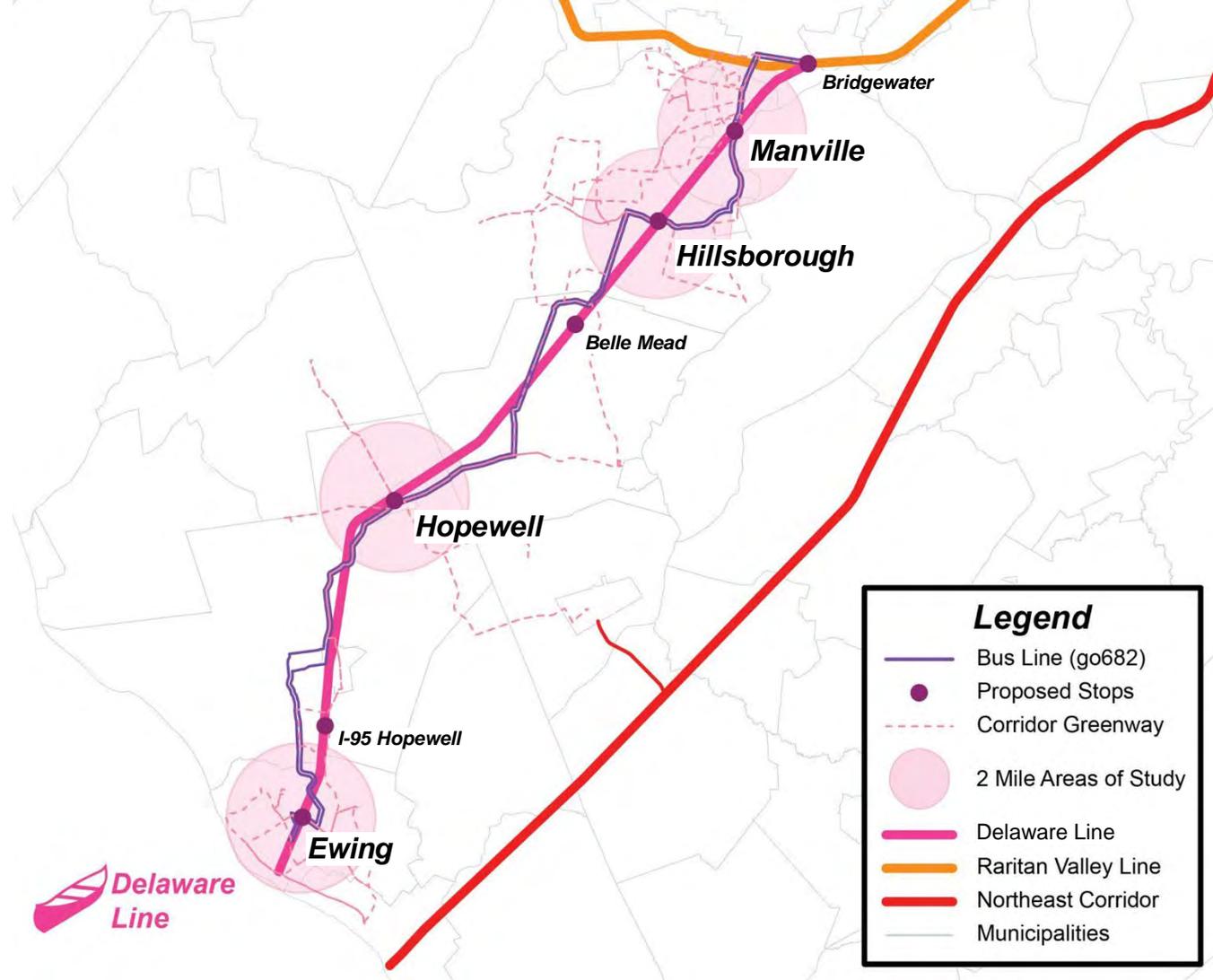


Delaware-Raritan Transit Corridor

*Blue Sky Comprehensive Planning
for Rail Reactivation*

*Fall 2022 Comprehensive Planning Studio
Edward J. Bloustein School of Planning & Public Policy
Rutgers, The State University of New Jersey*



Legend

- Bus Line (go682)
- Proposed Stops
- Corridor Greenway
- 2 Mile Areas of Study
- Delaware Line
- Raritan Valley Line
- Northeast Corridor
- Municipalities

Studio Members

Regional Team

Jared Aisenberg (3-1-1 BS/MCRP '23)

Laura Gould (MCRP '23, MPI '23)

Corey Hannigan (MCRP '23)

West Trenton Team

Sofia Barandiaran (MCRP '23)

Eric Harris (MCRP '23)

James Miller (MCRP '23)

Hillsborough Team

Alexander Bahls (MCRP '23)

Jessica Barnea (MCRP '23)

Andrew Farquhar (MCRP '23)

Hopewell Team

Sanjana Arunachalam (MCRP '23)

Kyrillos (Cyril) Girgis (MCRP '24)

Jada Ross (MCRP '23)

Timothy Staub (MCRP '23)

Manville Team

Shahan Ahmed (MCRP '23)

William Downie (MCRP '23)

Falaknaaz Patni (MCRP '23)

Anuka Reddy (MCRP '23)



Planning Process - Oriented Studio Members



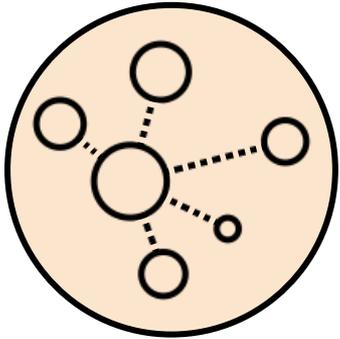
Policy - Oriented Studio Members



Design - Oriented Studio Members

Corridor Vision and Principles

“*The Delaware–Raritan Transit Corridor will foster a sustainable region of equitable and affordable communities while providing convenient access to destinations throughout the Garden State and beyond.*”



**Mobility &
Access**



**Sustainability &
Resilience**



**Equity &
Prosperity**



**Process &
Accountability**



Region-Wide

History & Ridership

The Delaware–Raritan Transit Corridor is home to the former West Trenton Line, a passenger rail line that was decommissioned in 1982 due to low ridership in period of financial stress.

- Ridership Today
 - Some currently active NJ TRANSIT lines see very small ridership
 - Some as low as 16 riders per weekday
 - 950 projected riders per weekday at Hillsborough Station
- Projected Numbers
 - The numbers projected by reactivation would exceed some station numbers on the Montclair-Boonton Line and Gladstone Branch
 - Represents a new passenger market that exceeds some current operations



New Jersey's passenger rail system circa 1970s

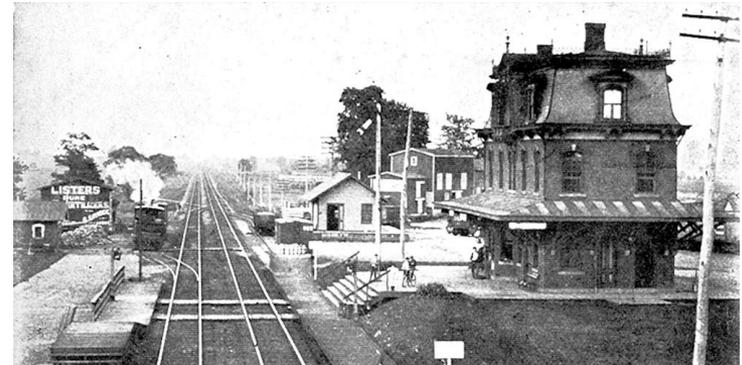


Photo of Hopewell Train Station prior to deactivation

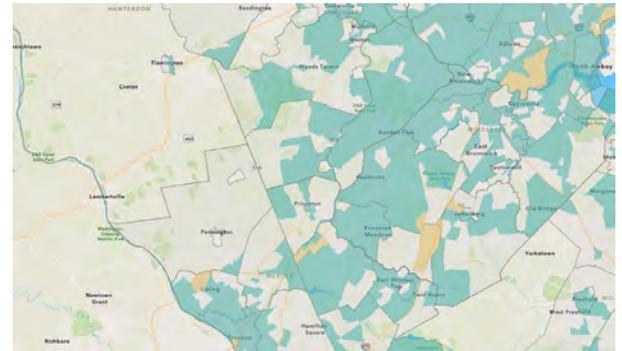
Demographics

As outlined in *Transit Friendly Planning: A Guide to New Jersey Communities*, the corridor is home to Suburban, Town Center, and Rural place types

- Land Use
 - Low density, but rapidly developing
- Demographics
 - 6 munis contain Overburdened Communities (>35-40% low income, minority, or limited English)
 - Ewing, Hopewell Twp, Hillsborough, Montgomery, Manville, Bridgewater
- Vehicle Access
 - 1 in 3 households own one vehicle or fewer
 - Over 5% zero-vehicle (~3,850 households)
 - Ability to help mobilize carless residents

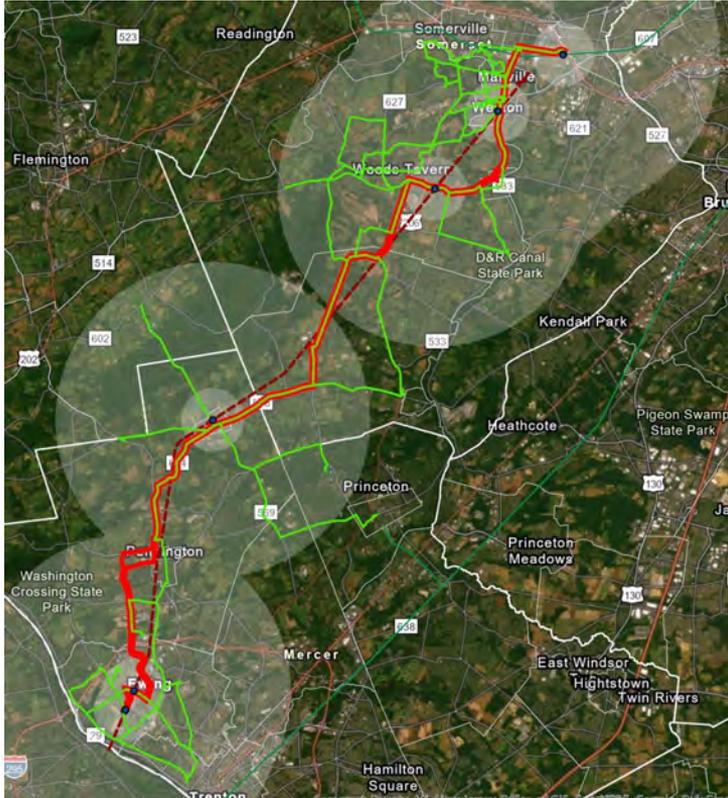


Transit Friendly Planning: A Guide for New Jersey Communities was used as a foundational document.



Areas of overburden communities highlighted in blue on the NJDEP EJMAP on the northern end of the corridor.

Regional Goals



Regional planning spans multiple jurisdictions

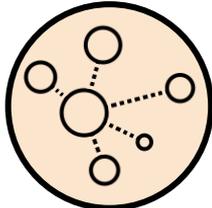
Currently, this region is a relative transit desert.

- Reactivating service will require regional approach to coordinate between two counties, two metropolitan planning associations, and seven municipalities
- “Transit-supportive corridor policies” may qualify for New Starts funding

Represents a “once-in-a-generation” opportunity to plan for this region, huge benefits *even without rail reactivation!*

Goal #1 Universal Basic Mobility

Residents and visitors will be able to safely and conveniently access destinations via a local greenway network, anchored by a reactivated transit line that connects riders to Northern New Jersey, New York, Philadelphia, and beyond.



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Access*



*Sustainability
& Resilience*



*Equity &
Prosperity*



Strategies:

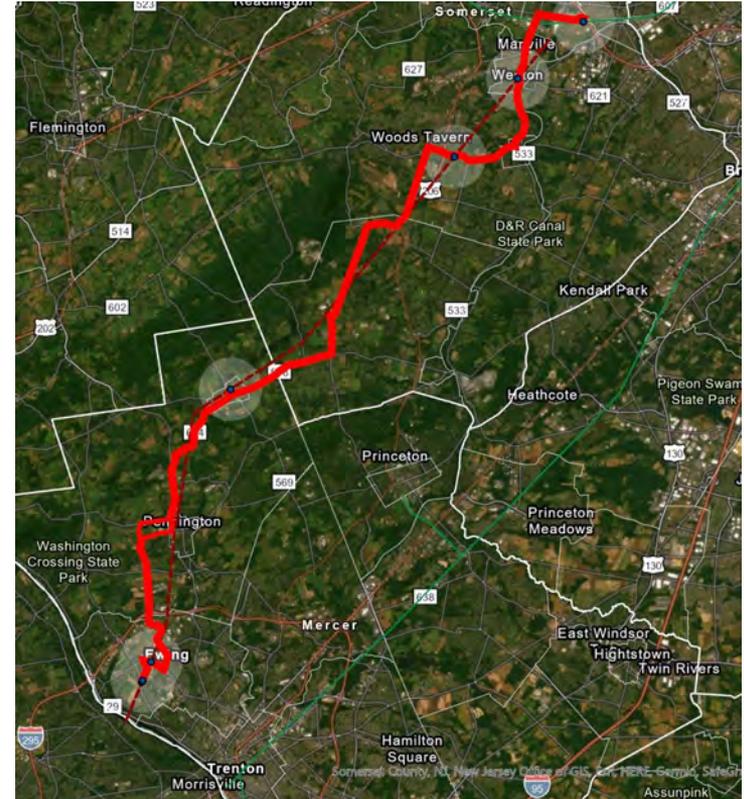
1. Pilot Transit Line
2. Greenway Network

Goal #1 Universal Basic Mobility

Transit is at the heart of this vision plan. It is crucial to establish fixed-route service right away to kick-start local town centers:

Pilot Transit Line

- Plan for today and the future
 - Short-term: simple bus line on local roads
 - Medium-term: coordinate with NJT Capital Planning on RVL corridor investments
 - Long-term: cost-benefit analysis to upgrade (e.g. reactivate rail, or BRT?)
- Service considerations:
 - Frequent and all-day
 - Quality wayfinding & service info
 - Consider inter-agency “Canal Connect” ticket



A pilot bus line could restore transit service to the region right away

Goal #1 Universal Basic Mobility

A fundamental network of safe cycling paths can greatly expand mobility options to/from transit hubs and offer practical car-optional access to local destinations up to 5 miles away.

Greenway Network

- Build off existing greenways and plans
 - Short-term: Quick-build with temporary materials to “test out” new designs
 - Long-term: Full capital build-out, green infrastructure, local artists
- Implementation considerations:
 - Pair with Vision Zero action plans
 - Coordinate with maintenance schedules
 - Secure bike parking and repair stations



A true regional micromobility network offers independence to all

Goal #2 Land Stewardship

Residents will be guaranteed that vulnerable natural habitats will be protected, that tax dollars will not be wasted on developing in flood-prone areas (without proper mitigations), and that revitalizing impoverished communities is a top-priority



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& Resilience*



*Equity &
Prosperity*



Strategies:

1. Resiliency Plan
2. Smart Growth Plan

Goal #2 Land Stewardship

Land use planning must consider how to mitigate environmental risks that overburdened communities face...

- Resiliency Plan
 - Identify priority “Resiliency Areas” where overburdened communities lie in flood zones
 - Coordinate between jurisdictions to site affordable housing outside flood-prone areas, zone for resilient development
 - Risk management action plans to address historic environmental injustice
 - Green stormwater infrastructure plans to expand permeable surface in urban areas



FEMA 1% Annual Chance Flood Hazard (njlutrans.org)



NJDEP Overburdened Communities (EJMAP)

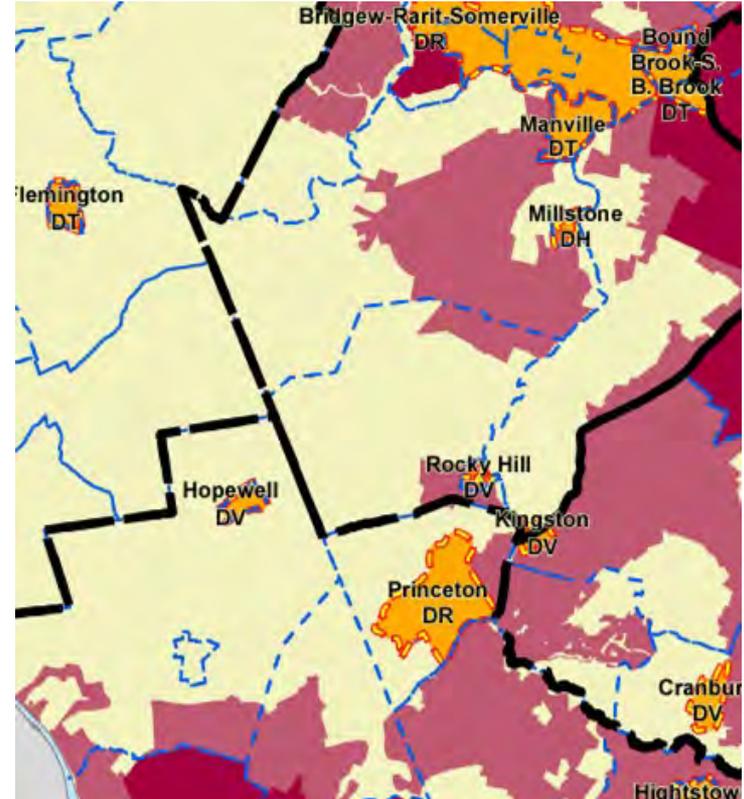
Goal #2 Land Stewardship

...while also planning future growth strategically, to prevent further environmental degradation

- Smart Growth Plan
 - Coordinate local zoning and state-designated conservation and smart-growth areas
 - Promote infill at “missing middle” densities in urban centers to preserve open space
 - Establish a long-term action plan with measurable benchmarks, performance reports



“Missing Middle” housing typologies (opticos.com)



NJ Smart Growth Plan (nj.gov)

Goal #3 Public Relations Campaign

Residents will look forward to showing off the progress being made in their communities, and visitors will get a chance to experience the special charm of this region.



*Equity &
Prosperity*



*Process &
Accountability*

Strategies:

1. Brand Identity
2. Annual "Renaissance Rail" Festivals
3. Stakeholder Updates and Feedback

Goal #3 Public Relations Campaign

The Delaware Raritan Transit Corridor must be viewed as a tangible, cohesive region during and after the reactivation of the Delaware Line

- Establish strong brand identity for the rail service and the communities along the line
- Canoe represents the Delaware River, recreation along the corridor, and NJ history



Sample logo for proposed NJ Transit Delaware Line

SERVICES STATUS TICKETS DESTINATIONS MAPS POLICE

System Status	Route	Status
	Atlantic City	On Time
	Main-Bergen County	On Time
	Montclair-Boonton	On Time
	Morris & Essex	On Time
	Northeast Corridor	On Time
	North Jersey Coast	On Time
	Pascack Valley	On Time
	Raritan Valley	On Time
	Delaware	On Time

Sample NJ Transit website showing new Delaware Line

Goal #3 Public Relations Campaign

The long-term success of this plan – and the transit corridor itself – depend on public awareness and participation:

- Plan events and festivals both within and across municipalities
 - Coordinate with chambers of commerce and business districts
 - Celebrate progress made in communities
 - Show off municipalities along the line
 - Visitors will be able to explore local attractions and businesses
 - Maintain momentum throughout the reactivation process



Sample Flyer: Encouraging community growth and engagement

Goal #3 Public Relations Campaign

The long-term success of this plan – and the transit corridor itself – depend on public awareness, public support, and public participation:

- Present a tangible vision of the comprehensive plan
 - Gather stakeholder input on progress
 - Confirm: are we on the right track or do we need to refocus?



Stakeholder participation at a public event hosted by NJ TRANSIT

Goal #4 Steering Committee

Residents will be reassured that planning decisions are made purposefully, in an integrated and fair manner, to ensure long-term success in implementing this comprehensive plan.



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Prosperity*



*Process &
Accountability*

Strategies:

1. Establish a Legal Directive
2. Establish a Task Force
3. Establish an Equity Board

Goal #4 Steering Committee

Residents will be reassured that planning decisions are made purposefully, in an integrated, fair manner, to ensure long-term success.

- Establish a Legal Directive
 - Memorandum of Agreement between Somerset and Mercer counties to formulate an official document establishing the committee
 - State legislation or gubernatorial executive order to establish a legal directive
 - Consider a state agency to oversee implementation (e.g. NJ Department of Community Affairs or NJ Office of Planning Advocacy)



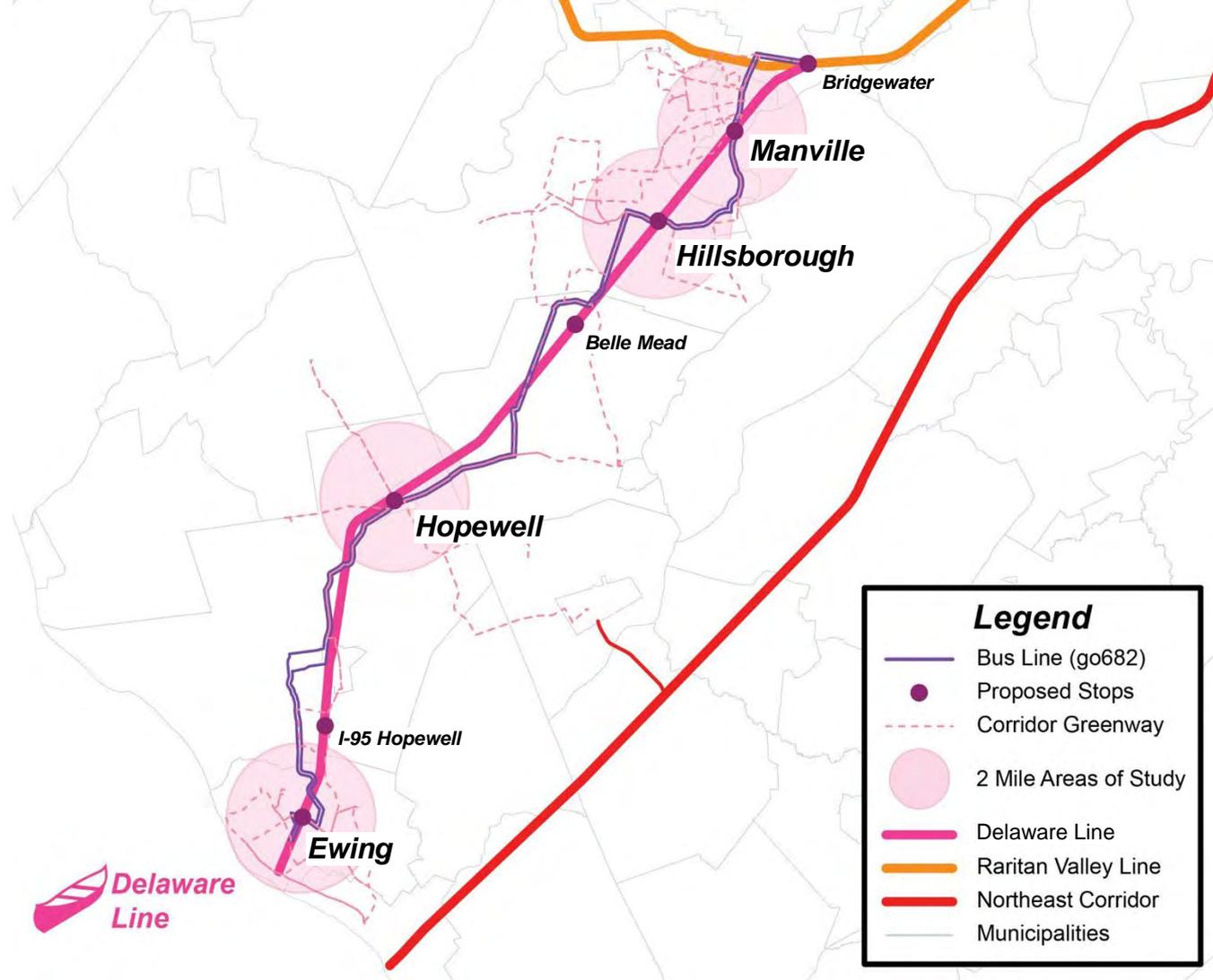
Governor Murphy signing an Executive Order

Goal #4 Steering Committee

Residents will be reassured that planning decisions are made purposefully, in an integrated, fair manner, to ensure long-term success.

- Establish a Task Force
 - Steers the long-term implementation of the plan by coordinating among representatives from jurisdictions at the local, county, MPO, and state levels, as well as local business and community organizations
- Establish an Equity Board
 - Helps to evaluate outcomes, ensuring that all parties are engaging in good-faith.
 - The board will focus ensuring equitable development and diverse representation.







Ewing Township

Ewing Township



Key landmarks surrounding the rail line in Ewing Township (Source: Google Earth)

Ewing Township

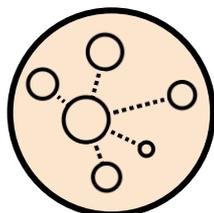
- General Motors and Naval Warfare Center
 - Historic employers for township
 - Ongoing redevelopment effort for 20+ years
- Land Use / Affordable Housing
 - 60% of Township zoned as single-family residential
 - “Uppercase A” Affordable Housing: Ewing has exceeded Mount Laurel Obligation by 28 Units
- Mobility / Circulation
 - Parkway Avenue Concept Development study



The proposed station location sits adjacent to the Ewing Town Center redevelopment area, on the corner of Parkway Ave

Goal #1 Mixed Uses

Encourage mixed-use and higher density development that is accessible to diverse income levels in order to build community, promote walkability, and boost ridership.



*Mobility &
Access*



*Equity &
Prosperity*



Strategies:

1. Mixed Residential Uses
2. Mixed Commercial Uses
3. Reduced Parking

Goal #1 Mixed Uses



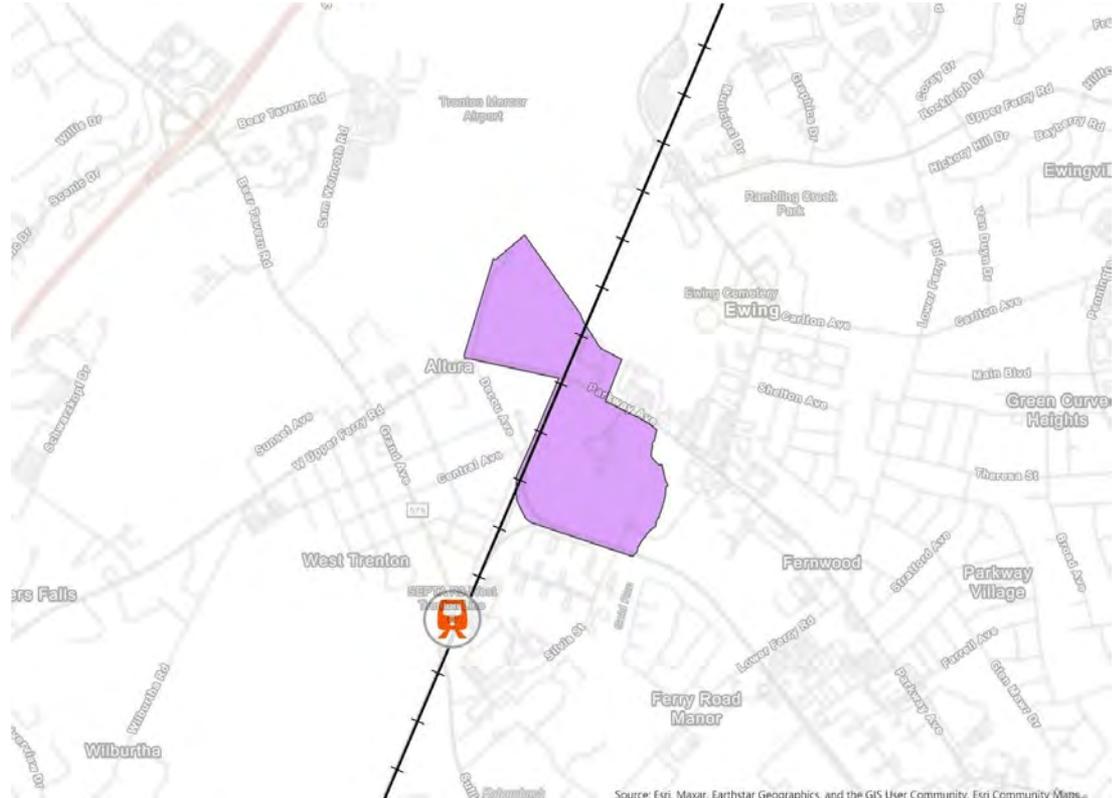
Existing Station



Railroad

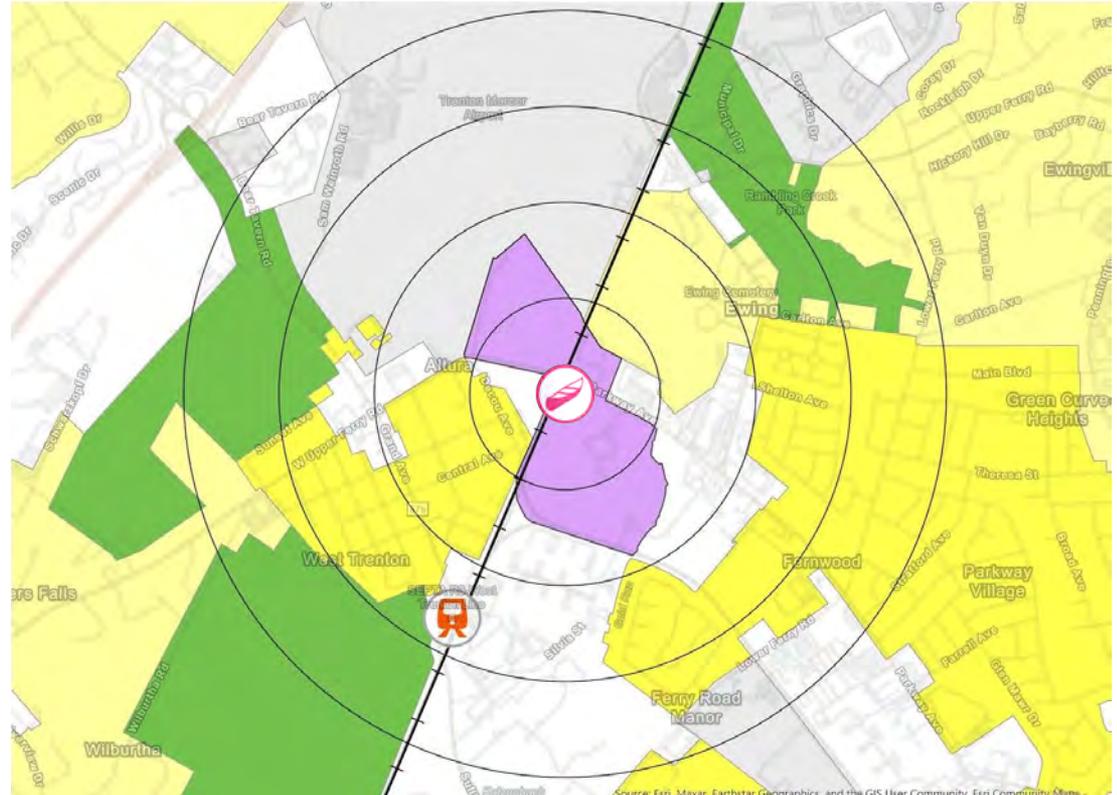
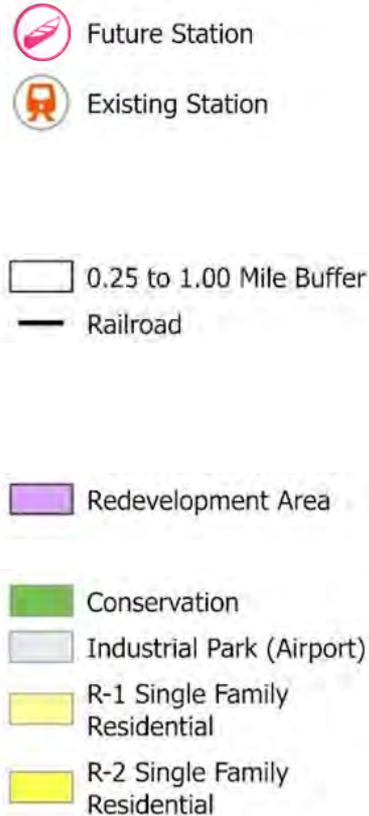


Redevelopment Area



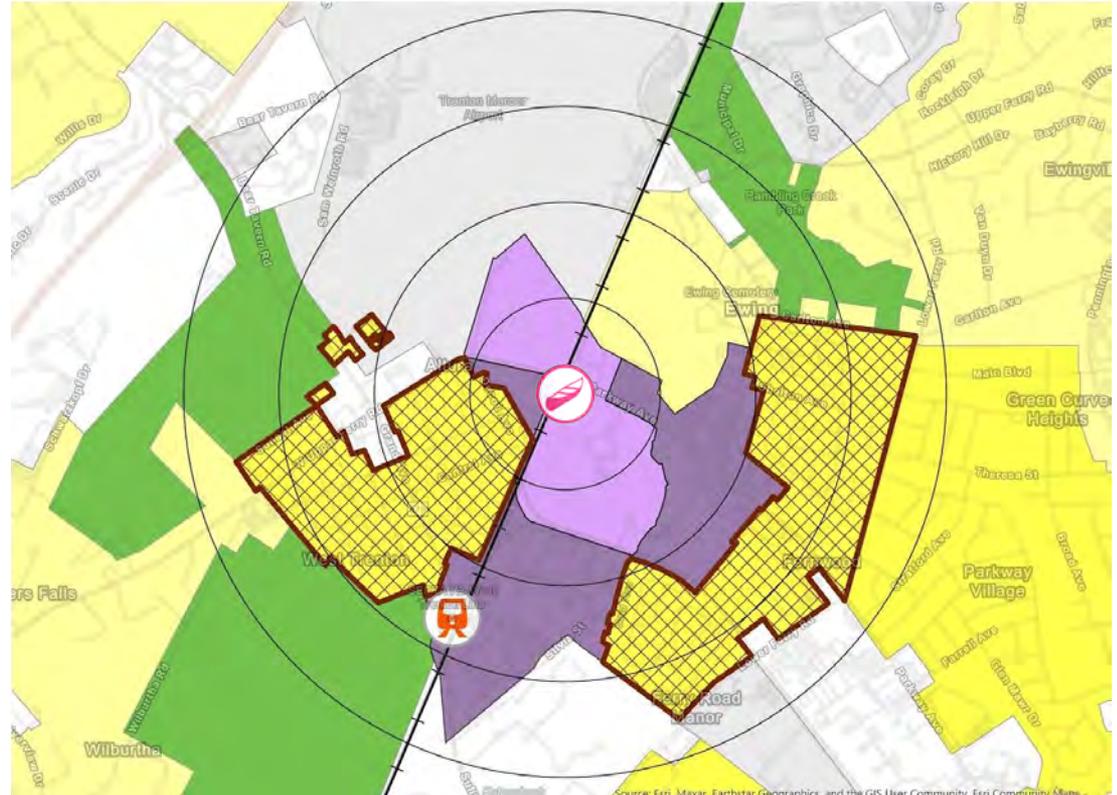
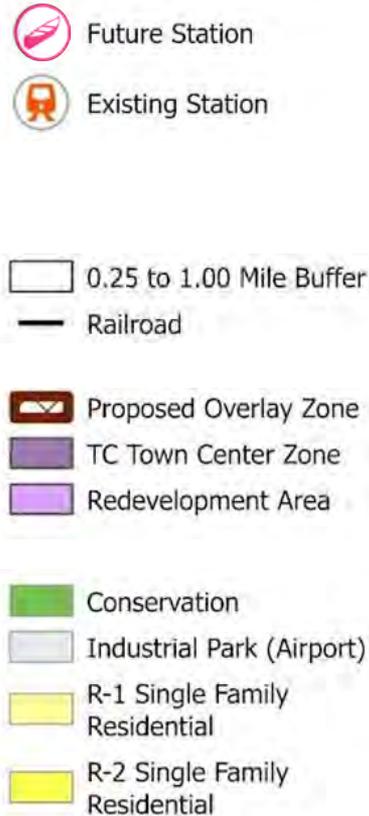
Ewing Township Transit Village (created using ArcGIS Pro)

Goal #1 Mixed Uses



Ewing Township Transit Village (created using ArcGIS Pro)

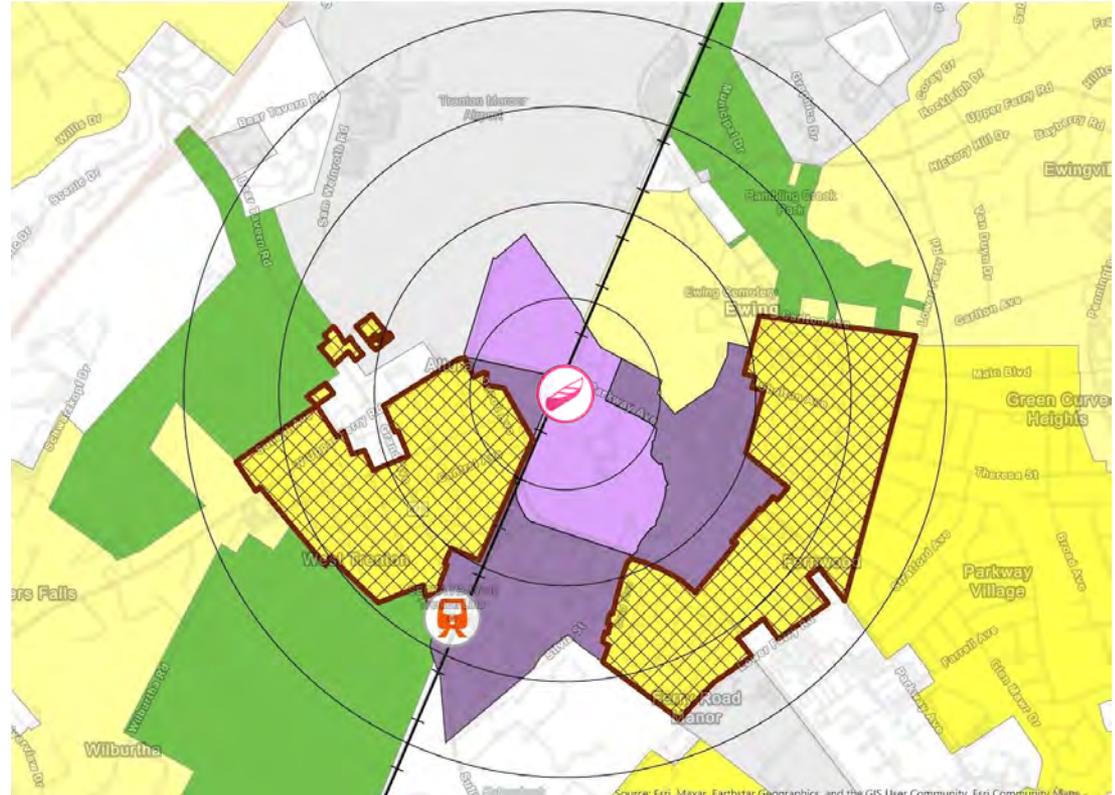
Goal #1 Mixed Uses



Ewing Township Transit Village (created using ArcGIS Pro)

Goal #1 Mixed Uses

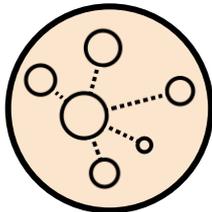
- Mixed Residential Uses
 - Accessory Dwelling Units (ADUs)
 - Subdivide Dwellings
 - By-Right Permitted Use
- Mixed Commercial Uses
 - Work/Live Units
 - Day Cares (< 15 Children)
 - Small groceries / food stores
 - Conditional Use Approval
- Reduced Parking
 - Shared Parking
 - Reduce Residential Minimum from 2 to 1



Ewing Township Transit Village (created using ArcGIS Pro)

Goal #2 Access & Mobility

Empower residents and visitors to access destinations near the Ewing station by creating a network of sustainable, multimodal travel options with the station as their hub.



***Mobility &
Access***



***Equity &
Prosperity***

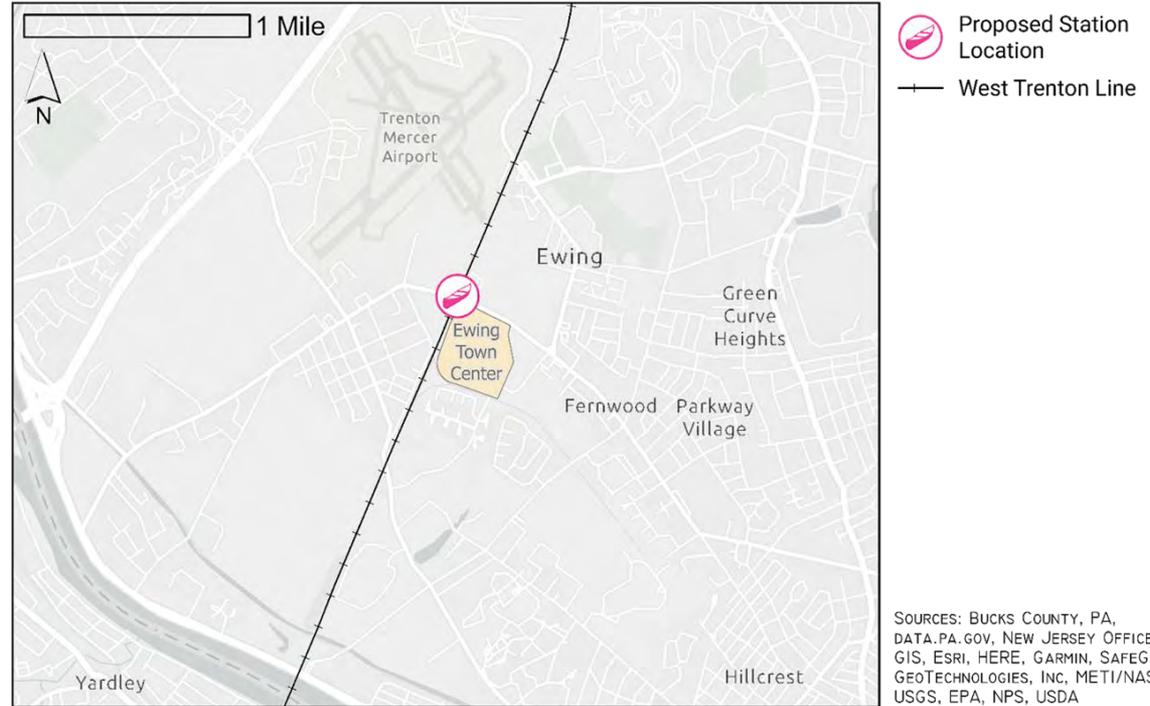


Strategies:

1. Bicycle and pedestrian access
2. Bus transit access
3. Station parking

Goal #2 Access & Mobility

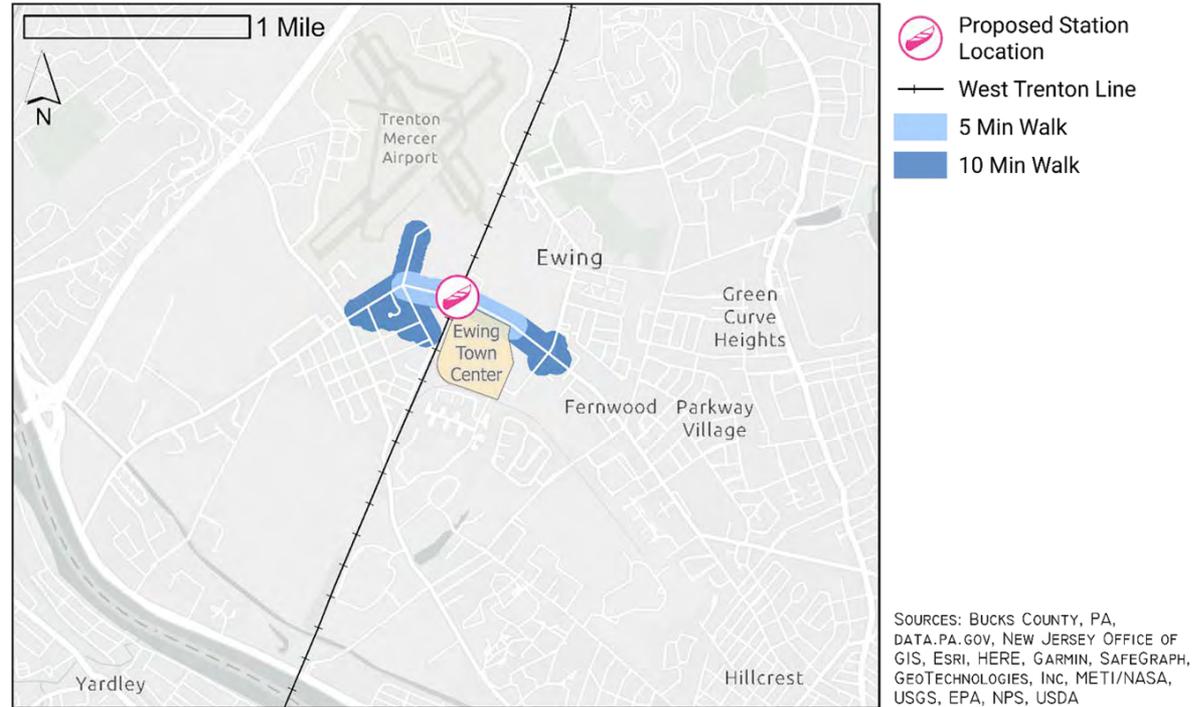
- Bicycle and pedestrian access
 - Create a walking and biking network around the station
 - Implement best practices for safety
 - Create slow zone around station
 - Create a bike or scooter share pilot



Walk and bike service areas to/from the Ewing Station

Goal #2 Access & Mobility

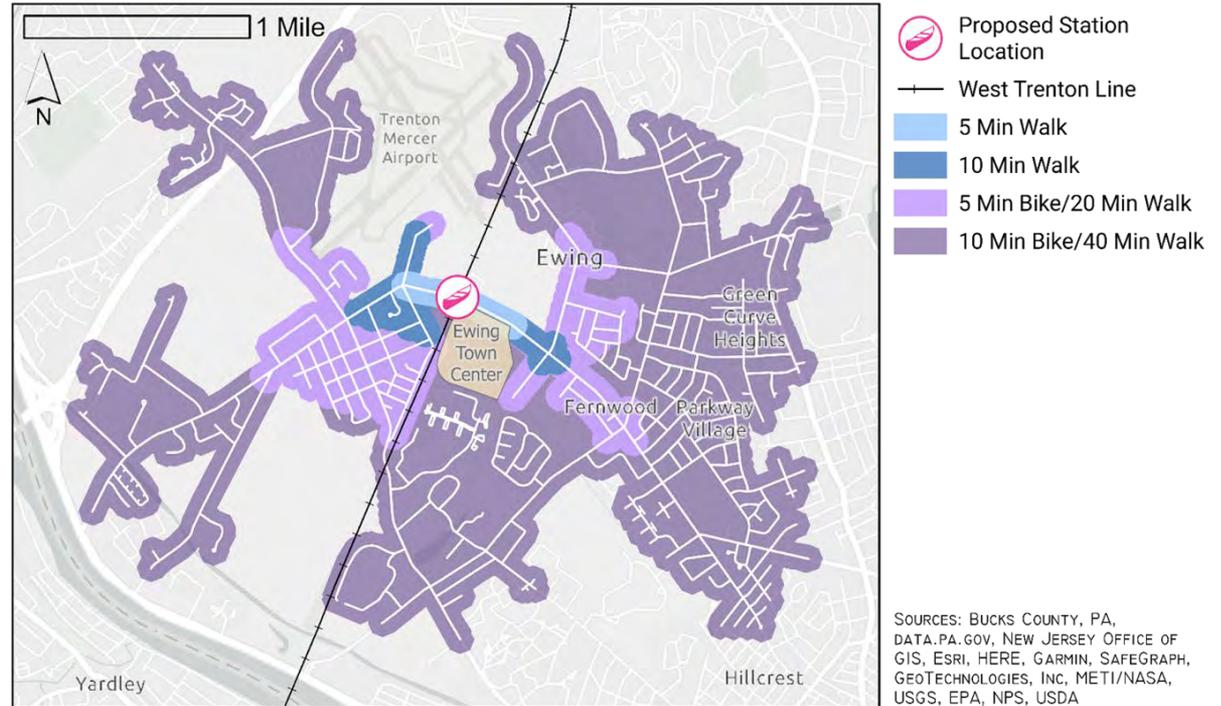
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Walk and bike service areas to/from the Ewing Station

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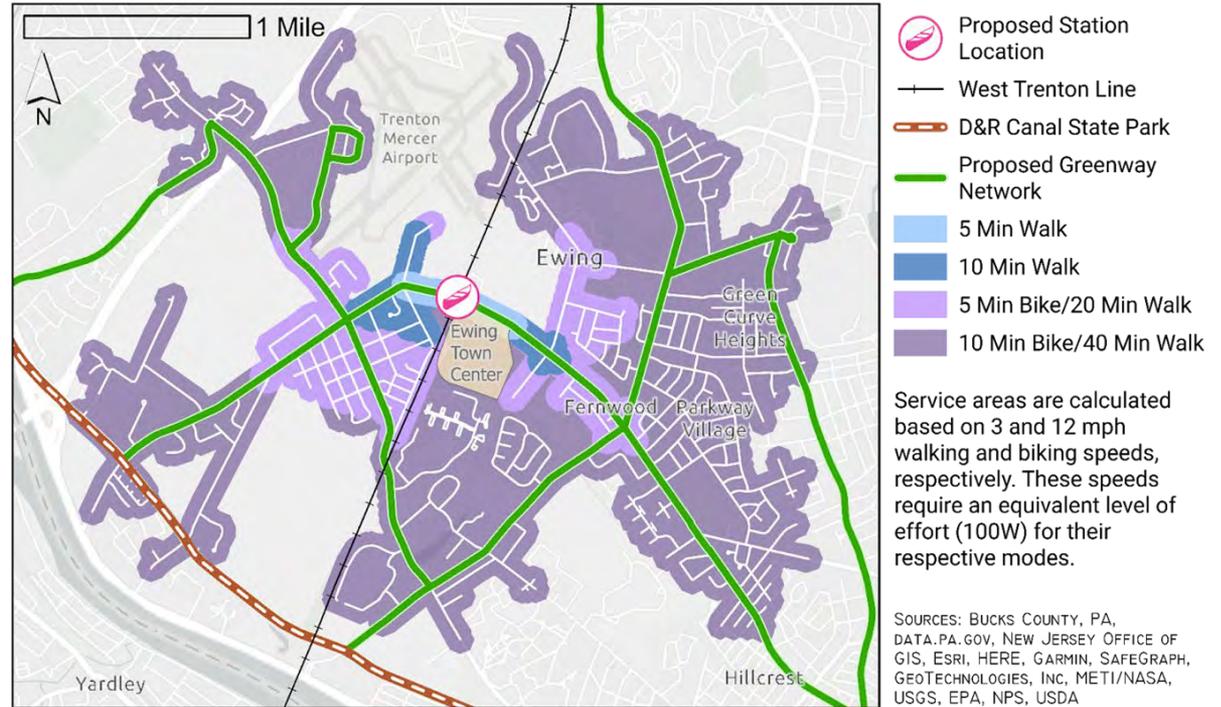
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Walk and bike service areas to/from the Ewing Station

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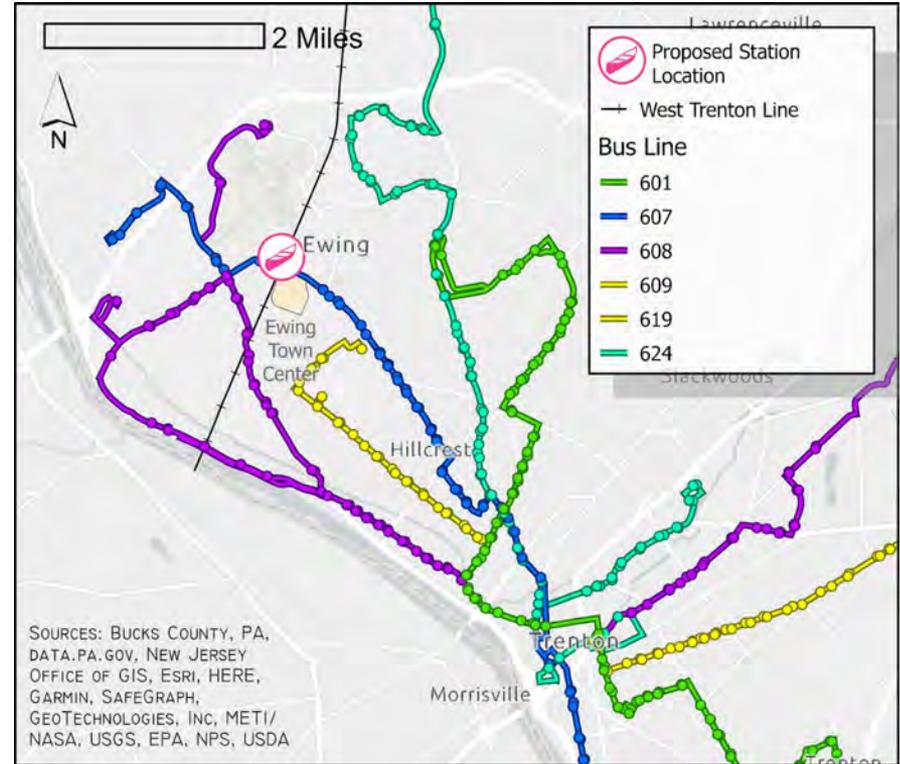
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 - Implement best practices for safety
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Walk and bike service areas to/from the Ewing Station

Goal #2 Access & Mobility

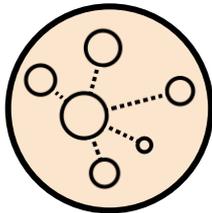
- Bus transit access
 - Assess existing bus network for potential to improve service
 - In anticipation of line, improve bus service between Ewing and Trenton
- Station parking
 - Implement demand-based parking
 - Provide secure bike parking
 - Provide electric vehicle charging stations



Improving bus service, especially between Ewing Station and Trenton Station, can help boost transit access to the region today to create a culture and constituency for the Delaware Raritan Line.

Goal #3 Intersystem Coordination

Create an intuitive and enjoyable rider experience by implementing systems for ongoing coordination between NJ TRANSIT and SEPTA to elevate the West Trenton rail station as a gateway to the region.



***Mobility &
Access***



***Process &
Accountability***

Strategies:

1. Coordination Taskforce
2. Arts & History
3. Station Design

Goal #3 Intersystem Coordination

- NJ TRANSIT & SEPTA Taskforce
 - Coordinate on tasks including infrastructure and operational needs for the station and rail yard, cost-sharing agreements for capital improvements and maintenance, timed transfers between services, and fare integration
- Art & history exhibits
 - To create a gateway to the region, create exhibits with local art and an exhibit on Reading Railroad history
- Transfer-friendly station design
 - Facilitate transfers by providing cross-platform access, waiting room, and intersystem wayfinding



SEPTA and NJ TRANSIT will both operate services at the new train station and yard. Images: Russell Sullivan for Trains.com (Left) and MoreThanTheCurve.com (Right).

Goal #4 Climate Resilience

Ensure that all residents are able to live, work, and play in healthy, safe, ecologically vibrant environments that are resilient to the threats of climate change.



***Sustainability
& Resilience***



Strategies:

1. Stream Corridor Protection Ordinance
2. Green Infrastructure
3. Green Building

Goal #5 Vibrant Economy

Cultivate equitable economic development near the Ewing station to support small businesses and create employment opportunities for residents.



*Equity &
Prosperity*



Strategies:

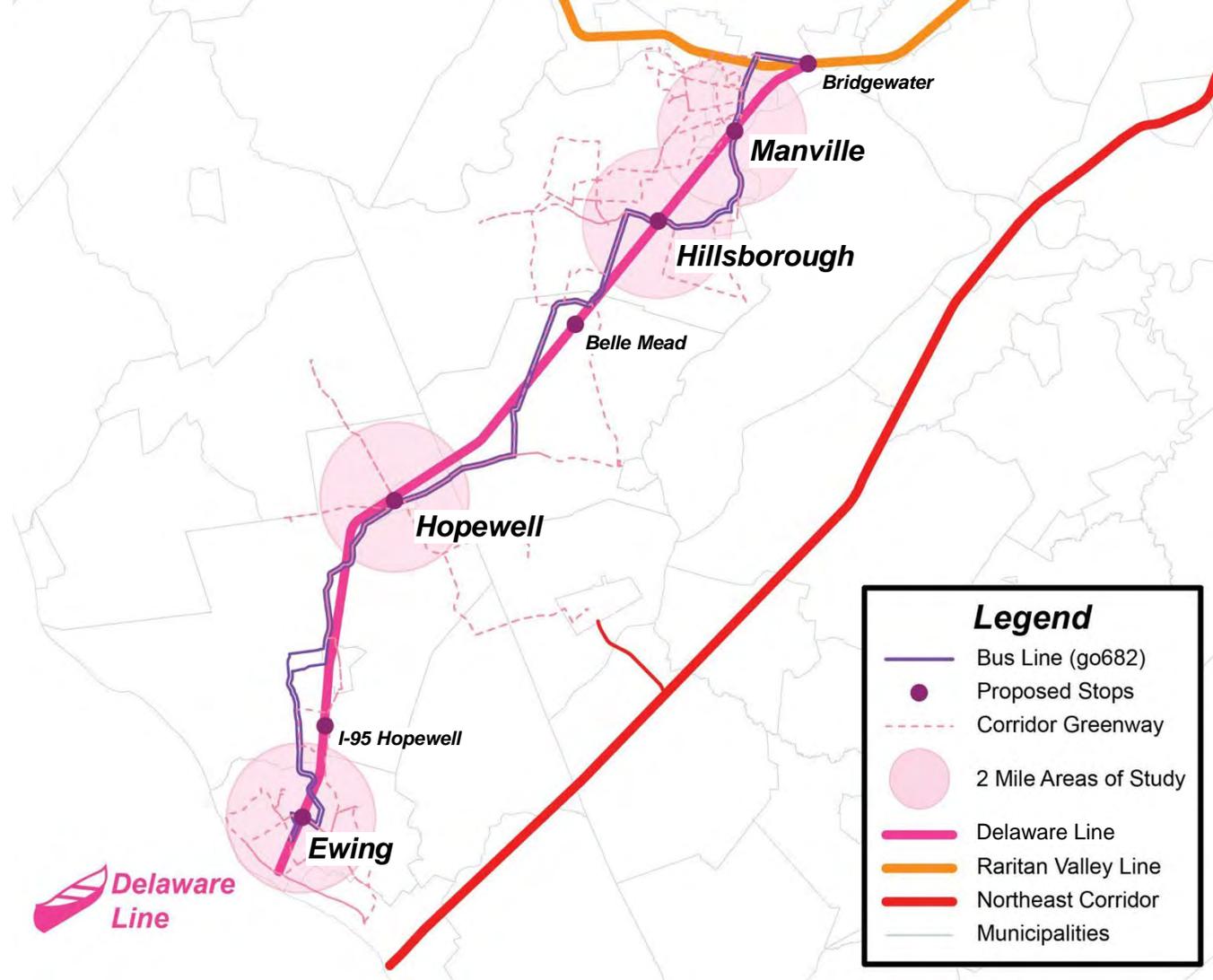
1. Small business loan assistance
2. Small business financial relief
3. Station vendor opportunities

Goal #5 Vibrant Economy

Cultivate equitable economic development near the West Trenton rail station to support small businesses and create employment opportunities for residents.



Farmer's Market at the Walnut Street Station in Montclair, New Jersey (Source: [Montclair Farmer's Market](#))



Legend

- Bus Line (go682)
- Proposed Stops
- Corridor Greenway
- 2 Mile Areas of Study
- Delaware Line
- Raritan Valley Line
- Northeast Corridor
- Municipalities

An aerial photograph of Hopewell Borough, New Jersey. The foreground features a large, three-story red brick building with a prominent arched entrance and a flat roof. To the right of the building is a green basketball court. The middle ground shows a residential street with several houses, including a white house with a porch and a green house. A road with a few cars and a cyclist is visible. The background is filled with lush green trees and more houses, extending to a distant treeline under a clear sky.

Hopewell Borough

Hopewell Borough

Historic and culturally grounded residential community in Mercer County

- Incorporated on **April 14th, 1891**

Total Population

- **1,918** (2020 Census)

Median Age

- **43.9**

Median Household Income

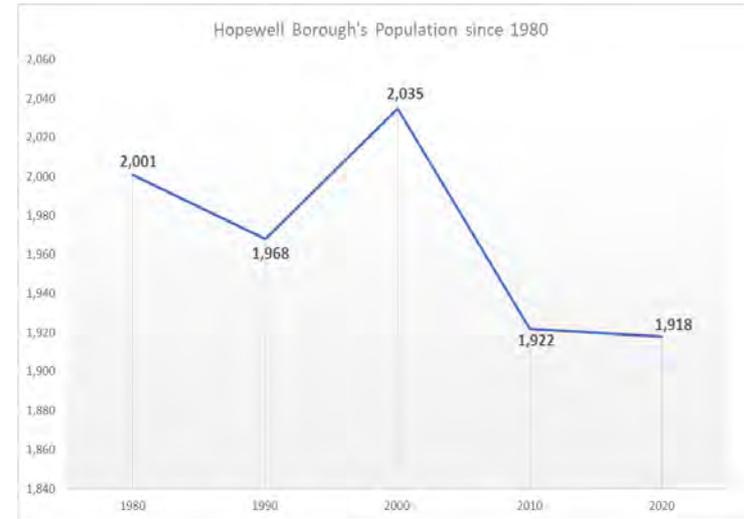
- **\$121,215**

Educational Attainment

- **67.8%** have Bachelor's degree or higher

Class of Workers, Employment by Sector

- **56.8%** employed by Private, For-Profit Sector (largest)
- **4.3%** are self-employed in own incorporated business workers (smallest)

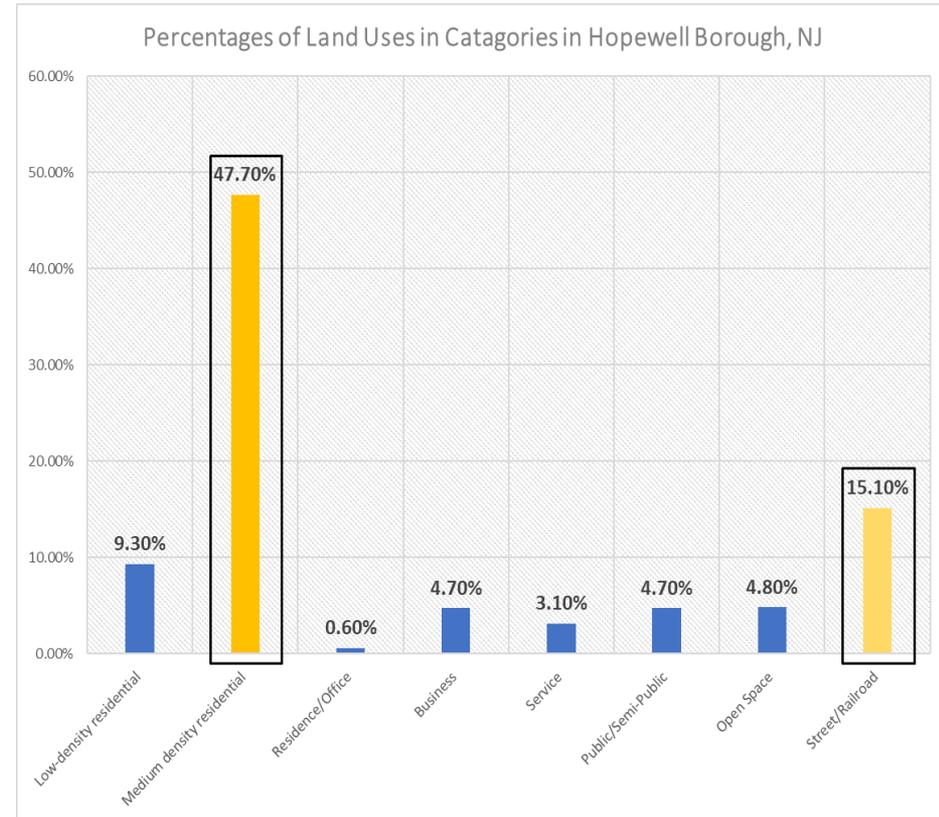


New Jersey State Data Center (NJSDC); Total Resident Population New Jersey, Counties Municipalities: 1980, 1990 and 2000 (p. 26). Accessed November 30, 2022.

Municipality	1980 Census	1990 Census	2000 Census	2010 Census	2020 Census
Hopewell Borough	2,001	1,968	2,035	1,922	1,918
Percentage	n/a	-1.6%	3.4%	-5.6%	-0.2%
Number	n/a	-33	+67	-113	-4

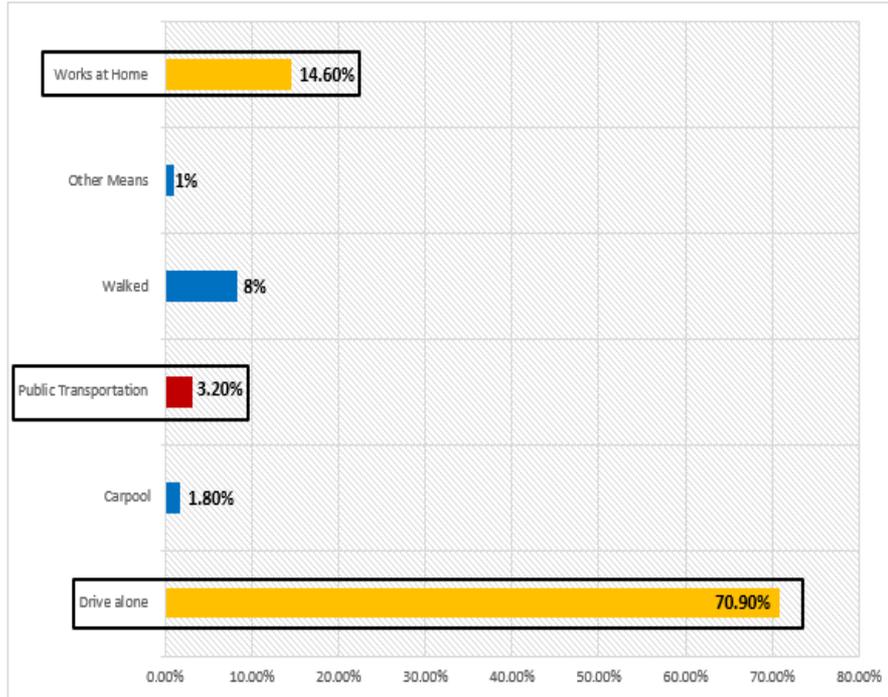
Land Use Conditions

- **Medium density residential** and **street/railroad**, both make up almost **63%** of the land uses in the borough.
- **Low density residential, open spaces, public/semi-public spaces** and **businesses** make up almost **25%** (almost a quarter) of the total land uses in the borough.
- Residential zoning districts include **mixed housing, residence-office** and **townhouses**.
- The borough also has a **Historic District Ordinance** adopted by the **Historic District Buffer Zone**, which provides a review process through the **Historic Preservation Commission (HPC)**, of any construction or demolition in the buffer zone area to protect and preserve the borough's historic character.



Ridership Comparison

Table 1: Commuting, Means of Transportation to Work (Workers 16 Years and older)



Source: U.S. Census, 2019 ACS 5-Year Estimates Data Profile

Table 2: West Trenton Line Station Ridership Summary by Time Period

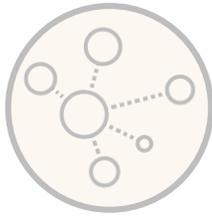
STATION	2040 Daily Eastbound Boardings	AM Peak Period Eastbound Boardings ON	AM Peak Period Eastbound OFF	Off-peak and PM Peak Eastbound ON	Off-peak and PM Peak Eastbound OFF
West Trenton	100	95	5	0	0
I-95	25	20	0	5	0
Hopewell	160	140	10	10	0
Belle Mead	350	350	0	0	0
Hillsborough	950	940	10	0	0
Manville	100	100	0	0	0
TOTAL W. Trenton Eastbound	1,685	1,645	25	15	0
SEPTA Transfers	15	15			

Note: SEPTA transfers are included in the West Trenton boarding ridership figures

Hopewell Borough Master Plan: 2007; Land Use Plan Element, 2.2 Plan Proposals, Table 1. Land Use Categories of Hopewell Borough (p. 10).

Goal #1 Homes for Hopewell

Create greater opportunity to build affordable homes while maintaining Hopewell's historic nature and open space.



*Sustainability
& Resilience*



*Equity &
Prosperity*



*Process &
Accountability*

Strategies:

1. Permit Traditional Housing
2. Harmonize the Historic and the New
3. Set Housing Goals

Goal #1 Homes for Hopewell

Hopewell needs more homes for its station to succeed

- Are there enough people for NJ TRANSIT to invest in building a station in Hopewell?
- Artists and families need places to live and Fair Share Settlements won't make Hopewell affordable for the middle class
- Density is key to preserving green space, reducing sprawl and congestion, and strengthening a community and the local economy

Goal #1 Homes for Hopewell

Strategy 1: Permit Traditional Housing

- Permit accessory dwelling units by right
 - A classic housing type that provides access to the young and old
 - Occupies relatively minor space (as pictured in a Hopewell backyard)
- Allow the subdivision of existing structures to up to four units (instead of just two)
 - Home subdivision is linked directly with the creation of community
 - Provides a homeowner with the opportunity to use their home as they see fit
 - Limits strain on sewage and greenspace



Existing accessory dwelling unit in Hopewell, NJ (AirBnB)



Fourplex across the street from the Westfield Station (T. Staub)

Goal #1 Homes for Hopewell

Strategy 2: Harmonize the Historic and the New

- Adjust the bulk code to encourage
- Hopewell's zoning code is incompatible with the buildings it wishes to have preserved & emulated
- Around 40% of lots in residential districts are smaller than the minimum lot size
- If Hopewell wants future homes to reflect its historic past, adjust the bulk regulations to reflect that past
- Quantify: Calculate the number of parcels that do not conform with the current code



Nonconforming Properties in Hopewell across from the Station (T. Staub)



Fourplex in Hopewell (T. Staub)

Goal #1 Homes for Hopewell

Strategy 3: Set Housing Goals

- Set a goal of 3% average annual unit addition
- Set a goal of 1% average annual impervious surface creation



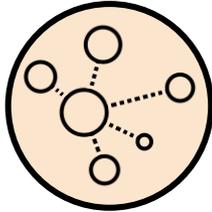
Nonconforming Properties in Hopewell across from the Station (T. Staub)



Fourplex in Hopewell (T. Staub)

Goal #2 Connectivity for Hopewell

Promote and enhance the safety, accessibility and circulation within Hopewell and its Station



*Mobility &
Access*



*Sustainability
& Resilience*



*Equity &
Prosperity*



*Process &
Accountability*

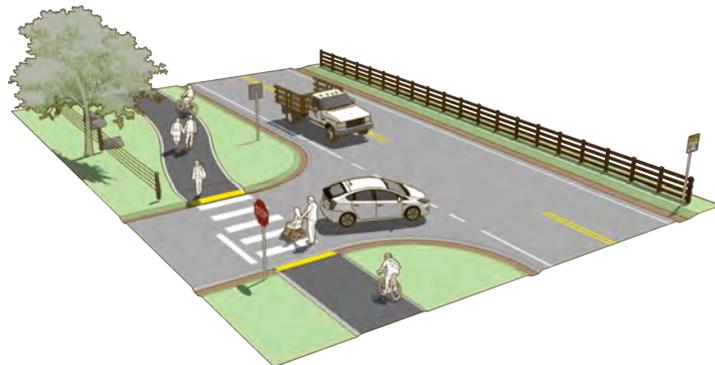
Strategies:

1. Safe & Secure circulation
2. Connecting Hopewell
3. Mobility & Land use

Goal #2 Connectivity for Hopewell

Strategy 1: Safety and accessibility for people and goods that support community and quality of life

- Develop a network of safe mobility tactics to enhance the overall safety and character of Hopewell
 - Wider sidewalks
 - Traffic calming strategies
 - Gateways
- Important to keep an intimate neighborhood that promotes more engagement at the human scale on the street for pedestrians



3D Render <https://ruraldesignguide.com/physically-separated/sidepath>

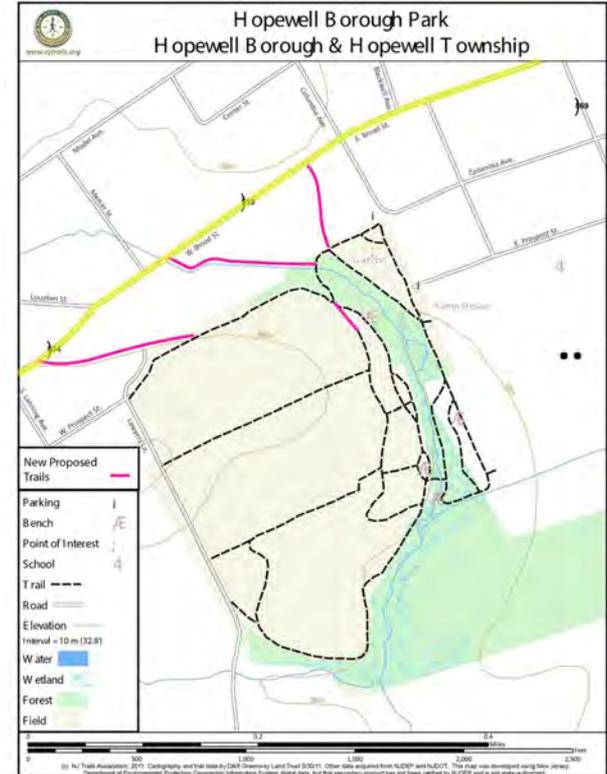


An intersection near an elementary school in Durham, NC
(Bloomberg Philanthropies)

Goal #2 Connectivity for Hopewell

Strategy 2: Consider the connection between neighborhoods and retail services, transit nodes and trails

- Develop a network of bicycle/pedestrian outlets and paths throughout the village, specifically at dead ends, and under used areas
 - Connection through existing neighborhoods and blocks to enhance trail experience
- Providing a direct link to Broad Street will ensure paths always connect back to a central node in the surrounding neighborhood



Hopewell Borough Park Trail Map, njtrails.org

Goal #2 Connectivity for Hopewell

Strategy 3: Align mobility priorities with land use to increase mobility options, minimize projected trip demand

- Create compact, mixed-use activity centers that encourage greater micro transit and reduce vehicle trips
- A micro-transit network encourages the number of people living next to or surrounding train station to walk or bike within Hopewell rather than solely depend of the use of a vehicle



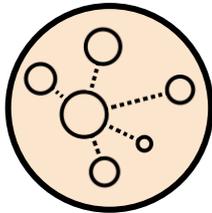
Small scale pavilion, NY Archintensions



Akron Pavillion, Rural Studio AL

Goal #3 Transit Village for Hopewell

Foster economic development that fits Hopewell's aspirations of becoming an art-aligned Transit Village



*Mobility &
Access*



*Equity &
Prosperity*



*Process &
Accountability*

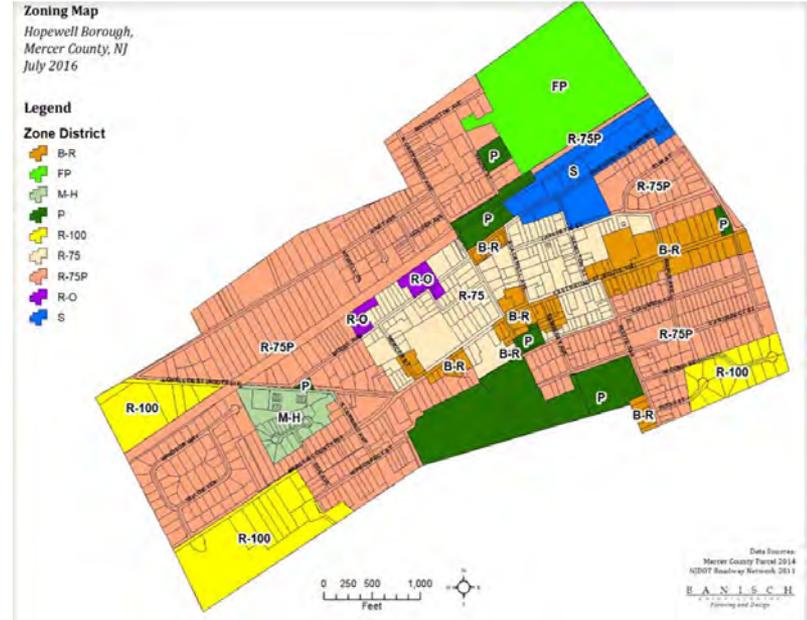
Strategies:

1. Expand Commercial Uses
2. Home Businesses Offices
3. Arts, History & Culture

Goal #3 Transit Village for Hopewell

Strategy 1: Expand permitted commercial uses for more transit-supportive uses

- Replace the service district with a new mixed-use zone consistent with the town's historic character to attract new retail opportunities.
- A new mixed-use zone solidifies the local economic base and increases the number of people living next to the train station to provide the critical mass to sustain new retail businesses in the downtown and surrounding areas.



Zoning map: Hopewell Borough [Source: Planning Presentation, Banisch Associates & Inc.]

Goal #3 Transit Village for Hopewell

Strategy 2: Expand home-based businesses and offices

- Allow for regulations that permit Accessory Commercial Units.
- Permitting the development of Accessory Commercial Units is an idealistic way to boost the base while maintaining the historic character of the community by providing incentive for locals to invest in home-based businesses with low capital costs.



Accessory Commercial Unit in Portland, Oregon [Source: Neighborhood Workshop]

Goal #3 Transit Village for Hopewell

Strategy 2: Expand home-based businesses and offices

- Seek to enhance the continuity of the B-R zone along Broad Street by allowing flexibility in the Residential Professional Office regulations.
- Allowing flexible Residential Professional Office regulations incentivizes small businesses to the main street without compromising the community character of Hopewell.



A Residential Building in Broad Street [T.Staub]

Goal #3 Transit Village for Hopewell

Strategy 3: Increase funding for arts, history, and cultural programming

- Support individual entrepreneurs by partnering with Hopewell Valley Arts Council and NJ State Council on the arts to provide small grants to encourage entrepreneurship, and career advancement among artists.
- Increase the number of self-employed in own incorporated and not incorporated business workers.

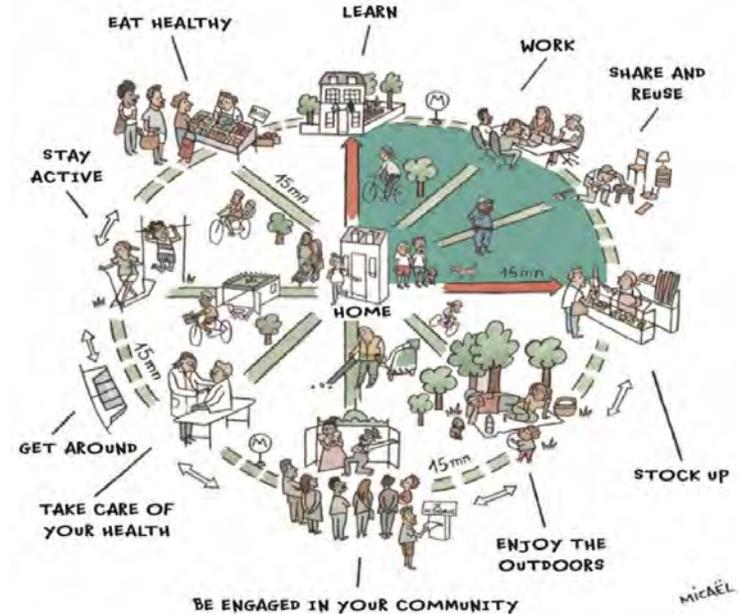


Source: www.downtownhopewell.com

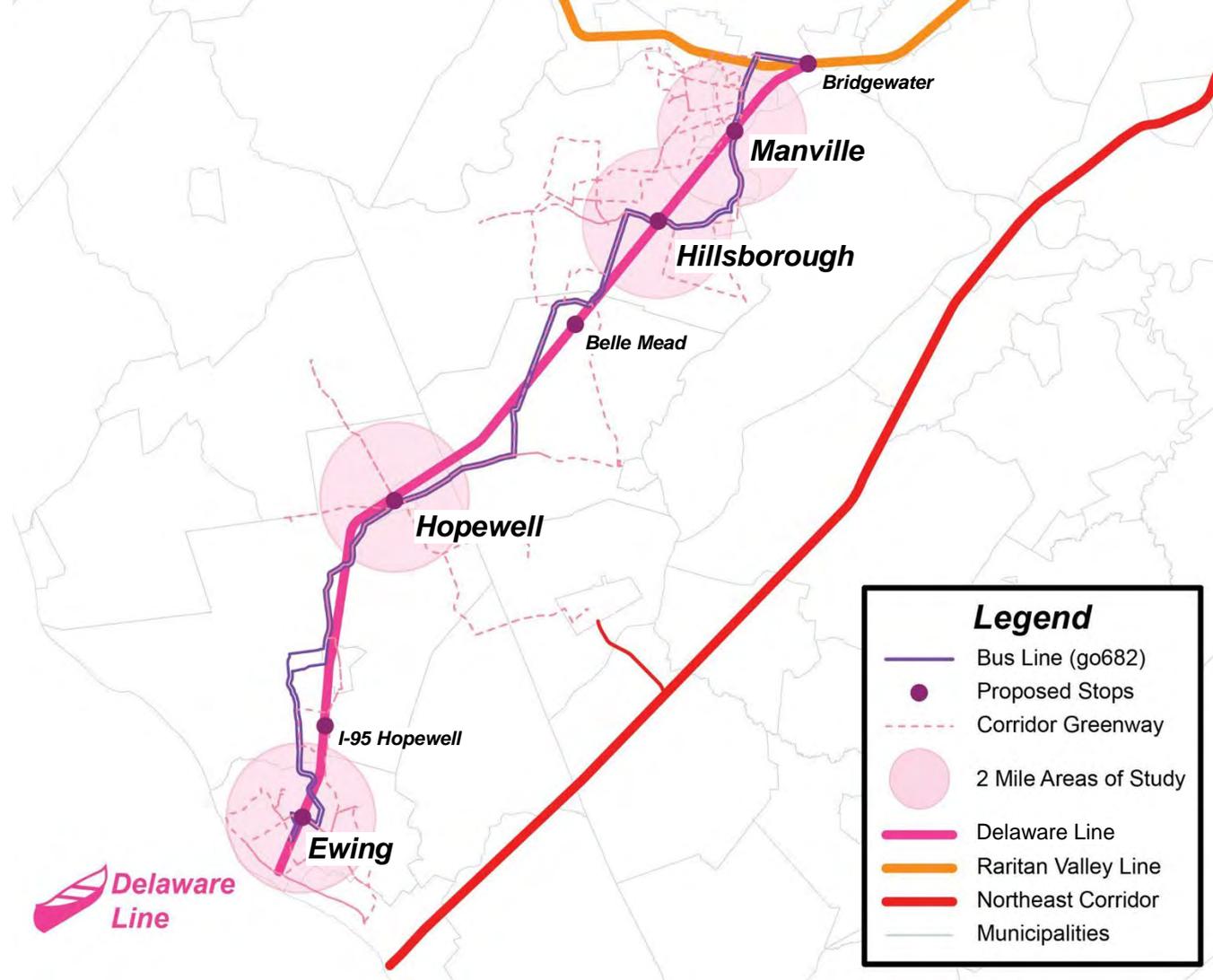
Goal #3 Transit Village for Hopewell

Strategy 3: Increase funding for arts, history, and cultural programming

- Strengthen heritage tourism by creating a budget to fund marketing campaigns and by creating partnerships with local businesses to create tour-packages.
- Market Hopewell Borough's unique selling proposition as an ideal 15-minute city.



[Source: 15-minute city sketch by Carlos Morena]



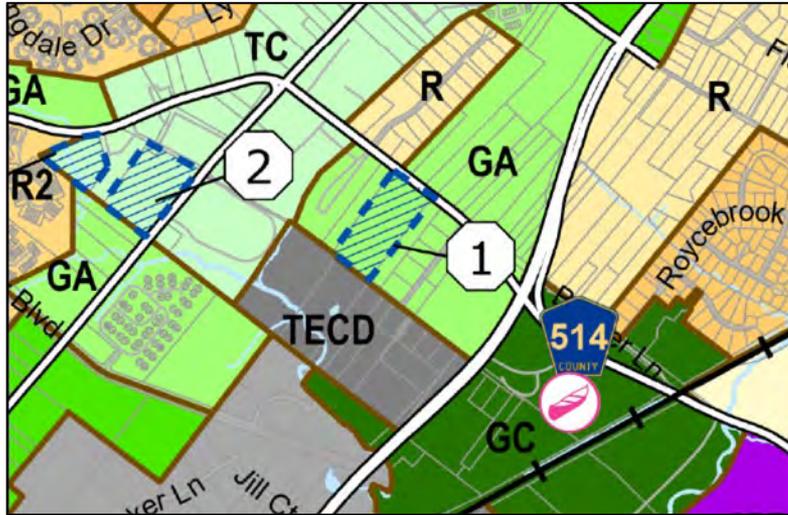
Legend

- Bus Line (go682)
- Proposed Stops
- Corridor Greenway
- 2 Mile Areas of Study
- Delaware Line
- Raritan Valley Line
- Northeast Corridor
- Municipalities

A large white barn with a cupola, a white pickup truck, and a white fence in a rural setting. The barn has a blue roof and a small white cupola on top. A white pickup truck is parked in front of the barn. A white fence runs across the foreground. The background shows trees and a clear blue sky.

Hillsborough Township

Hillsborough Township



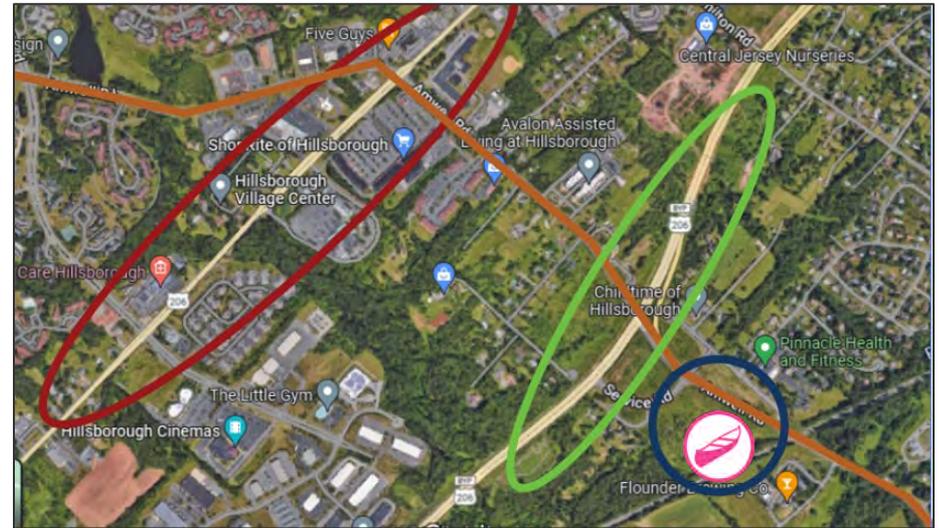
Zoning Map of Hillsborough



Multi-family
Inclusionary Zone



Mixed-use
Inclusionary Zone



Red line: "Main Street" around State Route 206

Orange line: Amwell Road

Blue line: Station Area

Green line: Route 206 Bypass (2021)

Hillsborough Township

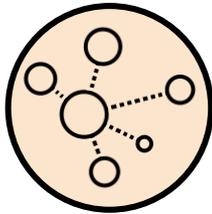
- Route 206 Bypass Finished in 2021
- Concentrate Development Between Bypass and Main Street
- 2018 Master Plan Re-Exam
- Gateway & Town Center Zoning



Route 206 Bypass in Hillsborough
Source: [Tapinto.net](https://www.tapinto.net)

Goal #1 Improve Multimodality

Promote human scale access, walkability, and bikeability to Route 206's "Main Street" area, Hillsborough Station, and Amwell Road's Linear Village.



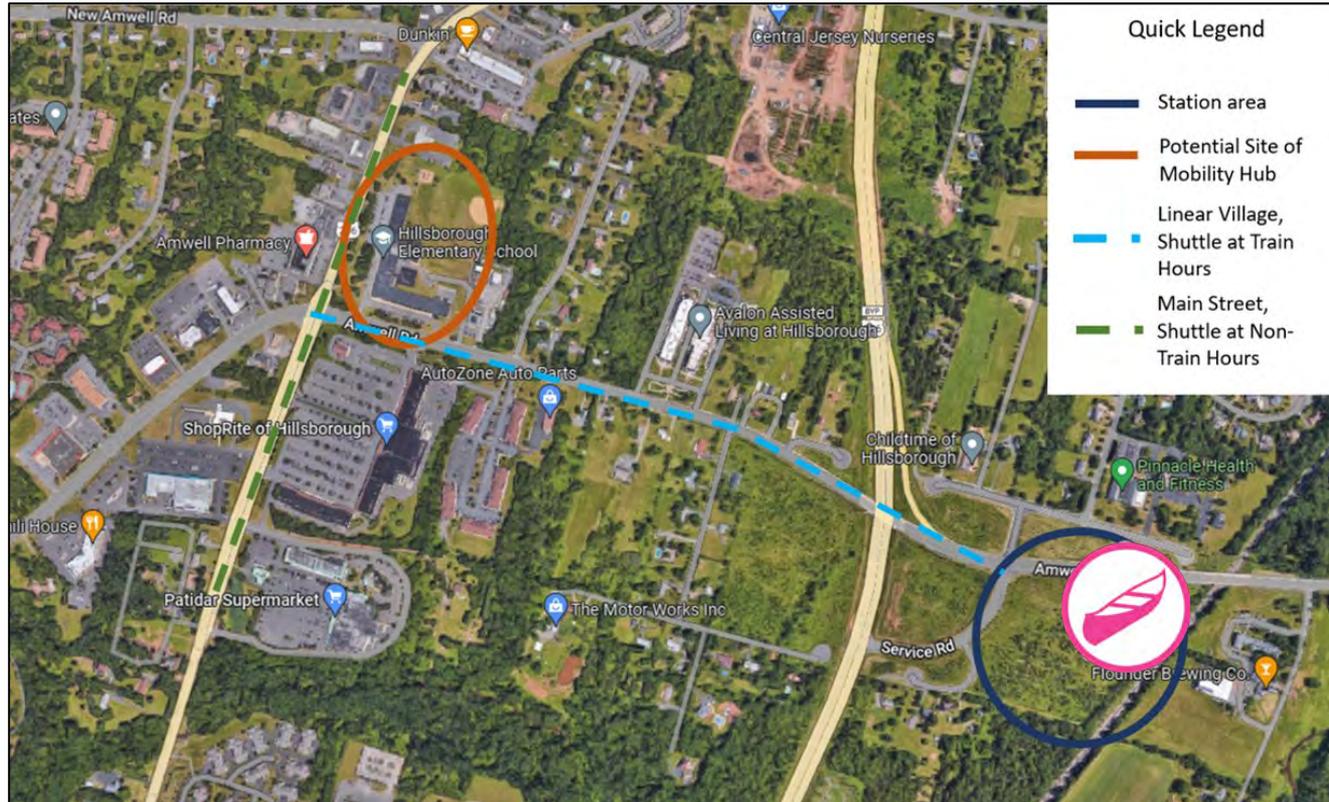
*Mobility &
Access*



Strategies:

1. Multimodal Improvements
2. Station Shuttle Service
3. Main Street Mobility Hub

Goal #1 Improve Multimodality



Proposed mobility improvements (Google Maps, 2022)

Goal #1 Improve Multimodality

These three prongs facilitate Station accessibility:

- Multimodal Improvements
 - Introduce multimodal improvements and modal separations for Amwell Road.
 - Enable a walkable Linear Village on Amwell.
- Station Shuttle Service
 - Road risk and inconveniences require a more immediate mobility solution.
 - Launch a shuttle route path for train schedule service and off-hour Main Street use.
- Main Street Mobility Hub
 - Main Street has limited mobility options.
 - Design a mobility hub in Route 206, promoting non-car trips in Main Street and to the Station.



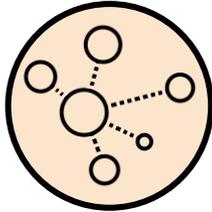
Amwell's shoulders are wide enough to accommodate cyclists and pedestrians but require protection (Google Maps, 2022)



Shore Pkwy, Queens, NY shows how traffic calming at bridges can create unintrusive, separated modes (Google Maps, 2022)

Goal #2 Balance Parking Demands

Hillsborough Station will require roughly 55% of the entire line's parking, according to previous analysis.* Spatially accounting for these parking demands will necessitate an intentional balance between utilizing existing pavement and constructing more parking.



*Mobility &
Access*



*Process &
Accountability*

Strategies:

1. Split Parking Decks
2. Repurpose Existing Parking
3. Engage Stakeholders on Creative Solutions

Goal #2 Balance Parking Demands

Realization of responsible, efficient balance by:

- Splitting Parking Decks
 - Hillsborough Station is expected to require ~800 parking spaces.*
 - Split parking between space abutting the station and near the Main Street area.
- Repurposing Existing Parking
 - Excess parking in Main Street's strip malls could be repurposed.
 - At least 500 parking spots are located at terminus of the shuttle and Linear Village.
- Engaging Stakeholders on Creative Solutions
 - Such parking is shared between many stores.
 - Engage them regarding revenue potential.

**Ewing Line Environmental Assessment Update 2021*

Station	Auto-Drive	Required Parking	Auto-Drive Percent
Ewing	5	25	5.0%
I-95	20	25	80.0%
Hopewell	90	100	56.3%
Belle Mead	255	300	72.9%
Hillsborough	690	800	72.6%
Manville	180	100	80.0%
Total	1,140	1,350	67.6%

2021 projections require more parking than Auto-Drive travelers.
May be possible to reduce parking figures.

Goal #3: Protect Agricultural Space

Protect agricultural and greenspace to the East and North of the Station



*Sustainability
& Resilience*



Strategies:

1. Limit Sewer Extension
2. Implement Transfer of Development Rights (TDR)
3. Remove Corporate Zoning

Goal #3: Protect Agricultural Space



Land east and northeast of station is mainly farmland (Source: [Somerset County Comprehensive Farmland Preservation Plan Update](#))

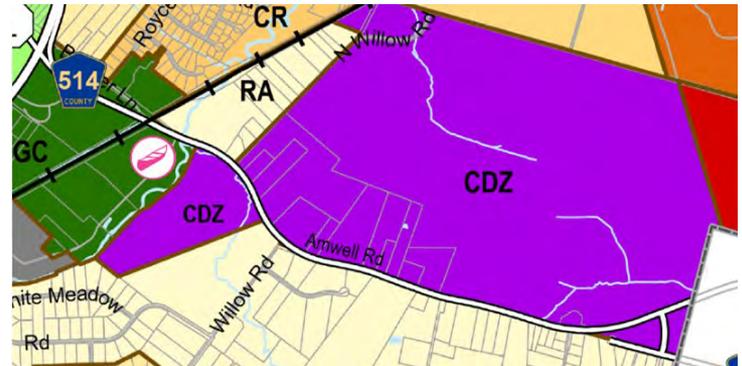
Goal #3: Protect Agricultural Space

Preserve Agricultural Space North of Station by:

- Limit Sewer Extension
 - Work with Somerset County to ensure train station does not result in expansion of sewer lines to farmland north and northeast of station
- Implement Transfer of Development Rights (TDR)
 - Allow owners of agricultural and green space to sell development rights to developers near the proposed train station
- Remove Corporate Zoning
 - Formally update master plan to update corporate zoning northwest of station



A farm in Hillsborough
Source: [New York Times](#)



Current zoning map
Source: [Hillsborough Planning](#)

Goal #4 Prioritize Affordable Housing

Prioritize affordable housing in the Linear Village between the Main Street area and Hillsborough Station



*Equity &
Prosperity*



Strategies:

1. Extend Affordable Housing Flexibility
2. Incentivize Mixed-Income Units
3. Develop Commuter Apartments

Goal #4 Prioritize Affordable Housing

Extend the affordable housing permitted uses

- Will include more of Amwell Road between Route 206 and the bypass
- Only allowed in Multifamily Inclusionary Overlay District
 - Less than 10% of the frontage
- Families closer to the town center and train station can live without purchasing multiple vehicles



#1 is the multifamily inclusionary overlay district



Building density doesn't need to mean high rises
Source: Opticos Design

Goal #4 Prioritize Affordable Housing

Incentive structure should ensure units are mixed-income in function, and do not concentrate poverty

- Set upper limit on density benefits for affordable units (i.e., benefits up to 60% affordable housing)
- Give developers lower parking minimums to promote goals of Transit Oriented Development
- Ensure new development complies with mandatory affordable housing set-aside, currently between 20 to 24%



Rendering of mixed-use office and retail space below apartments in a downtown Westfield, NJ

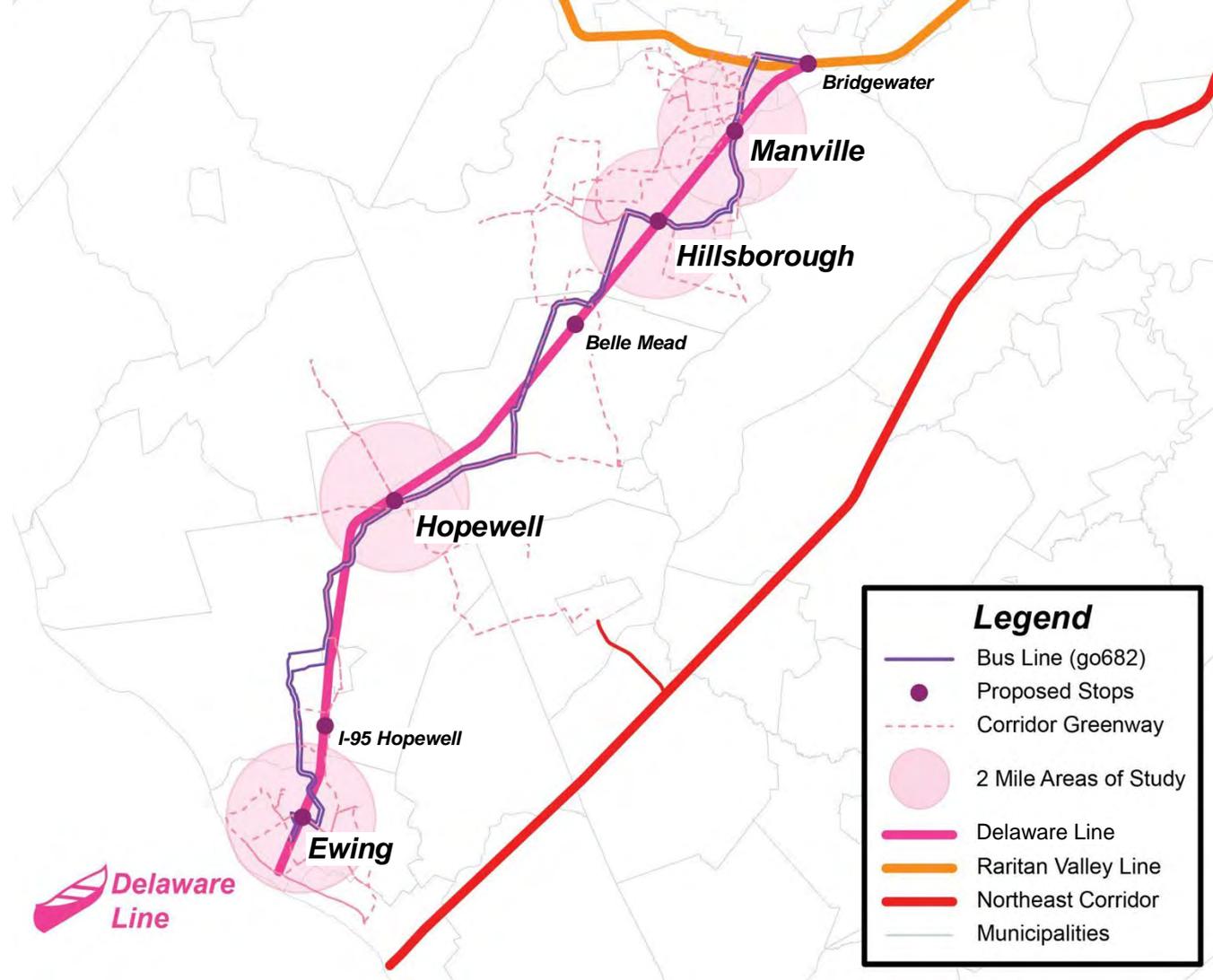
Source: Hudson Bay Co, (2022).

Goal #4 Prioritize Affordable Housing

Develop Commuter Apartments to capture housing demand generated by the station



Commuter apartments near Metuchen Train Station, Metuchen, NJ
(Woodmont Apartments)



Legend

- Bus Line (go682)
- Proposed Stops
- Corridor Greenway
- 2 Mile Areas of Study
- Delaware Line
- Raritan Valley Line
- Northeast Corridor
- Municipalities

An aerial photograph of Manville Borough, New Jersey. The image shows a mix of commercial and residential buildings, including a large multi-story office building on the left and several smaller structures. The area is surrounded by dense green trees, and the sky is filled with light, wispy clouds. The text 'MANVILLE BOROUGH' is overlaid in large, bold, black letters across the center of the image.

MANVILLE BOROUGH

Manville Borough

Manville is a 2.45 square mile, historic community of 10,953 residents, with a rich industrial history

- Manville is walkable, and 7% of residents walk, bike or use public transit to commute
- Manville has grown 5% since 2010, the first time since 1970 the population has grown
- Manville has several existing plans that would benefit from the introduction of the Delaware-Raritan Transit Corridor
 - Rustic Mall Redevelopment Plan
 - Main Street Revitalization Plan
 - Blue-Acres buyout program



Manville Borough

Manville is an ideal place to expand the Delaware Raritan Transit Corridor

- 47% of the population is under the age of 35.
- 11,000 people within 2 miles of the proposed train station.
- Low housing prices mean the introduction of the line will spur further growth
- With a median income 61% of Somerset County's, and a minority population of over 35%, the DRTC has a moral obligation to connect this community



Downtown Manville

Key Considerations for Manville

Housing

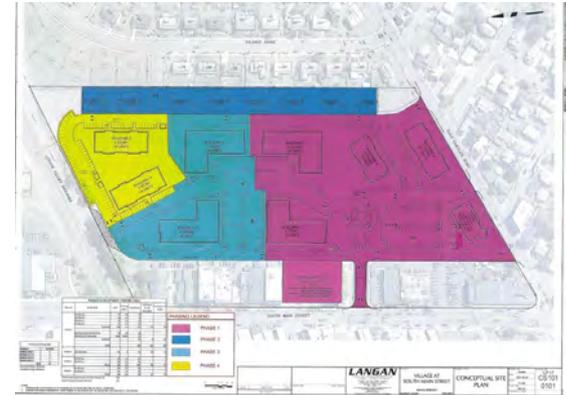
- 41% of Manville's households are housing cost burdened
- Much of Manville's housing stock is more than 65 years old

Income

- Manville's median income is 61% of Somerset County's median income
- The rising prices caused by the train line could lead to displacement if not properly managed

Flooding

- 44% of Manville is within a FEMA flood zone
- \$212 million of property is within a flood zone



Rustic Mall Redevelopment Map
Photo Courtesy: Borough of Manville

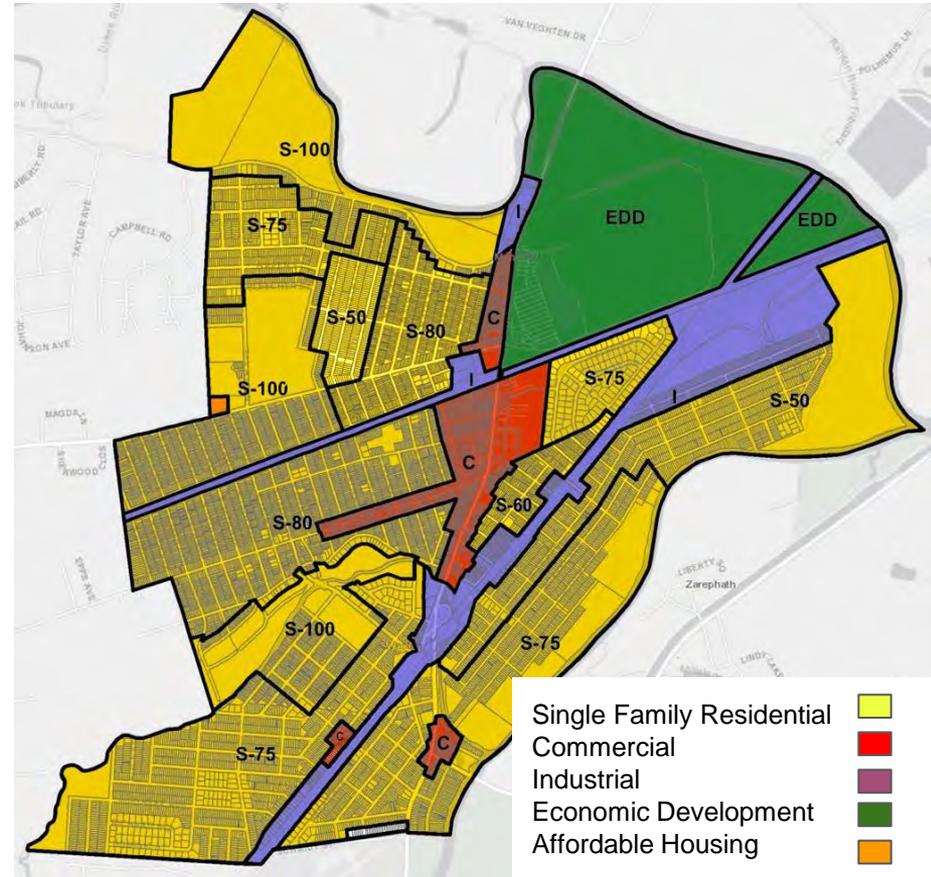


President Biden tours Manville following Hurricane Ida

Current Land Use

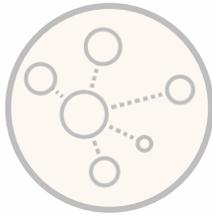
Key Takeaways

- No residential zone allows for multifamily dwellings by right
- Commercial zone allows for mixed use, but limits buildings to 2.5 stories



Housing & Land Use that Work for Everyone

Create affordable and safe housing that provides for increased density and build up in areas outside of flood zones, while building in increase resiliency and strategically retreating from the most vulnerable areas



*Sustainability
& Resilience*



*Equity &
Prosperity*



Strategies:

1. Inclusionary Overlay Zones
2. Flood Zone Based Zoning
3. Increase and diversify density and uses

Housing & Land Use that Works for Everyone

To create a land use and housing plan that better meets the needs of the community:

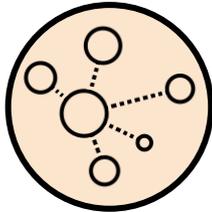
- Inclusionary Overlay Zones
 - In exchange for density and height bonuses, 15% of units must be affordable
- Flood zone based zoning
 - Tie FAR, impervious coverage and open space requirements to flood risk
- Increased density and mixed use in residential areas
 - Reduce minimum lot sizes
 - Allow ADUs, duplexes and triplexes by right
 - Allow small, first floor commercial and retail as conditional uses in residential areas



Proposed Overlay Zones and Resiliency Zones

Vibrant Circulation for a Vibrant Manville

Provide safe and affordable travel options to residents of all ages and abilities by pursuing a people-first approach and implementing efficient, environmentally responsible and equitable transportation strategies.



***Mobility &
Access***



***Sustainability
& Resilience***



***Equity &
Prosperity***



Strategies:

1. Relocate the proposed Train Station site
2. Main Street redesign project
3. Expand travel options
4. Traffic calming measures and structural changes

Vibrant Circulation for a Vibrant Manville

To develop a network that supports the sustainable and resilient community this plan envisions Manville to be:

- Relocate Train Station
- Remove jughandle at the intersection of Main Street and Kennedy Boulevard
- Main Street Redesign Project
- Smaller setbacks and wider sidewalks
- Improve streetscape and sense of place
- Introduce multimodal transit service
- Expand travel options
- Promote micro mobility
- Improve Wayfinding
- introduce Filtered Permeability



Relocating of the Train Station with Main Street and the Northern anchor

Imagery Source: Google Earth

Vibrant Circulation for a Vibrant Manville

- Traffic calming measures and structural changes
 - Introduce speed humps, raised intersections, textured pavement, median islands, gateways and corner bulb-outs
 - Carry out structural changes to the railroad crossings and provide bicycle and pedestrian walkthroughs.
 - Long term: Implement a 25 mph speed limit on the new corridor



Incremental evolution of the corridor's street scene.

A Thriving & Equitable Local Downtown

Develop a local economic center within the community through intensification of commercial uses along Main Street, anchored by the Rustic Mall Redevelopment Area and proposed rail station.



*Equity &
Prosperity*



Strategies:

1. Amend the Commercial Zone
2. Expand Sidewalks along Main Street
3. Create a Business Improvement District
4. Establish an Office of Local Business Affairs

A Thriving & Equitable Local Downtown

To create a downtown and local economy that support Manville's needs:

- Amend the Commercial Zone to encourage walkability and density
 - Reduce setbacks
 - Increased height limits to encourage mixed use development and residential build up
- Expand Sidewalks along Main Street
 - Wider sidewalks allow for more street seating and encourage walking
- Create a Business Improvement District along Main Street
 - Encourage business engagement and coordination in downtown
 - Allows for alternative funding and mutual support among businesses to support initiatives



Downtown Manville

Photo Courtesy of: Google Streetview



Downtown Somerville, NJ

Photo Courtesy of New York Times

A Thriving & Equitable Local Economy

To create a more equitable and place driven economy in Manville, we propose:

- Establish an Office of Local Business Affairs
 - Assist locals in starting a business
 - Oversee the digitization and simplification of opening a business
 - Create a local business fund to provide low or no interest loans to local and minority owned business ventures



Government Support can help business thrive in Manville

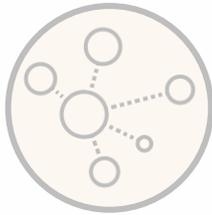
Photo Courtesy: Recorder.com



Manville's Redesigned Main Street

A Community Built for Flood Resilience

Create a flood-resistant neighborhood where the community strive for safe, healthy and exemplary living for its prosperous and vibrant future



*Sustainability
& Resilience*



*Equity &
Prosperity*



*Process &
Accountability*

Strategies:

1. Create a Borough-spanning greenbelt
2. Design a flood-safe station
3. Reduce coverage in the EDD Zone
4. Create a Flood Hazard Mitigation Committee
5. Expand the Blue Acres buyback program

A Community Built for Flood Resilience

Hazard Type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard	Probability of Occurrence	Risk Ranking Score (Probability X Impact)	Hazard Ranking
Flood	1% Annual Chance: \$76,300,000 0.2% Annual Chance: \$135,800,000	Frequent	33	High



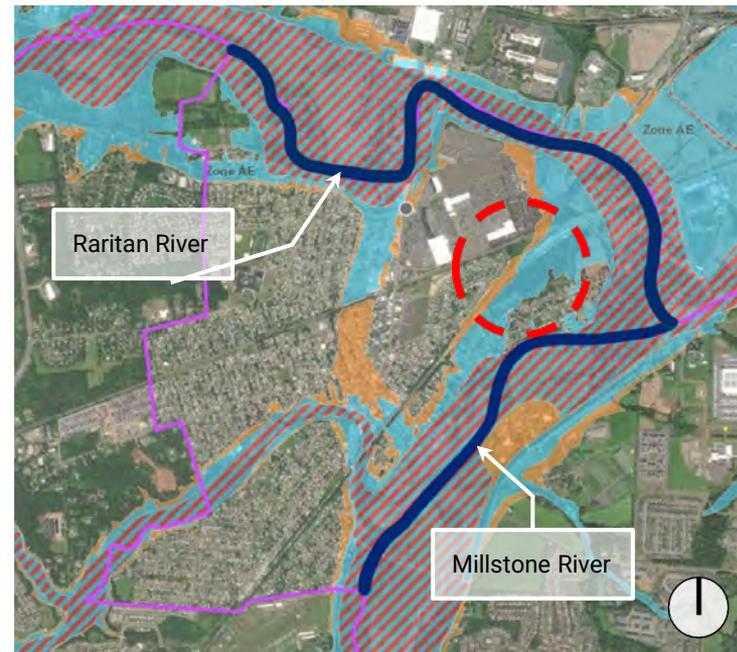
BEFORE FLOOD
July 14, 2020

Satellite image ©2021 Maxar Technologies



DURING FLOOD
Sept. 2, 2021

Satellite image ©2021 Maxar Technologies



Map demarcating the FEMA Flood Zones
(Source - arcgis.com)

A Community Built for Flood Resilience

Create a Borough-spanning green belt

- Conserve areas adjacent to the Raritan and Millstone rivers as a green buffer

Design a flood-safe station

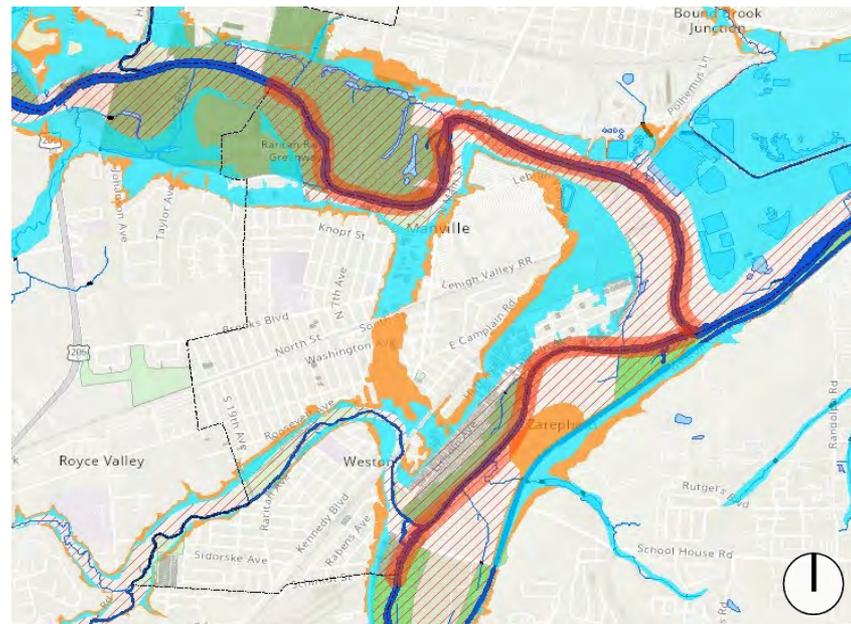
- Constructing the station above the base flood elevation
- Incorporate green infrastructure

FEMA Flood Zones - Flood Hazard Zones

-  1% Annual Chance Flood Hazard
-  Regulatory Floodway
-  Special Floodway
-  Area of Undetermined Flood Hazard
-  0.2% Annual Chance Flood Hazard

National Hydrography Dataset (NHD) Waterbody 2015

-  Lake/Pond
-  Reservoir
-  Stream/River
-  Spillway
-  Inundation Area
-  Canal/Ditch
-  Estuary
-  Sea/Ocean



Map demarcating the FEMA Flood Zones, Open Spaces and the Waterbody (Source - arcgis.com)

A Community Built for Flood Resilience

Reduce coverage in the EDD Zone:

- Replace impervious coverage in the EDD Zone with pervious pavement and other green infrastructure

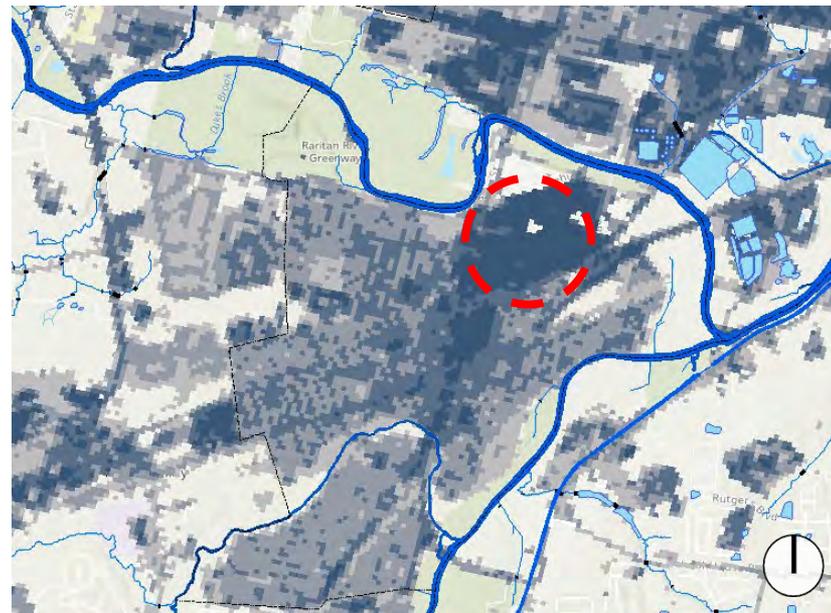
Create a Flood Hazard Mitigation Committee:

- Create a committee within the borough responsible for flood hazard mitigation coordination

USA LCD Impervious Surface Time Series



National Hydrography Dataset (NHD) Waterbody 2015



Map demarcating the Impervious Surfaces and Waterbody
(Source - arcgis.com)

A Community Built for Flood Resilience

Expand the Blue Acres buyback program:

- Continue and expand the Blue-acres buyback program in coordination with the County to remove housing and impervious areas in the Lost Valley
- Expansion of the Lincoln Avenue Park will result in capture, filter and absorb stormwater during flood events

Legend



Proposed Train Station



Lost Valley

FEMA Flood Zones - Flood Hazard Zones



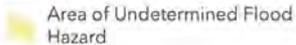
1% Annual Chance Flood Hazard



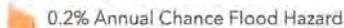
Regulatory Floodway



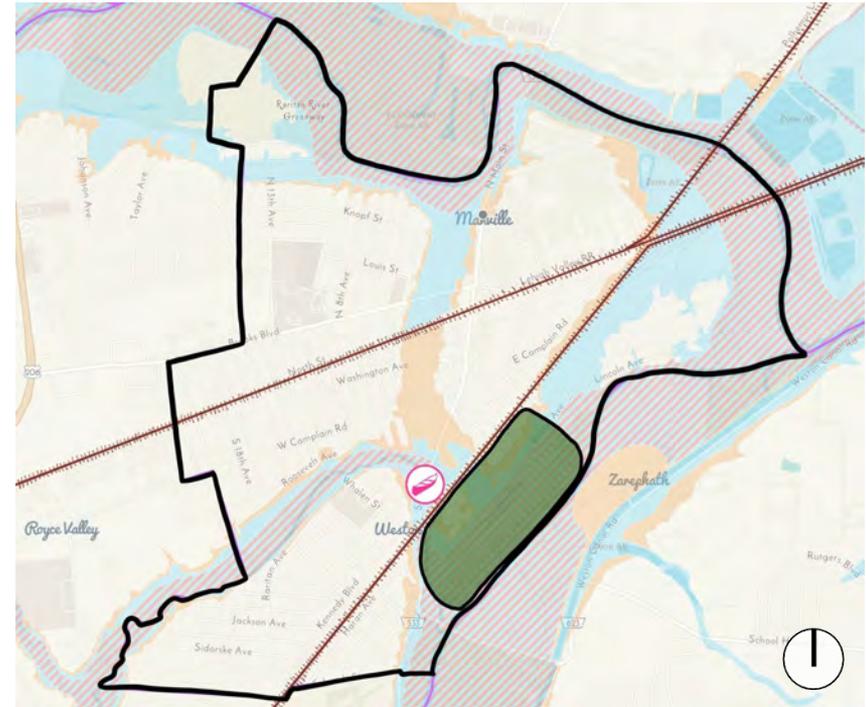
Special Floodway



Area of Undetermined Flood Hazard



0.2% Annual Chance Flood Hazard



Map demarcating the proposed train station and Lost Valley
(Source - New Jersey Flood Mapper)

Accountability and Improvement

Establish a system to keep the public engaged, informed and involved through annual listening sessions and reports to the Borough Council.



*Equity &
Prosperity*



*Process &
Accountability*

Strategies:

1. Host an Annual Plan Listening Session and Report to Council
2. Coordination with Somerset County and fellow DRTC municipalities

Accountability and Improvement

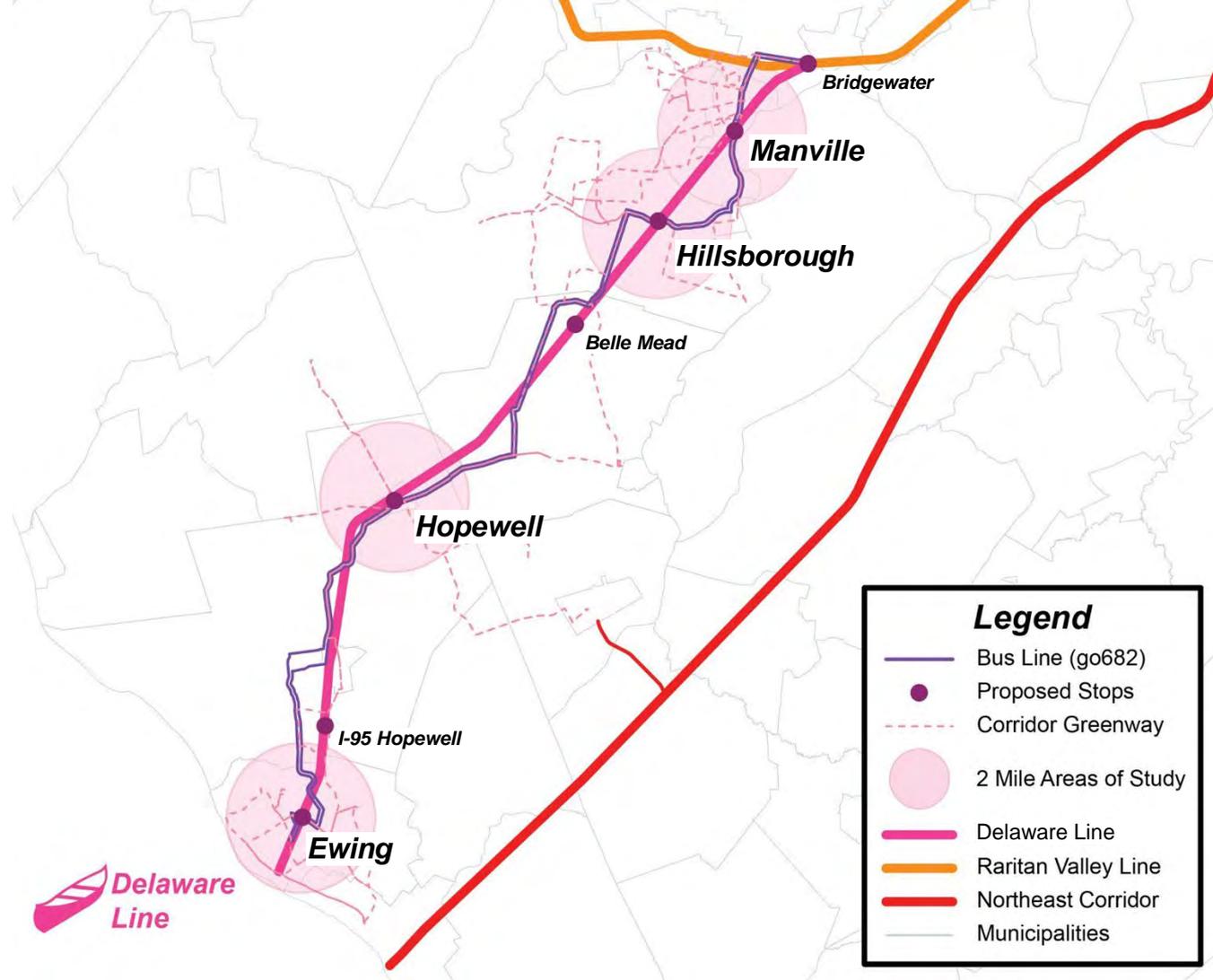
To create a system that holds Manville government accountable to the goals of this plan, and to build in continual and meaningful community input, we propose:

- Host an Annual Plan Listening Session and Report to Council
 - Solicit feedback from the community on the progress of the plan
 - Submit to the Council an annual report on the results of the listening session, along with a summary of the steps that have been taken and planned next steps
- Coordination with Somerset County and fellow DRTC municipalities
 - Coordinate with county and municipal governments on shared goals and challenges



Soliciting community feedback will result in better outcomes

Photo courtesy: <https://www.visn4.va.gov/town-hall-meetings.asp>



Legend

- Bus Line (go682)
- Proposed Stops
- Corridor Greenway
- 2 Mile Areas of Study
- Delaware Line
- Raritan Valley Line
- Northeast Corridor
- Municipalities

Recommendations

	Principles	Goals
Region	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Steering Committee
	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	Land Stewardship
	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Public Relations Campaign
	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	Universal Basic Mobility
Ewing	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	Mixed Uses
	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	Access & Mobility
	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	Intersystem Coordination
	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Climate Resilience
	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	Vibrant Economy
Hopewell	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Housing
	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Connectivity
	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Transit Village

	Principles	Goals
Hillsborough	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Improve Multimodality
	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	Balance Parking Demands
	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Protect Agricultural Space
	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	Prioritize Affordable Housing
Manville	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	Housing & Land Use
	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	Vibrant Circulation
	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	Thriving & Equitable Local Downtown
	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Flood Resilience
	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Accountability and Improvement

Acknowledgements

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