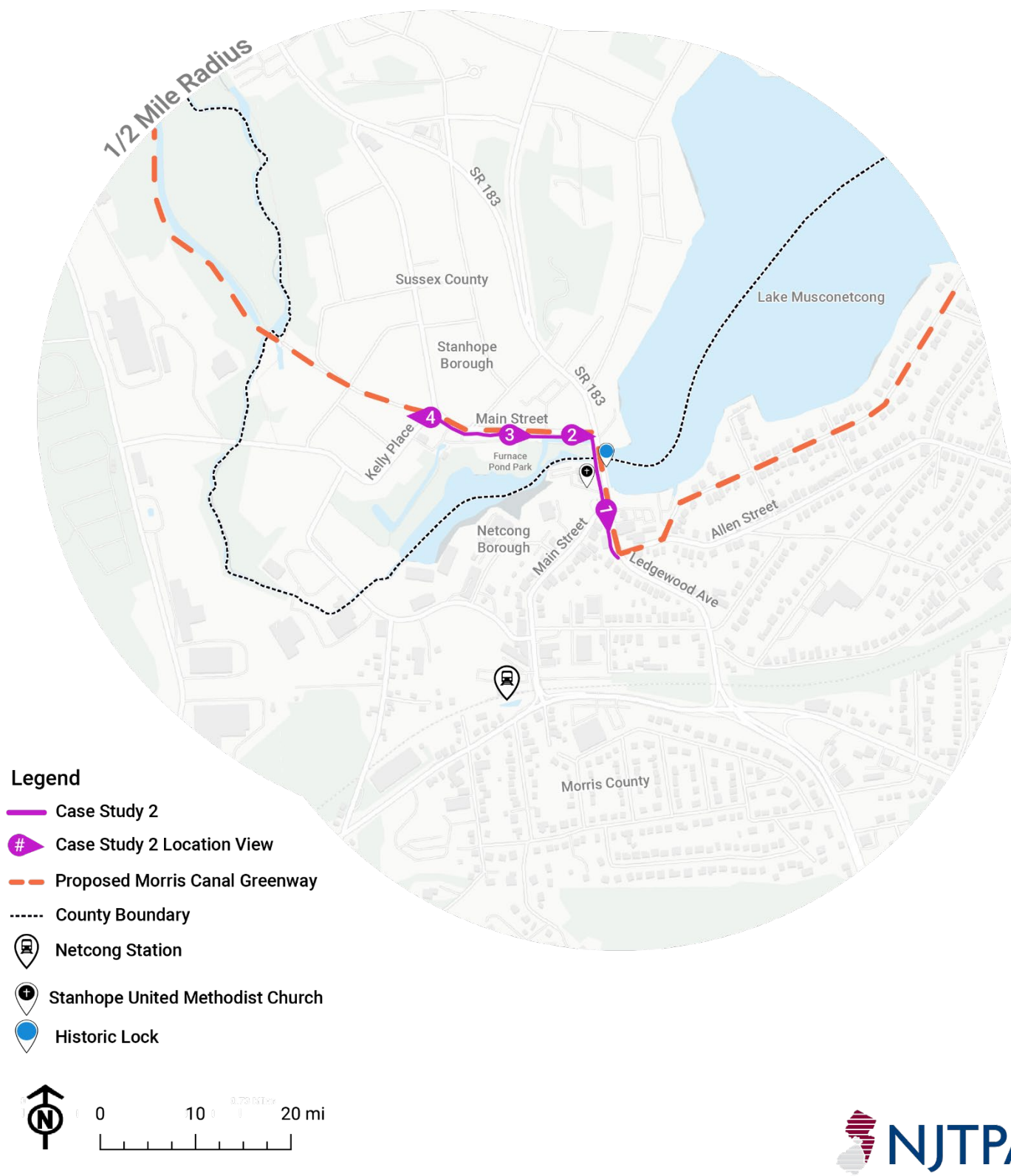
The project team conducted a site visit of Case Study 2 within the Boroughs of Stanhope and Netcong on March 15, 2023. The team observed heavy vehicular traffic making left turns at the intersection of Allen Street and Main Street. This heavy traffic caused a backup of vehicular traffic past Main Street. The team also noted sidewalks and crosswalks along Allen Street, Main Street, Ledgewood Avenue, and Dell Avenue.

The curb ramps within the case study limits appear to be a mix of ADA compliant and non-compliant ramps and require certain upgrades to meet current ADA standards. The Morris Canal Greenway is accessible via Plane Street, which is a one-way-only east of the intersection with New Street. Additionally, Plane Street is the location of a former canal, and the street was noted to have some inclines.

The four routes that connect to the Morris Canal Greenway (Plane Street, Kelly Place, Plane Lane, and New Street) have limited to no sidewalks. Observations on New Street and Plane Street revealed little to no vehicular traffic. Observations on Kelly Street revealed several vehicles navigating a very tight bend at 15 mph. The roadway widths of these streets are narrow, and both Kelly Place and New Street have sight-distance obstructions and tight curves. New Street includes a speed bump and Plane Lane has a steep gradient. Overall, most of the traffic concentrated on Ledgewood Ave. and Allen Street, and fewer vehicles moved along Main Street and the streets connecting Main Street to the Morris Canal Greenway.

Figure 4-1 Case Study 2 Corridor Map below shows the existing conditions of the corridor area.

**Figure 4-1 Case Study 2 Corridor Map**





The photos below are referenced in **Figure 4-1 Case Study 2 Corridor Map** above and were collected on a March 15<sup>th</sup>, 2023, site visit.

**1 Photo 13 South facing view on Main Street**



**2 Photo 24 East facing view on Route 183**



**3 Photo 36 East Facing View on Main**



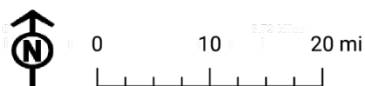
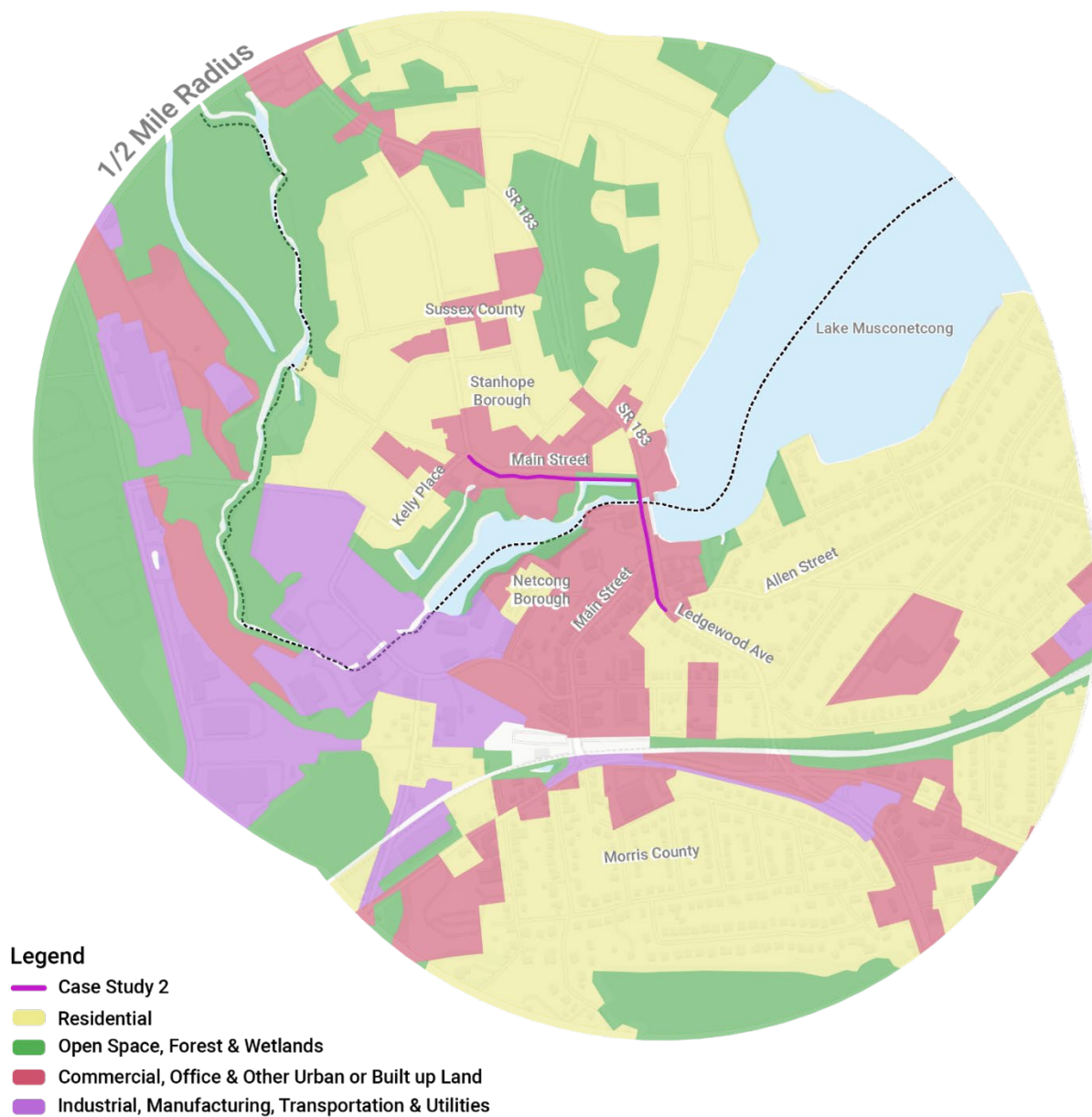
**4 Photo 45 West Facing View on Main Street towards Kelly Place**





The land use of the half-mile area surrounding Case Study 2 is shown in **Figure 4-2 Land Use** and **Table 4.2 Land Use**

**Figure 4-2 Land Use**





**Table 4.2 Land Use**

	<b>Acres</b>	<b>%</b>
Commercial, Office & Other Urban or Built-Up Land	108	18%
Industrial, Manufacturing, Transportation & Utilities	66	11%
Open Space, Forest & Wetlands	151	25%
Residential	290	47%

**Source Notes:** New Jersey Department of Environmental Protection (NJDEP), Division of Information Technology (DOIT), Bureau of Geographic Information Systems (BGIS) 2015

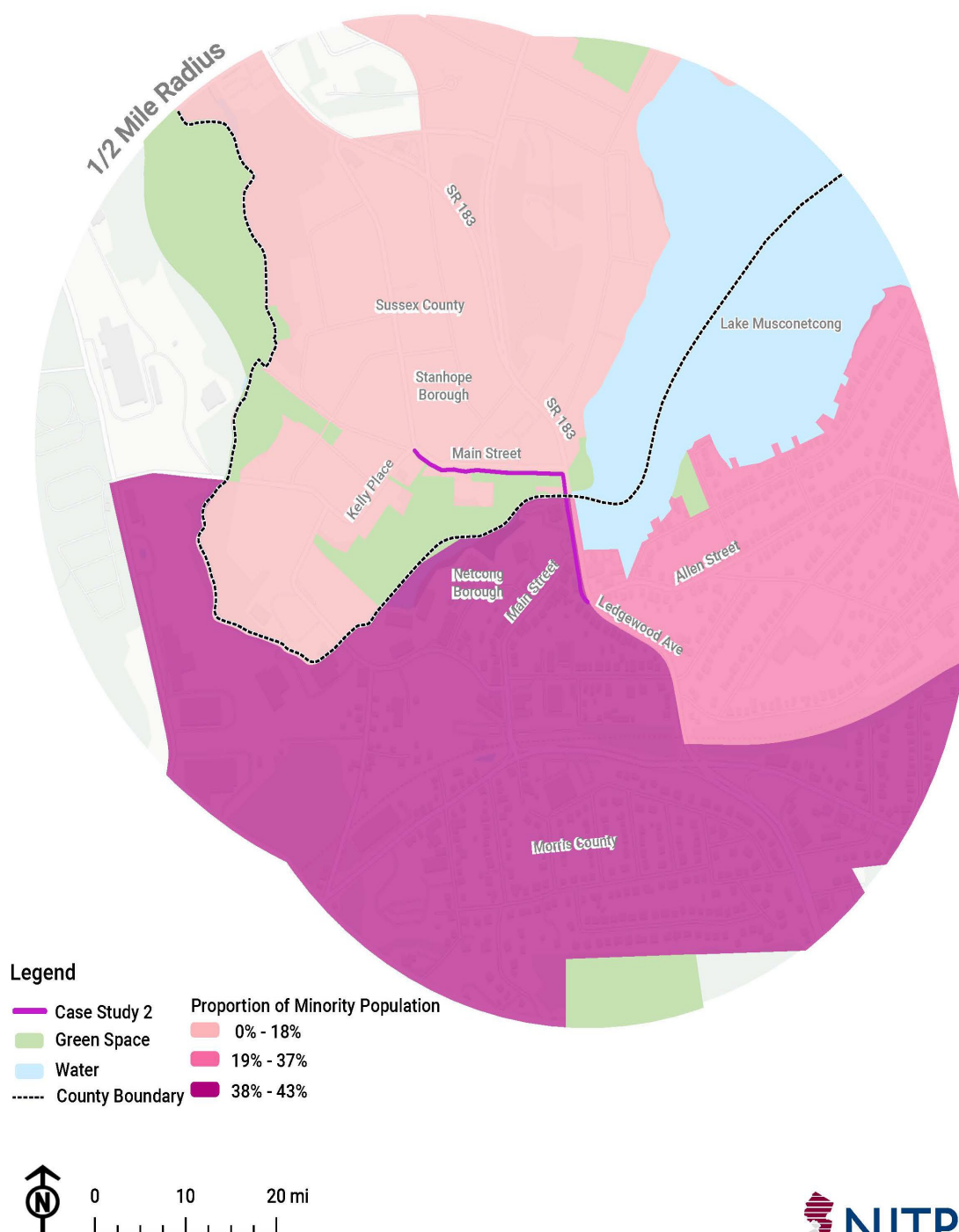
## Demographics

Minority, low income, and limited-English proficiency populations were pulled from the Census to capture Historically Underserved populations which surround Case Study 2 and include the total count of people as defined by Executive Order 12898<sup>5</sup> and Title VI<sup>6</sup>. Investment in bicycle and pedestrian facilities creates opportunities for people to exercise and provides additional modes of transportation, especially for communities that have been historically underserved by the transportation system. The following figures show minority, low-income, and low English proficiency populations for Case Study 2. Overall, the immediate area of Case Study 2 consists of the following populations:

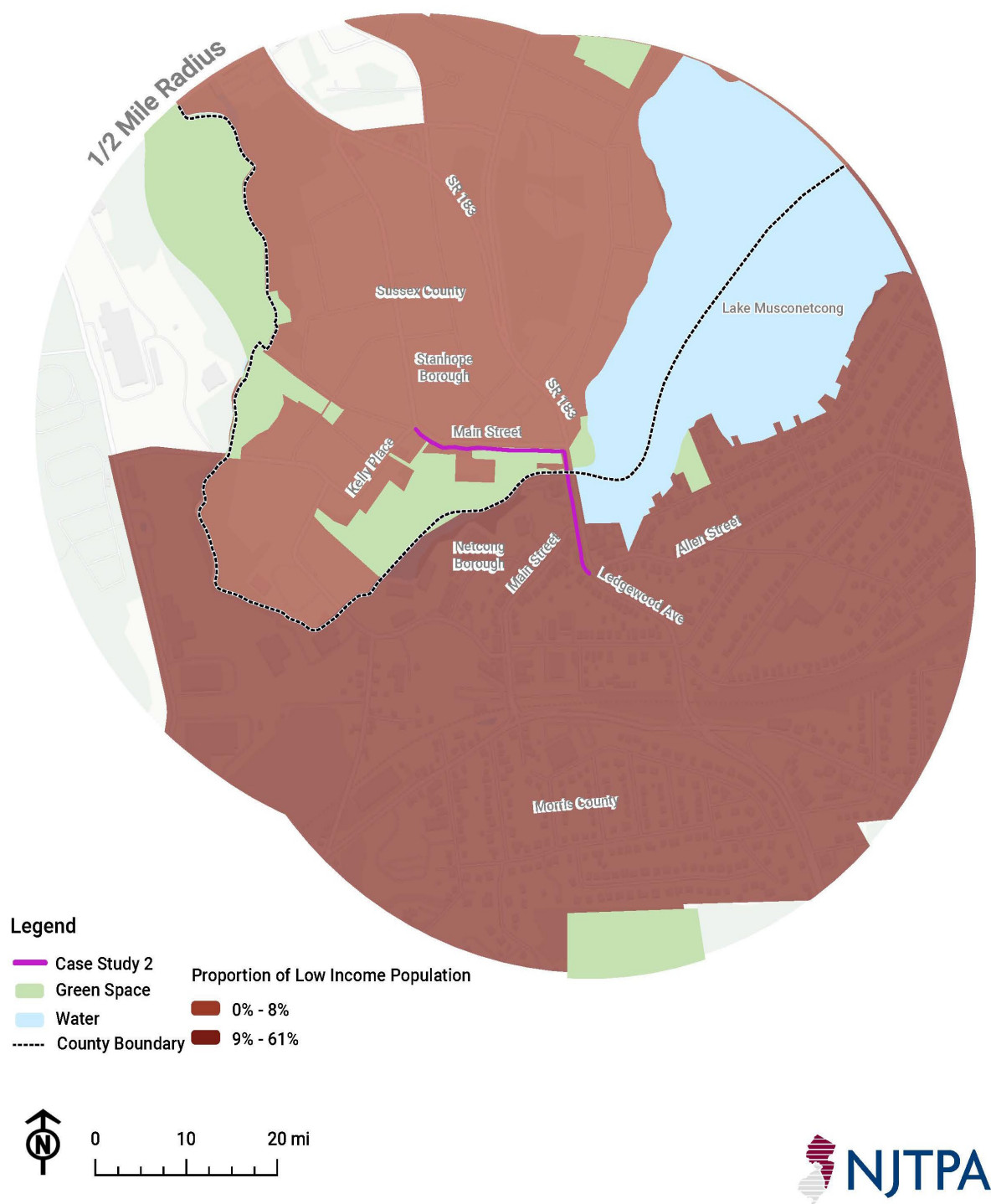
- Between 38-43 percent of the area within a half-mile of the study corridor contain minority populations
- At least 530 people within a half-mile of the study corridor have incomes 200 percent of the federal poverty line.

<sup>5</sup> "Learn About Environmental Justice | US EPA," September 6, 2022. <https://www.epa.gov/environmentaljustice/learn-about-environmental-justice#eo12898>.

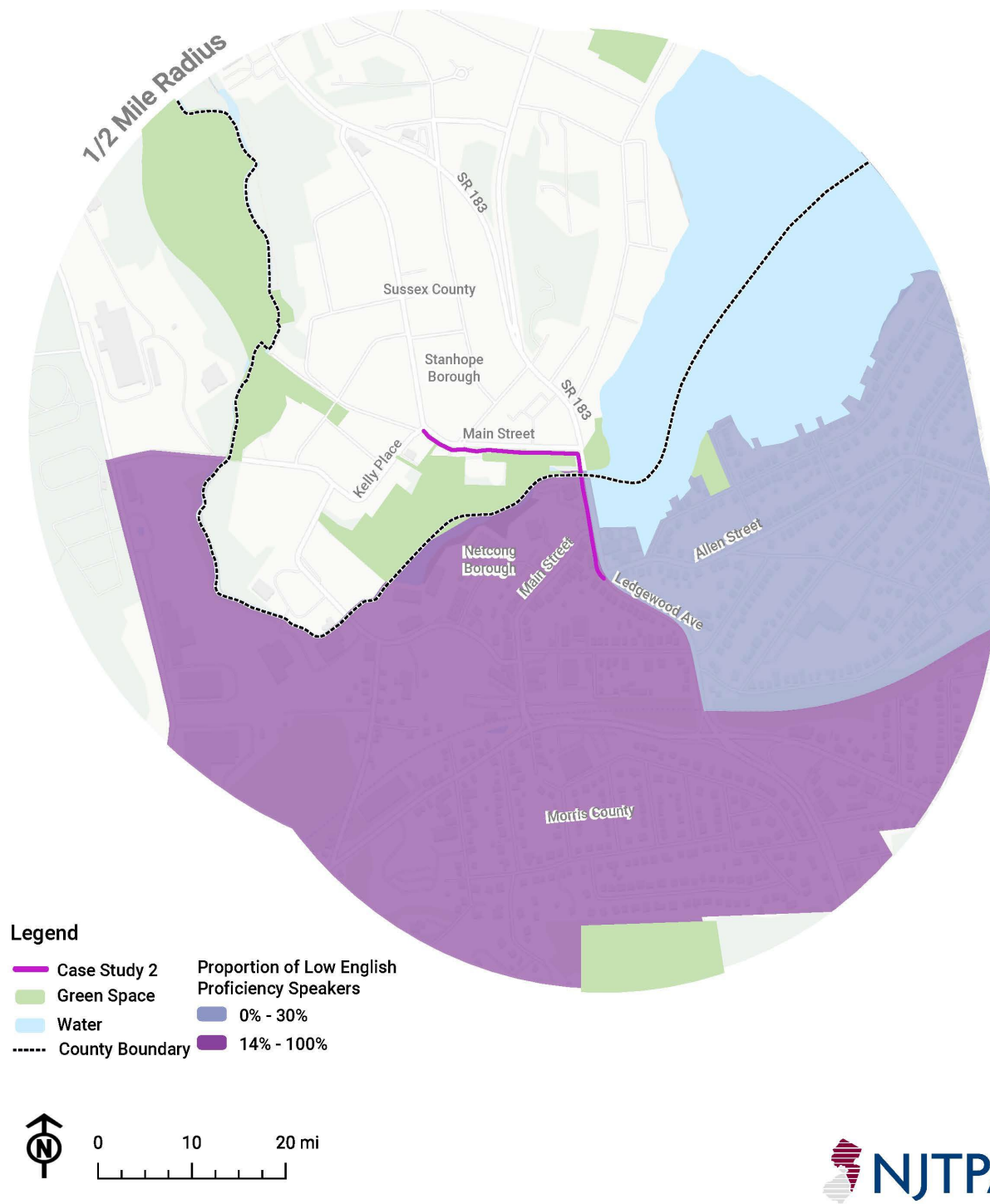
<sup>6</sup> US Department of Transportation. "The Department of Transportation Title VI Program," n.d. <https://www.transportation.gov/mission/department-transportation-title-vi-program>.

**Figure 4-3 Minority Population, ACS 2021**

**Source Notes:** **Minority:** ACS 5 years 2017-2021 density of minority populations (defined as all census races but not including people who identify as white-non-Hispanic) per acre by block group. (**Table: B03002**).

**Figure 4-4 Low Income Population, ACS 2021**

**Source Notes:** Low Income: ACS 5 years 2017-2021 Income as a ratio to poverty individuals' 200 percent of the federal poverty line (Table C17002)

**Figure 4-5 Low English Proficiency Population, ACS 2021**

**Source Notes:** Minority: Low English Proficiency: ACS 5 years 2017-2021 for Limited English Proficiency (Table: B16004)

**Table 4.3 Minority, Low Income and Low English Proficiency People in Case Study 2**

<b>Demographic</b>	<b>Number of People</b>	<b>Percentage of the Total</b>
Minority	761	9%
Low Income	531	7%
Low English Proficiency	57	1%

**Source Notes:** (1) Minority: ACS 5 years 2017-2021 density of minority populations (defined as all census races but not including people who identify as white-non-Hispanic) per acre by block group. (Table: B03002). (2) Low Income: ACS 5 years 2017-2021 Income as a ratio to poverty individuals' 200 percent of the federal poverty line (Table C17002) (3) Low English Proficiency: ACS 5 years 2017-2021 for Limited English Proficiency (Table: B16004)

## 4.2 Stakeholder Identification and Engagement

The stakeholder meeting for Case Study 2 was held on April 12, 2023, as a virtual call. The meeting described existing conditions and preliminary recommendations. Much of the meeting was focused on stakeholder feedback and discussion.

The following stakeholders were invited to provide feedback:

- Avenues in Motion
- Sussex County
- Borough of Netcong
- Borough of Stanhope
- NJDOT
- NJTPA
- Morris Canal Working Group
- Stanhope Fire Department

Representatives from five (5) of the identified stakeholders attended the meeting. The same questions posed to participants in Case Study 1 were posed to participants attending this meeting.

During the discussion, stakeholder feedback was collected on a virtual jam board under the groupings of plan/studies/policies, maintenance, funding, facility types/treatments, safety, and equity. Stakeholder comments are summarized below.

**Parking:** The Borough of Stanhope noted that there is a severe parking deficit along the Main Street corridor and a lack of parking could potentially impact business potential. The proposed bike lane along Main Street would impact existing on-street parking. Further study is needed to determine the extent of this perceived problem.

**Funding:** Stakeholders were interested in discussing funding opportunities, especially considering county funds to support the proposed treatments. Other potential funding sources identified include NJDOT's Safe Routes to Schools, Transit Village, and Complete Streets programs.

**Historic Considerations / Roadway Configuration:** Stakeholders suggested ways to highlight and leverage the historic elements located adjacent to the corridor such as the historic canal lock and channel (which crossed Lake Musconetcong and ran parallel to Main Street before descending onto Plane No. 2 West<sup>7</sup>), as well as the Stanhope United Methodist Church which is located along Route 183. Crossing Route 183 is a barrier for connecting Main Street in Stanhope and Netcong to the Morris Canal Greenway and Lake Musconetcong, which is a state-owned park (at the east end of the corridor).

There are certain areas of the roadway corridor that are restricted in width. Stanhope Fire Company No. 1 is along the corridor and should be consulted on any roadway configuration discussion.

### 4.3 Conceptual Recommendations

This section provides conceptual recommendations that prioritize bicycle and pedestrian movement for Case Study 2 based on an assessment of existing conditions and stakeholder feedback. Overall, providing wayfinding within the case study corridor was an important issue in the stakeholder meeting. Additionally, stakeholders agreed that it was important to provide lighting to improve safety for pedestrians and cyclists, especially when crossing Route 183 which is a busy highway with high volumes and high speeds.

#### Bicycles

A bicycle lane is proposed for Main Street to help provide infrastructure that prioritizes non-vehicle modes of travel. The configuration in Figure 4-7 is similar to the bike lane proposed for Case Study 1.

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<sup>7</sup> Canal Society New Jersey, "Borough of Stanhope Local History", <https://www.canalsocietynj.org/stanhope.html>

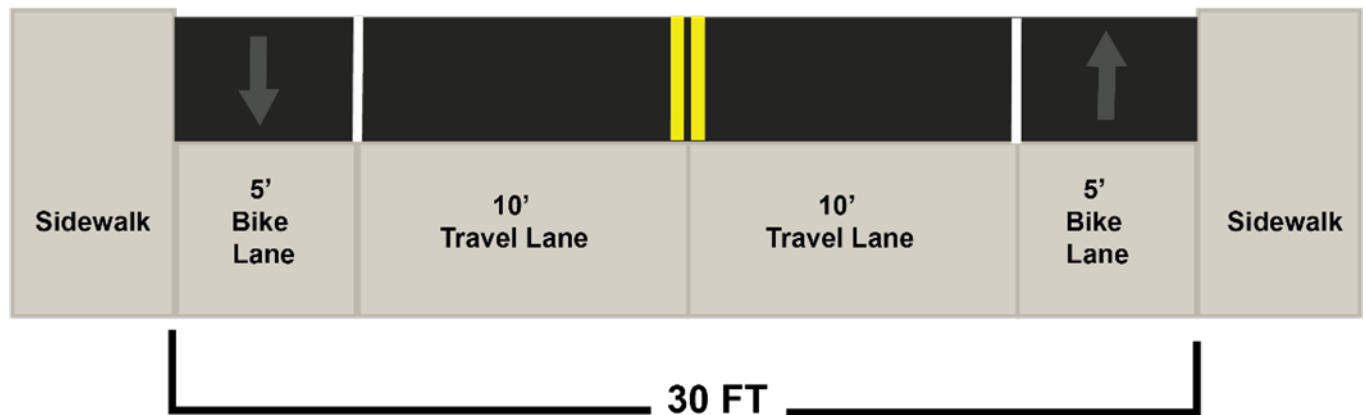


**Figure 4-6 Existing Conditions**



**Image Source:** Google Earth



**Figure 4-7 Proposed Street Section****Figure 4-8 Proposed Treatments on Main Street**



## Shared Street

Plane Street was included in the study corridor to consider ways to better connect bicyclists and pedestrians to the Morris Canal Greenway west of the intersection with Main Street. The figure below outlines the transformation of Plane Street into a green alley, a residential street with low traffic. A green alley is recommended due to the width of Plane Street, less than 25 feet. This recommendation supports the current proposed alignment of the Morris Canal Greenway<sup>8</sup> while also providing a pedestrian and bicycle connection to the Morris Canal Greenway. Connecting pedestrian and bicycle access to the Morris Canal Greenway is a priority for stakeholders due to the dilapidated nature of a state-owned pedestrian bridge over the Musconetcong River. Pedestrians and cyclists would need to cross this bridge to access the Morris Canal Greenway. Funding the repair of this historic bridge must be addressed to restore the connection. Additional stakeholders to involve in this discussion include representatives from Mount Olive Township, Morris County, and NJDOT.

**Figure 4-9 Existing Conditions**



**Image Source:** Google Earth

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<sup>8</sup> North Jersey Transportation Planning Authority, "Morris Canal: A Guided Tour", <https://njtpa.maps.arcgis.com/apps/MapJournal/index.html?appid=92e1ed763b874185ae5071933c8131ff>

**Figure 4-10 Proposed Green Alley on Plane Lane**

A green alley as defined by NACTO (National Association of City Transportation Officials) may be operated as a shared streets where pedestrian activity can be high and vehicle volumes are either low or discouraged<sup>9</sup>. The use of bollards and signs can make it clear the intended purpose of the green alley is to prioritize bicyclists and pedestrians, while still allowing for vehicle movement. By making Plane Street a green alley, the following treatments can be used for bicyclists and pedestrians:

- Wayfinding and signage to connect users to the Morris Canal Greenway and to the commercial shops on Main Street. The design should also include bollards, signs, and design features to ensure that the alley is prioritized for pedestrians and cyclists. Signage and pavement markings should also indicate the desired path of travel for motorists and any designated parking areas.
- Pedestrian scale lighting to ensure safety.
- Low-impact pavement materials such as pervious pavements with high reflectivity to reduce heat, especially during the summer.
- Bollards, signs, and design features that clearly define the intended use of the roadway connection to show that it is a shared space with vehicles.

<sup>9</sup> NACTO, “Commercial Shared Street”, <https://nacto.org/publication/urban-street-design-guide/streets/commercial-shared-street/>



As an alternative for connecting the Morris Canal Greenway through Stanhope, the remnants of the original canal behind the buildings on the south side of Main Street could also be considered. This alternative would be safer and allow for greater separation than the on-road connection if an alignment could be identified along the old canal route. There is currently a connection to Ledgewood Ave. from this trail, although it is in disrepair.

Options for a channelized/separated bike lane should be considered along Ledgewood Ave., due to the high traffic volumes. This is feasible within a current overall width of 40 feet. Careful consideration will need to be given to the arrangement at the Ledgewood Ave. and Allen Street intersection. Recommended treatments may include:

- 10' shoulder widths for bicycle accommodations in rural settings per FHWA guidelines and due to the high volume of vehicle traffic at this intersection.
- Employment of traffic calming measures to reduce vehicle speeds on the approach to the intersection
- Increased lighting and bike signage at the intersection as well as wayfinding to the Morris Canal Greenway.

## 5 Findings & Considerations

The purpose of this memo is to provide active transportation recommendations at Parish Drive in Wayne Township (Case Study 1) and Main Street in the Borough of Stanhope and Netcong (Case Study 2) based on an assessment of existing site conditions and discussion with local stakeholders. This section discusses findings and considerations based on a review of relevant policy documents and the proposed preliminary pedestrian and bicycle recommendations.

Active Transportation Plan Strategy GuideA Strategy Guide a component of the NJTPA's Active Transportation Plan; it's dedicated to advising subregions (NJTPA-member counties and cities) and municipalities on active transportation network implementation through a set of recommended strategies. More information on the Strategy Guide is available [here](#). Several recommended strategies are particularly relevant to the Parish Drive and Main Street case studies.

**Strategy #1: Capacity Building** is especially important for small municipalities or jurisdictions that lack the resources and technical capacity to execute complex active transportation planning and design projects.

### **1C. Invite County or municipal staff and elected leaders to a walk/bike audit or for data collection to experience a corridor via walking or biking.**

- A central tenet of walk/bike audits and other experiential education tools is to build empathy capacity, particularly toward people who use active transportation regularly.



Such experiences can be eye-opening for decisionmakers and help prioritize the needs of vulnerable road users during policy and project decisions.

- Invite planning, engineering, highway, public safety, public works, and other state, county, and local transportation staff, along with elected officials.
- It is likely that many officials have not walked or biked on the parts of Main Street or Parish Drive studied herein. Walk/bike audits will create space for them to explore these areas through a new medium and begin to understand the challenges that active transportation users face in navigating these spaces.

**1F. Map the project process from planning to maintenance to identify opportunities for collaboration and cross communication between departments and/or jurisdictions.**

- Since the Main Street case study crosses through multiple jurisdictions, coordination between agencies will help build a unified approach to project implementation. Stakeholders should collaborate on all project stages: scoping, planning, design, funding, construction, maintenance, and monitoring/evaluation.
- This process will empower stakeholders to pool knowledge, resources, and capacity for project implementation.

The Main Street case study crosses the border of Sussex and Morris counties and passes through Netcong and Stanhope. The alignment also uses an NJDOT maintained roadway, Route 183, to complete the on-street connection between two segments of the Morris Canal Greenway. With five jurisdictions responsible for portions of the alignment, **Strategy #2: Interjurisdictional and Multisectoral Collaboration**, is especially important to successfully implement this project.<sup>10</sup>

**2A. Build relationships through consistent and substantial communication between counties, municipalities, and the state to lay groundwork for a connected, regional network.**

- County, municipal, and NJDOT representatives should meet regularly before and during project implementation. Case study stakeholder meetings already put this process in motion.
- Consistency in communication and design is key for facilities that cross multiple jurisdictions.
- Signage, pavement markings, facility widths, and other design elements should be consistent across jurisdictional boundaries so trail users can enjoy a seamless trip through the area.

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<sup>10</sup> This strategy is less relevant for the Parish Drive case study since it spans only one jurisdiction, although coordination between Wayne Township, Passaic County, NJDOT, and NJ TRANSIT will still be necessary.

- Municipal and county staff should also coordinate with other Morris Canal Greenway stakeholders to ensure the on-road segment in their jurisdictions uses the same branding as the rest of the trail for wayfinding signage, trailheads, rest stops, etc. This effort will help maintain a uniform identity and user experience across the entire trail, both on- and off-street.

**2B. Quickly implement low-cost improvements, even incrementally, to demonstrate success, rally public support, and motivate decisionmakers to make more long-term, permanent investments.**

- During meetings for both case studies, stakeholders discussed the prospect of implementing temporary installations to test and improve projects before committing large investments to permanent street reconstruction projects.
- This strategy is also effective where funding constraints preclude major investments in the near-term and helps to build excitement and support for longer-term changes.

**2C. Bring opportunities for interjurisdictional collaboration to the attention of elected leaders at the county and municipal levels.**

- Residents and agency staff can advocate for this project with their elected representatives to highlight the importance of inter-county active transportation connections.
- Building a groundswell of local support for the project will help capture decisionmakers' attention.

Table 5.1 provides a connection between recommendations from other policy documents and the conceptual recommendations in this memo. The proposed conceptual pedestrian and bicycle recommendations were determined based on detailed analysis of site conditions, demographics, stakeholder feedback and priorities for each case study, while demonstrating clear policy alignment.

**Table 5.1 Relevant Policy and Proposed Conceptual Recommendations**

<b>Case Study</b>	<b>Relevant Policy</b>	<b>Proposed Conceptual Recommendation</b>
<b>Case Study 1</b> <b>Parish Drive</b> <b>Wayne Township</b>	<i>Preliminary/Final Design of the NYS&amp;W Bicycle &amp; Pedestrian Path &amp; the Morris Canal Greenway Feasibility Study</i>	Corridor wayfinding signs specifically orienting pedestrians and cyclists.
	<i>Active Transportation in the NJTPA Region (2020)</i> advocates for protected bicycle lanes to increase strategies to encourage non-motorized travel.	A 4-foot-wide conventional bicycle lane in each direction along Parish Drive
	The NJTPA's Long Range Transportation: <i>Plan 2050</i> will continue to support improvements that make walking safer.	Provide sidewalks on the north side of Mountainview Boulevard
	The NJTPA's Long Range Transportation: <i>Plan 2050</i> supports meeting the needs of seniors, low-income people, veterans, and individuals with disabilities (through ADA compliance).	Update the curb ramps to be ADA-compliant, particularly for the median between the roadway and the Stahl Plaza Shopping Center parking lot.
	The NJTPA's Long Range Transportation: <i>Plan 2050</i> supports pedestrian facilities which include treatments such as pedestrian countdown times, high-visibility crosswalks, curb extensions, and leading pedestrian intervals.	<ul style="list-style-type: none"> <li>• Provide high-visibility crosswalks at the intersection of Mountainview Blvd. and Erie Avenue, Mountainview Blvd. and Sherman Street, and Parish Drive and Mountainview Blvd. with curb extensions.</li> <li>• Ensure pedestrian signals include leading pedestrian intervals to give pedestrians of all abilities enough time to cross the road.</li> </ul>
	The NJTPA's Long Range Transportation: <i>Plan 2050</i> supports creating a livable region through the application of public art and designs for pedestrians throughout the region.	Provide additional lighting and public art at the Route 23 overpass.

Case Study	Relevant Policy	Proposed Conceptual Recommendation
<b>Case Study 2</b> <b>Main Street in</b> <b>The Borough of Stanhope and Netcong</b>	<i>Active Transportation in the NJTPA Region (2020)</i> advocates for protected bicycle lanes to increase strategies to encourage non-motorized travel.	A 5-foot-wide conventional bicycle lane in each direction along Main Street
	The NJTPA's Long Range Transportation: <i>Plan 2050</i> supports elements that promote "active" transportation through complete street initiatives.	Shared Street elements to include: <ul style="list-style-type: none"> <li>• Wayfinding and Signage to connect users to the Morris Canal Greenway and to the commercial shops on Main Street</li> <li>• Bollards, signs, and design features ensure that the alley is prioritized for pedestrians and cyclists.</li> <li>• Pedestrian scale lighting.</li> <li>• Ensure the alleyway has low-impact pavement materials.</li> </ul>
	<i>Sussex County Complete Streets Policy and Implementation Plan</i> prioritizes multimodal access to recreational, scenic, employment, service, and shopping opportunities.	<ul style="list-style-type: none"> <li>• Separated bike lanes</li> <li>• Wayfinding for pedestrians and cyclists</li> <li>• Green Alleys to prioritize non-motorized movement.</li> </ul>
	The NJTPA's Long Range Transportation: <i>Plan 2050</i> supports "calming streets" by reducing vehicle speeds for bicycle and pedestrian safety.	Employment of traffic calming measures to reduce vehicle speeds before the Ledgewood Ave. and Allen Street Intersection.
	<i>Netcong Complete Streets Resolution (2010)</i> is committed to creating a pedestrian and cyclist network by making these modes a viable alternative to vehicles and creating safe corridors for all road users of all abilities.	<ul style="list-style-type: none"> <li>• Separated bike lanes</li> <li>• Wayfinding for pedestrians and cyclists</li> <li>• Green Alleys to prioritize non-motorized movement.</li> </ul>
	<i>Morris Canal Greenway Feasibility Study</i> supports creating a more attractive	Increased lighting and bike signage at the Ledgewood Ave. and Allen



Case Study	Relevant Policy	Proposed Conceptual Recommendation
	greenway through street enhancements such as lighting, landscaping, and signage.	Street intersection, as well as wayfinding to the Morris Canal Greenway.
	<i>Northwest Morris Canal Greenway (2020)</i> identifies the benefits of bike and pedestrian facilities for users of the Northwest Morris Canal Greenway	<ul style="list-style-type: none"> <li>• Separated bike lanes</li> <li>• Wayfinding for pedestrians and cyclists</li> <li>• Increased lighting along the corridor</li> </ul>
	<i>Transit Village Initiative</i> is a collaboration between the NJDOT and NJ TRANSIT to support mixed use development and active transportation around transit.	<ul style="list-style-type: none"> <li>• Separated bike lanes</li> <li>• Wayfinding for pedestrians and cyclists</li> <li>• Increased lighting along the corridor</li> </ul>

The proposed conceptual recommendations discussed in this memo are intended to provide a framework for future implementation of active modes of transportation in Case Study 1 (Wayne Township) and Case Study 2 (Stanhope and Netcong). The recommendations are provided with a firm basis of supportive policies gathered from regional, county, and municipal planning agencies.