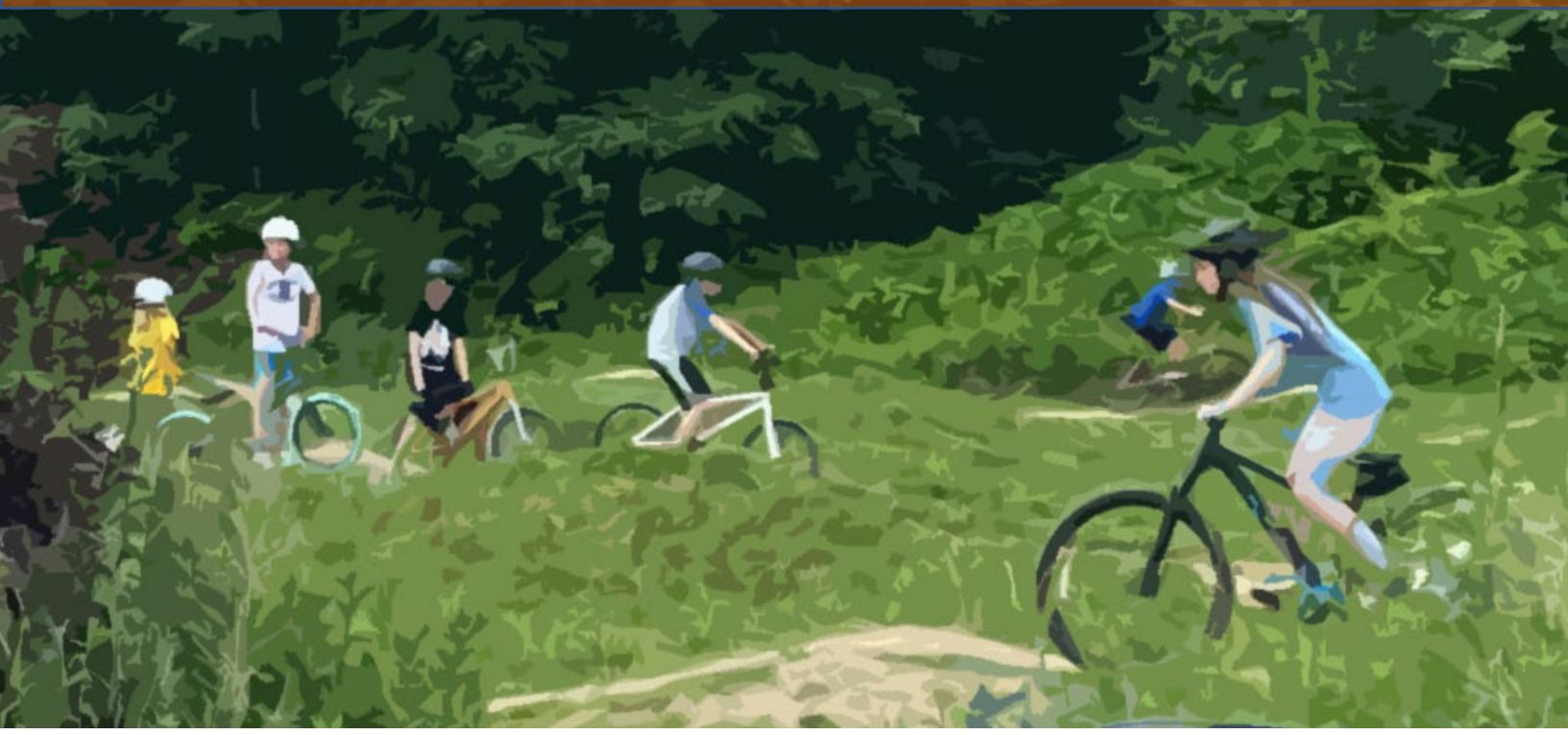
bike passaic COUNTY

APPENDIX

PASSAIC COUNTY BICYCLE MASTER PLAN

JUNE 2022



passaic COUNTY NEW JERSEY

NJTPA NORTH JERSEY TRANSPORTATION PLANNING AUTHORITY

Michael Baker INTERNATIONAL

NV5

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List of Appendices

Environmental Justice Assessment

Community Engagement

Previous Plans, Reports, and Studies

Existing Conditions

Bicycle Network

Pattern Book and Design Guidance

Concept Level Plans

Technical Memorandum: Environmental Justice

Date: 9/17/2021 (revised 12/15/2021, revised 5/26/2022, revised 06/29/2022)

Contents

I. Environmental Justice Analysis

A. Purpose

According to the United States Department of Transportation (USDOT), the definition of environmental justice includes "fair treatment and meaningful involvement of all people, regardless of race, ethnicity, income, national origin or educational level" with respect to laws, regulations, and policies. Environmental Justice (EJ) communities have been traditionally underrepresented in decision-making process related to public infrastructure projects and are disproportionately exposed to their negative impacts.

The project team conducted this Environmental Justice (EJ) analysis, reviewing demographic data throughout Passaic County's 16 municipalities, in order to:

- Identify language services for outreach
- Ensure fair distribution of planned improvements
- Ensure that planned projects do not negatively affect communities

B. Methodology

The project team used U.S. Census 2019 5-Year American Community Survey estimates (ACS) for the 2015-2019 period in Passaic County as the primary data source for this analysis. With the objective to identify populations that can be considered indicators of potential disadvantage, the project team tabulated and mapped the following data at the census block group level:

- Minority Population – Percentage of the population identified as a racial/ethnic minority
- Low Income Households – Percentage of households with income below poverty level in the past twelve months
- Limited English Proficiency Household – Percentage of the households that speaks a language other English, and a "Limited English-Speaking household"
- Minor Population – Percentage of the population that are people 17 years or younger
- Senior Population – Percentage of the population that are people 65 years or older
- Disabled Population – Percentage of the civilian population 18 years and over for whom poverty status is determined with a disability
- Zero-Vehicle Households – Percentage of households without access to a car
- Foreign-Born Population – Percentage of the population that is foreign-born[1]

[1] Place of Birth data was only available at the Census Tract level.

The data for each indicator was compared to the NJTPA regional averages and an Environmental Justice Score (EJ Score) was determined for each indicator, based on the standard deviation relative to the NJTPA regional average (in a manner similar to the DVRPC Indicators of Potential Disadvantage methodology[2]). EJ Scores were determined as follows:

- Well-below average: <= -1.5 Std.Dev. (score of 0)
- Below average: -1.5 - -0.5 Std.Dev. (score of 1)
- Average: -0.5 - 0.5 Std. Dev. (score of 2)
- Above average: 0.5 - 1.5 Std. Dev. (score of 3)
- Well above average: > 1.5 Std. Dev. (score of 4)

Note that the census block groups with estimates of zero were manually assigned a score of 0 instead of 1. For some of the indicators analyzed, the 5-year estimates at the block group level were found in different sets of tables and have a substantial margin of error.

The findings of this analysis of the ACS data are summarized below (in Section C) and assessed in relation to the *NJTPA Title VI Implementation Plan* (in Section D). The findings for each indicator are presented in greater detail in Appendix A.

C. Summary of Findings

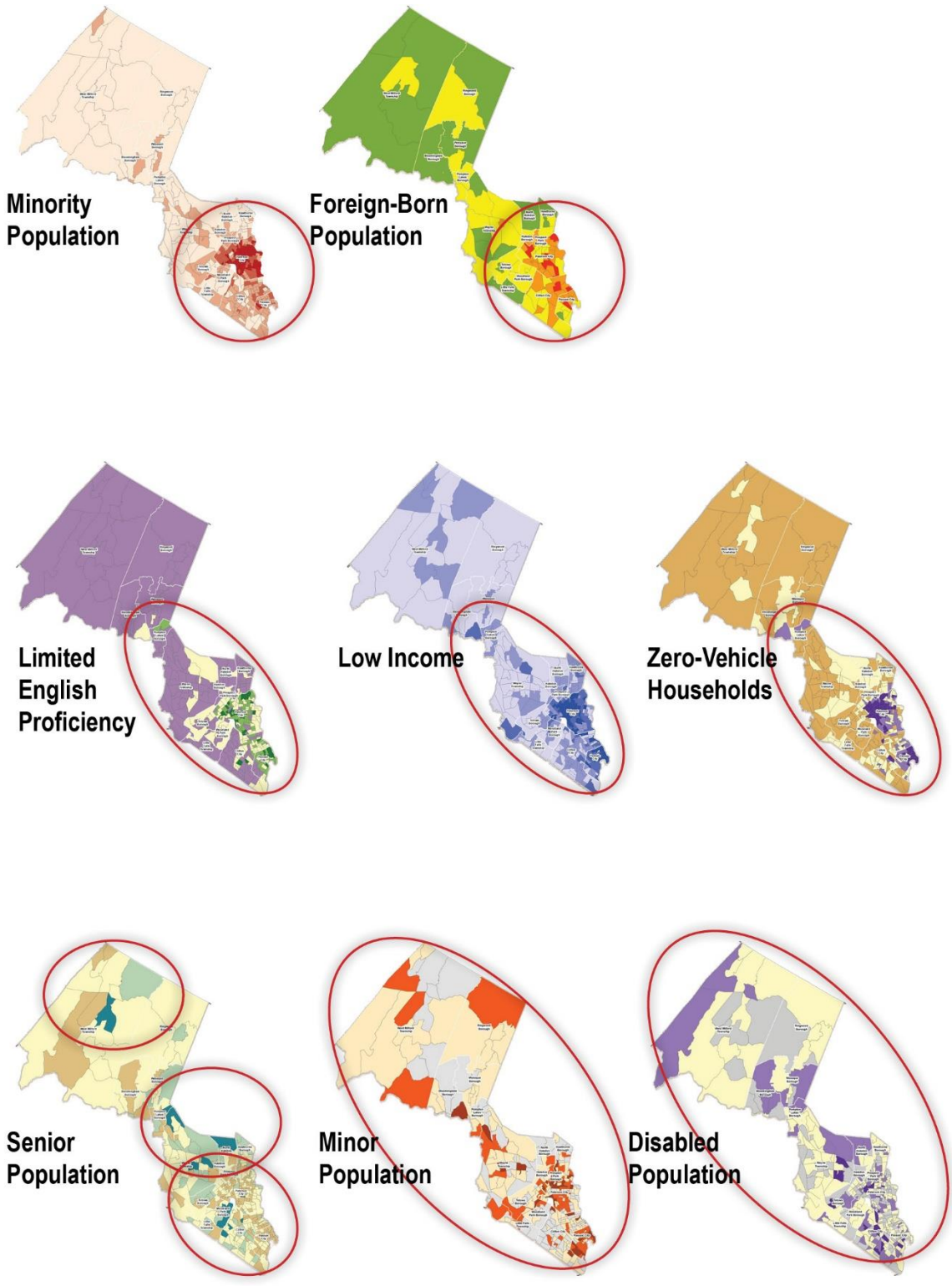
Based on the methodology described above, the following geographic trends were noted for the indicators of potential disadvantage:

- Minority and foreign born populations were most prevalent in the southern, more urbanized portion of Passaic County.
- Households with limited English proficiency, households below the poverty level, and households that do not own any cars were most prevalent in the southern, more urbanized portion of Passaic County, but also extended north into the central portion of the County.
- Populations of senior citizens (age 65 and older), minors (age 17 and under), and people with disabilities were distributed to varying degrees throughout Passaic County.

The graphic on the following page provides thumbnail image comparison of the geographic dispersal of indicators of potential disadvantage. Appendix A provides detailed mapping for each indicator.

[2] Equity Analysis for the Greater Philadelphia Region - v2.0 (dvrpc.org), accessed December 2020.

Graphic: Geographic Comparison of Indicators of Potential Disadvantage



D. Findings in Relation to NJTPA Title VI Implementation Plan

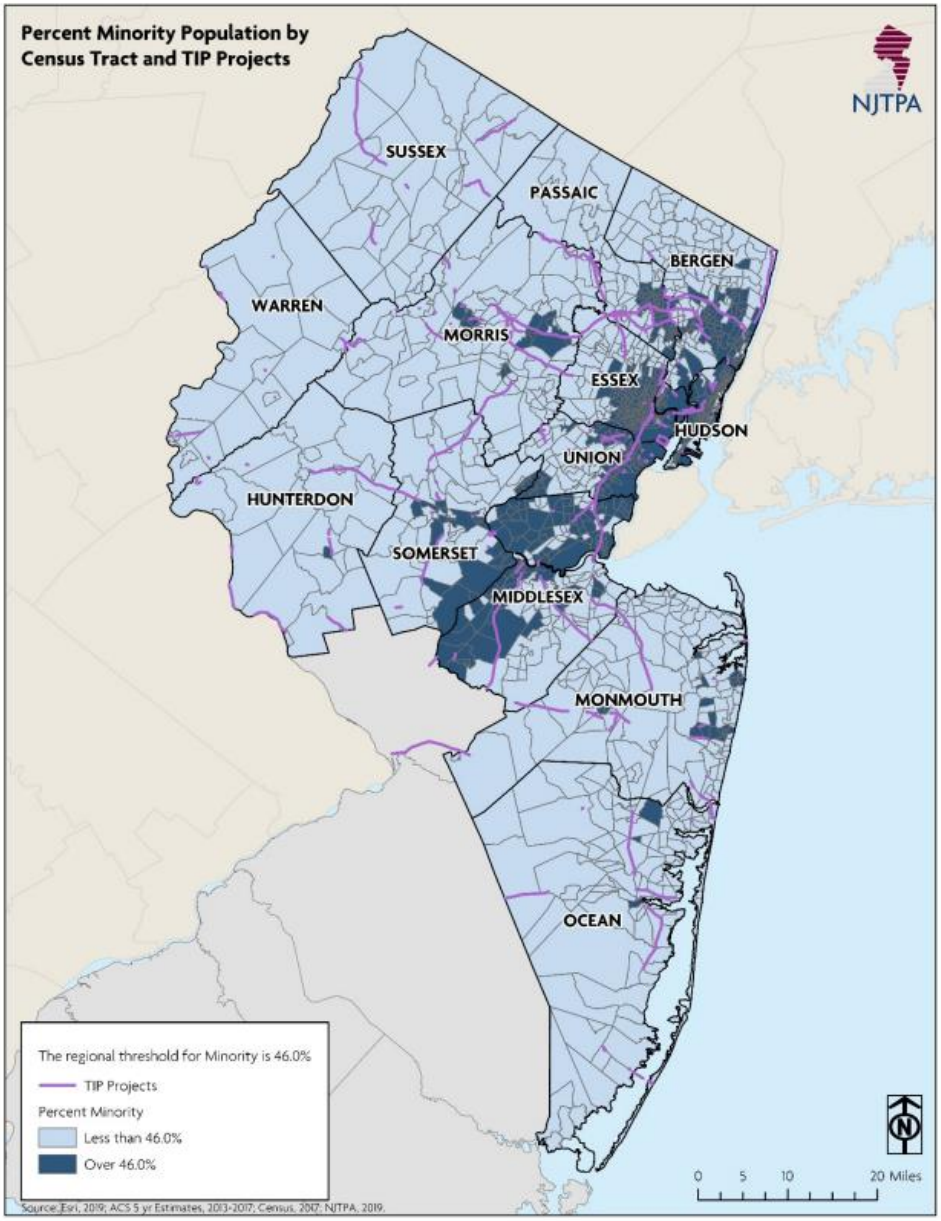
An important outcome of the EJ Analysis is to identify ways that planning procedures carried out for *BIKEPassaicCounty* to comply with the *NJTPA Title VI Implementation Plan* (January 2021). Considerations (in reference to sections of the *Title VI Plan*) include:

- **Section 3.2 Public Outreach and Involvement**
  In Passaic County, 16.2 percent of the population by household speaks Spanish (see Table 3: PASSAIC COUNTY LANGUAGES). "Under the Safe Harbor Provision, NJTPA is obligated to provide translation of written materials related to the planning products and analyses into languages that meet or exceed the established 5 percent or 1,000-person [whichever is less] threshold" (*Title VI Plan*, page 16). Therefore, translation of written materials should be provided for *BIKEPassaicCounty* in Spanish. Other languages that meet or exceed these thresholds should be evaluated on a case by case basis. The *BIKEPassaicCounty* project website and online project questionnaire both use Google Translate as a means to communicate in languages other than English. Graphics developed to advertise Public Meetings for *BIKEPassaicCounty* (to be posted on social media) include text in both English and Spanish. For the Public Meeting on December 8, 2021, a live Spanish captioning service was used, in addition to providing a person who can translate during the Q&A session at the end of the meeting. These methods will be repeated for subsequent outreach events.

- **Section 4.6 Mobility Needs for Minority Populations**
  "The NJTPA updated its *Coordinated Human Services Transportation Plan, Go Farther*, in 2017. The plan offers comprehensive recommendations for meeting the transportation needs of four target populations: persons ages 65 and older, low income individuals, people with disabilities and veterans. The planning process included extensive public outreach to gather input from the target populations" (*Title VI Plan*, page 40). As *BIKEPassaicCounty* advances to define a preliminary network, priority bikeways, and concept level plans, the input collected in the *Go Farther Plan* should remain in consideration, especially as related to the populations of persons with disabilities, minors, and senior citizens. For instance, in prioritizing bikeways for implementation, there may be consideration of factors such as travel mode (bicycle only, or bicycle and pedestrian) and daily mobility needs in order to provide access to transit, schools, healthcare, commerce, and other community destinations for people who do not drive. Where shared use (bicycle and pedestrian) paths are planned, topography and considerations for accessible grading design should be explored in order to create inclusive trail facilities. Additionally, where bikeways are envisioned along existing roadways, it will be important to ensure that conditions and access for people on foot, especially those with disabilities, are not negatively impacted.

- **Section 4.7 Transportation Improvement Program**
  "As part of federal regulation FTA C 4702.1B, MPOs are required to provide a demographic map that overlays the percent of minority and non-minority populations as identified by Census or ACS data, at census tract or block group level, and charts that analyze the impacts of the distribution of state and federal funds in the aggregate for transportation purposes, including federal funds managed by the MPO as a designated recipient" (*Title IV Plan*, page 40). As *BIKEPassaicCounty* advances to define a preliminary network, priority bikeways, and concept level plans, the project team can overlay proposed routes in a manner similar to Figure 9 (page

41, shown below) of the *Title VI Plan*. Understanding that the proposed bikeway network in *BIKEPassaicCounty* will represent a planned level of future investment, the objective of this step will be to ensure that priority projects and future investment/benefit are equitably distributed in minority areas.



Map showing Percent Minority Population by Census Tract and TIP Projects (Source: NJTPA Title VI Implementation Plan, figure 9, page 41).

- **Section 4.8: Disparate Impacts**
  The project team should deliberately and critically reflect on the *BIKEPassaicCounty* proposed bikeway network to ensure that there are no disparate impacts on the basis of race, color, physical ability, age, national origin, or other indicators of potential disadvantage.

E. Conclusions

The purpose of the environmental justice analysis is to ensure that the outreach and recommendations are equitably distributed throughout the County. Based on the EJ data mapping, areas with a high concentration of each of the EJ indicators should be considered while developing recommendations and conducting outreach.

Areas with a high concentration of minorities, limited-English speaking persons and foreign-born population should be engaged throughout the process with the development of bi-lingual materials and simple visuals. Translation services should be available at these events. Paterson City, Prospect Park Borough and Passaic City have a high concentration of minorities compared to the County and the NJTPA average. These municipalities in addition to Haledon Borough, Woodland Park Borough and Clifton City also have a high concentration of foreign-born population when compared to the County and the NJTPA regional average. Passaic City, Paterson City, Haledon Borough and Clifton City have a higher percentage of LEP population than the County and NJTPA. As mentioned earlier, several different languages are spoken within the County and the project website is using translation technology to reach people who speak languages other than English. Spanish language translation is being provided for outreach materials and public meetings. The project team should ensure that representatives from the EJ community organizations are involved in the outreach process and can be invited to serve on the Steering Committee.

Outreach should be conducted at venues and at times that are easily accessible by all (seniors, minors, persons with a disability, low income households and households with limited access to cars). Municipalities with a higher concentration of senior population than the County and NJTPA are North Haledon Borough, Wanaque Borough and Woodland Park Borough. Passaic City, Prospect Park Borough, and Paterson City have a high concentration of minors under 17 years when compared to the County and NJTPA. Totowa Borough, Pompton Lakes Borough and Wanaque Borough have a higher concentration of persons with a disability than the County and the NJTPA regional average. Of the 16 municipalities, Passaic City and Paterson City have the highest concentrations of low income households and households with no access to cars when compared to the County and NJTPA.

While developing recommendations the project team should tailor the recommendations to the specific needs of the EJ population such as proximity to day cares, senior centers, and easy access to transit and jobs for seniors, minors, low income, and zero car households. Additionally, network recommendations should be fairly distributed throughout the County and should do not disproportionately affect the EJ populations.

This analysis is a data-driven view of where the project team should engage stakeholders and understand the unique travel needs, risks and tailor communication materials to the vulnerable users and disadvantaged groups in the County. It is recommended that the project team combine this data-driven view with input from the local stakeholders that may have additional insights related to environmental justice populations.

II. Appendices

Appendix A: Data Analysis of Indicators of Potential Disadvantage

Overview

The project team analyzed the 5-year ACS demographic data for the 2015-2019 period for Passaic County. As mentioned previously, the eight indicators assessed included minority population, foreign-born population, low income population, limited English proficiency population, minor population, senior population, disabled population, and zero vehicle households. Table 1 below shows the percentage of households or persons that qualify at the county level for each of the demographic indicators:

Table 1: PASSAIC COUNTY PROFILE

Environment Justice Demographic Indicator[3]	Count	Percentage
UNIVERSE: HOUSEHOLDS	**165,429**	-
Households with Income below Poverty Level	24,902	15.1%
Limited English Proficiency	21,445	13.0%
Zero Vehicle Households	27,445	16.6%
UNIVERSE: TOTAL POPULATION	**503,637**	-
Minority Population	181,510	36.0%
Foreign-Born Population	154,270	30.6%
Minors (under 17 years)	120,481	23.9%
Senior Population (65+ years)	71,897	14.3%
UNIVERSE: CIVILIAN POPULATION OVER 18 YEARS FOR WHOM POVERTY STATUS IS DETERMINED	**376,653**	-
Disabled population	39,439	10.5%

Source: US Census Bureau ACS 2015-2019 5-Year Estimates

- *Table B17017 Poverty Status In The Past 12 Months By Household Type By Age Of Householder*
- *Table C16002 Household Language By Household Limited English Speaking Status*
- *Table B25044 Tenure By Vehicles Available*
- *Table B02001 Race*
- *Table B01001 Sex By Age*
- *Table C21007 Age By Veteran Status By Poverty Status In The Past 12 Months By Disability Status For The Civilian Population 18 Years And Over*
- *Table B05002 Place of Birth By Nativity And Citizenship Status*

[3] Data for all indicators except for Place of Birth was available at the census block group level. Place of Birth data was only available for census tracts.

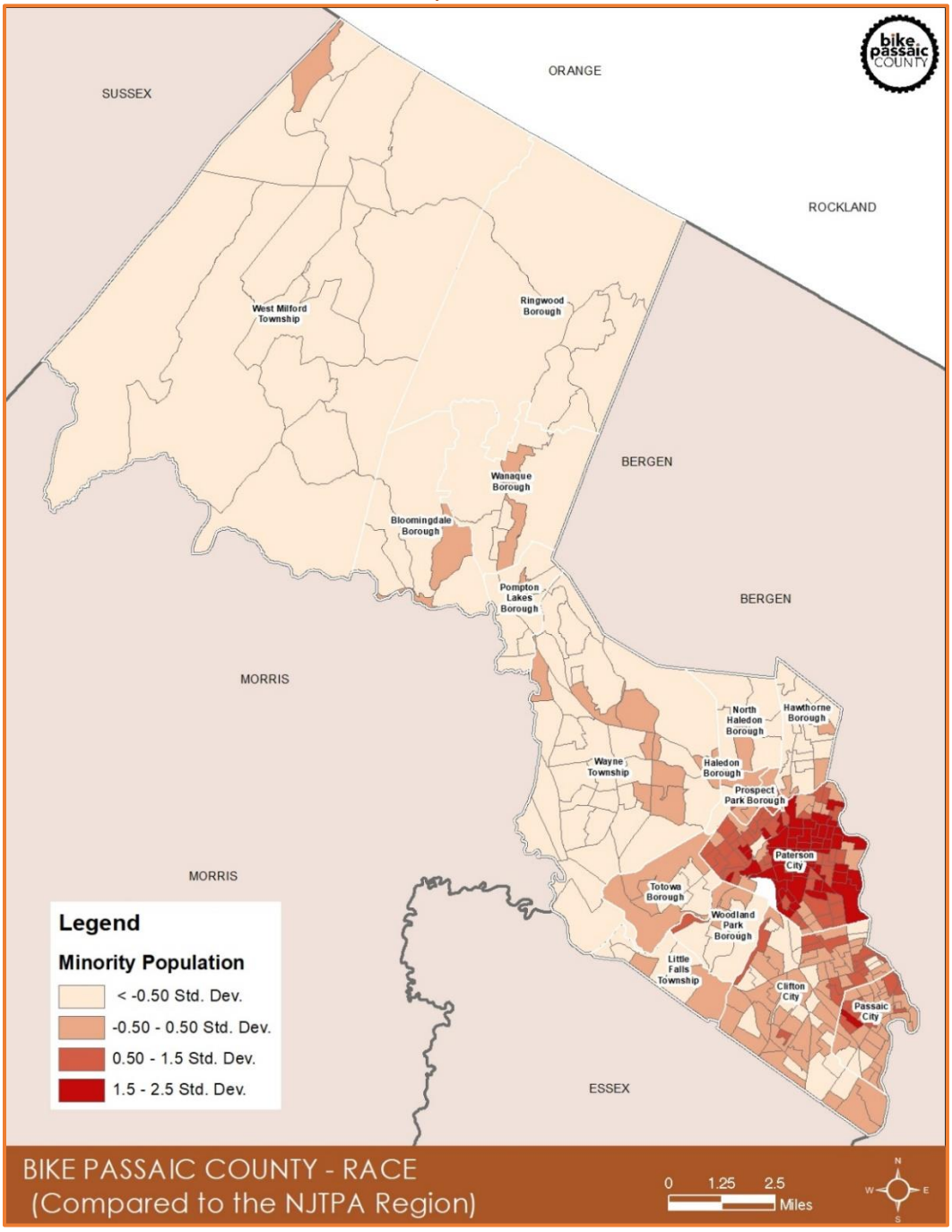
Table 2: DATA BY MUNICIPALITY

	UNIVERSE: HOUSEHOLDS (within each municipality)			**UNIVERSE:** TOTAL POPULATION (within each municipality)				**UNIVERSE:** CIVILIAN POPULATION OVER 18 YEARS (within each municipality)
Environment Justice Demographic Indicator	Households with Income below Poverty Level	Limited English Proficiency	Zero Vehicle HH	Minority	Foreign Born	Minors (under 17 years)	Seniors (65+ years)	Disabled population
NJTPA Region	**9.9%**	**8%**	**12.3%**	**32.9%**	**25.8%**	**22.2%**	**15.7%**	**11.5%**
Passaic County	15.1%	13.0%	16.6%	36.0%	30.6%	23.9%	14.3%	10.5%
Bloomingdale Borough	5.1%	3.7%	6.2%	10.1%	12.4%	21.2%	13.0%	10.3%
Clifton City	9.4%	10.7%	10.5%	32.0%	36.9%	20.0%	16.3%	11.3%
Haledon Borough	10.3%	11.6%	9.8%	30.0%	33.4%	21.5%	13.0%	9.2%
Hawthorne Borough	6.2%	1.8%	7.1%	13.7%	15.6%	19.7%	16.6%	9.8%
Little Falls Township	5.6%	3.6%	7.6%	11.6%	15.4%	16.6%	17.1%	10.5%
North Haledon Borough	3.4%	3.4%	9.1%	5.8%	13.6%	16.8%	23.3%	12.6%
Passaic City	30.2%	26.6%	33.3%	35.4%	38.8%	32.2%	8.9%	10.3%
Paterson City	27.8%	23.3%	31.3%	69.7%	40.6%	27.3%	11.3%	9.9%
Pompton Lakes Borough	6.7%	4.8%	7.6%	14.1%	20.9%	18.7%	13.6%	13.1%
Prospect Park Borough	14.9%	5.1%	14.8%	37.9%	34.4%	28.7%	9.8%	10.1%
Ringwood Borough	1.5%	0.6%	1.1%	9.3%	11.1%	22.2%	17.0%	9.7%
Totowa Borough	3.2%	5.0%	3.2%	16.5%	22.0%	16.7%	19.7%	13.3%
Wanaque Borough	4.6%	2.4%	5.0%	10.9%	12.7%	19.1%	21.6%	12.7%
Wayne Township	3.7%	3.5%	3.8%	13.0%	20.0%	20.9%	19.2%	10.0%
West Milford Township	4.6%	1.3%	3.2%	7.7%	9.7%	21.4%	15.1%	10.1%
Woodland Park Borough	8.4%	7.5%	3.2%	22.4%	27.3%	22.1%	20.1%	8.8%

I. RACE

Per the ACS 2015-2019, 36 percent of the County's population identify as a minority population. The "White" field was subtracted from the total population to determine the population that qualifies as a racial minority. Of the 16 municipalities; only Paterson City (69.7 percent) and Prospect Park Borough (37.9 percent), have higher concentrations of minorities when compared to the County as a whole. Passaic City (35.4 percent) and Clifton City (32 percent) also have a high concentration of minorities. Map 1 shows the distribution of minorities by census block groups in Passaic County when compared to the NJTPA regional average (32.9 percent).

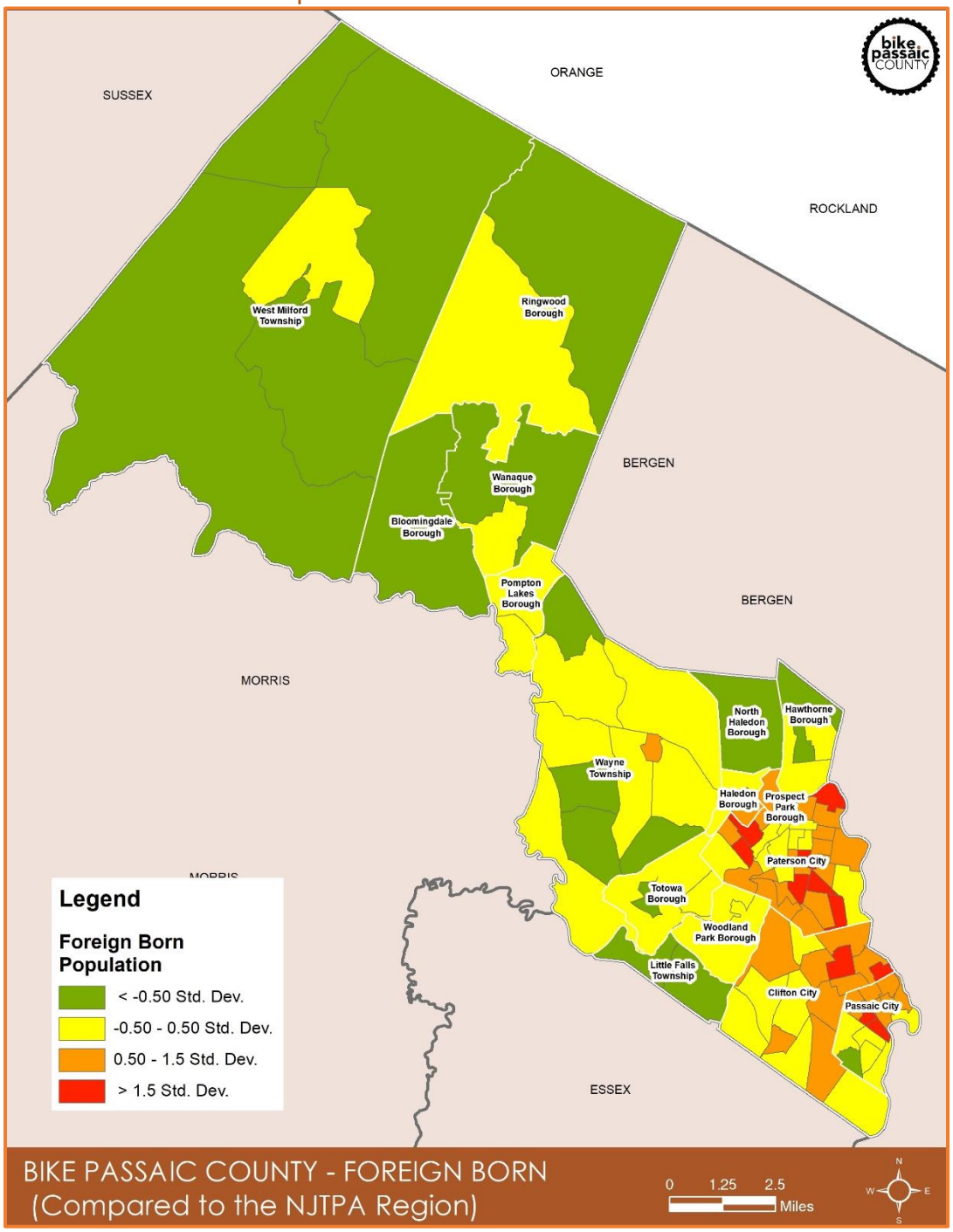
Map 1: RACE



II. FOREIGN-BORN POPULATION

Per the 2015-2019 ACS data, just over 30 percent of the County's population is foreign-born compared to over 25 percent for the NJTPA region. Paterson City (41 percent) and Haledon Borough (40 percent) have the highest percentage of foreign-born population. Passaic City, Clifton City and Prospect Park Borough and Woodland Park Borough have higher concentrations of foreign-born population than the NJTPA regional average of 25 percent. Map 2 shows the distribution of foreign-born population by census tracts in Passaic County when compared to NJTPA.

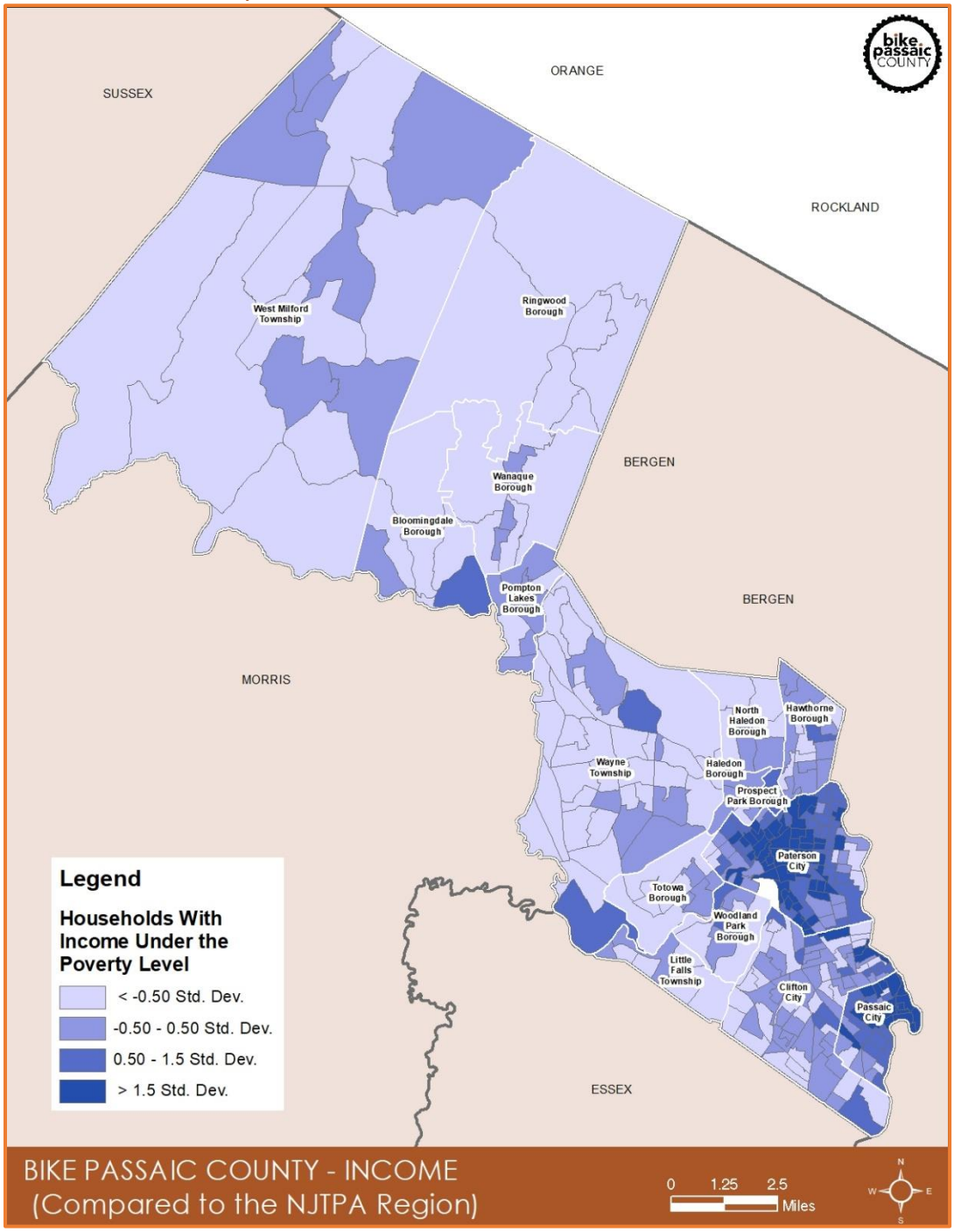
Map 2: FOREIGN-BORN POPULATION



III. INCOME

The ACS data indicates that just over 15 percent of the County's population have incomes below the poverty level. Of the 16 municipalities, Passaic City (30.2 percent) and Paterson City (27.8 percent) both have a higher percentage of households with incomes below the poverty level than the County. Map 3 shows the distribution of households with incomes below the poverty level by census block groups in Passaic County when compared to the NJTPA regional average (9.9 percent).

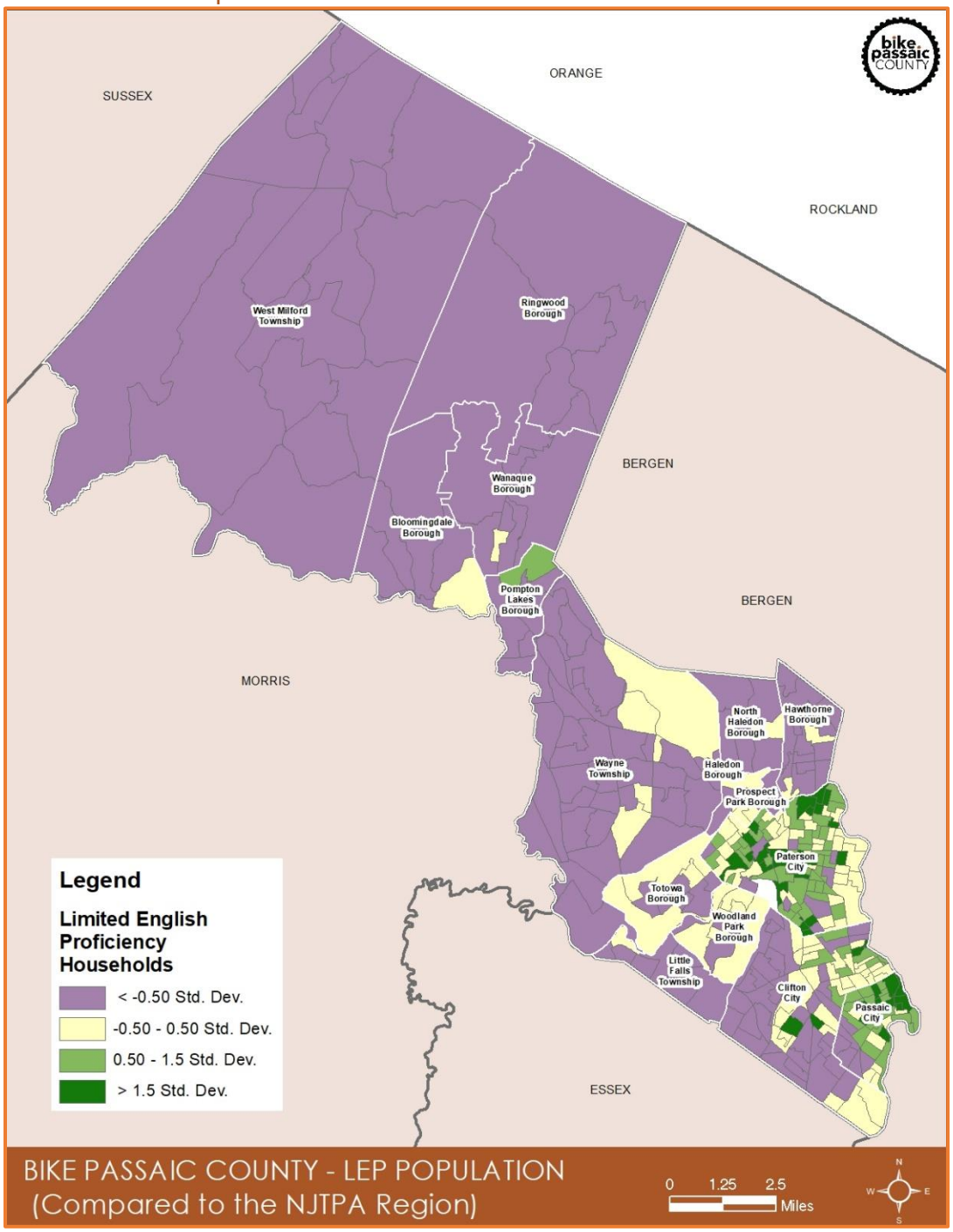
Map 3: HOUSEHOLDS BELOW POVERTY LEVEL



IV. LIMITED ENGLISH PROFICIENCY HOUSEHOLDS

With regards to English speaking status, the 2015-2019 ACS data indicates that 13 percent of the County's households are "Limited English speaking households". These households speak languages other than English as per ACS Table C16002. Of the 16 municipalities, Passaic City (26.6 percent) and Paterson City (23.3 percent) both have a higher percentage of "Limited English speaking households" than the County. Map 4 shows the distribution of limited English speaking households by census block groups in Passaic County when compared to the NJTPA regional average (8 percent).

Map 4: LIMITED ENGLISH SPEAKING HOUSEHOLDS



With regards to specific languages, ACS data for person 5 years and above, indicates that more than 20 percent of the County's population "speaks English less than very well". This amounts to almost 100,000 persons above 5 years in the County that primarily speak languages other English. Of those that primarily speak other languages and are LEP, 77 percent speak Spanish, nine percent speak "other Indo-European languages", four percent speak "Russian, Polish or other Slavic languages" and 3.6 percent speak Arabic.

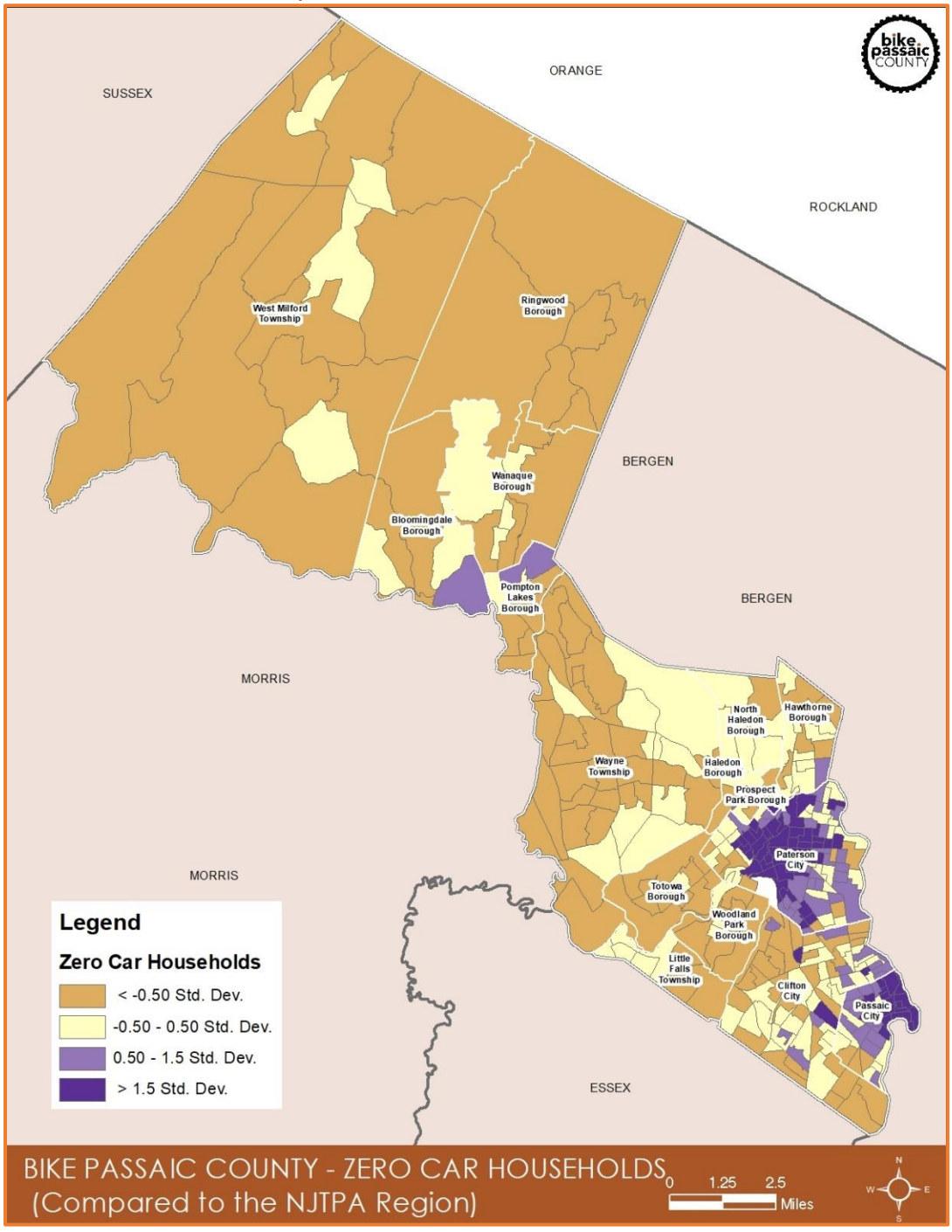
Table 3: PASSAIC COUNTY LANGUAGES

Geographic Area Name	Total Population (5 years and above)	Total LEP (5 years and above)	Spanish	French, Haitian, or Cajun	German or other West Germanic languages	Russian, Polish, or other Slavic languages	Other Indo-European languages	Korean	Chinese (incl. Mandarin, Cantonese)	Vietnamese	Tagalog (incl. Filipino)	Other Asian and Pacific Island languages	Arabic	Other and unspecified languages
Bloomingdale borough	7621	5.72%	2.7%	0.00 %	0.00 %	0.67 %	0.70 %	0.00 %	**0.50 %**	**0.59 %**	0.00 %	**0.56 %**	0.00 %	0.00 %
Clifton city	80492	**21.65 %**	13.3 %	**0.15 %**	0.04 %	**2.12 %**	**2.57 %**	**0.38 %**	**0.30 %**	0.02 %	**0.47 %**	**0.89 %**	**1.27 %**	0.09 %
Haledon borough	7903	18.69 %	11.6 %	**0.38 %**	0.00 %	**1.68 %**	1.92 %	0.00 %	0.00 %	0.00 %	0.00 %	1.16 %	**1.61 %**	**0.34 %**
Hawthorne borough	17637	6.51%	4.2%	0.00 %	0.00 %	0.20 %	1.29 %	0.09 %	0.00 %	0.00 %	**0.15 %**	0.01 %	0.57 %	0.00 %
Little Falls township	13618	6.67%	2.0%	**0.15 %**	**0.32 %**	0.51 %	1.68 %	0.16 %	0.00 %	**0.05 %**	0.00 %	**0.68 %**	**1.06 %**	0.00 %
North Haledon borough	8080	4.63%	0.6%	0.00 %	0.00 %	0.16 %	**2.43 %**	0.00 %	0.00 %	0.00 %	0.00 %	0.17 %	**1.05 %**	**0.19 %**
Passaic city	63390	**34.82 %**	**32.9 %**	0.00 %	0.00 %	0.81 %	0.84 %	0.00 %	0.00 %	0.00 %	0.08 %	0.02 %	0.03 %	0.13 %
Paterson city	134212	**32.58 %**	**28.0 %**	**0.18 %**	0.00 %	0.20 %	**2.41 %**	0.00 %	0.07 %	0.01 %	0.00 %	**0.47 %**	**0.94 %**	**0.26 %**
Pompton Lakes borough	10445	10.40 %	7.4%	**0.11 %**	0.00 %	0.23 %	1.60 %	**0.27 %**	0.00 %	**0.17 %**	**0.34 %**	0.14 %	0.12 %	0.00 %
Prospect Park borough	5321	16.90 %	12.3 %	**0.28 %**	0.00 %	0.13 %	1.48 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	**2.48 %**	**0.19 %**
Ringwood borough	11500	4.30%	1.4%	0.00 %	0.00 %	**1.25 %**	1.52 %	0.00 %	0.00 %	0.00 %	0.10 %	0.00 %	0.01 %	0.06 %
Totowa borough	10459	9.80%	4.0%	0.00 %	**0.26 %**	**0.78 %**	**2.43 %**	**0.95 %**	**0.46 %**	0.00 %	0.11 %	0.00 %	**0.85 %**	0.00 %
Wanaque borough	11073	3.80%	2.2%	0.00 %	0.00 %	0.13 %	0.84 %	0.00 %	0.06 %	0.00 %	**0.56 %**	0.00 %	0.00 %	0.00 %
Wayne township	50897	7.03%	2.4%	0.02 %	0.02 %	**1.05 %**	1.45 %	**0.63 %**	**0.48 %**	0.00 %	0.08 %	0.31 %	0.49 %	0.09 %
West Milford township	25032	3.41%	1.6%	0.00 %	0.04 %	0.63 %	0.55 %	0.00 %	**0.26 %**	0.00 %	0.00 %	0.12 %	0.10 %	0.14 %
Woodland Park borough	11734	14.90 %	4.8%	0.00 %	**0.54 %**	**1.08 %**	**5.47 %**	0.10 %	0.00 %	0.00 %	0.00 %	**0.92 %**	**2.01 %**	0.00 %
Passaic County	**469414**	**20.81 %**	**16.2 %**	**0.10 %**	**0.04 %**	**0.83 %**	**1.91 %**	**0.17 %**	**0.16 %**	**0.02 %**	**0.13 %**	**0.41 %**	**0.75 %**	**0.14 %**

V. HOUSEHOLDS WITH NO ACCESS TO VEHICLES

Per the 2015-2019 ACS data, 16.6 percent of the County's households have no access to a vehicle. Similar to the other indicators, of the 16 municipalities, Passaic City (33.3 percent) and Paterson City (31.3 percent) both have a higher percentage of zero vehicle households than the County. Map 5 shows the distribution of zero vehicle households by census block groups in Passaic County when compared to the NJTPA regional average (12.3 percent).

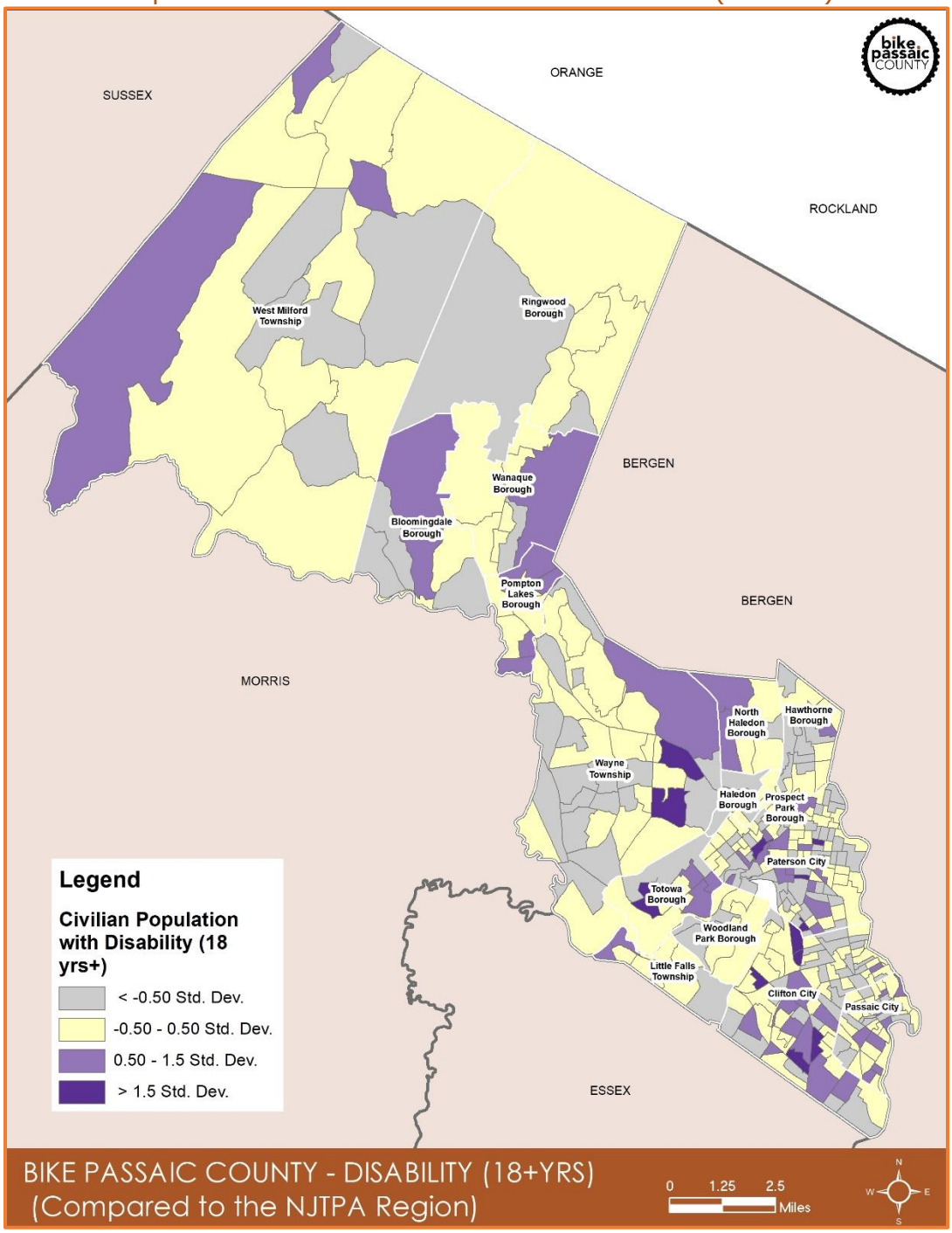
Map 5: ZERO VEHICLE HOUSEHOLDS



VI. POPULATION WITH A DISABILITY (18 YEARS+)

More than 10 percent of the County's population has a disability as per the data provided by the 2015-2019 ACS. Of the 16 municipalities, 10 municipalities have a higher percentage of population with a disability than the County. Totowa Borough (13.3 percent); Pompton lakes Borough (13.1 percent); and Wanaque Borough (12.7 percent) have the highest percentage of population with a disability. Map 6 shows the distribution of persons with a disability by census block groups in Passaic County when compared to the NJTPA regional average (11.5 percent).

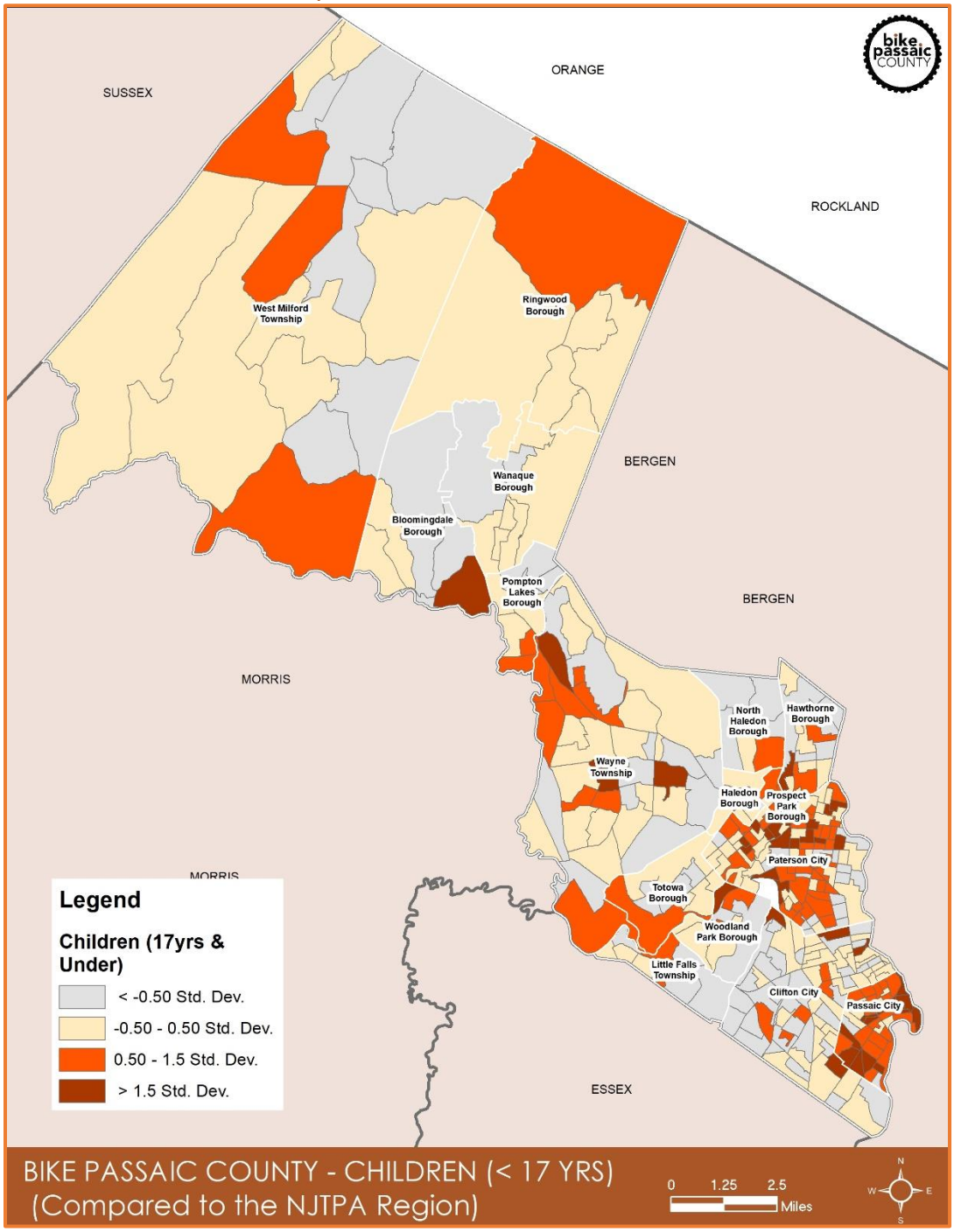
Map 6: CIVILIAN POPULATION WITH A DISABILITY (18YRS +)



VII. MINOR POPULATION (17 YEARS AND UNDER)

According to the 2015-2019 ACS data, almost 24 percent of the County's population consists of minors, 17 years and under. Passaic City has the highest percentage of minors (32.2 percent), followed by Prospect Park Borough (28.7 percent) and Paterson City (27.3 percent). Map 7 shows the distribution of minors under 17 years by census block groups in Passaic County when compared to the NJTPA regional average (22 percent).

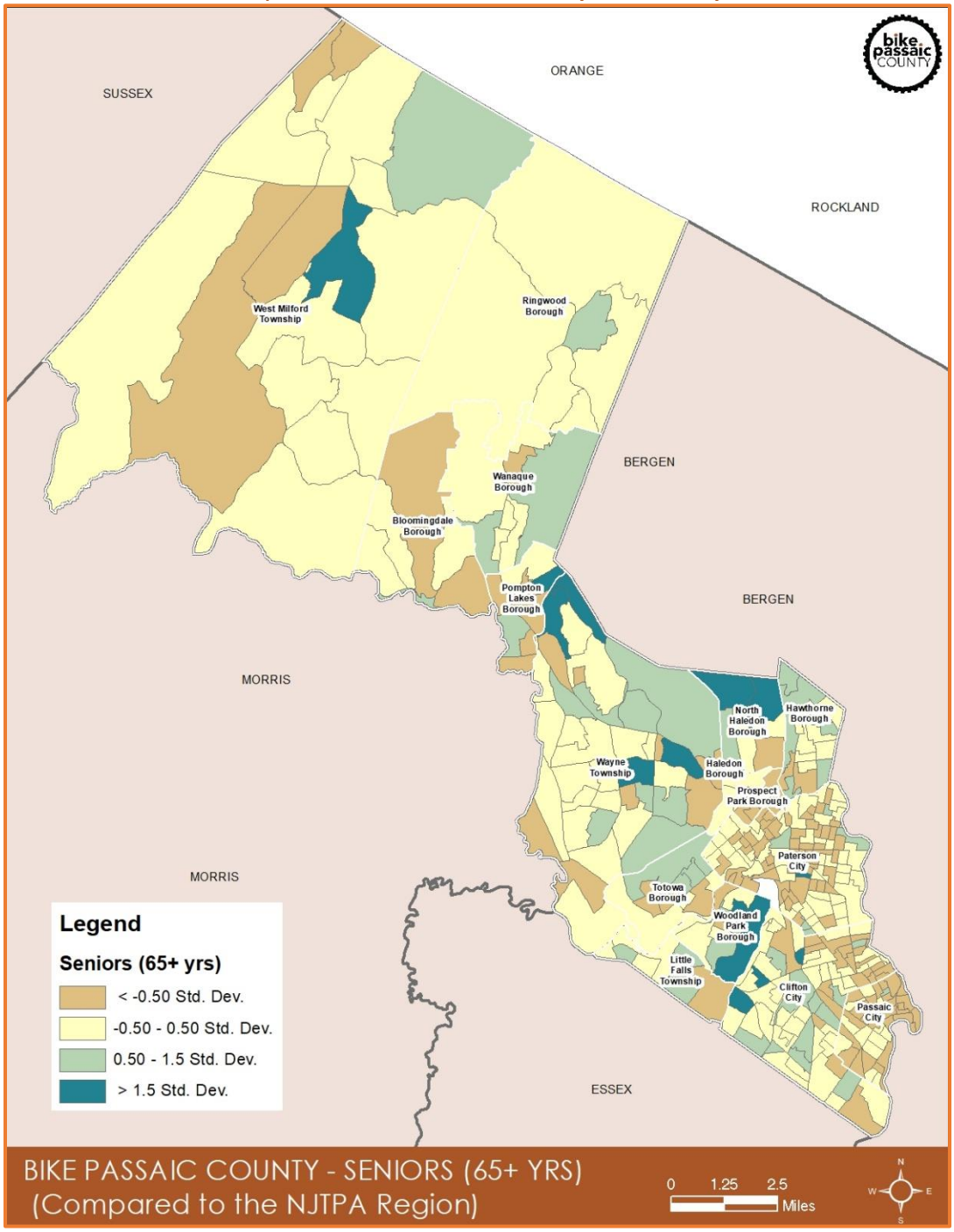
Map 7: MINORS UNDER 17 YEARS



VIII. SENIOR POPULATION (65+ YEARS)

The ACS data shows that approximately 14 percent of the County's population is age 65 or older. North Haledon Borough has the highest percentage of seniors (23.3 percent), followed by Wanaque Borough (21.6 percent) and Woodland Park Borough (20.1 percent). Map 8 shows the distribution of seniors 65 years and over by census block groups in Passaic County when compared to the NJTPA regional average (15.7 percent).

Map 8: SENIOR POPULATION (65+ YEARS)



Appendix B: Composite EJ Score

A final map was created with a composite score of all seven categories. An Environmental Justice score (EJ Score) was determined by standard deviations relative to an indicator's NJTPA regional average. The data for each indicator was assigned a score based on the following:

- Well-below average: <= -1.5 Std.Dev. (score of 0)
- Below average: -1.5 - -0.5 Std.Dev. (score of 1)
- Average: -0.5 - 0.5 Std. Dev. (score of 2)
- Above average: 0.5 - 1.5 Std. Dev. (score of 3)
- Well above average: > 1.5 Std. Dev. (score of 4)

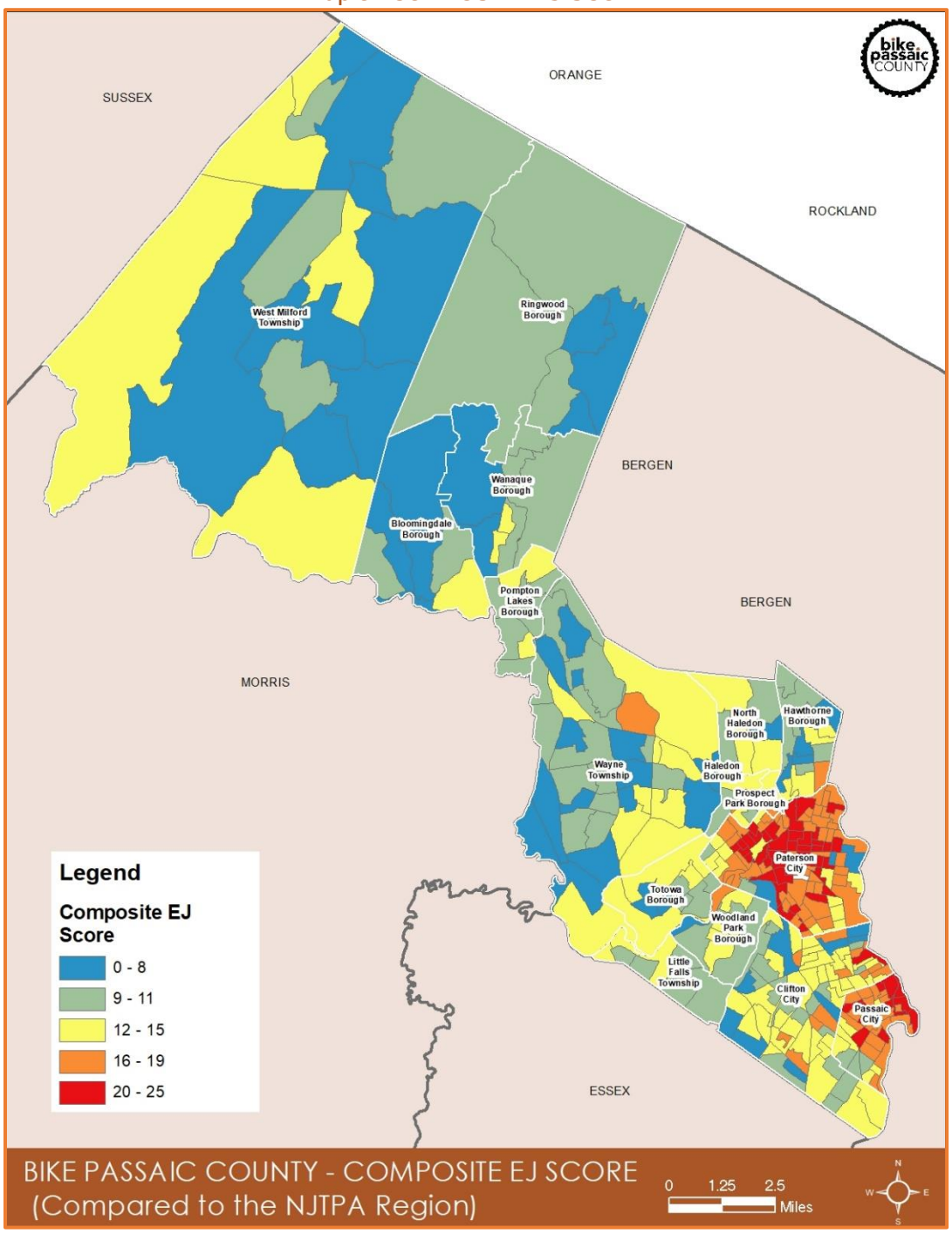
The Census block groups with estimates of zero were manually assigned a score of 0 instead of 1. For some of the indicators analyzed, the 5-year estimates at the block group level were found in different sets of tables and have a substantial margin of error.

A composite EJ score was developed for each of the Census block groups in the County. All of the individual EJ scores for each of the seven indicators was combined to develop the composite EJ Score. Map 8 shows the composite EJ score for all the census block groups in Passaic County. Paterson City has the highest composite EJ score followed by Passaic City and Clifton City (see Table 3 below).

Table 3: Composite EJ Score by Municipality

MUNICIPALITIES	COMPOSITE EJSCORE
Paterson City	2056
Passaic City	931
Clifton City	644
Wayne Township	352
Woodland Park Borough	189
Little Falls Township	158
Totowa Borough	135
West Milford Township	121
Pompton Lakes Borough	91
Hawthorne Borough	87
Bloomingdale Borough	79
Wanaque Borough	71
Prospect Park Borough	70
North Haledon Borough	64
Haledon Borough	62
Ringwood Borough	35

Map 9: COMPOSITE EJ SCORE



Appendix C: Indicators of Potential Disadvantage by Census Block Group

(See table beginning on the next page).

BIKE PASSAIC COUNTY

ENVIRONMENT JUSTICE DATA BY INDICATOR[1] BY CENSUS BLOCK GROUP[2]

Draft 12.1.2021

No.	Municipality Name	Census Tract (CT) No.	Census Block Group (CBG) No.	Percent Minority Population	Percent Low Income HH	Percent Limited English Speaking HH	Percent Zero Car HH	Percent Persons with a Disability	Percent Children 17 yrs & under	Percent Seniors (65+ yrs)
1	Bloomingdale Borough	CT 1165	CBG 1	20.0%	0.0%	0.0%	5.6%	14.0%	15.3%	18.0%
2	Bloomingdale Borough	CT 1165	CBG 3	11.0%	0.0%	4.0%	0.0%	13.0%	7.1%	26.0%
3	Bloomingdale Borough	CT 1165	CBG 4	1.0%	4.8%	0.0%	8.0%	6.0%	26.1%	18.0%
4	Bloomingdale Borough	CT 1165	CBG 5	0.0%	0.0%	4.0%	0.0%	7.0%	27.5%	14.0%
5	Bloomingdale Borough	CT 1165	CBG 6	12.0%	1.8%	0.0%	0.0%	16.0%	14.2%	10.0%
6	Bloomingdale Borough	CT 2167.02	CBG 1	10.0%	0.0%	2.0%	3.4%	5.0%	29.9%	21.0%
7	Bloomingdale Borough	CT 2366.02	CBG 1	8.0%	0.0%	0.0%	9.7%	9.0%	10.9%	21.0%
8	Bloomingdale Borough	CT 2568.04	CBG 3	0.0%	4.5%	0.0%	0.0%	11.0%	18.8%	14.0%
9	Bloomingdale Borough	CT 2568.05	CBG 3	12.0%	3.7%	2.0%	4.0%	8.0%	36.8%	12.0%
10	Clifton City	CT 1242	CBG 2	9.0%	0.0%	5.0%	19.7%	10.0%	18.8%	12.0%
11	Clifton City	CT 1242	CBG 4	13.0%	8.4%	4.0%	0.0%	13.0%	18.2%	26.0%
12	Clifton City	CT 1242	CBG 5	31.0%	7.6%	0.0%	0.0%	14.0%	16.4%	16.0%
13	Clifton City	CT 1243.11	CBG 1	3.0%	0.0%	0.0%	0.0%	23.0%	22.9%	38.0%
14	Clifton City	CT 1243.11	CBG 2	34.0%	5.5%	6.0%	2.6%	6.0%	17.9%	20.0%
15	Clifton City	CT 1243.11	CBG 3	35.0%	10.5%	5.0%	9.4%	11.0%	13.0%	20.0%
16	Clifton City	CT 1243.11	CBG 4	15.0%	2.9%	5.0%	6.1%	9.0%	35.7%	19.0%
17	Clifton City	CT 1243.12	CBG 2	15.0%	8.5%	3.0%	10.0%	15.0%	20.4%	19.0%
18	Clifton City	CT 1243.12	CBG 4	11.0%	0.0%	2.0%	0.0%	0.0%	19.4%	28.0%
19	Clifton City	CT 1243.21	CBG 1	48.0%	6.4%	11.0%	14.1%	21.0%	12.5%	31.0%
20	Clifton City	CT 1243.21	CBG 2	6.0%	0.0%	9.0%	0.0%	17.0%	7.7%	32.0%
21	Clifton City	CT 1243.21	CBG 3	8.0%	0.0%	6.0%	0.0%	2.0%	41.9%	14.0%
22	Clifton City	CT 1243.21	CBG 4	19.0%	4.9%	36.0%	16.0%	15.0%	13.3%	15.0%
23	Clifton City	CT 1243.21	CBG 5	16.0%	11.4%	11.0%	4.9%	10.0%	29.7%	17.0%
24	Clifton City	CT 1243.22	CBG 1	29.0%	6.3%	5.0%	5.1%	16.0%	20.0%	26.0%
25	Clifton City	CT 1243.22	CBG 2	21.0%	1.8%	2.0%	20.7%	26.0%	24.7%	30.0%
26	Clifton City	CT 1243.22	CBG 3	13.0%	0.0%	0.0%	0.0%	11.0%	27.9%	14.0%
27	Clifton City	CT 1243.22	CBG 4	7.0%	2.7%	0.0%	0.0%	7.0%	19.0%	15.0%
28	Clifton City	CT 1243.23	CBG 1	22.0%	11.1%	10.0%	10.5%	10.0%	14.9%	16.0%
29	Clifton City	CT 1243.23	CBG 2	40.0%	12.4%	19.0%	25.8%	12.0%	34.4%	13.0%
30	Clifton City	CT 1243.23	CBG 3	23.0%	4.4%	3.0%	14.9%	16.0%	17.2%	31.0%
31	Clifton City	CT 1244.01	CBG 1	11.0%	17.8%	36.0%	32.6%	6.0%	32.2%	4.0%
32	Clifton City	CT 1244.01	CBG 4	33.0%	9.2%	0.0%	0.0%	30.0%	25.4%	19.0%
33	Clifton City	CT 1244.01	CBG 7	6.0%	13.2%	5.0%	6.8%	17.0%	29.0%	17.0%
34	Clifton City	CT 1244.02	CBG 3	46.0%	16.7%	15.0%	2.4%	7.0%	30.7%	7.0%
35	Clifton City	CT 1244.02	CBG 4	21.0%	5.7%	7.0%	0.0%	6.0%	15.8%	11.0%
36	Clifton City	CT 1245	CBG 1	27.0%	0.0%	0.0%	10.2%	10.0%	33.3%	10.0%
37	Clifton City	CT 1245	CBG 4	0.0%	0.0%	0.0%	10.6%	8.0%	27.1%	24.0%
38	Clifton City	CT 1246.01	CBG 3	49.0%	8.1%	16.0%	5.8%	5.0%	30.6%	9.0%
39	Clifton City	CT 1246.01	CBG 4	3.0%	26.9%	11.0%	64.4%	50.0%	6.8%	74.0%
40	Clifton City	CT 1246.02	CBG 1	20.0%	10.3%	15.0%	2.2%	9.0%	26.0%	12.0%
41	Clifton City	CT 1246.02	CBG 2	26.0%	11.7%	21.0%	13.3%	7.0%	21.7%	15.0%

1: Foreign-Born data is not included as it is only available at the Census Tract level.

2: Green shaded cells highlight census block groups with above average percentage for each indicator.

BIKE PASSAIC COUNTY

ENVIRONMENT JUSTICE DATA BY INDICATOR[1] BY CENSUS BLOCK GROUP[2]

Draft 12.1.2021

No.	Municipality Name	Census Tract (CT) No.	Census Block Group (CBG) No.	Percent Minority Population	Percent Low Income HH	Percent Limited English Speaking HH	Percent Zero Car HH	Percent Persons with a Disability	Percent Children 17 yrs & under	Percent Seniors (65+ yrs)
42	Clifton City	CT 1246.02	CBG 3	20.0%	2.1%	2.0%	7.3%	6.0%	43.9%	14.0%
43	Clifton City	CT 1246.02	CBG 4	15.0%	5.4%	13.0%	3.3%	10.0%	25.2%	18.0%
44	Clifton City	CT 1247	CBG 3	5.0%	3.6%	3.0%	0.0%	1.0%	24.0%	8.0%
45	Clifton City	CT 1247	CBG 4	24.0%	0.0%	10.0%	0.0%	8.0%	12.1%	23.0%
46	Clifton City	CT 1247	CBG 5	16.0%	43.9%	39.0%	11.6%	10.0%	46.5%	5.0%
47	Clifton City	CT 1247	CBG 6	70.0%	0.0%	1.0%	0.0%	3.0%	18.0%	4.0%
48	Clifton City	CT 1248	CBG 1	13.0%	7.9%	11.0%	3.0%	10.0%	28.1%	18.0%
49	Clifton City	CT 1248	CBG 2	20.0%	2.1%	11.0%	2.1%	10.0%	32.1%	11.0%
50	Clifton City	CT 1248	CBG 3	21.0%	13.7%	26.0%	12.2%	13.0%	26.1%	10.0%
51	Clifton City	CT 1248	CBG 4	27.0%	6.5%	15.0%	5.9%	7.0%	28.1%	10.0%
52	Clifton City	CT 1248	CBG 5	17.0%	26.9%	21.0%	24.7%	2.0%	11.0%	19.0%
53	Clifton City	CT 1249	CBG 2	19.0%	8.1%	10.0%	24.2%	13.0%	19.1%	11.0%
54	Clifton City	CT 1250	CBG 1	42.0%	44.8%	27.0%	29.3%	12.0%	28.7%	14.0%
55	Clifton City	CT 1250	CBG 2	60.0%	8.1%	9.0%	6.2%	8.0%	27.0%	10.0%
56	Clifton City	CT 1250	CBG 3	8.0%	1.8%	31.0%	8.0%	13.0%	17.6%	16.0%
57	Clifton City	CT 1250	CBG 4	50.0%	0.0%	17.0%	17.1%	7.0%	13.2%	12.0%
58	Clifton City	CT 1250	CBG 5	22.0%	19.7%	12.0%	60.1%	13.0%	25.9%	7.0%
59	Clifton City	CT 1251	CBG 1	12.0%	25.8%	17.0%	25.5%	18.0%	28.9%	10.0%
60	Haledon Borough	CT 1337.01	CBG 1	2.0%	19.8%	14.0%	12.2%	11.0%	11.9%	21.0%
61	Haledon Borough	CT 1337.01	CBG 4	53.0%	0.0%	15.0%	23.7%	10.0%	35.7%	14.0%
62	Haledon Borough	CT 1635	CBG 4	18.0%	9.3%	4.0%	13.2%	8.0%	27.4%	21.0%
63	Haledon Borough	CT 1635	CBG 5	7.0%	0.0%	5.0%	16.8%	19.0%	13.0%	30.0%
64	Haledon Borough	CT 2460.01	CBG 3	58.0%	0.0%	0.0%	0.0%	5.0%	1.8%	4.0%
65	Haledon Borough	CT 2461.01	CBG 4	5.0%	0.0%	3.0%	0.0%	7.0%	16.6%	11.0%
66	Hawthorne Borough	CT 1432	CBG 3	14.0%	2.1%	3.0%	0.0%	11.0%	14.4%	13.0%
67	Hawthorne Borough	CT 1432	CBG 4	5.0%	0.0%	4.0%	6.7%	7.0%	24.5%	17.0%
68	Hawthorne Borough	CT 1432	CBG 5	3.0%	0.0%	0.0%	0.0%	3.0%	28.3%	16.0%
69	Hawthorne Borough	CT 1432	CBG 6	1.0%	0.0%	0.0%	4.6%	5.0%	16.5%	11.0%
70	Hawthorne Borough	CT 1433	CBG 1	12.0%	0.0%	0.0%	9.4%	12.0%	17.1%	17.0%
71	Hawthorne Borough	CT 1433	CBG 2	11.0%	19.8%	8.0%	11.4%	8.0%	35.4%	17.0%
72	Hawthorne Borough	CT 1433	CBG 3	19.0%	6.8%	0.0%	13.6%	19.0%	18.1%	24.0%
73	Hawthorne Borough	CT 1433	CBG 4	24.0%	4.9%	0.0%	2.5%	11.0%	19.8%	13.0%
74	Hawthorne Borough	CT 1434	CBG 4	0.0%	9.6%	3.0%	9.6%	2.0%	23.8%	11.0%
75	Little Falls Township	CT 1243.11	CBG 5	8.0%	0.0%	2.0%	0.0%	14.0%	13.0%	20.0%
76	Little Falls Township	CT 1243.12	CBG 1	12.0%	4.0%	2.0%	3.4%	9.0%	16.5%	34.0%
77	Little Falls Township	CT 1243.12	CBG 3	25.0%	0.0%	0.0%	5.2%	7.0%	7.4%	13.0%
78	Little Falls Township	CT 1540.01	CBG 1	54.0%	3.5%	2.0%	3.0%	7.0%	19.6%	10.0%
79	Little Falls Township	CT 1540.01	CBG 2	13.0%	4.1%	4.0%	2.8%	9.0%	13.9%	28.0%
80	Little Falls Township	CT 1540.02	CBG 1	0.0%	9.8%	6.0%	5.6%	19.0%	23.9%	13.0%
81	Little Falls Township	CT 1540.02	CBG 2	6.0%	13.0%	0.0%	11.0%	10.0%	37.4%	17.0%
82	Little Falls Township	CT 1540.02	CBG 3	10.0%	8.8%	11.0%	15.2%	17.0%	2.5%	21.0%

1: Foreign-Born data is not included as it is only available at the Census Tract level.

2: Green shaded cells highlight census block groups with above average percentage for each indicator.

BIKE PASSAIC COUNTY

ENVIRONMENT JUSTICE DATA BY INDICATOR[1] BY CENSUS BLOCK GROUP[2]

Draft 12.1.2021

No.	Municipality Name	Census Tract (CT) No.	Census Block Group (CBG) No.	Percent Minority Population	Percent Low Income HH	Percent Limited English Speaking HH	Percent Zero Car HH	Percent Persons with a Disability	Percent Children 17 yrs & under	Percent Seniors (65+ yrs)
83	Little Falls Township	CT 1540.02	CBG 4	29.0%	0.0%	0.0%	11.5%	8.0%	28.6%	13.0%
84	Little Falls Township	CT 1540.02	CBG 5	0.0%	0.0%	4.0%	6.3%	10.0%	21.4%	29.0%
85	Little Falls Township	CT 2238.02	CBG 2	17.0%	0.0%	18.0%	0.0%	13.0%	35.0%	20.0%
86	Little Falls Township	CT 2463	CBG 3	6.0%	18.0%	5.0%	3.8%	10.0%	38.0%	13.0%
87	Little Falls Township	CT 2641.02	CBG 1	9.0%	3.6%	9.0%	0.0%	11.0%	12.4%	52.0%
88	Little Falls Township	CT 2641.02	CBG 2	14.0%	0.0%	0.0%	0.0%	7.0%	24.9%	20.0%
89	Little Falls Township	CT 2641.02	CBG 5	18.0%	4.2%	10.0%	1.8%	7.0%	25.3%	19.0%
90	North Haledon Borough	CT 1432	CBG 1	3.0%	5.1%	0.0%	5.1%	8.0%	24.1%	23.0%
91	North Haledon Borough	CT 1432	CBG 2	4.0%	6.4%	0.0%	0.0%	13.0%	16.4%	30.0%
92	North Haledon Borough	CT 1635	CBG 1	2.0%	2.1%	0.0%	2.1%	15.0%	16.9%	40.0%
93	North Haledon Borough	CT 1635	CBG 2	0.0%	0.0%	10.0%	7.2%	4.0%	12.6%	17.0%
94	North Haledon Borough	CT 1635	CBG 6	2.0%	0.0%	4.0%	11.4%	20.0%	15.0%	36.0%
95	North Haledon Borough	CT 2460.01	CBG 2	23.0%	0.8%	7.0%	7.5%	15.0%	21.6%	23.0%
96	Passaic City	CT 1244.01	CBG 2	21.0%	0.0%	8.0%	4.4%	10.0%	24.0%	12.0%
97	Passaic City	CT 1244.01	CBG 3	4.0%	8.1%	5.0%	5.2%	9.0%	24.9%	16.0%
98	Passaic City	CT 1244.01	CBG 5	20.0%	11.7%	5.0%	5.6%	14.0%	12.3%	14.0%
99	Passaic City	CT 1244.01	CBG 6	0.0%	9.8%	0.0%	0.0%	9.0%	60.8%	9.0%
100	Passaic City	CT 1244.02	CBG 1	10.0%	0.0%	0.0%	0.0%	16.0%	30.2%	24.0%
101	Passaic City	CT 1244.02	CBG 2	38.0%	3.3%	20.0%	0.0%	10.0%	19.5%	20.0%
102	Passaic City	CT 1245	CBG 2	47.0%	3.5%	20.0%	7.5%	7.0%	10.3%	28.0%
103	Passaic City	CT 1245	CBG 3	20.0%	14.8%	0.0%	0.0%	5.0%	26.0%	0.0%
104	Passaic City	CT 1245	CBG 5	34.0%	18.4%	17.0%	36.1%	21.0%	16.5%	32.0%
105	Passaic City	CT 1249	CBG 1	51.0%	6.9%	13.0%	5.1%	8.0%	24.7%	19.0%
106	Passaic City	CT 1249	CBG 3	92.0%	11.0%	12.0%	14.0%	4.0%	31.8%	7.0%
107	Passaic City	CT 1250	CBG 6	23.0%	11.9%	17.0%	18.6%	14.0%	32.0%	8.0%
108	Passaic City	CT 1251	CBG 2	43.0%	22.8%	20.0%	28.4%	12.0%	24.7%	10.0%
109	Passaic City	CT 1251	CBG 3	30.0%	15.0%	19.0%	30.1%	7.0%	27.4%	3.0%
110	Passaic City	CT 1752	CBG 1	36.0%	34.1%	37.0%	44.3%	16.0%	50.0%	2.0%
111	Passaic City	CT 1752	CBG 2	55.0%	36.8%	38.0%	58.6%	13.0%	59.3%	7.0%
112	Passaic City	CT 1752	CBG 3	27.0%	49.6%	58.0%	66.2%	0.0%	49.2%	2.0%
113	Passaic City	CT 1753.01	CBG 1	21.0%	58.4%	47.0%	66.7%	7.0%	53.0%	1.0%
114	Passaic City	CT 1753.01	CBG 2	43.0%	25.7%	27.0%	45.3%	7.0%	32.9%	6.0%
115	Passaic City	CT 1753.02	CBG 1	57.0%	51.9%	40.0%	42.6%	13.0%	43.7%	5.0%
116	Passaic City	CT 1753.02	CBG 2	8.0%	0.0%	28.0%	41.3%	18.0%	24.3%	26.0%
117	Passaic City	CT 1753.02	CBG 3	51.0%	34.4%	29.0%	36.4%	9.0%	37.2%	4.0%
118	Passaic City	CT 1754.01	CBG 1	28.0%	18.5%	22.0%	41.3%	9.0%	37.7%	7.0%
119	Passaic City	CT 1754.01	CBG 2	40.0%	31.2%	49.0%	29.5%	13.0%	33.0%	9.0%
120	Passaic City	CT 1754.01	CBG 3	56.0%	33.9%	26.0%	31.5%	7.0%	38.4%	12.0%
121	Passaic City	CT 1754.02	CBG 1	20.0%	50.7%	29.0%	44.0%	3.0%	43.6%	4.0%
122	Passaic City	CT 1754.02	CBG 2	52.0%	46.2%	12.0%	52.0%	22.0%	32.1%	8.0%
123	Passaic City	CT 1754.02	CBG 3	21.0%	48.2%	54.0%	69.6%	19.0%	74.1%	12.0%

1: Foreign-Born data is not included as it is only available at the Census Tract level.

2: Green shaded cells highlight census block groups with above average percentage for each indicator.

BIKE PASSAIC COUNTY

ENVIRONMENT JUSTICE DATA BY INDICATOR[1] BY CENSUS BLOCK GROUP[2]

Draft 12.1.2021

No.	Municipality Name	Census Tract (CT) No.	Census Block Group (CBG) No.	Percent Minority Population	Percent Low Income HH	Percent Limited English Speaking HH	Percent Zero Car HH	Percent Persons with a Disability	Percent Children 17 yrs & under	Percent Seniors (65+ yrs)
124	Passaic City	CT 1754.02	CBG 4	26.0%	5.3%	39.0%	11.4%	7.0%	32.4%	11.0%
125	Passaic City	CT 1755	CBG 1	60.0%	29.7%	7.0%	25.7%	8.0%	32.8%	6.0%
126	Passaic City	CT 1755	CBG 2	66.0%	22.2%	33.0%	34.0%	9.0%	38.2%	6.0%
127	Passaic City	CT 1755	CBG 3	73.0%	26.3%	33.0%	28.4%	10.0%	30.8%	14.0%
128	Passaic City	CT 1756.01	CBG 1	2.0%	2.5%	0.0%	4.1%	7.0%	54.3%	10.0%
129	Passaic City	CT 1756.01	CBG 2	5.0%	6.3%	0.0%	0.0%	8.0%	52.9%	6.0%
130	Passaic City	CT 1756.02	CBG 1	116.0%	19.6%	20.0%	10.1%	1.0%	32.3%	10.0%
131	Passaic City	CT 1756.02	CBG 2	43.0%	13.7%	0.0%	32.2%	13.0%	17.4%	13.0%
132	Passaic City	CT 1756.02	CBG 3	49.0%	35.9%	3.0%	14.3%	8.0%	61.4%	10.0%
133	Passaic City	CT 1756.02	CBG 4	47.0%	12.7%	5.0%	17.4%	7.0%	41.9%	17.0%
134	Passaic City	CT 1757.01	CBG 1	28.0%	25.9%	30.0%	9.4%	10.0%	38.7%	5.0%
135	Passaic City	CT 1757.01	CBG 2	20.0%	0.0%	18.0%	12.2%	17.0%	54.6%	7.0%
136	Passaic City	CT 1757.01	CBG 3	36.0%	13.2%	8.0%	16.2%	18.0%	33.7%	11.0%
137	Passaic City	CT 1757.01	CBG 4	24.0%	19.2%	15.0%	33.7%	13.0%	17.9%	21.0%
138	Passaic City	CT 1757.03	CBG 1	43.0%	25.2%	31.0%	34.2%	16.0%	35.4%	19.0%
139	Passaic City	CT 1757.03	CBG 2	41.0%	17.0%	16.0%	20.7%	20.0%	39.1%	15.0%
140	Passaic City	CT 1757.04	CBG 1	5.0%	4.5%	0.0%	0.0%	15.0%	52.0%	8.0%
141	Passaic City	CT 1757.04	CBG 2	38.0%	25.1%	33.0%	22.9%	12.0%	33.9%	12.0%
142	Passaic City	CT 1758.01	CBG 1	27.0%	25.7%	43.0%	49.2%	12.0%	38.2%	12.0%
143	Passaic City	CT 1758.01	CBG 2	63.0%	47.0%	25.0%	29.2%	12.0%	32.9%	6.0%
144	Passaic City	CT 1758.01	CBG 3	18.0%	22.9%	25.0%	25.9%	13.0%	31.8%	18.0%
145	Passaic City	CT 1758.02	CBG 1	48.0%	50.3%	37.0%	44.4%	8.0%	52.1%	3.0%
146	Passaic City	CT 1758.02	CBG 2	28.0%	56.0%	36.0%	54.9%	8.0%	34.2%	5.0%
147	Passaic City	CT 1758.02	CBG 3	41.0%	26.7%	47.0%	31.7%	7.0%	48.0%	7.0%
148	Passaic City	CT 1758.02	CBG 4	45.0%	41.7%	36.0%	56.9%	4.0%	38.6%	6.0%
149	Passaic City	CT 1759	CBG 1	44.0%	36.3%	19.0%	39.7%	11.0%	73.0%	8.0%
150	Passaic City	CT 1759	CBG 2	47.0%	56.0%	21.0%	43.6%	9.0%	70.1%	6.0%
151	Passaic City	CT 1759	CBG 3	43.0%	70.5%	31.0%	37.8%	3.0%	43.6%	3.0%
152	Paterson City	CT 1242	CBG 3	11.0%	0.0%	0.0%	0.0%	9.0%	32.1%	9.0%
153	Paterson City	CT 1246.01	CBG 1	12.0%	9.9%	10.0%	0.0%	24.0%	22.5%	13.0%
154	Paterson City	CT 1246.01	CBG 2	69.0%	23.0%	11.0%	3.9%	9.0%	26.7%	9.0%
155	Paterson City	CT 1247	CBG 1	22.0%	27.1%	22.0%	21.9%	6.0%	50.5%	20.0%
156	Paterson City	CT 1247	CBG 2	7.0%	0.0%	0.0%	0.0%	9.0%	20.4%	18.0%
157	Paterson City	CT 1337.01	CBG 2	23.0%	15.3%	9.0%	0.0%	7.0%	32.5%	7.0%
158	Paterson City	CT 1337.01	CBG 3	22.0%	0.0%	8.0%	5.6%	14.0%	27.1%	9.0%
159	Paterson City	CT 1337.01	CBG 5	13.0%	37.9%	0.0%	15.2%	10.0%	20.8%	1.0%
160	Paterson City	CT 1434	CBG 1	26.0%	9.5%	3.0%	22.1%	11.0%	30.8%	23.0%
161	Paterson City	CT 1434	CBG 2	11.0%	11.0%	7.0%	13.2%	13.0%	23.5%	26.0%
162	Paterson City	CT 1434	CBG 5	13.0%	7.2%	2.0%	7.2%	15.0%	36.5%	4.0%
163	Paterson City	CT 1801	CBG 2	36.0%	11.1%	10.0%	9.5%	4.0%	26.3%	14.0%
164	Paterson City	CT 1801	CBG 4	59.0%	18.4%	15.0%	1.0%	11.0%	30.1%	9.0%

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2: Green shaded cells highlight census block groups with above average percentage for each indicator.

BIKE PASSAIC COUNTY

ENVIRONMENT JUSTICE DATA BY INDICATOR[1] BY CENSUS BLOCK GROUP[2]

Draft 12.1.2021

No.	Municipality Name	Census Tract (CT) No.	Census Block Group (CBG) No.	Percent Minority Population	Percent Low Income HH	Percent Limited English Speaking HH	Percent Zero Car HH	Percent Persons with a Disability	Percent Children 17 yrs & under	Percent Seniors (65+ yrs)
165	Paterson City	CT 1801	CBG 5	64.0%	0.0%	23.0%	17.7%	8.0%	26.3%	22.0%
166	Paterson City	CT 1802.01	CBG 2	41.0%	35.6%	12.0%	16.9%	6.0%	32.8%	1.0%
167	Paterson City	CT 1802.02	CBG 1	60.0%	46.0%	30.0%	67.1%	9.0%	62.3%	5.0%
168	Paterson City	CT 1802.02	CBG 2	108.0%	26.9%	26.0%	35.6%	15.0%	56.3%	6.0%
169	Paterson City	CT 1802.02	CBG 3	60.0%	26.9%	30.0%	12.8%	15.0%	21.4%	16.0%
170	Paterson City	CT 1802.02	CBG 4	61.0%	17.8%	33.0%	43.2%	8.0%	25.4%	13.0%
171	Paterson City	CT 1802.02	CBG 5	52.0%	43.9%	37.0%	39.2%	2.0%	43.5%	13.0%
172	Paterson City	CT 1803	CBG 1	33.0%	27.1%	15.0%	32.1%	12.0%	41.4%	13.0%
173	Paterson City	CT 1803	CBG 2	118.0%	33.3%	35.0%	41.1%	3.0%	40.6%	9.0%
174	Paterson City	CT 1803	CBG 3	22.0%	46.3%	34.0%	54.6%	9.0%	68.7%	14.0%
175	Paterson City	CT 1803	CBG 4	52.0%	50.6%	30.0%	35.9%	13.0%	21.8%	16.0%
176	Paterson City	CT 1806	CBG 1	77.0%	17.7%	23.0%	23.7%	7.0%	40.6%	10.0%
177	Paterson City	CT 1806	CBG 2	51.0%	25.1%	8.0%	33.6%	11.0%	42.8%	6.0%
178	Paterson City	CT 1806	CBG 3	50.0%	13.9%	25.0%	15.0%	6.0%	30.1%	4.0%
179	Paterson City	CT 1807	CBG 1	32.0%	26.3%	12.0%	23.9%	2.0%	45.3%	4.0%
180	Paterson City	CT 1807	CBG 2	43.0%	32.1%	11.0%	40.1%	8.0%	27.6%	11.0%
181	Paterson City	CT 1807	CBG 3	28.0%	20.3%	10.0%	21.0%	13.0%	38.6%	16.0%
182	Paterson City	CT 1808	CBG 1	68.0%	25.8%	15.0%	23.5%	8.0%	62.7%	7.0%
183	Paterson City	CT 1808	CBG 2	106.0%	39.9%	20.0%	48.9%	15.0%	35.7%	19.0%
184	Paterson City	CT 1809	CBG 1	16.0%	33.0%	44.0%	53.9%	19.0%	28.8%	17.0%
185	Paterson City	CT 1809	CBG 2	21.0%	55.5%	34.0%	14.3%	12.0%	43.5%	6.0%
186	Paterson City	CT 1809	CBG 3	98.0%	26.0%	17.0%	15.2%	9.0%	39.0%	8.0%
187	Paterson City	CT 1810	CBG 1	14.0%	16.6%	24.0%	10.9%	6.0%	34.1%	21.0%
188	Paterson City	CT 1810	CBG 2	62.0%	20.6%	35.0%	30.9%	8.0%	29.6%	19.0%
189	Paterson City	CT 1810	CBG 3	45.0%	24.3%	23.0%	37.3%	3.0%	46.0%	15.0%
190	Paterson City	CT 1810	CBG 4	55.0%	20.7%	42.0%	11.2%	5.0%	29.7%	6.0%
191	Paterson City	CT 1811	CBG 1	59.0%	51.1%	11.0%	21.0%	9.0%	26.7%	15.0%
192	Paterson City	CT 1811	CBG 2	86.0%	15.6%	51.0%	8.7%	8.0%	43.4%	9.0%
193	Paterson City	CT 1811	CBG 3	94.0%	21.0%	26.0%	10.2%	14.0%	30.4%	15.0%
194	Paterson City	CT 1811	CBG 4	11.0%	23.9%	13.0%	8.5%	15.0%	56.5%	22.0%
195	Paterson City	CT 1811	CBG 5	32.0%	12.7%	34.0%	22.1%	8.0%	30.9%	5.0%
196	Paterson City	CT 1812	CBG 1	105.0%	18.2%	16.0%	17.4%	4.0%	33.1%	6.0%
197	Paterson City	CT 1812	CBG 2	89.0%	20.6%	22.0%	26.0%	8.0%	41.2%	11.0%
198	Paterson City	CT 1812	CBG 3	87.0%	26.2%	24.0%	39.2%	5.0%	38.8%	6.0%
199	Paterson City	CT 1813	CBG 1	125.0%	22.5%	23.0%	37.1%	9.0%	37.0%	17.0%
200	Paterson City	CT 1813	CBG 2	86.0%	18.1%	31.0%	25.8%	4.0%	20.2%	9.0%
201	Paterson City	CT 1813	CBG 3	73.0%	36.3%	17.0%	38.4%	4.0%	44.2%	1.0%
202	Paterson City	CT 1813	CBG 4	42.0%	47.5%	14.0%	44.6%	25.0%	50.7%	13.0%
203	Paterson City	CT 1814	CBG 1	101.0%	37.6%	29.0%	52.0%	16.0%	43.3%	8.0%
204	Paterson City	CT 1814	CBG 2	90.0%	41.0%	21.0%	64.1%	12.0%	48.4%	14.0%
205	Paterson City	CT 1815	CBG 1	84.0%	33.6%	19.0%	37.2%	9.0%	32.1%	9.0%

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BIKE PASSAIC COUNTY

ENVIRONMENT JUSTICE DATA BY INDICATOR[1] BY CENSUS BLOCK GROUP[2]

Draft 12.1.2021

No.	Municipality Name	Census Tract (CT) No.	Census Block Group (CBG) No.	Percent Minority Population	Percent Low Income HH	Percent Limited English Speaking HH	Percent Zero Car HH	Percent Persons with a Disability	Percent Children 17 yrs & under	Percent Seniors (65+ yrs)
206	Paterson City	CT 1815	CBG 2	87.0%	56.6%	4.0%	66.5%	12.0%	54.2%	3.0%
207	Paterson City	CT 1817.02	CBG 1	52.0%	39.0%	32.0%	54.2%	5.0%	27.1%	4.0%
208	Paterson City	CT 1817.02	CBG 2	99.0%	33.8%	30.0%	51.6%	3.0%	24.2%	7.0%
209	Paterson City	CT 1818	CBG 1	23.0%	44.3%	36.0%	66.5%	22.0%	29.3%	19.0%
210	Paterson City	CT 1818	CBG 2	38.0%	40.6%	33.0%	69.2%	5.0%	40.4%	7.0%
211	Paterson City	CT 1818	CBG 3	39.0%	32.8%	40.0%	44.0%	12.0%	8.1%	3.0%
212	Paterson City	CT 1819	CBG 1	71.0%	12.5%	15.0%	37.3%	3.0%	31.4%	13.0%
213	Paterson City	CT 1820	CBG 1	84.0%	37.6%	25.0%	51.1%	6.0%	64.1%	7.0%
214	Paterson City	CT 1821	CBG 1	93.0%	28.2%	21.0%	30.0%	13.0%	35.3%	14.0%
215	Paterson City	CT 1821	CBG 2	58.0%	27.1%	6.0%	28.3%	6.0%	32.2%	8.0%
216	Paterson City	CT 1821	CBG 3	34.0%	24.6%	26.0%	24.6%	15.0%	39.6%	13.0%
217	Paterson City	CT 1822	CBG 1	66.0%	48.3%	25.0%	67.0%	17.0%	38.2%	4.0%
218	Paterson City	CT 1822	CBG 2	99.0%	39.4%	30.0%	38.9%	16.0%	39.0%	11.0%
219	Paterson City	CT 1823.01	CBG 1	82.0%	17.2%	20.0%	28.8%	3.0%	39.7%	6.0%
220	Paterson City	CT 1823.02	CBG 1	62.0%	28.9%	12.0%	57.4%	11.0%	30.4%	10.0%
221	Paterson City	CT 1823.02	CBG 2	140.0%	31.6%	47.0%	45.2%	4.0%	38.7%	8.0%
222	Paterson City	CT 1823.02	CBG 3	63.0%	19.9%	16.0%	11.0%	9.0%	42.1%	10.0%
223	Paterson City	CT 1823.02	CBG 4	73.0%	56.8%	42.0%	53.3%	12.0%	35.5%	10.0%
224	Paterson City	CT 1824	CBG 1	71.0%	22.9%	28.0%	29.9%	10.0%	34.9%	14.0%
225	Paterson City	CT 1824	CBG 2	23.0%	19.2%	0.0%	13.8%	11.0%	26.1%	9.0%
226	Paterson City	CT 1824	CBG 3	99.0%	28.5%	24.0%	13.4%	16.0%	43.7%	15.0%
227	Paterson City	CT 1824	CBG 4	48.0%	38.0%	23.0%	40.4%	8.0%	26.8%	12.0%
228	Paterson City	CT 1825	CBG 1	115.0%	9.0%	12.0%	9.2%	11.0%	11.6%	28.0%
229	Paterson City	CT 1825	CBG 2	11.0%	0.0%	11.0%	0.0%	0.0%	23.3%	15.0%
230	Paterson City	CT 1825	CBG 3	54.0%	14.7%	37.0%	23.8%	5.0%	22.2%	17.0%
231	Paterson City	CT 1825	CBG 4	28.0%	0.0%	0.0%	0.0%	4.0%	19.8%	5.0%
232	Paterson City	CT 1825	CBG 5	136.0%	40.4%	11.0%	56.9%	5.0%	57.1%	4.0%
233	Paterson City	CT 1826	CBG 1	41.0%	0.0%	11.0%	4.9%	10.0%	18.2%	12.0%
234	Paterson City	CT 1826	CBG 2	72.0%	8.4%	7.0%	21.2%	13.0%	18.4%	11.0%
235	Paterson City	CT 1826	CBG 3	94.0%	17.8%	8.0%	20.4%	15.0%	32.6%	15.0%
236	Paterson City	CT 1826	CBG 4	81.0%	20.6%	19.0%	24.5%	13.0%	18.0%	17.0%
237	Paterson City	CT 1827	CBG 1	73.0%	17.2%	32.0%	21.4%	9.0%	33.2%	12.0%
238	Paterson City	CT 1827	CBG 2	74.0%	30.7%	33.0%	15.0%	7.0%	36.7%	10.0%
239	Paterson City	CT 1827	CBG 3	105.0%	34.5%	21.0%	25.9%	2.0%	33.7%	5.0%
240	Paterson City	CT 1827	CBG 4	73.0%	28.3%	30.0%	31.8%	16.0%	23.5%	11.0%
241	Paterson City	CT 1828	CBG 1	76.0%	48.4%	49.0%	48.9%	23.0%	20.1%	44.0%
242	Paterson City	CT 1828	CBG 2	112.0%	22.6%	32.0%	32.6%	6.0%	39.0%	7.0%
243	Paterson City	CT 1829	CBG 1	56.0%	37.6%	13.0%	43.2%	8.0%	22.5%	5.0%
244	Paterson City	CT 1829	CBG 2	47.0%	31.3%	46.0%	50.7%	7.0%	52.3%	5.0%
245	Paterson City	CT 1830	CBG 1	38.0%	15.8%	21.0%	40.4%	7.0%	35.8%	11.0%
246	Paterson City	CT 1830	CBG 2	10.0%	32.6%	40.0%	40.9%	14.0%	15.2%	16.0%

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BIKE PASSAIC COUNTY

ENVIRONMENT JUSTICE DATA BY INDICATOR[1] BY CENSUS BLOCK GROUP[2]

Draft 12.1.2021

No.	Municipality Name	Census Tract (CT) No.	Census Block Group (CBG) No.	Percent Minority Population	Percent Low Income HH	Percent Limited English Speaking HH	Percent Zero Car HH	Percent Persons with a Disability	Percent Children 17 yrs & under	Percent Seniors (65+ yrs)
247	Paterson City	CT 1830	CBG 3	29.0%	15.1%	0.0%	0.0%	16.0%	29.2%	18.0%
248	Paterson City	CT 1830	CBG 4	10.0%	61.1%	36.0%	20.0%	7.0%	12.7%	26.0%
249	Paterson City	CT 1830	CBG 5	41.0%	49.2%	55.0%	35.1%	25.0%	20.9%	28.0%
250	Paterson City	CT 1830	CBG 6	57.0%	41.5%	22.0%	25.5%	0.0%	33.8%	5.0%
251	Paterson City	CT 1831.01	CBG 1	44.0%	20.4%	13.0%	17.1%	7.0%	17.1%	15.0%
252	Paterson City	CT 1831.01	CBG 2	47.0%	12.3%	24.0%	3.8%	12.0%	20.6%	12.0%
253	Paterson City	CT 1831.01	CBG 3	21.0%	7.9%	19.0%	24.5%	3.0%	20.1%	17.0%
254	Paterson City	CT 1831.02	CBG 1	69.0%	15.2%	7.0%	16.3%	12.0%	35.5%	6.0%
255	Paterson City	CT 1831.02	CBG 2	110.0%	31.9%	33.0%	13.3%	6.0%	37.8%	14.0%
256	Paterson City	CT 1831.02	CBG 3	60.0%	5.2%	6.0%	21.5%	16.0%	40.3%	17.0%
257	Paterson City	CT 1832	CBG 1	73.0%	35.0%	13.0%	62.4%	20.0%	51.2%	22.0%
258	Paterson City	CT 1832	CBG 2	90.0%	35.1%	34.0%	62.5%	10.0%	18.8%	14.0%
259	Paterson City	CT 2036	CBG 2	23.0%	6.7%	8.0%	25.0%	10.0%	32.5%	17.0%
260	Paterson City	CT 2036	CBG 3	37.0%	24.7%	6.0%	38.9%	12.0%	43.6%	8.0%
261	Paterson City	CT 2036	CBG 4	21.0%	12.9%	0.0%	8.9%	2.0%	28.4%	5.0%
262	Paterson City	CT 2642	CBG 1	147.0%	29.2%	28.0%	40.6%	17.0%	60.2%	9.0%
263	Paterson City	CT 2642	CBG 2	65.0%	46.6%	12.0%	43.7%	15.0%	48.6%	6.0%
264	Paterson City	CT 2642	CBG 3	0.0%	62.1%	0.0%	62.1%	35.0%	27.8%	0.0%
265	Pompton Lakes Borough	CT 1165	CBG 2	10.0%	24.1%	15.0%	24.1%	6.0%	45.7%	3.0%
266	Pompton Lakes Borough	CT 1964.01	CBG 1	11.0%	3.5%	1.0%	2.9%	10.0%	22.2%	24.0%
267	Pompton Lakes Borough	CT 1964.02	CBG 1	39.0%	8.9%	4.0%	16.6%	13.0%	16.0%	9.0%
268	Pompton Lakes Borough	CT 1964.02	CBG 2	5.0%	5.5%	21.0%	23.0%	16.0%	13.8%	18.0%
269	Pompton Lakes Borough	CT 1964.02	CBG 4	16.0%	8.0%	4.0%	6.5%	8.0%	30.2%	6.0%
270	Pompton Lakes Borough	CT 2366.01	CBG 1	8.0%	0.0%	0.0%	0.0%	15.0%	21.3%	24.0%
271	Pompton Lakes Borough	CT 2366.01	CBG 2	20.0%	0.0%	2.0%	3.1%	5.0%	29.6%	11.0%
272	Pompton Lakes Borough	CT 2366.02	CBG 3	5.0%	3.9%	0.0%	1.0%	16.0%	23.8%	33.0%
273	Prospect Park Borough	CT 1337.02	CBG 1	39.0%	7.3%	17.0%	9.4%	7.0%	22.2%	18.0%
274	Prospect Park Borough	CT 1434	CBG 3	9.0%	11.3%	0.0%	14.1%	8.0%	6.6%	27.0%
275	Prospect Park Borough	CT 1434	CBG 6	15.0%	0.0%	0.0%	0.0%	7.0%	66.0%	4.0%
276	Prospect Park Borough	CT 1635	CBG 3	3.0%	6.5%	0.0%	8.6%	12.0%	36.3%	6.0%
277	Prospect Park Borough	CT 2036	CBG 1	23.0%	17.7%	6.0%	3.2%	12.0%	37.5%	10.0%
278	Prospect Park Borough	CT 2036	CBG 5	44.0%	10.9%	5.0%	7.9%	14.0%	37.0%	10.0%
279	Ringwood Borough	CT 2167.01	CBG 2	18.0%	4.1%	0.0%	3.1%	12.0%	35.3%	15.0%
280	Ringwood Borough	CT 2167.01	CBG 3	13.0%	0.0%	0.0%	0.0%	12.0%	23.1%	24.0%
281	Ringwood Borough	CT 2568.02	CBG 2	0.0%	7.1%	0.0%	2.9%	11.0%	9.4%	24.0%
282	Ringwood Borough	CT 2568.02	CBG 4	3.0%	2.8%	0.0%	0.0%	6.0%	26.7%	11.0%
283	Totowa Borough	CT 1337.02	CBG 2	13.0%	10.2%	5.0%	0.0%	7.0%	27.3%	12.0%
284	Totowa Borough	CT 1801	CBG 1	18.0%	5.7%	28.0%	10.5%	14.0%	16.4%	16.0%
285	Totowa Borough	CT 1801	CBG 6	56.0%	0.0%	6.0%	0.0%	13.0%	28.0%	11.0%
286	Totowa Borough	CT 1802.01	CBG 1	133.0%	23.8%	10.0%	12.3%	13.0%	34.7%	11.0%
287	Totowa Borough	CT 2238.01	CBG 3	13.0%	6.2%	0.0%	3.4%	14.0%	24.6%	20.0%

1: Foreign-Born data is not included as it is only available at the Census Tract level.

2: Green shaded cells highlight census block groups with above average percentage for each indicator.

BIKE PASSAIC COUNTY

ENVIRONMENT JUSTICE DATA BY INDICATOR[1] BY CENSUS BLOCK GROUP[2]

Draft 12.1.2021

No.	Municipality Name	Census Tract (CT) No.	Census Block Group (CBG) No.	Percent Minority Population	Percent Low Income HH	Percent Limited English Speaking HH	Percent Zero Car HH	Percent Persons with a Disability	Percent Children 17 yrs & under	Percent Seniors (65+ yrs)
288	Totowa Borough	CT 2238.02	CBG 1	3.0%	5.4%	8.0%	0.0%	17.0%	20.2%	28.0%
289	Totowa Borough	CT 2238.02	CBG 3	58.0%	2.0%	7.0%	1.2%	7.0%	21.2%	23.0%
290	Totowa Borough	CT 2238.02	CBG 4	12.0%	0.0%	0.0%	4.0%	9.0%	3.8%	8.0%
291	Totowa Borough	CT 2238.02	CBG 5	3.0%	3.7%	0.0%	13.3%	14.0%	5.7%	26.0%
292	Totowa Borough	CT 2239	CBG 1	5.0%	0.0%	0.0%	0.0%	57.0%	1.9%	5.0%
293	Totowa Borough	CT 2461.04	CBG 1	18.0%	5.4%	6.0%	14.5%	9.0%	19.9%	26.0%
294	Totowa Borough	CT 2462.03	CBG 2	7.0%	2.9%	0.0%	4.3%	8.0%	21.9%	19.0%
295	Totowa Borough	CT 2463	CBG 2	13.0%	1.3%	3.0%	0.0%	8.0%	20.1%	8.0%
296	Wanaque Borough	CT 2167.01	CBG 1	0.0%	0.0%	0.0%	0.0%	10.0%	26.1%	12.0%
297	Wanaque Borough	CT 2167.02	CBG 2	23.0%	2.8%	1.0%	0.0%	11.0%	30.7%	13.0%
298	Wanaque Borough	CT 2167.02	CBG 3	11.0%	0.0%	0.0%	0.0%	4.0%	31.2%	20.0%
299	Wanaque Borough	CT 2366.01	CBG 3	11.0%	7.8%	4.0%	11.8%	10.0%	27.9%	17.0%
300	Wanaque Borough	CT 2366.01	CBG 4	13.0%	8.7%	15.0%	14.5%	13.0%	22.6%	14.0%
301	Wanaque Borough	CT 2366.02	CBG 2	12.0%	14.6%	0.0%	11.5%	14.0%	19.0%	8.0%
302	Wanaque Borough	CT 2366.02	CBG 4	8.0%	2.5%	2.0%	0.0%	9.0%	27.1%	14.0%
303	Wayne Township	CT 1964.01	CBG 2	7.0%	5.0%	0.0%	4.1%	16.0%	35.6%	8.0%
304	Wayne Township	CT 1964.01	CBG 3	11.0%	13.0%	4.0%	0.0%	15.0%	35.3%	8.0%
305	Wayne Township	CT 1964.02	CBG 3	11.0%	6.7%	4.0%	1.7%	12.0%	22.7%	10.0%
306	Wayne Township	CT 1964.02	CBG 5	2.0%	4.0%	0.0%	2.3%	17.0%	10.4%	41.0%
307	Wayne Township	CT 2460.01	CBG 1	22.0%	15.7%	10.0%	14.8%	14.0%	31.7%	28.0%
308	Wayne Township	CT 2460.02	CBG 1	6.0%	0.0%	0.0%	0.0%	12.0%	28.1%	18.0%
309	Wayne Township	CT 2460.02	CBG 2	5.0%	3.4%	4.0%	0.0%	11.0%	5.3%	41.0%
310	Wayne Township	CT 2460.02	CBG 3	4.0%	0.0%	0.0%	0.0%	8.0%	26.5%	40.0%
311	Wayne Township	CT 2460.03	CBG 1	10.0%	0.0%	0.0%	0.0%	6.0%	38.1%	8.0%
312	Wayne Township	CT 2460.03	CBG 2	15.0%	0.0%	3.0%	0.0%	9.0%	35.0%	22.0%
313	Wayne Township	CT 2460.03	CBG 3	8.0%	0.0%	0.0%	5.7%	13.0%	36.8%	31.0%
314	Wayne Township	CT 2460.03	CBG 4	12.0%	0.0%	3.0%	0.0%	8.0%	43.8%	18.0%
315	Wayne Township	CT 2460.03	CBG 5	5.0%	0.0%	0.0%	0.0%	0.0%	53.4%	5.0%
316	Wayne Township	CT 2460.03	CBG 6	6.0%	6.4%	0.0%	0.0%	11.0%	18.8%	21.0%
317	Wayne Township	CT 2461.01	CBG 1	2.0%	2.4%	2.0%	6.9%	28.0%	13.2%	39.0%
318	Wayne Township	CT 2461.01	CBG 2	20.0%	8.3%	0.0%	8.3%	25.0%	21.5%	24.0%
319	Wayne Township	CT 2461.01	CBG 3	29.0%	3.3%	0.0%	0.0%	11.0%	51.2%	14.0%
320	Wayne Township	CT 2461.02	CBG 1	23.0%	4.2%	4.0%	4.6%	12.0%	12.3%	19.0%
321	Wayne Township	CT 2461.02	CBG 2	39.0%	9.5%	13.0%	7.0%	10.0%	28.8%	6.0%
322	Wayne Township	CT 2461.03	CBG 1	9.0%	7.2%	12.0%	10.9%	9.0%	30.7%	19.0%
323	Wayne Township	CT 2461.03	CBG 2	13.0%	2.7%	0.0%	0.0%	10.0%	21.7%	17.0%
324	Wayne Township	CT 2461.03	CBG 3	3.0%	0.0%	0.0%	0.0%	4.0%	20.4%	36.0%
325	Wayne Township	CT 2461.03	CBG 4	17.0%	0.0%	16.0%	0.0%	12.0%	30.6%	25.0%
326	Wayne Township	CT 2461.03	CBG 5	4.0%	0.0%	5.0%	0.0%	5.0%	20.3%	6.0%
327	Wayne Township	CT 2462.01	CBG 1	4.0%	0.0%	2.0%	0.0%	7.0%	25.0%	17.0%
328	Wayne Township	CT 2462.01	CBG 2	23.0%	2.2%	4.0%	0.0%	6.0%	37.5%	21.0%

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2: Green shaded cells highlight census block groups with above average percentage for each indicator.

BIKE PASSAIC COUNTY

ENVIRONMENT JUSTICE DATA BY INDICATOR[1] BY CENSUS BLOCK GROUP[2]

Draft 12.1.2021

No.	Municipality Name	Census Tract (CT) No.	Census Block Group (CBG) No.	Percent Minority Population	Percent Low Income HH	Percent Limited English Speaking HH	Percent Zero Car HH	Percent Persons with a Disability	Percent Children 17 yrs & under	Percent Seniors (65+ yrs)
329	Wayne Township	CT 2462.01	CBG 3	14.0%	2.3%	0.0%	1.1%	9.0%	27.6%	19.0%
330	Wayne Township	CT 2462.02	CBG 1	7.0%	3.3%	0.0%	0.0%	7.0%	45.2%	13.0%
331	Wayne Township	CT 2462.02	CBG 2	2.0%	6.6%	0.0%	2.2%	8.0%	33.3%	17.0%
332	Wayne Township	CT 2462.02	CBG 3	4.0%	1.3%	0.0%	1.6%	8.0%	29.6%	19.0%
333	Wayne Township	CT 2462.02	CBG 4	1.0%	0.0%	0.0%	0.0%	3.0%	38.4%	15.0%
334	Wayne Township	CT 2462.03	CBG 1	6.0%	3.7%	2.0%	1.5%	8.0%	24.8%	23.0%
335	Wayne Township	CT 2462.03	CBG 3	8.0%	0.0%	6.0%	3.1%	6.0%	26.3%	19.0%
336	Wayne Township	CT 2463	CBG 1	12.0%	4.1%	3.0%	0.0%	6.0%	17.5%	19.0%
337	Wayne Township	CT 2463	CBG 4	5.0%	0.0%	0.0%	0.0%	8.0%	25.8%	9.0%
338	West Milford Township	CT 2568.01	CBG 1	35.0%	5.5%	5.0%	0.0%	18.0%	26.0%	7.0%
339	West Milford Township	CT 2568.01	CBG 2	3.0%	0.0%	0.0%	0.0%	8.0%	30.4%	4.0%
340	West Milford Township	CT 2568.01	CBG 3	2.0%	9.3%	3.0%	5.4%	13.0%	13.3%	18.0%
341	West Milford Township	CT 2568.01	CBG 4	15.0%	7.5%	2.0%	0.0%	15.0%	39.6%	12.0%
342	West Milford Township	CT 2568.02	CBG 1	4.0%	2.7%	0.0%	0.0%	9.0%	5.6%	14.0%
343	West Milford Township	CT 2568.02	CBG 3	1.0%	0.0%	0.0%	15.0%	15.0%	12.0%	13.0%
344	West Milford Township	CT 2568.03	CBG 1	20.0%	0.0%	4.0%	2.6%	6.0%	36.0%	7.0%
345	West Milford Township	CT 2568.03	CBG 2	8.0%	12.6%	0.0%	6.3%	11.0%	20.7%	38.0%
346	West Milford Township	CT 2568.04	CBG 1	7.0%	1.9%	0.0%	0.0%	6.0%	27.3%	14.0%
347	West Milford Township	CT 2568.04	CBG 2	5.0%	5.8%	0.0%	0.0%	9.0%	29.5%	13.0%
348	West Milford Township	CT 2568.04	CBG 4	2.0%	3.8%	0.0%	15.6%	5.0%	7.5%	17.0%
349	West Milford Township	CT 2568.05	CBG 1	7.0%	1.5%	2.0%	3.1%	17.0%	28.2%	19.0%
350	West Milford Township	CT 2568.05	CBG 2	9.0%	2.5%	0.0%	0.0%	8.0%	30.3%	9.0%
351	Woodland Park Borough	CT 1242	CBG 1	14.0%	22.9%	4.0%	0.0%	8.0%	44.9%	14.0%
352	Woodland Park Borough	CT 1242	CBG 6	73.0%	2.7%	6.0%	0.0%	14.0%	17.0%	20.0%
353	Woodland Park Borough	CT 1801	CBG 3	46.0%	6.5%	37.0%	0.0%	7.0%	38.4%	12.0%
354	Woodland Park Borough	CT 1819	CBG 2	21.0%	11.6%	5.0%	3.8%	8.0%	22.3%	10.0%
355	Woodland Park Borough	CT 1819	CBG 3	63.0%	31.7%	18.0%	14.6%	8.0%	30.7%	6.0%
356	Woodland Park Borough	CT 1819	CBG 4	43.0%	11.7%	23.0%	14.6%	18.0%	41.8%	7.0%
357	Woodland Park Borough	CT 1821	CBG 4	0.0%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.0%	#DIV/0!
358	Woodland Park Borough	CT 2238.01	CBG 1	5.0%	4.4%	0.0%	0.0%	18.0%	27.0%	20.0%
359	Woodland Park Borough	CT 2238.01	CBG 2	4.0%	6.3%	4.0%	2.8%	16.0%	25.1%	9.0%
360	Woodland Park Borough	CT 2641.01	CBG 1	61.0%	16.2%	10.0%	5.7%	14.0%	45.6%	9.0%
361	Woodland Park Borough	CT 2641.01	CBG 2	33.0%	16.3%	2.0%	6.0%	4.0%	41.4%	5.0%
362	Woodland Park Borough	CT 2641.01	CBG 3	17.0%	6.2%	6.0%	1.1%	8.0%	12.2%	23.0%
363	Woodland Park Borough	CT 2641.01	CBG 4	16.0%	8.1%	12.0%	3.4%	11.0%	38.8%	15.0%
364	Woodland Park Borough	CT 2641.02	CBG 3	13.0%	10.4%	2.0%	4.2%	11.0%	31.5%	24.0%
365	Woodland Park Borough	CT 2641.02	CBG 4	5.0%	6.5%	17.0%	6.5%	3.0%	32.3%	18.0%

1: Foreign-Born data is not included as it is only available at the Census Tract level.

2: Green shaded cells highlight census block groups with above average percentage for each indicator.

BIKEPassaicCounty

Community Engagement Summary Memorandum

June 30, 2022

Introduction

Community engagement is an integral part of the BIKEPassaicCounty Plan. The goal of community engagement is to gain a better understanding of existing programs and initiatives, needs and barriers to bicycling, and potential partnership opportunities to improve and encourage bicycling. Findings from the community engagement process also help to inform the recommendations of the Plan.

To accommodate the changing restrictions of COVID-19 and to reach a broader spectrum of people, the outreach plan included a mix of in-person and virtual opportunities for the public, including virtual public meetings, online questionnaires, virtual interactive mapping, and in person pop-up events. Project team members also conducted interviews with municipal representatives and facilitated focus groups with various stakeholders to learn about safety, accessibility and other challenges facing people riding bicycles in the County. A web-based engagement portal (publicinput.com/bikepassaiccounty) served as the central engagement hub for the planning process. Engagement opportunities were promoted via the website, email, social media, and various print media throughout the course of the project.

Public participation is a core function of a Metropolitan Planning Organization (MPO). The NJTPA, the region's MPO and study funder, is committed to serving the region's diverse population and promoting involvement of under-represented groups and communities. An Environmental Justice (EJ) analysis was conducted as part of the project to inform the community engagement process. Based on findings from the EJ analysis, written materials and graphics were provided in Spanish to involve the County's large population of Spanish speakers more effectively. The project website and questionnaire integrated Google's Translate Application Programming Interface (API) as a means to provide translation in many languages other than English. A synchronous Spanish captioning program was used for the virtual Public Meetings held on December 8, 2021 and May 11, 2022, in addition to providing live Spanish translation during the Q&A session.

Below is a summary of the activities, events, materials, and tools used to ensure an open and inclusive process and to provide a variety of options for community input.

Activities and Events

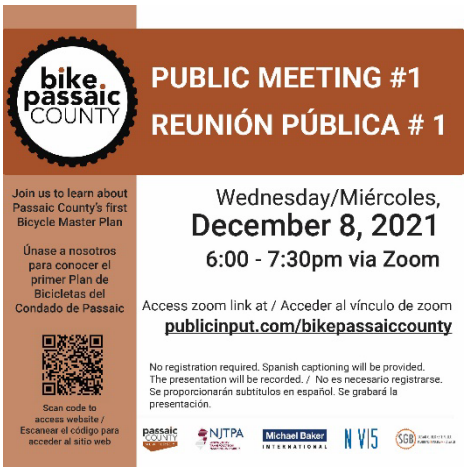
Stakeholder Advisory Committee

The Stakeholder Advisory Committee (SAC) consisted of representatives from government departments and various non-profit organizations including NJDOT, NJ Highlands Council, EZ Ride and TransOptions Transportation Management Associations (TMAs), Voorhees Transportation Center, NJ TRANSIT, and the New Jersey Bike & Walk Coalition. The SAC met three times throughout the course of the project. The SAC offered valuable input on the plan's vision and goals, bicycle network, and policy and programming recommendations; helped shape the draft bicycle network; and provided key support and guidance on the project's community engagement effort.

Public Meetings

Public Meeting #1

The first virtual public meeting was held on December 8, 2021, via Zoom, with 25 participants in attendance. Passaic County Commissioner John Bartlett gave the opening remarks and then the project team presented the purpose of the study and timeline, community engagement efforts, highlights of results from previously administered questionnaire, and existing conditions including socioeconomics, crash hotspots, and bicycle level of traffic stress for the county's transportation network. Public meeting participants provided live input via several Zoom poll questions, as well as through a Q&A session that followed the presentation. The presentation slides, recording of the public meeting, and a summary of the Q&A session were posted on the project website and shared via e-mail with website subscribers and those who participated in the project questionnaire.



This flyer was used to promote the December 2021 Public Meeting. The graphic was shared on social media and sent to website subscribers, questionnaire participants, and other stakeholders and organizations.

During the Q&A, participants offered responses to three questions. Their responses are summarized below:

1. In one or two words, how would you describe bicycling in Passaic County today?
    - Some words that participants used to describe bicycling in Passaic County include: terrifying (x3), beautiful, scary, chaotic, possible, connected, disconnected, isolated, strong potential
2. Where is a good place to bicycle in Passaic County and what makes it good to bike?
    - Participants generally prefer parks and areas with less traffic. Some parks and areas that participants mentioned include: Eastside Park, Pompton Lakes Aquatic Park, Willmore Park in Little Falls, Weasel Brook Park, Garret Mountain (x3). Participants noted that the following areas are more bicycle-friendly: Wayne, Ringwood (x5), Hillcrest/Totowa (x2), Eastside Paterson. Participants also noted that Passaic County is a great place for mountain biking.
3. What is the most important thing that the County can do to improve bicycling?
    - When asked about the most important thing that the county can do to improve bicycling, participant responses centered around enhancing connectivity, improving safety, promoting tourism, and providing resources for underserved communities

Public Meeting #2

The second virtual public meeting was held on May 11, 2022, via Zoom. There were 59 people who registered for the public meeting. The project team presented draft vision and goals, feedback received from community engagement activities, the draft bicycle network, concept level plans, and recommended policies, plans and programs. Similar to the first public meeting, there were several Zoom poll questions and a Q&A session that followed the presentation.

Virtual Open House

The Virtual Open House was live for three weeks from May 11th, 2022 to May 31st, 2022. There were 324 views, 62 participants, and 70 comments. The Virtual Open House was designed so that participants could go through the site in their own time to review materials from the draft BIKEPassaicCounty plan and share their thoughts. Participants were given to opportunity to provide input about the draft vision and goals, draft bicycle network, and the draft recommended policies, plans and programs. Information about different bicycle facility types were also provided for reference. Input from the Open House is summarized below.

- The majority of participants strongly agreed (73%) or agreed (15%) with the vision, and no one strongly disagreed with the Vision. In the comments, participants expressed that they support the vision because they would love to see greater connectivity and more places to safely bicycle in Passaic County.
- About half of participants indicated that the goal to increase safety and comfort is most important; one-third of participants selected the goal to enhance access and mobility as most important to them. In the comments, many people noted that the other goals cannot be achieved unless people feel safe and comfortable while bicycling.
- Many participants commented that the bicycle network needs to have more protected bicycle facilities that are separated from traffic. In particular, Highland Rail Trail and the Morris Canal Greenway were pointed out by several participants as exciting projects that they are looking forward to the most. Some participants commented that the bicycle network needs to provide greater connectivity across everyday destinations, such as places for shopping/recreation, so that bicycle can be a viable mode of transportation for commutes and errands.
- Two-thirds of participants indicated that the recommendation to incorporate bicycle needs and safety into zoning, land use, and development review as most important, followed by the recommendation to establish a Bicycle/Pedestrian or Complete Streets Advisory Committee.
- The top three planning recommendations that were most important to participants include: Conduct Bicycle and Pedestrian Road Safety Audits and Assessments, coordinate transportation and land use activity through the development of Corridor Plans, and create a Vision Zero Action Plan to identify strategies to achieve the goal of eliminating severe injury and fatal crashes.
- The top three program recommendations that were most important to participants include: Develop a plan for bicycle wayfinding signage, work with advocacy groups and law enforcement to inform the public about bicycle related laws and changes to new laws, and participate in and support efforts to promote bicycling such as Safe Routes to School and Bike Month activities.

Community Events

Project team members attended thirteen events in the summer and fall of 2021 to promote the project and encourage people to participate in the online questionnaire and interactive mapping activities. The public received flyers with QR codes and stickers to promote the project. Participants also provided input on comfort and preference for different types of bicycle facilities. The main

finding from the community events is that most residents support improvements for bicycling and would like bicycling to be more convenient and enjoyable for people of all ages and abilities.

The table below details each event the project team attended. The level of engagement varied by event, with several events drawing 50 to 75 people to the project displays, including National Night Out, Great Falls Festival, and the Sounds of Passaic Concert series.

Table 1. Community Events

Date	**Event Name**	**Location**
June 26, 2021	Passaic County Food Truck Festival	Weasel Brook County Park in Clifton
June 26, 2021	West Milford BMX Pop-up	West Milford
August 3, 2021	National Night Out	Ward 5 (Roberto Clemente Park) and Ward 6 (School 25) in Paterson
August 3, 2021	National Night Out	Little Falls
August 3, 2021	National Night Out	Woodland Park
August 3, 2021	National Night Out	West Milford
August 12 - 15, 2021	Passaic County Fair	Garret Mountain County Park in Woodland Park
September 4, 2021	Great Falls Festival	Paterson
September 5, 2021	Pompton Day	Pompton Lakes
September 6, 2021	Sounds of Passaic Concert Series	Christopher Columbus Park in Passaic
September 25, 2021	Wayne Day	Wayne
October 9, 2021	Paterson Green Fair	Paterson
October 16, 2021	Ride Out for Unity	Paterson

The project team collected input at a variety of events across the County.

Municipal Interviews

Four discussion groups were conducted with representatives from Passaic municipalities to receive input on their needs, issues, priorities, and bicycling opportunities. Municipal discussions were held on October 26, October 28, November 9, and November 10. All municipalities were invited to attend these sessions. Nine of the County's 16 municipalities participated in the discussion groups. The municipalities that participated include Little Falls, Haledon, Hawthorne, West Milford, Clifton, Pompton Lakes, Ringwood, Woodland Park, Wayne Township.

Discussion highlights include:

- Municipalities would love to receive more resources and funding to enhance bicycle facilities.
- While some municipalities would like to see more people bicycling, they are concerned that parking demands, existing street designs, high traffic levels, and environmental conditions (ex. terrain) make it challenging to integrate bicycle facilities.
- Many municipalities reported that students rarely walk or bicycle to school, and emphasized the need for safer routes to school.
- A few municipalities noted increasing interest and use of micromobility, such as e-scooters and e-bikes.
- Better coordination is needed between jurisdictions to enhance connectivity.
- Road resurfacing is a good opportunity for integrating low-cost complete streets improvements.
- Some municipalities experience mixed reactions from the public about certain bicycle improvements, such as sharrow markings.

Focus Group Discussions

Discussions were held virtually with a variety of stakeholders to receive input from different perspectives. The project team scheduled three sessions focused on: (1) education and events, (2) bicycle clubs, and (3) enforcement. Feedback from the focus group discussions helped guide programmatic recommendations.

Education and Events

The Education and Events Focus Group was held on March 23 from 10-11am with representatives from parks and recreation, government, health, and sustainability organizations, including Pompton Lakes Trail Maintenance Subcommittee, Passaic County Department of Historical and Cultural Affairs, Passaic County Parks and Recreational Department, Passaic County Solid Recycling and Solid Waste, Little Falls Councilwoman and Green Team, North Haledon Green Team, and Sustainable West Milford. The purpose of the discussion was to get input on existing programs and initiatives, needs and barriers to bicycling, and potential partnership opportunities to improve and encourage bicycling.

Highlights from the discussion include:

- It's difficult to find and access information about programs that help with bicycle safety, bicycle care, and maintenance.

- The County needs an interconnected network of bicycle facilities and more secure bicycle parking.
- Sharrows are not sufficient to enhance bicyclist safety.
- The Passaic County Office of Solid Waste and Recycling Program, through a partnership with Pedals for Progress, receives bicycle donations that are shipped to countries such as Rwanda and Cameroon. Potential collection programs could be organized in the future to collect bicycle donations for the local community in Passaic County.
- Potential partners who can help promote education and encouragement for bicycling include the Boys & Girls Club, Jersey Off Road Bicycle Association (JORBA), Green Teams, and police departments.
- Enhancing bicycle facilities is an important part of promoting tourism in Passaic County.
- Open street events and other community events would be a great way to encourage bicycling.
- Assistance is needed for creating pop-up bike lanes in municipalities.

Bicycle Clubs

The bicycle clubs focus group was held with representatives from the Brothers United and Sisters United Bicycling Clubs, both of which are active in Paterson. The clubs are non-profit organizations working to support bicycling as a sport, as a means of advancing community health, and as an avenue for mentoring city youth. Highlights from the discussion include:

- Membership in the bike clubs increased during COVID-19 as people wanted to get out and exercise.
- Members have connections to the City Recreation Department and the Police Department. For instance, the clubs are working with schools and the Paterson Police to develop a mentorship program.
- Road conditions and potholes are major barriers to bicycling.
- Bicycling provides people with opportunities to explore different areas and to network with other members of the community from different neighborhoods. It has also brought families across different generations together. It is helpful for kids to see people who look like them on bicycles as bicycling has not been visible in their neighborhoods.
- It would be helpful to have information on different ordinances and regulations in different municipalities (ex. sidewalk riding, registration requirements).
- Would love to host a Cycling Night Out similar to the National Night Out and would like to see a velodrome in the city. Hinchliffe Stadium was mentioned as an ideal location.

Enforcement

The final discussion group was held with a representative from the Community Policing Unit of the Paterson Police Department. Highlights from the discussion include:

- More youth than adults are bicycling in the city of Paterson.
- Downtown Paterson is very congested and difficult for bicycling.

- The intersection of River Street, Straight Street, Lafayette Street, and the bridge is a difficult area to navigate.
- Changes in Title 39 are addressed via the Deputy Chief emailing officers to alert them of any changes or updates to traffic laws.
- The Paterson Community Policing Division has a strong commitment to building community relationships.
- The Police Department hosts an Easter event. They have received grant money to purchase bikes as a giveaway for this event.

Tools and Materials

Engagement Hub

A project website (publicinput.com/bikepassaiccounty) was created to share information about the Plan and facilitate on-going public engagement. The site included a project overview, timeline, project documents, relevant prior studies, an overview of the benefits of bicycling, materials from the December public meeting, and links to the questionnaire and interactive mapping activity. The project team was able to build a contact list through website subscribers and questionnaire participants to assist with sharing project updates and promoting community engagement opportunities.

The website was multilingual; participants could choose any language through the site's Google Translate API. As of June 2022, there are close to 4,000 views of the website.

Screenshot of the home page of the BIKEPassaicCounty website.

Questionnaire

The online questionnaire was available from June 2021 through January 2022. The page received 902 views and a total of 474 participants. The questionnaire asked about people's experiences bicycling in Passaic County, their safety concerns, barriers to bicycle travel, and the types of bicycle improvements that residents would like to see in the future.

Participant Demographics

Participants were asked to self-identify race, age, and gender. This helped the project team to get a sense of who was reached. The following graphics illustrate questionnaire participant characteristics.

Figure 1. What is your connection to Passaic County?

OBJ

Figure 2. Do you identify as ...

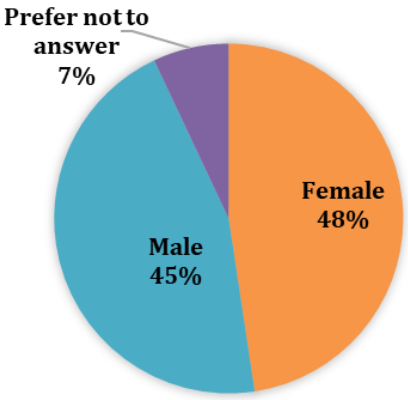
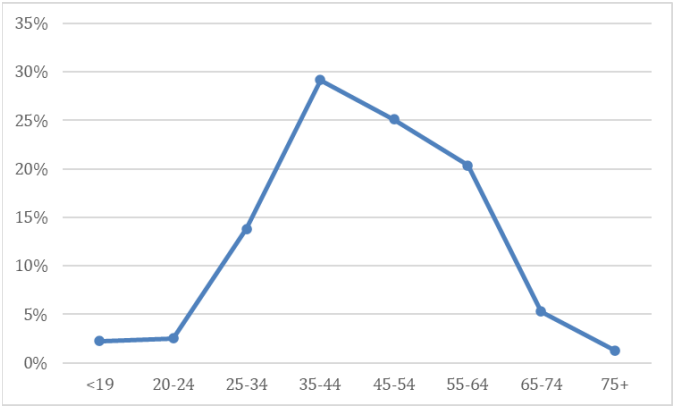


Figure 3. What is your age?



The demographics of the survey respondents reflect the diversity of the County's population.

Table 2. Demographic of Questionnaire Participants to County Population

Race & Hispanic Origin	Questionnaire Participants	County Population (ACS 2020 Estimates)
White or Caucasian	70%	61%
Hispanic or Latino	14%	42%
Asian	3%	5%
Multiracial or Biracial	3%	7%
Black or African American	2%	11%
American Indian or Alaskan native	1%	0.3%
Native Hawaiian or Other Pacific Islander	1%	0%

Other	1%	16%
Prefer not to answer	13%	-

Bicycling in Passaic County

Participants were asked how often they bike, why they ride, and how frequently they see other people riding. A majority of respondents bicycle at least a few times a month. However, almost half of people reported seeing other people bicycling in Passaic County daily. The top reasons that participants ride a bicycle are to exercise, to enjoy nature, and for social activity. The top factors that keep people from riding or riding more often are high speed, high-volume vehicle traffic, aggressive motorist behavior, and lack of secure bicycle parking at destinations. This data helped get an understanding of bicycling habits in the County.

Figure 4. How frequently do you travel by bicycle in Passaic County?

OBJ

Figure 5. What reasons do you ride?

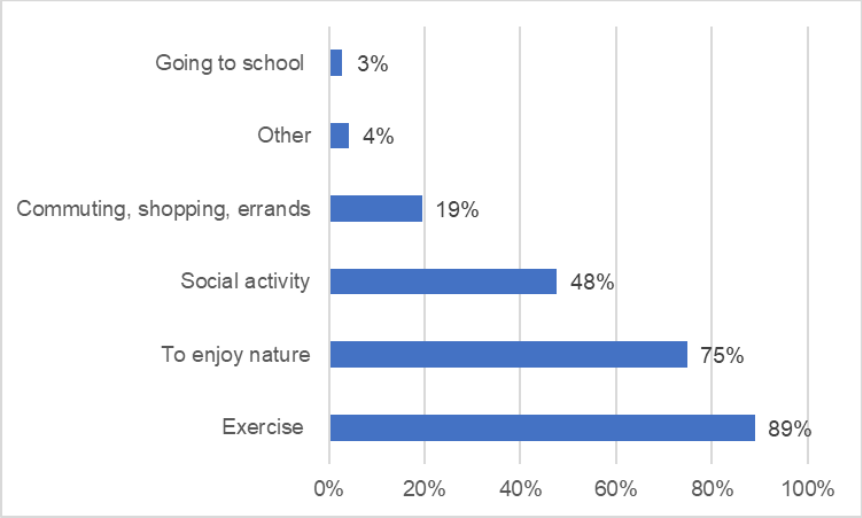
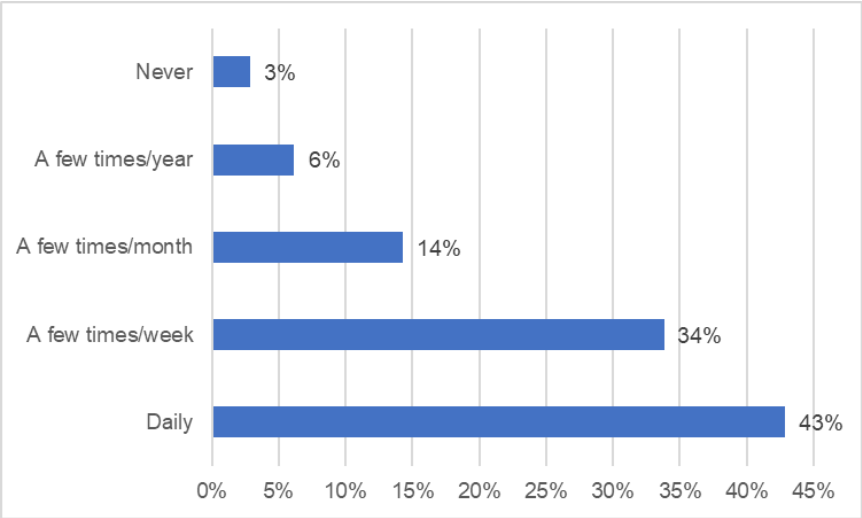


Table 3. Do any of the following factors keep you from riding or riding more often?

FACTORS	
High speed, high-volume vehicle traffic	88%
Aggressive motorist behavior	82%
Lack of secure bicycle parking at destinations	35%
Fear of crime or harassment	12%
I need to transport other people and/or carry things	8%
Other	6%
I do not own or have access to a bicycle	5%
Concerned about my appearance after riding a bicycle	3%

Figure 6. How frequently do you see other people bicycling in Passaic County?

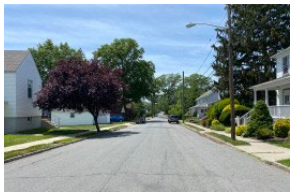


Comfort Bicycling on Different Types of Bicycle Facilities

The questionnaire presented participants with four bicycle facility types and asked them to identify their comfort level with each facility. Results indicate that participants are more comfortable with protected bicycle facilities, with the majority of participants indicating they would be very comfortable or somewhat comfortable bicycling on multi-use paths/trails or buffered bicycle lanes. Two-thirds of participants feel very comfortable or somewhat comfortable bicycling on low-speed/low-traffic residential roads. Participants had mixed reactions to bicycling on standard bicycle lanes with equal shares feeling comfortable and uncomfortable.

Respondents Level of Comfort Bicycling on Different Types of Bicycle Facilities

Bicycle Facility Type	Very or somewhat comfortable	Neutral/unsure	Very or somewhat uncomfortable
 Multi-use Path/Trail	95%	2%	3%
 Buffered Bicycle Lane	84%	7%	9%

 Standard Bicycle Lane	44%	13%	43%
 Low-speed/Low-traffic Residential Street	67%	11%	12%

Bicycle Improvements

The vast majority (93%) of participants responded that they would bicycle more often if there were more bicycle lanes, paths, and trails in Passaic County. The top five infrastructure improvements that participants indicated they would like to see in Passaic County were:

1. Additional paths and trails separated from traffic (73%)
2. Connections to trails and/or transit (50%)
3. Growing the network of on-road bicycle lanes (42%)
4. Traffic calming and slower traffic on bicycle routes (33%)
5. Better bicycle accommodations at bridges and intersections (28%)

The top five programs that would encourage them to bicycle more often include:

1. Community bicycle events (52%)
2. Motorist and bicycle safety education programs (37%)
3. Nearby group rides to gain confidence bicycling (33%)
4. Free and reduced cost access to bicycles (20%)
5. Access to basic bicycle repair class (20%)

Participants reported that the most important aspects of a county-wide bike network were increased safety for bicyclists and other road users (66%), improved health (58%), environmental benefits (46%), tourism and economic development (34%), and accessibility (19%).

Questionnaire participants were invited to elaborate on their desired improvements to bicycle infrastructure by answering the question, "If you had a magic wand and could do one thing to

improve bicycling in Passaic County, what would it be?" The following summarizes the most frequently noted types of responses:

- Over 100 participants expressed a desire for more dedicated bicycle and/or mixed-use paths and trails. Many also emphasized the importance of separating paths/trails from roads and motorized traffic.
- Many participants (over 50) also suggested more (and better marked) bicycle lanes on roads.
- Many participants were in favor of greater connectivity between existing and new bicycle lanes, paths, and trails to encourage bicycle travel between cities and destinations within Passaic County and neighboring counties.
- Many participants requested the continuation of existing rail trails or development of new rail trails for off-road, scenic, and mixed-use recreation, including bicycling.
- Many participants emphasized the importance of safety, both by creating safe routes for bicycling in Passaic County and enforcing safety measures on roads where bicycles are present.

Interactive Map

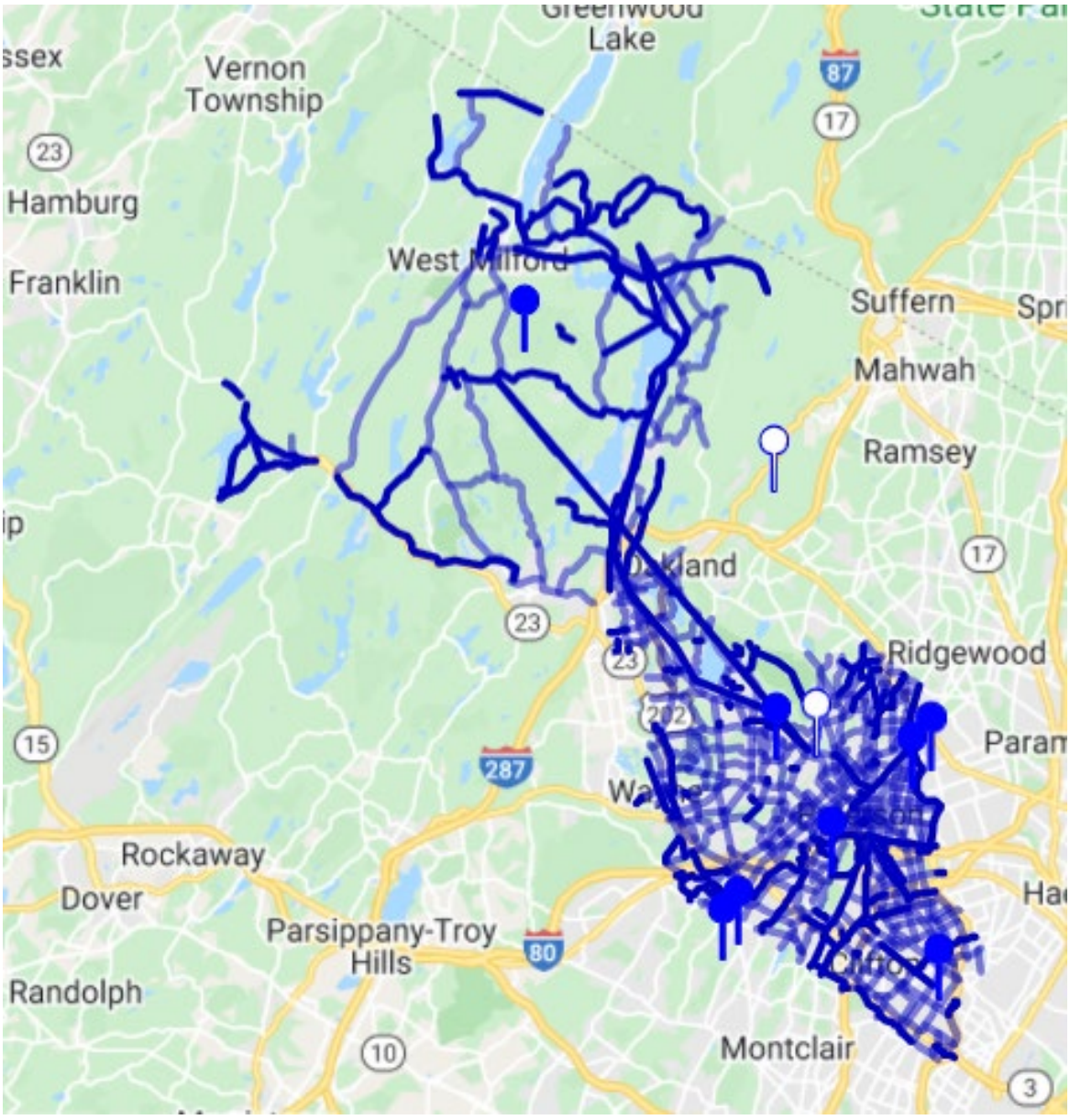
In addition to the questionnaire, participants were also asked to provide input on two interactive maps. On the first map, participants were asked to indicate key destinations and problem spots. Input was concentrated in the northern and southern parts of the County. The table below summarizes the results:

Table 4. Key Destinations and Problem Spots Identified on the Interactive Map

MUNICIPALITY	KEY DESTINATIONS	PROBLEM SPOTS
Bloomingdale	Norvin Green	
Clifton	Train Station, Richardson Oval, Richardson Scale Park, Athenia Steel Park	Van Houten Avenue, Broad Street
Hawthorne	Goffle Brook Park	Goffle Brook Park
Little Falls	Local businesses on Main Street, Little Falls Station, W. Essex Trail, Shop Rite, MSU Station	Browertown Road, Long Hill Road, Lindsley Road and Cedar Grove Road intersection
Passaic City	Mayor Johnson Park, Dundee Island County Park	
Paterson	Rail Station	Ward Street, Haledon Avenue, West Broadway
Pompton Lakes	Lincoln Elementary School, Hershfield Park, Lenox Elementary School, Pompton Lakes High School, Lakeside Field, Pompton Lakes Park, Willow Field Sports Complex, Main Street District in downtown Pompton Lakes	Lakeside Ave, Paterson Hamberg Turnpike, Hershfield Park

Ringwood	Skyline Drive, Ringwood Manor, Shepard Lake Recreation Area, Ringwood State Park, Ryerson School, Fieldstone Park Shopping Center, Tranquility Ridge	Cupsaw Road, Burnt Meadow Road, Mill Pond Road, Skyline Drive, Greenwood Lake Turnpike
Totowa		Chamberlain Ave, Riverview Drive
West Milford	Clinton Road, Jungle Habitat, San Cap, Woods Road, Camp Hope, Marshall Hill Elementary School, Wallish Estate, Shop Rite, Mountain Bike Trails, Ironworks, Ridge Road, Skate Park, Bubbling Springs Park, West Milford Recreation Center, The Pump Track	East Shore, Woods Road, Lake Shore, Greenwood Lake Turnpike, Union Valley Road, Marshall Hill Road, Warwick Turnpike, Trailheads, Macopin Road, Echo Lake Road
Woodland Park	Garrett Mountain Reservation	Lackawanna Avenue

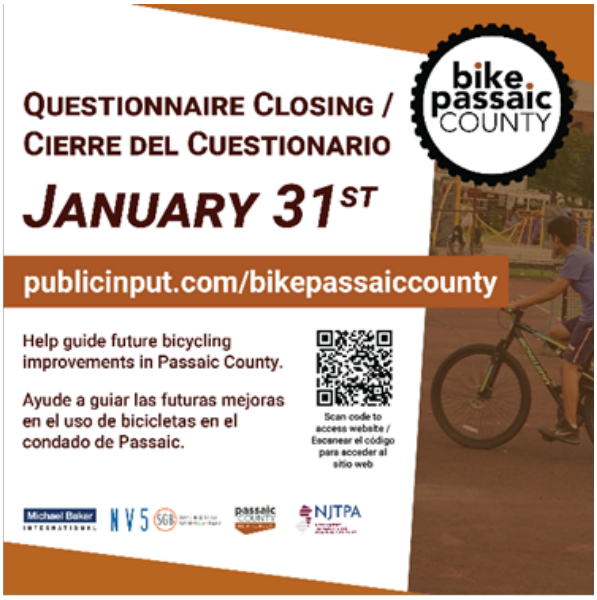
The second map asked participants to identify places where they want to see bike lanes and paths. The map results are shown in the screenshot image below. The activity shows that people want to see bicycle facilities throughout the County. The map also shows that participants want to see bike paths along and across highways, as well as on bridges, underpasses, and overpasses. Many also want to see better connections between housing, parks, schools, commercial areas, and rail trails, such as the NYSW Rail Trail.



Materials

The project team used both virtual and in-person methods to distribute promotional materials for the project. Social media graphics for the project were posted on Passaic County's social media pages and shared via various social media pages, groups, and newsletters, such as municipal Facebook groups, New Jersey Bike Walk Coalition's Facebook page, and the NJ Walks and Bikes Newsletter. Emails with project updates and flyers were also sent to website subscribers, questionnaire participants, and other community organizations. Flyers and stickers were handed out at various events in Passaic County, and lawn signs were placed throughout the County. The stickers, in particular, attracted the attention of kids and teenagers. The promotional materials encouraged residents to visit the engagement portal and to complete the questionnaire and interactive maps. All promotional materials were available in English and Spanish, and they displayed a QR code and link to the website.

Various promotional materials that were distributed during in-person outreach activities. Clockwise from top left: Flyer about the project, handout to promote the survey, a different handout design to promote the survey, stickers.



Various social media graphics that were used to promote the questionnaire.

Technical Memorandum: Literature Review

Date: 7/22/2021 (revised 12/15/2021)

Contents

I. Introduction

An essential element of a successful plan is to understand prior and ongoing initiatives that can provide information, context, and background. This is a necessary step to support sound decision making.

This literature review summarizes key initiatives and recommendations from recent and previous studies. The studies are organized into the following categories:

- **Framework Plans** are developed at the state or regional level. The literature review identifies goals/objectives of these plans, to which *BIKEPassaicCounty* can potentially contribute. As *BIKEPassaicCounty* advances, it is of value to describe how bicycle planning in Passaic County supports state and regional goals, building support and partnerships with state and regional agencies.
- **Passaic County Plans & Studies** are developed by Passaic County (with partners such as the NJTPA) as elements of the Passaic County Master Plan. *BIKEPassaicCounty* maintains a focus on bicycle facility planning, yet is able contribute to advancing the goals and objectives of these other elements. Likewise, these prior elements serve as a foundation for *BIKEPassaicCounty.* By building synergy with prior elements, the recommendations of *BIKEPassaicCounty* can be of great value to the County and its residents.
- **Local Plans** are developed by the 16 municipalities within Passaic County. These plans present an opportunity to integrate local initiatives and bicycle circulation patterns into a plan for County-wide bicycle mobility.
- **Location-Specific Plans** deal with limited geographic study areas, yet may offer insight into planned mobility improvements that can be integrated with *BIKEPassaicCounty.* (Note: The County is working on road improvements on County Roads throughout the County that will lead to bicycling improvements such as Main Avenue in Passaic, Allwood Road in Clifton, Lakeview Avenue in Paterson, etc., that can be mentioned in this study).
- **Design Guides** are reference documents that deal with the planning and development of bicycle facilities.

II. Framework Plans

A. NJTPA Long Range Transportation Plan 2050

Date: Draft, July 2021
Contributors: NJTPA

With a theme of "Transportation. People. Opportunity.", this plan emphasizes a shift from an outmoded focus on transportation as the movement of motor vehicles to transportation as accessibility or "using a variety of modes to give people convenient and affordable access to jobs, education, and other opportunities." The plan formalizes a regional framework that prioritizes accessibility as a means to reduce barriers, support equity and environmental justice, improve safety, and address aging infrastructure. Plan priorities include safety, accessibility, equity, active transportation, climate change mitigation, and transportation technologies. The plan recognizes needs for increased funding for local projects, support for active transportation, access to transit/TOD, and environmental protection.

Key strategies related to bicycling (p. 63-64) and bicycle planning in Passaic County include:

- Bicycle networks: Building out a connected bicycle network enables less experienced cyclists to gain better access to destinations. Installing bike lanes is one way to designate safe space for cyclists. Protected bike lanes offer greater protection for cyclists where curbside space is available.
- Dedicated trails: Upgrading existing trails such as the Morris Canal Greenway and exploring new additions, such as the proposed nine-mile Essex-Hudson Greenway from Montclair to Jersey City, and the Northern Valley Greenway from Tenafly to Northvale in Bergen County, would provide even more opportunities for cyclists of all levels to comfortably travel off-road from one destination to another.
- Pathways to transit: Safe access to public transit is a key element of an effective regional active transportation network. Investment in more accessible transit infrastructure such as safe walking paths to bus stops and safe bus stop designs also addresses equity issues, since the most frequent transit users are minority and low-income residents.
- "Calming" streets: Reducing vehicle speed plays a key role in safety outcomes for pedestrians and bicyclists. If a car traveling 40 MPH strikes a pedestrian, the survival rate is 20 percent, versus a 90 percent survival rate if the vehicle is traveling 20 MPH. Road diets, landscaping and signage are just a few ways to signal to drivers that they are entering zones with higher pedestrian and biking activity

Appendix A: Active Transportation in the NJTPA Region
This study discusses the current state of walking and biking in the region and offers recommendations to enhance active transportation.

- Defines benefits of active transportation (economic, health, environment, access)

- Describes active transportation patterns in the region: "Four percent of commuters in the NJTPA region travel by foot or bicycle, according to the 2014-2018 American Community Survey (ACS). Walking and biking account for ten percent of non-commute trips, based on the NJTPA and New York Metropolitan Transportation Council (NYMTC) Regional Travel Household survey. Most of these are walking trips, with bicycling accounting for less than 0.5 percent of both commute and non-commute travel."
- Describes challenges to improving active transportation (need for infrastructure, data limitations, safety)
- Presents strategies for improving active transportation (calming streets, pedestrian facilities, bicycle networks, pathways to transit, ADA, safety, land use/TOD, policy changes
- Provides recommendations for NJTPA:
  1. Expand active transportation planning
  2. Provide support and technical assistance for design and construction
  3. Create an active transportation plan
  4. Promote education and public participation
  5. Improve regional data.
  6. Expand available funding

B. Together North Jersey: The Plan. Connection People, Places, and Potential

Date: 2015

Contributors: Together North Jersey, multi-county steering committee, NJTPA, NJ TRANSIT, NJ OPA, HCDN-NJ, NJ Future, Building One New Jersey, PlanSmart NJ, Bloustein School of Planning, RPA, Sustainability Institute at The College of New Jersey

The TNJ Plan introduced themes that have permeated planning efforts in the North Jersey region in the ensuing years. Efforts to update the 2015 Plan are currently underway. The Plan includes 5 Priority Goals and 15 Focus Area/Strategies.

Goals and Focus Areas relevant to bicycle network planning in Passaic County include:

Goals:

- Grow a strong and inclusive regional economy
- Create great places
- Increase access to opportunity
- Protect the environment

Focus Areas:

3.1: Use our region's transportation infrastructure as a framework for future investment.
3.3: Strengthen tourism by promoting North Jersey's arts, cultural, recreation, historic and natural amenities at the regional scale.
6.1: Design places that meet the diverse needs of people in all age groups.
6.2: Create a physical vision for new development based on an understanding of the unique characteristics that define each place, including historic context.

6.3: Establish programming and management practices to create active, actively-managed spaces.
6.4: Locate development in areas that are walkable, bikeable, and accessible by public transit.
6.5: Invest strategically in catalyst spaces, rather than standalone building projects.
7.1 Maintain transportation infrastructure in a state of good repair.
7.2 Adopt and implement "Complete Streets" policies.
7.7 Use technology to improve transportation operations.
10.2 Adapt communities to be resilient to extreme weather events and the impacts of climate change.
10.4 Use green infrastructure to mitigate the impacts of extreme weather and climate change.
12.1 Integrate public health considerations in all aspects of planning and policy-making.
12.2 Increase access to affordable healthy foods and maximize access to locally produced fresh food.
12.3 Increase access to quality healthcare facilities, especially for medically underserved communities.
12.5 Create safe and healthy buildings, neighborhoods and communities through planning and design.
12.7 Improve conditions for communities that are disproportionately burdened by air pollution.
13.1 Work with landowners to stewardship of privately owned natural lands and green space.
13.3 Improve stewardship of public parks, open space and natural lands.

C. New Jersey Bicycle and Pedestrian Master Plan

Date: 2016
Contributors: NJDOT Office of Bicycle and Pedestrian Programs

The BPMP describes a Vision for active transportation in New Jersey as:

> "New Jersey is a place where people of all ages and abilities are able to bicycle and walk. Those who live, work, or visit are able to conveniently walk and bicycle with confidence, a sense of security in every community, and with the respect of all modes. Both activities are a routine part of the transportation and recreation systems."

The BPMP identifies 5 goals with supporting strategies for implementation. Those relevant to bicycle network planning in Passaic County include:

Goal 1: Improve Safety

- Prioritize the most vulnerable (disadvantaged/high-risk groups — youth, seniors, low-income, disabled and minority populations) of vulnerable user needs in projects and decision-making.

Goal 2: Enhance Accessibility, Mobility, and Connectivity

- Maximize Complete Streets Implementation through education, training, funding support, tools and best practices.
- Develop and fund pilot projects in communities that have adopted Complete Streets implementation plans.
- Test and evaluate innovative concepts, new practices and technological advances.
- Improve and expand the transportation infrastructure for bicyclists and pedestrians

- Adopt NACTO Urban Bikeway Design Guide, Urban Street Design Guide, and Transit Street Design Guide at the state, MPO, county, and local levels.
- Identify and complete trail system gaps.
- Improve access to transit.
- Improve maintenance of facilities to ensure safety of users.
- Support construction of bicycle facilities to improve connectivity and mobility of non-motorized transportation networks to attract the widest range of potential users.
- Train and coordinate municipal engineers for funding and prioritization.
- Collaborate with school boards to support and coordinate SRTS efforts.
- Conduct training via a coordinated, geographically informed strategy to bring together local, county, and NJDOT liaisons on resources [developed by NJDOT and others]

Goal 3: Achieve Healthy, Equitable, Sustainable Communities

- Continue to educate the public on the benefits of and safe practices for walking and bicycling.
- Collaborate with health, enforcement, business, and environmental partners
- Collaborate with equity and environmental justice partners
- Collaborate with community design and placemaking partners

Goal 4: Foster a Culture Shift

- Increase public awareness of the benefits of bicycling and walking.
- Address emerging technologies, such as electric bikes and bike share.

D. Highlands Regional Master Plan

Date: 2008
Contributors: Highlands Planning Council

The northern portion of Passaic County falls within the Highlands Region, as governed by the Highlands Water Protection and Planning Act:

> "The Highlands Water Protection and Planning Act (Highlands Act, P.L. 2004, c. 120), enacted on August 10, 2004, includes findings of the Legislature "that the New Jersey Highlands is an essential source of drinking water . . . for one-half of the State's population . . . that . . . [it] contains other exceptional natural resources such as clean air, contiguous forest lands, wetlands, pristine watersheds, and habitat for fauna and flora, [and that it] includes many sites of historic significance, and provides abundant recreational opportunities for the citizens of the State" (p. 11)

Of the portion of Passaic County that is located within the Highlands Region, the majority is classified as Highlands Preservation Area:

> "The Preservation Area consists of nearly 415,000 acres located in 52 municipalities within the seven Highlands Counties. The lands within the Preservation Area were subject to the immediately effective standards in the Highlands Act and are governed by rules and regulations subsequently adopted by the New Jersey Department of Environmental Protection (NJDEP). The Highlands Act

established detailed and stringent standards for the NJDEP rules to protect the Preservation Area resources, with some provision for relief for redevelopment, brownfields development, and development based on the issuance of permit with waiver or qualification for one of the 17 exemptions." (pp.11-12)

Relevant to bicycle network planning in Passaic County, the Highlands Regional Master Plan includes the following components:

Smart Growth Component – Consider public investment priorities, infrastructure investments, economic development, revitalization, housing, transportation, energy resources, waste management, recycling, brownfields, and design such as mixed-use, compact design, and transit villages

Transportation Component – Promote a sound, balanced transportation system

"The Highlands Council does not issue permits, but is statutorily required to review certain proposed projects throughout the Highlands Region for consistency with the Highlands Act and Highlands Regional Master Plan (RMP). The Highlands Council shares jurisdiction with the New Jersey Department of Environmental Protection, which is the permitting agency in the Highlands. Please refer to the links below for additional guidance." (https://www.nj.gov/njhighlands/projectreview/)

***BIKEPassaicCounty* should produce recommendations that conform to the Highlands Regional Master Plan when planning within the Highlands Region. This means that a sensitive/conservative approach may be advisable when considering new trail or off-road bicycle facilities in the region. It would also be reasonable to contact the New Jersey Highlands Council for review/input on any *BIKEPassaicCounty* recommendations within the Highlands Region as a component of network/concept development.**

E. New Jersey Trails Plan Update

Date: 2009
Contributors: NJDEP, NJDOT, NJ Trails Council

The NJ Trails Plan Update establishes new conceptual links among significant New Jersey trail facilities and includes important planning considerations, identifying the follow links and broadening the definition of trails: to include Trails ***and*** Transportation

- Trails and Economic Development
- Trails and Greenways
- Trails and Open Space Preservation
- Trails and Health
- Demographics
- Sprawl development
- Trail user types
- Trails accessibility

Trail definition: "Trails continue to be popular for outdoor recreation, but many are also important for transportation (as they originally were). Some trails are created to commemorate, preserve and provide access to historic places or unique natural landscapes, providing a venue for education and interpretation. Many trails are located in rural or bucolic settings, but an increasing number are found in urban and suburban areas where they are sometimes referred to as "community pathways." Today,

trails can also be located within public rights of way and can include "on-road" elements, such as a bicycle touring route or a trail connector that completes a network of trails. Trails are being used by an expanding variety of user types. In addition to land trails, there are a fast-growing number of water trails or "blueways": streams, rivers, canals and waterfronts for boating."

Relevant to bicycle facility planning in Passaic County, the Trails Plan Update identified the following themes, goals, and recommendations:

1. Trails for all

- Trail networks formed by extending and connecting existing trails
- An increased number of accessible trails for the sensory or mobility impaired throughout the state
- Vigorously pursue the acquisition and development of major multiple use trails on their own rights of way, especially on rail rights of way (includes rails with trails)
- Explore opportunities to provide sustainable trail access on publicly owned preserved open space

2. Trails for Community Connections

- Community pathway networks within New Jersey's population centers that provide a walking trail within 10 minutes of every resident and non-motorized connection to neighborhoods, schools, workplaces and public destinations
- An extensive network of connecting trails throughout New Jersey for safe and easy movement between communities
- An extensive network of greenway trails connecting parks and natural areas
- Provide bicycle and walking trails connecting residential areas with parks, major trails and trails systems. Capitalize on the transportation value of trails, using them to connect to non-park destinations.
- Include trails and pedestrian facilities in development, redevelopment and transit proposals.

6. Trail Information, Communication, and Promotion

- Widely available maps and information on trails through a variety of sources
- An informed public, including decision-makers, regarding trail benefits and the role of trails in supporting active, healthy lifestyles
- Trails and greenways promoted as key connections between parklands, rivers, historic sites and other natural resources

7. Trails Planning and Development

- Cooperative trails planning and decision making within and among all levels of government
- Trails built into land use laws so that developers are required to plan for trails as part of their site plan

F. Morris Canal Greenway Corridor Study

Date: 2018
Contributors: NJTPA, Morris Canal Working Group, Technical Advisory Committee (incl. Passaic County Planning)

This study:

- analyzes the path of the historic Morris Canal,
- identifies a continuous greenway for walking and bicycling that follows the original route as closely as possible,
- identifies potential projects for short- to medium- and long-term implementation,
- outlines branding and marketing activities to build visibility for the Morris Canal Greenway, presents design guidelines to unify the greenway, and
- recommends an organizational structure that coordinates implementation, helps to maintain the greenway, and promotes its benefits.

***BIKEPassaicCounty* should note the study area alignment in mapping and analysis, accounting for any sections of the canal that have been constructed or for which planning/design has been advanced within Passaic County.**

It is likely that the routing decision made in this 2018 study, with stakeholders from the entire length of the Morris Canal, supersedes routing decisions made in the 2011 Morris Canal Greenway Feasibility Study in Passaic County only (ANJEC funded). The 2011 study was used a resource in the 2018 study.

III. Passaic County Plans and Studies

A. Moving Passaic County: Transportation Element of the Passaic County Master Plan

Date: 2012
Contributors: Passaic County Department of Planning and Economic Development, NJTPA

The Transportation Element addresses all aspects of the transportation system including pedestrians, bicyclists, motor vehicles, public transportation, waterway accessibility, air travel access, and freight movement. This 2012 plan proposes important key themes – Complete Streets; Bicycle, Pedestrian and River Access – and established a roadway typology, Complete Streets design guidance, and introduced the concept of green streets.

Key components relevant to *BIKEPassaicCounty* include:

- Goal #4: Work toward the creation of "Complete Streets" so that our roadways better serve all users, including pedestrians, bicyclists, transit users, senior citizens, and persons with disabilities.
- Roadway Classification (Street) Typology:
  - Regional Street Definition: a major travel route that handles the highest volume of traffic on County roadways, supporting all modes of transportation
  - Highlands regional Street Definition: As above, but also characterized by single-use, low-intensity development that transitions between residential, commercial and rural settings. In many cases, developments are separated by large natural areas and winding roadways. They are major travel routes that handle the most diverse traffic modes.
  - Downtown Street
  - Community Street
  - Neighborhood Street
  - Green Street
- Key Issues: Safety, Public Health, Access, Connectivity
  - **Can be updated in BIKEPassaicCounty to conform to NJTPA Plan 2050**
- Bicycle/pedestrian Priority Corridors
  - **Maps 4.1 and 4.2 can serve as baseline data for BIKEPassaicCounty**
- Identifies wayfinding and dedicated bicycle facilities on County roadways as prevalent needs for access and connectivity
- Identifies river access as a need and opportunity
- Bicycle access to Transit
- Bicycle relationship to Scenic and Historic Byways **(Maps 8.1, 8.2, and 8.3 can serve as baseline data for *BIKEPassaicCounty*)**
  - "Scenic and Historic Byways are defined as any roads, rivers, trails, railways or historic routes that hold an intrinsic historic or scenic value that identifies (or was vital) in the

development of Passaic County. The intrinsic value of the byway can be characterized by the presence of such features as traditional homesteads, viewsheds, architecturally significant buildings, bridges, stone walls and other features throughout Passaic County." (p.80)

- Appendix A – Complete Streets Guidelines
    - Provides a thorough reflection on qualities that establish the Roadway Classification Typology
    - Guidance is high level and descriptive, rather that prescriptive of solutions for given roadways (opportunity for *BIKEPassaicCounty*)
    - Guidance predates many of the design guides that can be applied in 2021 (see list of design guides in this literature review)

B. Heritage Tourism Element of the Passaic County Master Plan

Date: 2013

Contributors: Passaic County Department of Planning and Economic Development, Passaic County History and Tourism Board, Passaic County Heritage Tourism Board Technical Advisory Committee

The Heritage Tourism Element builds from the Transportation Element (2012) to address both transportation and tourism issues and formalizing an implementation plan for the Scenic and Historic Byways Program described in the Transportation Element. "The outcomes and benefits of the Passaic County Scenic and Historic Byways Program are diverse and cover a wide range of objectives:

- Preservation of the County's historic sites, scenic vistas and open space,
- A unified interpretive story of Passaic County's history and its role in historical movements and events of regional and national significance,
- **Improved access to visitor destinations** by tourists as well as residents of all ages and abilities,
- **Economic vitality from increased tourism**, and
- **Transportation improvements** that support the Scenic and Historic Byway objectives,
- **Encourage the use of non-motorized travel**,
- **Address safety** throughout the Byways network." (p.1)

The Heritage Tourism Element includes a GIS inventory of Major Attractions, the Scenic Byway Network, and trails (maps on page 14 and 15) that should be incorporated as baseline data in *BIKEPassaicCounty.*

C. Sustainability Element of the Passaic County Master Plan

Date: 2013

Contributors: Passaic County Department of Planning and Economic Development, Sustainability Working Group, Passaic County Heritage Tourism Board Technical Advisory Committee

The Sustainability Element "…outlin[es] a comprehensive action plan with distinct goals and strategies to achieve a sustainable future for Passaic County. This plan represents a commitment to improving public health and the quality of life for all residents, visitors and businesses in our community." (p.1)

The plan defines sustainability as "a systematic approach that supports economic responsibility, environmental stewardship and a thriving community to achieve and encourage the highest level of efficiency and conservation of resources in local government operations" (p. 5)

Key components relevant to *BIKEPassaicCounty* include:

- Vision: "To be a sustainable local government means that the Passaic County governing body considers the direct and indirect fiscal, social and environmental impacts of their decisions, resulting in policies that reduce waste to promote efficiency and effectiveness across all three areas. In carrying out the policies enacted by the governing body, Passaic County staff equally considers the fiscal, social and environmental impacts of their actions and operations. The Passaic County Board of Chosen Freeholders strive to provide effective services that fulfill the needs of Passaic County residents today, without compromising the ability of future generations of Passaic County residents to meet and exceed our quality of life. The goals and strategies outlined in this plan were thoughtfully designed to guide Passaic County toward our vision for a sustainable future."
- Green Infrastructure: Design and maintain a strategically planned green infrastructure network composed of natural lands, working landscapes and capital projects that maximize infrastructure efficiency and mimic natural ecosystem functions to benefit human health and quality of life for Passaic County residents. Green Infrastructure Design Guidelines are included in Moving Passaic County (2012).
- Design for People: Create human-scale built environments that provide comfort, safety, accessibility, and are aesthetically pleasing to Passaic County residents and visitors.
- Compact & Complete Communities: Create complete communities with a range of services that allow for amenities and transportation options; afford equitable access to the ingredients of what makes for an economically and socially viable neighborhood; and reduce the community's carbon footprint.
- Public Spaces: Invest in, program and optimally maintain diverse and interconnected public spaces that feature equitable, convenient and comfortable access, encourage safe and healthy behaviors, minimize hazards, are culturally appropriate, and attract and serve all populations.
- Transportation & Mobility: Reduce vehicle miles traveled (VMT) and associated greenhouse gas and air pollutant emissions by enhancing the availability of, and access to, diverse transportation choices, including non-motorized modes and transit. Create safe, affordable mobility and physical activity opportunities for all; provide and optimally maintain infrastructure that efficiently and affordably moves people and goods locally and regionally. Design County roads in accordance with the Complete Streets Design Guidelines in Moving Passaic County (2012).

- Code Barriers: Guidelines, Requirements and Resolutions: Ensure that County planning and engineering guidelines, requirements and resolutions consider community and site context, improve ecological integrity, are based on life-cycle costing, foster social equity and reward innovation; serve as a resource to municipal land-use boards to overcome code barriers.
- Public Engagement in Planning and Design: Provide regular, meaningful and equitable opportunities for Passaic County citizens to shape the future of our communities.
- Fuel Efficiency and Transportation Infrastructure: Support low-carbon and high resource-efficiency transportation options through the development of supporting infrastructure, fuel purchasing and local fuel production; facilitate improvements to the public transportation system with NJ Transit and transit management agencies; encourage non-motorized transportation infrastructure and safety improvements for bicyclists and pedestrians.
- Food Access and Nutrition throughout Food Cycle: Throughout the food cycle, ensure community food security by improving the availability, accessibility and affordability of healthy food at all times for every Passaic County resident; understand and strengthen the Passaic County Food System.
- Active Living: Create opportunities for and promote the integration of recreation and physical activity into County residents' daily routines and the built environment.
- Infrastructure and Capital Projects: Equitably distribute infrastructure, amenities and services to foster community health and create communities of opportunity.
- Environmental Justice: Develop and enforce government policies and practices that not only contribute to reducing polluted and toxic environments for all residents, but also lead to an equitable distribution of the positive and negative environmental effects on the health and well-being of communities.

D. Passaic County Parks, Recreation and Open Space Master Plan

Date: 2014

Contributors: Passaic County Department of Planning and Economic Development, Open Space Trust Fund Advisory Committee

The Parks, Recreation, and Open Space Master Plan "…provides the foundation for the management, maintenance, improvement, and expansion" of the Passaic County Parks System. Although the plan focuses on park issues, it also provides recommendations on accessibility and linkages (mobility) as functional assets of a successful park system, and goals relevant to *BIKEPassaicCounty.*

Key components relevant to *BIKEPassaicCounty* include:

- **Vision:** "Passaic County envisions a public park system that features a comprehensive and integrated network of park, recreation and open space areas, which are alive with energy, attractive, well maintained, and provide a high---quality experience for any visitor or user of a county park and recreation program.
  The park system is safe and user---friendly, providing new and restored facilities set in significant historic and scenic landscapes, and in open spaces and recreation areas which meet the dynamic needs of the county's diverse residents.

The parks attract Passaic County residents and visitors from the metropolitan area to enjoy outstanding public recreation and open space areas, which protect the environment, strengthen the county's diverse communities, and promote healthy living."

- **Goals/Objectives**
  - 1.a: Facilitate access for all county residents to the Passaic County Park System.
  - 2: Increase the accessibility of the Passaic County Park System.
  - 2.c: Develop linkages between key areas of the Passaic County Park System, and partner to link the county park, recreation and open space areas with federal, state and municipal park and open space systems.
  - 2.d: Encourage municipalities to develop bicycle and pedestrian facilities that link residential areas with park, recreation and open space areas.
  - 2.e: Provide appropriate bicycle facilities, such as secure bike parking, in appropriate areas of the Passaic County Park System.

E. Green Stormwater Infrastructure Element of the Passaic County Master Plan

Date: 2018
Contributors: Passaic County Department of Planning and Economic Development, Open Space Trust Fund Advisory Committee, NJTPA

The Green Stormwater Infrastructure Element provides recommendations and technical guidance "to enable the County to implement a comprehensive strategy for stormwater management based on widespread application of Green Stormwater Infrastructure (GSI) and Low Impact Development (LID) strategies."

- Technical guidance includes a Stormwater Management Guidance Manual and **Green Streets Guidelines**.
- Site-Scale Implementation Strategy: "Develop a list of potential pilot projects; include community stakeholders to ensure that projects address community priorities and provide improvements for underrepresented populations." … **relates to Concept Development task in *BIKEPassaicCounty***
- Appendix A2 – Passaic County Green Streets Guidelines - Provides more detailed information about siting and design considerations for stormwater Best Management Practices (BMPs), as well as applicable practices and diagrammatic representation (plans and cross sections) of potential BMP locations in relation to the County's road typologies and street zones (building on the 2012 Transportation Element of the Passaic County Master Plan)

In Concept Development, *BIKEPassaicCounty* can make reference to this plan and appendix for specific concepts to help envision how a County roadway might be adapted to include Green Street BMPs in addition to bicycle facilities.

F. Highlands Element of the Passaic County Master

Date: 2019
Contributors: Passaic County Planning Department

See review of Highlands Regional Master Plan under Framework Plans above.

"Where development applications filed with the County Planning Board are subject to municipal review and approval in a municipality for which the Highlands Council has approved Plan Conformance, the County Planning Board will rely upon the municipal decision. Where development applications to the County Planning Board are subject to municipal review and approval in a municipality for which the Highlands Council has not approved Plan Conformance, the County Planning Board will rely solely upon review by the Highlands Council." (p. 7)

***BIKEPassaicCounty* should produce recommendations that conform to the Highlands Regional Master Plan when planning within the Highlands Region. This means that a sensitive/conservative approach may be advisable when considering new trail or off-road bicycle facilities in the region. The New Jersey Highlands Council will be invited to be on SAC and there may be a separate meeting with the Council to discuss recommendations.**

IV. Local Plans

Municipal plans, such as the Municipal Master Plan, Transportation Element, or Circulation Element were reviewed in the context of *BIKEPassaicCounty*. The following list provides key bicycle mobility recommendations, as applicable, from the 16 municipalities in Passaic County. Municipalities with Complete Streets policies (ascertained from http://njbikeped.org/complete-streets-2/) are noted. Contact with municipal representatives may be prudent discussion of recommendations/routing in *BIKEPassaicCounty.*

Municipality	Key Bicycle Recommendations in Municipal Plans
Bloomingdale	• Complete Streets Policy 07/17/2018: Goal b: "Provide safe and accessible accommodations for existing and future pedestrian, bicycle, vehicle and transit facilities on all roadways in the Borough." • Bicycle facilities/circulation are not addressed in the municipal master plan/amendments.
Clifton	• 2003 Goal 8: "To encourage the location and design of transportation routes which will promote the free flow of traffic while discouraging the location of such facilities and routes which would result in congestion, blight or unsafe conditions." • 2008 Policy Statement 18 :" To encourage the location and design of transportation routes which will promote the free flow of traffic while discouraging the location of such facilities and routes which would result in congestion, blight or unsafe conditions." • 2008, p. 23: "A Circulation Plan Element should be prepared for the City showing the location and types of a facilities for all modes of transportation required for the efficient movement of people and goods into, about and through Clifton, taking into account the functional highway classification of the Federal Highway Administration and the type, locations, conditions and availability of existing and proposed transportation facilities, including air, water, road and rail."
Haledon	• Objective Six – "The County's plan for improving major traffic intersections should be implemented. • "The intersections, geometry and elevations of Belmont Avenue, Haledon Avenue, and Church Street are unsafe and inadequate. The traffic lights are outdated and do not work properly on the County Roads. The traffic flow into and from the Borough can be resolved through coordination with the County, easements for transition lanes, and potential eminent domain as required. • For BIKEPassaicCounty, a review of any existing plans for the above mentioned intersections should be conducted, if recommendations from the plan are applicable to those areas.

Municipality	Key Bicycle Recommendations in Municipal Plans
Hawthorne	• 2011 Goal 9 (p. 39): "Goal 9: To address traffic and pedestrian circulation issues on a local and regional scale. Policy: The Borough recognizes that the existing circulation system incorporates some deficiencies that serve to impede traffic flow. These include the fact that four major roadways traverse Hawthorne bringing high volumes of traffic to local roadways such as Lafayette Avenue, Goffle Road and Wagaraw Road. The intent of this plan is to improve the flow and safety of traffic within the Borough for vehicles, bicyclists, and pedestrians. However, the Borough also notes that substantive road widening that would create additional travel lanes along entire lengths of roadway would have a negative impact on the community's developed character."
Little Falls	• Complete Streets Policy 10/17/2016: "The Township of Little Falls Complete Streets Policy promotes a comprehensive, integrated, connected multimodal transportation network by providing connections to bicycling and walking trip generators such as employment, education, residential, recreational and public facilities, as well as retail and transit centers." • Complete Streets Action Plan item B: "Encourage and facilitate complete street improvements on roadways owned and maintained by the County of Passaic." • 2013 Updated Comprehensive Goals, #5 (p.29): Encourage the development of both active and passive recreation opportunities for all age groups, interest and abilities in the community, while maintaining sensitivity to environmental and cultural resources" • 2013 Update Comprehensive Objectives for Circulation, #1 (p.32): "Create pedestrian and bike connections within the Township between and among residential neighborhoods, community resources, commercial areas and transit facilities." • 2013 Update Comprehensive Objectives for Economic Development, #3 (p.34) "Transform Little Falls downtown into a pedestrian-friendly, attractive "main street" environment with diverse high-quality retail stores at the ground level, particularly along the streetfront, that is accessible to residents by car, on foot or by bicycle. • 2013 General Recommendation for Traffic, Circulation, and Safety (p. 40): "Support the goal of becoming a sustainable community, where residents can walk safely or bicycle to shopping centers, recreation areas and schools. Access to public transit and a network of pedestrian walkways and bicycle trails should be established." • Mention of Morris Canal Bikeway phase III and IV completion
North Haledon	• Complete Streets Policy 05/17/2017 • 2011 Reexamination Report notes that there have been investments made in circulation improvements, mostly sidewalk facilities for access to schools. The report recommends developing a separate Circulation Element (p.44) • Belmont Avenue Redevelopment Plan (2014) notes objectives to implement Complete Streets, drawing upon guidance from the Passaic County Transportation Element. This plan also shows depiction of bicycle lanes on Belmont Avenue, though notes a 3' width, which does not meet standards.

Municipality	Key Bicycle Recommendations in Municipal Plans
Passaic	• Main Avenue Redevelopment Plan (2021) Section 4.3 provide standards for bicycle parking. Section 4.4 Traffic Impact study notes critical role of multi-modal circulation in the area. • City of Passaic Master Plan (2013) notes the need to develop a Circulation Element. Further notes "Total reconstruction of city streets as opposed to merely resurfacing, when possible" (p. 71).
Paterson	• The City of Paterson and Passaic County are developing Paterson's first Bicycle Plan. Based on community outreach and an understanding of activity centers, travel patterns, and crash history, the Plan will propose an interconnected and accessible bicycle network. The Baker/SGB team can summarize opportunities for synergy with BIKEPassaicCounty when needed.
Pompton Lakes	• Complete Streets Policy 01/23/2019 Goal #1: "Create a comprehensive, integrated, connected multi-modal network by facilitating connections to bicycling and walking trip generators such as employment, education, residential, recreational, and public facilities, as well as retail and transit centers." • 2017 Master Plan Reexamination Goal for Circulation (p. 5), "Establish bicycle routes throughout the municipality, connecting open space, active recreation areas and a potential river walk along the Wanaque River." Goal for Parks and Recreation (p. 7), "Promote greenways and pathways for pedestrian and bicycle recreation." • Pompton Lakes has a Complete Streets plan developed through NJDOT by Michael Baker. The Baker team can summarize the CS Plan when needed. • A recent study Creating Great Places to Age: Aging-Friendly Land Use Assessment (September 2020) by NJ Future has transportation recommendations, such as bike route connectivity to parks, green spaces, and community destinations.
Prospect Park	• 2009 Master Plan Reexamination Report has no specific recommendations for bicycling.
Ringwood	• 2009 Bike and Pedestrian Plan identifies potential on- and off- circulation improvements "to improve or provide neighborhood connections for residents to schools and businesses as well as opportunities to experience Ringwood's local attractions, to not only increase circulation throughout the Borough but to also stimulate the local economy through foot traffic by residents and visitors alike." NV5 can provide mapping from 2009 if needed. • 2012 Master Plan Reexamination Report Objective for Transportation: "To establish transportation policies and programs that improve connections among housing, employment and commercial uses, including provisions for vehicular and pedestrian travel and bicycle paths." Objective for Economic Development: "To promote the redesign of existing commercial sites to provide a more efficient land use pattern through such approaches as reduced curb cuts, interconnecting driveways, improved pedestrian and bicycle linkages and enhanced landscaping and aesthetics."
Totowa	• 2016 Master Plan Reexamination Report has no specific recommendations for bicycling.

Municipality	Key Bicycle Recommendations in Municipal Plans
Wanaque	• 2010 Master Plan Reexamination has no specific recommendations for bicycling. • 2002 Open Space & Recreation Plan notes, "opportunity for creation of linear recreation and open space facilities such as trails, bicycle paths and green ways which link existing recreation and open space sites in an integrated system" (p. 7) • Passaic County is currently working on Highlands Rail Trail Project in Wanaque **(should be added to BIKEPassaicCounty Mapping)**
Wayne	• 2020 Master Plan Re-Examination Report: "Pursue programs with NJDOT and NJ Transit to provide alternative forms of transportation, including but not limited to, bicycle trails, circulator bus service, and additional park and ride lots. The County has implemented multiple on-street bike paths on County roads. Additionally, a new rails-to-trials project is being constructed along the former right-of-way of the Erie Railroad from the Mountainview neighborhood into Pequannock Township" (This is the NYS&W Trail, designed by NV5). • Mention of Highlands Rail Trail and Morris Canal Greenway in (https://www.tapinto.net/towns/wayne/sections/green/articles/public-hearing-set-for-proposed-4-8-mile-bike-path-between-pequannock-and-wayne)
West Milford	• 2003 Open Space Plan: "One of the goals of the Open Space Plan is to develop a framework for an interconnected system of open space and recreational areas. The connections in some cases will simply be in the form of natural linkages such as streams, wetlands, and forested areas (see Trails map). In other instances, however, definite physical connections capable of being traversed on foot, on horseback or by bicycle will be more desirable These connectors or trails already exist in many areas throughout the Township Some of the trails are old logging roads and as such were previously used for purposes other than hiking or horseback riding Other trails, such as the Appalachian Trail, which traverse the northern portion of the Township have always existed primarily for recreational purposes. (p. 33). • The Open Space Plan includes maps of existing and proposed trails. • Note West Milford includes the Jeremy Glick Trail – "Jeremy Glick became a national hero when he was among the passengers aboard United Airlines Flight 93 who stormed the cockpit in an attempt to wrest the plane from terrorists who had pointed it toward Washington, D.C."
Woodland Park	• 2012 Master Plan, Circulation Plan Element notes that the Borough should seek to "Investigate viable east-west options for bicycle and pedestrian linkages to connect the upland areas with the lowland areas, to provide upland residents access to commercial services and the lowland areas access to the County parks and recreation; Analyze streets for viability of adding designated bicycle lanes to promote connections not only in the Borough, but linkages to other communities and mass transit." • The Element also identifies Morris Canal Greenway, Riverwalk along the Passaic River, Connection between Rifle Camp Park and Garrett Mountain Park, and Wayfinding/Marketing as priorities.

V. Location-Specific Plans

A. Peckman Preserve Study, Passaic County Environmental Sanctuary

Date: 2010
Contributors: Passaic County

This study provides conceptual landscape improvements to the Peckman Preserve (12 acres) in Little Falls, providing an integrated perspective of the natural, historical, cultural and social values that are relevant to the Preserve and Passaic County.

As a key component of connectivity, the study proposes a footbridge at the south end of the Preserve, across the Peckman River, connecting to a section of the **Morris Canal Greenway.**

***BIKEPassaicCounty* should note this proposed connection in mapping and analysis (unless it is superseded by subsequent planning of the Morris Canal Greenway.**

B. Great Falls Circulation Study

Date: 2016
Contributors: Passaic County, NJTPA

The Great Falls Circulation Study advances a five-part Gateway Vision Plan of multimodal transportation and placemaking improvements. The study area is a roughly 2-square-mile area around Great Falls National Historical Park in Paterson.

***BIKEPassaicCounty* should note the following in mapping and analysis:**

- **Proposed reconfiguration of 4-lane Spruce Street bridge over Great Falls NHP as a 3-lane road diet with enhanced ped accommodations; currently under constriction**
- **Proposed two-way conversion of Cianci and Mill Streets**
- **Proposed intersection improvements at Memorial Drive at West Broadway, NJ 19/Ward Street at Marshall Street, Cianci Street at Passaic Street**

C. Highlands Rail Trail Feasibility Study

Date: 2017

Contributors: Passaic County, Boroughs of Borough of Bloomingdale, Ringwood, Wanaque, and Pompton Lakes, Township of West Milford

"The purpose of this feasibility study is to evaluate the creation of the Highlands Rail Trail, a bicycle and pedestrian friendly pathway. The historic alignment of the New York and Greenwood Lake Railway, identified as a priority bicycle and pedestrian corridor in the County's Transportation Element of the Master Plan, will provide the foundation for the alignment of the proposed trail. The Highlands Rail Trail was identified in the County's Heritage Tourism Element of the Master Plan as an opportunity to "link bicyclists and pedestrians to businesses, civic uses and recreational opportunities along the constrained Ringwood Avenue corridor, and provide a link between communities in northern and southern Passaic County." The trail will utilize interpretive elements of the historic railroad and the scenic beauty along the corridor to create a regional draw for tourism and a source of local pride for Passaic County."

The study provides detail on the potential trail alignment/route, design guidelines, and implementation steps.

***BIKEPassaicCounty* should note the study area alignment in mapping and analysis.**

D. Paterson-Newark Transit Market Study

Date: 2020
Contributors: Passaic County, Essex County, NJTPA

This study "confirms the viability and market potential of a high-quality transit connection between Paterson and Newark. It does not provide detailed technical study of the many components of such a project."

The study notes that "bicycle/pedestrian trails and greenway compatibility" are an outstanding technical detail to be evaluated in future study.

***BIKEPassaicCounty* should note the study area corridor in mapping and analysis.**

VI. Design Guides

The following list of Design Guides, as a starting point, will be consulted and cited in the development of components of *BIKEPassaicCounty*, including the Pattern Book, network, and concepts.

NJDOT

1. New Jersey Complete Streets Design Guide (NJDOT)
2. New Jersey School Zone Design Guide (NJDOT)

U.S Access Board

1. Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG)
2. Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way; Shared Use Paths
3. A Summary of Accessibility Standards for Federal Outdoor Developed Areas

NACTO

1. Urban Street Design Guide
2. Don't Give Up at the Intersection
3. Urban Bikeway Design Guide
4. Transit Street Design Guide
5. Urban Street Stormwater Guide

AASHTO

Guide for the Development of Bicycle Facilities, Fourth Edition

FHWA

1. Manual on Uniform Traffic Control Devices, (MUTCD)
2. Small Town and Rural Multimodal Networks
3. Separated Bike Lane Planning and Design Guide

VII. Conclusion

The objective of this Literature Review has been to establish a baseline of information relevant to bicycle network and facility planning in Passaic County and to help inform concurrent and future steps in the planning process. The following points provide a synopsis of findings:

- The Framework Plans listed in Section II present high-level goals related to either bicycle, pedestrian, and trail planning, or regional approaches to land use/development and transportation planning, in general. *BIKEPassaicCounty* will establish a bicycle facility network map, priority bikeways, and concept level plans for a select number of routes, providing a level of geographic specificity that is not attained in Framework Plans and informing future discrete project for implementation. In developing the network map, priority bikeways, and concept level plans, the project team should revisit this Literature Review to document how a) proposed facilities are in general compliance with established plans, and b) the manner in which proposed routes meet the goals and objectives of established Framework Plans, thereby strengthening the case of discrete projects for future funding and implementation.
- The Passaic County Plans and Studies in Section III present a fertile and cohesive background from which *BIKEPassaicCounty* will advance. The project team should document in the Final Report, using Passaic County Plans and Studies as a reference, the ways in which the bicycle network will address key planning issues in the County, such as green infrastructure/stormwater management, Complete Streets, transit access, and sustainability. The *BIKEPassaicCounty* planning process can also be used as an opportunity for "inreach" to other departments within the County to discuss perspectives on funding, maintenance, compatibility with other County practices/procedures, and any other considerations, to ensure the *BIKEPassaicCounty* is recognized and ready for cooperative implementation by other County departments as appropriate.
- Based on review of the 16 Local Plans (Section IV) within Passaic County, there is wide variation in the level of consideration given to bicycle planning by the municipalities. From this standpoint, *BIKEPassaicCounty* creates the opportunity for Passaic County Planning to provide leadership in bicycle planning, both as a technical and an inspirational resource. To date, the *BIKEPassaicCounty* planning process has included direct outreach to the municipalities. The County should consider ways (which can be documented in the Final Report) to formally continue bicycle planning and implementation processes that directly involve the municipalities.

As the *BIKEPassaicCounty* planning process advances, it will be important for the project team to build and document consensus from prior planning processes (such as those referenced in this Literature Review), public and stakeholder outreach, and Steering Committee input to inform the proposed routes, concepts, and next steps that are to be included in the plan. This will create a consensus-driven plan with the best opportunity for effective implementation.

BIKEPassaicCounty

Existing Conditions Summary Memorandum

June 30, 2022

Table of Contents

List of Tables

List of Figures

Existing Conditions

The existing conditions analysis identifies existing bicycle facilities, evaluates safety risks and the suitability of the roadway network for bicycle travel, and creates the resources to support identification and selection of the proposed county bicycle network. The existing conditions assessment includes a crash analysis, trip destinations and attractions, and barriers and constraints to cycling, including the Bicycle Level of Stress (LTS) metric.

Bicycle Crashes and Hotspots

Crash data was collected using NJDOT's Safety Voyager platform for bicycle crashes the most recent six years of data (2014-2019). Many studies have found that crashes involving pedestrians and cyclists are frequently underreported. Therefore it should be noted that although the actual crash numbers and severity findings for Passaic County may be higher that noted in this plan, this assessment is limited to the available and reported crash data.

Passaic County bicycle crash data are summarized in Table 1. During the six-year period (2014-2019), 620 bicycle crashes were reported; 16 of these resulted in serious injuries and three fatalities; two of the three fatalities occurred in Paterson. The data and hotspots maps indicate more frequent crash occurrence in the urbanized areas of Passaic County. Paterson, for example, accounts for 29.2% of county population but almost 36% of all reported bicycle crashes.

Passaic County's total of 620 bicycle crashes during the 2104-2019 period was 5.7% of the statewide total of 10,856 crashes. Passaic accounted for 5.6% of statewide population during this period, so overall the County is about average for its share of total bicycle crashes in New Jersey.

Table 1: Bicycle Crash Data Summary, (2014-2019), , NJDOT Safety Voyager

Comparison of Bicycle Related Crashes (2014-2019)				
	Passaic County		New Jersey	
Severity	**Count**	**% of Total**	**Count**	**% of Total**
Fatal	3	0.5%	85	0.8%
Suspected Serious Injury	16	2.6%	293	2.7%
Suspected Minor Injury	152	24.5%	3,304	30.4%
Possible Injury	315	50.8%	4,895	45.1%
Property Damage Only	134	21.6%	2,279	21.0%
Total	**620**	**100.0%**	**10,856**	**100.0%**
Roadway Network	**Count**	**% of Total**	**Count**	**% of Total**
County Road	295	47.6%	3,898	35.9%
Municipal Road	312	50.3%	5,198	47.9%
State Highway	13	2.1%	1,598	14.7%
Other	-	0.0%	162	1.5%
Total	**620**	**100.0%**	**10,856**	**100.0%**
Crash Location	**Count**	**% of Total**	**Count**	**% of Total**
At Intersection	382	61.6%	6,174	56.9%
Not at Intersection	238	38.4%	4,682	43.1%
Total	**620**	**100.0%**	**10,856**	**100.0%**
Roadway Condition	**Count**	**% of Total**	**Count**	**% of Total**
Dry	565	91.1%	9,808	90.3%
Wet	50	8.1%	966	8.9%
Snowy	3	0.5%	21	0.2%
Icy	-	0.0%	7	0.1%
Other	-	0.0%	13	0.1%
Unknown	2	0.3%	41	0.4%
Total	**620**	**100.0%**	**10,856**	**100.0%**
Light Condition	**Count**	**% of Total**	**Count**	**% of Total**
Daylight	452	72.9%	8,011	73.8%
Dusk	21	3.4%	352	3.2%
Dawn	7	1.1%	102	0.9%
Dark (no streetlights)	10	1.6%	203	1.9%
Dark (street lights off)	7	1.1%	79	0.7%
Dark (street lights on, Cont)	104	16.8%	1,649	15.2%
Dark (Street lights on, Spot)	19	3.1%	413	3.8%
Unkown	-	0.0%	47	0.4%
Total	**620**	**100.0%**	**10,856**	**100.0%**
Environmental Condition	**Count**	**% of Total**	**Count**	**% of Total**
Clear	559	90.2%	9,691	89.3%
Overcast	23	3.7%	400	3.7%
Rain	34	5.5%	658	6.1%
Snow	3	0.5%	26	0.2%
Other	-	0.0%	30	0.3%
Unkown	1	20.0%	51	0.5%
Total	**620**	**100.0%**	**10,856**	**100.0%**

Reported bicycle crashes in Passaic County occur more frequently at intersections than statewide averages (61.2% vs. 56.9%) and therefore less frequently away from intersections than statewide (38.4% vs. 43.1%).

Dedicated bicycle facilities at intersections and fully separated facilities are among the improvements that may lessen bicycle crash risk at intersections. Sparse roadway networks and high intersection turning volumes may also be among the factors that contribute to increased risks for bicycle travel at Passaic County intersections.

Greater percentages of reported Passaic County bicycle crashes occur on county and municipal roadways than statewide averages, heightening the responsibility for addressing bicycle safety for Passaic County and its constituent municipalities, compared to NJDOT-owned roadways.

Reported bicycle crashes and hotspots are illustrated in Figures 1 and 2. Although distributed across the county as a whole, the most significant hotspots occur in the urbanized areas of Paterson and Passaic and in the less densely populated Pompton Lakes, with lesser concentrations in Clifton and Wayne. In the northwest, the hotspots are reflective of the sparse population and roadway network, and occur mostly along the few major regional roadways and at significant intersections. Paterson is home to 29.2% of the county population and Passaic is 16.8%; together 46% of county residents live in these two cities.

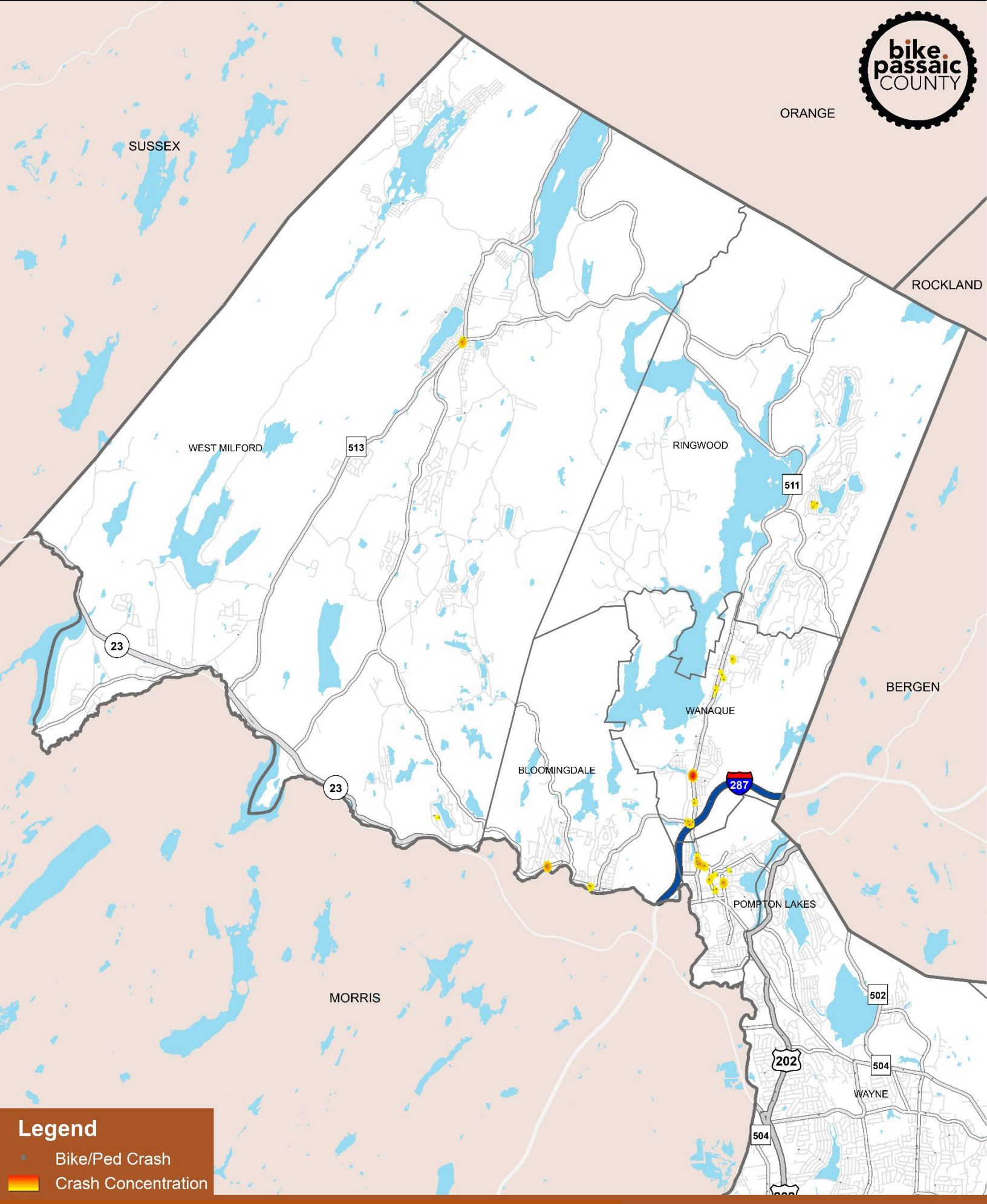


Figure 1: Bicycle Crashes and Hotspots, Northwest

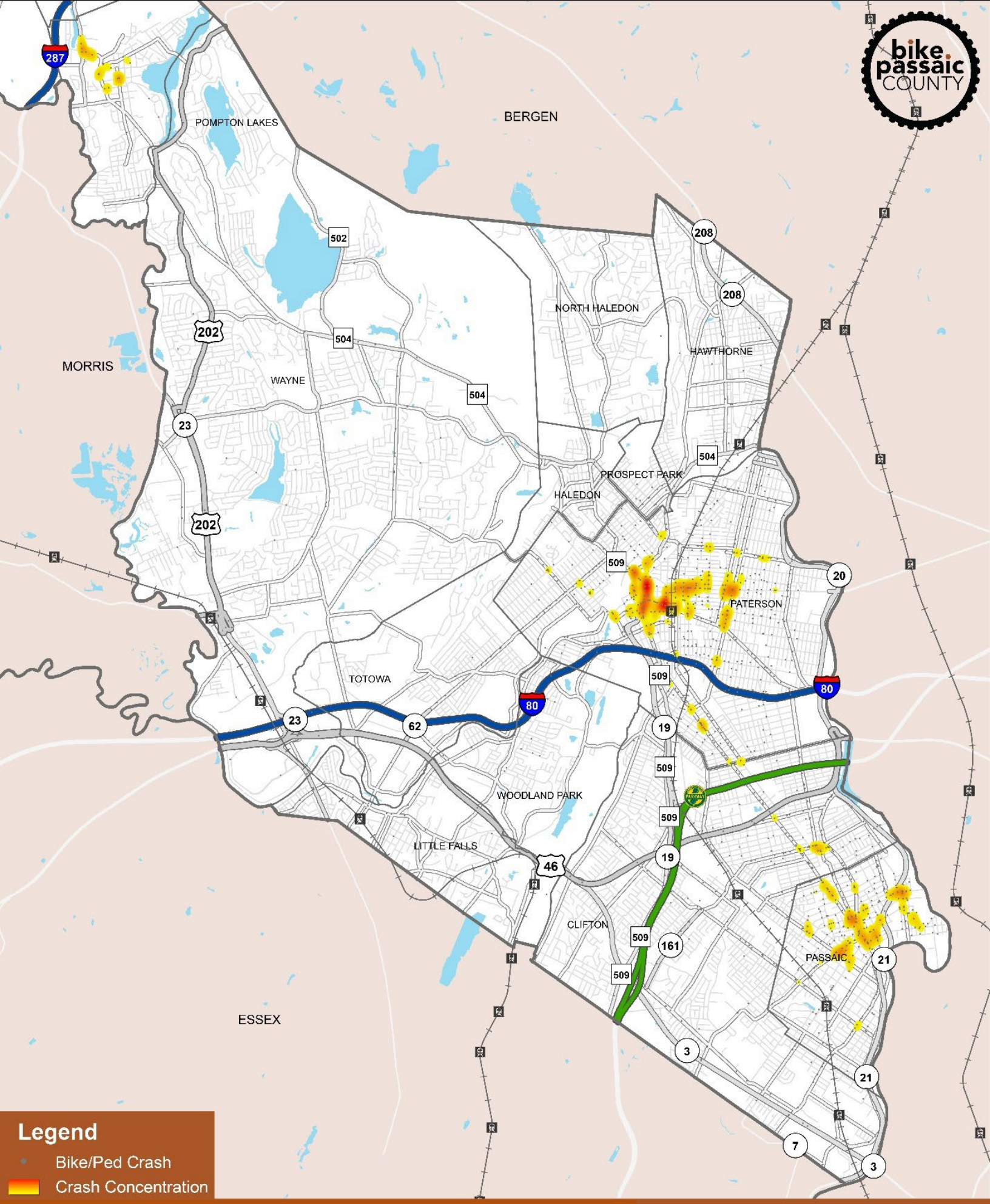


Figure 2: Bicycle Crashes and Hotspots. Southeast

Speed and Crash Occurrence & Severity

Many studies including the New Jersey Complete Streets Design Guidei have shown that slower motor vehicle speeds exponentially increase the survival rates for both pedestrians and bicyclists who are involved in a collision with a motor vehicle. Studies have also suggested that not only can bicycle infrastructure help slow motorists travel speeds but increasing the presence of cyclists and pedestrians has a traffic calming effect as well.[ii]

As figure 3 below illustrates, a crash that takes place at 30 miles per hour is 800% more likely to result in a fatality than a crash at 20 miles per hour. Consequently, 20 mile-per-hour speed limits are ideal for roadways heavily travelled by pedestrians (and bicycles).

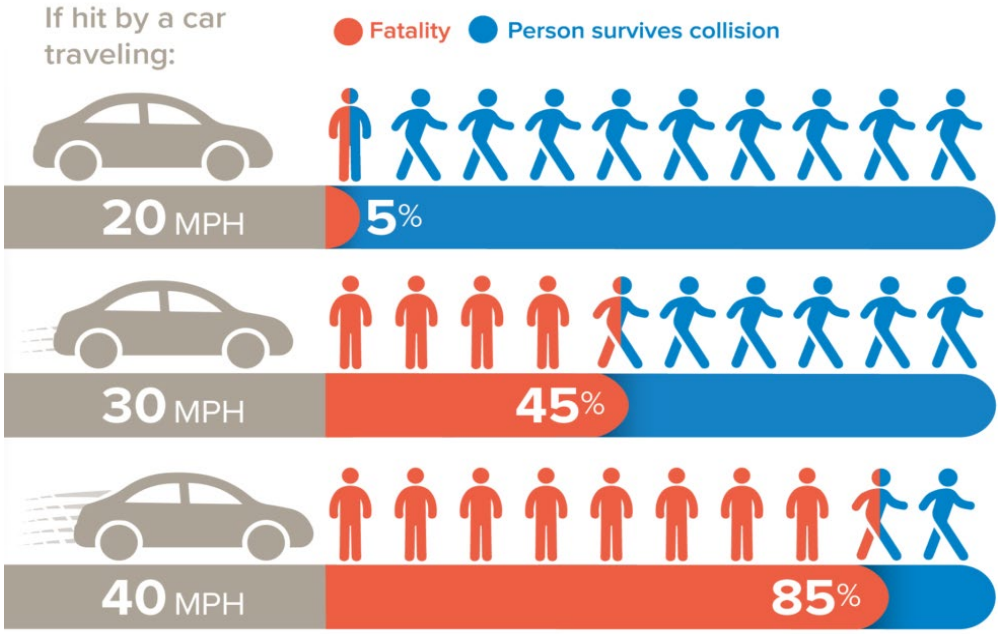


Figure 3 - Risk of Fatality and Serious Injury to Pedestrians vs Vehicle Speed. National Traffic Safety Board (2017)[iii]

Bicycle Level of Stress (LTS) and Island Effect

Bicycle Level of Traffic Stress (LTS) evaluates a bicyclist's potential comfort level given the current use and design of the roadway, and has proven influential in the advancement of bicycle planning in the United States. The LTS metric is based on the Dutch concept of low-stress bicycle facilities and advanced in the U.S. by research supported by the Mineta International Institute for Surface Transportation.[iv] See Figure 4 below.

In general, lower stress facilities have increased separation between cyclists and vehicular traffic and/or have lower speeds and lower traffic volumes. Higher stress environments generally involve cyclists riding in close proximity to vehicular traffic, multi-lane roadways, and higher speeds or traffic volumes.

Four levels of traffic stress were used to evaluate the Passaic County's road network:

- Level of Traffic Stress 1: The level most users can tolerate (including children and seniors). Often called 'ages 8 to 80'
- Level of Traffic Stress 2: The level tolerated by most adults
- Level of Traffic Stress 3: The level tolerated by "enthusiastic" riders who might still prefer dedicated space but able to mix with vehicular traffic
- Level of Traffic Stress 4: The level tolerated only by the most experienced riders

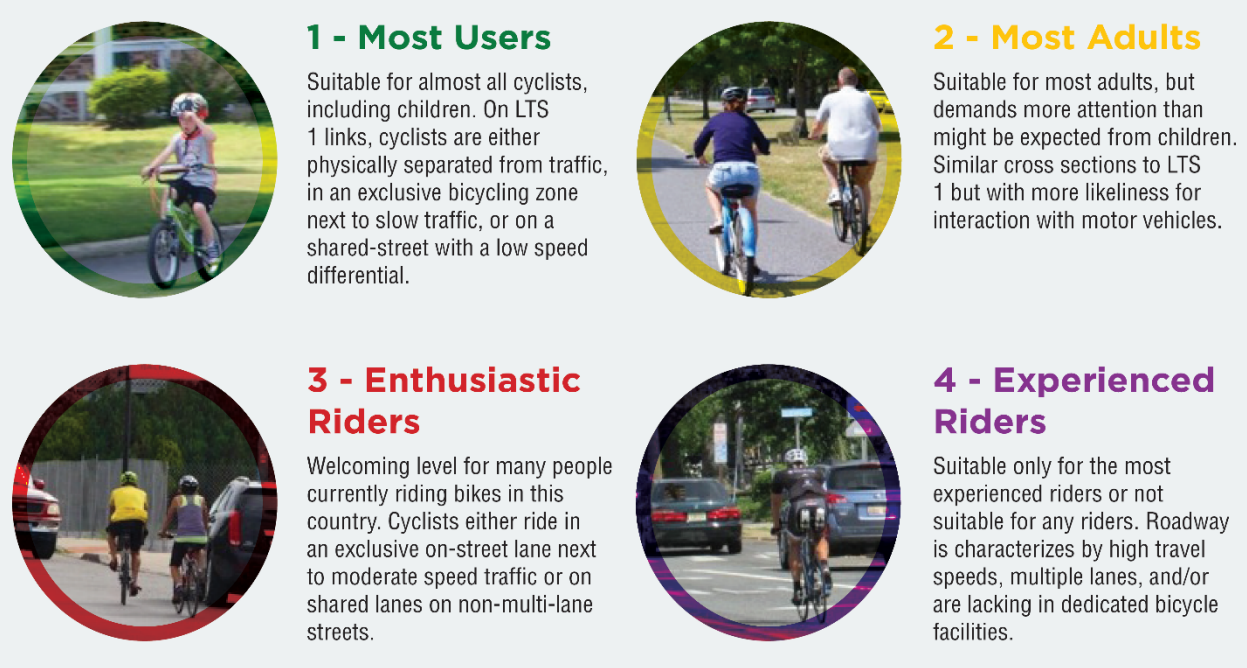


Figure 4: The Four Types of Bicyclists by Level-of-Traffic-Stress (LTS)

The LTS metric was evaluated for the Passaic County roadway network using a variety of data sources, including base mapping, GIS data files, traffic data from NJDOT, and roadway dimension data from Google Earth and Maps. Supplemental virtual field evaluations to take measurements and verify various roadway features, character, parameters, and user behavior. For most of the local roads in the study area, basic assumptions were made of their typical characteristics where to data availability was limited.

From the perspective of low stress (LTS 1 and 2) cyclists, such as children bicycling to school or most adults riding in their neighborhoods or to the local park or main street, Passaic County has many accessible roadways. LTS 1 and 2 roadways comprise about 81% of the total countywide network.

Overall, however, the LTS analysis shows that Passaic County's roadway network presents a very stressful environment for many bicycle trips, with the low-stress network heavily fragmented and isolated by higher-stress LTS 3 and 4 roadways, introducing significant barriers and gaps in mobility and access.

In the northwest (see Figure 5), the roadway network is sparse with few regional roadways and very limited connectivity and roadway capacity. Many of the primary routes were evaluated as high stress roadways, including Clinton Road, Union Valley Road, Macopin Road, Westbrook Road, Otterhole Road, Stonetown Road, Greenwood Lake Turnpike, and Ringwood Avenue. The low stress network is mostly limited to neighborhood streets that provide local access but limited regional connectivity.

In the southeast (see Figure 6), the roadway network is more developed but still dominated by high stress roadways, including many County Routes and municipal roadways, including Berdan Avenue, Hamburg Turnpike, Ratzer Road, Belmont Avenue, Ling Hill Road, Rifle Camp Road, and large portions of the densely population and traffic heavy cities of Paterson, Passaic, and Clifton. Interstate-80, U.S. 202, and NJ Routes 3, 7, 19, 20 21, 23, 46, 62 and others all create significant barriers to bicycle and pedestrian mobility. Many New Jersey state and county roadways provide very limited or no bicycle access.

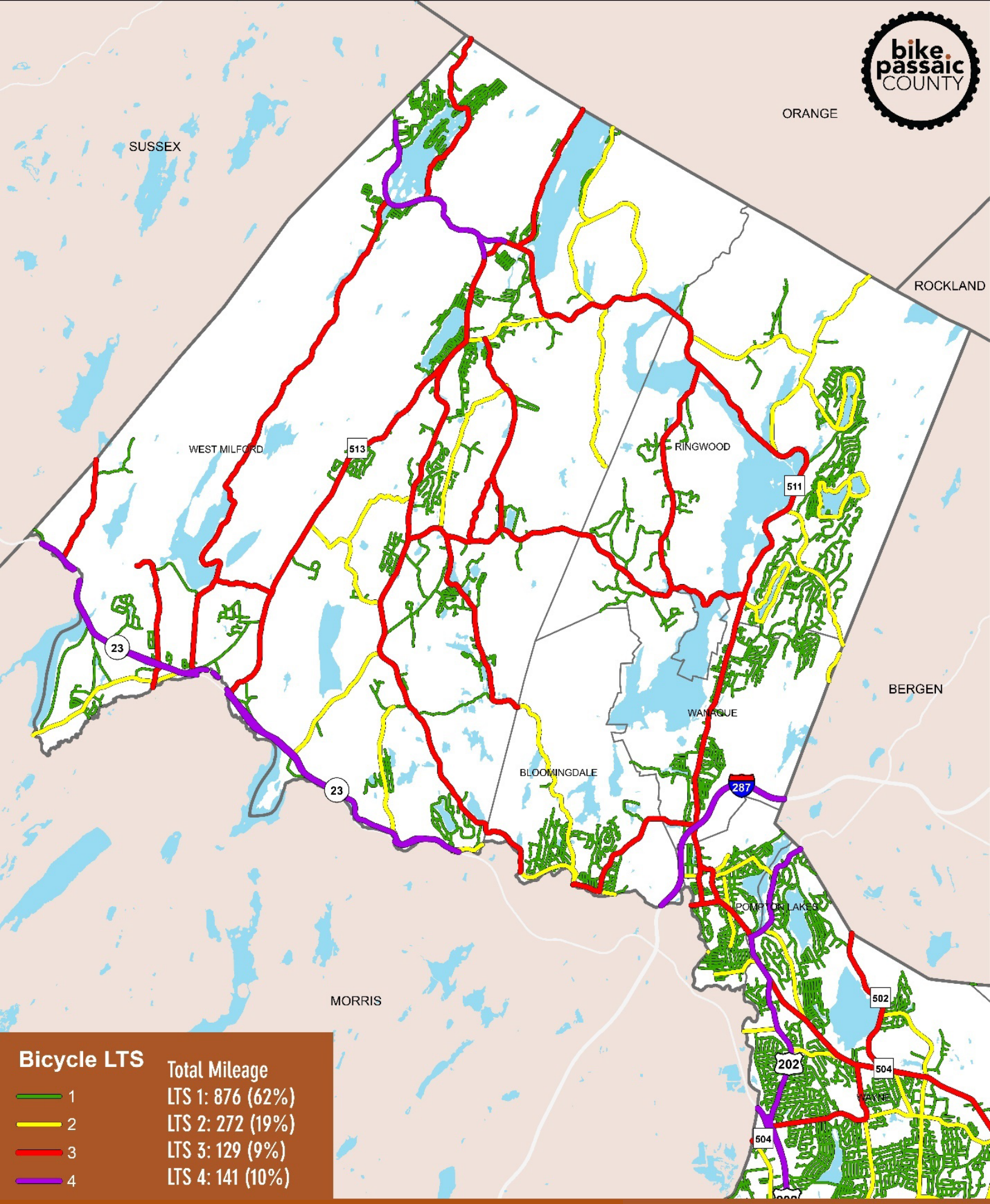


Figure 5: Existing Bicycle LTS, Northwest

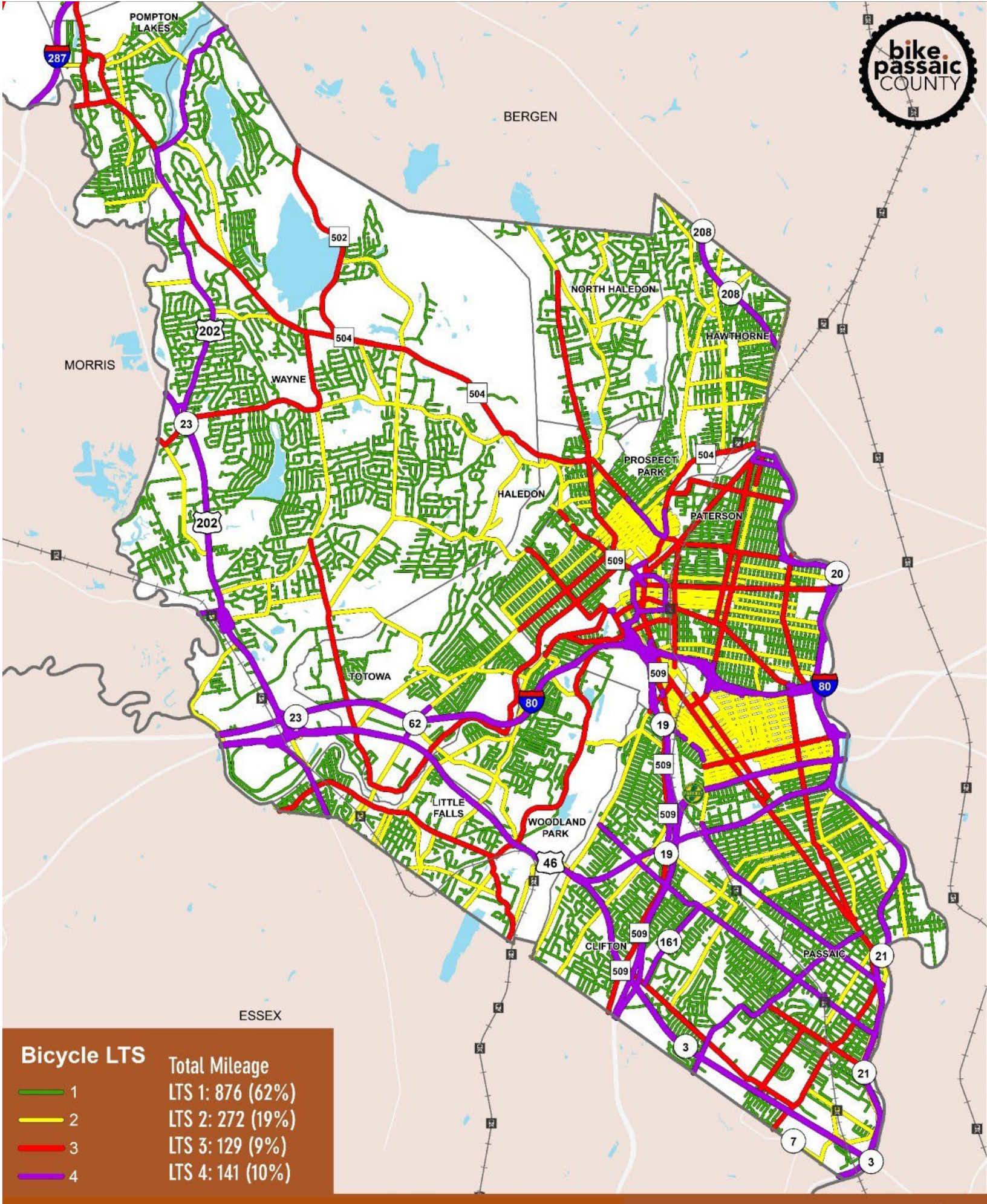


Figure 6: Existing Bicycle LTS, Southeast

These conditions create an island effect, with numerous small but isolated low-stress "islands" of local mobility frequently disconnected from adjacent areas and neighborhoods, with the net effect of containing residents within their neighborhoods, and limiting access to key destinations and attractions.

This is consistent with comments and observations from the community engagement effort; many respondents indicated they are unable or uncomfortable to range beyond their own streets and neighborhoods by bicycle due to safety concerns, exposure to high traffic volumes, speeds, large trucks and busses, and aggressive and inattentive driving behaviors.

In northwest Passaic County, the roadway network is sparse with few regional roadways and very limited connectivity and roadway capacity. (See Figure 7) Many of the primary routes were evaluated as high stress roadways, including Clinton Road, Union Valley Road, Macopin Road, Westbrook Road, Otterhole Road, Stonetown Road, Greenwood Lake Turnpike, and Ringwood Avenue. The low stress network is mostly limited to neighborhood streets that provide local access but limited regional connectivity. The island effect, presented in the following paragraphs, is severe in the northwest.

The unique topography, severe terrain, and prevalence of lakes and water bodies of the northwest also play a significant role in the island effect, magnifying traffic stress and isolation, and creating additional barriers to mobility.

In the southeast, the roadway network is more developed but still predominated by high stress roadways, including both County Routes and municipal roadways, among them Berdan Avenue, Hamburg Turnpike, Ratzer Road, Belmont Avenue, Ling Hill Road, Rifle Camp Road, and large portions of the densely population and traffic heavy cities of Paterson, Passaic, and Clifton. Interstate 80, U.S. 202, NJ Routes 3, 7, 19, 20 21, 23, 46, 62, and others all create significant barriers to bicycle and pedestrian mobility. Many state and county roadways function as de facto highways with very limited or no bicycle access provided.

In the southeast of the County, the island effect is less severe, although barriers and gaps are common across the region. (See Figure 8) The islands are effectively larger, and the barriers and gaps become more pronounced and inhibiting. Regardless of the size and extent of an island, it still has the net effect of containing residents within their neighborhoods, limiting access, mobility, and opportunity.

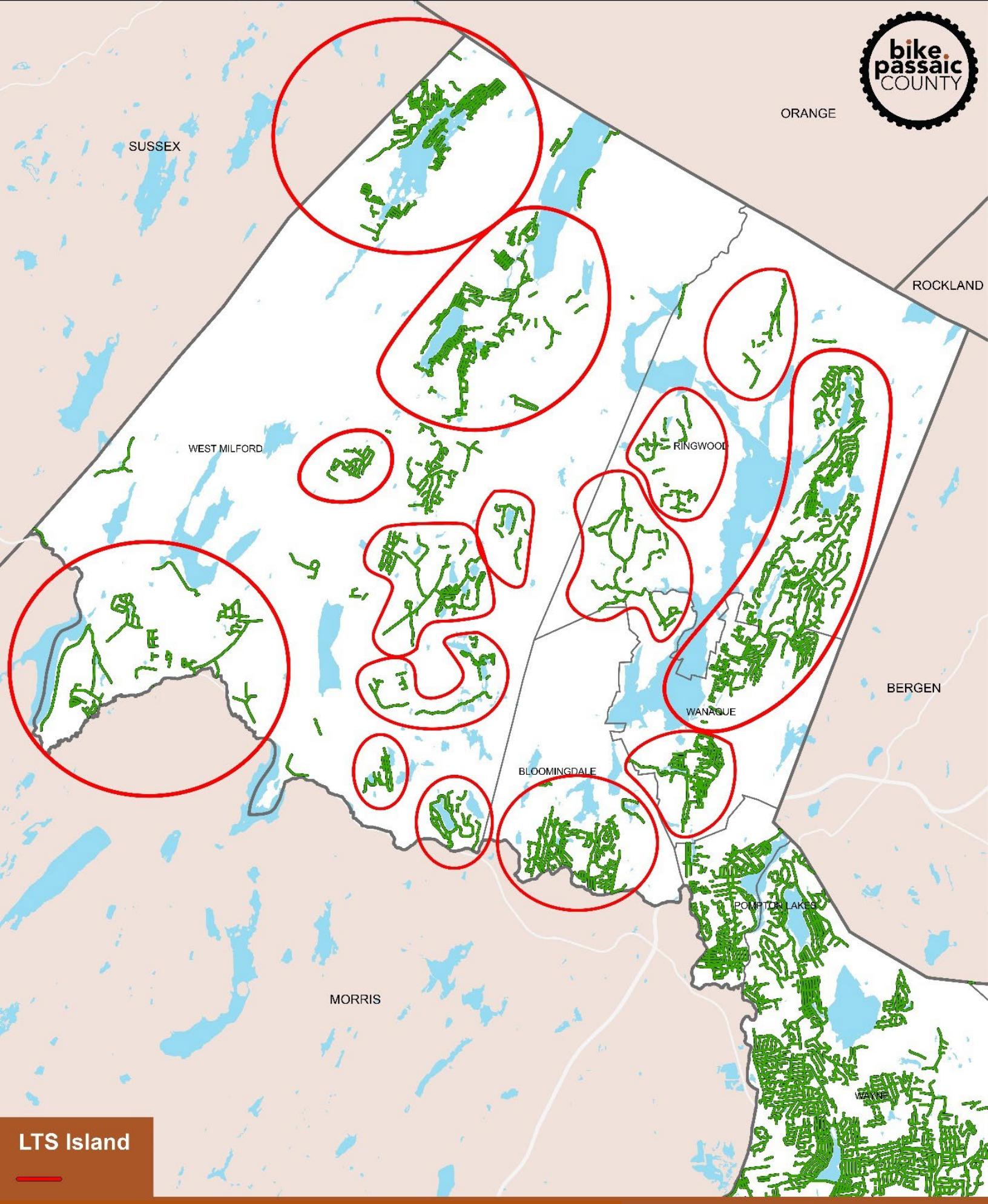


Figure 7: Island Effect, Northwest

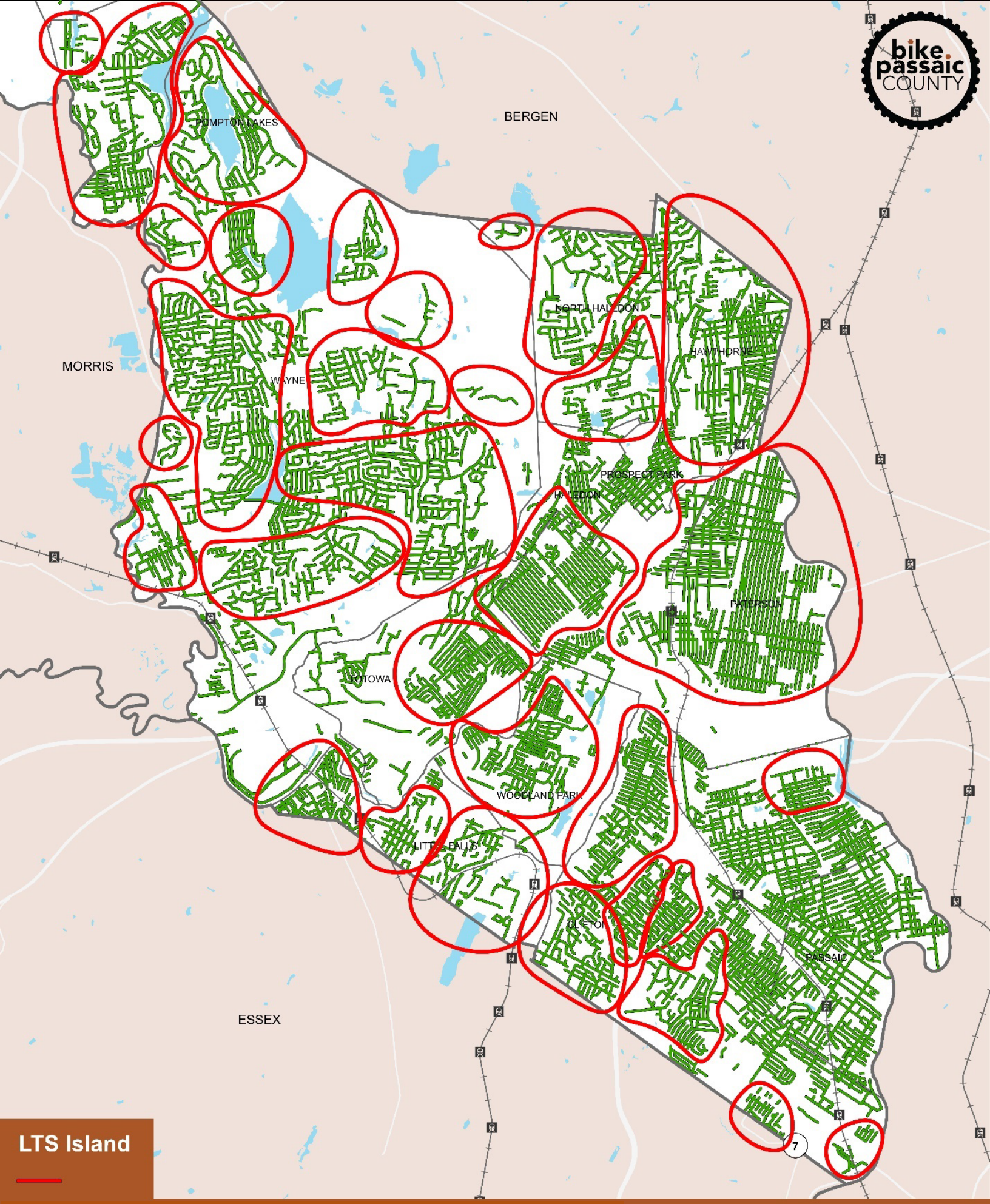


Figure 8: Island Effect, Southeast

Roadway Network

As noted in *Moving Passaic County*,[v] one third of the lane miles of higher level roadway system (Passaic County-owned, State/U.S. roadways, and Interstate highways) is on County roadway which provide most of the connectivity between higher functional classification roadways and local residential areas and destinations, making the county network essential in providing mobility and access for people and goods in Passaic County. This finding is even more pronounced in the northwest, which is skewed even more heavily to the county system and where the county network makes up the majority of the lane mileage. This makes the county network an essential component of bicycle mobility in Passaic County.

Much of the higher level roadway network in Passaic County was also found to be "congested" as defined in *Moving Passaic County*. This includes portions of the principal New Jersey Routes (3, 19, 20, 21, 23, 46) and others, and County roadways (including Paterson-Hamburg Turnpike (CR 504), Haledon Avenue, Union Boulevard and Totowa Road, McBride Avenue, Market Street, Grand Street, Broadway, Main Street/Main Avenue, Getty Avenue, Straight Street, and Allwood Road).[vi]

This finding is supported by the LTS assessment and Island Effect analysis, which show that many Passaic County roadway are high-stress and not accessible to most bike riders.

Trip Destinations and Attractions

Passaic is a diverse county, with a complex and challenging geography, home to many lakes and water bodies, and a long and rich history. Passaic features a wealth of trip destinations and attractions, many of which have the potential to be accessible to travel by bike and foot. Destinations and attractions typical include land uses attractive to bike riding such as school, parks, downtowns, etc.

Figures 9 and 10 illustrate the location of key destinations and attractions, many of which are dispersed throughout the county.

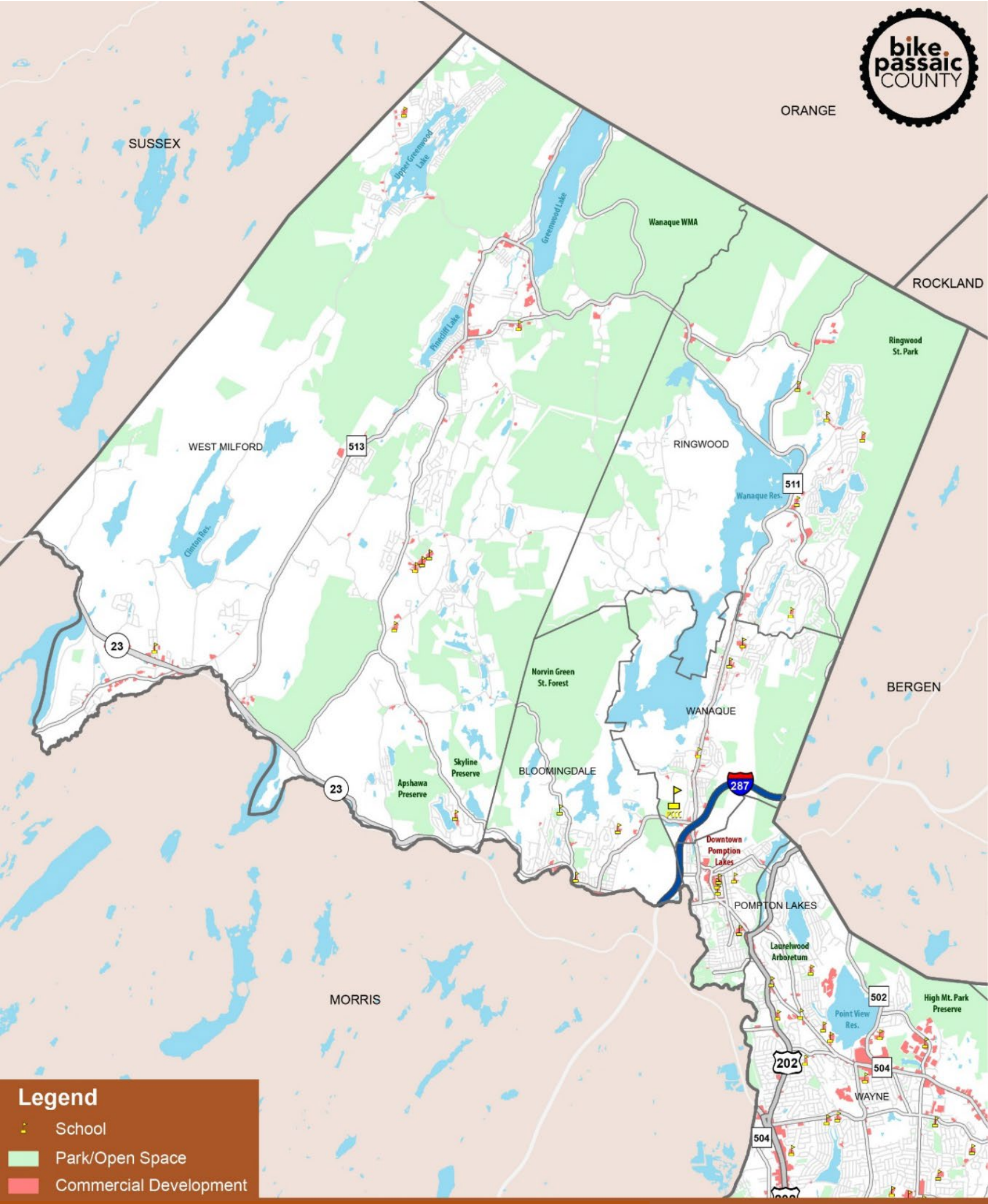


Figure 9: Trip Destinations and Attractions, Northwest

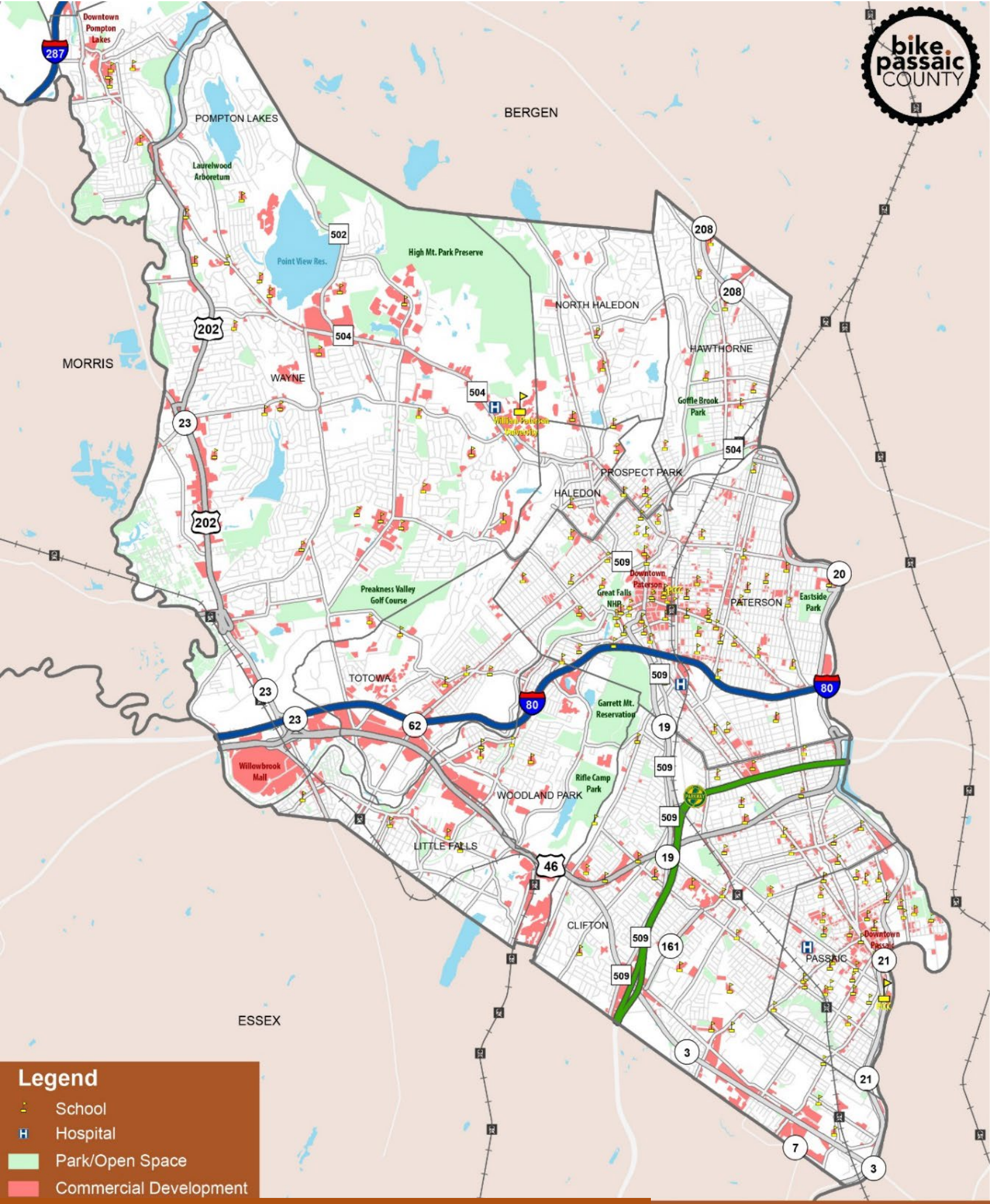


Figure 10: Trip Destinations and Attractions, Northwest

End Notes

[i] New Jersey Complete Streets Design Guide Page 60

[ii] Jacobsen and Rutter, Cycling Safety, 2012

iii National Traffic Safety Board (2017) Reducing Speeding-Related Crashes involving Passenger Vehicles

[iv] https://transweb.sjsu.edu/research/Low-Stress-Bicycling-and-Network-Connectivity

[v] Moving Passaic County -Transportation Element of the Passaic County Master Plan, October 2012

[vi] Moving Passaic County, Section 6, page 54

Technical Memorandum: Pattern Book

Date:	08/17/2021 (revised 01/27/2022; revised 03/10/2022, revised 05/10/2022, revised 5/27/2022; revised 06/27/2021)

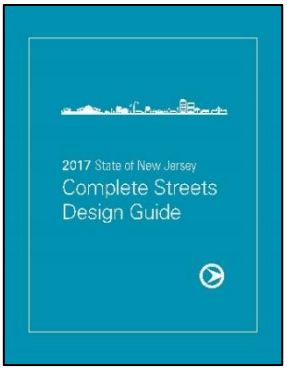
Contents:

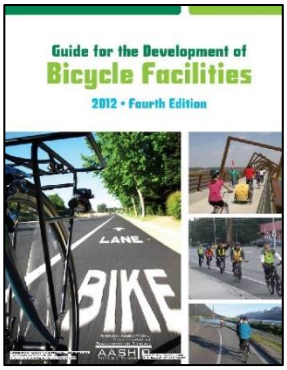
Introduction

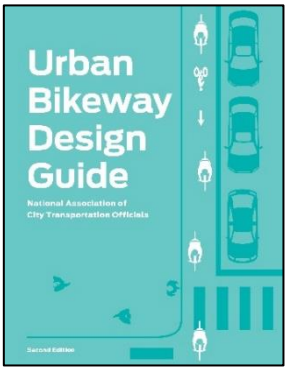
This Pattern Book has been developed as a component of the *BIKEPassaicCounty Plan* to provide general design guidance on several configurations for bicycle facilities that are planned in Passaic County, both on-road and off-road. For each bicycle facility type, the Pattern Book provides a definition, key points to describe the typical application of the facility, typical dimensions, and references to published design guides where additional details can be obtained. The Pattern Book also provides an Order-of-Magnitude Cost Estimate List for a range of bicycle facility configurations.

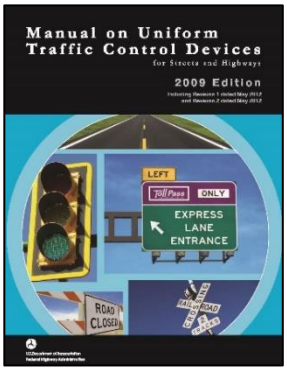
The purpose of this Pattern Book is threefold:

1. To inform the planning of a *BIKEPassaicCounty* Network by providing consistent criteria for facility selection relative to the variable conditions that exist throughout Passaic County,
2. To provide a visual illustration and common palette of planned bicycle facilities in order to enhance communication with municipalities, stakeholders, and the public, and
3. To inform context-sensitive concept plans for priority routes in the *BIKEPassaicCounty* Network.





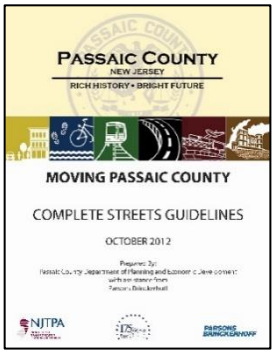


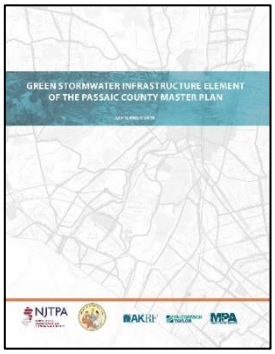


Much of the interest and growth in bicycle facilities and networks in New Jersey over the past 30 years is attributable to the information provided in continually evolving design guides published at the state and national levels. The design guidance presented in this Pattern Book is distilled from such resources including, the State of New Jersey Complete Streets Design Guide, the AASHTO Guide for the Development of Bicycle Facilities, the NACTO Urban Bikeway Design Guide, and the Manual on Uniform Traffic Control Devices (MUTCD). Additional resources are also referenced in this Pattern Book to provide sufficient detail where needed. Recommendations are subject to change as newly published design guidance from appropriate sources evolves over time.

This Pattern Book also serves as a companion to augment the design guidance provided in the Transportation Element (Appendix A: Complete Streets Guidelines) and the Green Stormwater Infrastructure Element (Appendix A2: Green Streets Guidelines) of the Passaic County Master Plan, completed in 2012 and 2018, respectively. As it relates to the Complete Streets Guidelines, this Pattern Book expands the definition of a bicycle lane from a standard four- to five-foot-wide striped area at the outside edge of the street, to include robust configurations (such as buffered or separated bike lanes) that can be more attractive to bicyclists of varying experience and confidence levels. It also provides guidance on shared use path and sidepath facilities, which are attractive to users of all ages and abilities and create value in terms of mobility, recreation, and public health for bicyclists, pedestrians, and other wheeled users. As it relates to the Green Streets Guidelines, this Pattern Book provides guidance on the spatial requirements of bicycle facilities, a vital consideration for balancing the green streets approach to ensure that the vehicle cartway, bicycle facilities, and stormwater management infrastructure are designed to function in concert.

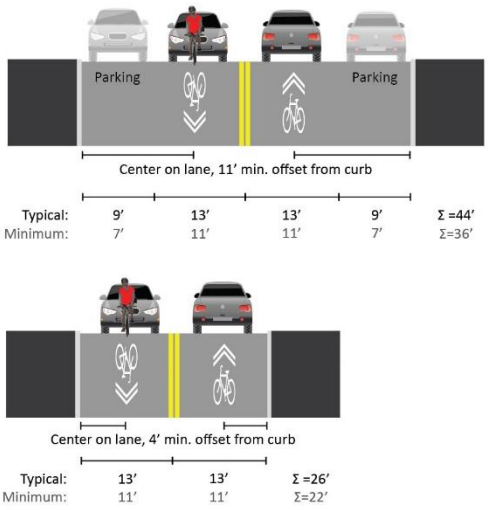
The level of detail provided in this Pattern Book is appropriate for bicycle facility network planning and conceptual planning of priority routes. Future implementation of planned bicycle facilities should include careful and deliberate engineering design to ensure the safety of all users and comply with any and all applicable codes, statutes, and evolving best practices. Intersections, crossings, bicycle parking, wayfinding, and curbside management (such as parking, transit stops, goods movement, and parklets) will be important considerations in future phases of bicycle route design once the *BIKEPassaicCounty* Network has been formalized.





Marked Shared Lanes

Marked shared lanes are streets with special pavement markings (known as shared lane markings or "sharrows") to indicate a shared roadway for motor vehicles and bicycles. Shared lane markings are not exclusive bicycle facilities, but help provide directional guidance to bicyclists, reinforce the legitimacy of bicyclists, and alert motorists to the potential presence of bicyclists.



Shared lane markings
Top: With on-street parking
Bottom: Without on-street parking

Application:

- Low-speed, low-traffic streets (usually single lane each direction with posted speed ≤25 MPH and volume <10,000 ADT)
- Guide bicyclists over short distances between other on-road or off-road bicycle facilities
- Guide bicyclists through intersections
- Not preferred for use over long distance
- Material should be high quality thermoplastic or polymer cement material, such as Endurablend
- Where used, should be placed immediately after an intersection and spaced at intervals of <250 feet thereafter
- Shared lane markings should be centered on the lane (at least 11 feet from the curb in the presence of on-street parallel parking, or at least 4 feet from the curb where these is not on-street parking)
- Green color backing of shared lane marking is experimental and requires application to the Federal Highway Administration (FHWA)

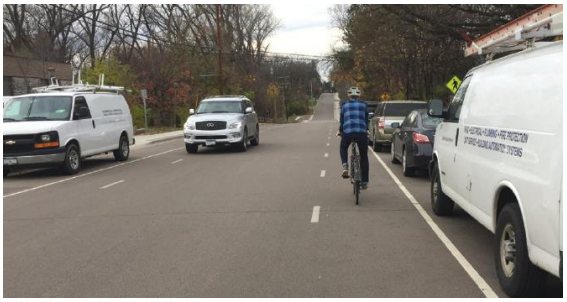
Planning & Design Resources:

- 2017 State of New Jersey Complete Streets Design Guide, Chapter 3, p. 98, NJDOT
- 2012 Guide for the Development of Bicycle Facilities, Chapter 4, p. 4-4, AASHTO
- 2011 Urban Bikeway Design Guide, p. 273, NACTO
- 2012 MUTCD, Section 9C.07

Example of bicyclists on road with shared lane markings in Princeton, NJ

Evolving Practice: Advisory Bicycle Lanes

For roads with a low traffic volume (<6,000 ADT) that are too narrow for conventional bicycle lanes, Advisory Bicycle Lanes are currently being evaluated as a potential solution. Advisory Bicycle Lanes "demarcate a preferred space for bicyclists and motorists to operate on narrow streets that would otherwise be shared lanes. Unlike dedicated bicycle lanes, motor vehicle use is not prohibited in the advisory bike lane and is expected on occasion." (AASHTO Research Roadmap, 2021). The treatment requires an application for experimentation and approval from FHWA to implement. As the research and guidance around Advisory Bicycle Lanes continues to develop, this type of facility may supplant the use of shared lane markings.



Example Advisory Bicycle Lane in Edina, MN (Source: FHWA, Small Town and Rural Multimodal Networks)

Additional Resources:

- 2016 Small Town and Rural Multimodal Networks, pp. 2-17 – 2-24, FHWA
- 2021 AASHTO Council on Active Transportation Research Roadmap Review, p. 74

Bicycle Boulevard

A bicycle boulevard (also known as a community greenway) is a street with low motor vehicle speed and volume that is further enhanced to prioritize bicycle travel and support interconnected bicycle mobility. The principal elements of a bicycle boulevard include direct/efficient routing and access to destinations, signage and pavement markings, traffic calming measures for speed and volume management, and crossing enhancements for bicyclist convenience and safety.

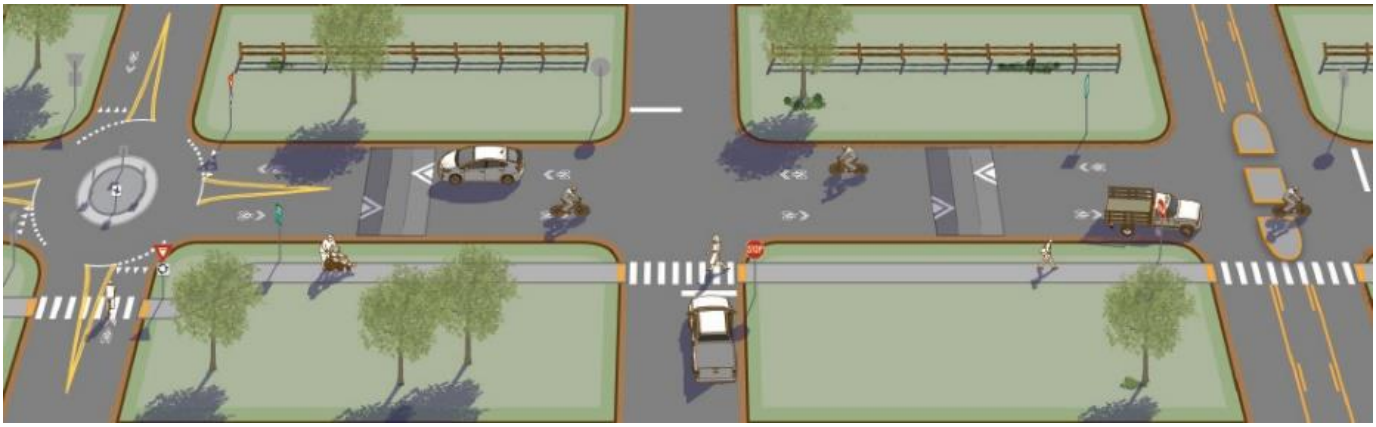
Application:

- Local streets with network connectivity and low motor vehicles speeds (≤25 MPH) and volumes (<2,500 ADT)
- Bicycle boulevards are linear corridors of interconnected, traffic-calmed streets where bicyclists are afforded an enhanced level of safety and comfort
- Include easy-to-follow route signage and pavement markings (shared lane makings) for bicyclists
- Traffic calming interventions are utilized to manage motor vehicle speed and volume, optimizing comfort for bicyclists, and may include facilities such as a chicane, mini roundabout, curb extension, refuge island, speed hump, raised crosswalk, raised intersection, full street closure, or partial street closure, based on local context

Example of a bicycle boulevard in Berkeley, CA that shows pavement markings and a chicane in the foreground, and a speed hump in the background. (Source: Flickr/Payton Chung)

Planning & Design Resources:

- 2017 State of New Jersey Complete Streets Design Guide, Chapter 3, p. 99, NJDOT
- 2012 Guide for the Development of Bicycle Facilities, Chapter 4, page 4-33, AASHTO
- Urban Bikeway Design Guide, Bicycle Boulevards website, NACTO
- 2016 Small Town and Rural Multimodal Networks, p. 2-9, FHWA



Example layout of a bicycle boulevard that shows a refuge island, speed humps, and a roundabout (Source: FHWA, Small Town and Rural Multimodal Networks)

Signed Bicycle Route

Signed bicycle routes are streets that include signage to support bicycling. Bicyclists may operate on all roadways, except where prohibited by statute or regulation. In certain parts of Passaic County, particularly the northwest portion of the county, physical contraints of topography and distance make the provision of dedicated bicycle facilities difficult. Yet, the scenic character of these streets is attractive to bicyclists, especially experienced and confident road bicyclists.

Along these types of routes, most without a designated space or markings for bicyclists, regulatory signage (to alert motorists of bicyclist presence) and wayfinding signage (to enhance bicylist navigation of routes) can be installed following MUTCD guidelines. In addition to signage, it is important to ensure that these routes have good pavement quality, sight distances, and bicycle-compatible drainage grates, bridge expansion joints, and railroad crossings. Consideration should also be made for bicyclist movement through traffic signals and intersections.

Application:

Signed bicycle routes may be considered where:

- Expanding shoulders on both sides of the road would require substantial expense, including regrading of topographic features and/or relocation of utility poles, light poles, drainage appurtenances, swales, etc.
- Streets are unable to accommodate other treatments due to constraints such as vehicle volumes and speeds (see table on page 6), distances between destinations, elevation change along the route, or the expense of shoulder widening.

Planning & Design Resources:

- 2012 Guide for the Development of Bicycle Facilities, Chapter 4, pp. 4-3, 4-34 - 4-37, AASHTO
- Manual on Uniform Traffic Control Devices (MUTCD): Part 9. Traffic Controls for Bicycle Facilities
  - Section 9B.02 Design of Bicycle Signs
  - Section 9B.20 Bicycle Guide Signs

Regulatory Sign R4-11 may be used on roadways where no bicycle lanes or adjacent shoulders usable by bicyclists are present and where travel lanes are too narrow for bicyclists and motor vehicles to operate side by side. (Source: MUTCD Section 9B.06)

Bicycle guide signs can be used to indicate destination, direction, and distance, helping bicyclists to navigate. (Source: MUTCD Figure 9B.4)

Bicycle Lanes on Two-Way Streets

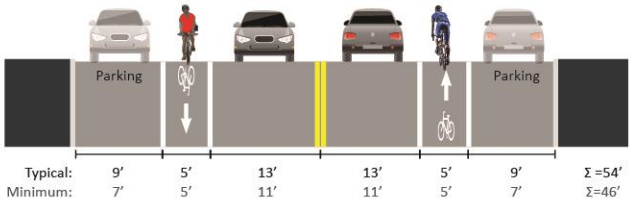
Bicycle lanes are on-road facilities that designate an exclusive space for bicyclists to operate within the street. Bicycle lanes can be implemented in a range of configurations depending upon the context and characteristics of a given street, considering variables such as the street width, traffic speed, traffic volume, direction of travel, and presence of on-street parking. Bicycle lane configurations appropriate for two-way streets include standard bicycles lanes, buffered bicycle lanes, and separated bicycle lanes.

Application:

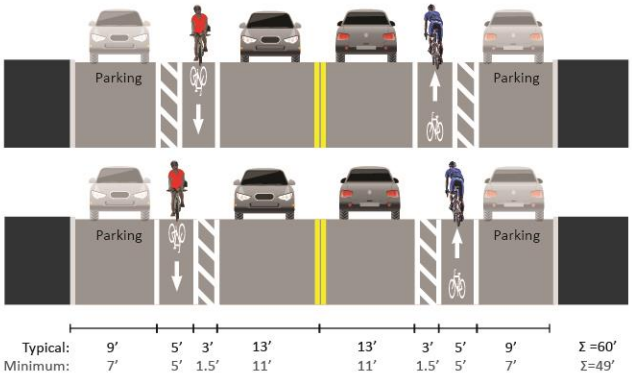
- The minimum width of a bicycle lane is 5 feet when the lane is adjacent to a vertical element, such as a vertical curb, or on-street parking.
- The minimum width of a bicycle lane may be reduced to 4 feet when there is no vertical curb or on-street parking.
- Selection of the appropriate bicycle facility for a given street should consider speed limit and traffic volume (as indicated in the Bicycle Facility Selection Table below) and street width to provide the most robust bicycle lane possible for the street.
- When placed next to a parking lane, the desirable distance from the curb face to the edge of the bicycle lane is 14.5 feet to keep bicycles out of the door zone.

Planning & Design Resources:

- 2017 State of New Jersey Complete Streets Design Guide, Chapter 3, pp. 91-96, 106-107, NJDOT
- 2012 Guide for the Development of Bicycle Facilities, Chapter 4, p. 4-12, AASHTO
- 2011, Urban Bikeway Design Guide, pp. 4-104 NACTO
- 2016 Small Town and Rural Multimodal Networks, FHWA

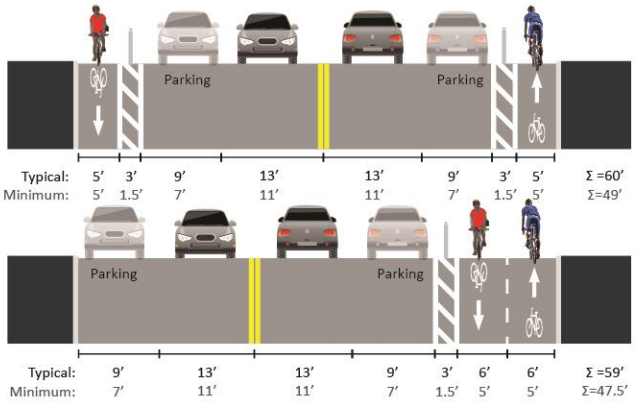


Standard Bicycle Lane



Buffered Bicycle Lane

Top: Buffer to parking. Bottom: Buffer to traffic.



Separated Bicycle Lane

Top: One-way. Bottom: Two-way cycle track.

Bicycle Facility Selection Table from 2017 State of New Jersey Complete Streets Design Guide, Chapter 3, p. 106, NJDOT

	85TH PERCENTILE SPEED[1]						
ADT	≤ 20	25	30	35	40	45	≥50
≤ 2,500	ABCDEF	A[2]BCDEF	CDEF	CDEF	CDEF	DEF	F
2,500–5,000	BCDEF	BCDEF	CDEF	CDEF	DEF	DEF	F
5,000–10,000	B[3]CDEF	B[3]CDEF	CDEF	DEF	DEF	EF	F
10,000–15,000	DEF	DEF	DEF	DEF	EF	EF	F
≥15,000	DEF	DEF	DEF	EF	EF	F	F

A: Shared Street/Bicycle Boulevard **B:** Shared-lane Markings **C:** Bicycle Lane **D:** Buffered Bicycle Lane
E: Separated Bicycle Lane **F:** Shared-use Path

[1] If data not available, use posted speed
[2] Bicycle boulevards are preferred at speeds ≤25 mph
[3] Shared-lane markings are not a preferred treatment with truck percentages greater than 10%

Bicycle Lanes on One-Way Streets

Bicycle lanes can be provided on one-way streets, following the same dimensional guidance as bicycle lanes on two-way streets. On one-way streets, the standard location for a bicycle lane is to the right of the motor vehicle lane. However, a left-side bicycle lane can be provided if there is a significant number of bicyclist left turns, or if such placement results in a decrease in conflict with parking, transit, deliveries, or other activities on the right side of the street.

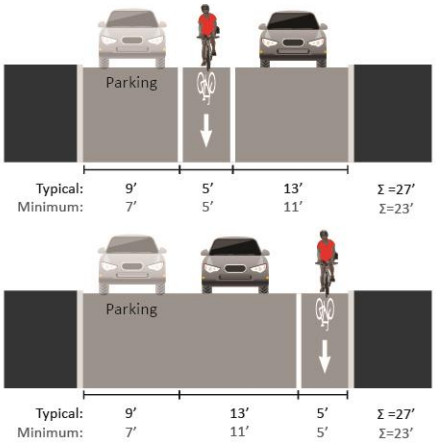
Because one-way streets offer only one direction of travel, bicycle lanes on one-way streets should be coupled with complementary bicycle facilities elsewhere in the network to provide bicycle mobility in the opposite direction.

Application:

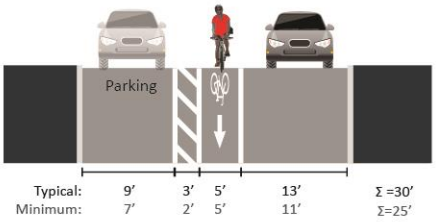
- Typically considered for an urban context with grid network of streets
- One-way buffered or separated bicycle lanes may be considered for the left side, if space allows, however there is little published guidance on such a configuration.
- Refer to Bicycle Facility Selection table on page 5.
- Same dimensional guidance as bicycle lanes on two-way streets
- A standard bicycle lane and a contraflow bicycle lane may be coupled on a one-way street. Contraflow bicycle lanes require careful design for separation (centerline or median), signage, and intersection approaches. They are discouraged where parking or other curbside vehicular activities are present on the same side of the street.

Planning & Design Resources:

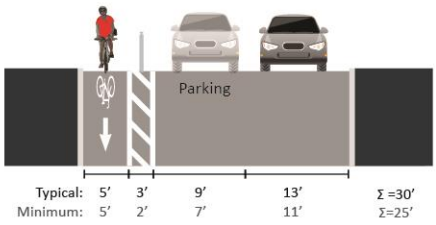
- 2017 State of New Jersey Complete Streets Design Guide, Chapter 3, pp. 90-97, NJDOT
- 2012 Guide for the Development of Bicycle Facilities, Chapter 4, pp. 4-12 – 4-14, AASHTO
- Urban Bikeway Design Guide Bike Lanes and Left-Side Bike Lanes, pp. 31-57, NACTO



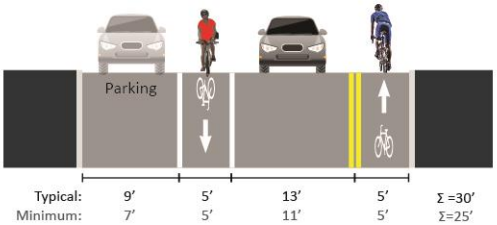
One-Way Bicycle Lane
Top: Right-side bicycle lane.
Bottom: Left-side bicycle lane.



One-Way Buffered Bicycle Lane



One-Way Separated Bicycle Lane



Standard Bicycle Lane and Contraflow Lane

Paired Hybrid Streets

Hybrid streets provide a bicycle lane in one direction with a shared lane in the opposite direction. (The shared lane may include shared lane markings). By pairing hybrid streets at the network level – i.e., ensururing that there are complementary bicycle facilities in close proximity to provide bicycle mobility in the opposite direction – this configuration can provide a dedicated bicycle facility (standard, buffered, or separated bike) on narrow streets that cannot support bicycle lanes in both directions, utilizing the redundancy of the urban grid network to support bicyclist mobility.

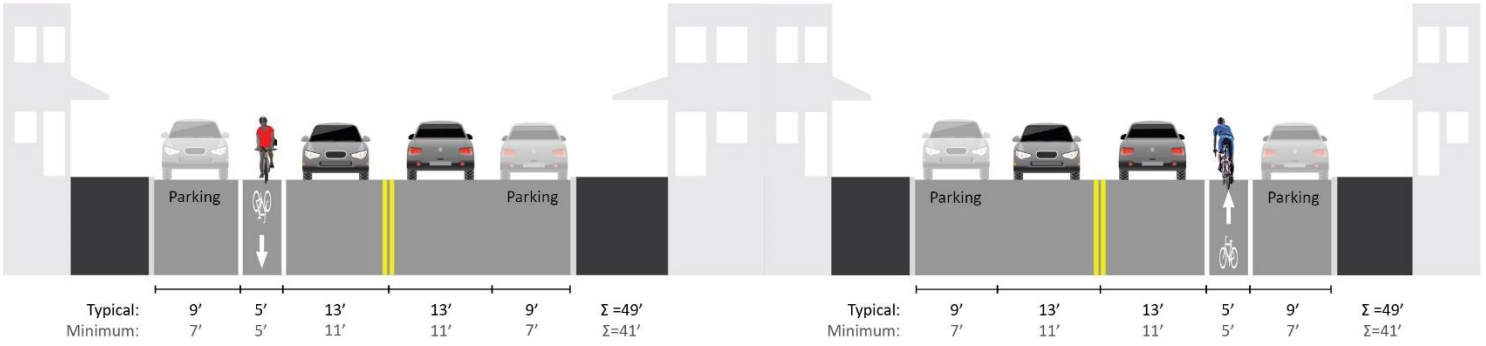
These hybrid designs can be useful in constrained street environments with narrow street width that limit opportunities for traditional bicycle accommodations and designs.

Application:

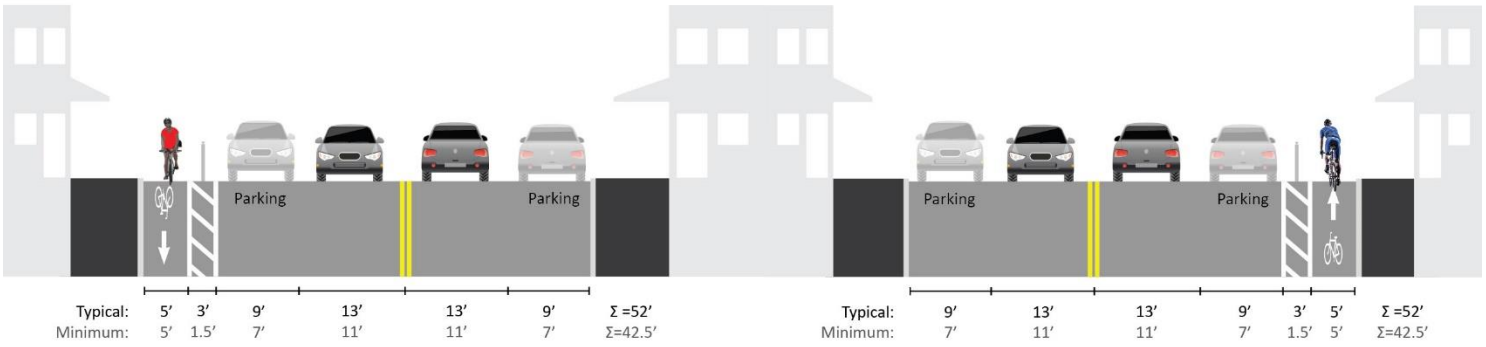
- Typically considered for an urban context with grid network of streets
- Should be coupled with complementary bicycle facilities elsewhere in the network that provide bicycle mobility in the opposite direction
- Can be applied to adjacent two-way or one-way streets
- Note that the AASHTO *Guide for the Development of Bicycle Facilities* (2012) cautions against a bicycle lane in one direction on a two-way street, citing the peril of wrong-way bicycling in the bicycle lane (p. 4-12).
- Signage and pavement markings should be provided to discourage wrong-way riding in the bicycle lane.
- Refer to Bicycle Facility Selection table on page 5.
- Same dimensional guidance as bicycle lanes on two-way streets
- When possible, on two-way streets, the bicycle lane should be oriented in the uphill direction (creating a climbing lane) and the shared lane should be marked in the downhill direction.

Planning & Design Resources:

- 2012 Guide for the Development of Bicycle Facilities, Chapter 4, p. 4-12, AASHTO



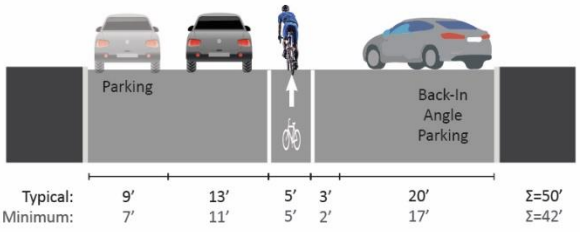
Two-Way Hybrid Street Pairing with with Standard Bicycle Lanes



Two-Way Hybrid Street Pairing with Separated Bicycle Lanes

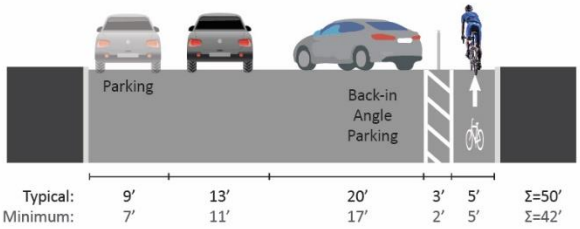
One-way Street with Bicycle Lane and Back-In Angle Parking

On one-way streets that are at least 42 feet wide, it is possible to include a bicycle lane and on-street angle parking. The preferred orientation of the angle parking is back-in (also called head-out) because it provides better visibility for a driver exiting a parking space to recognize oncoming vehicles or bicyclists, and also eliminates the risk of dooring bicyclists in travel. Like other one-way streets with bicycle lanes, this configuration should be coupled with complementary bicycle facilities elsewhere in the network to provide bicycle mobility in the opposite direction.



One-Way Street with Back-In Angle Parking and Bicycle Lane

John Muir Drive in San Francisco, CA.
(Source: SREETSBLOG SF)

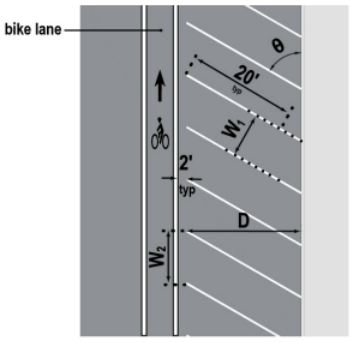


One-Way Street with Back-In Angle Parking and Separated Bicycle Lane

Skillman Avenue at 35th Street is Queens, NY.
(Source: Google Streetview)

Application:

- Typically considered for mix-used and commercial areas where parking turnover is high
- Same dimensional guidance as bicycle lanes on two-way streets
- On streets where it is possible to convert existing parallel parking to back-in angle parking, there is an opportunity to increase the parking capacity of the street. A typical parallel parking space requries 22 feet of curb length; meanwhile, a typical back-in angle parking space at 45 degrees requires 13 feet of curb length. Thus, as a rule of thumb, parking capacity can be increased by a factor of 1.7.
- Striping and plasitc bollards can be installed in the no-parking areas around intersections to ensure that sight triangles at intersections are maintained.



Back in Angle Parking			
θ (Degrees)	W_1 (feet)	W_2 (feet)	D (feet)
0°	7–10	20	7–10
30°	8–9	16–18	16.9–17.8
45°	8–9	11.3–12.7	19.8–20.5
60°	8–9	9.2–10.4	21.3–21.8

W_1 = stall width
W_2 = striping width
D = depth to face of curb
θ = angle

Typical angle parking dimensions from 2021 On-Street Motor Vehicle Parking and the Bikeway Selection Process, p. 4, FHWA

Planning & Design Resources:

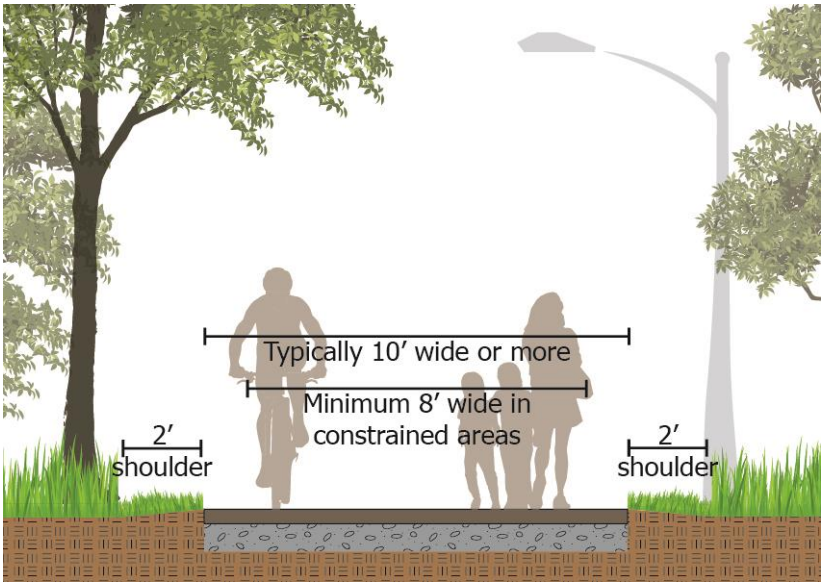
- 2021 On-Street Motor Vehicle Parking and the Bikeway Selection Process, FHWA

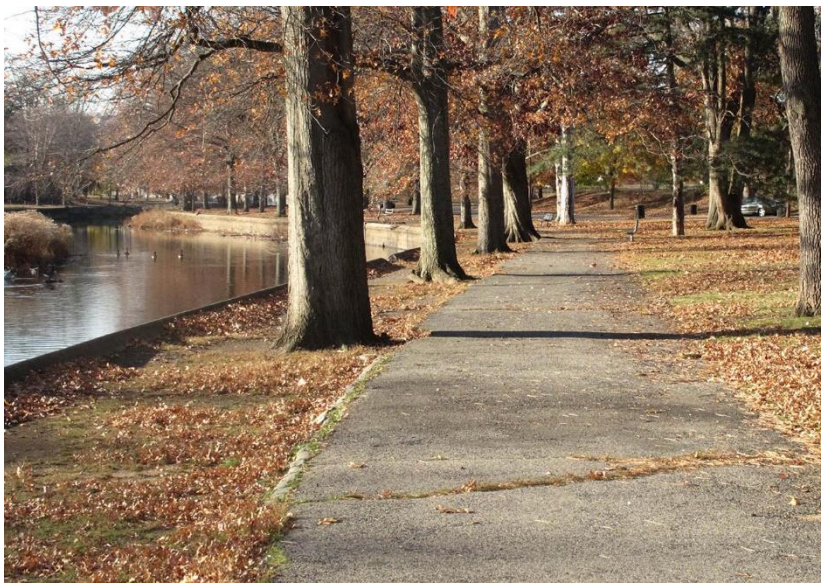
Shared Use Path / Trail

A shared use path consists of a paved travel area that is 10 feet wide or more (minimum 8 feet in constrained areas) in a right-of-way that is independent of the existing roadway network. Shared use paths are designed to accommodate two-way travel for bicyclists, pedestrians, and other non-motorized users, such as in-line skaters, skateboarders, and kick scooter users. Because they are separated from motor vehicle traffic, shared use paths are considered low-stress facilities that are attractive to non-motorized travelers of all ages and abilities.

Application:

- Continuous right-of-way that is independent of the road network
- Scenic/recreation areas
- River/stream frontage
- Rail-to-trail or rail-with-trail facilities
- Utility corridors
- Appropriate New Jersey Department of Environmental Protection (NJDEP) permits must be obtained when facilities impact freshwater wetlands, transition areas, state open waters, flood hazard areas, or other environmentally sensitive locations.
- Lighting should be considered where nighttime use is permitted, especially when the shared use path connects to transit, schools, employment, or shopping areas.
- Horizontal illumination of 0.5 to 2 foot-candles should be considered, with higher levels at intersections or where personal safety is a concern.
- Lighting sources may include pedestrian-scale lights (10-15 feet high) or fixtures mounted to existing street light poles. Lower fixture height and uniform spacing of fixtures can provide uniform distribution of light, avoid disruption/shadows, and improve the sense of security.
- A vertical illumination pattern that maintains a height of 7 feet enables visual recognition of other pedestrians/bicyclists, which may be beneficial in heavily traveled areas.
- Lighting for shared use paths requires careful photometric design and consideration of capital and operating costs, power source, residential light pollution, wildlife impacts, and other factors.





Shared use path example in Westside Park, City of Paterson, Passaic County

Planning & Design Resources:

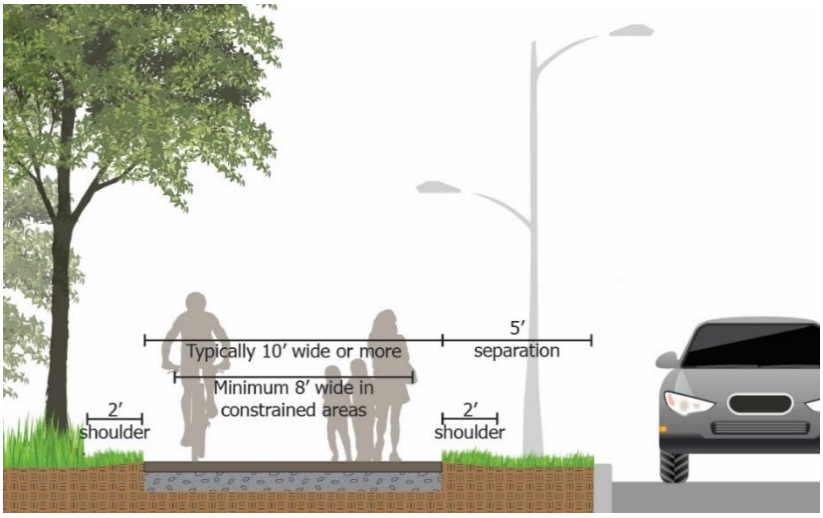
- 2017 State of New Jersey Complete Streets Design Guide, Chapter 3, p. 102, NJDOT
- 2012 Guide for the Development of Bicycle Facilities, Chapter 5, AASHTO
- 2016 Small Town and Rural Multimodal Networks, pp. 4-3 – 4-10, FHWA
- 2016 Lighting Regional Trails: Best Practices and Recommendations, Oregon Metro
- 2017 Empire State Trail Design Guide, pp. 3-18, NYSDOT
- 1998 Time-Saver Standards for Landscape Architecture: Design and Construction Data, Second Edition, McGraw-Hill
- NJDEP Trails, Boardwalk and Bike Paths permitting overview

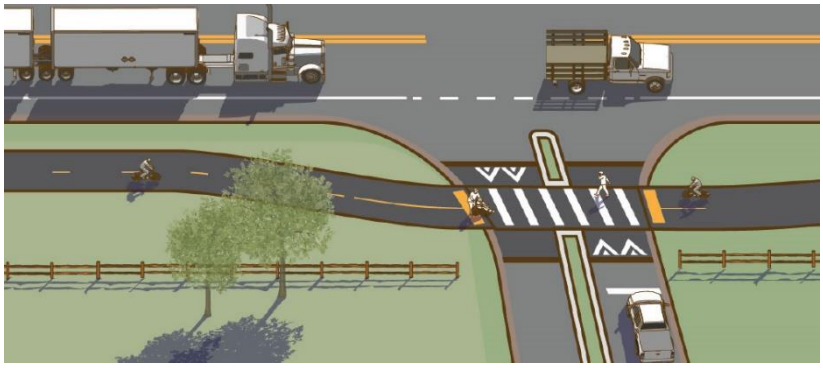
Sidepath

A sidepath is a shared use path (10 feet wide or more, minimum 8-feet in constrained areas) for pedestrians, bicyclists, and other non-motorized users that is constructed adjacent to a roadway, yet physically separated from motor vehicles. In contrast to a standard shared use path, a sidepath has special design considerations to function safely within the roadway right-of-way.

Application:

- Appropriate along roadways with a high level of traffic stress for bicyclists and insufficient width for on-road separated bike lane facilities
- Should be considered where driveways and intersection crossings are infrequent (or can be reduced, if possible)
- Should provide continuity between other sections of on-road and off-road bicycle facilities in the network
- One-way sidepaths can be provided on both sides of the street
- Should be separated from the roadway a minimum of 5 feet (or a barrier or railing should be provided)
- Fixed objects (such as utility/light poles, mail boxes, signs, trash cans, etc.) can constrain the operating width of the sidepath and should be located outside of the shoulder area whenever possible.
- Appropriate NJDEP permits must be obtained when facilities impact freshwater wetlands, transition areas, state open waters, flood hazard areas, or other environmentally sensitive locations.
- Horizontal illumination of 0.5 to 2 foot-candles should be considered, with higher levels at intersections or where personal safety is a concern.
- Lighting sources may include pedestrian-scale lights (10-15 feet high) or fixtures mounted to existing street light poles.
- See Shared Use Path / Trail for additional information on lighting.





Example layout of a sidepath adjacent to a busy roadway as it crosses a perpendicular street. (Source: FHWA, Small Town and Rural Multimodal Networks)

Planning & Design Resources:

- 2017 State of New Jersey Complete Streets Design Guide, Chapter 3, p. 102, NJDOT
- 2012 Guide for the Development of Bicycle Facilities, Chapter 5, AASHTO
- 2016 Small Town and Rural Multimodal Networks, pp. 4-11 – 4-18, FHWA
- NJDEP Trails, Boardwalk and Bike Paths permitting overview

Rail Trails

Rail trails are railroad rights-of-way that are converted to provide shared use path facilities. In general, rail trails are defined in two categories:

- A **rail-to-trail** is a railroad that is decommissioned and coverted to use as a trail. In Passaic County, the planned 7.15-mile Highlands Rail Trail will be a premier example of a rail-to-trail facility once contructed.
- A **rail-with-trail** is a railroad that continues rail operations while enabling construction and operation of a shared use path within the railroad right-of-way. This requires careful design and coordination to maintain physical separation of the trail from railroad operations and ensure safety of all users.

Rail-to-Trail example: Merchantville Mile in Merchantville, NJ.

Application:

- Rail trails are constructed within railroad rights-of-way, offering an opportunity for a high quality shared use path experience, often with significant regional connectivity advantages.
- In general, rail trails should be planned to provide a shared use path – a paved travel area that is 10 feet wide or more (minimum 8 feet in constrained areas). (See Shared Use Path/Trail on page 10 for additional guidance).
- Making use of existing railroad infrastructure, such as bridges, grade-separated crossings, and gentle grades contribute to rail trail connectivity, unique travel experiences, and can attract bicyclists and pedestrians of all ages and abilities.
- Rail trails require extensive planning, funding, and coordination among a variety of stakeholders, including the railroad owners and lessees, the Federal Railroad Administration, utilities, and government agencies at all levels with regulatory, environmental, transportation, funding, use, and maintenance interests.

Rail-to-Trail example: Traction Line Trail in Morris Township, NJ.

Planning & Design Resources:

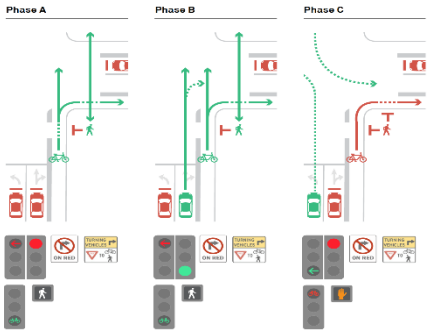
- 2020 Rails with Trails Best Practices and Lessons Learned, U.S. Department of Transportation
- 2017 Rails to Trails Conversions: A Legal Review, Rails-to-Trail Conservancy
- 2012 Guide for the Development of Bicycle Facilities, Chapter 5, AASHTO

Crossings & Intersections

A high quality bicycle network will improve mobility throughout Passaic County and attract more people of all ages, abilities, and backgrounds to bicycling as a means of both transportation and recreation. Inevitably, the bicycle network will need to be designed to respond to the varying conditions at intersections, interchanges, driveways, and other locations where bicyclists, pedestrians, and motorists will cross paths. At the network planning level, it is advisable to anticipate and plan around crossings and intersection configurations that are presently unfriendly or potentially dangerous to bicyclists. However, it is also important not to sacrifice potential bicyclist mobility improvements due to the perception that change at these locations is not feasible. Safety, comfort, and convenience can be improved at challenging intersections.

At crossings and intersections, design measures can be taken to increase the conspicuity of bicyclists and bicycle facilities, give bicyclists the right of way, integrate bicyclist turning- and thorough-movements into signal phasing, reduce the turning speeds and radii of motor vehicles, and balance (as well as help to make predictable) the disparate speeds and movement of motorists, bicyclists, and pedestrians.

Pavement markings through intersection, Hoboken, NJ (Source: Google Streetview)



Lead Bike Interval (LBI) signal phasing diagram (Source: NACTO)

Common treatments at crossings and intersections include pavement markings and signage, signal modifications (signal face visibility, timing/phasing, and actuation), physical separation of bicyclists facilities through construction of curbing or other means (known as protected intersections), and grade separation. Well-designed crossings and intersection are likely to integrate or combine aspects of these treatments to function in concert.

Protected intersection (Source: City of San Luis Obispo, CA)

Grade separated crossing of US Route 22 in Bridgewater, NJ

It is important to note that the design approach to crossings and intersections continues to evolve as bicycle networks and facilities grow in prevalence. Crossings and intersections deserve careful design to ensure safety, functionality, and mobility for all users. Although *BIKEPassaicCounty* is primarily a network and policy level plan, it will likely also inspire future thought and inquiry around crossings and intersections as they relate to both on-road and off-road bicycle facilities. Additional resources for reference in future planning and design of crossings and intersections include the following:

- Don't Give Up at the Intersection: Designing All Ages and Abilities Bicycle Crossings. NACTO, 2019.
- Urban Bikeway Design Guide, 2011, NACTO:
  - Intersections, pp. 105-202
  - Bicycle Signals, pp.203-237
- State of New Jersey Complete Streets Design Guide, 2017, Chapter 3, Intersections, pp. 111-145
- AASHTO Guide for the Development of Bicycle Facilities, 2012:
  - Chapter 4: Design of On-Road Facilities, 4.8 – Bicycle Lanes at Intersections
  - Chapter 5: Design of Shared Use Paths, 5.3 – Shared Use Path Roadway-Intersection Design
- Manual on Uniform Traffic Control Devices (MUTCD): Part 9. Traffic Controls for Bicycle Facilities

Order-of-Magnitude Cost Estimate List

This section provides a list of order-of-magnitude estimated costs for the bicycle facilities described in this Pattern Book. Each cost is presented in either Linear Feet ("LF," to represent a linear facility such as bicycle lane) or Each ("EA," to represent a point such as a shared use path crossing a street).

Unless otherwise noted, the order-of-magnitude estimated costs are derived from the 2020 version of the New Jersey Safe Routes to School website "Estimating Improvement Costs for Walking, Wheeling, and Bicycling (2020)," which has been reviewed by NJDOT and published by the Voorhees Transportation Center. For pavement markings, the estimated costs assume long-life, thermoplastic material. The estimated costs are appropriate for use at a planning level; they are based generally on materials and labor and do not account for the following factors:

- Field conditions
- Evaluation of existing facilities/structures
- Maintenance
- Right-of-way and utility impacts or relocation
- Right-of-way acquisition
- Design and permitting costs
- Evaluation of existing stormwater management or culverts
- Evaluation of existing structures
- Evaluation of existing traffic signals
- Excavation, materials testing, remediation, or disposal

Facility	Unit	Cost (One-Way LF or Each)	Cost (Two-Way LF)
1. Marked Shared Lanes This estimate assumes ±25 shared lane marking symbols installed per mile along a bicycle route in one direction. The cost should be doubled for shared lane markings in two directions.	**LF**	**$0.60**	**$1.20**
A. Shared Lane Markings (each symbol, thermoplastic)	*EA*	*$120*	
2. Bicycle Boulevard This estimate assumes the listed quantities of components A, B, and C below for a bicycle boulevard in one direction (i.e. one-way street). The cost should be doubled for shared lane markings in two directions. The elements listed under item D are additional and require context-sensitive application along a route.	**LF**	**$2.30**	
Bicycle Boulevard Components:			
A. Shared Lane Markings (35/mile)	*LF*	*$0.80*	*$1.60*
B. Regulatory Signs (5/mile)	*LF*	*$0.50*	*$1.00*
C. Wayfinding Signs (10/mile)	*LF*	*$1.00*	*$2.00*
D. Additional Traffic Calming Elements:			
Chicane	*EA*	*$30,000*	
Mini Roundabout	*EA*	*$35,000*	
Curb Extension	*EA*	*$20,000*	
Refuge Island	*EA*	*$8,000*	
Speed Hump	*EA*	*$5,000*	
Raised Crosswalk	*EA*	*$8,000*	
Raised Intersection	*EA*	*$100,000*	
Full Street Closure	*EA*	*$200,000*	
Partial Street Closure	*EA*	*$100,000*	

Facility	Unit	Cost (One-Way)	Cost (Two-Way)
3. Bicycle Lanes Bicycle lanes can be configured in various forms, but are primarily composed of pavement striping, symbols, and regulatory signs. This estimate provides different costs for the various types of facilities by aggregating the costs of the various components listed below as A-G. This estimate assumes a bicycle lane in one direction; therefore the costs should be doubled for a bicycle lane in two directions. The exceptions to this are the Two-Way Separated Bicycle Lane and the Bicycle Lane and Contraflow Lane, which provide travel in two directions, and therefore would not need the cost to be doubled.			
3.1. Bicycle Lane with No On-Street Parking Components: A + D + E	**LF**	**$2.50**	**$5.00**
3.2. Bicycle Lane with On-Street Parking Components: 2xA + D + E	**LF**	**$4.10**	**$8.20**
3.3. Buffered Bicycle Lane with No On-Street Parking Components: C + D + E	**LF**	**$5.25**	**$10.50**
3.4. Buffered Bicycle Lane with On-Street Parking Components: A + C+ D + E	**LF**	**$6.85**	**$13.70**
3.5. One-Way Separated Bicycle Lane Components: C + D + E	**LF**	**$5.25**	**$10.50**
3.6. Two-Way Separated Bicycle Lane (linear measure in two directions) Components: B + C + D + E	**LF**	**N/A**	**$6.05**
3.7 Bicycle Lane and Contraflow Lane (linear measure in two directions) Components: 2xA + 2xD + 2xE +F	**LF**	**N/A**	**$8.00**
Bicycle Lane Components:			
A. 4" White Stripe	*LF*	*$1.60*	
B. 4" White Stripe (dashed)	*LF*	*$0.80*	
C. 3'-wide Gore Stripe with Edge Lines	*LF*	*$4.35*	
D. Bicycle Lane Symbol (25/mile)	*LF*	*$0.60*	
E. Regulatory Signs (R3-17 and plaques, 6 per mile)	*LF*	*$0.30*	
F. Double 4" Yellow Stripe	*LF*	*$3.00*	
G. Optional: Delineator Posts (Source: Tactical Urbanist's Guide to Materials and Design, 2016, John S. and James L. Knight Foundation)	*LF*	*$8.50*	

Facility	Unit	Cost
4. Paired Hybrid Streets This estimate provides different costs for the various types of facilities by aggregating the costs of the various components listed below as A-G.		
4.1. Hybrid Street with Standard Bicycle Lane Components: 2xA + D +2xF	**LF**	**$4.40**
4.2. Hybrid Street with Separated Bicycle Lane Components: B + D + 2xF	**LF**	**$5.55**
Hybrid Street Components:		
A. 4" White Stripe	*LF*	*$1.60*
B. 3'-wide Gore Stripe with Edge Lines	*LF*	*$4.35*
C. 3'-wide Gore Stripe with Double Yellow Edge Lines	*LF*	*$6.00*
D. Bicycle Lane Symbol (25/mile)	*LF*	*$0.60*
E. Shared Lane Marking (25/mile)	*LF*	*$0.60*
F. Regulatory Signs (R3-17 and plaques, 6 per mile)	*LF*	*$0.30*
G. Optional: Delineator Posts (Source: Tactical Urbanist's Guide to Materials and Design, 2016, John S. and James L. Knight Foundation)	*LF*	*$8.50*
5. One-Way Street with Bicycle Lane and Back-In Angle Parking This estimate provides different costs for the various types of facilities by aggregating the costs of the various components listed below as A-G.		
5.1 One-Way Street with Bicycle Lane and Back-In Angle Parking Components: 2xA + C + D + E	**LF**	**$7.90**
5.2 One-Way Street with Separated Bicycle Lane and Back-In Angle Parking Components: B + C+ D + E	**LF**	**$9.05**
Bicycle Lane and Back-In Angle Parking Components:		
A. 4" White Stripe	*LF*	*$1.60*
B. 3'-wide Gore Stripe with Edge Lines	*LF*	*$4.35*
C. Bicycle Lane Symbol (25/mile)	*LF*	*$0.60*
D. 4" White Stripe for Angle Parking (calculated as LF of curbline, not of striping)	*LF*	*$3.50*
E. Regulatory Signs (R3-17 and plaques, and parking instructions, 12 per mile)	*LF*	*$0.60*
F. Optional: Delineator Posts (Source: Tactical Urbanist's Guide to Materials and Design, 2016, John S. and James L. Knight Foundation)	*LF*	*$8.50*
G. Painted/Striped No Parking Area at intersection (requires context sensitive application along route)	*EA*	*$900*

Facility	Unit	Cost
6.1. Shared Use Path (asphalt paved, 10' wide)	**LF**	**$95**
6.2. Shared Use Path (crushed stone, 10' wide)	**LF**	**$65**
6.3. Sidepath (asphalt paved, 10' wide)	**LF**	**$95**
6.4. Street Crossing for Shared Use Path or Sidepath	**EA**	**$10,000**
Street Crossing Components:		
A. Warning Signs + Pavement Markings (roadway)	*EA*	*$4,600*
B. Warning + Stop Signs (path)	*EA*	*$1,000*
C. Crosswalk	*EA*	*$900*
E. Curb Ramps	*EA*	*$3,500*
F. Option: Lighting Improvements at Crossing	*EA*	*$20,000*
G. Option: Rectangular Rapid Flashing Beacons (2)	*EA*	*$15,000*
6.5 Lighting along Shared Use Path or Sidepath *(assume $3500 per fixture and 30-foot spacing)*	**LF**	**$117**

BIKEPassaicCounty

Proposed County Bicycle Network Memorandum

June 30, 2022

Table of Contents

List of Figures

Proposed County Bicycle Network

The BIKEPassaicCounty proposed county bicycle network implements the Vision Statement: a connected, countywide system of paths, trails, and on-street facilities increases access to destinations, enhances community health, promotes equity, and improves the experience of biking, with special emphasis on the most vulnerable users.

Development of the network took place over a series of steps, using data-driven and GIS mapping methodologies, planning and design guidance resources, manual field assessment of existing conditions, extensive outreach to stakeholders, and collaborative review and refinement of findings and recommendations.

This process draws upon the applicable guidance including the BIKEPassaicCounty Pattern Book, New Jersey Complete Streets Design Guide, and related resources. Together, these resources create a uniform process for evaluating and selecting appropriate facility types, while the Pattern Book also helps ensure consistency and connects details among the various facility types. A bike lane should look and function the same regardless of the context or community so that bike riders and drivers are able recognize it, use the facility, and interact in a safe and predictable manner.

Methodology

Development of the proposed county bicycle network used a three-step process:

Step 1: Passaic County Draft Priority Network

This first step was to develop the draft priority network, which is from the *Moving Passaic County* concept of “priority bicycle and pedestrian corridors.” The goal of the priority network is to provide for bicycle travel within each town, between neighboring towns, across the County, and continuing through to neighboring counties. Step 1 of emphasizes County-owned roadways and lands for siting and hosting of bicycle facilities but does not specify facility types.

Step 2: Completeness Check to Create the Priority Network

The second step was a completeness check of the draft priority network (step 1). The completeness check is an assessment of network connectivity, access, and mobility, with the goal to fill in network gaps and overcome barriers. The result is the priority network, which is focused on completing connections and providing local and regional access.

Step 3: Proposed County Bicycle Network with Bicycle Facility Types

The third and final step assigned recommended bicycle facility types to the priority network to create the proposed county bicycle network. The facility types include on- and off-street and range from bike lanes to shared-use paths and trails. This process yielded a comprehensive, county-wide bicycle network and facility type

recommendations based specifically on Passaic County context and conditions, and ranges from on-street bicycle lanes to off-street side paths and trails.

Step 1: Passaic County Draft Priority Network

Passaic County assembled the draft priority corridors, drawing from previous plans and studies, various mapping and data resources, collaborative efforts, and knowledge of the local and regional roadway and trails networks.

The County began its review *Moving Passaic County (2012)* which introduced the concept of "priority bicycle and pedestrian corridors." These are considered priority routes for bicycle and pedestrian travel because they strategically link and interconnect the major neighborhoods, districts, destinations and attractions in Passaic County.

However, these 2012 priority corridors reflect conditions from at least a decade ago and do not reflect the current data resources and assessments, including recent crash data, crash hotspots, bicycle LTS, and the island effect, as described and documented in the existing conditions assessment. The existing conditions assessment reveals that the County must look beyond both the 2012 priority corridors to adequately meet everyday access and mobility needs, due to the high traffic volumes and travel speeds; crash occurrence and hotspots; and high-stress condition of many County-owned roadways.

The Passaic County Draft Priority Corridors are depicted in and on the following pages.

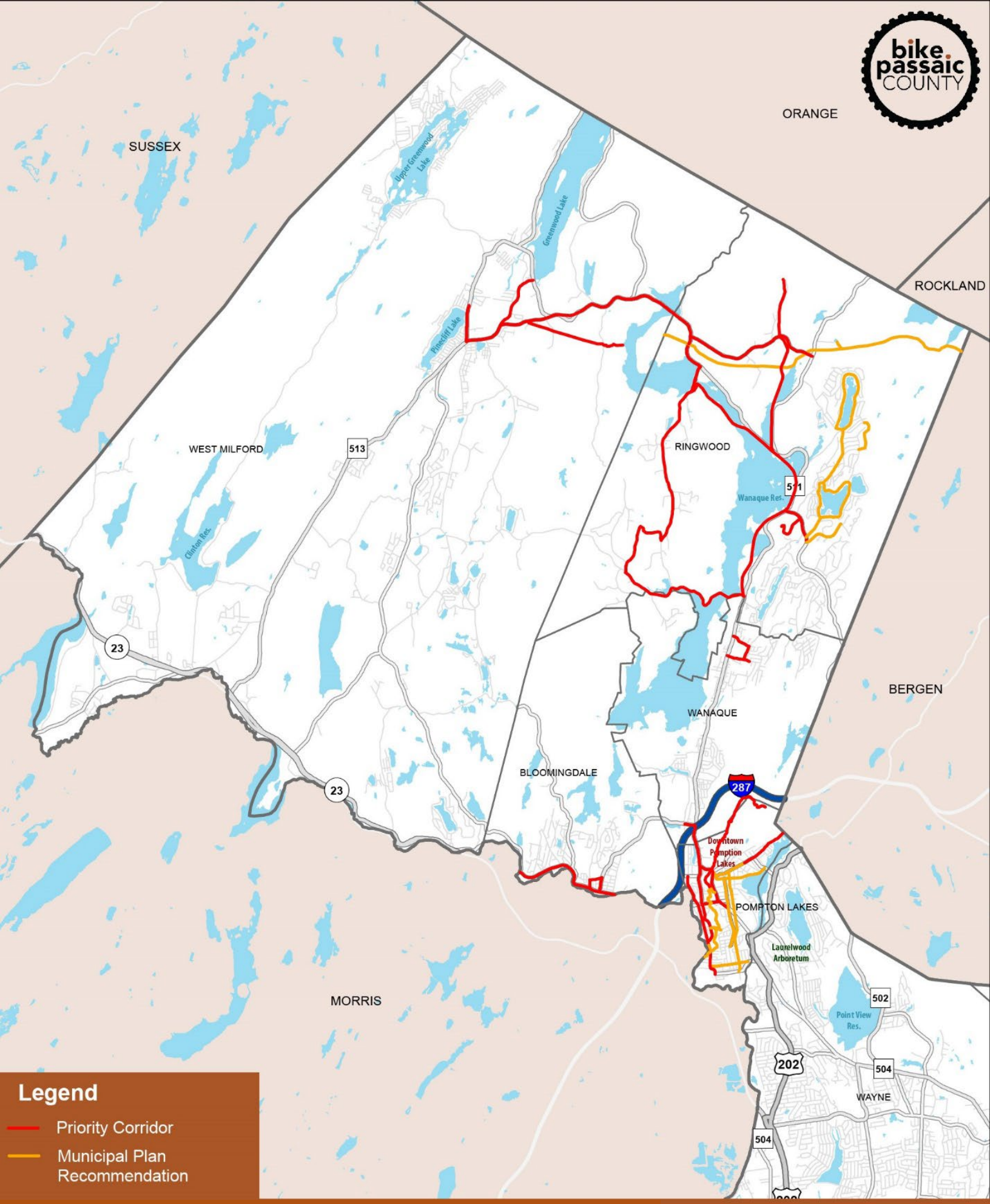


Figure 1: Passaic County Draft Priority Network, Northwest

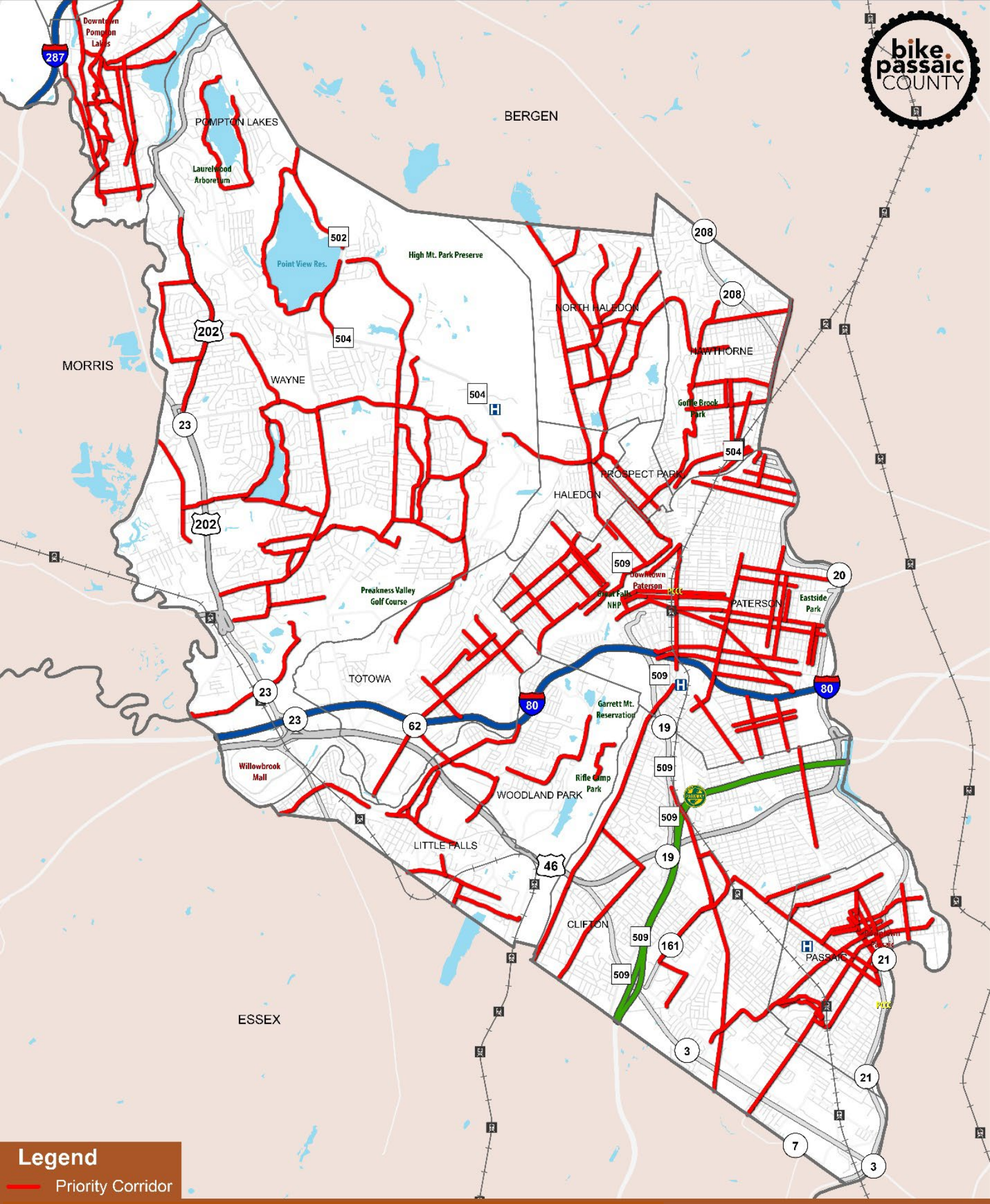


Figure 2: Passaic County Draft Priority Network, Southeast

Step 2: Completeness Check to Create the Priority Network

The goal of Step 2 is to complete the priority network to provide adequate mobility, connecting people to the places they need to go. Mobility should not stop at municipal boundaries, and neither should non-motorized travel networks.

The priority network is focused on connections and access, rather than specific bicycle facility types, including where people live and work, where they want to and need to travel to, and which roadways provide that necessary connectivity and access. The completeness check includes an assessment of connectivity, access, and mobility of the draft priority network, and seeks to fill in gaps and bridge barriers by adding local and off-street connections.

Each municipality should have a well-developed and accessible bicycle network with adequate connectivity not just locally, but to neighboring municipalities as well. The network should also provide access between critical multimodal trip generators and attractors, including residential areas, work locations, transit stops and rail stations, schools, parks, libraries, downtowns, and other activity centers. To provide adequate access and mobility, the network should bridge over high-stress and physical barriers and fill in gaps identified during the existing conditions assessment. The network should reconnect, to the extent feasible, the many isolated areas identified in the island effect analysis.

The completeness check encountered significant challenges, including the following:

- For northwest Passaic County, the road network is shaped by topography and open space with a mix of residential and rural roads. With the exception of the population centers of West Milford, Ringwood, Bloomingdale, and Pompton Lakes, which feature localized and neighborhood-based street grids, the roads follow natural contours and passes, connecting nodal areas with small residential areas that are often surrounded by commercial areas with retail or dining destinations, and/or a lake or small water body. There are significant grade changes, and the shoulders, if present, are of varying width and are often unpaved and/or roadside swales or culverts.
- The options available to connect commercial areas, open space, recreational trail access points, schools, and park-and-ride facilities, are therefore severely limited. The Highlands Rail Trail, for example, provides an off-road north-south backbone, which was a major anchor within this part of the county. Regional connectivity options had to be examined from among both on-road and off-road possibilities.

    - In the southeast, numerous additions were made, emphasizing local and neighborhood connectivity, as compared to the regional and county-wide focus of the draft priority network. Many of these additional miles in the southeast are short facilities that enhance local connectivity between proposed network routes and provide links between residential areas, schools, and other destinations. For example:
    - In Haledon, portions of Central Avenue and West Haledon Avenue were added to connect surrounding residential areas to Haledon Public School, and regional bicycle facilities such as Pompton Road and Haledon Avenue, and the commercial district along Haledon Avenue.
    - In Wayne, the addition of Magnolia Place connects the George Washington School to a large residential area and regional facilities at Lake Drive West, Osborne Terrace, and Packanack Lake Road.
- Many of these additions achieve the goal of reconnecting, to the extent feasible, the many isolated areas identified in the island effect analysis.

The completeness check in Step 2 added 101 miles to the draft priority network (209 miles), for a total priority network of 310 miles across the 16 Passaic County municipalities.

The priority network includes proposed facilities on state, county, and local roadways. The majority of these additions were made to northwest Passaic County, adding 74 miles to the bicycle network. This is due primarily to the limited roadway network in the northwest, and the need to utilize local residential streets and off-street and trail options to enhance connectivity.

In the southeast, 27 miles were added to the bicycle network (4). Many of these additional miles are short facilities provided to enhance local connectivity between proposed network routes and also to provide linkages from the priority network to residential areas, schools, and other destinations.

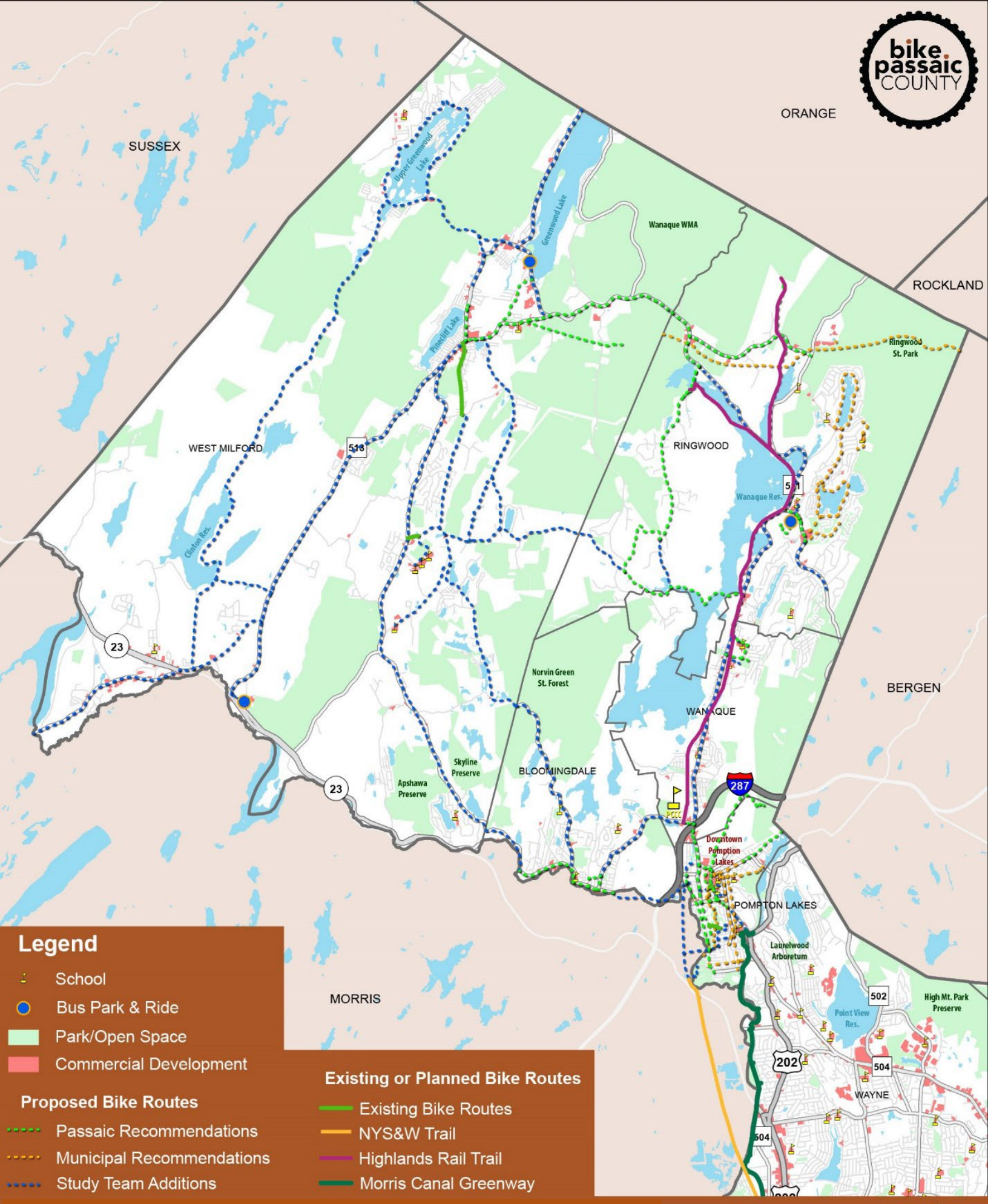


Figure 3: Passaic County Priority Network, Northwest

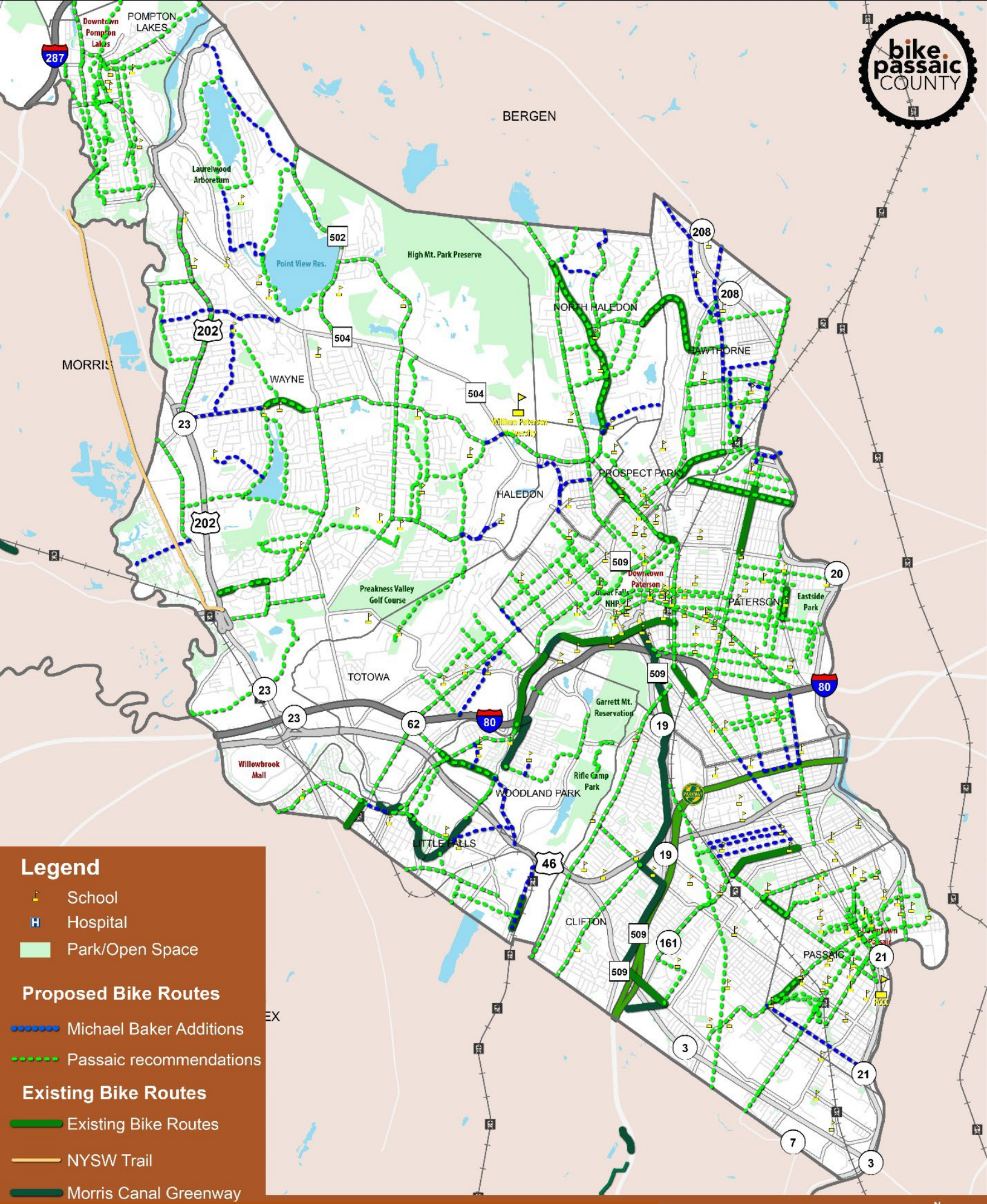


Figure 4: Passaic County Priority Network, Southeast

Step 3: Proposed County Bicycle Network

In Step 3, facility type recommendations for the proposed county bicycle network were evaluated and selected based on context, existing conditions, and collaborative efforts, to develop a comprehensive, interconnected, and fully integrated bicycle network.

Candidate roadway segments were identified and screened using the Bikeway Selection Guidance Process (pp 106-107) of the New Jersey Complete Streets Design Guide (CSDG), which outlines a three-part process for identification and selection of candidate bicycle facilities and is summarized in Figure 5: Bicycle Facility Type Selection, inset right.

Applicable facility types and context-specific details are further defined in the BIKEPassaicCounty Pattern Book. The Pattern Book summarizes the range of proposed improvements from on-street bicycle lanes to off-street side paths and trails. The CSDG includes a flowchart and step-by-step process to identify appropriate bicycle facilities based on the street and local community context, design features such as posted speed limit, and cross section width, and approximate daily AADT and truck volume percentage.

Figure 5: Bicycle Facility Type Selection

Part 1: Evaluate Candidate Roadway Segment and Local Context.

Screening and selection of proposed bike improvements proceeds one candidate roadway segment at a time.

Begin by evaluating the roadway segment (i.e. roadway X from point A to point B) and determine the local context and existing roadway attributes: 85th percentile travel speed (or posted speed limit), actual or estimated traffic volume (ADT), truck percentage, presence or absence of parking, available right-of-way width, and other factors.

Part 2: Determine Candidate Facility Type Options.

Next evaluate the range of potential bicycle facility options for the candidate roadway segment.

Apply the Bikeway Selection Guidance Process from the New Jersey Complete Streets Design Guide (pp 106-7), to the candidate roadway segment using the established design attributes (local context, travel speeds and volumes, truck percentage, and roadway width) to identify the range of potential facilities: i.e. bike lanes, shared-use sidepath, etc.

Part 3: Assess Feasibility and Select Preferred Facility Type.

Finally, review each of the potential facility options (bike lane, sidepath, etc.) and determine which best fits the local context, existing conditions, and available roadway width.

Together, the Pattern Book and CSDG create a uniform process for evaluating and selecting appropriate facility types, while the Pattern Book also helps ensure consistency and connects details among the various facility types. A bike lane should look and function the same regardless of the context or community so that bike riders and drivers are able recognize it, use the facility, and interact in a safe and predictable manner.

Numerous meetings and collaborative efforts were held to review, refine, and enhance the potential proposed County bicycle network and improvements. Additional comments from the public via surveys, WikiMap entries, and other sources including municipal recommendations, were also evaluated and incorporated in the same manner.

Due to the significant variation in context, place types, and existing conditions between northwest and southeast Passaic County, each was evaluated separately.

Proposed County Bicycle Network, Northwest

As discussed in the existing conditions technical memorandum, the municipalities of the northwest portion of the county include at least 15 separate islands) that consist of isolated, almost self-contained, nodes of residential and commercial development, schools, parks, and park-and-ride facilities. These individual nodes feature primarily low-stress (LTS 1 & 2) internal street networks and are separated and isolated from one another by higher-stress (LTS 3 & 4) regional roadways that are not inviting to bicyclists, as well as by the topography and numerous water bodies that characterize northwest Passaic County. The result is that in addition to the towns being separated from one another, each individual town is further divided into a series of smaller, internal islands.

Figures 6 depicts the proposed county bicycle network for northeast Passaic County. The legend indicates each facility type with a unique color scheme for each type with existing facilities displayed with solid lines and potential new facilities with dashed lines.

Due to the prevalence of high-stress roadways in the northwest, several off-street facilities are proposed to provide connectivity within municipalities and between municipalities (Proposed County Bicycle Network, Northwest, Figure 28).The planned 7.15-mile Passaic County Highlands Rail Trail (Highlands Rail Trail) serves as an anchor facility for low-stress mobility in the communities east of the Wanaque Reservoir.[i]

- In conjunction with other planned shared use paths – the NYS&W Trail in Morris County and the Morris Canal Pompton Feeder in Passaic County – there is potential to create a roughly 17-mile low-stress bicycle connection from northern Ringwood to the planned Morris Canal Greenway, supporting both local and regional mobility, as well as trail tourism, for years to come.
- To complete this trail network, there is a roughly 3-mile gap to be filled in Wanaque and Pompton Lakes, beginning at the planned southern terminus of the Highlands Rail Trail and extending south to the soon-to-be-constructed NYS&W path. Both on-road (short-term) and off-road (long-term) options are identified in the proposed bicycle network to close this gap.

Within the communities east of the Wanaque Reservoir, the Highlands Rail Trail will be accessible to the existing low-stress street networks that connect to schools, parks, transit access, and other destinations.

- Skyline Drive (CR-692) in Ringwood is an example of a county street that can be enhanced with standard bicycle lanes to simultaneously support local and regional connectivity, by connecting the existing network of residential streets with existing shopping centers, the Ringwood Park & Ride, and ultimately the Highlands Rail Trail.

- Likewise, Greenwood Lake Turnpike (CR-511) is an east-west county roadway that has the potential to connect the commercial and residential centers of West Milford with those of Ringwood and with the Highlands Rail Trail. Standard bicycle lanes are recommended for Greenwood Lake Turnpike, which would require certain portions of the shoulder areas to be widened.

West of the Wanaque Reservoir, the county landscape is dominated by the Highlands topography, and the existing street network is considered to be moderate to high stress for bicycling (LTS 3).

- Despite the high level of stress, these streets are scenic and attractive to enthused and confident recreational road bicyclists, as indicated both by STRAVA data and anecdotal observations.
- Significant investment to widen shoulders for dedicated bike lanes is typically not a high-priority recommendation for rural roads, due to significant cost and potential right-of-way and environmental impacts, and because inexperienced and concerned bicyclists are not likely to ride on these roads due to grade changes and exposure to high traffic volumes and speeds.

Therefore, for these streets, a more subtle enhancement is recommended, such as designation as signed bicycle routes. As described in the Pattern Book, this would include the installation of regulatory and wayfinding signage to enhance bicycle activity, along with general maintenance practices that support favorable bicycling conditions. However, further discussion with cyclists who regularly use these roads is needed because improving bicycling safety on hilly, winding rural roads is highly location specific.

Large format bicycle network mapping with enhanced detail and labels is provided in the Appendix and as a standalone map.

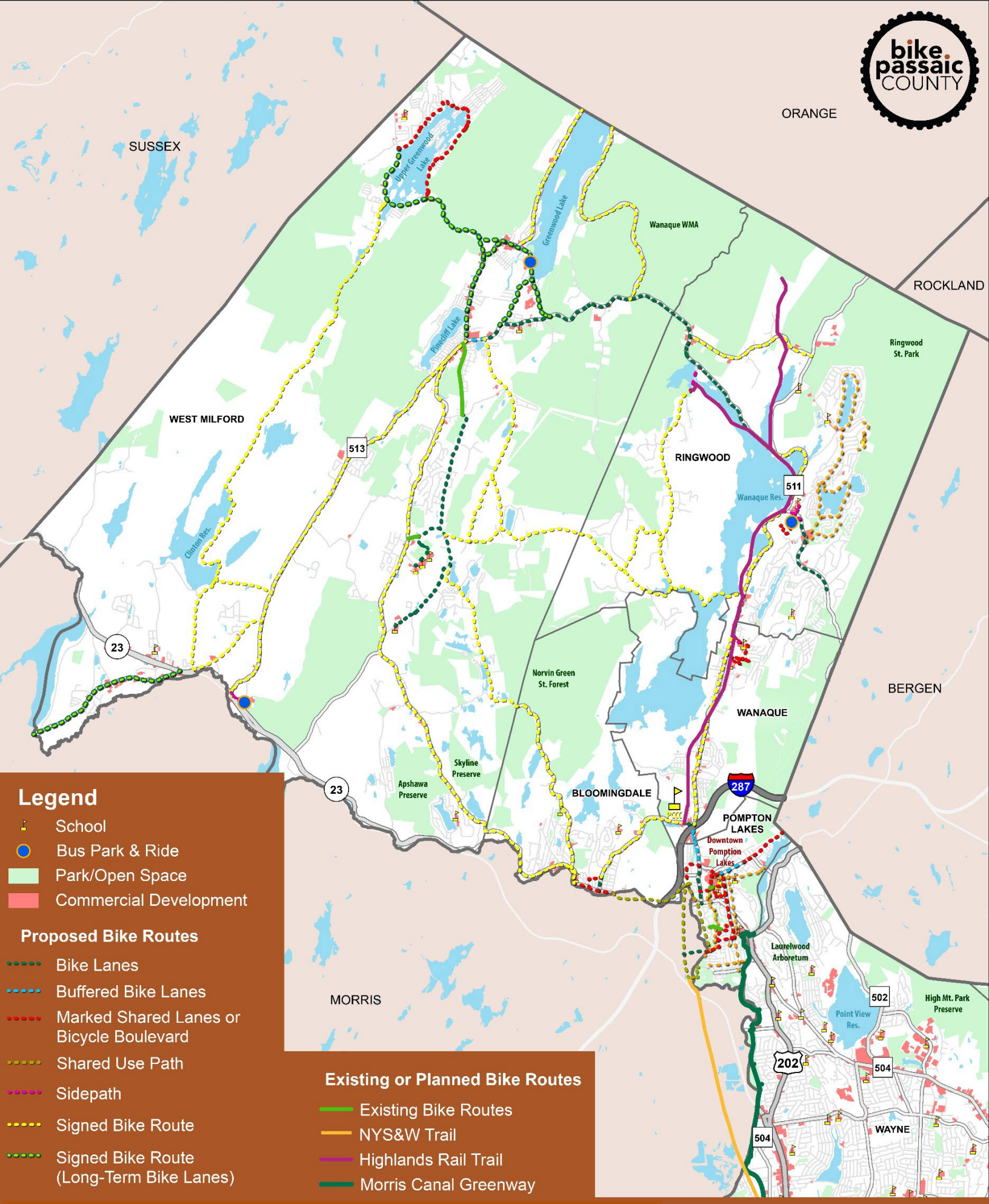


Figure 6: Proposed County Bicycle Network, Northwest

Proposed County Bicycle Network, Southeast

Bicycle facility type recommendations for the southeast were evaluated and selected based on context, existing conditions, and collaborative efforts, to develop a comprehensive, interconnected, and fully integrated bicycle network. Numerous recommendations from previous studies and plans were considered, including many from the *Moving Passaic County*, *Great Falls Circulation Study*, and the various Morris Canal Greenway studies. Examples include the Taft Avenue bridge over I-80 in Woodland Park; recommendations from municipal coordination efforts including facilities on Haledon Avenue between Paterson, Prospect Park, and Haledon; potential rail with trail facility adjacent to the conceptual Newark-Paterson Transit BRT concept in Clifton and Paterson; and numerous recommendations from BIKEPaterson, including Madison and Getty Avenues bike lanes.

Additional comments from surveys, e-mail, and written sources, WikiMap entries, and municipal recommendations were also evaluated and incorporated in the same manner.

Figure 7 depicts the proposed county bicycle network for southeast Passaic County. The legend indicates each facility type with a unique color scheme for each type with existing facilities displayed with solid lines and potential new facilities with dashed lines.

Large format bicycle network mapping with enhanced detail and labels is provided in the Appendix and as a standalone map.

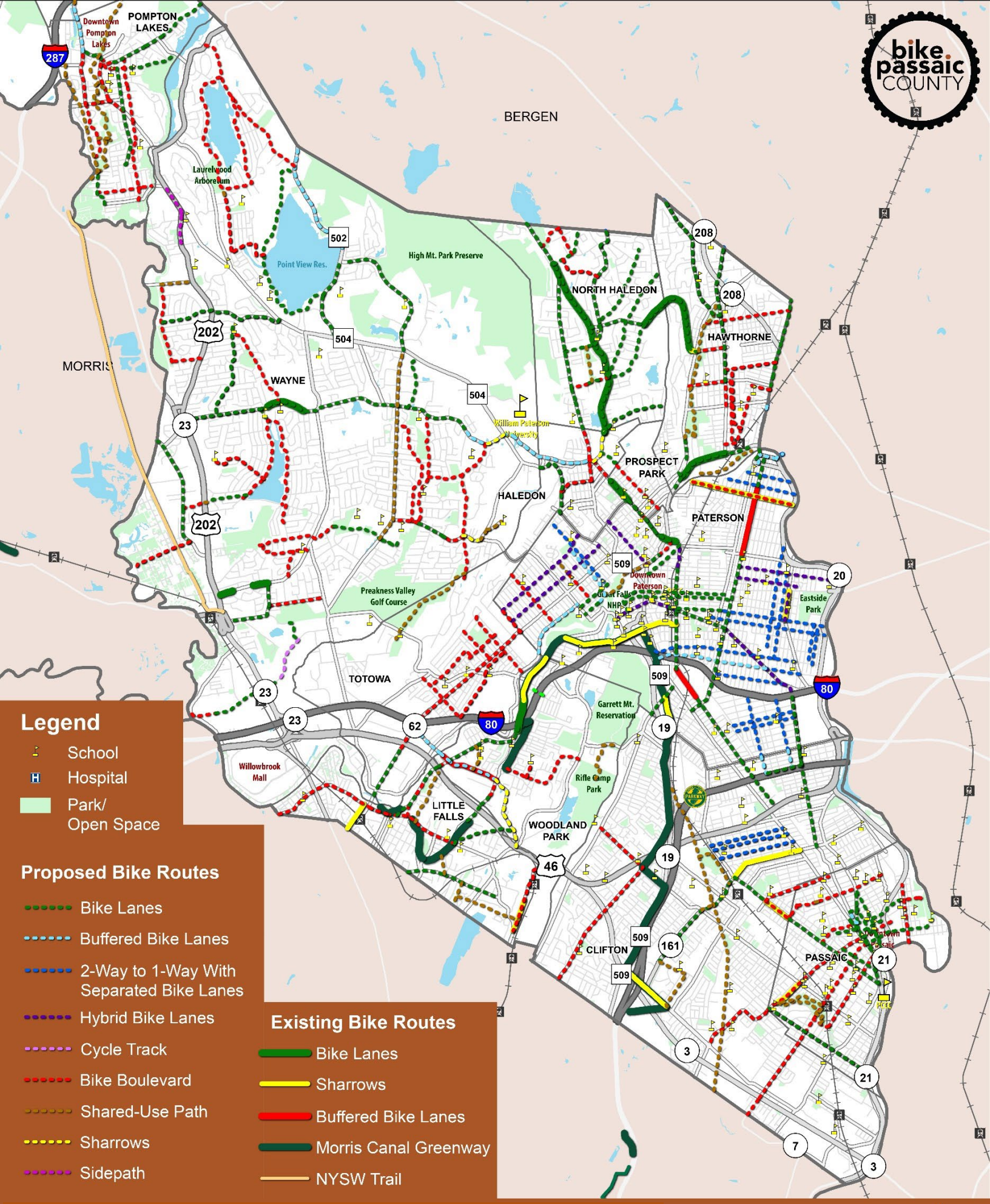


Figure 7: Proposed County Bicycle Network, Southeast

End Notes

[i] Passaic County. (N.d.). Highlands Regional Trail. Retrieved: https://www.passaiccountynj.org/departments/planning-economic-development/plans-and-technical-studies/highlands-rail-trail. Accessed April 24, 2022.

Technical Memorandum: Bike Network Concept Level Plans

Date: 4/28/2022 (revised 6/17/2022; revised 6/27/2022)

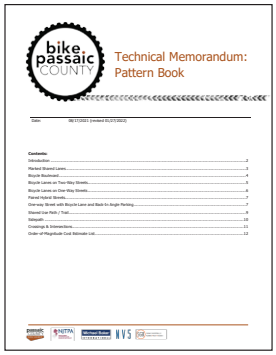
Contents:

Introduction

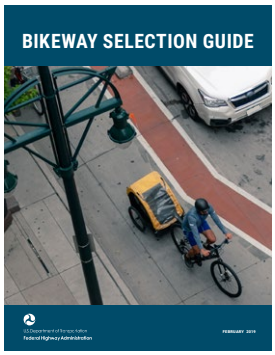
This technical memorandum is a component of the *BIKEPassaicCounty Plan,* describing concept level plans for priority corridors or locations in the county bike network. Priority locations or corridors were identified in collaboration with Passaic County Planning as a component of the countywide bike network planning process. Twelve corridors or locations were identified, as indicated in the key map on the following page, with a range of objectives including regional trail access, inter-community connections, and improvements for bicycle access to community destinations, such as schools, parks, and transit. The twelve concept level plans are distributed throughout the county.

Each concept level plan includes an overview, concept map, description of the potential bike facilities planned for each route, and an order-of-magnitude estimation of the level of effort and cost to implement. Each concept level plan is broken down into distinct segments in which the recommended facility, design considerations, and level of effort/cost vary, based on existing conditions and contextual considerations for the potential bike facilities.

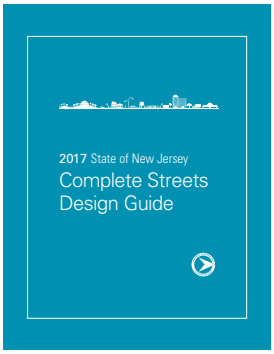
Key references used in the development of the concept level plans include the following:



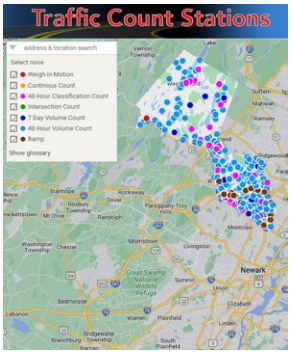
The ***BIKEPassaicCounty Pattern Book*** is a component of the *BIKEPassaicCounty Plan* providing design guidance and cross section dimensions for on- and off-road bicycle facilities. The Pattern Book is based on current design guidance from the American Association of State Highway and Transportation Officials (AASHTO), National Association of City Transportation Officials (NACTO), and the Federal Highway Administration (FHWA).



The FHWA Bikeway Selection Guide (2019) is a national standard outlining the all-ages-and-abilities approach to context-sensitive bike facility selection.



The State of New Jersey Complete Streets Design Guide (2017) is a state standard for integrating bicycle and pedestrian facilities into street design.

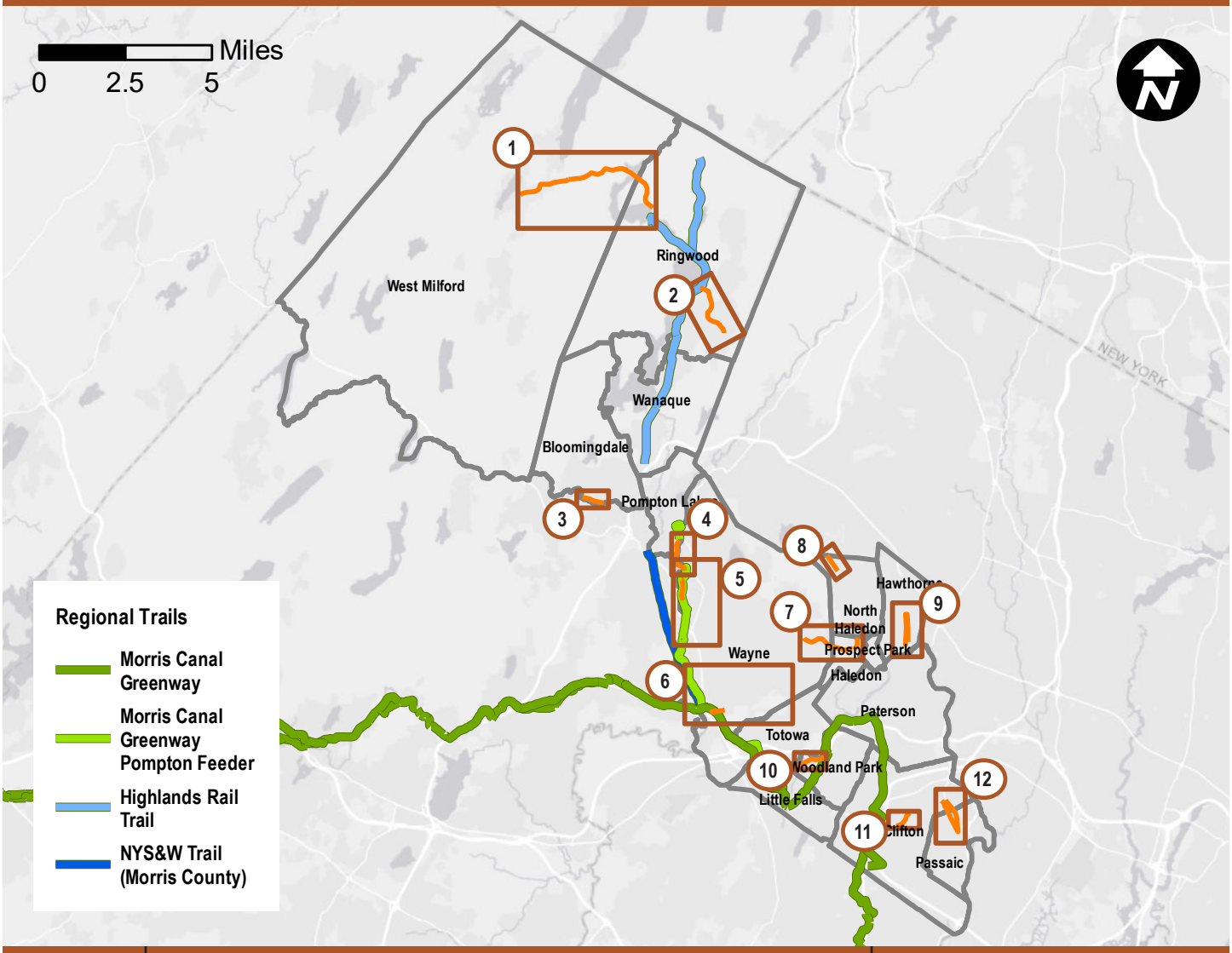


The New Jersey Department of Transportation (NJDOT) Interactive Traffic Count Reports Map provides traffic data from counts taken on state, county, and local jurisdiction routes throughout New Jersey. Traffic counts from this resource are documented throughout the concept level plans.

The NJDOT Straight Line Diagrams provide a variety of data for state and county routes, including posted speed limits, jurisdictional extents, and dimensions of travel lanes and shoulders, referenced throughout the concept level plans.

High resolution aerial mapping from Nearmap was obtained and used to take cross section measurements throughout the concept level plans.

Key Map



Concept	Name	Municipalities
1	West Milford Connection to Highlands Rail Trail	West Milford and Ringwood
2	Ringwood Connection to Highlands Rail Trail	Ringwood
3	Main Street Complete Street	Bloomingdale
4	Morris Canal Greenway Connection	Wayne
5	Black Oak Ridge Connections to Morris Canal Greenway	Wayne
6	Parish Drive Connections to Morris Canal Greenway	Wayne
7	Wayne-Haledon Community Connection	Wayne and Haledon
8	High Mountain Road Connection to Nature Preserve	North Haledon
9	Hawthorne North-South Connection	Hawthorne
10	McBride Avenue	Woodland Park
11	Clifton Avenue	Clifton
12	Passaic-Clifton Community Connection	Passaic and Clifton

Methodology

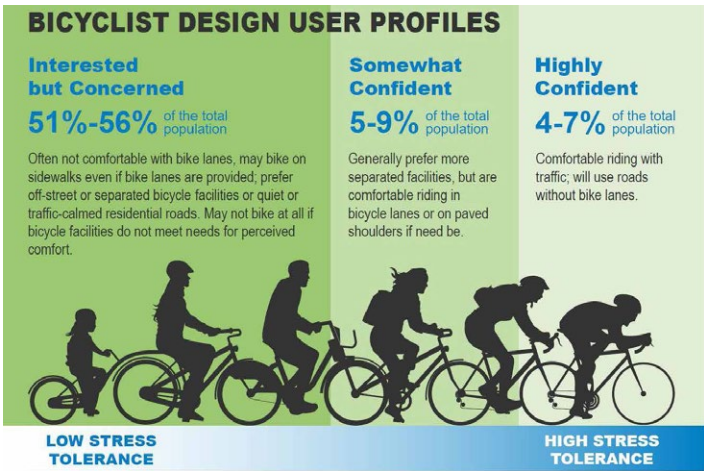
The process to develop each concept level plan included:

- Collection and assessment of existing conditions information (road context, start/end points, posted speed limit, traffic volume, existing paved area width),
- Consideration of alternative routes,
- Bike facility selection, and
- Consideration of design factors, alternative facility types, and feasibility (level of effort, cost, and other potential impacts).

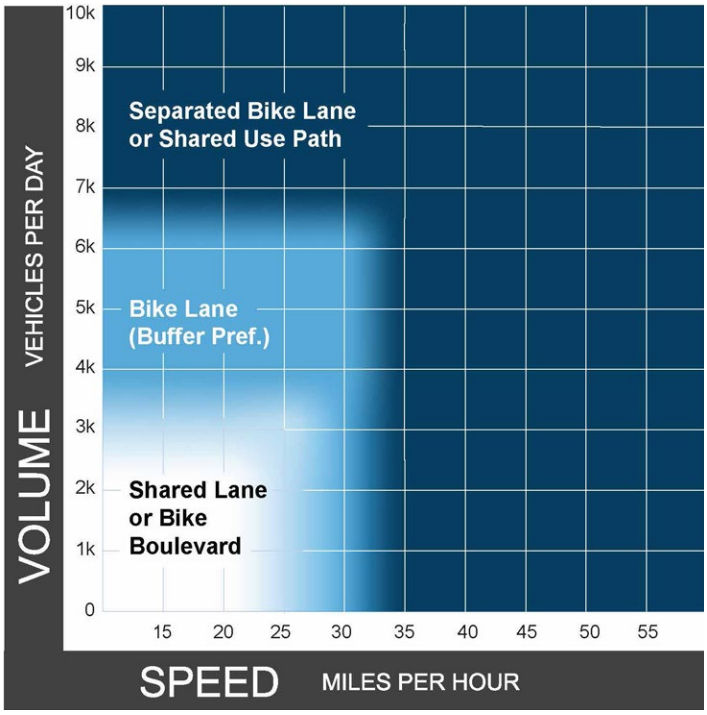
Each concept level plan prioritizes safety and an all-ages-and-abilities approach to provide safe and convenient connectivity in compliance with established design guidance.

Key inputs to bike facility selection include the FHWA Bicycle Design User Profiles and Preferred Bikeway Type charts, along with the New Jersey Complete Streets Design Guide Bikeway Selection Table.

For each concept level plan, the expected bicyclist is defined based on FHWA Bicycle Design User Profiles, with effort made throughout to prioritize the largest number of potential users (i.e. low-stress facilities) in balance with overall feasibility and connectivity.



FHWA Bicycle Design User Profiles, from the FHWA Bikeway Selection Guide (2019), p. 13



FHWA Preferred Bikeway Type chart, from the FHWA Bikeway Selection Guide (2019), p. 23

ADT	85TH PERCENTILE SPEED[1]						
	≤ 20	25	30	35	40	45	≥50
≤ 2,500	ABCDEF	A[2]BCDEF	CDEF	CDEF	CDEF	DEF	F
2,500–5,000	BCDEF	BCDEF	CDEF	CDEF	DEF	DEF	F
5,000–10,000	B[3]CDEF	B[3]CDEF	CDEF	DEF	DEF	EF	F
10,000–15,000	DEF	DEF	DEF	DEF	EF	EF	F
≥15,000	DEF	DEF	DEF	EF	EF	F	F

A: Shared Street/Bicycle Boulevard **B:** Shared-lane Markings **C:** Bicycle Lane **D:** Buffered Bicycle Lane
E: Separated Bicycle Lane **F:** Shared-use Path

[1] *If data not available, use posted speed*
[2] *Bicycle boulevards are preferred at speeds ≤25 mph*
[3] *Shared-lane markings are not a preferred treatment with truck percentages greater than 10%*

New Jersey Complete Streets Design Guide Bicycle Facility Table, p. 106

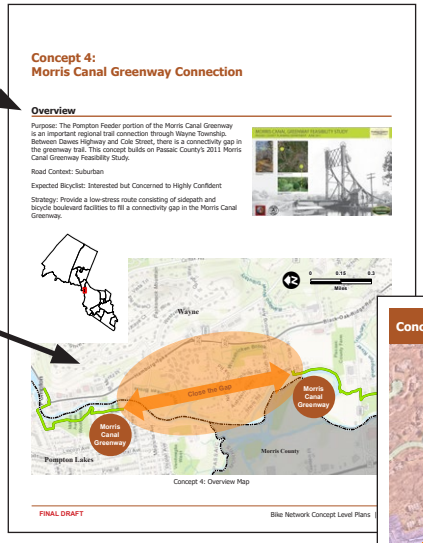
Concept Components

Each concept level plan is intended to incrementally advance the planning and implementation of the bike network in Passaic County. Such advancement will require outreach and consensus from a range of stakeholders and participants, including the general public, elected officials, and the engineering community to balance the needs and input of all involved. Each concept, therefore, is intended to serve as a basis for building consensus and support the development of funding and grant applications for future phases of design and construction.

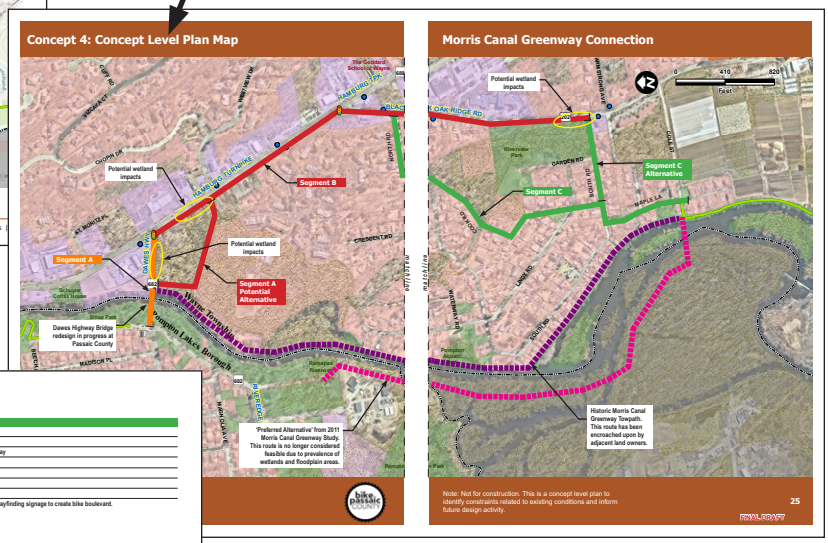
Each concept includes the following components:

Overview
- Purpose
- Road Context
- Expected Bicyclist
- Strategy

Concept Overview Map
Diagrammatic representation of the purpose and geography of each concept level plan

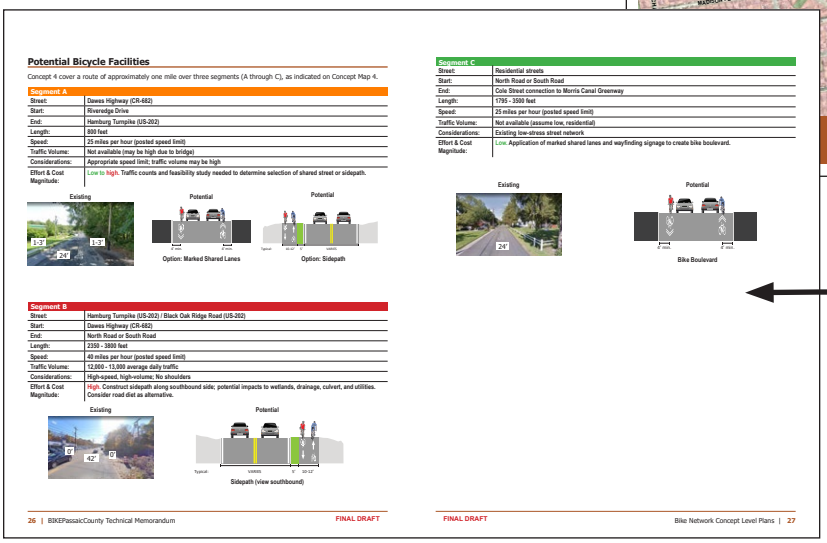


Concept Level Plan Map
Each concept level plan includes a two-page map at appropriate scale to identify each segment and surrounding land use. Each segment is identified by letter (A, B, C, etc.) and corresponds to a data table and cross section graphics, as shown above.



Potential Bike Facilities
These entries provide a breakdown of each concept level plan by segment, presenting existing conditions data and a potential bike facility for implementation. Each segment is identified on the Concept Map. Segments are color coded by Effort and Cost Magnitude, as defined below.

Refer to the *BIKEPassaic County Pattern Book* for additional information on each facility type.



Effort and Cost Magnitude by Color:

Low (green): Bike facility generally requires only signing and striping for implementation.

Moderately High (orange): Bike facility requires signing and striping along with limited or selective construction and/or additional coordination/approval such as removal/reallocation of on-street parking, additional studies, etc.

High (red): Bike facility requires substantial design and construction along the full extent of the segment, such as shoulder widening or construction of an independent shared use path.

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Concept 1:
West Milford Connection to Highlands Rail Trail

Municipalities: West Milford and Ringwood

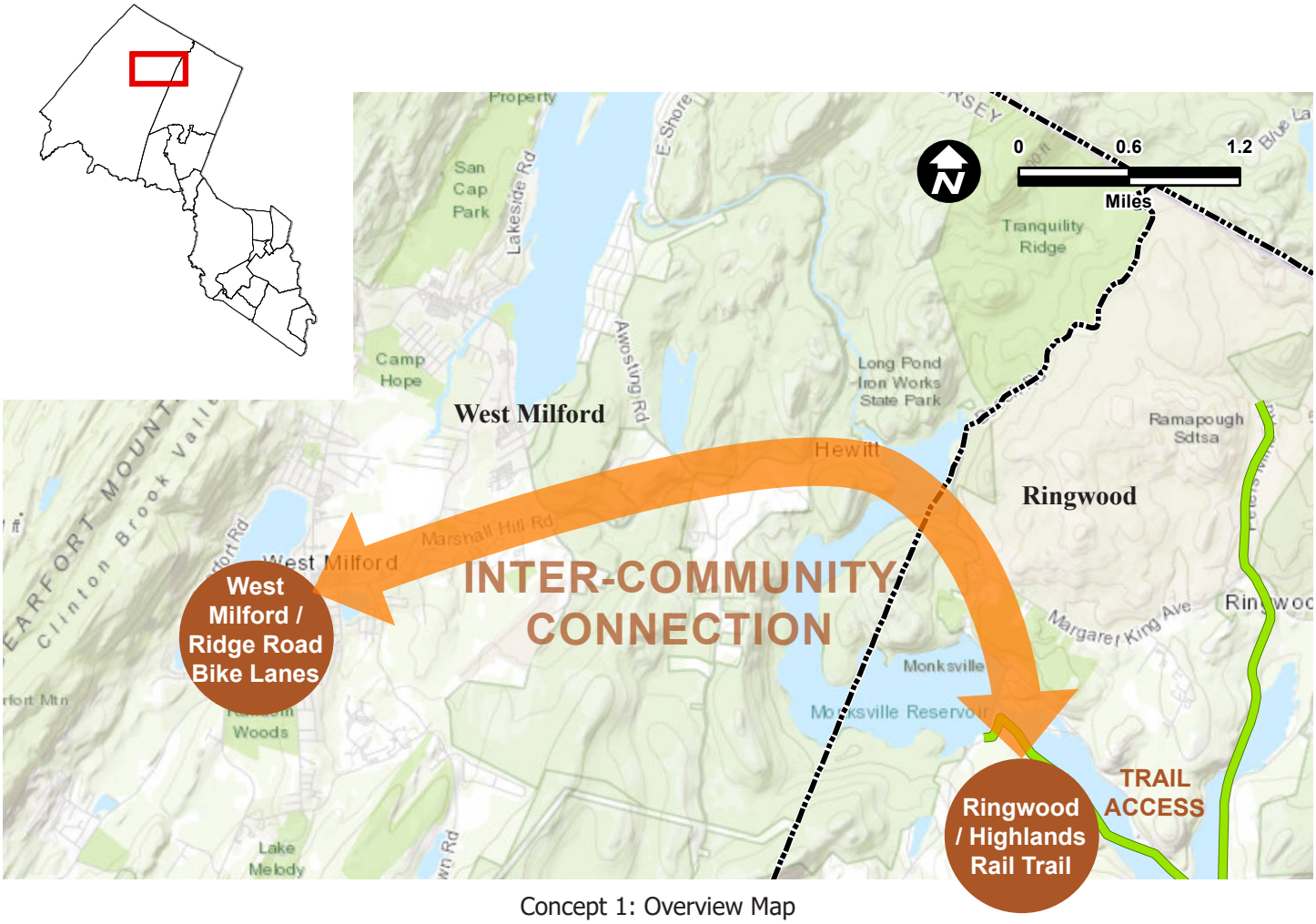
Overview

Purpose: Greenwood Lake Turnpike (CR-511) and Marshall Hill Road (CR-696) create an opportunity for an east-west bike lane connection to the Highlands Rail Trail between the communities of Ringwood and West Milford. In Ringwood, the potential bike lanes connect to the Highlands Rail Trail, supporting regional connectivity for residents of both communities. Scenic and historic locations along the route include the Monksville Dam, Monksville Reservoir Bridge, and Long Pond Iron Works State Park. In West Milford, the potential bike lanes can connect to existing bike lanes on Ridge Road, supporting access to commercial locations and schools within the township.

Road Context: Rural to Rural Town

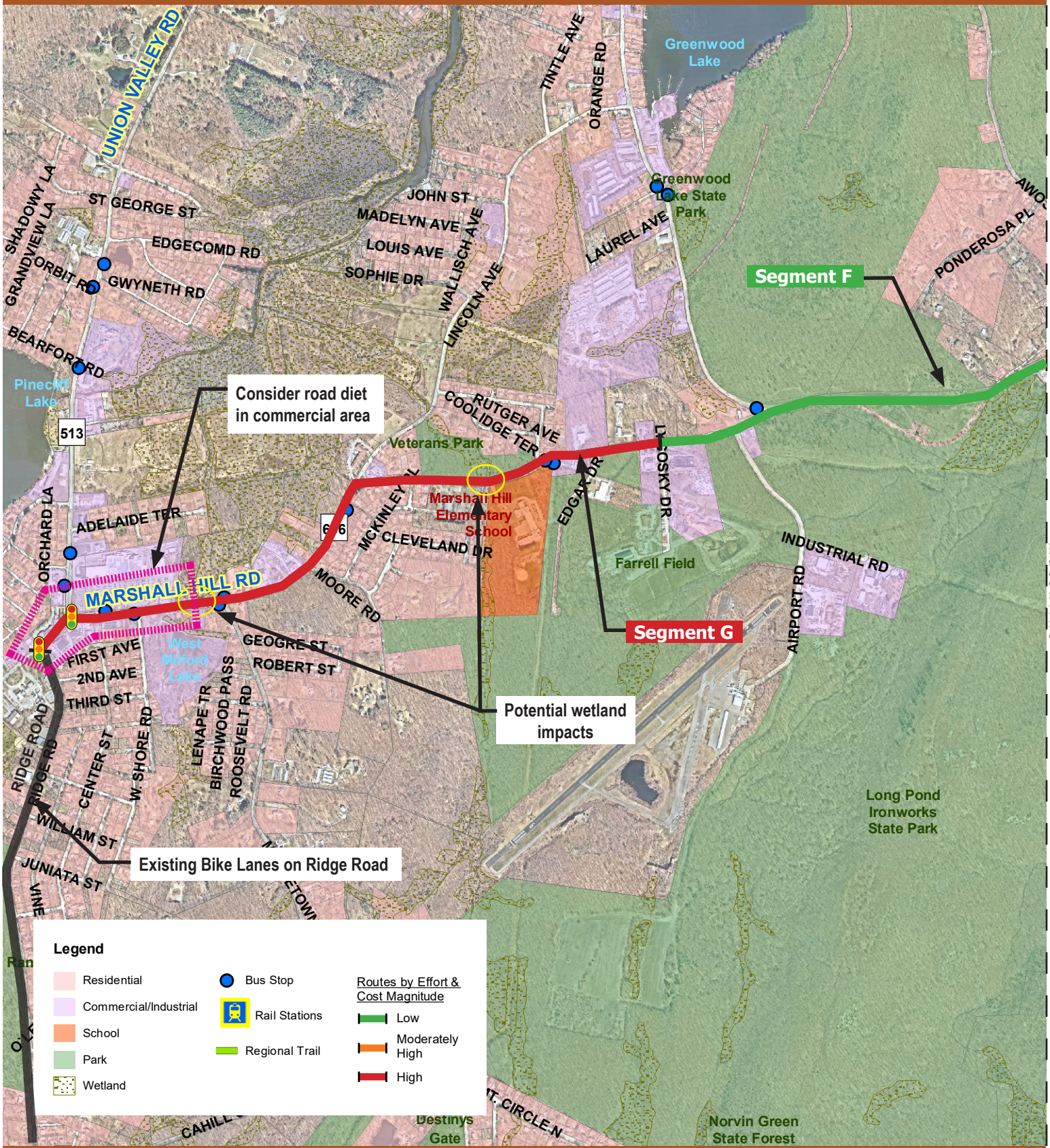
Expected Bicyclist: Somewhat Confident to Highly Confident

Strategy: Provide bike lanes along the indicated route. Various extents of the route will require widening of the paved area of the street to accommodate bike lanes.

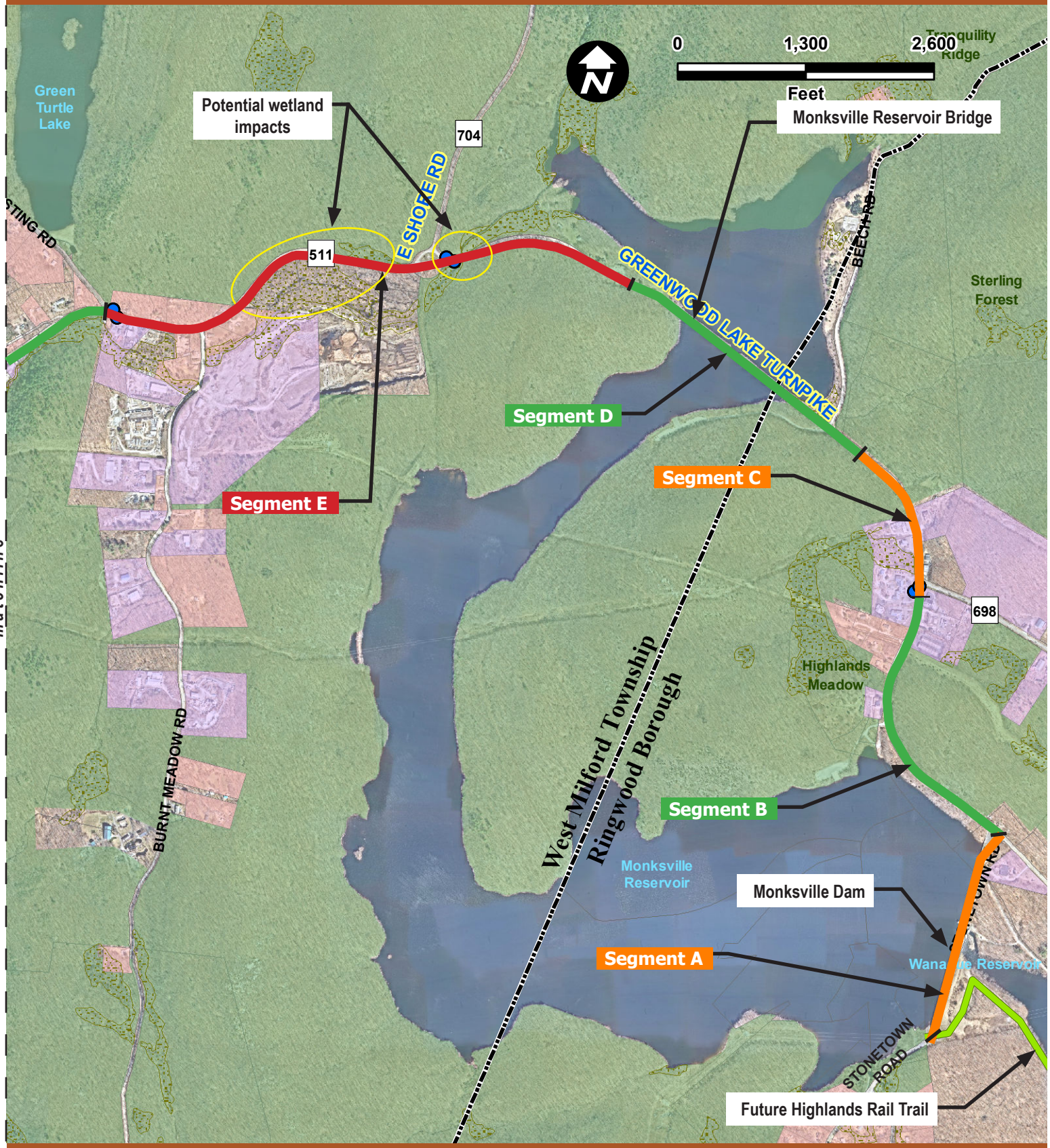


Concept 1: Overview Map

Concept 1: Concept Level Plan Map



West Milford Connection to Highlands Rail Trail



Note: Not for construction. This is a concept level plan to identify constraints related to existing conditions and inform future design activity.

FINAL DRAFT

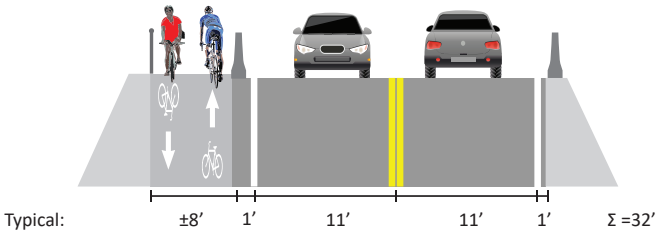
Potential Bicycle Facilities

Concept 1 covers a route of approximately 5.3 miles over seven segments (A through G), as indicated on Concept Map 1.

Segment A	
Street:	Stonetown Road crossing Monksville Dame
Start:	Highlands Rail Trail
End:	Greenwood Lake Turnpike (CR-513)
Length:	2300 feet
Speed:	30 miles per hour (posted speed limit)
Traffic Volume:	Not available
Considerations:	Limited width of the dam road is a significant constraint. Bicyclists may dismount and use existing separated walkway.
Effort & Cost Magnitude:	Moderately High. Reduce lane width. Relocate barrier to widen pathway.

Existing

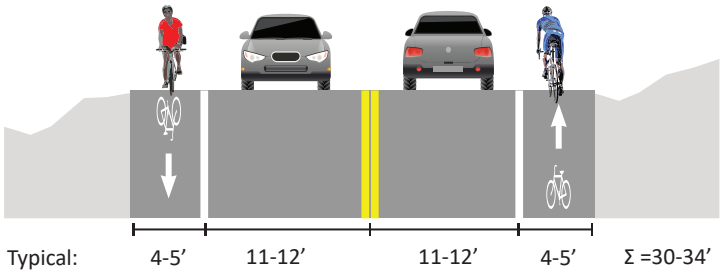
Potential



Sidepath (view northbound)

Segments B-F

Potential



Bike Lanes

Segment B

Street:	Greenwood Lake Turnpike (CR-513)
Start:	Stonetown Road
End:	Vicinity of 1124 Greenwood Lake Turnpike
Length:	2665 feet
Speed:	45 miles per hour (posted speed limit)
Traffic Volume:	12,000 - 14,000 average daily traffic
Considerations:	Existing shoulders provide sufficient space for bike lanes.
Effort & Cost Magnitude:	Low. Bike lane striping and signage with no constructed changes to the street.

Existing

Segment C

Street:	Greenwood Lake Turnpike (CR-513)
Start:	Vicinity of 1124 Greenwood Lake Turnpike
End:	Monksville Reservoir Bridge Westbound Approach
Length:	2230 feet
Speed:	45 miles per hour (posted speed limit)
Traffic Volume:	12,000 - 14,000 average daily traffic
Considerations:	Existing shoulders are variable and insufficient for bike lanes at certain points.
Effort & Cost Magnitude:	Moderately High. Selective widening of roadway to achieve 4-5' bike lanes. Constraints include utilities and commercial parking frontage/ driveways.

Existing

Segment D

Street:	Greenwood Lake Turnpike (CR-513)
Start:	Monksville Reservoir Bridge Westbound Approach
End:	Longpond Ironworks Museum
Length:	2270 feet
Speed:	45 miles per hour (posted speed limit)
Traffic Volume:	12,000 - 14,000 average daily traffic
Considerations:	Existing shoulders provide sufficient space for bike lanes.
Effort & Cost Magnitude:	Low. Bike lane striping and signage with no constructed changes to the street.

Existing

Segment E

Street:	Greenwood Lake Turnpike (CR-513)
Start:	Longpond Ironworks Museum
End:	Awosting Road
Length:	5700 feet
Speed:	45 miles per hour (posted speed limit)
Traffic Volume:	12,000 - 14,000 average daily traffic
Considerations:	Existing shoulders are insufficient for bike lanes.
Effort & Cost Magnitude:	High. Widen roadway to achieve 4-5' bike lanes. Constraints include adjacent wetlands, slope, drainage, and utilities.

Existing

Segment F

Street:	Greenwood Lake Turnpike (CR-513) / Marshall Hill Road (CR-696)
Start:	Awosting Road
End:	Lycosky Road
Length:	5215 feet
Speed:	40 miles per hour (posted speed limit)
Traffic Volume:	12,000 - 14,000 average daily traffic
Considerations:	Existing shoulders provide sufficient space for bike lanes.
Effort & Cost Magnitude:	Low. Bike lane striping and signage with no constructed changes to the street.

Existing

Segment G

Street:	Marshall Hill Road (CR-696)
Start:	Lycosky Road
End:	Ridge Road
Length:	7025 feet
Speed:	40 miles per hour (posted speed limit)
Traffic Volume:	6,000 - 8,000 average daily traffic
Considerations:	Existing shoulders are insufficient for bike lanes.
Effort & Cost Magnitude:	High. Widen roadway to achieve 4-5' bike lanes. Constraints include adjacent wetlands, utilities, residential, and commercial parking frontage/driveways. Consider road diet.

Existing

Concept 2:
Ringwood Connection to Highlands Rail Trail

Municipality: Ringwood

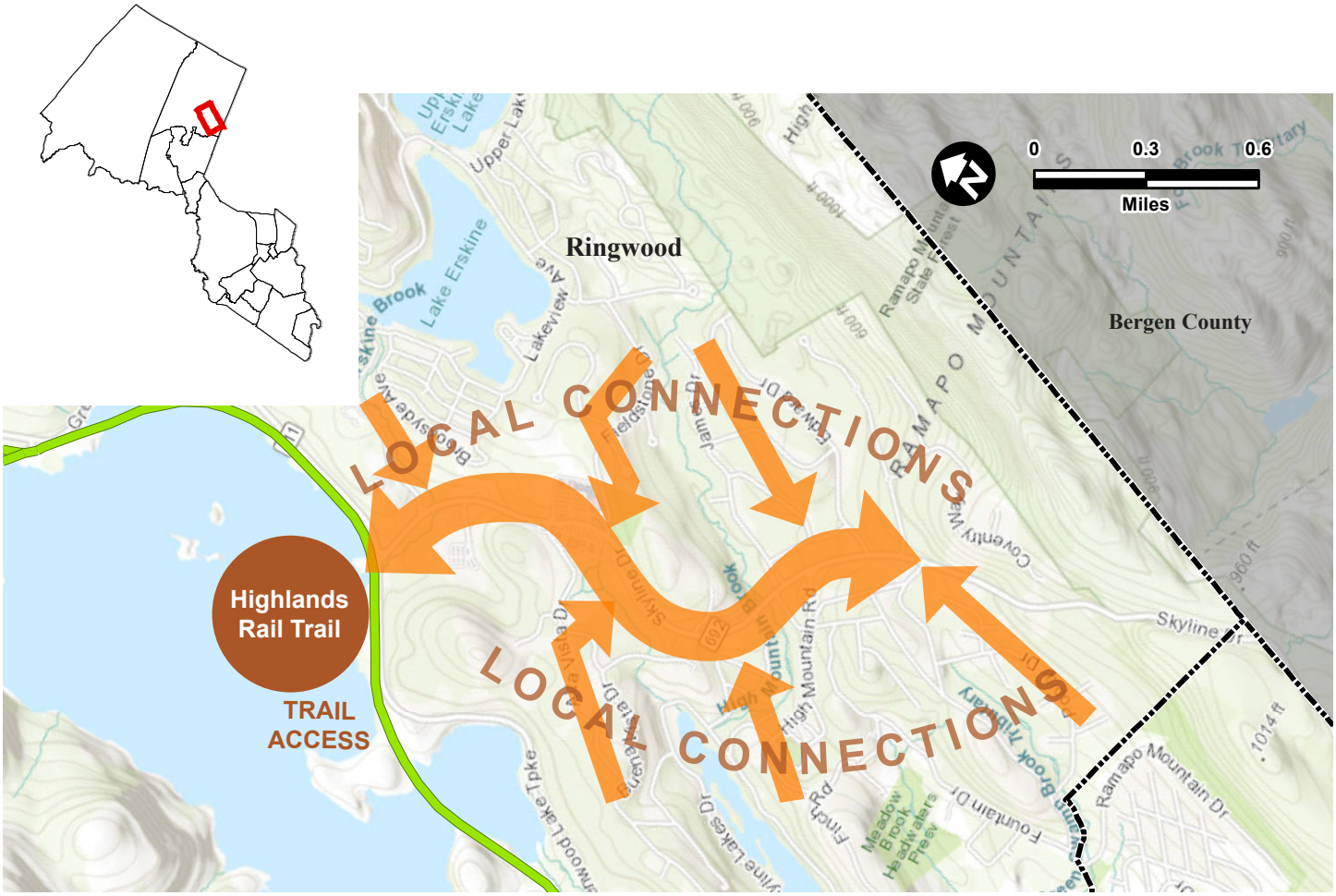
Overview

Purpose: Provide an east-west bicycle connection along Sklyline Drive (CR-692) within Ringwood that connects local residential areas with commercial areas, schools, transit, and the Highlands Rail Trail. Once accessible to the Highlands Rail Trail, the area of Ringwood east of the Wanaque Reservoir will enjoy regional connectivity with the potential to connect with West Milford and communities to the south.

Road Context: Rural Town to Suburban

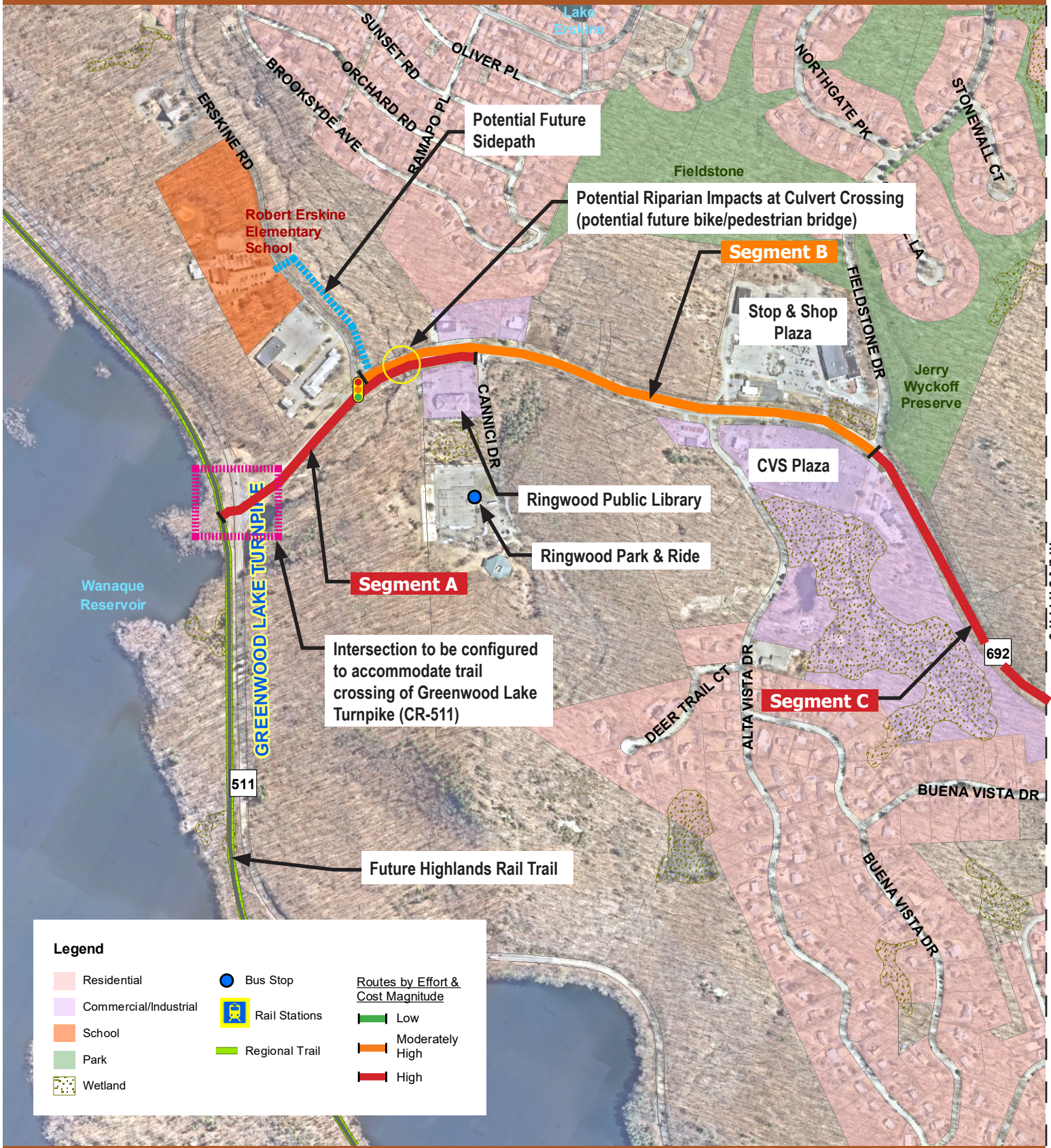
Expected Bicyclist: Interested but Concerned to Highly Confident

Strategy: Provide buffered bike lanes with vertical delineators in both directions along the identified route. Along with this effort, there is opportunity for traffic calming on this high volume roadway by reducing turning radii at streets and driveways and/or eliminating slip lanes. Consider a sidepath connection from Highlands Rail Trail to Cannici Drive.

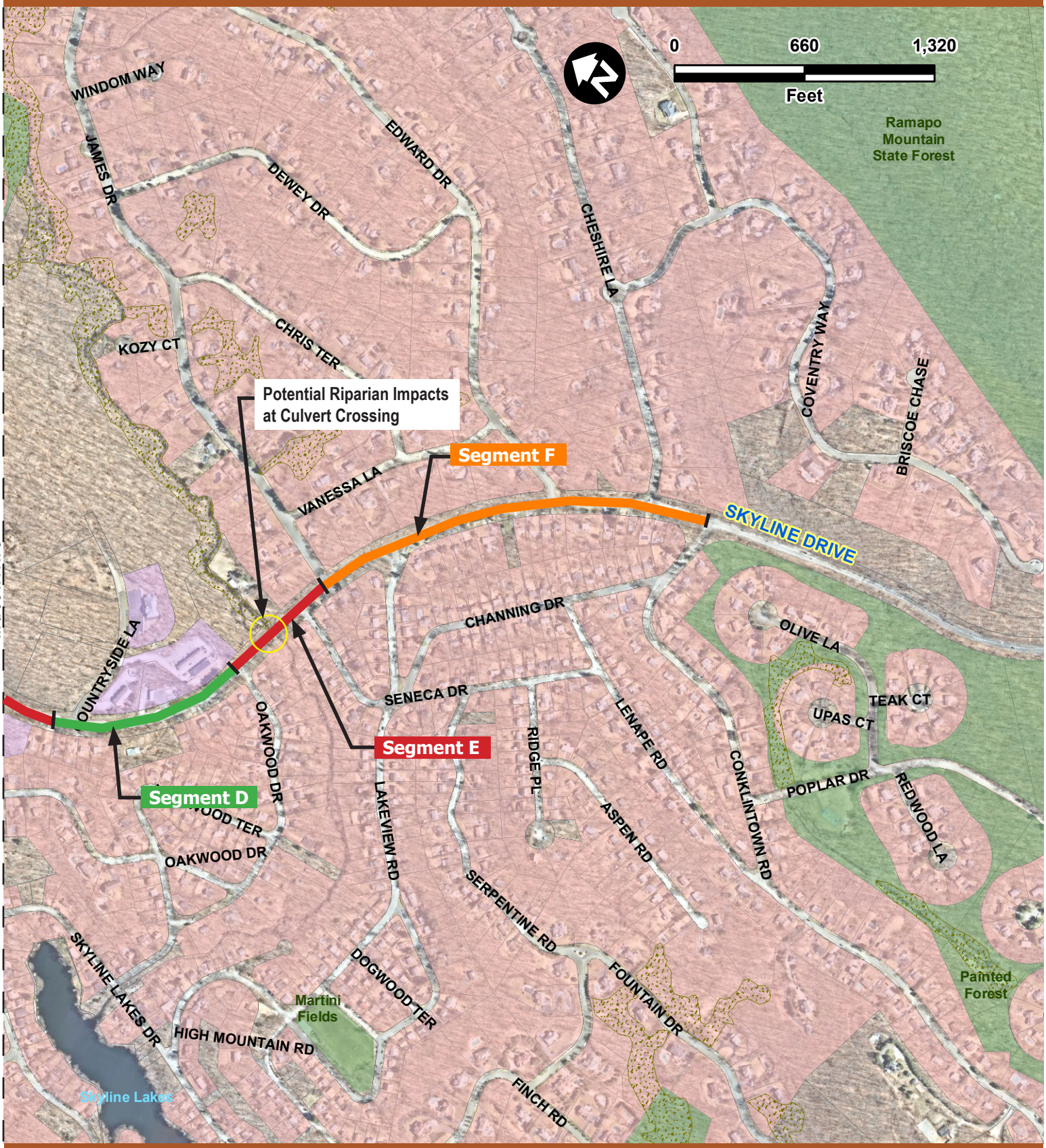


Concept 2: Overview Map

Concept 2: Concept Level Plan Map



Ringwood Connection to Highlands Rail Trail



Note: Not for construction. This is a concept level plan to identify constraints related to existing conditions and inform future design activity.

FINAL DRAFT

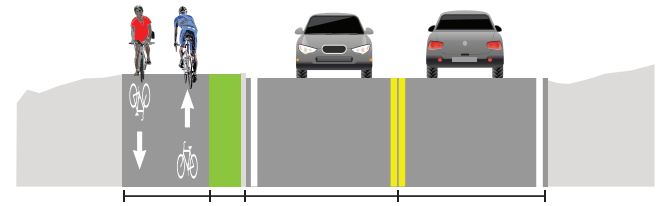
Potential Bicycle Facilities

Concept 2 covers a route of approximately 1.9 miles over six segments (A through F), as indicated on Concept Map 2.

Segment A	
Street:	Skyline Drive (CR-692)
Start:	Highlands Rail Trail
End:	Cannici Drive
Length:	1625 feet
Speed:	35 miles per hour (posted speed limit)
Traffic Volume:	13,000 average daily traffic
Considerations:	Sidepath may provide low-stress connection from Highlands Rail Trail to Ringwood Park & Ride. Alternative to continue buffered bike lines to intersection with Greenwood Lake Turnpike (CR-511).
Effort & Cost Magnitude:	High. Feasibility study is needed to determine costs and impacts of sidepath and bike/pedestrian bridge on north or south side of street. Sidepath would require design, construction, and permitting through areas with potential riparian impacts.

Existing

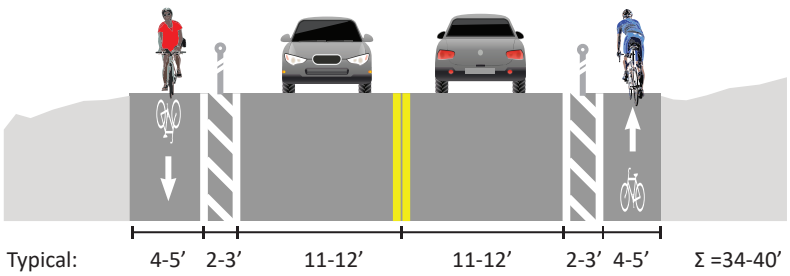
Potential



Sidepath

Segment B-F

Potential



Buffered Bike Lanes

Segment B

Street:	Skyline Drive (CR-692)
Start:	Cannici Drive
End:	Fieldstone Drive
Length:	2660 feet
Speed:	35 miles per hour (posted speed limit)
Traffic Volume:	13,000 average daily traffic
Considerations:	Existing lanes and shoulders are variable and insufficient for buffered bike lanes at certain points.
Effort & Cost Magnitude:	Moderately High. Selective widening and restriping of roadway to achieve buffered bike lanes. Constraints include culvert crossing, utilities, and commercial parking frontage/driveways.

Existing

Segment C

Street:	Skyline Drive (CR-692)
Start:	Fieldstone Drive
End:	Countryside Lane
Length:	1930 feet
Speed:	35 miles per hour (posted speed limit)
Traffic Volume:	13,000 average daily traffic
Considerations:	Narrow shoulders insufficient for buffered bike lanes.
Effort & Cost Magnitude:	High. Widen roadway to achieve buffered bike lanes. Constraints include utilities, grading, and guardrail.

Existing

Segment D

Street:	Skyline Drive (CR-692)
Start:	Countryside Lane
End:	Oakwood Drive
Length:	925 feet
Speed:	35 miles per hour (posted speed limit)
Traffic Volume:	13,000 average daily traffic
Considerations:	Existing shoulders provide sufficient space for buffered bike lanes.
Effort & Cost Magnitude:	Low. Restripe roadway. Sign and stripe buffered bike lanes.

Existing

Segment E

Street:	Skyline Drive (CR-692)
Start:	Oakwood Drive
End:	James Drive
Length:	615 feet
Speed:	35 miles per hour (posted speed limit)
Traffic Volume:	13,000 average daily traffic
Considerations:	Narrow shoulders insufficient for buffered bike lanes.
Effort & Cost Magnitude:	High. Widen roadway to achieve buffered bike lanes. Constraints include culvert crossing, utilities, grading, and guardrail.

Existing

Segment F

Street:	Skyline Drive (CR-692)
Start:	James Drive
End:	Conklintown Road
Length:	2075 feet
Speed:	35 miles per hour (posted speed limit)
Traffic Volume:	13,000 average daily traffic
Considerations:	Existing lanes and shoulders are variable and insufficient for buffered bike lanes at certain points.
Effort & Cost Magnitude:	Moderately High. Selective widening and restriping of roadway to achieve buffered bike lanes. Constraints include culvert crossing, utilities, and commercial parking frontage/driveways.

Existing

Concept 3:
Main Street Complete Street

Municipality: Bloomingdale

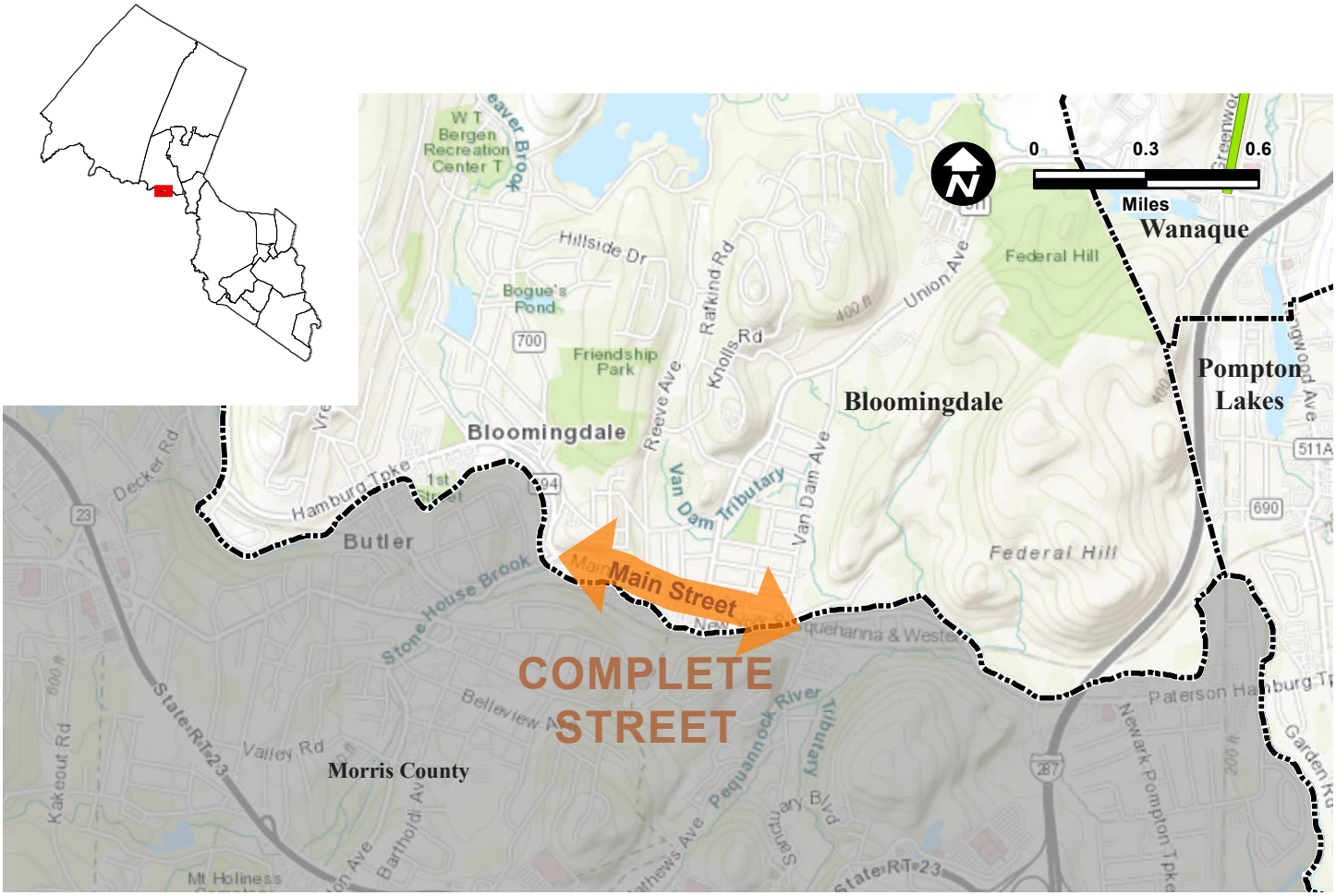
Overview

Purpose: Enhance Main Street as a 'Complete Street' with access and circulation for people on bicycles, on foot, or in motor vehicles, as well as improved connections to existing bus stops. Connect Bloomingdale's local network of low-stress residential streets to Main Street (CR-511 / CR-694), borough's primary business/commercial corridor.

Road Context: Suburban to Urban

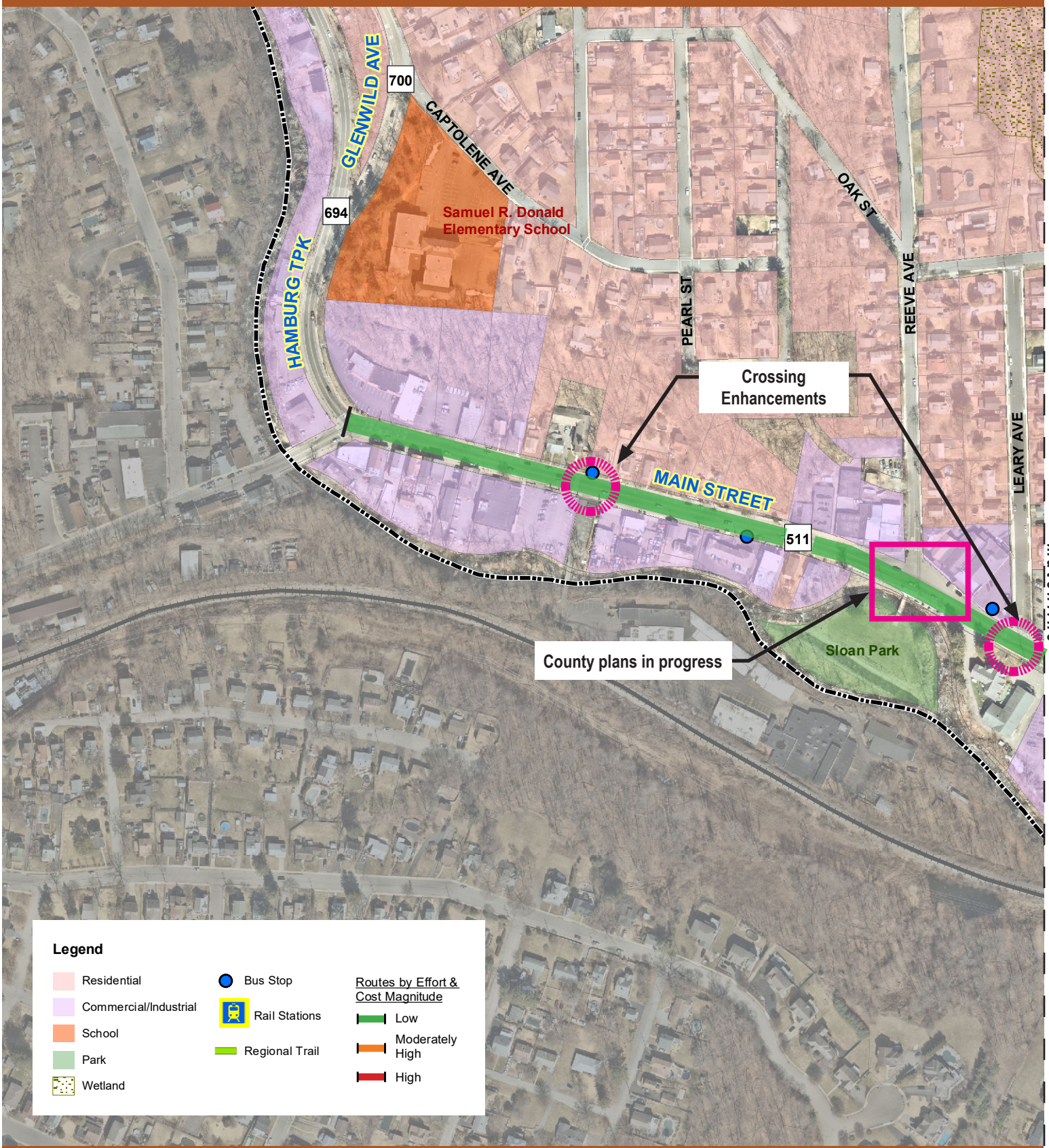
Expected Bicyclist: Somewhat Confident to Highly Confident

Strategy: Provide marked shared lanes, crosswalk visibility enhancements, and bicycle parking to encourage bicycle and pedestrian travel on Main Street to access local business and transit.

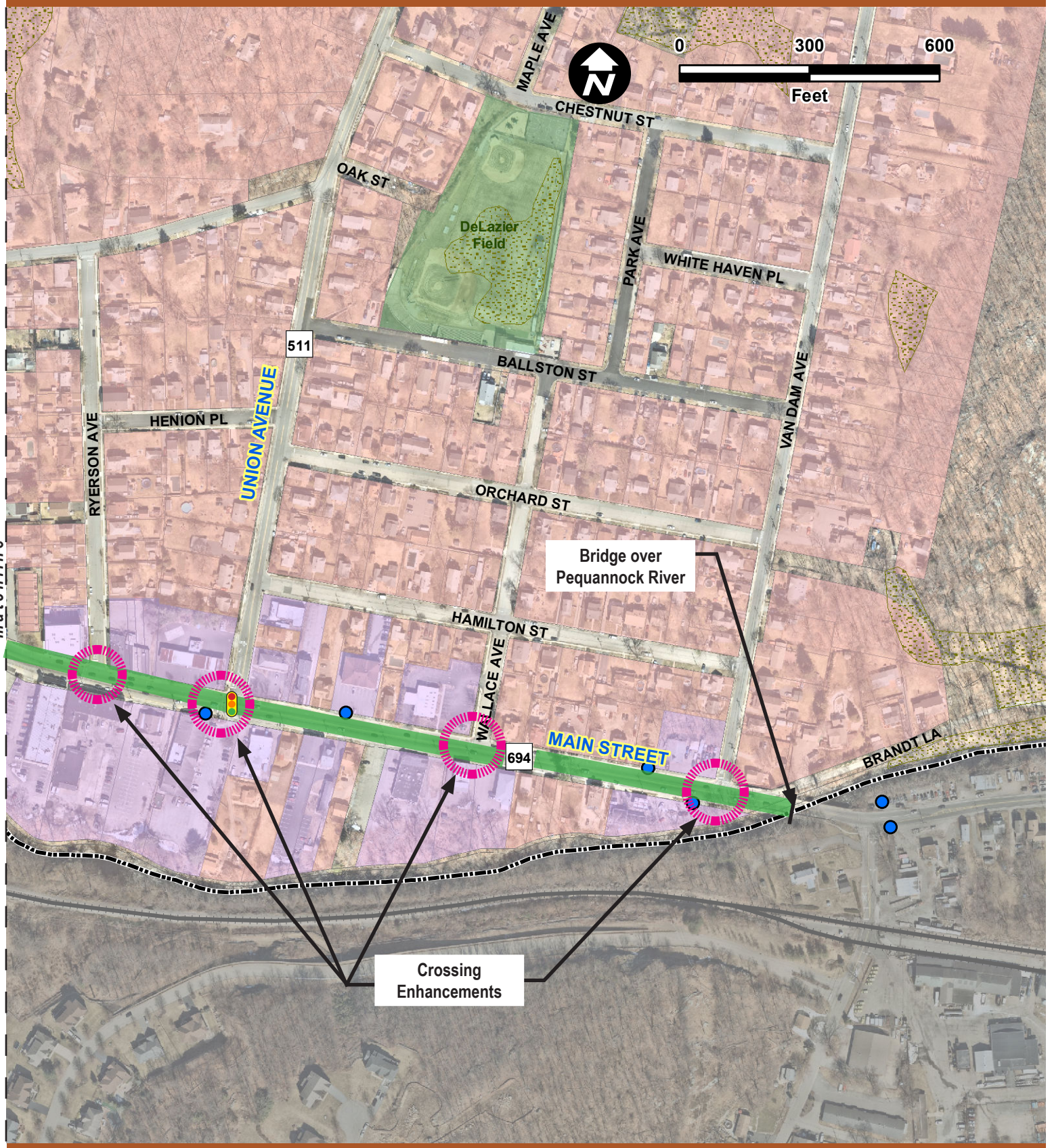


Concept 3: Overview Map

Concept 3: Concept Level Plan Map



Main Street Complete Street



Note: Not for construction. This is a concept level plan to identify constraints related to existing conditions and inform future design activity.

FINAL DRAFT

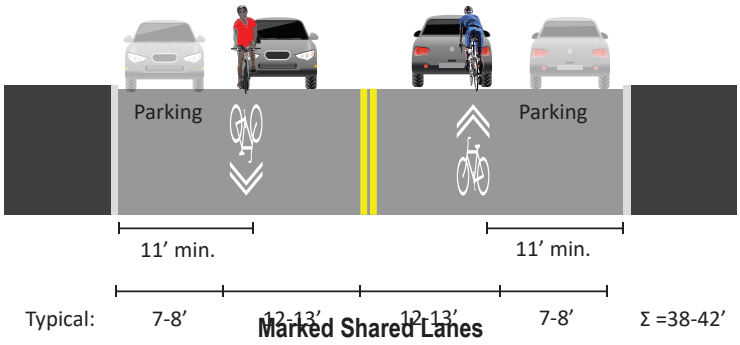
Potential Facilities

Concept 3 covers a 0.7-mile route defined in a single segment, as indicated on Concept Map 3.

Main Street	
Street:	Main Street (CR-511 / CR-694)
Start:	Paterson-Hamburg Turnpike (CR-694)
End:	Bridge over the Pequannock River
Length:	3600 feet
Speed:	25 miles per hour (posted speed limit)
Traffic Volume:	11,000 - 12,000 (estimate)
Considerations:	Appropriate speed limit for marked shared lanes. Traffic volume may be high. Street is limited by existing curb-to-curb width which is too narrow for bike lanes.
Effort & Cost Magnitude:	Low to moderately high. Traffic counts needed. Striping of marked shared lanes. Addition of crosswalk visibility enhancements. Effort and cost increase with level of construction (e.g. constructed vs. painted curb extensions). Formal concept plan with public input should be developed.

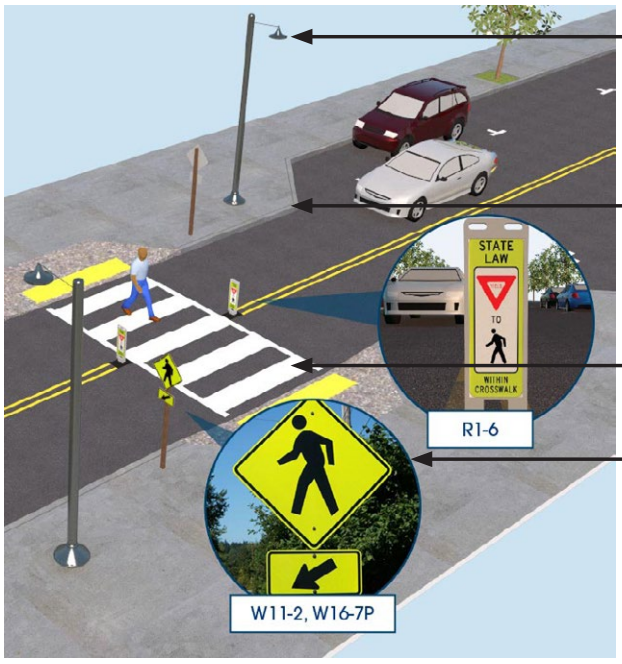
Existing

Potential



Marked Shared Lanes

Crossing Enhancements



Lighting

Curb Extension

High-Visibility Crosswalk

Signs

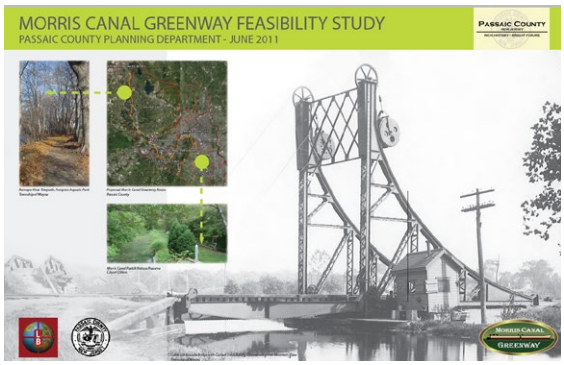
Crosswalk Visibility Enhancements
(Source: FHWA Proven Safety Countermeasures)

Concept 4:
Morris Canal Greenway Connection

Municipality: Wayne

Overview

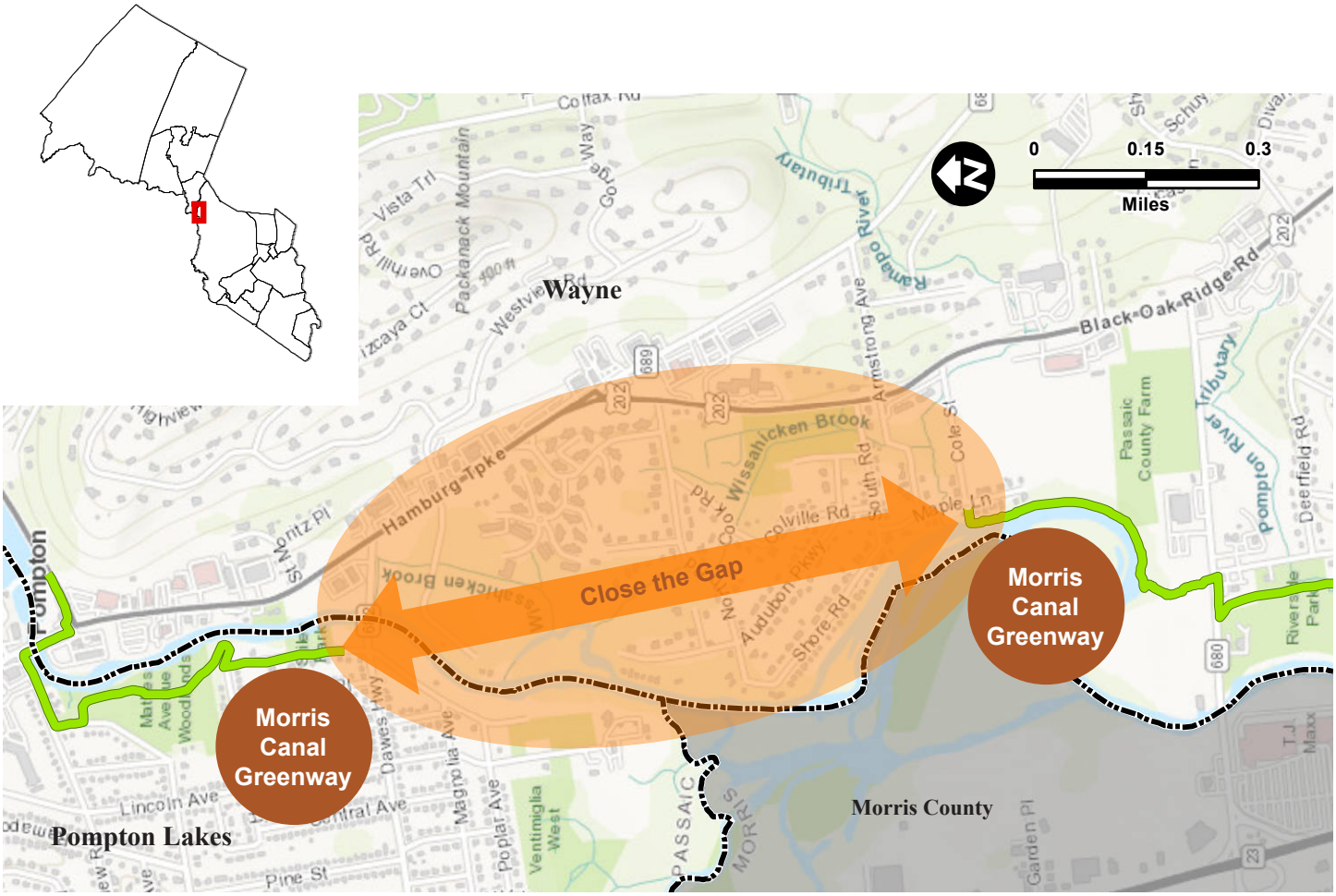
Purpose: The Pompton Feeder portion of the Morris Canal Greenway is an important regional trail connection through Wayne Township. Between Dawes Highway and Cole Street, there is a connectivity gap in the greenway trail. This concept builds on Passaic County's 2011 Morris Canal Greenway Feasibility Study.



Road Context: Suburban

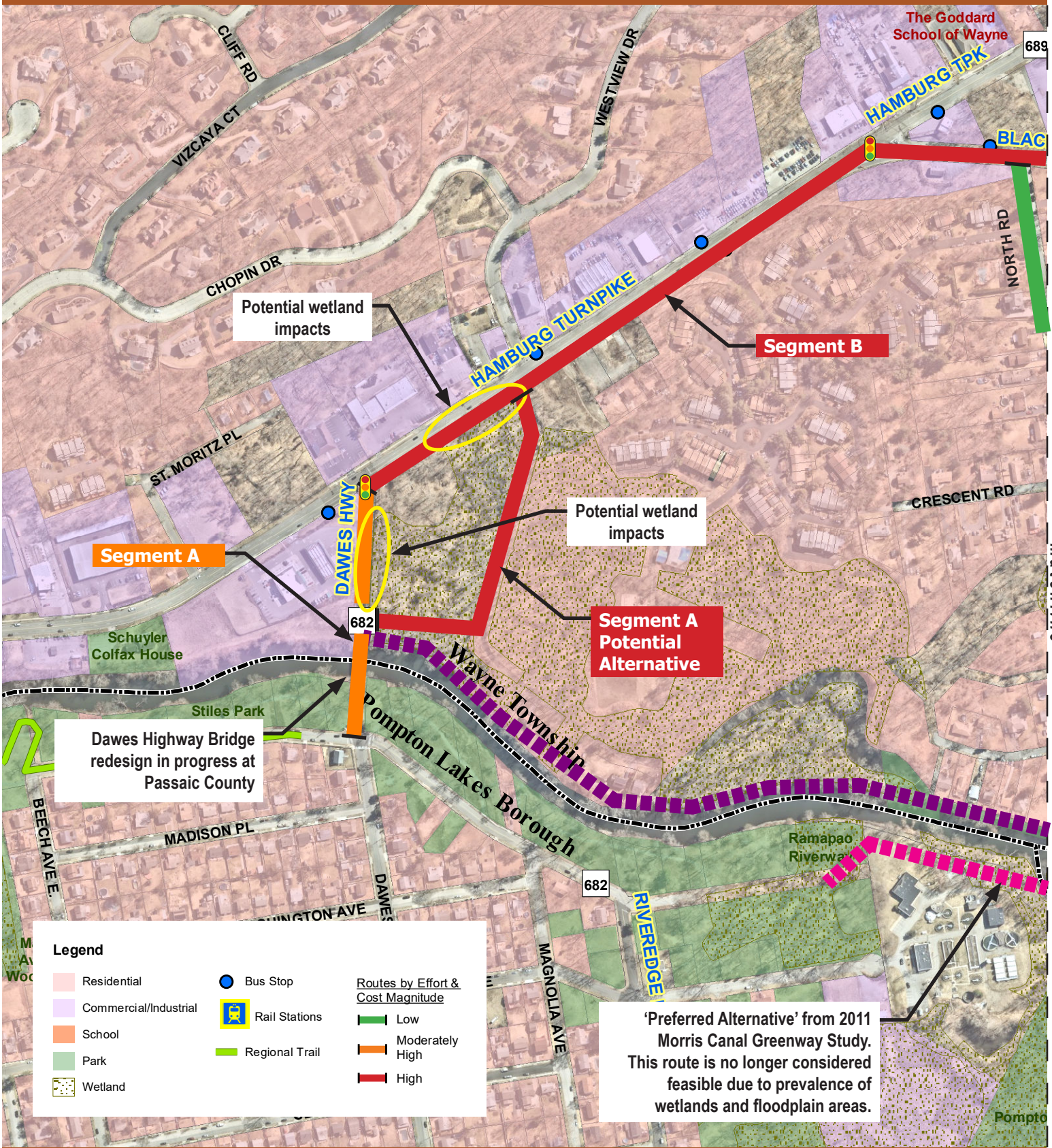
Expected Bicyclist: Interested but Concerned to Highly Confident

Strategy: Provide a low-stress route consisting of sidepath and bicycle boulevard facilities to fill a connectivity gap in the Morris Canal Greenway.



Concept 4: Overview Map

Concept 4: Concept Level Plan Map

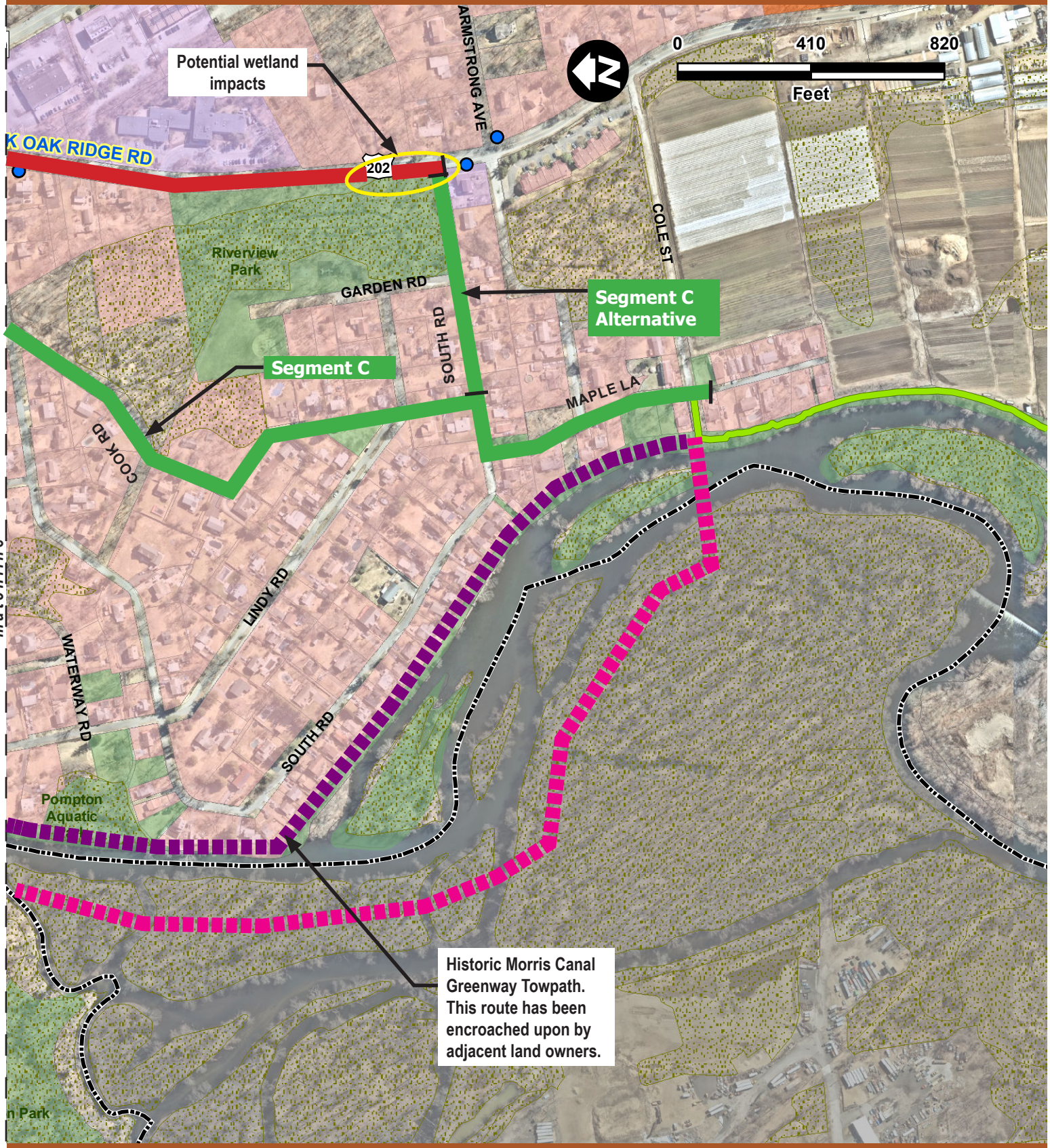


Municipality

Wayne

FINAL DRAFT

Morris Canal Greenway Connection



Note: Not for construction. This is a concept level plan to identify constraints related to existing conditions and inform future design activity.

FINAL DRAFT

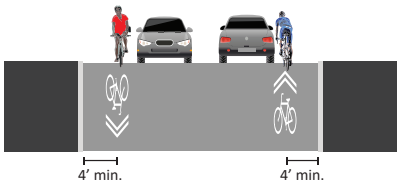
Potential Bicycle Facilities

Concept 4 cover a route of approximately one mile over three segments (A through C), as indicated on Concept Map 4.

Segment A	
Street:	Dawes Highway (CR-682)
Start:	Riveredge Drive
End:	Hamburg Turnpike (US-202)
Length:	800 feet
Speed:	25 miles per hour (posted speed limit)
Traffic Volume:	Not available (may be high due to bridge)
Considerations:	Appropriate speed limit; traffic volume may be high
Effort & Cost Magnitude:	Low to high. Traffic counts and feasibility study needed to determine selection of shared street or sidepath.

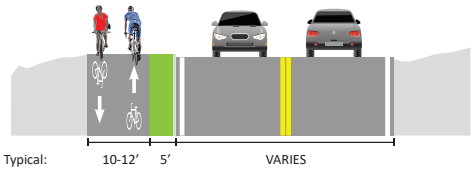
Existing

Potential



Option: Marked Shared Lanes

Potential

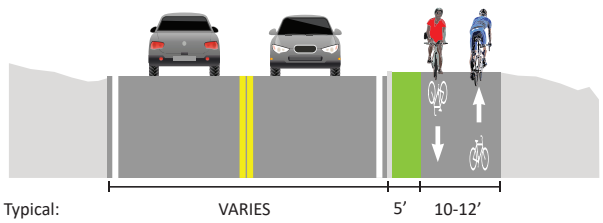


Option: Sidepath

Segment B	
Street:	Hamburg Turnpike (US-202) / Black Oak Ridge Road (US-202)
Start:	Dawes Highway (CR-682)
End:	North Road or South Road
Length:	2350 - 3800 feet
Speed:	40 miles per hour (posted speed limit)
Traffic Volume:	12,000 - 13,000 average daily traffic
Considerations:	High-speed, high-volume; No shoulders
Effort & Cost Magnitude:	High. Construct sidepath along southbound side; potential impacts to wetlands, drainage, culvert, and utilities. Consider road diet as alternative.

Existing

Potential

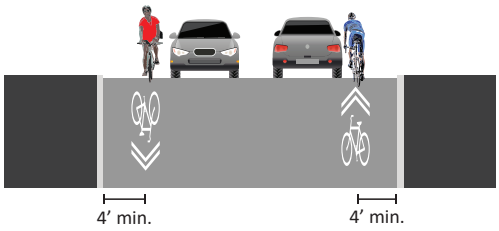


Sidepath (view southbound)

Segment C	
Street:	Residential streets
Start:	North Road or South Road
End:	Cole Street connection to Morris Canal Greenway
Length:	1795 - 3500 feet
Speed:	25 miles per hour (posted speed limit)
Traffic Volume:	Not available (assume low, residential)
Considerations:	Existing low-stress street network
Effort & Cost Magnitude:	Low. Application of marked shared lanes and wayfinding signage to create bike boulevard.

Existing

Potential



Bike Boulevard

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Concept 5:
Black Oak Ridge Connections to Morris Canal Greenway

Municipality: Wayne

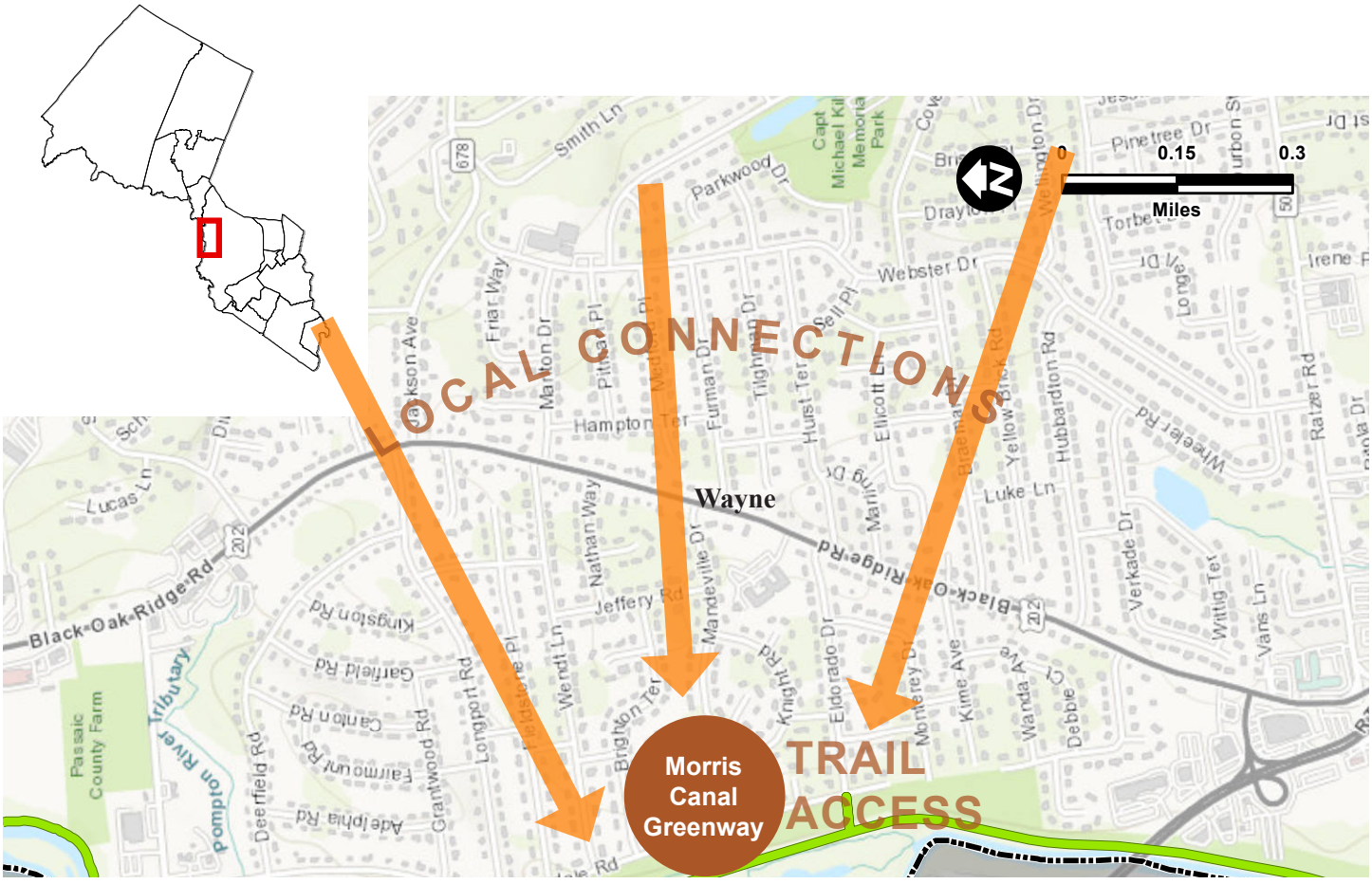
Overview

Purpose: Provide bicycle connectivity to the Morris Canal Greenway for residential areas of Wayne Township around Black Oak Ridge Road.

Road Context: Suburban

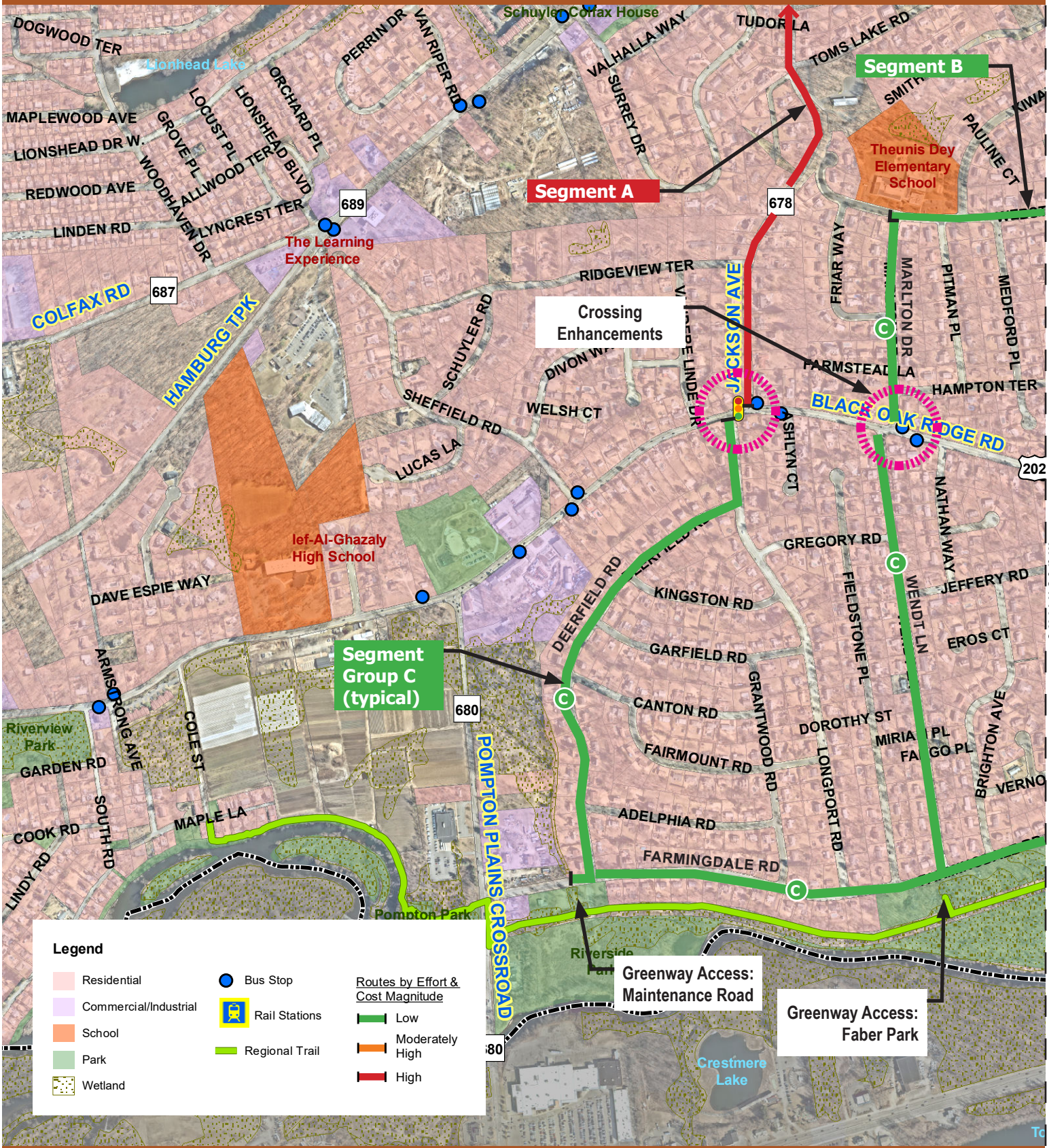
Expected Bicyclist: Interested but Concerned to Highly Confident

Strategy: Take advantage of select existing low-stress, residential streets enhanced as bicycle boulevards to provide connectivity.



Concept 5: Overview Map

Concept 5: Concept Level Plan Map

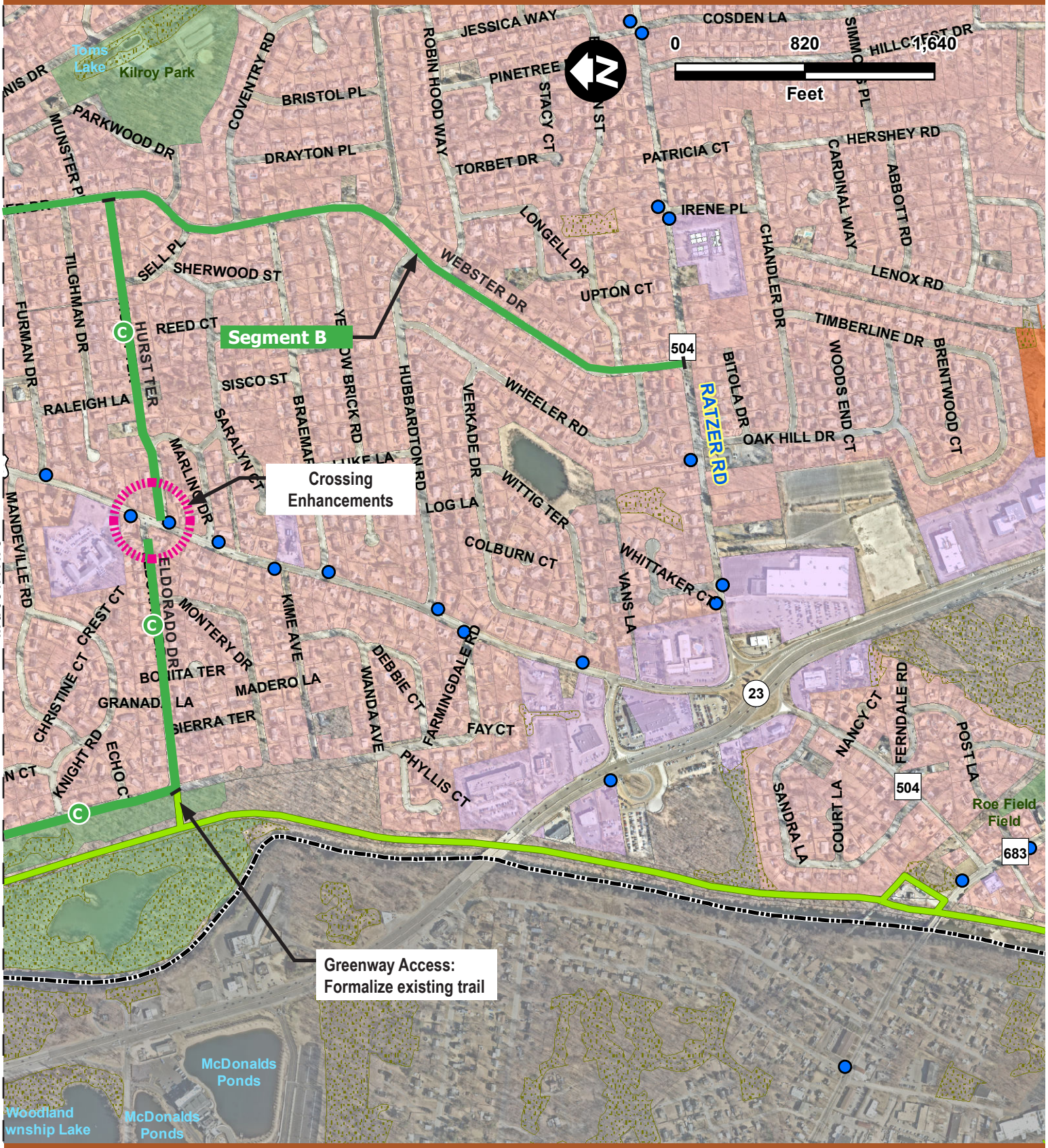


Municipality

Wayne

FINAL DRAFT

Black Oak Ridge Connections to Morris Canal Greenway



Note: Not for construction. This is a concept level plan to identify constraints related to existing conditions and inform future design activity.

FINAL DRAFT

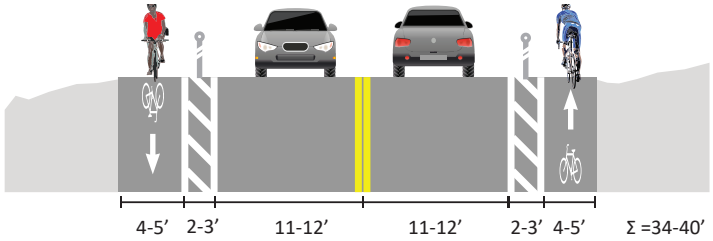
Potential Bicycle Facilities

Concept 5 covers a network of approximately five miles over three segments (A through C), as indicated on Concept Map 5.

Segment A	
Street:	Jackson Avenue (CR-678)
Start:	Hamburg Turnpike (outside of map extent)
End:	Black Oak Ridge Road (US-202)
Length:	4300 feet
Speed:	35 miles per hour (posted speed limit)
Traffic Volume:	10,000 - 12,000 average daily traffic
Considerations:	A buffered bike lane is the preferred potential facility for the posted speed limit and traffic volume. Standard bike lanes (without buffer area) may be considered, but may only attract use from high-stress-tolerant bicyclists. Either facility would require widening of the roadway.
Effort & Cost Magnitude:	High. Significant to widen the roadway, including relocation of curb, utilities, drainage, sidewalks, and tree removal/replacement.

Existing

Potential

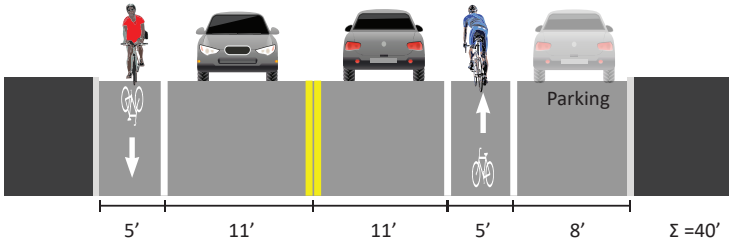


Buffered Bike Lanes

Segment B	
Street:	Webster Drive
Start:	Ratzer Road
End:	Marlton Drive
Length:	5800 feet
Speed:	25 miles per hour (posted speed limit)
Traffic Volume:	Not available, assume <4,000 average daily traffic (residential conditions)
Considerations:	Given the low speed and traffic volume, a bike lane is the preferred potential facility. Parking is currently permitted on both sides of the street. To provide space for bike lanes, parking would have to be prohibited on one side. If parking cannot be prohibited, a bike boulevard or marked shared lanes can be considered.
Effort & Cost Magnitude:	Low. Bike lane striping and signage with no constructed changes to the street.

Buffered Bike Lanes

Potential

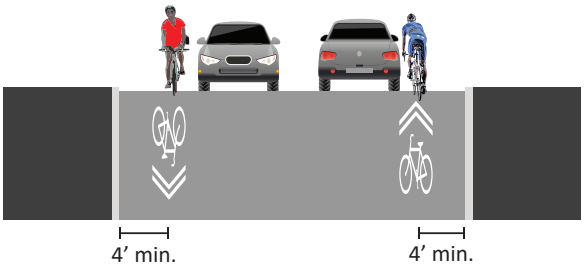


Bike Lanes

Segment Group C	
Street:	Various residential streets as indicated on Map 5
Start:	Webster Lane
End:	Morris Canal Greenway access points
Length:	15,600 feet
Speed:	25 miles per hour (posted speed limit)
Traffic Volume:	Not available, assume <4,000 average daily traffic (residential conditions)
Considerations:	Given the low speed and traffic volume, existing residential streets can be marked as bike boulevards to provide bicycle connectivity, while avoiding car-dominated collector and arterial streets.
Effort & Cost Magnitude:	Low. Application of marked shared lanes and wayfinding signage to create bike boulevard.

Existing

Potential



Bike Boulevard

Crossing Enhancements

Rectangular Rapid Flashing Beacon

(Source: FHWA Proven Safety Countermeasures)

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Concept 6:
Parish Drive Connections to Morris Canal Greenway

Municipality: Wayne

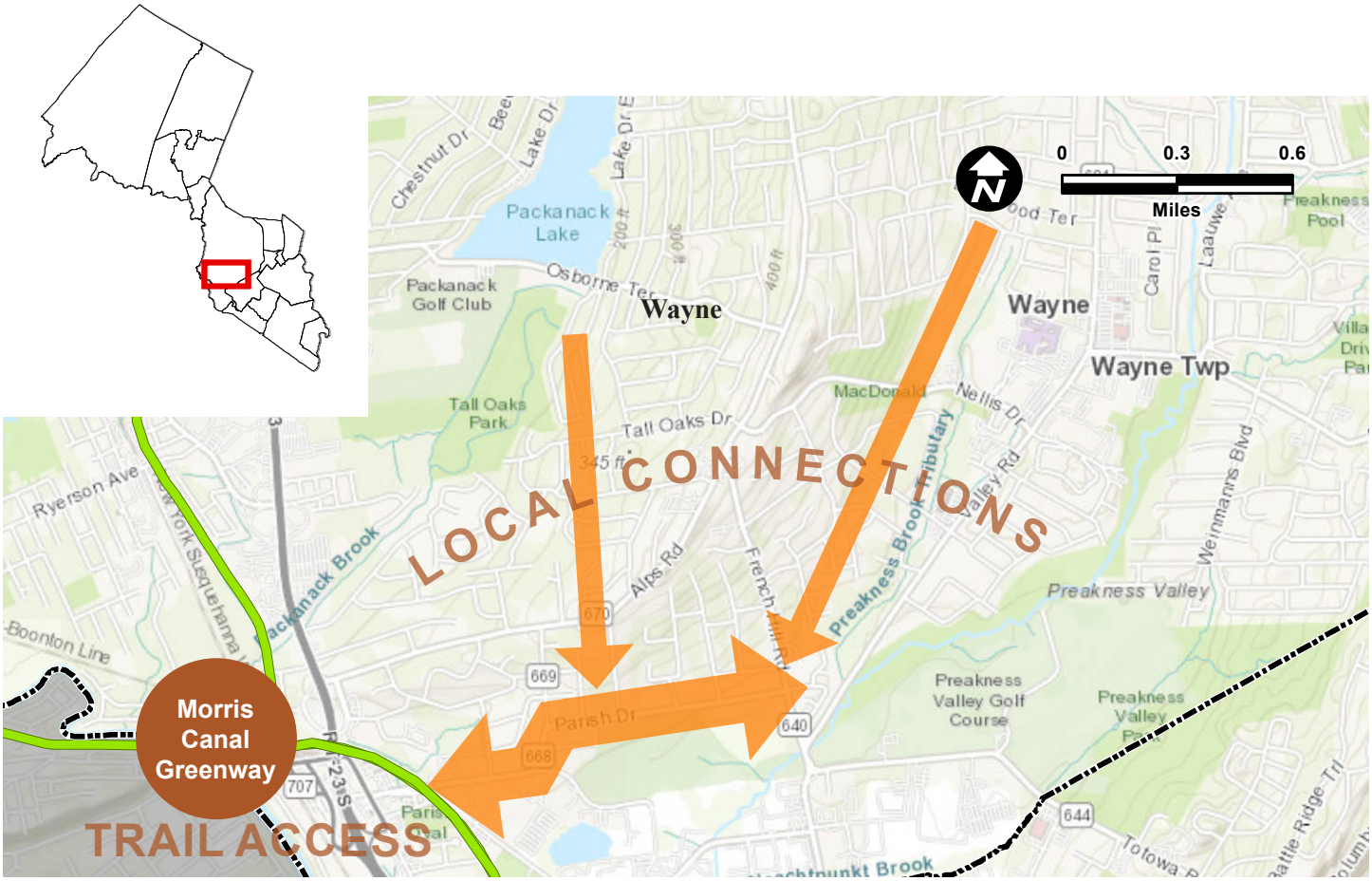
Overview

Purpose: Provide bicycle connectivity to the Morris Canal Greenway for residential areas of Wayne Township around Osbourne Terrace, Valley Road, and Parish Drive.

Road Context: Suburban

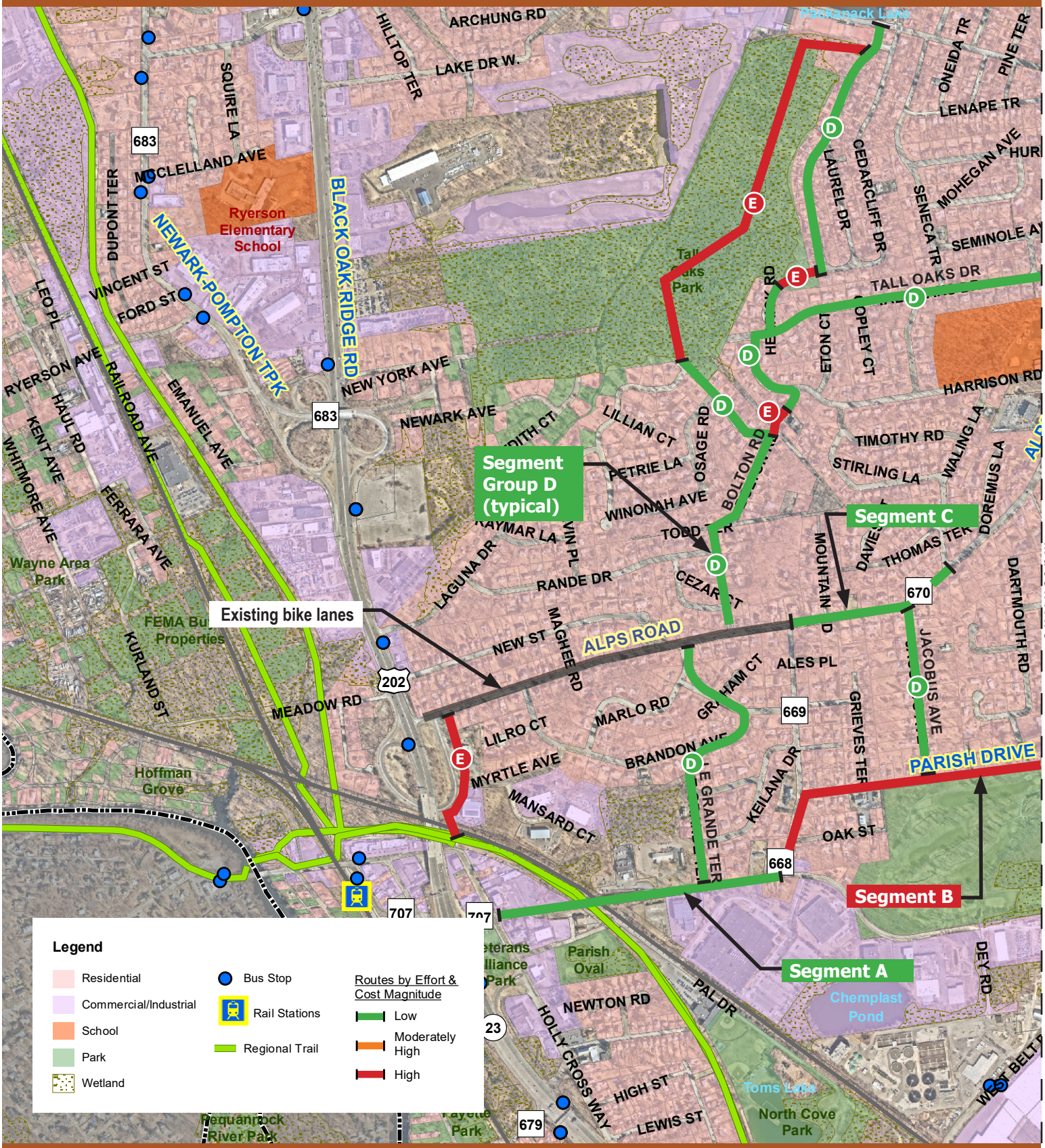
Expected Bicyclist: Interested but Concerned to Highly Confident

Strategy: Take advantage of select existing low-stress, residential streets enhanced as bicycle boulevards to provide network connectivity. Improve higher stress streets with appropriate facilities, such as bike lanes. Improve connectivity between cul-de-sac-separated neighborhoods by developing shared use path connections in key locations.



Concept 6: Overview Map

Concept 6: Concept Level Plan Map

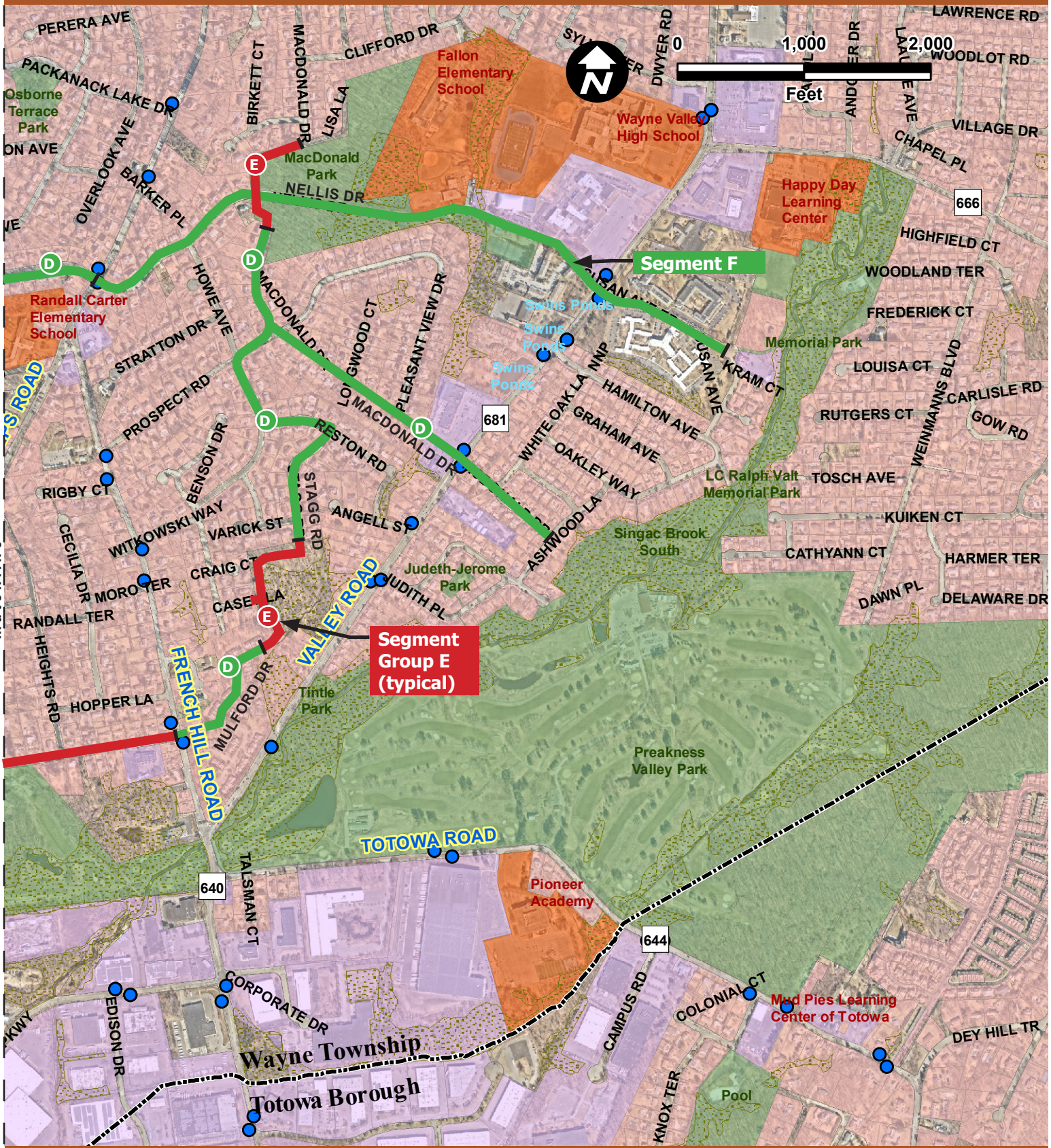


Municipality

36 Wayne

FINAL DRAFT

Parish Drive Connections to Morris Canal Greenway



Note: Not for construction. This is a concept level plan to identify constraints related to existing conditions and inform future design activity.

FINAL DRAFT

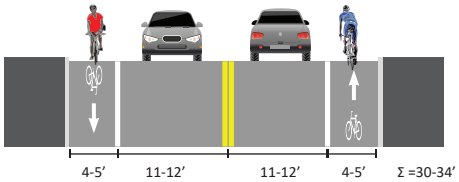
Potential Bicycle Facilities

Concept 6 covers a network of approximately seven miles over six segments (A through F), as indicated on Concept Map 6.

Segment A	
Street:	Parish Drive (CR-668)
Start:	Mountain View Boulevard (US-202)
End:	Dey Road
Length:	2300 feet
Speed:	35 miles per hour (posted speed limit)
Traffic Volume:	5,000 - 6,000 average daily traffic
Considerations:	A bike lane is the preferred potential facility for the traffic volume; however, a speed limit reduction to 30 or 25 miles per hour should be considered. Bike lane will narrow to 4 feet wide at the railroad overpass, which is narrow when adjacent to a curb.
Effort & Cost Magnitude:	Low. Bike lane striping and signage with no constructed changes to the street.

Existing

Potential

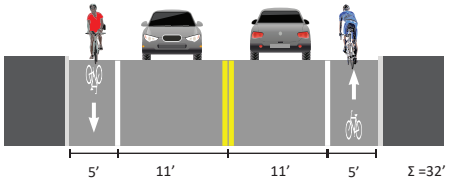


Bike Lanes

Segment B	
Street:	Parish Drive (CR-668)
Start:	Dey Road
End:	French Hill Road (CR-640)
Length:	3970 feet
Speed:	35 miles per hour (posted speed limit)
Traffic Volume:	5,000 - 6,000 average daily traffic
Considerations:	A bike lane is the preferred potential facility for this traffic volume; however, the existing paved area of the street is not wide enough to accommodate. Widening of the street would be necessary, along with consideration of a speed limit reduction to 30 or 25 miles per hour.
Effort & Cost Magnitude:	High. Significant effort to widen the roadway, including relocation of curb, utilities, drainage, sidewalks, and tree removal/replacement.

Existing

Potential

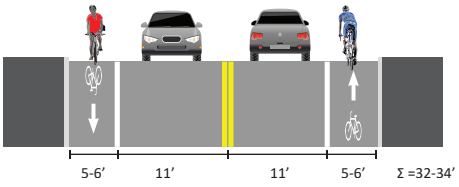


Bike Lanes

Segment C	
Street:	Alps Road (CR-670)
Start:	Maple Avenue (CR-669)
End:	Thomas Terrace
Length:	1,400 feet
Speed:	35 miles per hour (posted speed limit)
Traffic Volume:	Not available
Considerations:	This is an extension of existing bike lanes on Alps Road that currently end at Maple Avenue (CR-669). Sufficient space is available and it is assumed that traffic volumes are appropriate, given the existing bike lane. A speed limit reduction to 30 or 25 miles per hour may be considered.
Effort & Cost Magnitude:	Low. Bike lane striping and signage with no constructed changes to the street.

Existing

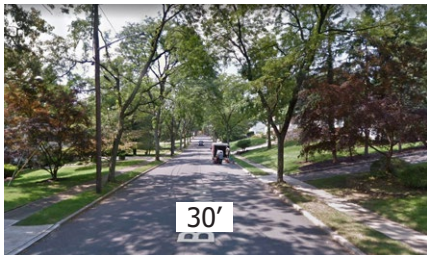
Potential



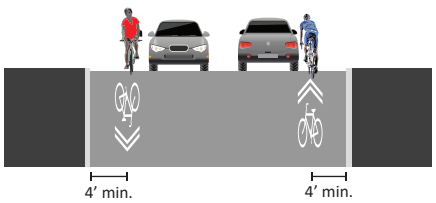
Bike Lanes

Segment Group D	
Street:	Various residential streets as indicated on map
Start:	Nellis Drive
End:	Parish Drive (CR-668)
Length:	19,430 feet
Speed:	25 miles per hour (posted speed limit)
Traffic Volume:	Not available
Considerations:	Given the low speed and traffic volume, existing residential streets can be marked as bike boulevards to provide bicycle connectivity, while avoiding car-dominated collector and arterial streets.
Effort & Cost Magnitude:	Low. Application of marked shared lanes and wayfinding signage to create bike boulevard.

Existing



Potential

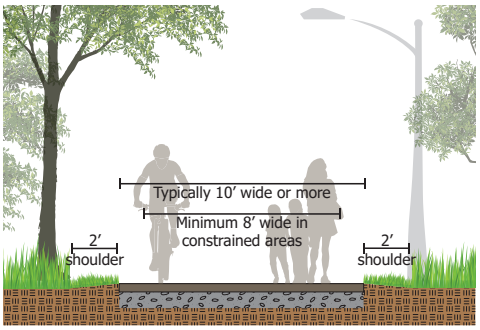


Bike Boulevard

Segment Group E	
Street:	Various off-road routes as indicated on map
Start:	Various
End:	Various
Length:	6,110 feet
Speed:	Off-road
Traffic Volume:	Off-road
Considerations:	Shared use paths can be designed and constructed in strategic locations as indicated on map to promote bicycle and pedestrian connectivity between neighborhoods. Planning process should include public input. Maintenance practices should match intended use (transportation or recreation).
Effort & Cost Magnitude:	High. Requires planning, design, permitting, and construction processes.

Existing

Potential

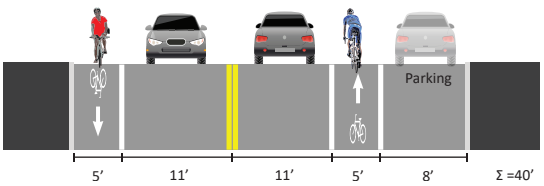


Shared Use Path

Segment F	
Street:	Nellis Drive
Start:	Alps Road (CR-670)
End:	Valley Road (CR-681)
Length:	4,500 feet
Speed:	30 miles per hour (posted speed limit)
Traffic Volume:	5,000 average daily traffic
Considerations:	A bike lane is the preferred potential facility for the traffic volume. A speed limit reduction to 25 miles per hour should be considered. To provide space for bike lanes, parking would have to be prohibited on one side (consider the south side where there are already significant parking restrictions. If parking cannot be prohibited, a bike boulevard or marked shared lanes can be considered.
Effort & Cost Magnitude:	Low. Bike lane striping and signage with no constructed changes to the street.

Existing

Potential



Bike Lanes

Concept 7:
Wayne-Haledon Community Connection

Municipalities: Wayne and Haledon

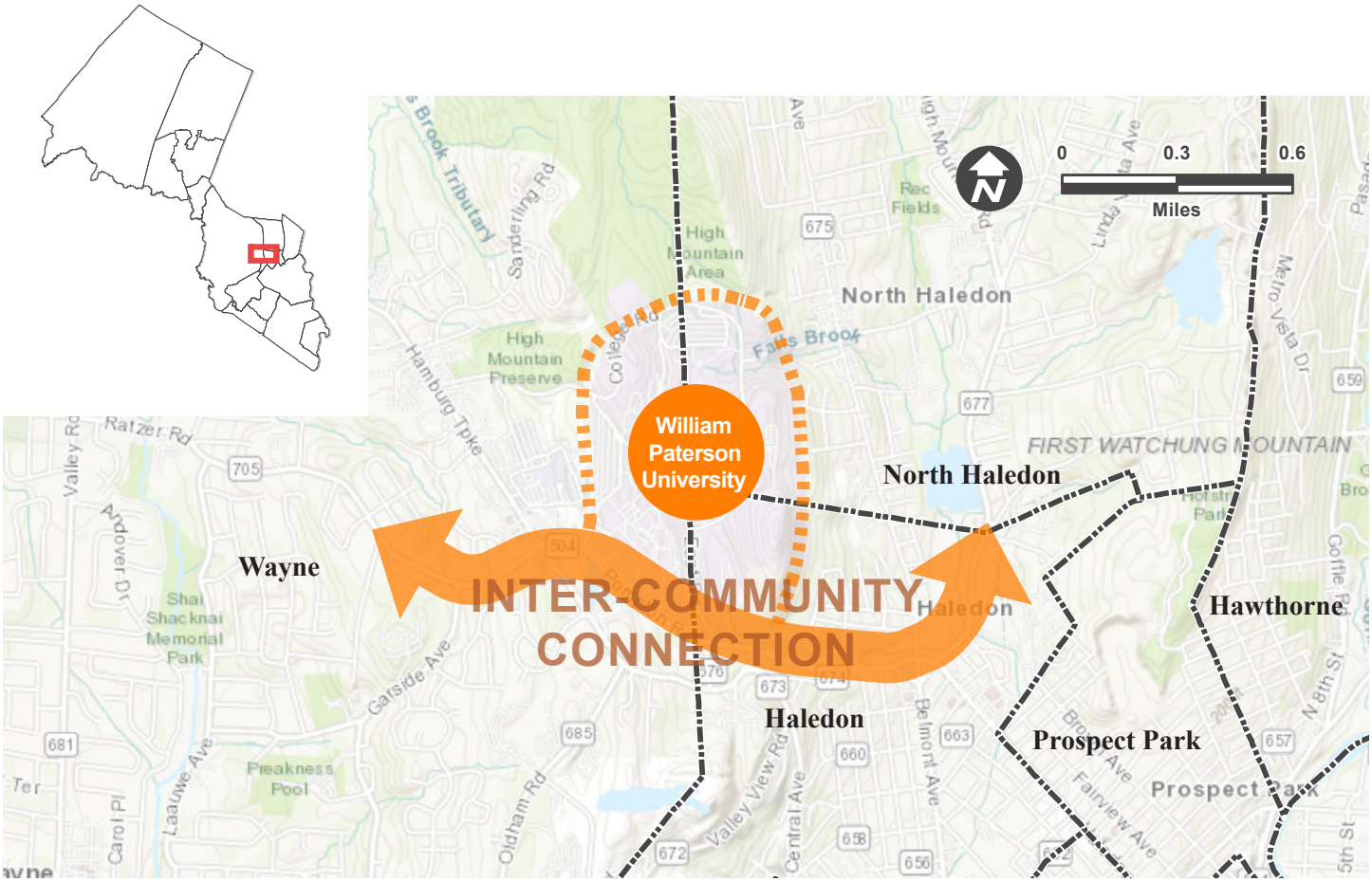
Overview

Purpose: Provide inter-community connections among Wayne, Haledon, and North Haledon, with access to William Paterson University.

Road Context: Suburban to Urban

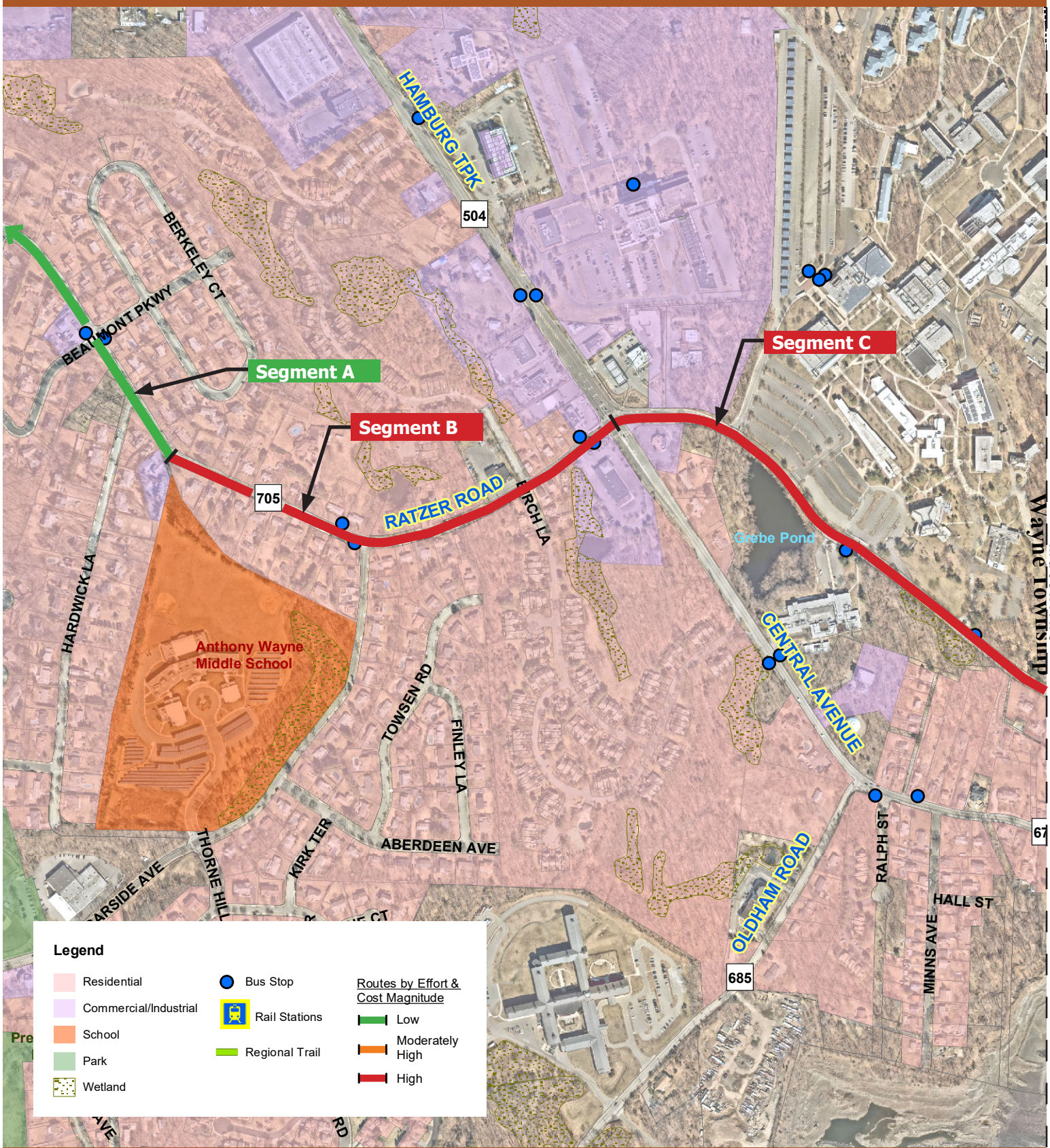
Expected Bicyclist: Interested but Concerned to Highly Confident

Strategy: Provide buffered bike lanes with vertical delineators in both directions (with an option for a sidepath) along the identified route to support low-stress bicycle connectivity.

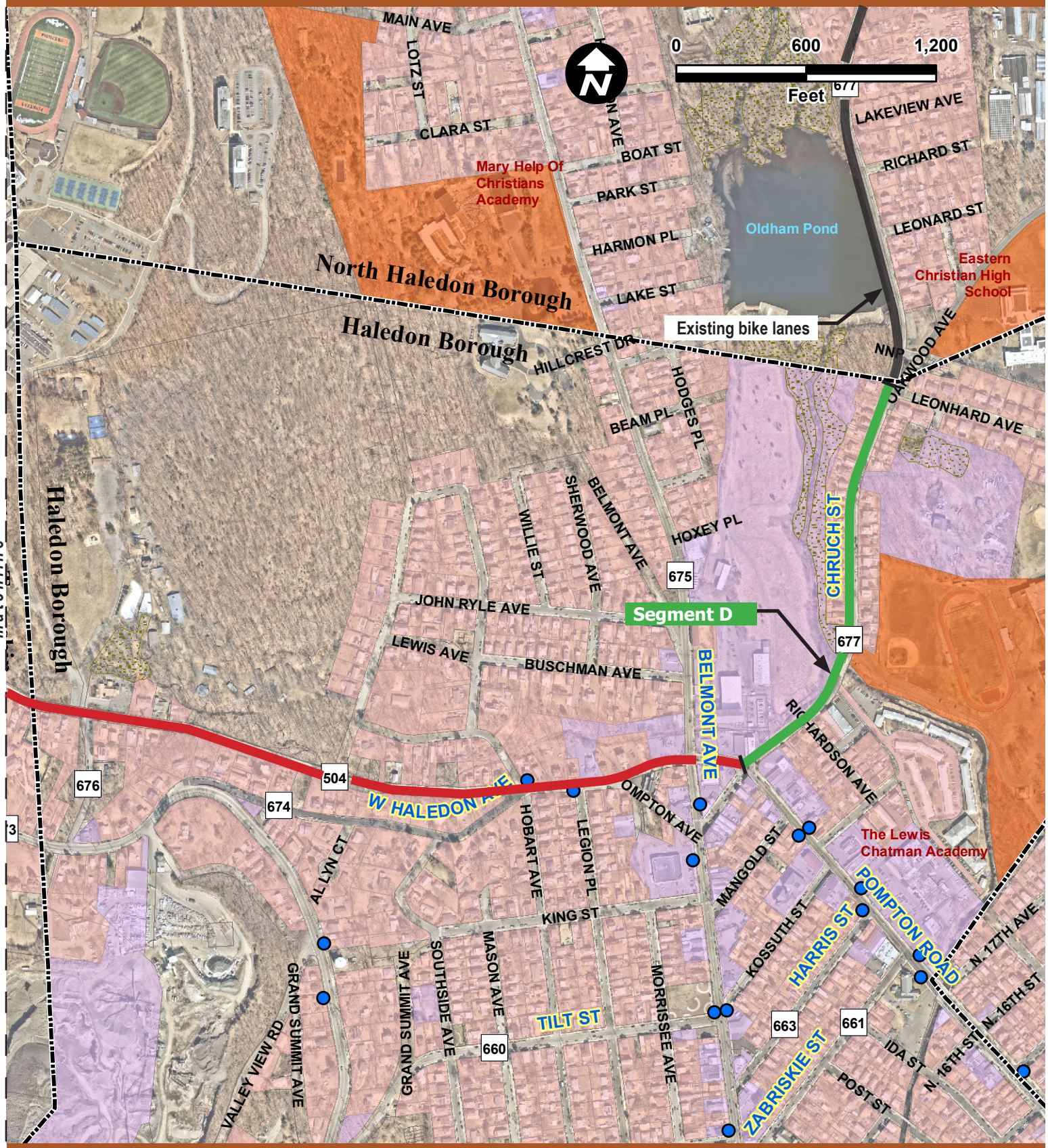


Concept 7: Overview Map

Concept 7: Concept Level Plan Map



Wayne-Haledon Community Connection



Note: Not for construction. This is a concept level plan to identify constraints related to existing conditions and inform future design activity.

FINAL DRAFT

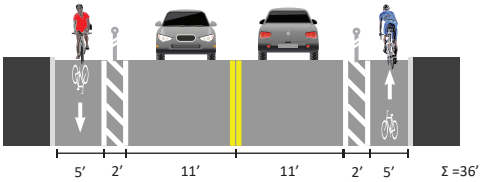
Potential Bicycle Facilities

Concept 7 covers a route of approximately 1.5 miles over four segments (A through D), as indicated on Concept Map 7.

Segment A	
Street:	Ratzer Road (CR-705)
Start:	Stanford Place
End:	Hardwick Lane
Length:	3120 feet
Speed:	35 miles per hour (posted speed limit)
Traffic Volume:	10,000 - 12,000 average daily traffic
Considerations:	A buffered bike lane is the preferred bike facility for this traffic volume and speed. The existing paved area provides sufficient space for buffered bike lanes.
Effort & Cost Magnitude:	Low. Bike lane striping and signage with no constructed changes to the street.

Existing

Potential

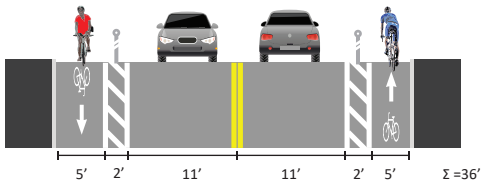


Buffered Bike Lanes

Segment B	
Street:	Ratzer Road (CR-705)
Start:	Hardwick Lane
End:	Hamburg Turnpike (CR-504 / CR-673)
Length:	2530 feet
Speed:	35 miles per hour (posted speed limit)
Traffic Volume:	10,000 - 12,000 average daily traffic
Considerations:	A buffered bike lane is the preferred bike facility for this traffic volume and speed. The existing paved area is insufficient for buffered bike lanes; therefore, widening of the roadway is necessary.
Effort & Cost Magnitude:	High. Widen roadway to achieve buffered bike lanes. Constraints include utilities and drainage appurtenances.

Existing

Potential

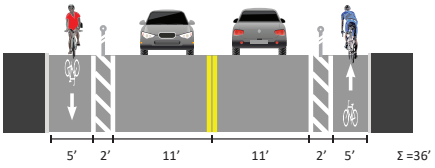


Buffered Bike Lanes

Segment C	
Street:	Pompton Road (CR-504) / Haledon Avenue
Start:	Hamburg Turnpike (CR-504 / CR-673)
End:	Church Street (CR-677)
Length:	5900 feet
Speed:	35-45 miles per hour (posted speed limit)
Traffic Volume:	Not available (estimate 10,000 - 20,000 average daily traffic)
Considerations:	A buffered bike lane is the preferred bike facility for this estimated traffic volume and speed. The existing paved area is insufficient for buffered bike lanes; therefore, widening of the roadway is necessary. Alternatively, the north side of the street has an open frontage to William Paterson University and open space; therefore, a sidepath is worth consideration.
Effort & Cost Magnitude:	High. Widen roadway to achieve buffered bike lanes. Constraints include utilities, drainage appurtenances, and sidewalk reconstruction. Sidepath considerations, in addition, include coordination with adjacent property owners, grade changes east University Drive, and potential riparian impacts.

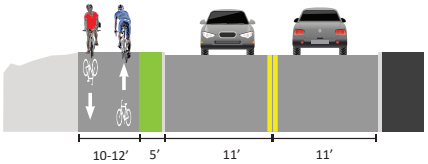
Existing

Potential



Option: Buffered Bike Lanes

Potential

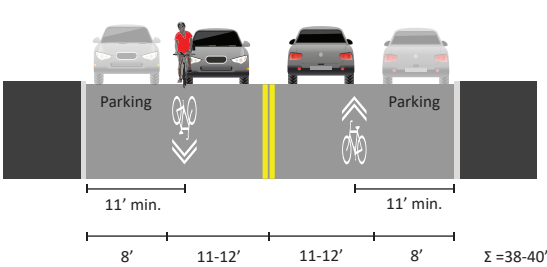


Option: Sidepath (view eastbound)

Segment D	
Street:	Church Street (CR-677)
Start:	Haledon Avenue
End:	Leonhard Drive
Length:	2000 feet
Speed:	25 miles per hour (posted speed limit)
Traffic Volume:	9,000 - 10,000 average daily traffic
Considerations:	Marked shared lanes are an acceptable treatment at this traffic volume and speed as a segment that links to existing bike lanes.
Effort & Cost Magnitude:	Low. Marked shared lanes and signage with no constructed changes to the street.

Existing

Potential



Marked Shared Lanes

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Concept 8:
High Mountain Road Connection to Nature Preserve

Municipality: North Haledon

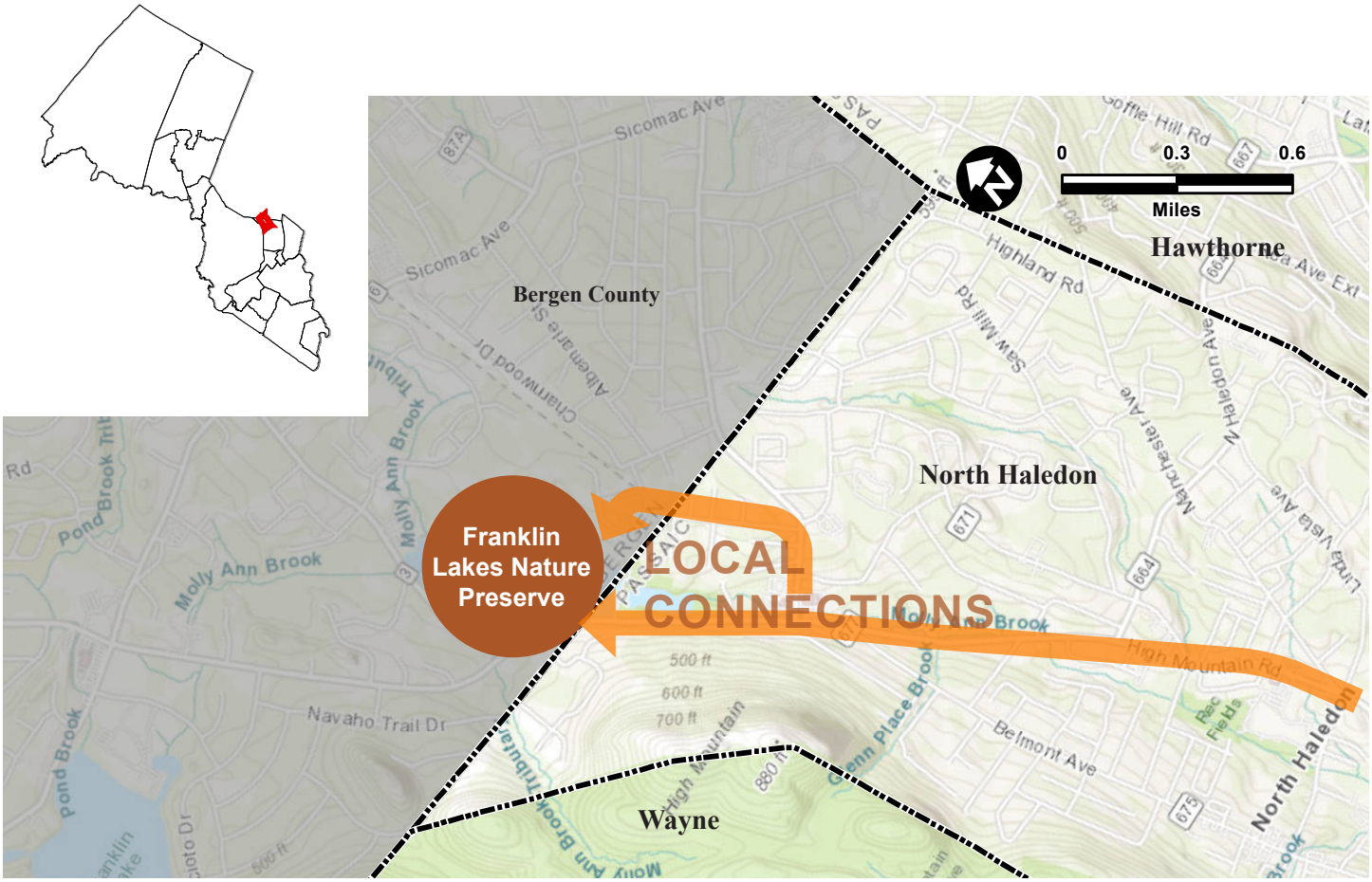
Overview

Purpose: Provide bicycle connectivity to Franklin Lakes Nature Preserve.

Road Context: Rural Town to Suburban

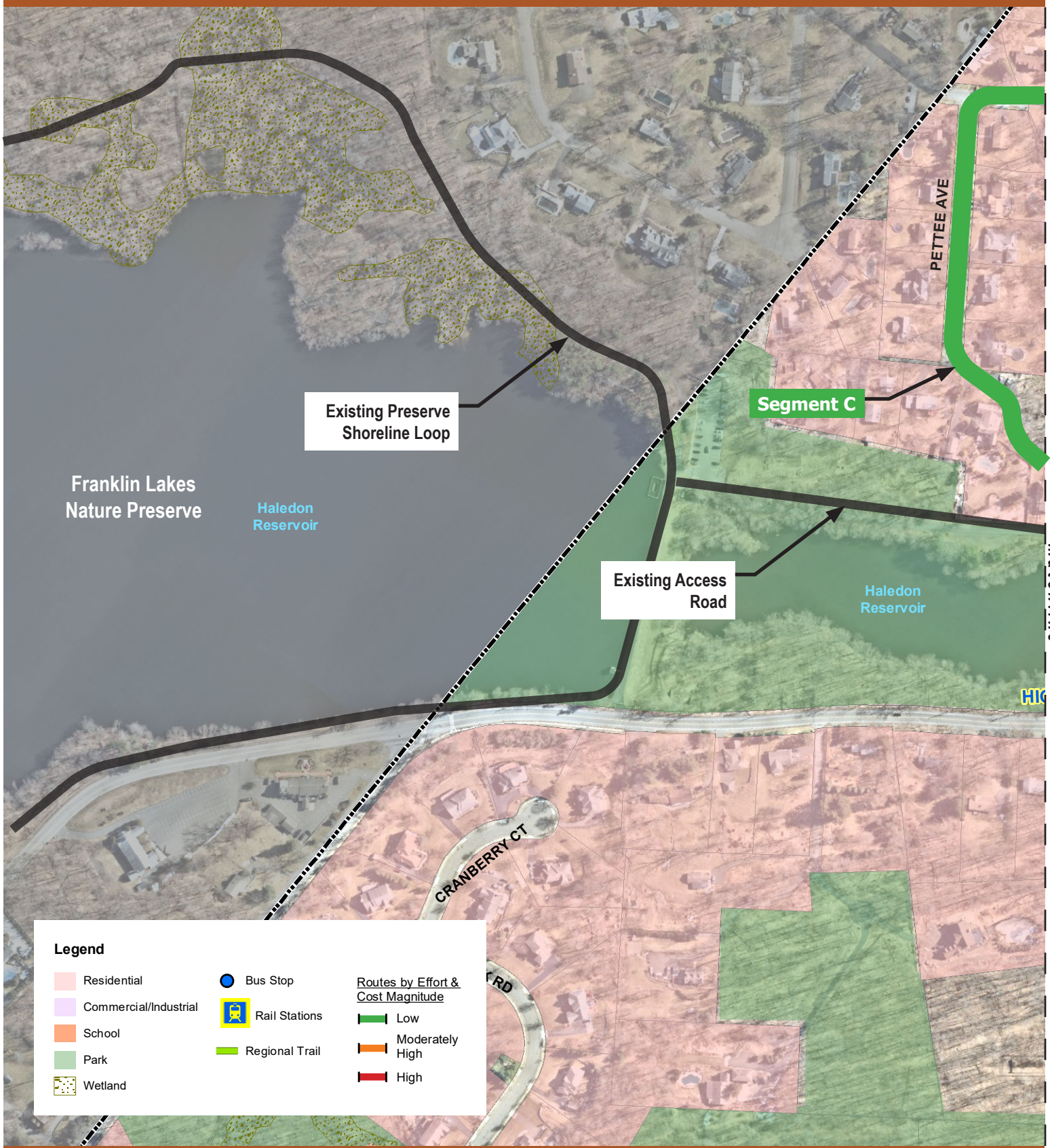
Expected Bicyclist: Interested but Concerned to Highly Confident

Strategy: Expand existing bike lanes and/or take advantage of select existing low-stress, residential streets enhanced as bicycle boulevards to provide connectivity.

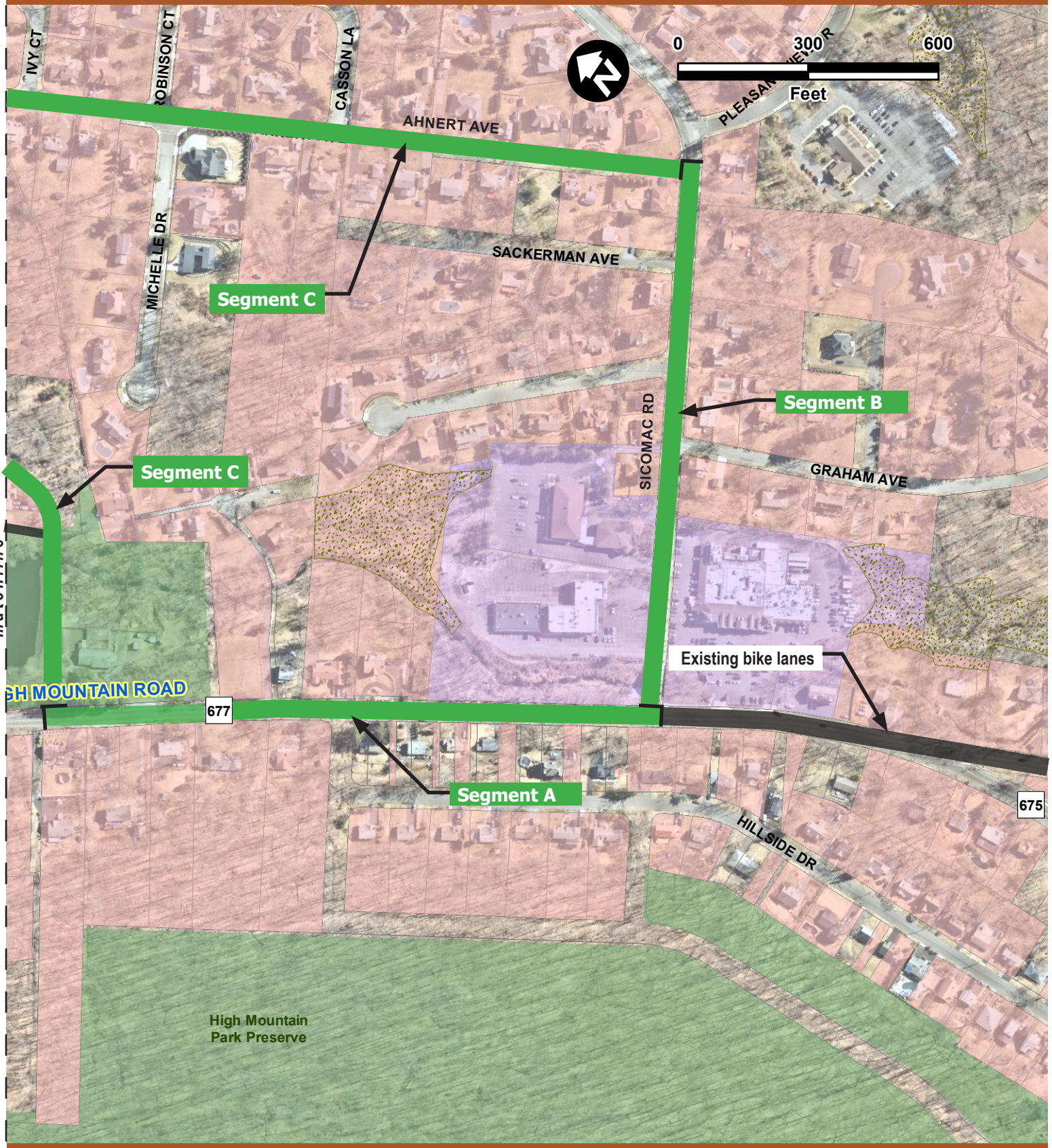


Concept 8: Overview Map

Concept 8: Concept Level Plan Map



High Mountain Road Connection to Nature Preserve



Note: Not for construction. This is a concept level plan to identify constraints related to existing conditions and inform future design activity.

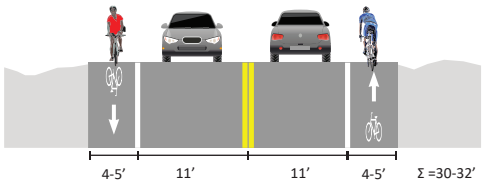
Potential Bicycle Facilities

Concept 8 covers a network of approximately 1.1 miles over six segments (A through C), as indicated on Concept Map 8.

Segment A	
Street:	High Mountain Road (CR-677)
Start:	Sicomac Road
End:	Pettee Avenue
Length:	1400 feet
Speed:	40 miles per hour (posted speed limit)
Traffic Volume:	6300 average daily traffic
Considerations:	Continue existing bike lanes on High Mountain Road that currently terminate at Sicomac Road. Consider a speed limit reduction to 30 miles per hour in this area.
Effort & Cost Magnitude:	Low. Bike lane striping and signage with no constructed changes to the street.

Existing

Potential

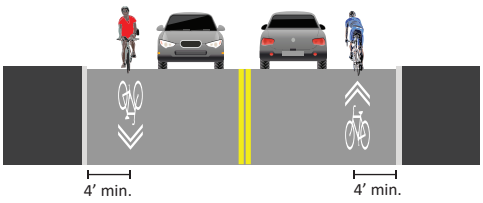


Bike Lanes

Segment B	
Street:	Sicomac Road
Start:	High Mountain Road (CR-677)
End:	Ahnert Avenue
Length:	1250 feet
Speed:	35 miles per hour (posted speed limit)
Traffic Volume:	5000 average daily traffic
Considerations:	Marked shared lanes are an acceptable treatment at this traffic volume, as a segment that links to existing bike lanes. However, the speed limit should be lowered to 25 miles per hour in this area.
Effort & Cost Magnitude:	Low. Marked shared lanes and signage with no constructed changes to the street.

Existing

Potential



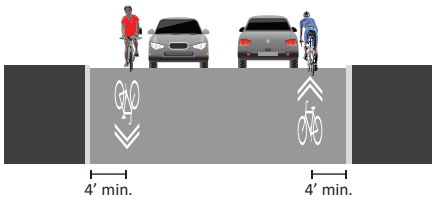
Marked Shared Lanes

Segment C

Street:	Residential Streets (Ahnert Avenue, Pettee Avenue)
Start:	Sicomac Road
End:	High Mountain Road (CR-677)
Length:	3300 feet
Speed:	25 miles per hour (posted speed limit)
Traffic Volume:	Not available, assume <4,000 average daily traffic (residential conditions)
Considerations:	Given the low speed and traffic volume, existing residential streets can be marked as bike boulevards to provide bicycle connectivity, while avoiding car-dominated collector and arterial streets.
Effort & Cost Magnitude:	Low. Application of marked shared lanes and wayfinding signage to create bike boulevard.

Existing

Potential



Bike Boulevard

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Concept 9:
Hawthorne North-South Connection

Municipality: Hawthorne

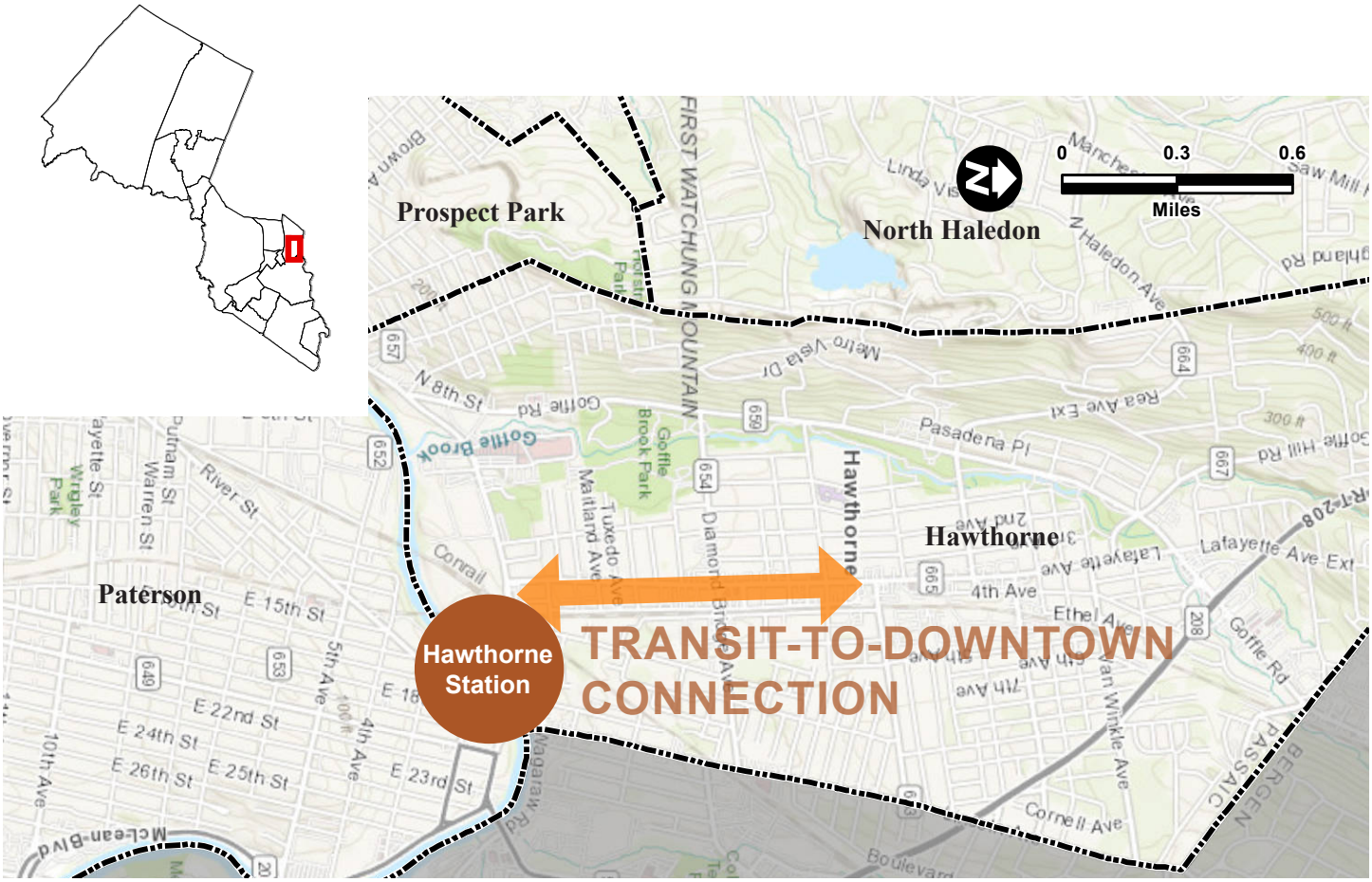
Overview

Purpose: Provide connectivity within the downtown Hawthorne area, between the train station and commercial activity center.

Road Context: Urban

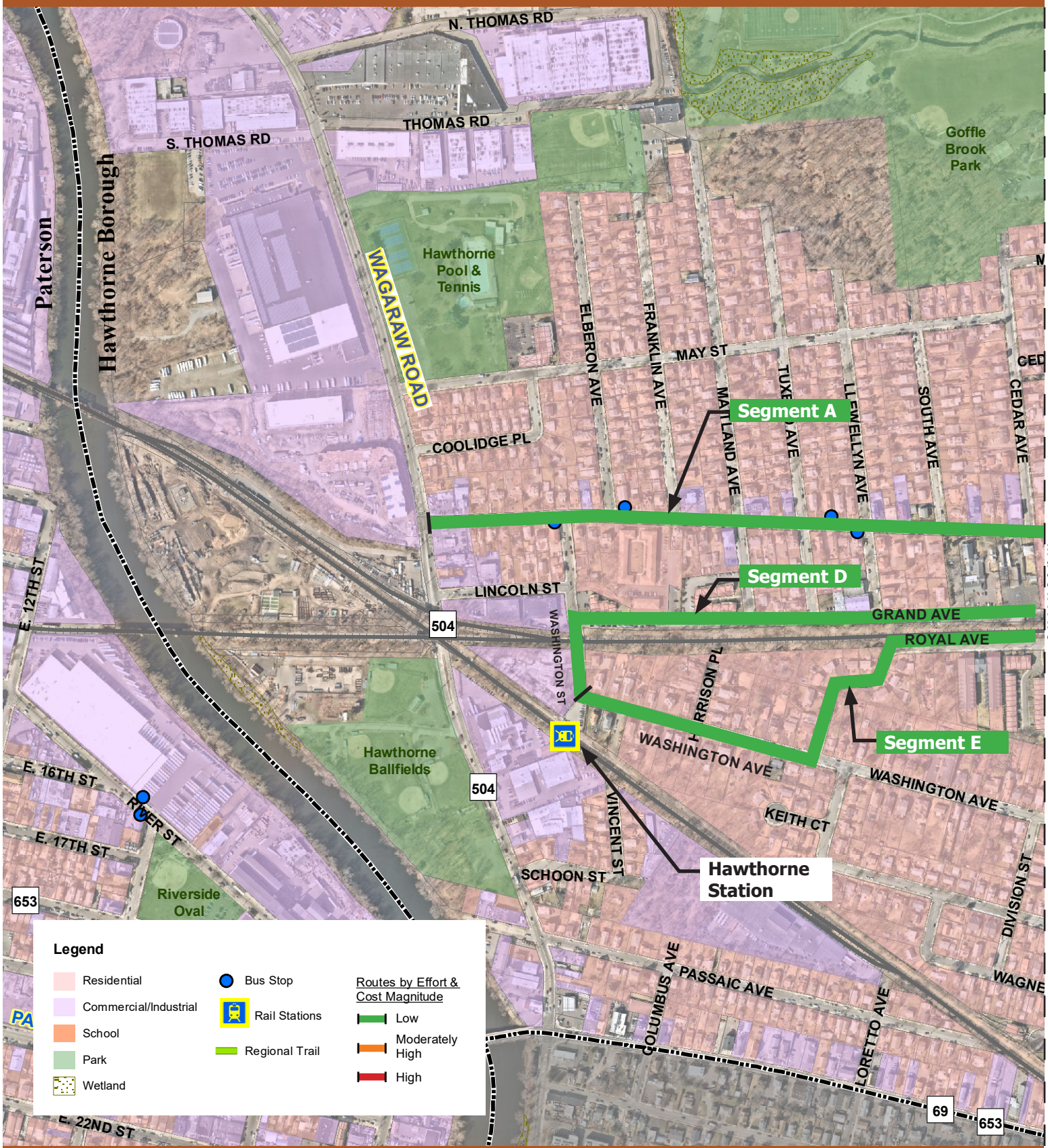
Expected Bicyclist: Interested but Concerned to Highly Confident

Strategy: Use shoulders for curbside bicycle lane where possible along Lafayette Avenue (CR-665). Segments that require on-street parking for retail will change to shared lane markings. Bicycle Boulevard on Grand Avenue and Royal Avenue will allow for local access to bicycle parking at the train station.

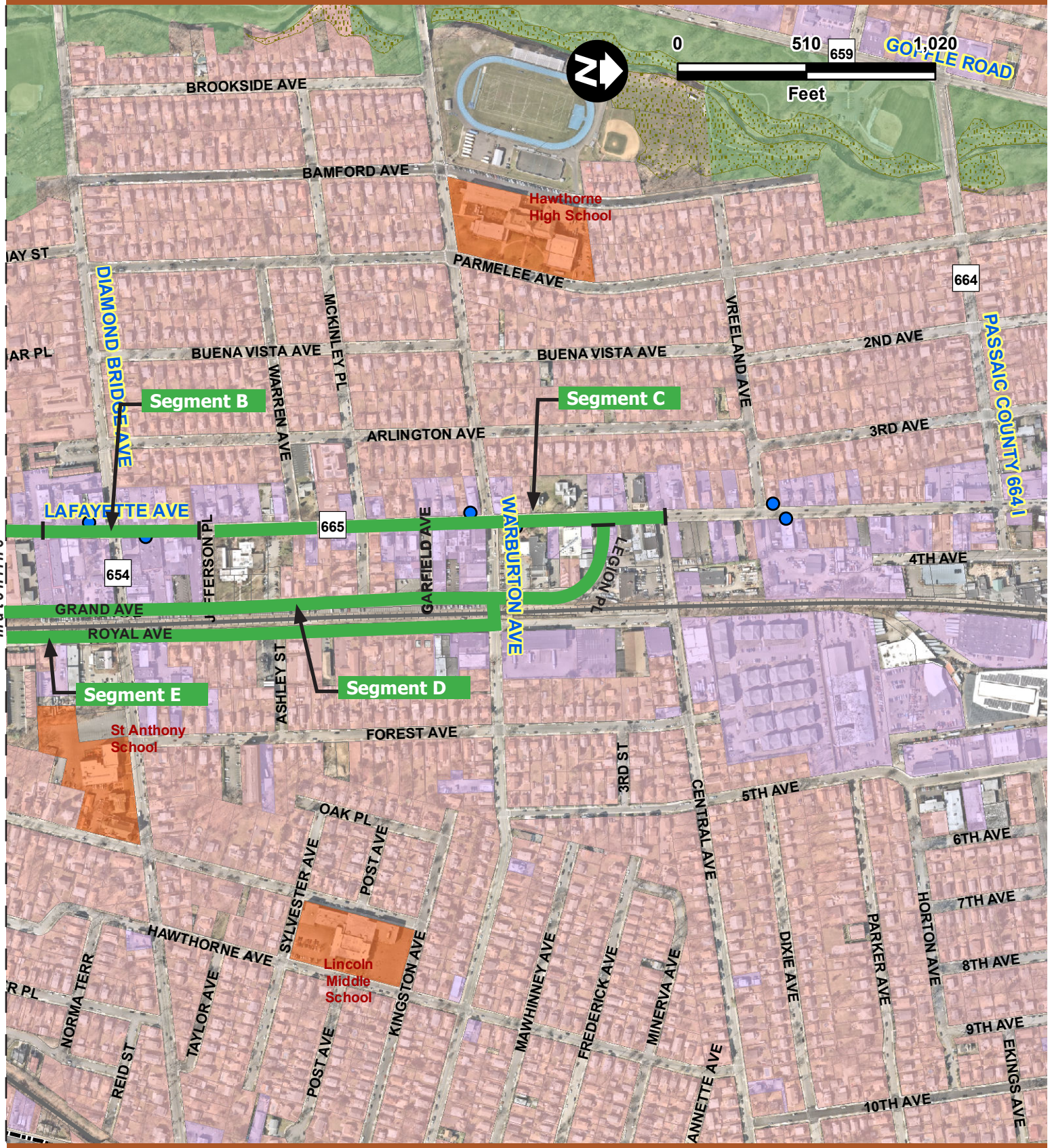


Concept 9: Overview Map

Concept 9: Concept Level Plan Map



Hawthorne North-South Connection



Note: Not for construction. This is a concept level plan to identify constraints related to existing conditions and inform future design activity.

FINAL DRAFT

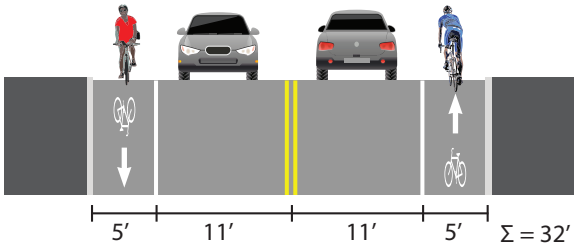
Potential Bicycle Facilities

Concept 9 covers a route of approximately 1.1 miles over 4 segments (A through D), as indicated on Concept Map 9.

Segment A	
Street:	Lafayette Avenue (CR-665)
Start:	Wagaraw Road (CR-504)
End:	Cedar Avenue
Length:	2520 feet
Speed:	35 miles per hour (posted speed limit)
Traffic Volume:	11,000 - 12,000 average daily traffic
Considerations:	Parking is restricted and/or not used in this segment. Consider speed limit reduction to 30 miles per hour.
Effort & Cost Magnitude:	Low. Application of bicycle lane markings.

Existing

Potential

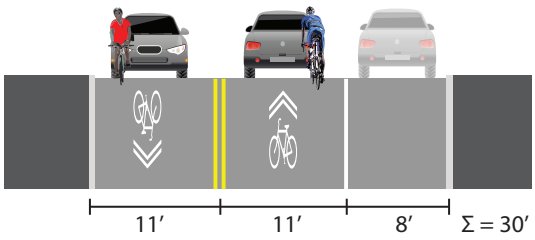


Bike Lanes

Segment B	
Street:	Lafayette Avenue (CR-665)
Start:	Cedar Avenue
End:	Jefferson Place
Length:	830 feet
Speed:	35 miles per hour (posted speed limit)
Traffic Volume:	11,000 - 12,000 average daily traffic
Considerations:	Parking is required for retail context. Speed limit should be reduced to 30 or 25 miles per hour with marked shared lanes. Traffic volume is high for marked shared lanes, but may be acceptable given the short length as a connecting segment between bike lanes.
Effort & Cost Magnitude:	Low. Application of marked shared lanes.

Existing

Potential

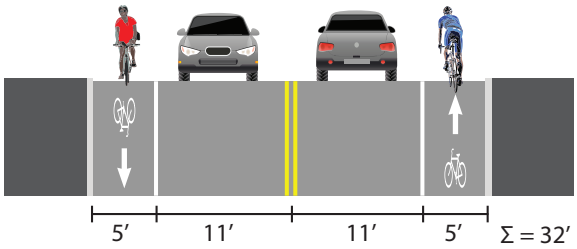


Marked Shared Lanes (view northbound)

Segment C	
Street:	Lafayette Avenue (CR-665)
Start:	Jefferson Place
End:	Legion Place
Length:	1540 feet
Speed:	30 miles per hour (posted speed limit)
Traffic Volume:	11,000 - 12,000 average daily traffic
Considerations:	Parking is restricted and/or not used in this segment.
Effort & Cost Magnitude:	Low. Application of bicycle lane markings.

Existing

Potential

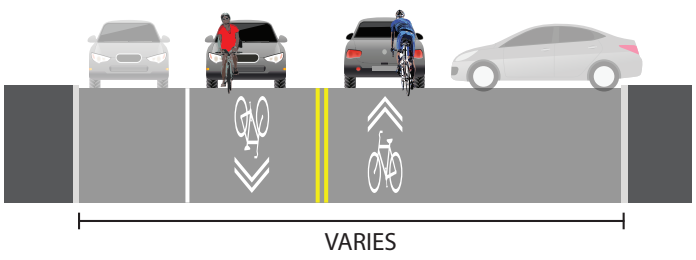


Bike Lanes

Segment D	
Street:	Grand Avenue
Start:	Washington Street
End:	Legion Place
Length:	4800 feet
Speed:	25 miles per hour (posted speed limit)
Traffic Volume:	Not Available
Considerations:	Parallel to the railroad tracks, Grand Avenue provides local access to the train station. Existing on-street perpendicular parking may not be preferable for bicyclists.
Effort & Cost Magnitude:	Low. Application of marked shared lanes and wayfinding signage to create bike boulevard. Consider an edgeline stripe adjacent to parking.

Existing

Potential

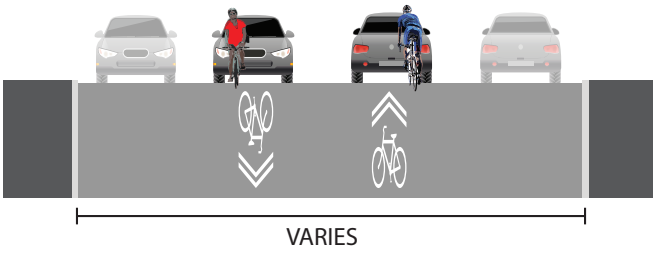


Bike Boulevard (view northbound)

Segment E	
Street:	Royal Avenue, Washington Avenue, and Grand Avenue
Start:	Washington Street
End:	Legion Place
Length:	4965 feet
Speed:	25 miles per hour (posted speed limit)
Traffic Volume:	Not Available
Considerations:	Parallel to the railroad tracks, Grand Avenue provides local access to the train station. Existing residential streets can be marked as bike boulevards to provide bicycle connectivity, while avoiding car-dominated collector and arterial streets.
Effort & Cost Magnitude:	Low. Application of marked shared lanes and wayfinding signage to create bike boulevard.

Existing

Potential



Bike Boulevard

Concept 10:
McBride Avenue

Municipality: Woodland Park

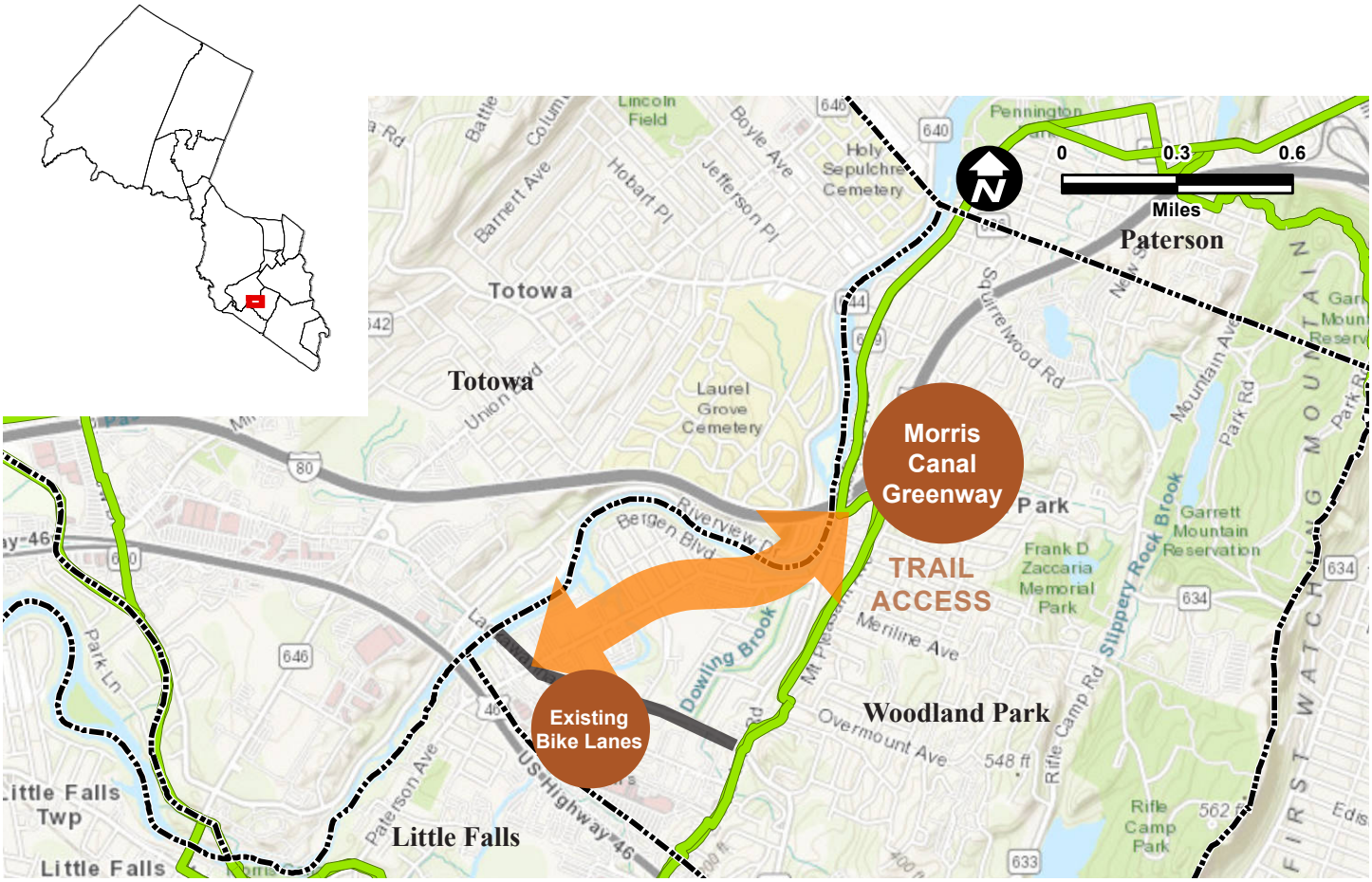
Overview

Purpose: Extend existing bike lanes on McBride Avenue and create a connection between existing bike lanes on Lackawanna Avenue to the south and portions of the Morris Canal Greenway to the north.

Road Context: Suburban to Urban

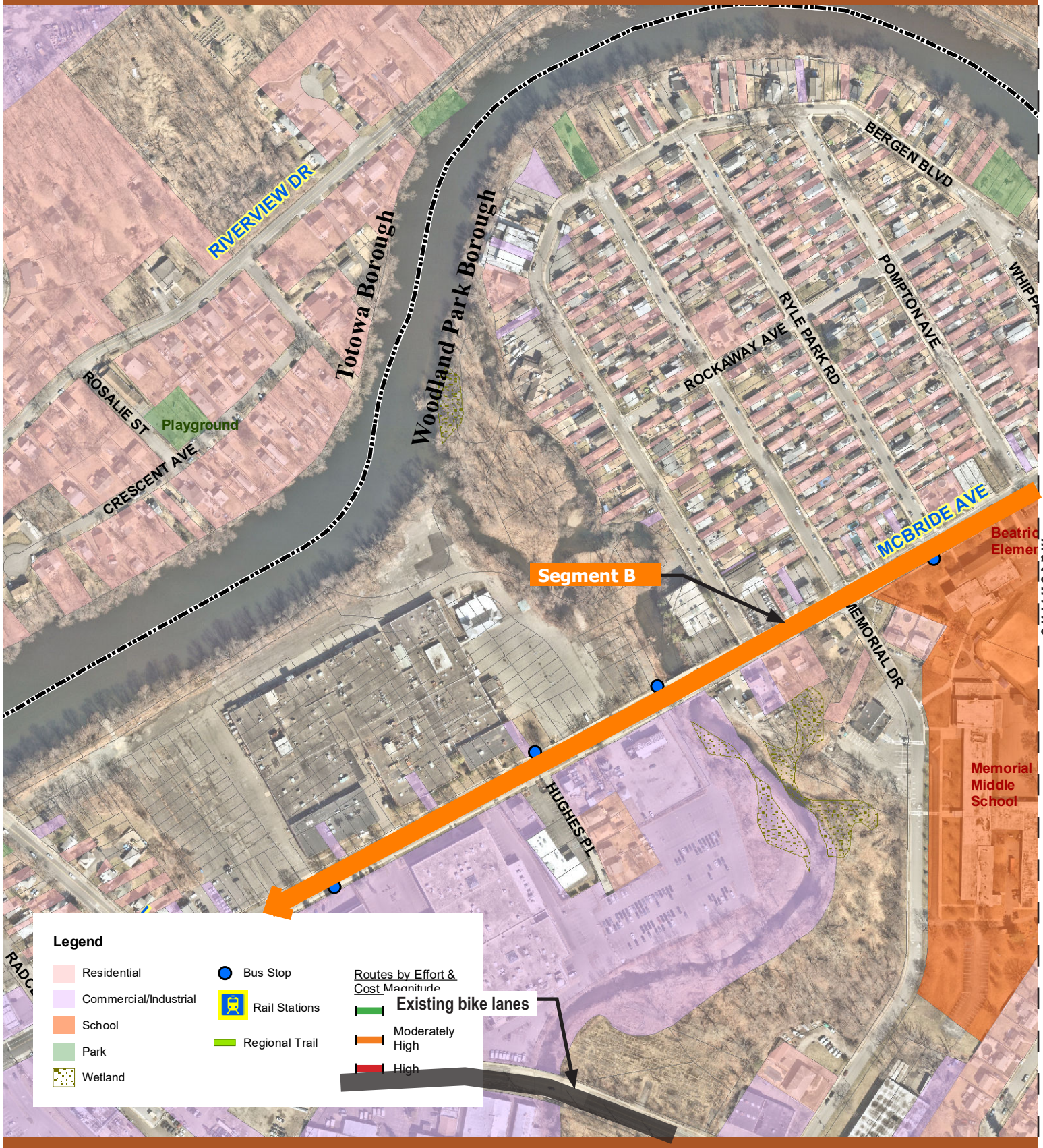
Expected Bicyclist: Somewhat Confident to Highly Confident

Strategy: Retain parking where possible (north segment), replace parking on one side with bike lanes in both directions for most of the corridor, removing parking on the south side which has designated off-street parking.



Concept 10: Overview Map

Concept 10: Concept Level Plan Map

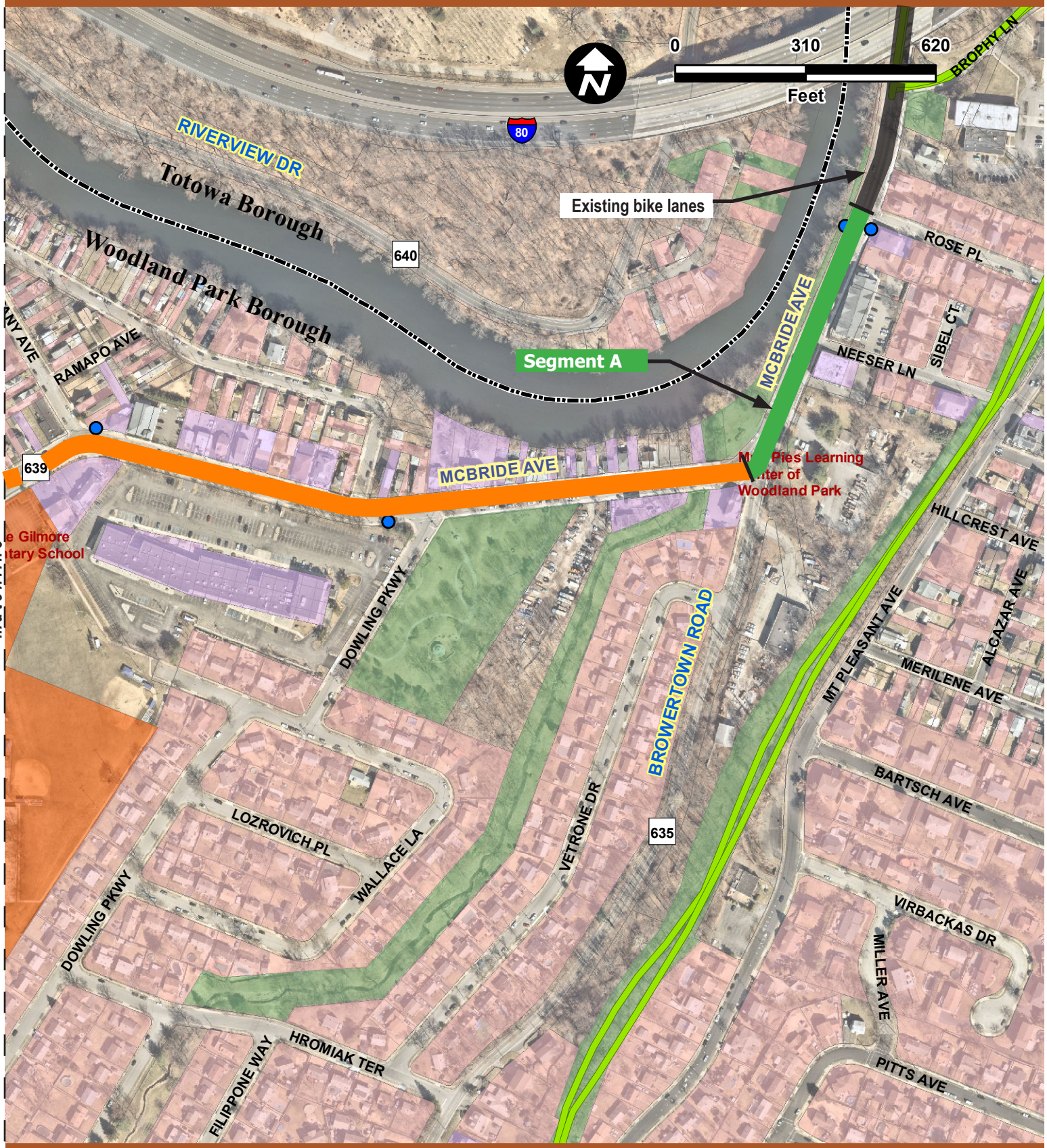


Municipality

Woodland Park

FINAL DRAFT

McBride Avenue



matchline

Note: Not for construction. This is a concept level plan to identify constraints related to existing conditions and inform future design activity.

FINAL DRAFT

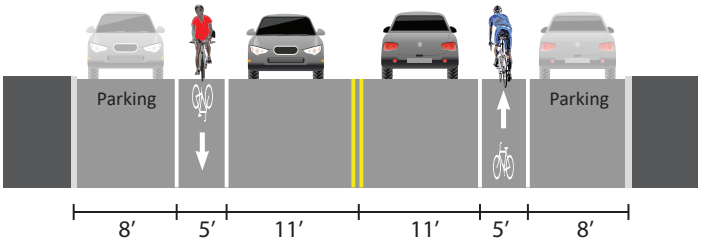
Potential Bicycle Facilities

Concept 10 covers a route of approximately 0.9 miles over two segments (A and B), as indicated on Concept Map 10.

Segment A	
Street:	McBride Avenue (CR-639)
Start:	Rose Place
End:	Browertown Road (CR-635)
Length:	680 feet
Speed:	25 miles per hour
Traffic Volume:	Not available
Considerations:	North of Rose Place, McBride Avenue has previously received a road diet: parking and bike lanes on both sides with one travel lane in each direction, in place of the existing two travel lanes in each direction for this segment. This segment would extend the bike lanes north of Rose Place two additional blocks.
Effort & Cost Magnitude:	Low. Provide bike lane striping and signage with no constructed changes to the street. Consider removal of on-street parking if not needed, to provide sufficient space for bike lanes and the complex approach to the intersection with Browertown Road (CR-635). This intersection could be studied in the future for potential conversion to a roundabout.

Existing

Potential

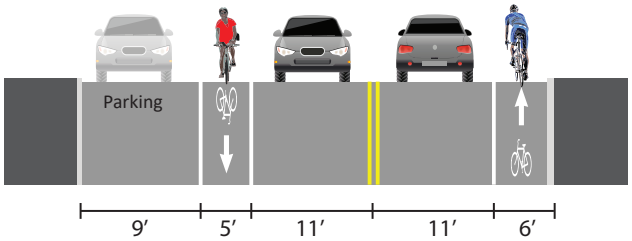


Bike Lanes

Segment B	
Street:	McBride Avenue (CR-639)
Start:	Browertown Road (CR-635)
End:	Lackawanna Avenue (CR-632)
Length:	4230 feet
Speed:	25 miles per hour
Traffic Volume:	Not available
Considerations:	Addition of bike lanes would require removal of parking along south side of McBride, which has fewer land uses requiring on-street parking (commercial with off-street parking, schools, open space).
Effort & Cost Magnitude:	Moderately high. Bike lane striping and signage with no constructed changes to the street; however, parking removal will require additional planning, outreach, and consensus.

Existing

Potential



Bike Lanes (view eastbound)

Concept 11:
Clifton Avenue

Municipality: Clifton

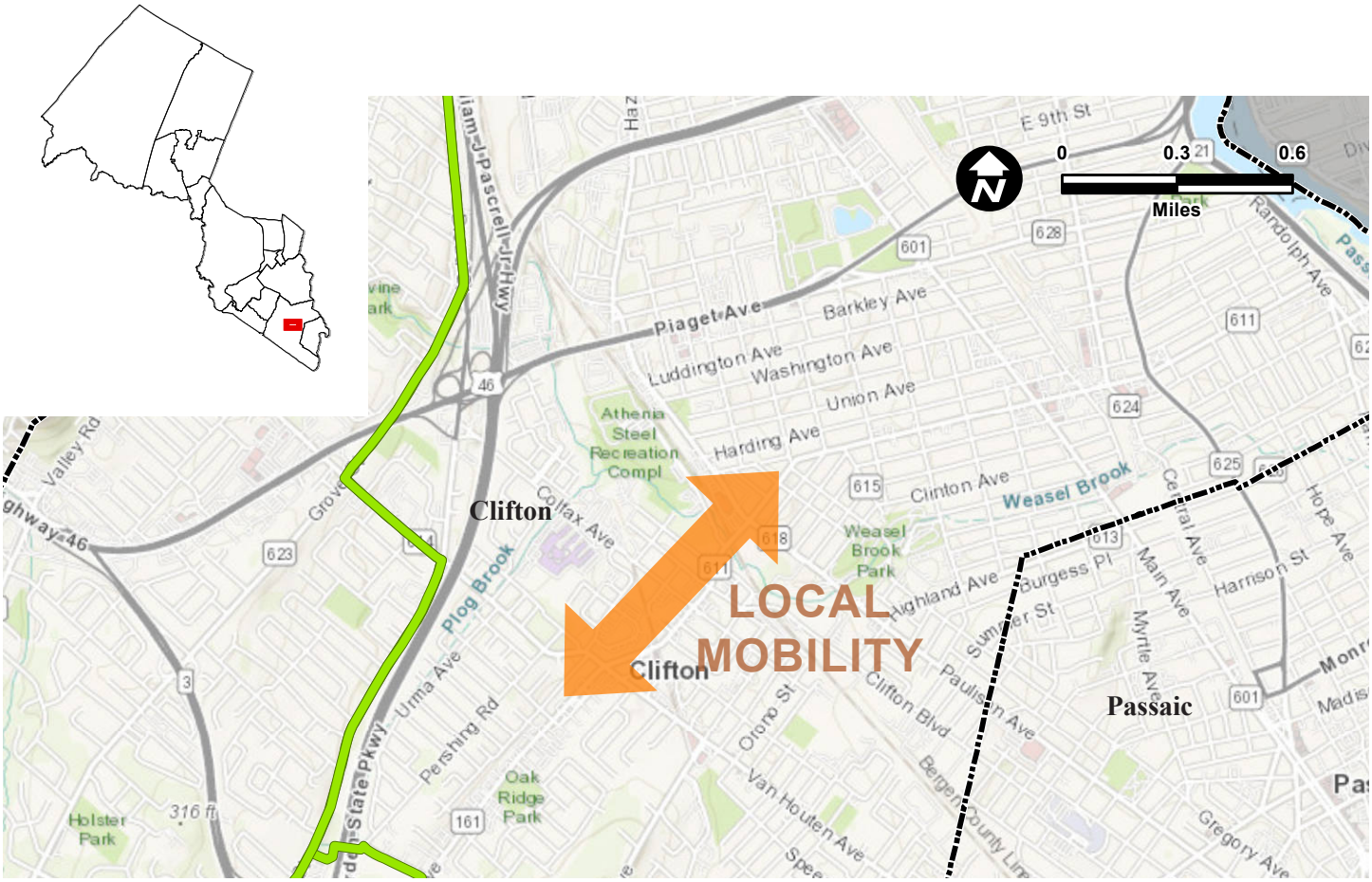
Overview

Purpose: Clifton Avenue (CR-611) between Van Houten Avenue (CR-614) and Paulison Avenue (CR-618) creates a connection that supports local mobility. Van Houten Avenue is a candidate for marked shared lanes, and Paulison Avenue has bicycle lanes southeast of Clifton Avenue. The north-south connection that Clifton Avenue provides is an important part of the bicycle network in the Athenia area of Clifton.

Road Context: Urban

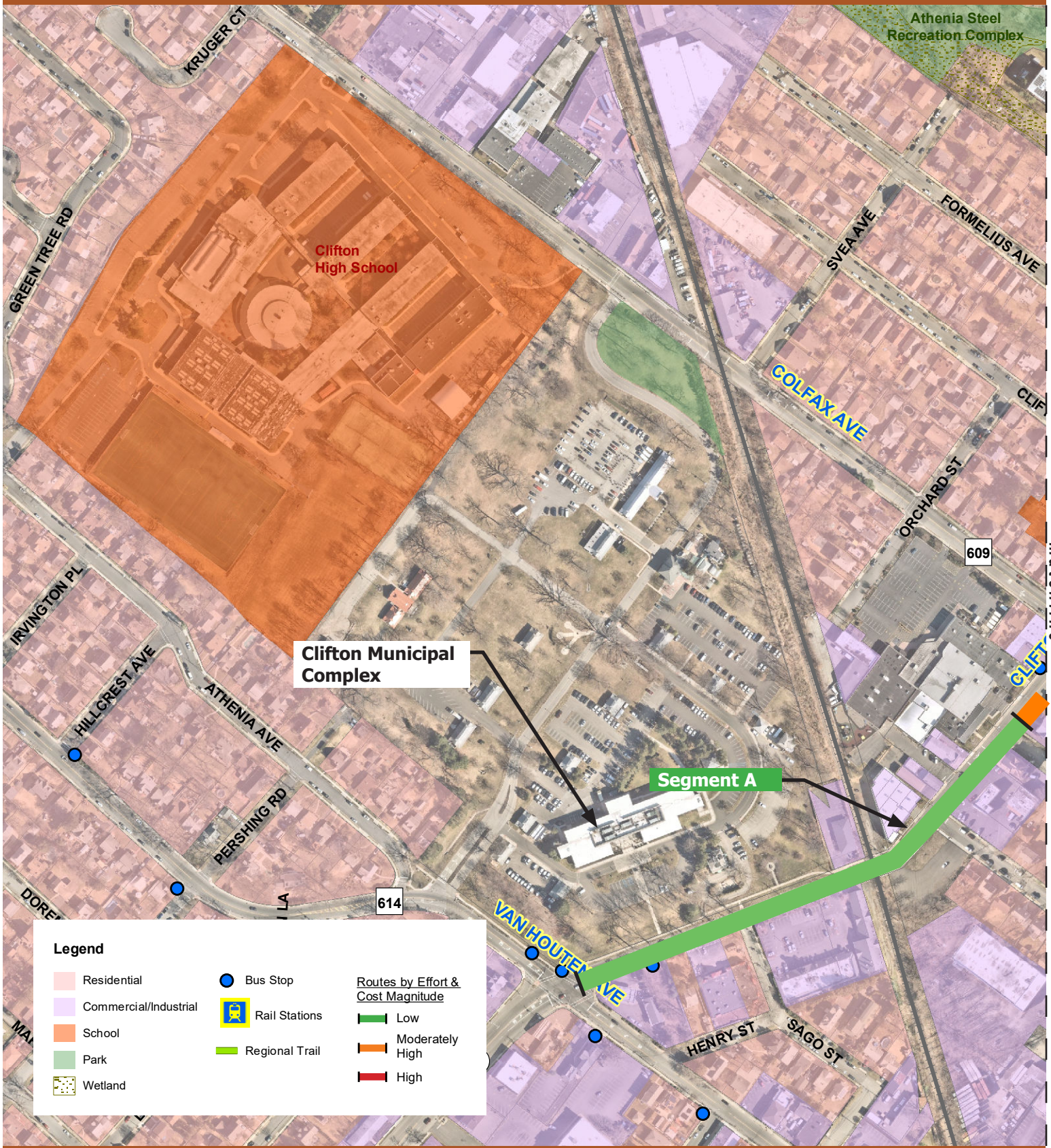
Expected Bicyclist: Interested but Concerned to Highly Confident

Strategy: Create a continuous buffered bike lane where possible, with marked shared lanes elsewhere.



Concept 11: Overview Map

Concept 11: Concept Level Plan Map



Clifton Avenue

Note: Not for construction. This is a concept level plan to identify constraints related to existing conditions and inform future design activity.

FINAL DRAFT

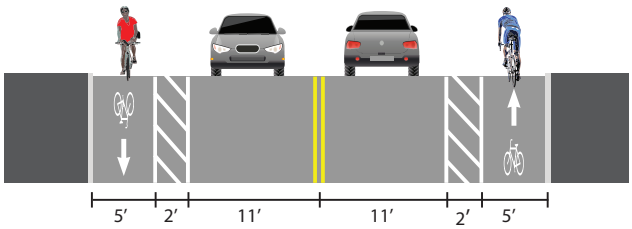
Potential Bicycle Facilities

Concept 11 covers a route of approximately 0.5 miles over four segments (A through D), as indicated on Concept Map 11.

Segment A	
Street:	Clifton Avenue (CR 611)
Start:	Van Houten Avenue (CR 614)
End:	Twain Place
Length:	1200 feet
Speed:	25 miles per hour (posted speed limit)
Traffic Volume:	Not available
Considerations:	Existing shoulder area wide enough for a buffered bike lane (5' bike lane with a 2' buffer). Parking is either restricted or underutilized. Bus stops can be found periodically. At intersections, turn lanes change the conditions to require shared lanes.
Effort & Cost Magnitude:	Low. Buffered bike lane striping and signage with no constructed changes to the street.

Existing

Potential

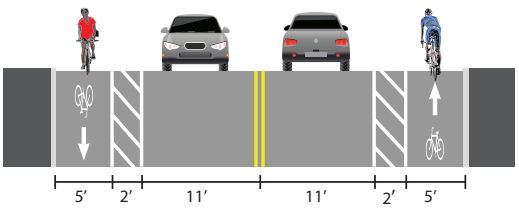


Buffered Bike Lanes

Segment B	
Street:	Clifton Avenue (CR 611)
Start:	Twain Place
End:	Clifton Terrace
Length:	550 feet
Speed:	25 miles per hour (posted speed limit)
Traffic Volume:	Not available
Considerations:	Light to moderate on-street parking usage. Buffered bike lanes would require on-street parking removal on both sides. Shared lanes may be required in some sections, or can be considered as a less desirable alternative to buffered bike lanes.
Effort & Cost Magnitude:	Moderately high. Buffered bike lane striping and signage with no constructed changes to the street; however, parking removal will require additional planning, outreach, and consensus.

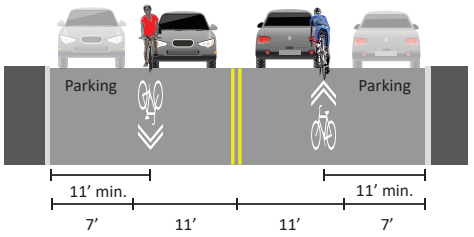
Existing

Potential



Option: Buffered Bike Lanes

Potential

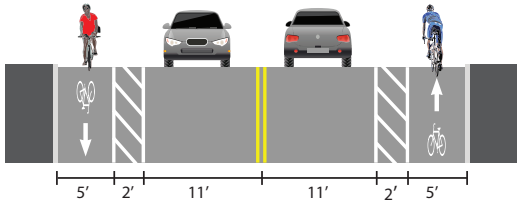


Option: Marked Shared Lanes

Segment C	
Street:	Clifton Avenue (CR 611)
Start:	Clifton Terrace
End:	Fornelius Avenue
Length:	350 feet
Speed:	25 miles per hour (posted speed limit)
Traffic Volume:	Not available
Considerations:	Moderate to heavy on-street parking usage. Bike lanes would require on-street parking removal on both sides. Shared lanes are likely required in this segment.
Effort & Cost Magnitude:	Moderately high. Buffered bike lane striping and signage with no constructed changes to the street; however, parking removal will require additional planning, outreach, and consensus.

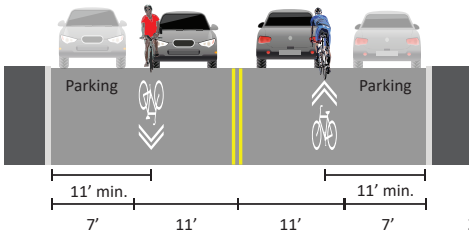
Existing

Potential



Option: Buffered Bike Lanes

Potential

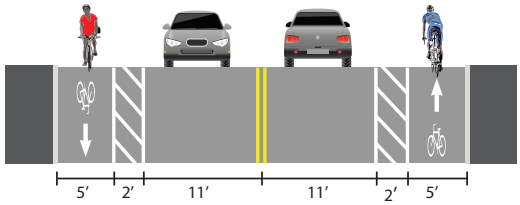


Option: Marked Shared Lanes

Segment D	
Street:	Clifton Avenue (CR 611)
Start:	Fornelius Avenue
End:	Paulison Avenue (CR 618)
Length:	800 feet
Speed:	25 miles per hour (posted speed limit)
Traffic Volume:	Not available
Considerations:	Light to moderate on-street parking usage. Bike lanes would require on-street parking removal on both sides. Shared lanes may be required in some sections.
Effort & Cost Magnitude:	Moderately high. Buffered bike lane striping and signage with no constructed changes to the street; however, parking removal will require additional planning, outreach, and consensus.

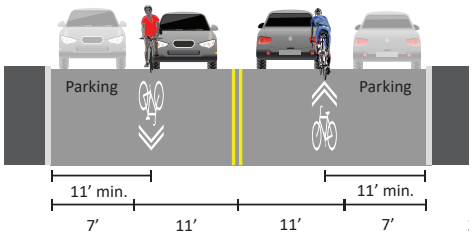
Existing

Potential



Option: Buffered Bike Lanes

Potential



Option: Marked Shared Lanes

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Concept 12:
Passaic-Clifton Community Connection

Municipalities: Passaic and Clifton

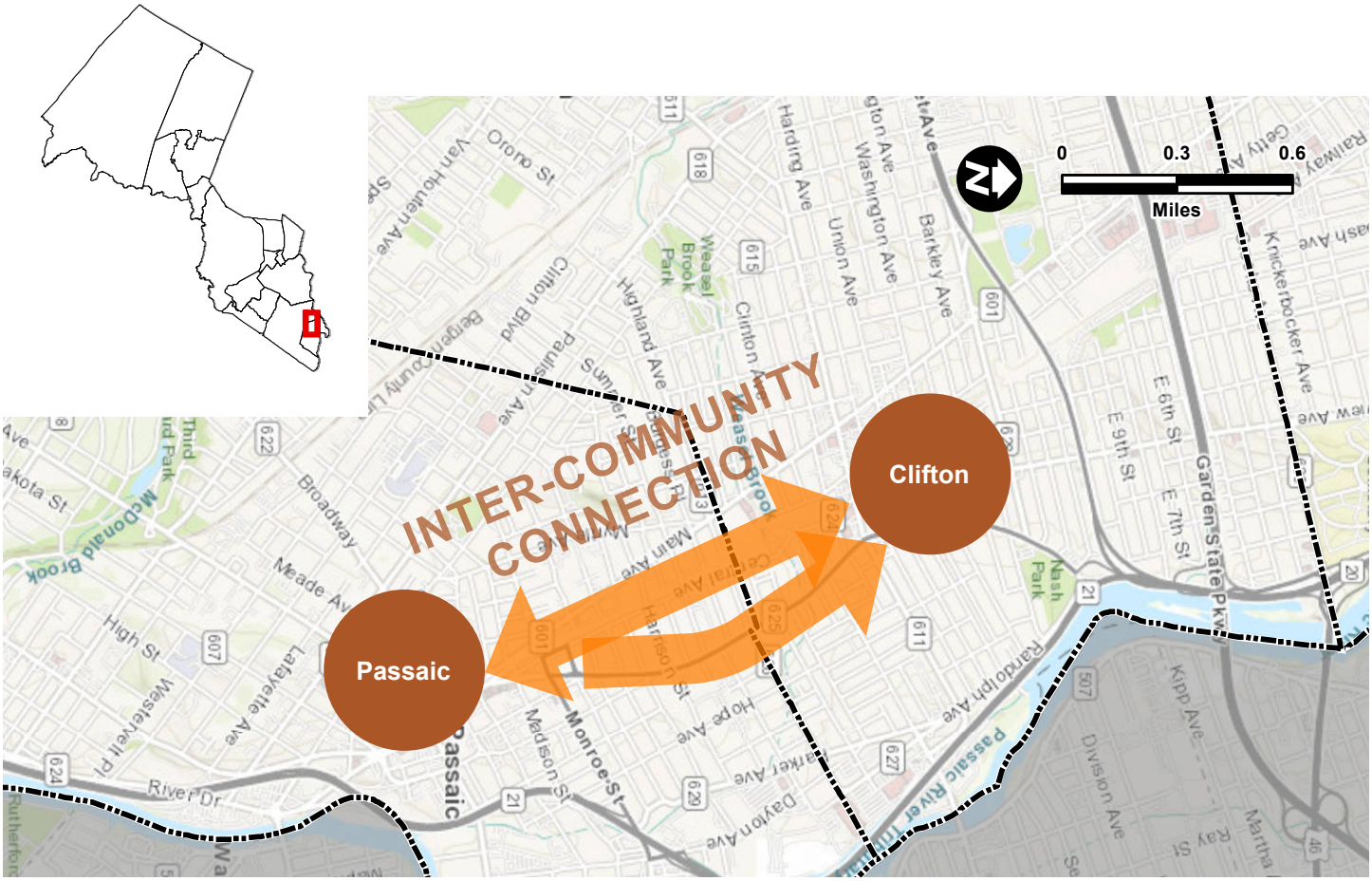
Overview

Purpose: Provide an inter-community connection between Passaic and Clifton with access to the Main Avenue Bus Terminal along with commercial areas, schools, and residential streets.

Road Context: Urban

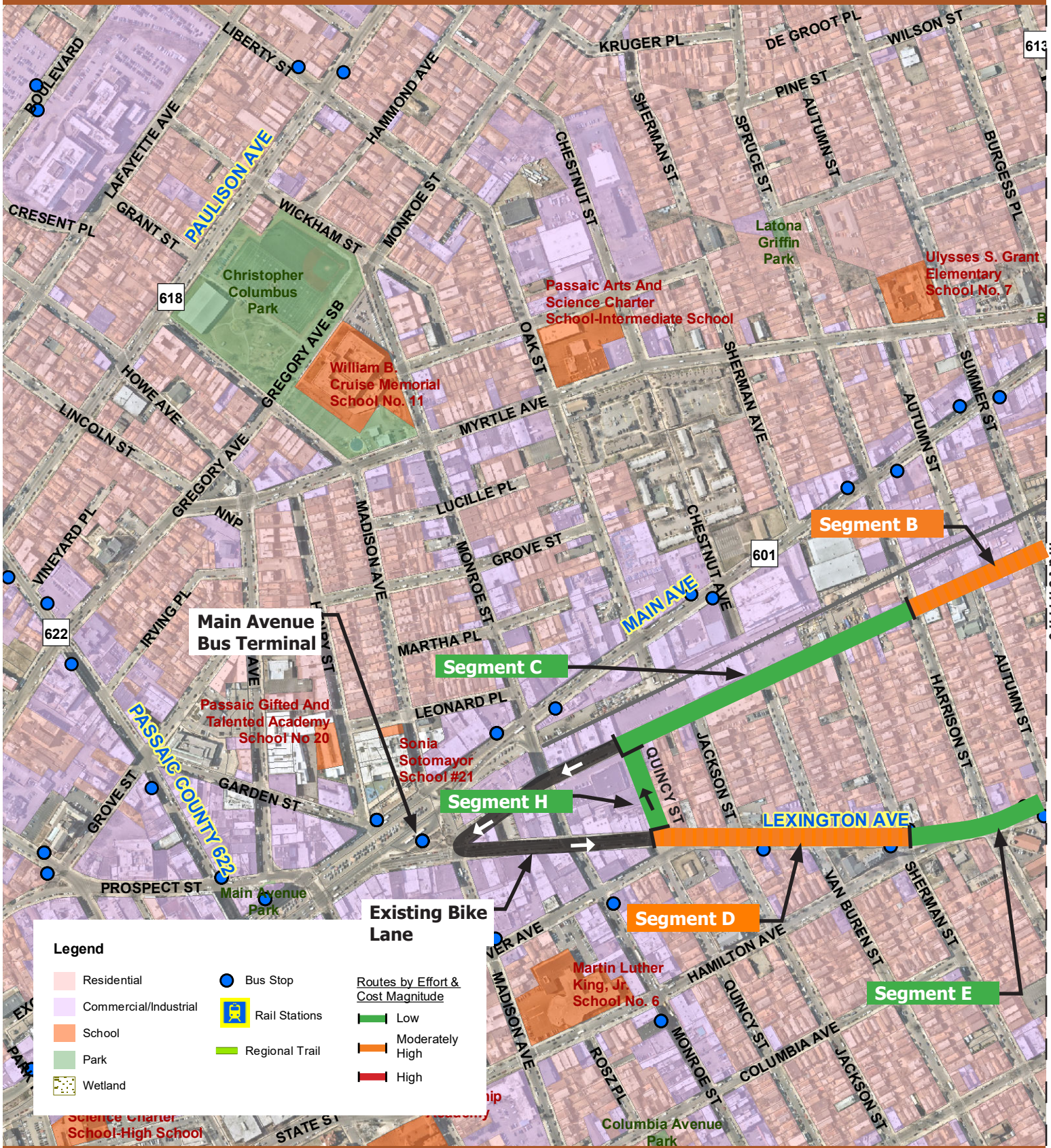
Expected Bicyclist: Interested but Concerned to Highly Confident

Strategy: Provide northbound priority bicycle facility on Lexington Avenue and southbound priority bicycle facility on Central Avenue, maintaining curbside alignment with and without parking protection. Other bicycle facilities provided in the non-priority area.

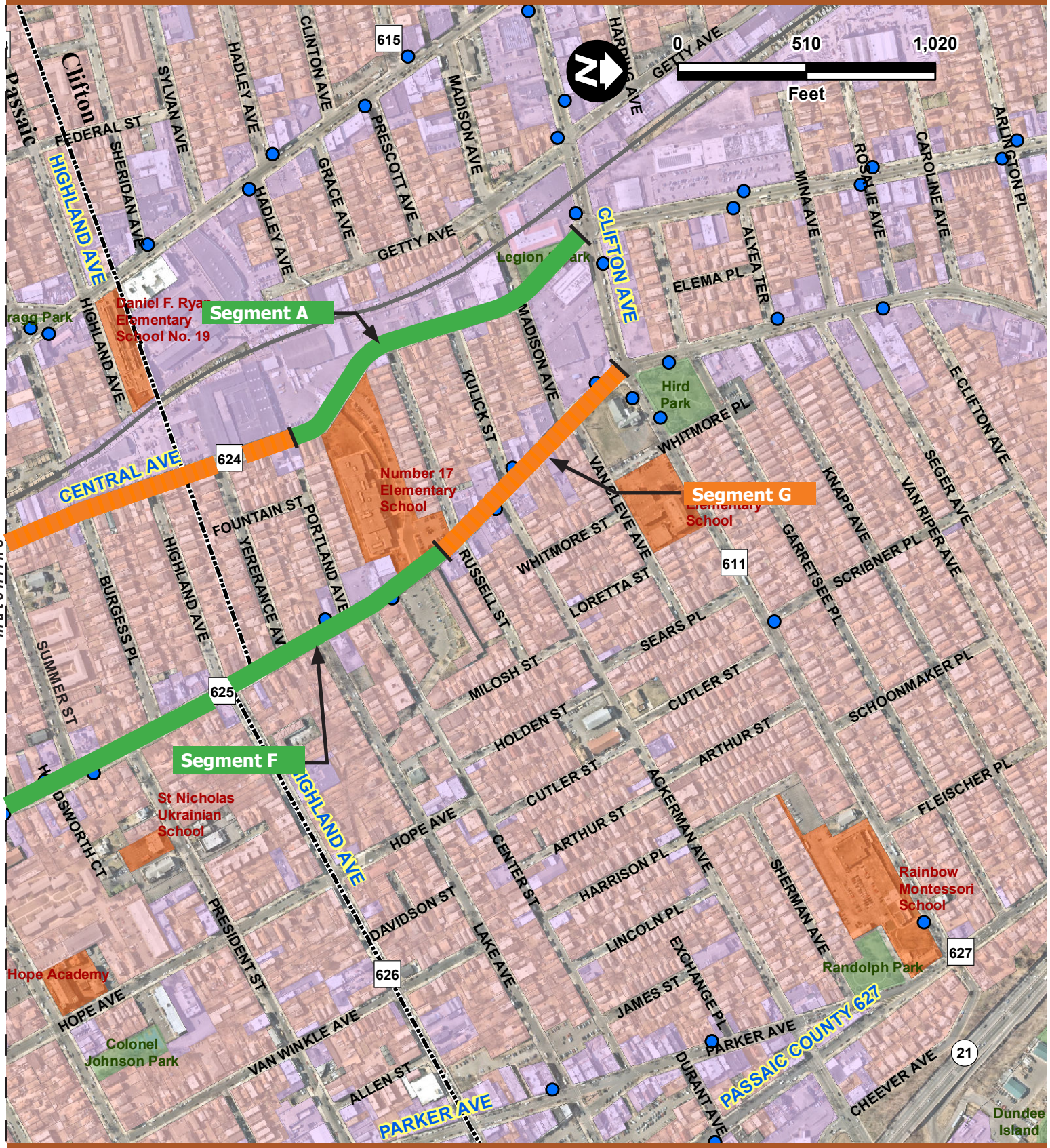


Concept 12: Overview Map

Concept 12: Concept Level Plan Map



Passaic-Clifton Community Connection



Note: Not for construction. This is a concept level plan to identify constraints related to existing conditions and inform future design activity.

FINAL DRAFT

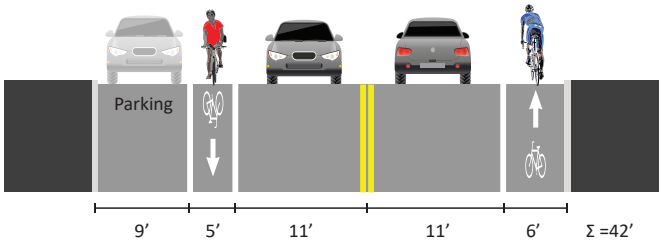
Potential Bicycle Facilities

Concept 12 covers a route of approximately 1.8 miles over eight segments (A through H), as indicated on Concept Map 12.

Segment A	
Street:	Central Avenue (CR-624)
Start:	Clifton Avenue (CR-611)
End:	Portland Avenue
Length:	1520 feet
Speed:	30 miles per hour (posted speed limit)
Traffic Volume:	15,000 average daily traffic (estimate)
Considerations:	Requires parking removal on one side to provide any dedicated bicycle facility. Prioritize southbound bicycle travel.
Effort & Cost Magnitude:	Moderately high. Bike lane striping and signage with no constructed changes to the street; however, parking removal will require additional planning, outreach, and consensus.

Existing

Potential

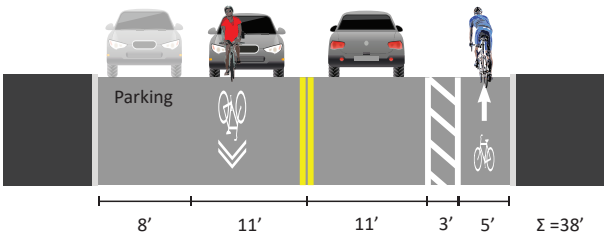


Bike Lanes

Segment B	
Street:	Central Avenue (CR-624)
Start:	Portland Avenue
End:	Harrison Street
Length:	1800 feet
Speed:	30 miles per hour (posted speed limit)
Traffic Volume:	15,000 average daily traffic (estimate)
Considerations:	Heavier parking utilization; requires parking removal on one side to provide any dedicated bicycle facility. Prioritize southbound bicycle travel.
Effort & Cost Magnitude:	Moderately high. Bike lane striping and signage with no constructed changes to the street; however, parking removal will require additional planning, outreach, and consensus.

Existing

Potential

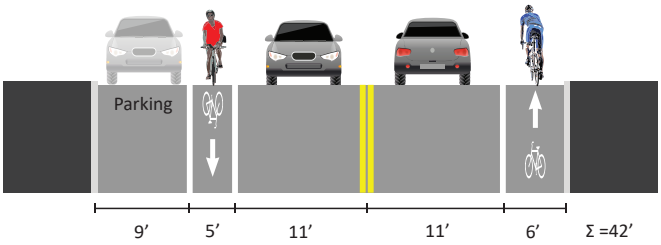


Hybrid Street (view southbound)

Segment C	
Street:	Central Avenue (CR-624)
Start:	Harrison Street
End:	Quincy Street
Length:	1250 feet
Speed:	30 miles per hour (posted speed limit)
Traffic Volume:	15,000 average daily traffic (estimate)
Considerations:	Requires parking removal on one side to provide any dedicated bicycle facility. Prioritize southbound bicycle travel.
Effort & Cost Magnitude:	Moderately high. Bike lane striping and signage with no constructed changes to the street; however, parking removal will require additional planning, outreach, and consensus.

Existing

Potential

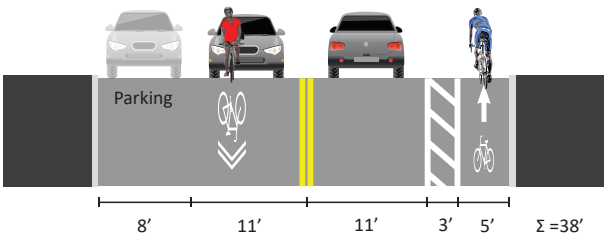


Bike Lanes

Segment D	
Street:	Lexington Avenue (CR-625)
Start:	Quincy Street
End:	Sherman Street
Length:	970 feet
Speed:	25 miles per hour (posted speed limit)
Traffic Volume:	12,000 average daily traffic (estimate)
Considerations:	Requires parking removal on one side to provide any dedicated bicycle facility. Prioritize northbound bicycle travel.
Effort & Cost Magnitude:	Moderately high. Bike lane striping and signage with no constructed changes to the street; however, parking removal will require additional planning, outreach, and consensus.

Existing

Potential

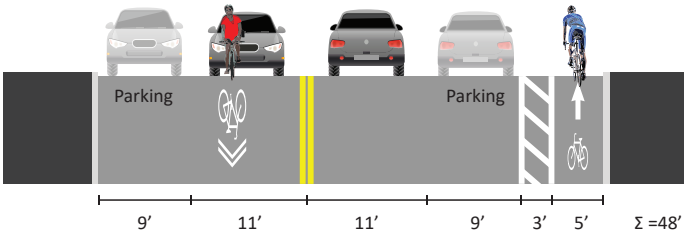


Hybrid Street (view northbound)

Segment E	
Street:	Lexington Avenue (CR-625)
Start:	Sherman Street
End:	Highland Avenue (CR-626)
Length:	1600 feet
Speed:	25 miles per hour (posted speed limit)
Traffic Volume:	12,000 average daily traffic (estimate)
Considerations:	No parking removal required. Maintain curbside bicycle lane alignment. Prioritize northbound bicycle travel.
Effort & Cost Magnitude:	Low. Buffered bike lane striping and signage with no constructed changes to the street.

Existing

Potential

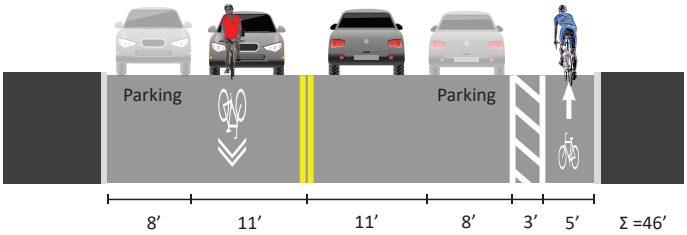


Hybrid Street (view northbound)

Segment F	
Street:	Lexington Avenue (CR-625)
Start:	Highland Avenue (CR-626)
End:	Public School 17
Length:	860 feet
Speed:	25 miles per hour (posted speed limit)
Traffic Volume:	12,000 average daily traffic (estimate)
Considerations:	No parking removal required. Maintain curbside bicycle lane alignment. Prioritize northbound bicycle travel.
Effort & Cost Magnitude:	Low. Buffered bike lane striping and signage with no constructed changes to the street.

Existing

Potential

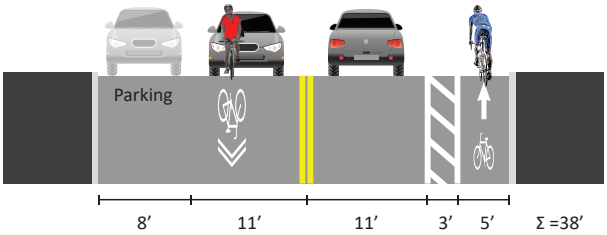


Hybrid Street (view northbound)

Segment G	
Street:	Lexington Avenue (CR-625)
Start:	Public School 17
End:	Clifton Avenue (CR-611)
Length:	1140 feet
Speed:	25 miles per hour (posted speed limit)
Traffic Volume:	12,000 average daily traffic (estimate)
Considerations:	Requires parking removal on one side to provide any dedicated bicycle facility. Prioritize northbound bicycle travel.
Effort & Cost Magnitude:	Moderately high. Bike lane striping and signage with no constructed changes to the street; however, parking removal will require additional planning, outreach, and consensus.

Existing

Potential

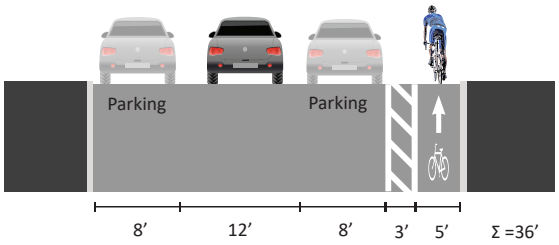


Hybrid Street (view northbound)

Segment H	
Street:	Quincy Street
Start:	Central Avenue (CR-624)
End:	Lexington Avenue (CR-625)
Length:	390 feet
Speed:	25 miles per hour (posted speed limit)
Traffic Volume:	Not available
Considerations:	Facilitates connections between Central Avenue and Lexington Avenue; No parking removal required.
Effort & Cost Magnitude:	Low. Buffered bike lane striping and signage with no constructed changes to the street.

Existing

Potential



Buffered Bike Lane (one-way, view westbound)

bike passaic COUNTY

passaic COUNTY NEW JERSEY

NJTPA NORTH JERSEY TRANSPORTATION PLANNING AUTHORITY

Michael Baker INTERNATIONAL

NV5

SGB SUSAN G. BLICKSTEIN, AICP, PhD
PLANNING ♦ POLICY ♦ RESEARCH