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DELAWARE VALLEY
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REGIONAL
PLANNING COMMISSION

browns mills



BICYCLE & PEDESTRIAN ACTION PLAN





The Delaware Valley Regional Planning Commission

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CHAPTER 1:

Introduction

This chapter highlights the plan's purpose and goals. It provides a description of the study area and discusses why we should care about walking and biking.

The chapter includes a summary of related studies and investments and concludes with an overview of the stakeholder engagement process.

Introduction

The way our communities are designed, built, and maintained can have a significant effect on the health of individuals and the community at large. The environment shapes people's ability to make healthy choices, access health-promoting resources, and ultimately live a healthy life. By creating inviting spaces where people can safely walk and bike, we can support better individual health and greater community well-being.

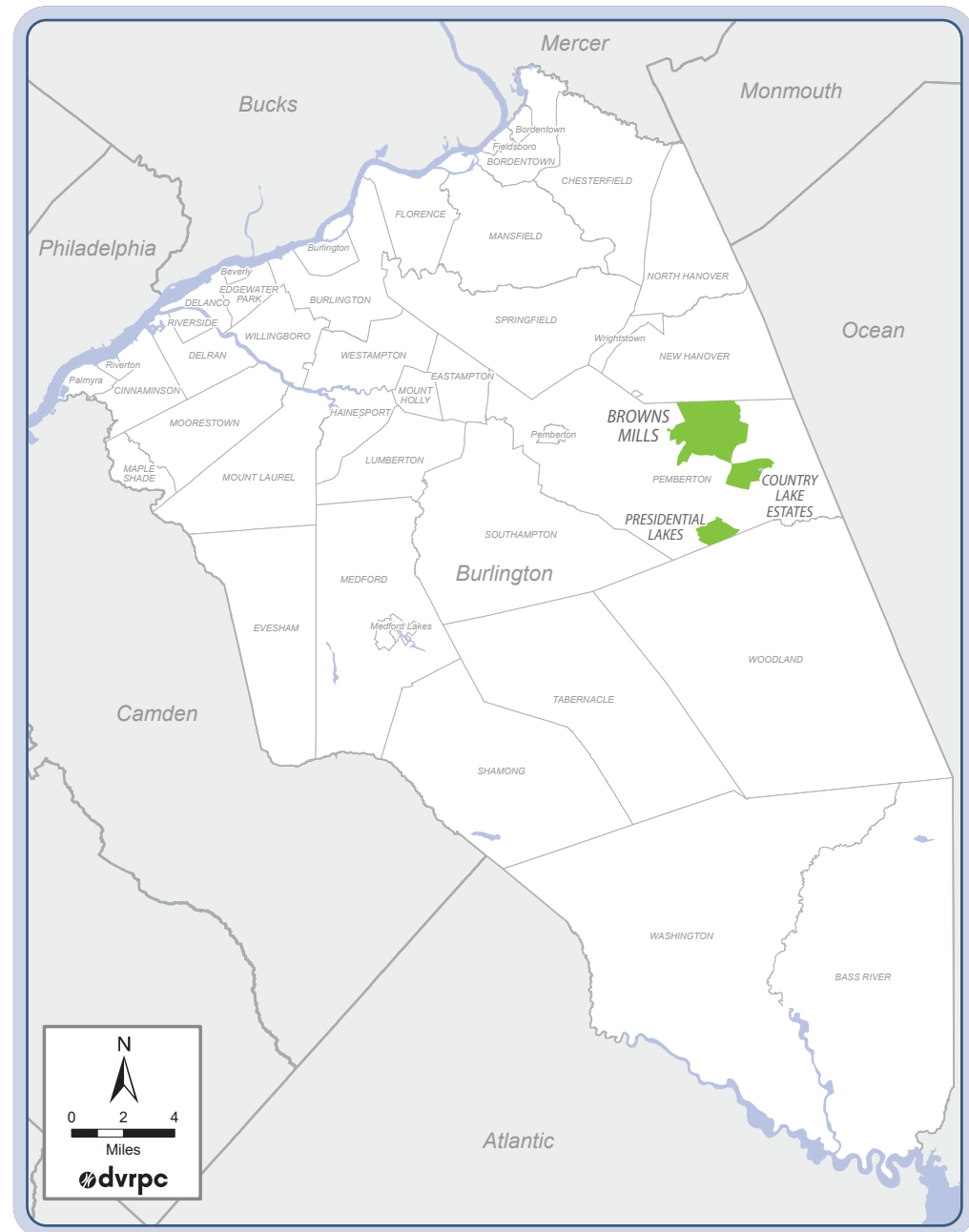
PURPOSE

The purpose of this document is to present a set of bicycle and pedestrian recommendations for Browns Mills, New Jersey, that supports better health outcomes and enhances connections to the Town Center, recreational destinations, and neighboring communities. This action plan provides detailed recommendations for five locations throughout and around Browns Mills that the community, Pemberton Township, and project Advisory Committee identified as both the highest priority and most achievable corridors for bicycle and pedestrian improvements. The recommendations build on Browns Mills' existing bicycle and pedestrian infrastructure with facilities that will create safer and more complete roads, trails, and intersections.

STUDY AREA

Browns Mills is an unincorporated community within Pemberton Township, in Burlington County, New Jersey (see Figure 1 for a depiction of the study area's location within Burlington County). Hailed for its fresh Pine Barren air and pristine springs that were thought to have curative properties, Browns Mills developed in the mid-19th century

FIGURE 1: STUDY AREA CONTEXT



as a summer retreat for visitors seeking to get away from the industrial metropolises of Philadelphia, Camden, and New York City.

Today, approximately 10,734 people live and 2,530 people work within its 5.6 square miles (5.4 square miles of land and 0.2 square miles of water).^{1,2} It is home to the Deborah Heart and Lung Center, an 89-bed teaching hospital with over 1,000 employees and adjacent to Joint Base McGuire-Dix-Lakehurst (JB MDL), which employs over 40,000 military and civilian personnel.

NATURAL AMENITIES

Browns Mills is situated within the Pinelands National Reserve and is rich with natural amenities. There are three main lakes: Mirror Lake, Big Pine Lake, and Little Pine Lake. The North Branch Rancocas Creek flows through Mirror Lake and continues about 30 miles west until it meets up with the main branch of the Rancocas Creek in Rancocas State Park. Browns Mills is also within a 30-minute drive of numerous state forests and wildlife preserves.

TRANSPORTATION

County Route 530 (with different local segments known variously as Pemberton Browns Mills Road, Juliustown Road, and Lakehurst Road) is a principal arterial running east to west through Browns Mills and across the Mirror Lake Dam. CR 530 connects Browns Mills to downtown Pemberton and the township offices to the west, and Country Lakes Estates and Route 70 to the east. County Route 669 (Juliustown Road) connects downtown Browns Mills to JB MDL and County Road 667 runs through downtown Browns Mills and circles Big Pine Lake as Broadway, West Lakeshore Drive, Bayberry Street, East Lakeshore Drive, and Pemberton Browns Mills Road.

¹ U.S. Census Bureau, *2020 Census of Population and Housing*, Accessed September 2021: www.census.gov/quickfacts/fact/table/brownsmillscdpnewjersey/POP010220#POP010220.

² U.S. Census Bureau, Center for Economic Studies, LEHD, *On The Map*, Accessed September 2021: onthemap.ces.census.gov.

Browns Mills is served by two bus connections—New Jersey Transit 317 and the BurLINK B1. The 317 bus runs from Philadelphia to Asbury Park, connecting Browns Mills to Cherry Hill, Moorestown, Mount Holly, Wrightstown, and Lakewood, among other communities. The BurLINK B1 is provided by the Burlington County Board of Commissioners and operated by Stout's Transportation Services. It connects Browns Mills and Country Lakes Estates with Pemberton, Mt. Holly, Willingboro, and Beverly. Both routes run fairly infrequently, with headways of at least one hour.

COUNTRY LAKES AND PRESIDENTIAL LAKES ESTATES

The study also looks at bicycle and pedestrian access between Country Lake Estates and Presidential Lakes Estates, two neighboring communities which are also situated around lakes. Country Lake Estates, located in eastern Pemberton Township along CR 530, is 1.4 square miles in size, and is home to 4,054 people.³ Presidential Lakes Estates, located along Route 70 on the southern border of Pemberton Township, is home to 2,353 residents and is 1.1 square miles in size.

³ U.S. Census Bureau, *2020 Decennial Census: Table P1*, Accessed September 2021.



Mirror Lake in Browns Mills
Source: Derek Lombardi, DVRPC

PINELANDS NATIONAL RESERVE

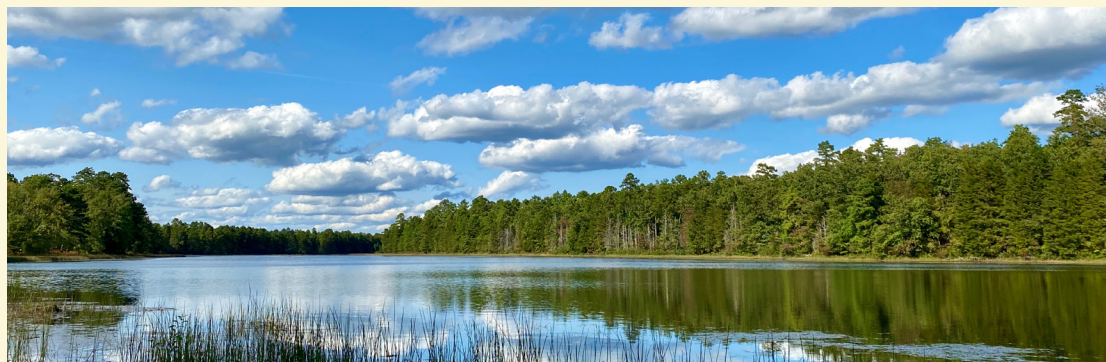
The Pinelands National Reserve is the country's first national reserve and home to 1.1 million acres of farms, forests, wetlands, and rare plant and animal species. The boundary of the Pinelands includes all or part of 56 municipalities in seven counties and encompasses nearly 22 percent of the State of New Jersey. The Pinelands is the largest body of open space on the Eastern seaboard between Maine and the Florida everglades. Most land in the Pinelands overlays the vast Kirkwood-Cohansey aquifer, which holds an estimated 17-trillion gallons of freshwater. The Pinelands is home to 870,00 people, 43 endangered or threatened animal species, and an unknown number of rare plant species.

There are three state forests in the Pinelands that cover 173,288-acres, an area equivalent to 3 percent of the State of New Jersey. At 115,000 acres, Wharton State Forest is the single-largest tract of land in the state park system. Bass River State Forest, the first New Jersey state forest, contains the world's largest pygmy forest of pine and oak trees, which reach just four feet at maturity. The Brendan T. Byrne State Forest is located partially within Pemberton Township. Each park offers ample hiking trails, many of which are wheelchair-accessible.

In addition to the valuable and unique environmental features of the Pinelands, it also includes historic and prehistoric sites, hamlets, subdivisions, towns, and active farmland. New Jersey is the fifth largest producer of blueberries and the fourth largest producer of cranberries in the country, and almost all this production occurs within the Pinelands.

The New Jersey Pinelands Commission's *Comprehensive Management Plan* (CMP), adopted in 1980 and approved by Congress in 1981, is a plan to balance Pinelands protection with development. To ensure the effectiveness of the plan, county and municipal master plans and land use ordinances must be brought into conformance with the CMP. The CMP divides the Pinelands region into nine different management areas based on land use capability. Each area has different goals, objectives, development intensities, and permitted uses. The study area encompasses two types of management areas: Regional Growth and Forest Areas. In order to develop in the Pinelands, an application must be submitted to the Pinelands Commission. Development applications are reviewed to ensure conformance with the Pinelands CMP. After this review, the Pinelands Commission issues a Certificate of Filing, which enables the applicant to apply for state and local permits and approvals. If the development does not meet the land use and environmental standards of the CMP, then the applicant may attempt to obtain a Waiver of Strict Compliance, which involves additional review. The development review process by the Pinelands Commission is aimed at fostering environmentally sensitive development in order to protect one of the most unique ecosystems in the world.

Sources: State of New Jersey Pinelands Commission, The Pinelands National Reserve, accessed September 2021: www.state.nj.us/pinelands/reserve/; Pinelands Preservation Alliance, New Jersey Pinelands Overview, accessed September 2021: pinelandsalliance.org/learn-about-the-pinelands/pinelands-overview/; New Jersey Pinelands Commission, Pinelands Facts, August 24, 2021: www.nj.gov/pinelands/infor/fact/Pinelands%20Facts.pdf.



Batsto Village, New Jersey

Source: Kim Dean, DVRPC

Why Should We Care About Walking and Biking?

IT'S GOOD FOR YOUR HEALTH

Being physically active is an important part of being healthy. Walking and biking are low-cost and low-impact ways to be physically active. Research has shown that walking for 2.5 hours per week can reduce the risk of cardiovascular events such as stroke, heart attack, and heart failure by 31 percent and the risk of dying by 32 percent.⁴ Walking and other types of moderate exercise like biking also “help protect against dementia, peripheral artery disease, obesity, diabetes, depression, and colon cancer.”⁵ Additionally, numerous studies have demonstrated that walking, especially in nature, has positive mental health benefits.^{6,7}

The Centers for Disease Control and Prevention (CDC) recommends that adults get 150 minutes per week of moderate-intensity physical activity, which they define as “anything that gets your heart beating faster,” such as going for a brisk walk.⁸ However, according to the CDC, almost 43 percent of Burlington County adults don’t meet the recommended amount of activity and a quarter of Burlington County adults get no physical activity.^{9,10}

⁴ “Walking: Your steps to health,” *Harvard Men’s Health Watch*, October 13, 2020: www.health.harvard.edu/staying-healthy/walking-your-steps-to-health.

⁵ Ibid.

⁶ Sharma, Ashish et al. “Exercise for mental health,” *Primary care companion to the Journal of Clinical Psychiatry*, vol. 8, 2 (2006): 106. doi:10.4088/pcc.v08n0208a.

⁷ Jordan, Rob. “Stanford researchers find mental health prescription: Nature.” *Stanford News*. June 30, 2015: news.stanford.edu/2015/06/30/hiking-mental-health-063015/.

⁸ Centers for Disease Control and Prevention, “How much physical activity do adults need?” October 7, 2020: www.cdc.gov/physicalactivity/basics/adults/index.htm.

⁹ New Jersey Department of Health, “Meets Physical Activity Recommendations, Age-Adjusted, 2017,” *New Jersey State Health Assessment Data*, April 6, 2020: www.doh.state.nj.us/doh-shad/query/result/njbrfs/RecPhysicalAct/RecPhysicalActAA11_.html.

¹⁰ New Jersey Department of Health, “No Leisure Time Activity, 2017,” *New Jersey State Health Assessment Data*, April 6, 2020: www.doh.state.nj.us/doh-shad/query/result/njbrfs/PhysInact/PhysInactAA11_.html.

People who live in walkable and bikeable communities—as opposed to those who live in auto-dependent neighborhoods—can more easily incorporate physical activity into their daily activities. Short walks or bike rides to work, the grocery store, a park, or other community facilities allow people to be more active in their day-to-day and count towards the recommended 150 minutes per week.

IT'S GOOD FOR THE ECONOMY

Studies have shown that pedestrian- and bicycle-friendly communities provide economic benefits, too. Walkable and bikeable communities tend to have higher property values, appeal to residents and employees with higher levels of educational attainment, attract tourists, decrease transportation costs for residents, and support more vibrant and resilient retail centers. A report by the CEO for Cities found that “Homes located in more walkable neighborhoods—those with a mix of common daily shopping and social destinations within a short distance—command a price premium over otherwise similar homes in less walkable areas.” More specifically, they noted that a one-point increase in Walk Score® was associated with a \$500 to \$3,000 increase in home values.¹¹

Other studies have shown that pedestrian- and bicycle-friendly communities with a mix of uses nearby are good for local businesses and shops. Walkers and bikers are traveling more slowly than drivers and can more easily see and visit stores along their routes. Additionally, a study on grocery shopping patterns by mode choice showed that while bicyclists and pedestrians spent less than drivers in a single trip, they often made more trips, spending more money than drivers over the course of a month.¹² A recent DVRPC study of

¹¹ Cortright, Joe. *Walking the Walk: How Walkability Raises Home Values in U.S. Cities*. Impresa, Inc. for CEOs for Cities, August 2009: community-wealth.org/sites/clone.community-wealth.org/files/downloads/report-cortright.pdf.

¹² Clifton, Kelly J., Sara Morrissey, and Chloe Ritter, “Exploring the Relationship Between Consumer Behavior and Mode Choice,” *TR News Issue 280*, May-June 2012: www.trb.org/Publications/Blurbs/167474.aspx.

downtowns in the Greater Philadelphia region found that downtowns that were walkable, near trails, had a mix of uses, and were located near housing were more resilient and better able to withstand the economic downturn associated with the COVID-19 pandemic.¹³

In addition to supporting the local retail environment, a 2019 study ranking walkable urban areas across America found that the walkability of a community “is significantly correlated with the educational attainment of its workforce and its gross domestic product per capita (GDP).”¹⁴ The study noted that many companies choose to locate their offices in more walkable areas in order to attract and retain skilled employees.

Finally, walkable and bikeable communities can reduce transportation costs for residents by allowing them to get to work and their daily errands by foot, bike, or transit instead of by car. This can mean big savings as AAA estimates the average annual cost of new car ownership to be \$9,282 (including fuel, maintenance, insurance, registration fees, and other costs); whereas the annual average cost of bicycle ownership is estimated to be around \$350–\$400.^{15,16}

IT'S GOOD FOR THE ENVIRONMENT

Walkable and bikeable communities can also improve the natural environment by helping to reduce greenhouse gas emissions and air pollution. According to DVRPC's 2015 Greenhouse Gas Inventory,

mobile sources, such as fossil-fuel powered vehicles on the region's roadways, accounted for emissions equivalent to 23.1 million metric tons of carbon dioxide (CO₂)—nearly a third of the region's greenhouse gas emissions.¹⁷ A study by the University of Oxford's Transport Studies Unit found that people who “switch just one trip per day from car driving to cycling reduce their carbon footprint by about 0.5 tonnes over a year, representing a substantial share of average per capita CO₂ emissions.”¹⁸ Another study found that a 5 percent increase in neighborhood walkability was associated with a 6.5 percent decrease in vehicle miles traveled (VMT) per capita, a 5.6 percent decrease in grams of nitrogen dioxide (NO₂) per capita, and a 5.5 percent decrease in grams of volatile organic compound (VOC) emitted per capita.^{19,20}



Cyclist

Source: Greg Krykewycz, DVRPC

¹³ Delaware Valley Regional Planning Commission, “Diverse Downtowns,” *Community Resilience*, accessed September 2021: www.dvrpc.org/communityrevitalization.

¹⁴ Hadden Loh, Tracy, Christopher B. Leingerger, and Jordan Chafetz. *Foot Traffic Ahead: Ranking Walkable Urbanism in America's Largest Metros*, The George Washington University School of Business and Smart Growth America, 2019: community-wealth.org/sites/clone.community-wealth.org/files/downloads/report-cortright.pdf.

¹⁵ AAA Automotive, “Average Annual Cost of New Vehicle Ownership,” accessed September 2021: www.aaa.com/autorepair/articles/average-annual-cost-of-new-vehicle-ownership.

¹⁶ Yeager, Jeff, “How Bicycling Can Save You Big Money: Pedal Your Way to More Spending Power,” *AARP*, July 21, 2017: www.aarp.org/money/budgeting-saving/info-2017/save-money-bike-commuting.html.

¹⁷ Delaware Valley Regional Planning Commission, *Regional Energy Use and Greenhouse Gas Emissions Inventory*, accessed September 2021: www.dvrpc.org/energyclimate/Inventory/.

¹⁸ Imperial College London, “Ditching the car for walking or biking just one day a week cuts carbon footprint,” *Science Daily*, 8 February 2021: www.sciencedaily.com/releases/2021/02/210208104624.htm.

¹⁹ Frank, Lawrence et al., “Many Pathways from Land Use to Health: Associations between Neighborhood Walkability and Active Transportation, Body Mass Index, and Air Quality,” *Journal of the American Planning Association*. 72. 75-87. 2006: www.researchgate.net/publication/232928984_Many_Pathways_from_Land_Use_to_Health_Associations_between_Neighborhood_Walkability_and_Active_Transportation_Body_Mass_Index_and_Air_Quality.

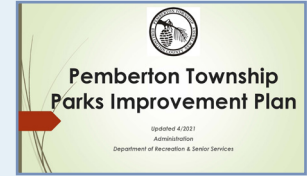
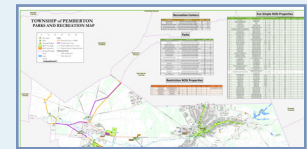
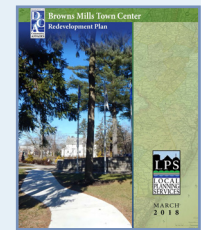
²⁰ When exposed to sunlight NO₂ and VOCs can combine to form harmful ground-level ozone, which has been associated with many poor health outcomes.

Previous Studies

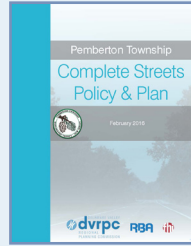
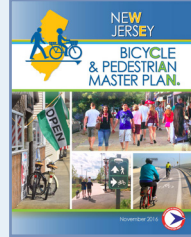
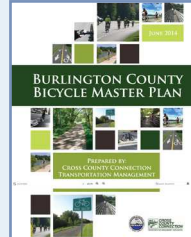
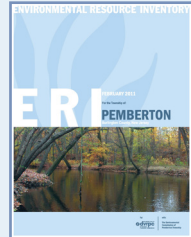
Many previous studies have examined bicycle and pedestrian transportation in and around Browns Mills, including the [Pemberton Township Complete Streets Plan](#) (2016), the [Burlington County Bicycle Master Plan](#) (2014), and the [Browns Mills Town Center Redevelopment](#)

[Plan](#) (2018). This plan draws ideas and inspiration from these prior documents and builds on the work contained within them. See Table 1 for a summary of the most relevant previous plans.

TABLE 1: PREVIOUS STUDIES

PREVIOUS STUDIES		
PEMBERTON TOWNSHIP PARKS IMPROVEMENT PLAN 2021	<p>This document details the state of the township’s current recreational amenities, including playgrounds, beaches, trails, boat launches, and open space. It notes that while some parks and amenities have been upgraded, most are in need of revitalization. It also acknowledges that the lack of access routes, trails, and bike lanes can make it hard to travel throughout the township. The plan details specific improvements and associated costs that the recreation department will undertake over the next five years.</p>	
TOWNSHIP OF PEMBERTON PARKS AND RECREATION MAP 2020	<p>This map depicts township-owned parks, recreation centers, and municipal buildings; existing and proposed trails and on-road bike lanes; and properties listed in the Recreation and Open Space Inventory maintained by the state Green Acres program. The map includes a proposed trail between Country Lakes Estates and Presidential Lakes Estates.</p>	
BROWNS MILLS TOWN CENTER REDEVELOPMENT PLAN 2018	<p>This plan is an update to the 2011 Browns Mills Town Center Redevelopment Plan and offers new strategies on a wide range of topics, including traffic circulation, Pinelands regulations, environmental constraints, demographic and market shifts, development patterns and bicycle and pedestrian issues. Within the Transportation Chapter, it specifically suggests that Rancocas Lane be designated as a bikeway between Browns Mills and the proposed County Trail. The plan also identifies the need to redesign Trenton, Juliustown, and Pemberton-Browns Mills Roads to reduce curb cuts, complete missing links in the sidewalk network, and improve the pedestrian experience with better design aesthetics.</p>	

PREVIOUS STUDIES (CONTINUED)

2016 PEMBERTON TOWNSHIP COMPLETE STREETS PLAN	<p>This plan and policy document provides a framework for improvements to the design, construction, operation, and maintenance of roadways throughout Pemberton Township, with the goal of making them safe and accessible for all travelers. It contains a multimodal street typology and corresponding design guidelines, as well as a draft Complete Streets resolution, which the township adopted on May 5, 2016.</p>	
2016 NEW JERSEY BICYCLE AND PEDESTRIAN MASTER PLAN	<p>This plan is the second update to the state's original bicycle and pedestrian plan, released in 1995 and updated in 2004. It presents a vision, goals, and strategies to support bicycling and walking as safe and easy ways to travel throughout the state. It highlights policies that have been adopted and projects that have been implemented since the 2004 update. The plan also provides guidance on implementation and measures to track the state's progress toward realizing the vision.</p>	
2014 BURLINGTON COUNTY BICYCLE MASTER PLAN	<p>This plan seeks to guide Burlington County staff, and their partners, on the development of the on-road bikeways (primarily county-maintained roadways) and multi-use trails to create a county-wide bikeway network. The plan includes a prioritized list of potential bikeway segments, design standards, and funding strategies. Two of the corridors chosen for this action plan were also included in the Burlington County Bicycle Master Plan:</p> <ul style="list-style-type: none"> • Pemberton-Browns Mills Road from the Pemberton Bypass to Trenton Road in downtown Browns Mills was listed as a high priority segment to be completed in the "Immediate" implementation phase. • Trenton Road from Pemberton Boulevard to Juliustown Road was listed as a secondary corridor to be completed in the long-term. 	
2011 PEMBERTON TOWNSHIP ENVIRONMENTAL RESOURCE INVENTORY	<p>This report documents the natural and community resources of Pemberton Township. The natural resource information includes descriptions, tables, and maps of: land use; soils; drinking water, aquifers, and wells; surface waters, including watersheds, streams, lakes, wetlands, and floodplains; impacts on water resources and surface water quality; impervious coverage; vegetation, including wetlands, forests, and grasslands; animal communities; threatened and endangered species; Natural Heritage Priority Sites; Landscape Project Priority Habitats; and known contaminated sites. Community resources that are briefly described include population, transportation, township utilities and services, historic sites and buildings, and protected open space. A short history of the community is also included.</p>	

Recent Investments

Pemberton Township and Burlington County have made significant investments in Browns Mills in recent years, improving the sidewalks, curb ramps, and pedestrian lighting throughout the downtown area. The township and county have also invested in updating and improving recreational facilities and trails throughout Browns Mills and Pemberton Township. A summary of some of the recent investments is included below.

SIDEWALK IMPROVEMENTS

- With \$400,000 from the New Jersey Department of Community Affairs's Small Cities Grant Program, the township was able to replace the existing, deteriorated sidewalks along Pemberton-Browns Mills Road between Trenton and Juliustown Roads with new, brick-lined sidewalks, curb cuts, and ADA ramps.
- In October 2020, the United States Department of Agriculture's Community Facilities Loan and Grant Program awarded \$234,000 to Pemberton Township, which was matched by \$200,900 from the township, to complete additional streetscape improvements along Pemberton-Browns Mills Road from Juliustown Road west to the end of the Browns Mills Town Center Redevelopment Area.

PARK IMPROVEMENTS

- The township has been making improvements to many of the township-owned parks, including installing new, safe playground surfaces, picnic tables, and benches, and repaving and repainting basketball courts.

TRAILS

- In 2018, the township received Safe Routes to Transit funding to support the construction of a pedestrian path and bridge over Ongs Run. The path connects Broadway to Evergreen Street.

- In 2021, the township completed a half-mile trail with fitness station through Nesbit Park approximately two miles east of Browns Mills.
- Burlington County received a Phase 7 Regional Trails Grant from DVRPC to study the feasibility of the Rancocas Creek Greenway Trail, which would run 11 miles from the South Branch of the Pemberton Rail Trail in Pemberton, south of Browns Mills and Country Lake Estates, to Route 70 and Brendan Byrne State Forest.



Trail over Ongs Run
Source: Derek Lombardi, DVRPC

Outreach and Stakeholders

ADVISORY COMMITTEE

DVRPC convened an Advisory Committee consisting of approximately 20 individuals representing 12 different organizations—including local and county government, transportation agencies, health care institutions, higher education institutions, environmental organizations, and community residents—to help guide the development of this plan. The Advisory Committee created a space for sharing local knowledge and developing a deeper understanding of both the community's and local governments' priorities for improving bicycle and pedestrian facilities in and around Browns Mills. Advisory Committee members were invited to attend three virtual meetings between 2020 and 2022. The first meeting in December 2020 introduced the project, reviewed the existing conditions, and discussed potential focus areas. The second meeting in June featured a presentation of the survey results and discussion around the selected corridors. The third meeting was held in March 2022 to present and discuss the proposed bicycle and pedestrian improvements.

PUBLIC SURVEY

The DVRPC team developed an online survey to learn more about people's experiences walking and biking in Browns Mills, specifically in the four selected areas. The survey also sought to collect feedback on preferred bicycle and pedestrian improvements (see Appendix A for a copy of the survey). The survey was distributed electronically through the Advisory Committee, the township's webpage, and through social media. Pemberton School District shared the survey with parents and students and the Pemberton Recreation Department shared paper copies of the survey at their senior centers. Almost 300 people participated in the survey. A summary presentation of the survey results can be found in Appendix B.

KEY STAKEHOLDER MEETINGS

The DVRPC team also met with representatives from Pemberton Township, Burlington County, NJDOT, the Pinelands Commission, Pinelands Preservation Alliance, and the JB MDL throughout the planning process.



Social Media Outreach
Source: DVRPC



CHAPTER 2: Existing Conditions

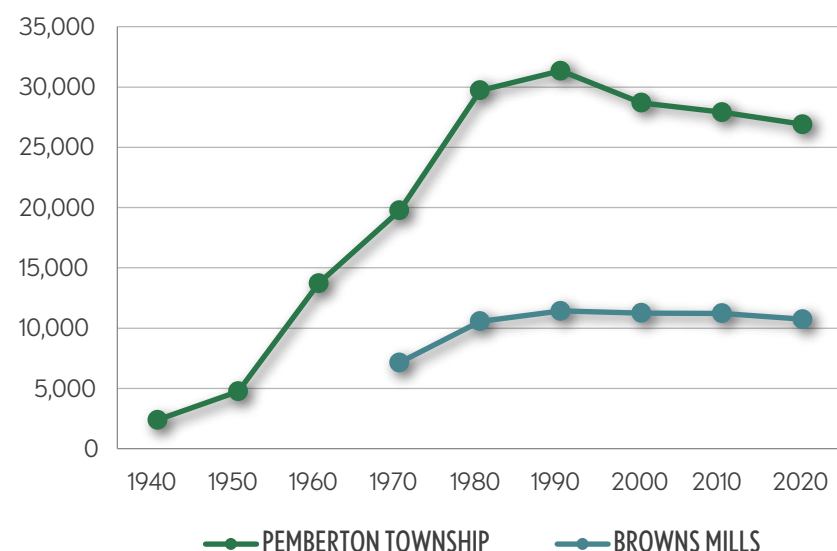
This chapter provides an overview of Browns Mills' demographics, health, land use, and existing transportation conditions.

Demographics

POPULATION

As of 2020, approximately 10,734 people live in Browns Mills.²¹ Browns Mills' population has remained largely steady since 1980, declining just over 6 percent from its peak of 11,429 residents in 1990. See Figure 2 for additional details.

FIGURE 2: POPULATION BY DECADE



Source: U.S. Census Bureau; 1940–2020

AGE

The median age in Browns Mills is 36, which is much lower than both the county and the state median ages of 42 and 40, respectively. This may be due to the fact that Browns Mills has a slightly higher percentage of children than the county and the state (24 percent in

²¹ U.S. Census Bureau, 2020 Census of Population and Housing.

Browns Mills, 21 percent in Burlington County, and 22 percent in New Jersey) and a slightly lower percentage of adults 65 years or older (13 percent in Browns Mills, 17 percent in Burlington County, and 16 percent in New Jersey).²²

INCOME AND UNEMPLOYMENT

The median household income for Browns Mills is \$63,833, approximately \$20,000 less than the median income of Burlington County and the state as a whole.²³

The percentage of residents living in poverty is directly related to income. Although the poverty level varies based on family size and composition, the weighted average poverty level for a family of four in 2019 was \$26,172.²⁴ Approximately 10 percent of Browns Mills residents live below the poverty line. This is almost double the county's poverty rate (6.1 percent) but is very similar to the township and the state poverty rates.

Additionally, the unemployment rate in Browns Mills (10.6 percent) is nearly double that of the county (5.7 percent) and the state (5.5 percent).²⁵

SNAP ENROLLMENT

As of 2019, 11.6 percent of households in Browns Mills received Supplemental Nutrition Assistance Program (SNAP) benefits.²⁶ While this is equivalent to the national average, it is higher than the township (7.8 percent), county (5.0 percent), and state (8.7 percent).

²² 2015-2019 ACS 5-Year Estimates, DP05 "ACS Demographic and Housing Estimates."

²³ 2015-2019 ACS 5-Year Estimates, DP03 "Selected Economic Characteristics" and S1701, "Poverty Status in the Past 12 Months."

²⁴ U.S. Census Bureau, Current Population Survey, 1960 to 2021 Annual Social and Economic Supplements (CPS ASEC), "Table 1. Weighted Average Poverty Thresholds for Families of Specified Size: 1959 to 2020," accessed October 2021: www2.census.gov/programs-surveys/cps/tables/time-series/historical-poverty-people/hstpov1.xlsx.

²⁵ 2015-2019 ACS 5-Year Estimates, S2301 "Employment Status."

²⁶ 2015-2019 ACS 5-Year Estimates, S2201 "Food Stamps/Supplemental Nutrition Assistance Program (SNAP)."

RACE AND ETHNICITY

Browns Mills is more racially diverse than the state, where 23.4 percent of Browns Mills residents identified as Black or African American compared to 16.9 percent of county residents and 13.5 percent of state residents. Additionally, 10.4 percent of Browns Mills residents identify as Two or More Races, compared to 3.8 percent of county residents and 2.7 percent of state residents. Only 3.4 percent of Browns Mills residents identified as Asian, which is lower than the county (5.1 percent) and the state (9.5 percent).²⁷ See Figure 3 for additional details.

The percent of Browns Mills residents that identify as an ethnic minority such as Hispanic or Latino (9.8 percent) is lower than the

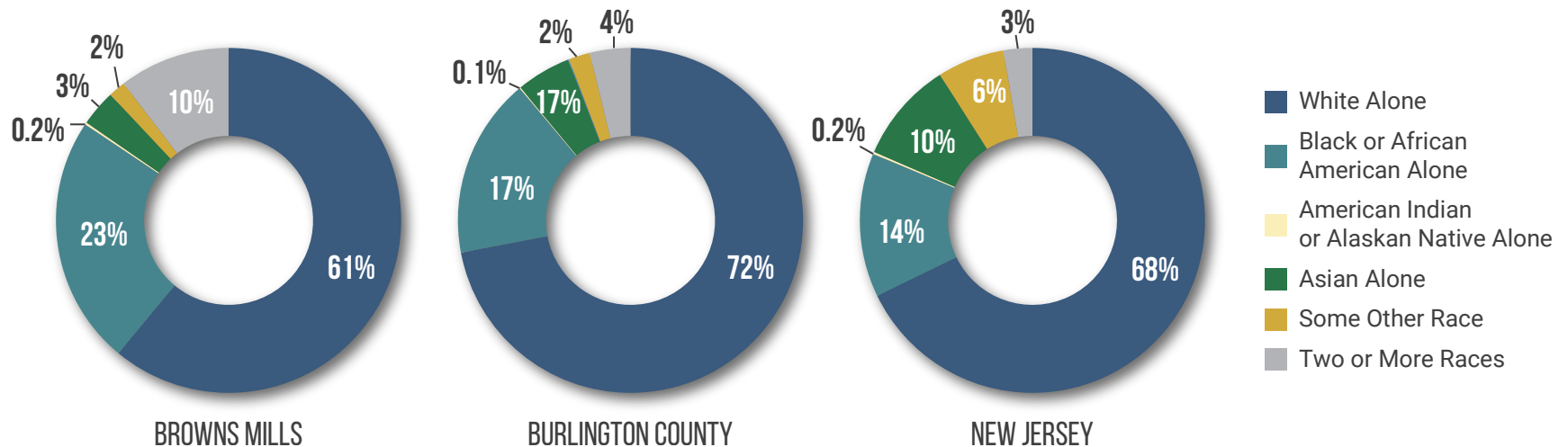
state average of 20.2 percent and the township average of 12.4 percent. It is still slightly higher than the county overall.

EDUCATIONAL ATTAINMENT

In Browns Mills, 92.9 percent of residents over the age of 25 hold a high school diploma or higher, which is slightly higher than the township and state rates. However, only 13.1 percent of Browns Mills residents have obtained a bachelor's degree or higher, which is almost three times less than the county (38 percent) and state (39.7 percent) rates for residents with bachelor degrees or higher. Eleven percent of Browns Mills residents have obtained their associate degree. State programs can make associate degrees more attainable, although there are fewer opportunities available than at the bachelor's level.²⁸

²⁷ 2015–2019 ACS 5-Year Estimates, S0601, "Selected Characteristics of the Total and Native Populations."

FIGURE 3: RACIAL COMPOSITION COMPARISON, 2019



²⁸ 2015–2019 ACS 5-Year Estimates, S1501, "Educational Attainment."

Source: 2015–2019 ACS 5-Year Estimates, S0601, "Selected Characteristics of the Total and Native Populations."

Health

Chronic diseases, such as heart disease, diabetes, obesity, and cancer, are the leading causes of death not only locally, but also across the country and world. Although they are some of the most common and costly health problems, they have also been found to be the most preventable. Although the rates of some of the most prevalent chronic diseases are not available for Browns Mills or Pemberton Township, rates in Burlington County are generally higher than the state as a whole, except for rates of adult asthma. More details can be found in Table 2 below.

TABLE 2: ADULT CHRONIC DISEASE RATES

	BURLINGTON COUNTY	NEW JERSEY	UNITED STATES
ADULT OBESITY	28.2	27.2	31.3
ADULT DIABETES	14	11	10.5
ADULT ASTHMA	7.2	8.5	9.4
ADULT CORONARY HEART DISEASE	5	3.7	3.9

Sources: New Jersey Behavioral Risk Factor Survey Data 2017; www.doh.state.nj.us/doh-shad/ and CDC BRFSS Prevalence and Trends Data 2017; nccd.cdc.gov/BRFSSPrevalence/rdPage.aspx?rdReport=DPH_BRFSS.

HEALTH INSURANCE

Much like the rest of Burlington County, Browns Mills and Pemberton Township have a higher percentage of insured individuals of all ages compared to the state. Vulnerable populations like children under 18 and adults over 65 also have high rates of insurance, with nearly 100 percent of older adults and 98 percent of children having health insurance. Individuals aged 19 to 25 have slightly lower levels of health insurance (90.1 percent). Governmental programs, including the Children's Health Insurance Program and Medicare, provide free or

low-cost health insurance for many children and older adults; however, there are fewer subsidized health insurance programs for able-bodied, working-age adults.

DEBORAH COMMUNITY HEALTH NEEDS ASSESSMENT

The Patient Protection and Affordable Care Act of 2010 requires tax-exempt hospitals to develop a community health needs assessment (CHNA) every three years. The CHNA must define the community that the hospital serves and assess the health needs of that community, with input from community members. Deborah's 2019 CHNA identified "access to care, behavioral health needs, chronic disease prevention and management, growing health and social needs among seniors, and reducing health and social disparities" as the region's top health concerns. The CHNA reported that individuals from the federally-designated Medically Underserved Areas of Browns Mills and Pemberton Township encounter significant economic and health disparity.²⁹ More specifically, it noted that life expectancy in the Pemberton Borough/Township and Browns Mills area was less than 75 years, compared to a life expectancy of 75 to 81 years in the rest of Deborah's identified service area. The CHNA found that Burlington County emergency departments had 6,203 visits from Browns Mills residents related to chronic diseases (e.g., obesity, asthma, diabetes, heart disease, etc.), which was the second highest number of visits from a zip code within the county.

The CHNA also highlighted a concern for behavioral health conditions, including substance abuse and mental health needs. Among Burlington County municipalities, residents of Pemberton Township experience the highest number of admissions related to substance abuse. Military personnel and veterans are cited as being vulnerable to mental health concerns and should have services available to manage conditions like post-traumatic stress disorder and suicidal thoughts.

²⁹ Deborah Community Health Needs Assessment, 2019.

Land Use

GENERAL

As noted in the introduction, a significant portion of Browns Mills is natural, undeveloped area, with over 45 percent of the land within Browns Mills classified as wooded. Development is primarily concentrated in the town center along Broadway, Juliustown Road, Trenton Road, and Pemberton-Browns Mills Road. Approximately 35 percent of the land in Browns Mills is classified as residential, with the single-family housing making up the majority of residential uses. Commercial uses, like shopping centers and offices, and institutional uses, like schools, churches, and hospitals, account for about 5 percent of land within Browns Mills.

The whole study area of Browns Mills, Country Lake Estates, and Presidential Lakes (outlined in black in Figure 4) has similar percentages of land uses, with wooded areas accounting for 40 percent and residential areas accounting for 41 percent of all land. As shown in Figure 4, much of the land outside of the boundaries of the study area is wooded. See Table 3 and Figure 4 for additional information.

TABLE 3: 2015 LAND USE BY ACREAGE AND PERCENTAGE

CATEGORY	TOTAL STUDY AREA	% TOTAL STUDY AREA	TOTAL MAPPED AREA	% TOTAL MAPPED AREA
AGRICULTURE	146.6	2.8%	344.5	1.7%
COMMERCIAL	112.7	2.2%	152	0.7%
INSTITUTIONAL	75.4	1.5%	87.1	0.4%

FIGURE 4: LAND USE IN BROWNS MILLS

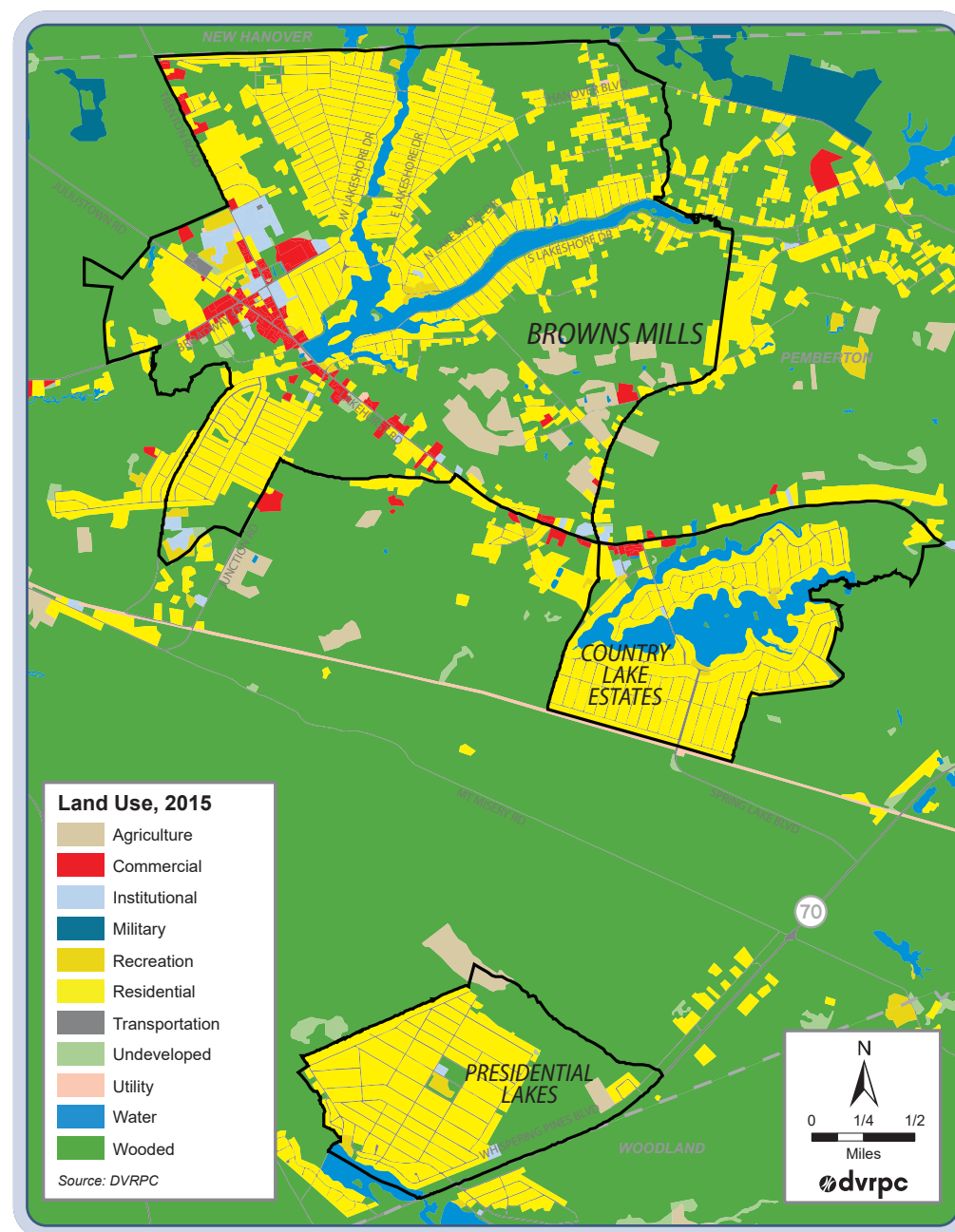


FIGURE 5: COMMUNITY AMENITIES AND FACILITIES IN BROWNS MILLS

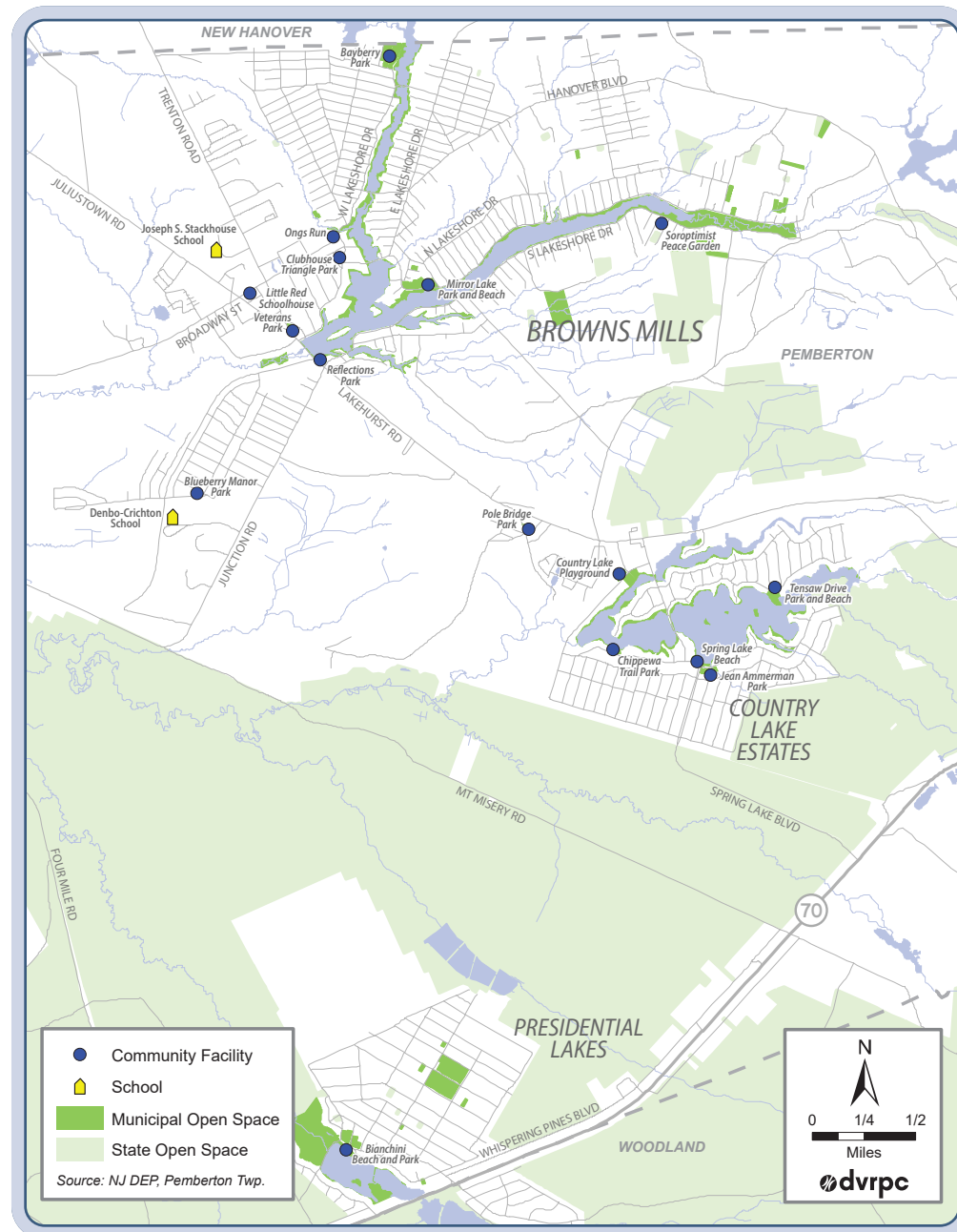


TABLE 3: 2015 LAND USE BY ACREAGE AND PERCENTAGE (CONT.)

CATEGORY	STUDY AREA	% STUDY AREA	TOTAL MAPPED AREA	% TOTAL MAPPED AREA
MILITARY	0.1	0.0%	512.1	2.5
RECREATION	51	1.0%	88.2	0.4%
RESIDENTIAL	2,096.1	40.7%	2,806.4	13.5%
TRANSPORTATION	284	5.5%	432.5	2.1%
UNDEVELOPED	19.4	0.4%	157	0.8%
UTILITY	3.6	0.1%	50	0.2%
WATER	361.13	7.0%	547.37	2.6%
WOODED	2,002.5	38.9%	15,674.3	75.2%
TOTALS	5,152.5	100%	20,851.5	100%

Source: DVRPC, 2015.

COMMUNITY AMENITIES AND FACILITIES

As shown in Figure 5, Browns Mills is home to several parks, including Bayberry Park, Blueberry Manor Park, Reflections Park, and Mirror Lake Beach. Country Lake Playground, Jean Ammerman Park, Tensaw Drive Park, and Bianchini Beach and Park are located in the neighboring Country Lakes and Presidential Lakes communities. The amenities allow residents and visitors to enjoy the community's plentiful recreational spaces like its lakeshore and numerous playgrounds. Browns Mills is also close to several multi-purpose facilities available to the public such as Dominique Johnson Center, the Country Lakes Clubhouse and Nesbit Center.³⁰

³⁰ Pemberton Township Recreation Department. "Facilities," Accessed January 2022: pemberton.recdesk.com/Community/Facility.

Transportation

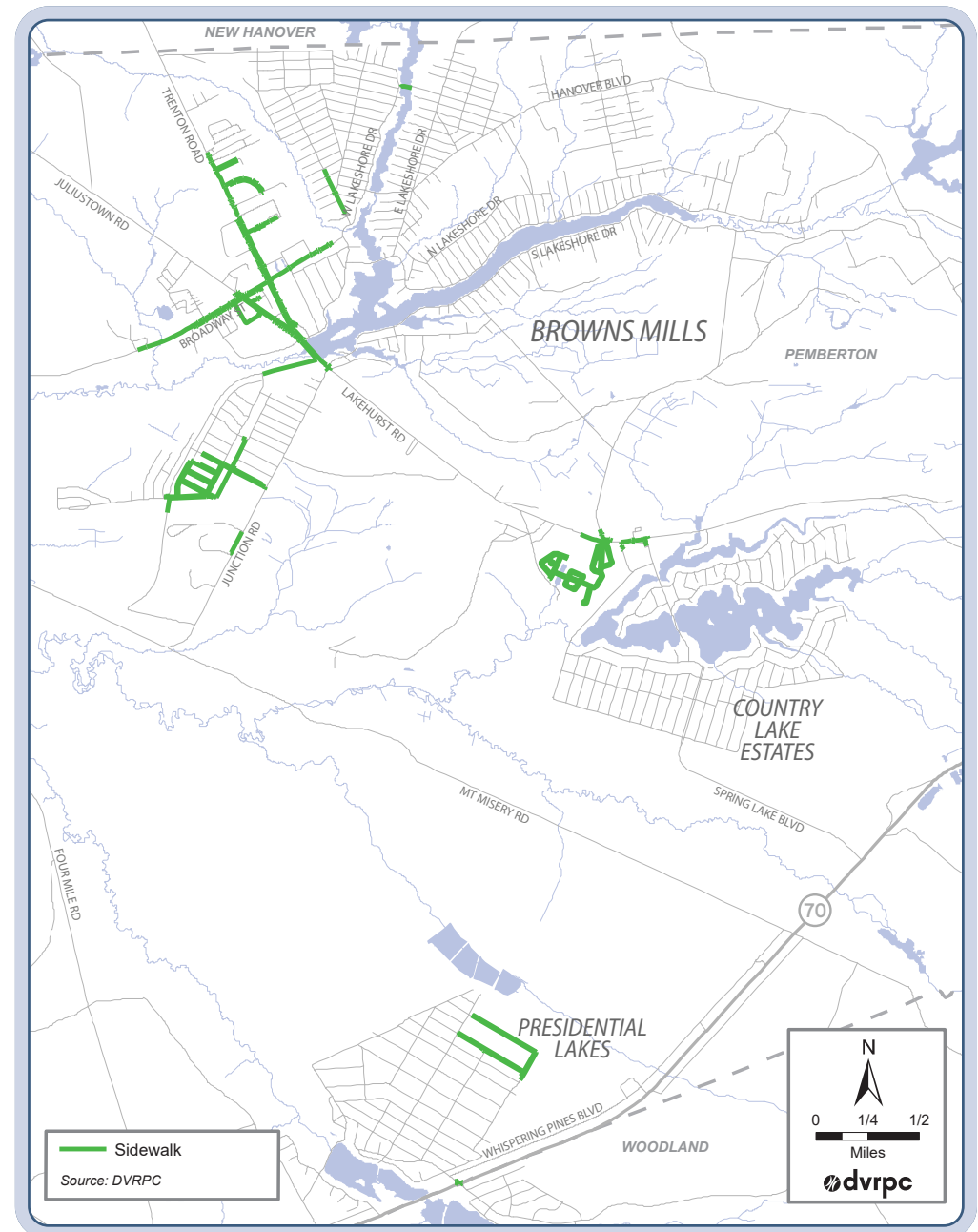
EXISTING BICYCLE, SIDEWALK, AND TRAIL NETWORKS

In Browns Mills, 0.7 percent of people commute by bike and 2.5 percent commute by foot. Although these numbers may seem low, the percent of Browns Mills residents walking and biking to work is higher than the county for both walking and biking (1.1 and 0.1 percent, respectively) and higher than the state for biking (0.3 percent). Statewide walking to work rates are slightly higher at 2.8 percent.³¹

SIDEWALK NETWORK

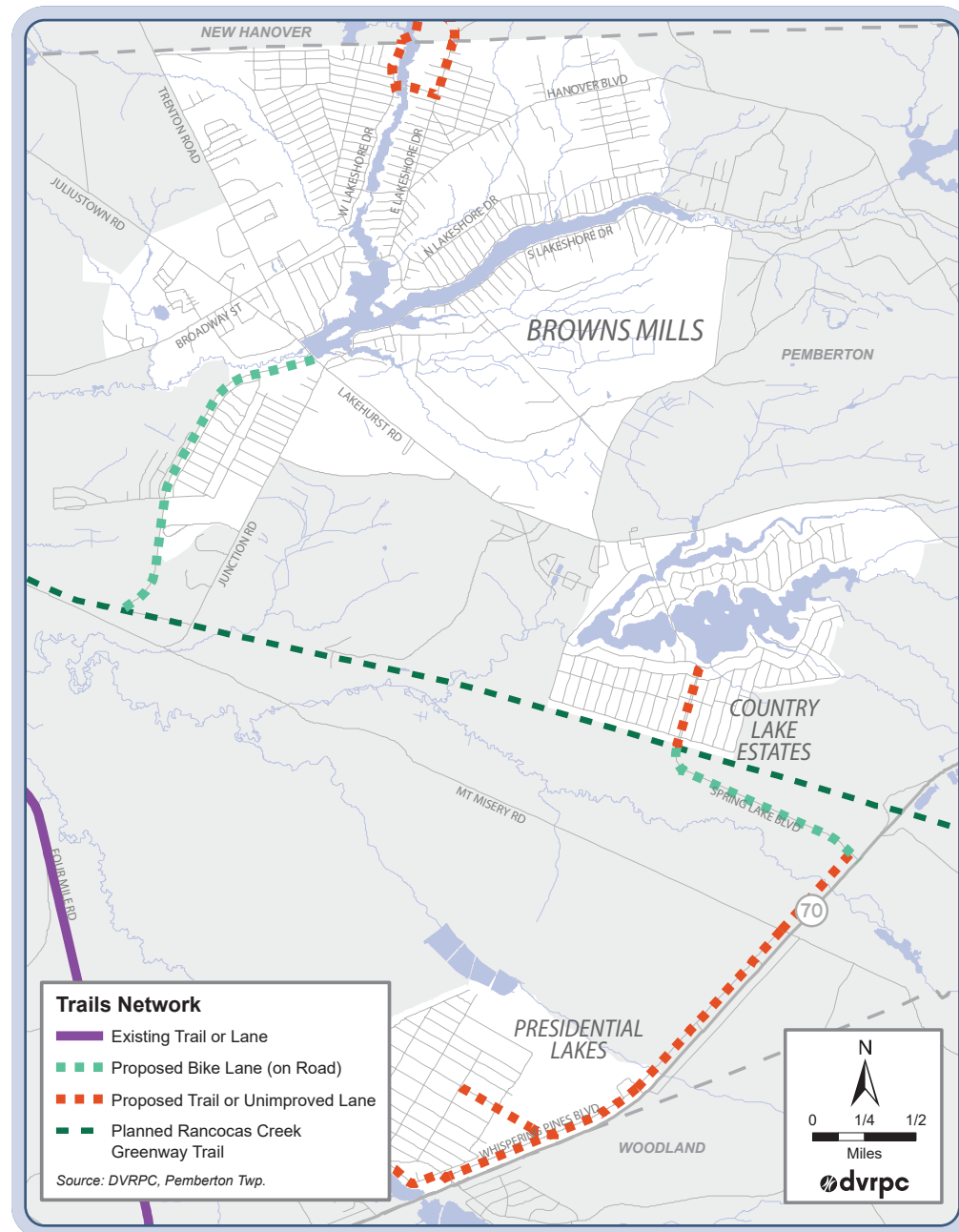
There are sidewalks located along a number of Browns Mills' arterial roads, especially in the Town Center. The township has made improvements to much of the downtown sidewalk network in recent years, replacing cracked pavement, adding a decorative brick border, and installing pedestrian scale lighting. Despite these improvements, some of the sections of sidewalk are isolated and may not connect to either the community amenities or other neighborhoods. Additionally, many of the sidewalks are interrupted by frequent curb cuts and driveways, increasing potential conflict with cars. See Figure 6 for a map of the sidewalk network in Browns Mills.

FIGURE 6: SIDEWALK NETWORK IN BROWNS MILLS



³¹ 2015–2019 ACS 5-Year Estimates, S0801, "Commuting Characteristics by Sex."

FIGURE 7: TRAIL NETWORK



TRAIL NETWORK

Although there are currently very few trails located within Browns Mills, Pemberton Township is working with numerous stakeholders, including Burlington County's Department of Resource Conservation, to expand opportunities for walking and biking. Several extensions of the existing Pemberton Rail Trail are currently in the planning phase, including the Rancocas Creek Greenway Trail shown in dark green on Figure 7: Trail Network. Figure 7 also shows the planned routes for the township-proposed bike lanes and trails, originally documented in the [Township Parks and Recreation Map](#).



Kinkora Trail in Burlington County
Source: Shawn Megill Legendre, DVRPC

LEVEL OF TRAFFIC STRESS

DVRPC maintains a regional Level of Traffic Stress (LTS) assessment that classifies the comfort of roads for cyclists based on a variety of road characteristics, including number of lanes, vehicle speed, and the presence of bicycle facilities, such as bike lanes. Roads are classified from LTS 1 (most comfortable) to LTS 4 (least comfortable). Figure 8 shows that many of Browns Mills' residential streets are comfortable for cycling but lack interconnections due to stressful conditions on the more major arterial roads, such as Juliustown Road, Trenton Road, Lakehurst Road, Broadway, and Lakeshore Drive. For more information on LTS and the regional connectivity analysis, please visit www.dvrpc.org/webmaps/bike-lts/.



Pemberton Boulevard looking East
Source: Derek Lombardi, DVRPC

FIGURE 8: LEVEL OF TRAFFIC STRESS

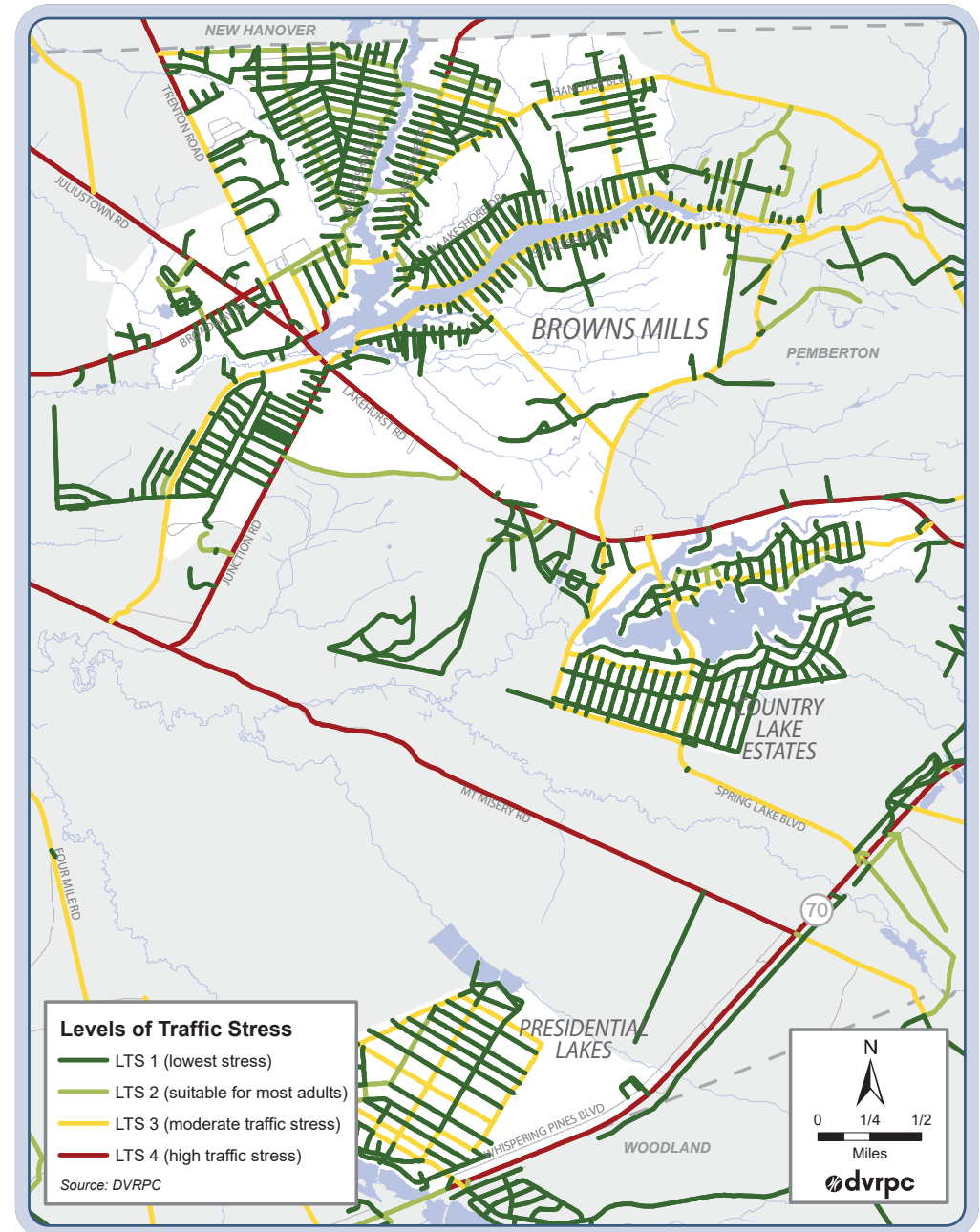
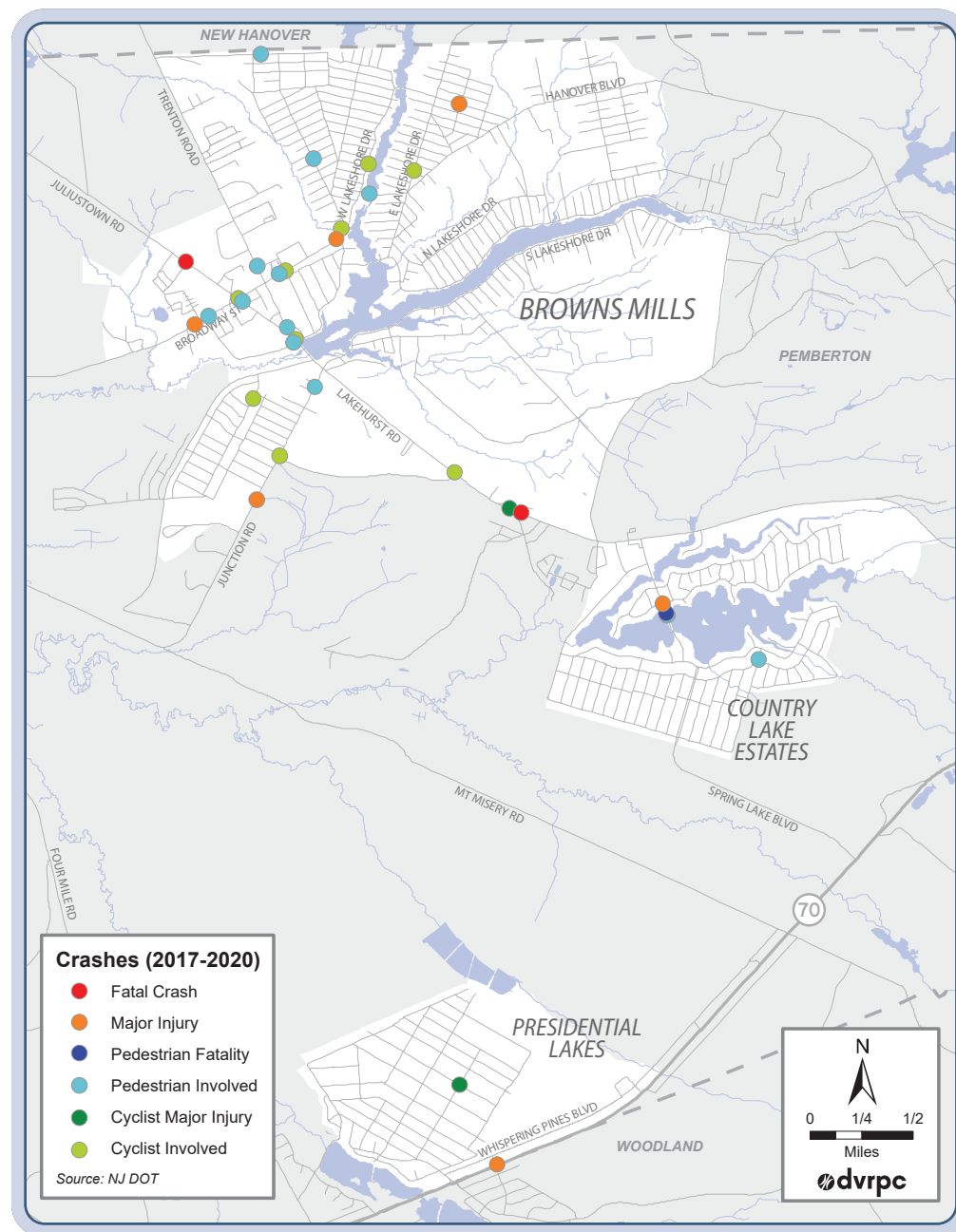


FIGURE 9: CRASHES



CRASHES

There were 907 crashes reported in the study area during the years 2017–2020, including three fatal crashes, 261 injury crashes (eight of which involved a suspected serious injury), and 645 property damage-only crashes. The crash trend was relatively consistent over the four-year study period, with 202 crashes in 2017, 267 crashes in 2018, 218 crashes in 2019, and 220 crashes in 2020. Rear-end collisions were the most common type at 23 percent (211 crashes), followed closely by hit fixed object crashes at 22 percent (201 crashes).

PEDESTRIAN AND BICYCLIST CRASHES

During the 2017–2020 analysis period there were a total of 14 pedestrian and 11 bicyclist crashes, representing 9.6 percent of all injury crashes. One of the pedestrian crashes resulted in a fatality (one of the three total fatalities reported in the study area between 2017 and 2020). Fifteen of the 25 combined pedestrian and bicyclist crashes occurred under dark lighting conditions. As shown in Figure 9, most of the pedestrian and bicycle crashes are concentrated in the Town Center area on Pemberton-Browns Mills, Juliustown, Lakehurst, and Trenton Roads.

According to local press, at least two additional fatal crashes—not included in the data above—occurred within the study area. One occurred on Lakehurst Road near Choctaw Drive and resulted in a pedestrian fatality. The second fatal crash happened on Lakehurst Road, near Rancocas Lane. These additional, more recent reports, combined with the crash data, show that many of the higher-severity crashes occurred further from the Town Center, where speeds are often higher and bicycle and pedestrian amenities may be lacking.

Road Ownership

- Local
- County
- State
- Other:
 - Belaire Estates, LLC
 - Pemberton Township Schools
 - Central Jersey Power & Light

Source: NJ DOT, Pemberton Twp.

Many of the major arterial roads in Browns Mills are owned and maintained by Burlington County, including Pemberton-Browns Mills Road, Broadway, Trenton Road, and Lakehurst Road. The New Jersey Department of Transportation (NJDOT) owns Routes 70 and 72. The majority of the neighborhood roads are owned by Pemberton Township, with a few exceptions, including various sections of Rancocas Lane that are privately owned by the Pemberton Board of Education and Jersey Central Power and Light (JCP&L). See Figure 10 for more information on road ownership.

Approximately 92 percent of Browns Mills households have access to at least one vehicle, which is slightly higher than the statewide rate of 89 percent and slightly lower than the county (98 percent) and township (97 percent). Additionally, 42 percent of Browns Mills households have access to three or more vehicles, compared to 32 percent of households statewide. Less than 1 percent of Browns Mills residents commute by public transportation. The high rate of vehicle ownership is understandable given Browns Mills' location, lack of transit options, and car-centric development patterns.

TRANSIT

Browns Mills is served by two bus routes: New Jersey Transit Route 317 and the BurLINK B1. NJ Transit Route 317 operates between Camden City and Asbury Park, connecting Browns Mills to many destinations including Fort Dix to the east and Mt. Holly, Moorestown, and Cherry Hill to the west. Route 317 operates seven days per week, with headways ranging from one to two hours.

The BurLINK B1 bus route is operated by the Cross County Connection TMA and runs between Beverly to the east and Country Lakes to the west, with interim stops in Pemberton Borough, Mt. Holly, Lumberton, Westampton, and Willingboro. The B1 only operates on weekdays with headways of about an hour.



BurLINK B1 Bus Stop on Scammell Drive

Source: Derek Lombardi, DVRPC



CHAPTER 3:

Bicycle and Pedestrian Toolkit

This chapter provides descriptions and examples of a number of the improvements proposed in the subsequent chapter.

Bicycle and Pedestrian Toolkit

This plan provides detailed recommendations to improve bicycle and pedestrian mobility along five priority segments in and around Browns Mills. The pedestrian access recommendations focus on enhancing the existing sidewalk network through both new and improved pedestrian crossings. New bicycle-oriented interventions for the area, including pavement markings, signage, on-road lane separation, and off-road trails, are recommended to create clear and safe options for bicyclists. Many of the facilities are [Federal Highways Administration \(FHWA\) Proven Safety Countermeasures](#) that have been shown to be effective at reducing roadway fatalities and serious injuries. Many are also featured in greater detail in the [Pemberton Township Complete Streets Policy and Plan](#) and the [New Jersey Bicycle Safety Action Plan Toolbox](#). Descriptions and examples of a number of these recommendations are shown below.

BICYCLE FACILITIES

Bike lanes are the most familiar type of bicycle facility. They designate an exclusive space in the roadway for bicyclists through the use of pavement markings and signage. Bike lanes facilitate predictable behavior and movements between motorists and bicyclists, and enable bicyclists to ride at their preferred speed without interference from prevailing traffic conditions. The minimum bike lane width is five feet when adjacent to a curb, gutter, or parking lane. Various types of bicycle lanes as well as other facilities designed to accommodate bicycle travel within the public right-of-way are discussed below. Bike lanes are an FHWA Proven Safety Countermeasure and have been shown to reduce crashes by up to 30 to 49 percent, depending on the roadway context and type of bicycle facility.³²

1 CONVENTIONAL BIKE LANES

A conventional bike lane is located adjacent to motor vehicle travel lanes and flows in the same direction as motor vehicle traffic. Bike lanes are typically on the right side of the street, between the adjacent travel lane and curb, road edge, or parking

³² U.S. Department of Transportation, Federal Highway Administration, "Proven Safety Countermeasures," February 25, 2022: safety.fhwa.dot.gov/provencountermeasures/.



Bike Lane | Washington Monroe Bikeway, Gloucester, NJ
Source: John Boyle, Flickr



Buffered Bike Lane | Morris Road, Montgomery County, PA
Source: John Boyle, Flickr



Protected Bike Lane | Rancocas Creek Trail
Source: John Boyle, Flickr

lane. Bicyclists may leave the bike lane to pass other bicyclists, make left turns, avoid obstacles or debris, and avoid other conflicts.

2 BUFFERED BIKE LANES

Buffered bike lanes are conventional bicycle lanes paired with a designated, striped buffer space separating the bicycle lane from the adjacent motor vehicle travel lane and/or parking lane. Buffered bike lanes appeal to a wider cross-section of bicycle users and can create more comfort for bicyclists on streets with high traffic volume, faster speeds, regular truck traffic, or high parking turnover.

3 PROTECTED BIKE LANES

Protected bike lanes physically separate cyclists from vehicular traffic, parking, and sidewalks. Also known as cycle tracks, these lanes may be one-way or two-way and the type of separation can vary from bollards to a landscaped median. In situations where on-street parking is allowed, protected bike lanes are located to the curb-side of the parking (in contrast to conventional bike lanes). By separating cyclists from motor traffic, these types of facilities can offer a higher level of security than unprotected bike lanes and are attractive to a wider spectrum of the public.

4 SHARED LANE MARKINGS

Shared Lane Markings, or “sharrows,” are road markings that can create a safer bicycling environment on streets that cannot accommodate a bicycle lane. Shared lane markings alert motorists to the presence of bicyclists and their position in the street. These markings can also help identify bicycle networks and connections between bicycle facilities. Shared lane markings are most appropriate for lower volume, lower speed streets that can accommodate bicycling without geometric changes.

5 BIKE COMPATIBLE SHOULDERS

Bike compatible shoulders allow cyclists to use existing roadway shoulders for travel without formal bike lane striping. They should be clear of debris and snow and should have bicycle-friendly inlet grates. Bike compatible shoulders are most appropriate where shoulders over four feet already exist or in rural areas. Where feasible, bike lanes should be used in place of bike compatible shoulders.



Sharrows | Silver Spring, MD
Source: Dan Reed, Flickr



Bike Compatible Shoulder in D'Iberville, MS
Source: Alta Planning + Design via FHWA Small Town and Rural Multimodal Networks

6 BICYCLE BOULEVARDS

A bicycle boulevard, also known as a neighborhood greenway, is a low-volume and low-speed street that has been optimized for bicycle travel through treatments such as traffic calming elements like chicanes and speed tables, signage and pavement markings, and intersection crossing treatments. These treatments allow cyclists to travel comfortably while discouraging similar through trips by nonlocal motorized traffic. Bicycle boulevards are best suited for two-lane residential streets without a centerline where vehicle traffic can be restricted to low volumes and slow speeds.

7 GREEN COLORED PAVEMENT

Colored pavement can be utilized as a corridor treatment along the length of a bike lane or cycle track, or as a spot treatment, such as a bike box, conflict area, or intersection crossing marking. In the United States, most colored lanes are green since the American Association of State Highway and Transportation Officials has given interim approval for the use of green colored pavement for bike lanes.

8 INTERSECTION CROSSING MARKINGS

Pavement markings such as bike boxes and intersection crossing markings are two tools that can reduce the risk of crashes and increase bicyclist comfort. A bike box is a designated area at the head of a signalized intersection that allows cyclists to safely queue ahead of vehicles during a red signal phase. They help cyclists safely execute left turns or wait in a visible area before they proceed straight or turn right. Bicycle pavement markings through intersections guide bicyclists on a safe and direct path through the intersection and alert motorists to yield to bikes before turning.



Bicycle Boulevard | Rancocas Creek Greenway
Source: John Boyle, Flickr



Conflict Area Striping | Green Lake Neighborhood, Seattle, WA
Source: Seattle Department of Transportation, Flickr



Bike Box | Portland, OR
Source: Greg Raisman, Flickr

PEDESTRIAN FACILITIES

Sidewalks, crosswalks, and curb ramps are three of the most obvious and critical elements of the pedestrian network. Sidewalks should enable an active, safe, and comfortable pedestrian environment that serves multiple public functions, including space for walking, landscaping, and lighting. As noted on page 17, many of the major arterial roads in downtown Browns Mills have sidewalks alongside them. While there are opportunities to construct additional sidewalks and create more pedestrian connections among Browns Mills' neighborhoods and destinations, this report focused largely on improvements that could be made within the existing paved right-of-way, including crosswalks and other intersection treatments that can improve pedestrian safety and comfort.

9 CONTINENTAL CROSSWALKS

A crosswalk is the portion of the roadway designated for pedestrians to use to cross the street, channeling pedestrian crossing activity to designated, predictable, and marked areas. The continental stripe pattern (shown in image 9) is the most visible marking pattern and stands up well to surface wear. Crosswalks should be designed to minimize crossing distances and should be straight, to make them easier for people with visual impairments to navigate. High-visibility crosswalks are an FHWA Proven Safety Countermeasure and have been shown to reduce pedestrian injury crashes by up to 40 percent.³³

10 PEDESTRIAN ISLANDS

Pedestrian safety or refuge islands break up the crossing distance at an intersection, thereby reducing the exposure time experienced by a pedestrian. Islands are most often installed at locations where speeds and volumes make crossings prohibitive, or where three or more lanes of traffic make pedestrians feel unsafe. Pedestrian islands should be at least six feet wide, but have a preferred width of eight to ten feet. Where a six-foot wide median cannot be attained, a narrower raised median is still preferable to nothing. All medians at intersections should have a "nose" which extends past the crosswalk to protect people waiting and slow down turning motorists.

³³ Ibid.



Continental Crosswalks | Dundee, MI
Source: Dan Burden, PedBike Images



Pedestrian Island | Boulder, CO
Source: Dan Burden, PedBike Images

11 RECTANGULAR RAPID FLASHING BEACON

Rectangular rapid flashing beacons (RRFBs) are active warning devices used to alert motorists of crossing pedestrians at uncontrolled crossings. They remain dark until activated by pedestrians, at which point they emit a bright, rapidly flashing yellow light, which cautions drivers to stop. RRFBs are another FHWA proven safety countermeasure and can increase yielding rates by up to 98 percent, depending on the roadway conditions and time of day. RRFBs are particularly effective on multi-lane roadways with speed limits below 40 miles per hour and should be used judiciously as overuse may result in decreased effectiveness.³⁴

12 CURB RADIUS REDUCTION

The curb radius at intersections is often designed to allow large vehicles to make a right turn without deviating from their traffic lane. However, wide curb radii are often underutilized by such vehicles, and instead, encourage cars to turn at high speeds. Reducing the turning radius to a tighter turn will lower turning speeds, shorten the crossing distance for pedestrians, and also improve sight distance between pedestrians and motorists. NACTO notes that materials such as epoxied gravel, planters, and bollards can be used to reduce a corner turning radius but should be considered a temporary option until funding becomes available for a more permanent treatment.

13 VISUALLY SEPARATED PEDESTRIAN LANES

A pedestrian lane is a designated space for pedestrians on roadways without an existing sidewalk. The lane may be on one or both sides of the roadway and can fill gaps between important destinations in a community. Because they do not provide physical separation from the travel lane, pedestrian lanes may be appropriate on roads with low to moderate speeds and volumes. They should be at least five to eight feet wide with optional buffer space. The FHWA notes that pedestrian lanes should be considered an interim or temporary facility, with sidewalks or another separated facility as a more permanent goal.

³⁴ Ibid.



Rectangular Rapid Flashing Beacon | Lower Merion, PA
Source: Montgomery County Planning Commission



Curb Radius Reduction at Fries Mill Road and Glassboro Cross Key Road
Source: John Boyle, Flickr



Visually Separated Pedestrian Lane | St. Charles, MN
Source: Alta Planning + Design, *Small Town and Rural Design Guide*

14 LEADING PEDESTRIAN INTERVALS

Leading pedestrian intervals (LPIs) allow pedestrians to enter an intersection at least three to seven seconds before vehicles. The additional time allows pedestrians to establish their presence within the intersection and increases their visibility. LPIs typically require adjustments to existing signal timing that are relatively low cost compared to other countermeasures. LPIs are another FHWA proven safety countermeasure and have been shown to reduce pedestrian-vehicle crashes at intersections by 13 percent.³⁵



Leading Pedestrian Interval | Wynnewood, PA
Source: Amy Verbofsky, DVRPC

³⁵ Ibid.

SHARED USE FACILITIES

The following facilities accommodate users of different modes within the same space.

15 ROAD DIET

A road diet is a roadway reconfiguration that removes one or more vehicular travel lanes to improve safety, calm traffic, and enhance access for all road users. A road diet typically involves converting an existing four-lane, undivided roadway segment to a three-lane segment consisting of two through lanes and a center, two-way left-turn lane. Depending on the context, the space gained can be used for bicycle lanes, expanded sidewalks, or some other purpose. Road diets result in fewer lanes for pedestrians to cross and more consistent speeds as turning vehicles make use of the dedicated left-turn lane. They are a FHWA Proven Safety Countermeasure and have been shown to result in a 19 to 47 percent reduction in total crashes.³⁶

16 SHARED USE SIDEPATH

A sidepath is a bidirectional shared use path located immediately adjacent and parallel to a roadway. Sidepaths can offer a high-quality experience for users of all ages and abilities as compared to on-roadway facilities in heavy traffic environments, allow for reduced roadway crossing distances, and maintain rural and small town community character.



Road Diet | Presidential Boulevard in Lower Merion, PA was converted from a road with two lanes in each direction to a road with one travel lane and a bike lane in each direction, with a continuous turn lane.
Source: Montgomery County Planning Commission



Princeton Avenue Shared Use Sidepath in Philadelphia
Source: John Boyle, Flickr

³⁶ Ibid.



CHAPTER 4:

Proposed Improvements

This chapter proposes a set of recommendations that will enhance bicycle and pedestrian mobility in and around Browns Mills.

Proposed Improvements

The study team developed the following set of bicycle and pedestrian recommendations after synthesizing input from the township, the Advisory Committee, and residents with data on the existing land use, demographics, and transportation networks. The recommendations work together to create a bicycle and pedestrian network that not only connects the residential neighborhoods in and around Browns Mills to the Town Center but also connects Browns Mills to other regional destinations.

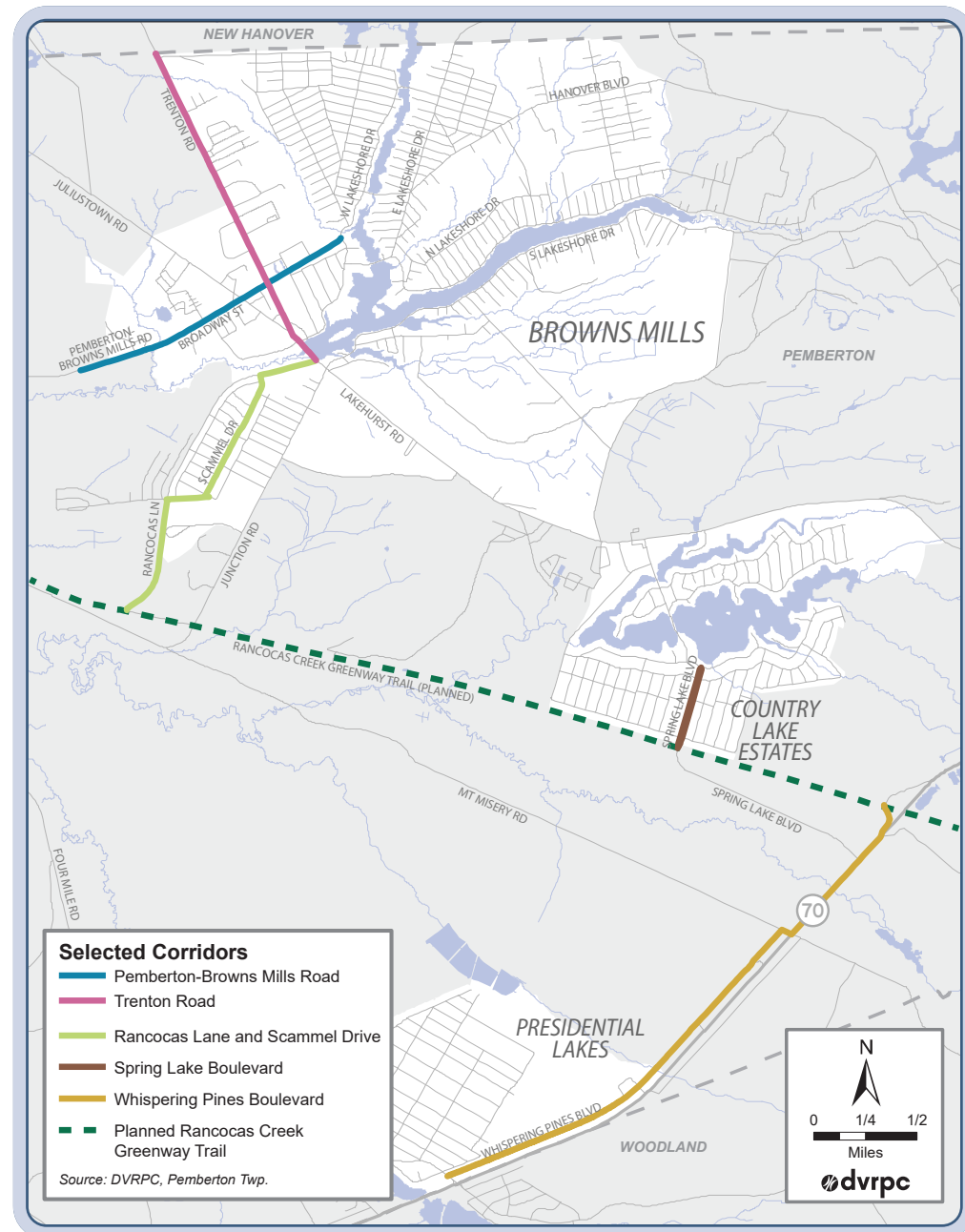
The following section reviews the existing conditions and provides specific bicycle and pedestrian recommendations for each of the five road segments listed below and shown in Figure 11:

- Pemberton-Browns Mills Road (CR-530/667)
- Trenton Road (CR-545)
- Lakehurst Road (CR-530)
- Rancocas Lane/Scammell Drive/Weymouth Road
- Spring Lake Boulevard/Whispering Pines Boulevard

As noted in Chapter 2: Existing Conditions, some of the roadways are owned by the county and will require coordination with the county to implement and maintain many of the recommended improvements. Additionally, the figures included in this section are conceptual drawings intended to illustrate the proposed improvements and may not be to scale.

This section also includes brief descriptions of three additional facilities that the township may want to explore to continue to connect communities and expand bicycle and pedestrian access in and around Browns Mills.

FIGURE 11: SELECTED CORRIDORS



Pemberton-Browns Mills Road

EXISTING CONDITIONS

The following section details the existing conditions on and around Pemberton-Browns Mills Road between Browns Mills Avenue to the west and Dover Place/Ongs Run trail to the east.

LOCATION AND OWNERSHIP

Within downtown Browns Mills, Pemberton-Browns Mills Road (CR-530/667) partly comprises County Routes 530 and 667 and stretches roughly 1.3 miles. It travels east-west, connecting Browns Mills to Pemberton Borough roughly four miles to the west, with major signalized intersections at Juliustown Road and Trenton Road, and terminating at Lakeshore Drive to the east. CR-667 is known as Broadway for roughly one half-mile, between Trenton Road and Lakeshore Drive. As a county route, Pemberton-Browns Mills Road is owned and maintained by Burlington County.



Pemberton-Browns Mills Road looking northeast from Juliustown Road
Source: Derek Lombardi, DVRPC

SURROUNDING LAND USE

Between Dickens Street and Trenton Road, the corridor has mostly commercial and institutional land uses, including the partly inactive Browns Mills Shopping Center for which redevelopment considerations are ongoing. To the east of Trenton Road is the Pine Grove Plaza shopping center, which includes an ACME grocery store, as well as a dollar store, gym, and pet store. Immediately to the east of this plaza is the Pemberton Community Library. As a result, Pemberton-Browns Mills Road has a number of curb cuts for access to adjacent properties and serves as a mostly auto-oriented retail and activity corridor. To the west and east of downtown, surrounding land uses are primarily residential or wooded.

ROADWAY CHARACTERISTICS

Through most of the downtown area, Pemberton-Browns Mills Road has two travel lanes—one in each direction—and a center lane that alternates between serving as a two-way left turn lane, dedicated left turn lane, and striped median. Lane widths vary across the corridor, but are generally between 10 and 12 feet with a few exceptions near certain intersections or transition areas.

Shoulders range in width as well. Most of the corridor has shoulders of at least three feet, but they shrink to as little as one foot between Juliustown Road and Market Street, and are as wide as around 12 feet near the Pine Grove Plaza shopping center.

Speed limits are highest at the western end of the segment: 45 miles per hour (mph) between Browns Mills Avenue and Dickens Street and 50 mph west of downtown. Between Juliustown and Trenton Roads—the narrowest part of the corridor—speed limits fall to 25 mph. On the remaining segments of Pemberton-Browns Mills Road (between Dickens Street and Juliustown Road, and between Trenton Road and Lakeshore Drive), speed limits are 35 mph.

PEDESTRIAN AMENITIES

Sidewalks are present on the north side of Pemberton-Browns Mills Road for nearly its full length in the downtown area. On the south side, less than a half-mile of sidewalks are available. The sidewalks are slightly narrow, ranging from three to five feet wide. In some areas a grass buffer separates the sidewalk from the curb and street, while in other areas the sidewalk is adjacent to the curb. Pedestrian-scale, globe-shaped lamp posts line the roadway between Dickens and Main streets, marking the entrance to downtown from the west and between Juliustown Road and the Pemberton Community Library, located near the intersection at Lakeshore Drive. The only marked pedestrian crossings are at the two signalized intersections, which feature ladder-style crosswalks, accessible curb ramps, and countdown timers. Just east of the library, the township recently constructed a trail and bridge over Onga Run, creating a safe connection between Broadway and Evergreen Boulevard by helping pedestrians to avoid traveling on the shoulder around the dangerous curve at Lakeshore Drive. Nearly all intersecting side streets have no crosswalks, or crosswalks have faded over time (see image below).



BurLINK B1 heading west on Pemberton-Browns Mills Road
Source: Derek Lombardi, DVRPC

BICYCLE FACILITIES

No formal bicycle facilities or amenities currently exist on Pemberton-Browns Mills Road. The Burlington County Bicycle Master Plan proposed bike lanes on the road between Pemberton Borough and Big Pine Lake, connecting to Cookstown via Lakeshore Drive. CR-530 and CR-667 are also partly designated segments on NJDOT's High Point to Cape May Bicycle Route.

TRANSIT ACCESS

New Jersey Transit's Route 317 has a few stops on Pemberton-Browns Mills Road, located near Newcomb Drive to the west of downtown and at Fairfield and Ashton streets in downtown Browns Mills. Bus shelters are provided only at westbound stops. The BurLINK B1 bus route travels on Broadway between Lakeshore Drive and Trenton Road.

CRASHES

Between 2017 and 2020, over 170 crashes were recorded on Pemberton-Browns Mills Road in the downtown area. Two of the crashes resulted in possible pedestrian injuries and another two resulted in possible bicyclist injuries. The crashes occurred near Berkshire Street, Juliustown Road, and Pear Avenue.

RECOMMENDATIONS

Recommended treatments for Pemberton-Browns Mills Road are detailed below and in Appendix C. A rough cost estimate for the proposed improvements can be found in Appendix I. Please note that as a county road, improvements to Pemberton-Browns Mills Road may require a shared services agreement between the county and township that may address installation, maintenance, and liability.

NARROW TRAVEL LANES TO 10–11 FEET, WHERE FEASIBLE.

Burlington County maintains a standard travel lane width of 11 feet, though some parts of the existing roadway already have lanes as narrow as 10 feet. On segments with lanes wider than 11 feet, they should be narrowed to calm vehicle traffic. This is especially true at the western edge of the segment, where eastbound vehicles entering downtown Browns Mills may be traveling at 50 mph or higher. The township may consider working with county engineers to conduct a speed study that explores extending the 35 mph limit zone, which begins near Dickens Street, farther to the west, where the limit is currently 45–50 mph. See Figure 12 and Figure 13.

ADD FIVE-FOOT (5') BICYCLE LANES TO SHOULDERS, WHERE FEASIBLE.

By narrowing the travel and turning lane widths as recommended above, the existing road width supports the addition of five-foot bicycle lanes between Browns Mills Avenue and Juliustown Road, and between Trenton Road and Lakeshore Drive. In the segment between Dickens and Brook streets, the bicycle lanes may need to be reduced to four-foot “bikeable shoulders” due to the narrower road width (see Figure 13). Signage should be used to indicate to motorists where bicycle lanes begin and end, and where to share the road in mixed traffic conditions. Cross-striping at key conflict points, such as intersecting roadways and driveways, also helps to enhance bicycle safety and ensure they are given the right-of-way by motorists.

ADD SHARROWS BETWEEN JULIUSTOWN ROAD AND TRENTON ROAD.

For the roughly 800-foot segment between Juliustown and Trenton Roads, the width does not support three vehicle lanes and two bicycle lanes. Instead, the county can paint sharrows to connect segments with dedicated bike lanes and alert users to the mixed traffic conditions. This segment already has a lower speed limit of 25 mph which helps to make biking more comfortable. The sharrows can be marked with a green paint background for additional visibility. Bicycle boxes should be placed at each approach to the intersection (west of Juliustown Road and east of Trenton Road) to help cyclists get ahead of through-moving and turning vehicles as they enter the mixed traffic segment. See Figure 16 and Figure 17.

ADD MEDIAN ISLANDS TO EXISTING GORED AREAS.

Vertical deflections in the median can help calm vehicle traffic at key locations where travel in the center lane is already prohibited. This includes the existing gored areas between Newcomb Drive and Dickens Street, and at the western approaches of Berkshire, Fairfield, Ashton, and Brook streets. Median islands can include landscaping to enhance sense of place, and utilize mountable curbs to allow emergency vehicles to travel over them if needed. See Figure 14.

ADD SAFE CROSSINGS AT FAIRFIELD STREET, MARKET STREET, AND PEAR AVENUE.

New crossings would create safe access across Pemberton-Browns Mills Road in areas of expectedly high pedestrian activity without forcing pedestrians to detour to one of the only existing crossings at Juliustown and Trenton Roads. A crossing at Fairfield Street gives pedestrians a shorter route between commercial uses to the west of Juliustown Road, including any potential reuse of the Browns Mills Shopping Center site, as well as the nearby NJ Transit bus stops. On the west side of Market Street, an existing set of curb ramps leads pedestrians to Pemberton-Browns Mills Road, but no crosswalk is

painted there. Adding a crosswalk completes this amenity and makes it safer to travel on foot between the Browns Mills United Methodist Church and various retail facilities to the south. By painting the crosswalks through proposed median islands, the crossing distance is broken up into two segments, and pedestrians have a safe place to wait before crossing a second lane. A crosswalk at Pear Avenue gives pedestrians a safe way to reach the Pine Grove Plaza shopping center from residential areas to the south of Broadway. Each crossing can be supplemented with Rectangular Rapid Flashing Beacons (RRFB), which allow pedestrians to manually activate LED lights warning approaching drivers to stop. See Figure 14, Figure 16, and Figure 18.

CONSIDER ACCESS MANAGEMENT TO NARROW OR CLOSE EXISTING DRIVEWAYS.

Pemberton-Browns Mills Road has several driveways with curb cuts over a short distance. On the quarter-mile stretch between Dickens Street and Juliustown Road, the eastbound lane has 10 curb cuts for business driveways in addition to the five intersecting side streets. This makes for several conflict points with pedestrians and bicycles, causing their travel experience to be less predictable, comfortable, and safe. Properties with multiple driveways could consolidate vehicle entry and exit to a single location, including from intersecting streets, thereby reducing the locations at which turning movements, cross-traffic, and conflicts can occur. See Figure 14 and Figure 15.

ADD BUS STOP AMENITIES.

Only westbound bus passengers have access to shelters at the Fairfield Street and Newcomb Drive NJ Transit stops. Adding the same facilities to eastbound stops, upgrading the shed structure at the westbound Newcomb Drive stop, and paving a waiting area outside of the shoulder at the eastbound Newcomb Drive stop would all serve to enhance the transit experience. See Figure 14.

REPAINT ALL INTERSECTING CROSSWALKS.

Nearly all of the intersecting side streets have no crosswalks or the crosswalks have faded over time. Painting or restriping crosswalks with a high-visibility continental design will support pedestrians' ability to safely navigate the existing sidewalk network, and also reinforce the need for turning auto traffic to consider and yield to crossing foot traffic. See Figure 12, Figure 13, and Figure 15 for illustrations of where crosswalks should be added or repainted.

CREATE NEW MULTIMODAL TRAFFIC PATTERNS AND AMENITIES AT THE BROWNS MILLS SHOPPING CENTER PROPERTY.

The township should be prepared to require any future redevelopment of the shopping center to install improved pedestrian and bicycle facilities on Pemberton-Browns Mills Road. This might include widened sidewalks or a multi-use sidepath that allows both pedestrians and bicyclists to travel off street. It could also include reducing the number of curb cuts into the site or providing additional streetscape amenities.

ADD LEADING PEDESTRIAN INTERVALS (LPI) AT JULIUSTOWN ROAD AND TRENTON ROAD.

LPIs at the two major signalized intersections would give pedestrians a few seconds to begin crossing before the green signal allows vehicles to turn. This contributes to a safer and more convenient experience for those traveling on foot, since they are more visible to motorists and their through movements are given priority over turning vehicle traffic. See Figure 15 and Figure 17.

FIGURE 12: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR PEMBERTON-BROWNS MILLS ROAD AT BROWNS MILLS AVENUE



FIGURE 13: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR PEMBERTON-BROWNS MILLS ROAD AT DICKENS AND BEVERLY STREETS

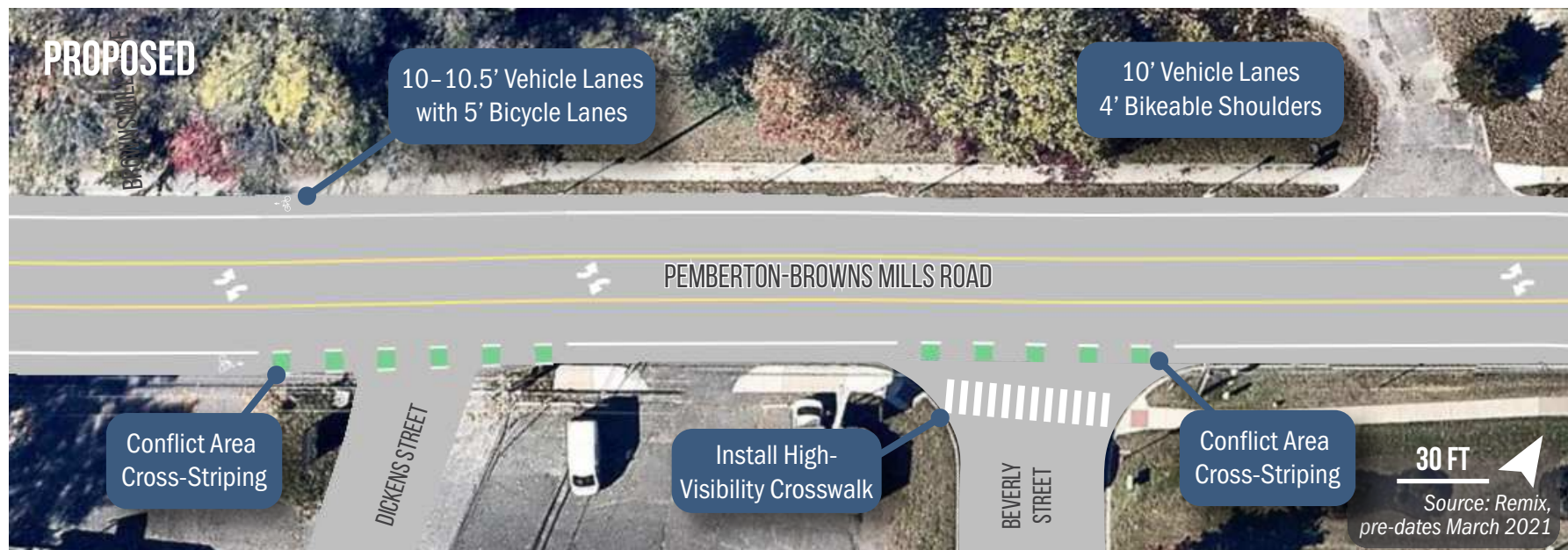
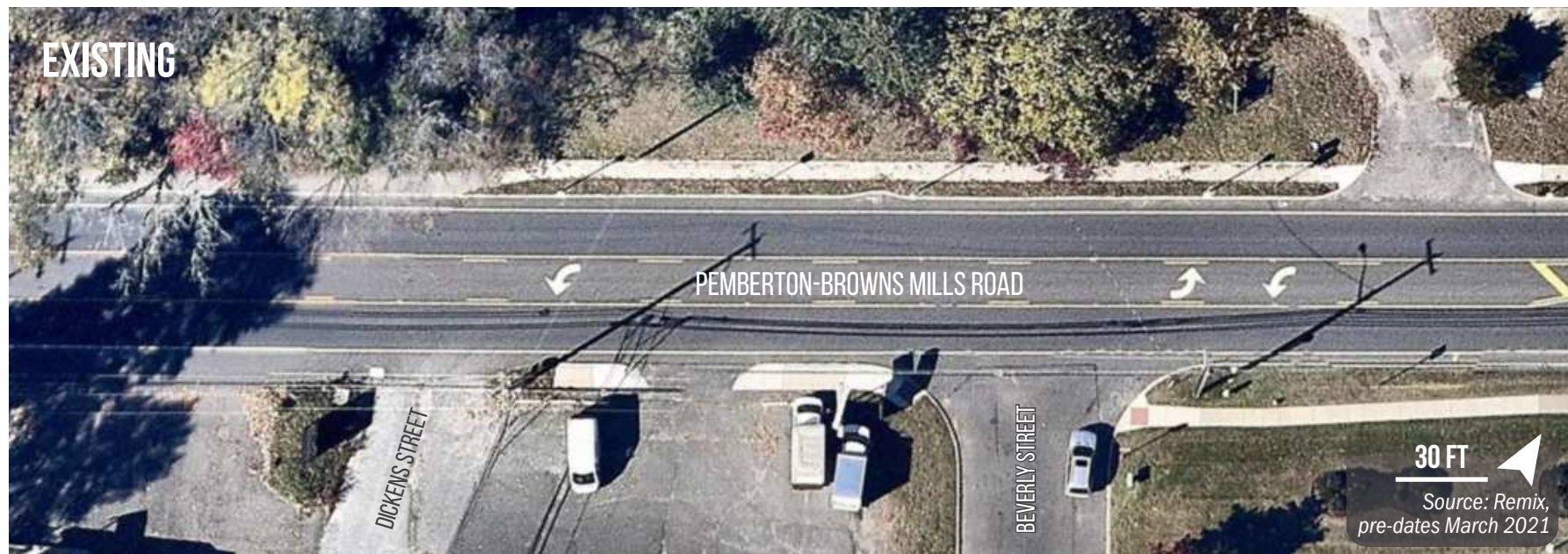


FIGURE 14: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR PEMBERTON-BROWNS MILLS ROAD AT FAIRFIELD AND ASHTON STREETS



FIGURE 15: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR PEMBERTON-BROWNS MILLS ROAD AT JULIUSTOWN ROAD

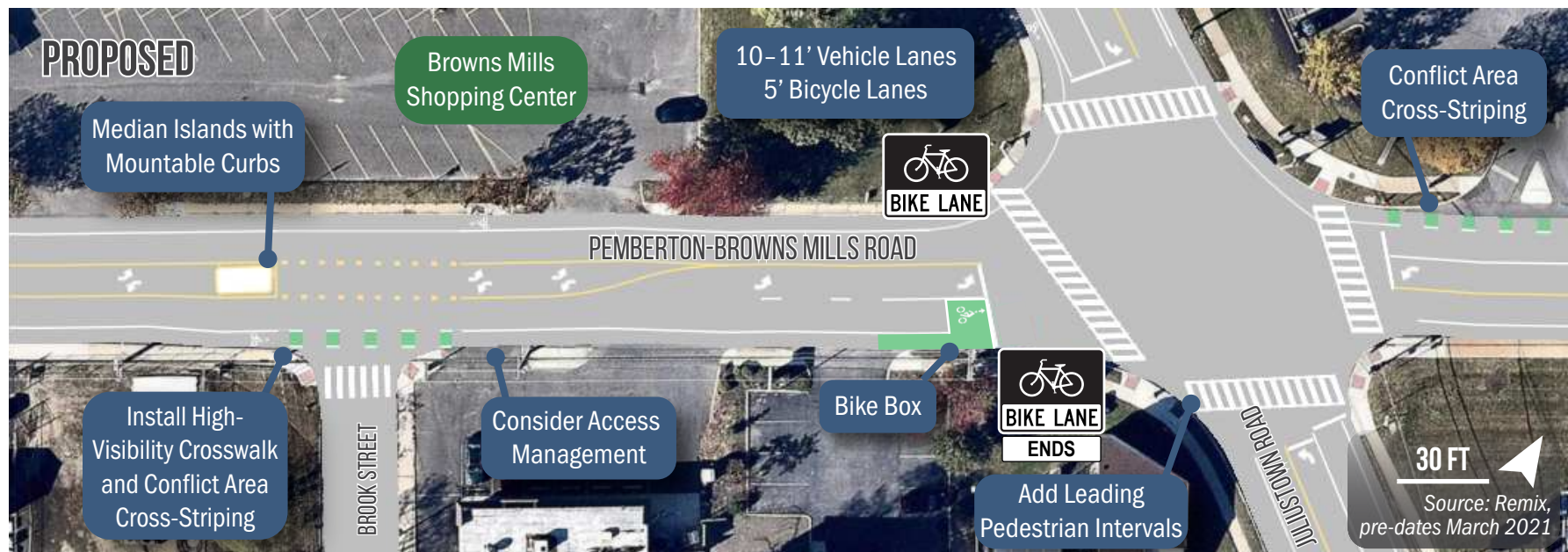
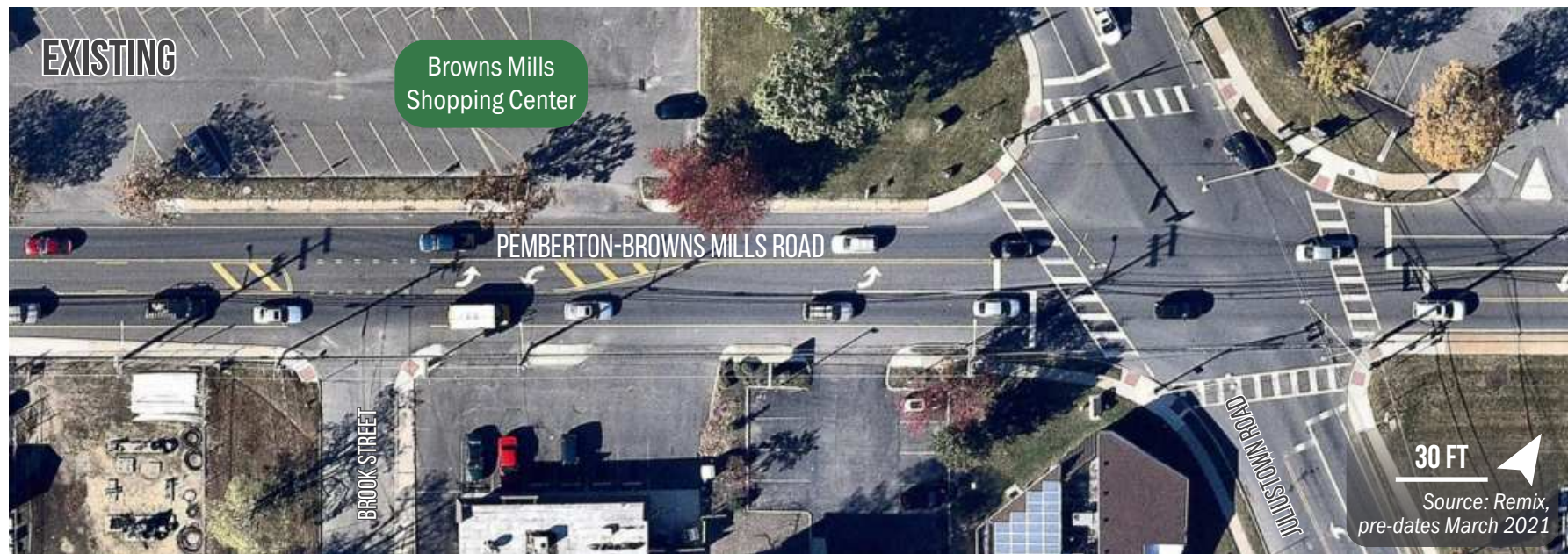


FIGURE 16: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR PEMBERTON-BROWNS MILLS ROAD BETWEEN JULIUSTOWN ROAD AND MARKET STREET

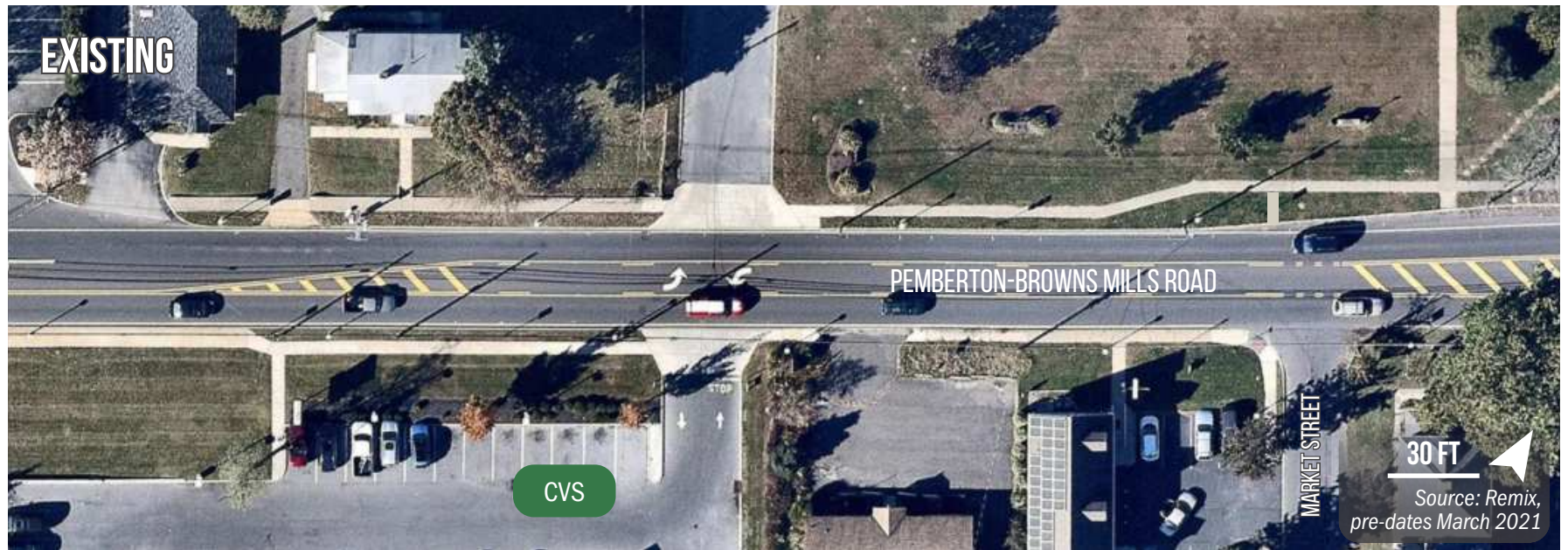


FIGURE 17: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR PEMBERTON-BROWNS MILLS ROAD AT TRENTON ROAD

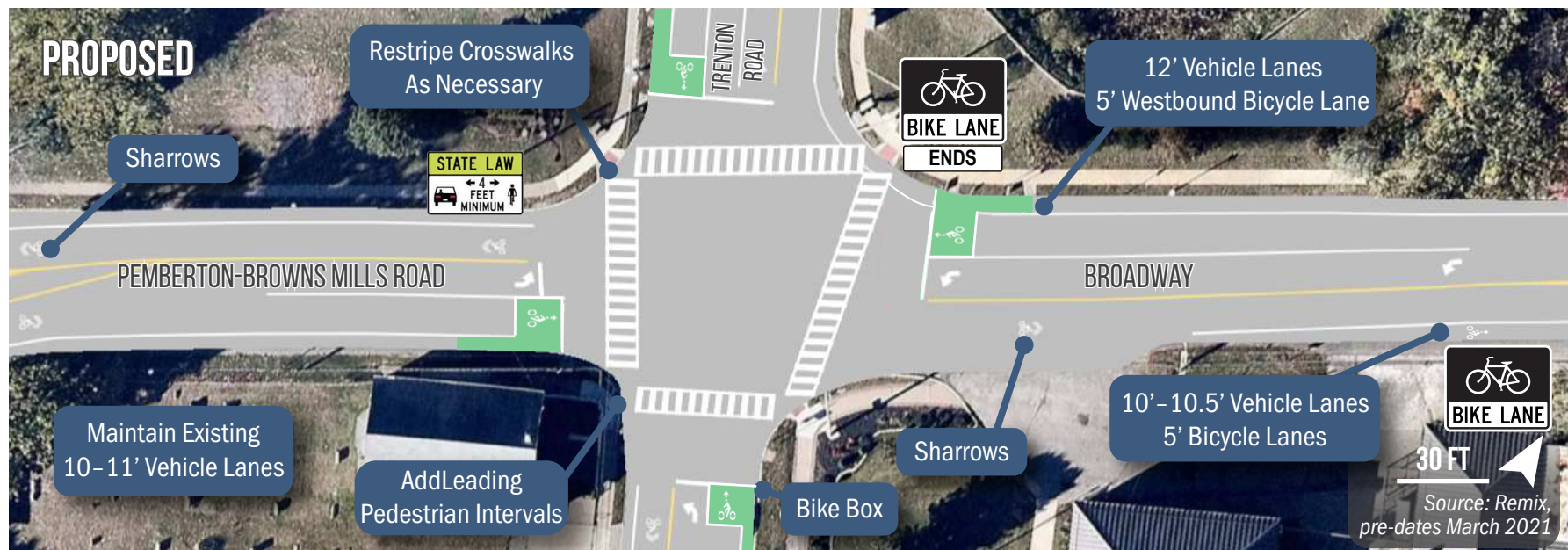
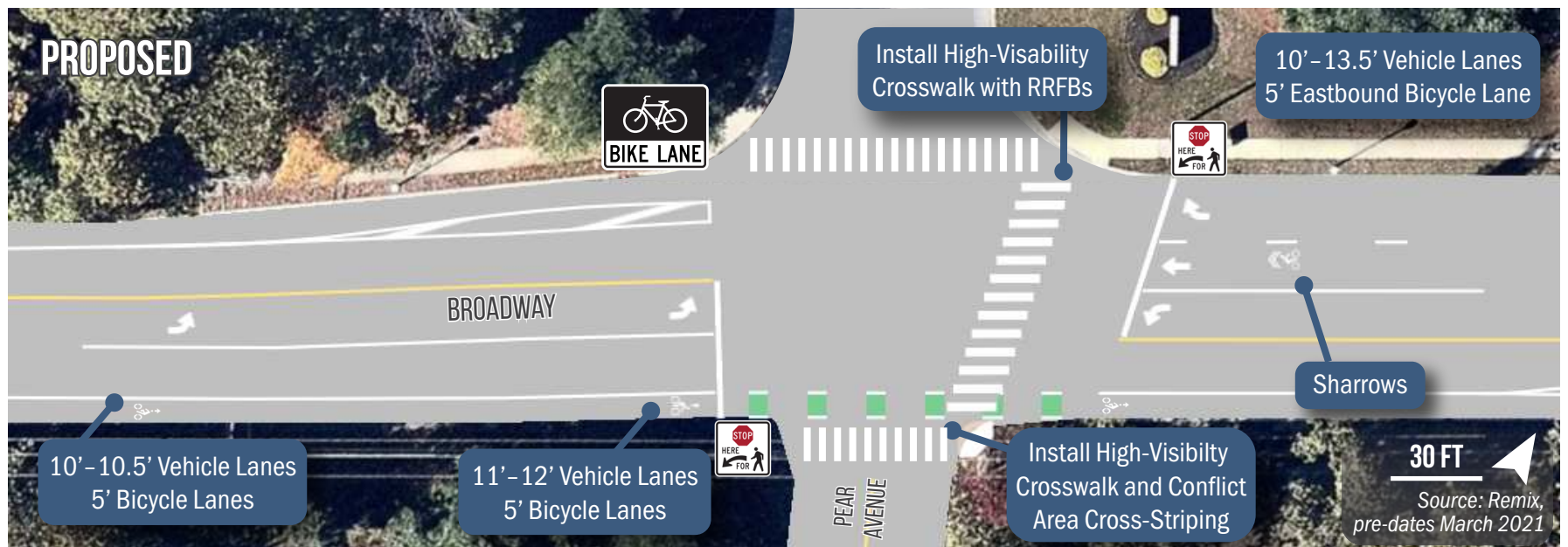


FIGURE 18: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR BROADWAY AT PEAR AVENUE



Trenton Road

EXISTING CONDITIONS

The following section details the existing conditions on and around Trenton Road between Pemberton Boulevard to the northwest and Lakehurst Road to the southeast.

LOCATION AND OWNERSHIP

Trenton Road (CR-545) makes up the southernmost part of County Route 545, which travels north-south between downtown Browns Mills, JB MDL (roughly one half-mile north), and upper areas of Burlington County. In Pemberton Township, CR-545 is roughly 1.5 miles between Pemberton Boulevard, north of downtown, and Lakehurst Road, where it forms a three-way Y-shaped, signalized intersection with Juliustown Road just to the south of downtown Browns Mills. The other major signalized intersection is with Pemberton-Browns Mills Road as discussed in the previous section. Access to CR-545 through JB MDL, where it is referred to as Texas Avenue, is restricted to base personnel. As a county route, Trenton Road is owned and maintained by Burlington County.

SURROUNDING LAND USE

Trenton Road has a mix of land uses, with a denser collection of auto-oriented commercial and institutional properties in the downtown area, including a gas station, fire station, bank, multiple churches and fast-food restaurants, and the township-owned Little Red School House. These are complemented by scattered multi-unit and single-family residences and the roughly one-acre Veterans Memorial Park. Near Pine Mill Court, the large Deborah hospital site and the Pemberton Township Schools campus occupy large tracts of land. To the north of Earlin Avenue, several residential communities define the west side of Trenton Road, like the Browns Woods Apartments and Hilltop Mobile Village, along with a few isolated commercial properties.

The east side of Trenton Road is entirely wooded to the north of the school district property.

ROADWAY CHARACTERISTICS

Along most of the corridor, Trenton Road has two travel lanes—one in each direction. Dedicated turn lanes are provided at the intersection with Pemberton-Browns Mills Road (southbound left and right, northbound left); at Pear Avenue, which leads into the Pine Grove Plaza shopping center (southbound left; northbound left and right); and at Lawrence Drive, where the Browns Woods Apartments are located (northbound right). Lane widths on Trenton Road are generally 10 to 11 feet.

Shoulders also vary in width. Between Pemberton Boulevard and Lawrence Drive, some segments have a combined shoulder width of under ten feet. For a short segment near Lawrence Drive, the northbound shoulder widens significantly but includes on-street parking. Shoulders reach a consistent width of at least eight feet on both sides between Earlin Avenue and Pine Mill Court. Near intersections at Pear Avenue and Pemberton-Browns Mills Road, shoulder widths shift between less than one foot and up to 13 feet. Shoulders are around five to eight feet wide for most of the roadway south of Pemberton-Browns Mills Road. On this segment, shoulders are narrowest near intersections and where dedicated turn lanes form, including at Pemberton-Browns Mills Road and adjacent to the northbound lane at Lakehurst Road.

Speed limits are highest at the northern end of Trenton Road, 40 mph between Pemberton Boulevard and Lawrence Drive. The limit is 35 mph between Lawrence Drive and Pemberton-Browns Mills Road, except for the school zone (25 mph) between Pine Mill Court and Pear Avenue. Between Pemberton-Browns Mills Road and Lakehurst Road, the speed limit is 30 mph.

PEDESTRIAN AMENITIES

Trenton Road has sidewalks on both sides between roughly Pine Mill Court and Circle Drive, or roughly 0.3 miles. The east (northbound) side of the road has about 1 mile of sidewalk from Chicks Way to Lakehurst Road. Sidewalks are generally about four feet wide. Most existing sidewalk is buffered from the curb and street by at least three feet of grass, with the exception of a roughly 470-foot stretch of sidewalk that is on the curbline on the east (northbound) side of the street just south of Pine Mill Road. Like Pemberton-Browns Mills Road, much of Trenton Road also has pedestrian-scale globe lights, which stretch on both sides between Pine Mill Court to Lakehurst Road, and extending from Chicks Way on the east (northbound) side.

There are seven marked pedestrian crossings including a mid-block, unsignalized crosswalk at Deborah hospital; ladder-style unsignalized crosswalks at Pine Mill Road, Pear Avenue, and Busansky Lane; ladder-style signalized crosswalks at Pemberton-Browns Mills Road/Broadway; and a transverse-style crosswalk at Lakehurst Road. The crossings at Pemberton-Browns Mills Road and Lakehurst Road include countdown timers, and all crosswalks include accessible curb ramps. Nearly all intersecting side streets have no crosswalks running parallel to Trenton Road, or crosswalks have faded over time. Just north of the intersection with Lakehurst Road, a few wide curb cuts may make walking less comfortable on the southbound side of the street, including near the gas station, realty office, and fire station.

BICYCLE FACILITIES

No formal bicycle facilities or amenities currently exist on Trenton Road. Trenton Road has an LTS level of 4 out of 4 (high stress) north of Dans Road and south of Pemberton-Browns Mills Road, and 3 out of 4 (moderate stress) between Dans Road and Pemberton-Browns Mills Road. The Burlington County Bicycle Master Plan proposed bike lanes south of Pemberton-Browns Mills Road, extending along Lakehurst Road to NJ Route 70.

TRANSIT ACCESS

The BurLINK B1 bus route travels on Trenton Road between Broadway and Lakehurst Road.

CRASHES

There were 79 crashes on Trenton Road between Pemberton Boulevard and Lakehurst Road from 2017 to 2020. Two resulted in suspected pedestrian injuries, occurring near Pear Avenue and Circle Drive. No bicyclist crashes were recorded during this time frame.



Little Red School House at the intersection of Trenton Road and Broadway Street
Source: Derek Lombardi, DVRPC

RECOMMENDATIONS

Recommended treatments for Trenton Road are detailed below and in Appendix D. A rough cost estimate can be found in Appendix I. Please note that as a county road, improvements to Trenton Road may require a shared services agreement between the county and township that may address installation, maintenance, and liability. Additionally, due to the narrow width on the northern extent of Trenton Road within Pemberton Township, recommendations only include segments between Dans Road and Lakehurst Road. They are as follows:

MAINTAIN MAXIMUM TRAVEL LANE WIDTHS OF 11 FEET, WHERE FEASIBLE.

Burlington County maintains a standard travel lane width of 11 feet, though some parts of the existing roadway already have lanes as narrow as 10 feet. Most of Trenton Road already meets this standard, so future restriping should maintain 11 feet as a maximum width, especially as potential pedestrian and bicycle facilities are added.

ADD FIVE-FOOT (5') BUFFERED BICYCLE LANES TO SHOULDERS, WHERE FEASIBLE.

Most of the existing road width supports the addition of five-foot bicycle lanes with a minimum buffer width of one foot between Dans Road and Lakehurst Road.

The following segments are too narrow to include buffers between the vehicle lanes and bicycle lanes:

- Chicks Way to the southern approach to Trainor Place;
- The southern approach to Dunkin' Donuts;
- Pear Avenue to Pemberton-Browns Mills Road/Broadway; and
- Circle Drive to Lakehurst Road.

On the especially narrow segment between Chicks Way and Trainor Place (30 feet wide), the bicycle lanes may need to be reduced to four-foot “bikeable shoulders” with 11-foot vehicle lanes. Alternatively, the vehicle lanes can be reduced to 10 feet while maintaining five-foot bike lanes (see Figure 20).

The existing parking lane north of Lawrence Drive is narrowed from 20 feet to 8 feet, with an additional two-foot buffer between the parking lane and the northbound bike lane (Figure 21).

Signage should be used to indicate to motorists where bicycle lanes begin and end. See Figure 19, Figure 23, and Figure 24. The township has the option to paint the bike lanes, or sections of them, for added visibility and compliance. Cross-striping at key conflict points, such as intersecting roadways and driveways, also helps to enhance bicycle safety and ensure they are given the right-of-way by motorists. See Figure 22 for example areas for cross-striping. Lane widths for individual segments are listed in Table 4.



View north on Trenton Road near Circle Drive

Source: Derek Lombardi, DVRPC

ADD SHARROWS BETWEEN PEMBERTON-BROWNS MILLS ROAD AND ST. ANN'S CHURCH.

For the roughly 280-foot segment to the south of the intersection with Pemberton-Browns Mills Road, the width does not support two through lanes, a dedicated northbound left turn lane, and two bicycle lanes. Instead, the county can paint sharrows, with the option of using green paint for increased visibility. Bicycle traffic will have to mix with vehicle traffic. Bicycle boxes should be placed at each approach to the intersection to help cyclists get ahead of through-moving and turning vehicles as they travel through the mixed traffic segment. See Figure 23 for additional details on treatments for this segment.

CONSIDER ACCESS MANAGEMENT TO NARROW OR CLOSE EXISTING DRIVEWAYS.

The lower part of Trenton Road has several driveways with wide curb cuts, including the local fire station. These create conflict points with pedestrians and bicycles, causing their travel experience to be less predictable, comfortable, and safe. Properties with multiple driveways could consolidate vehicle entry and exit to a single location, including from intersecting streets, thereby reducing the locations at which turning movements, cross-traffic, and conflicts can occur. See Figure 25 for an example of an access management opportunity.

REPAINT ALL INTERSECTING CROSSWALKS.

Nearly all intersecting side streets and driveways have no crosswalks, or crosswalks have faded over time. Painting or restriping crosswalks with a high-visibility continental design will support pedestrians' ability to safely navigate the existing sidewalk network, and also reinforce the need for turning auto traffic to consider and yield to crossing foot traffic. See Figure 21 for an example.

TABLE 4: PROPOSED LANE WIDTHS ON TRENTON ROAD

SEGMENT	VEHICLE LANE WIDTH	BICYCLE LANE WIDTH	BUFFER WIDTH
Dans Road to Chicks Way	11 feet	5 feet	1–5 feet
Chicks Way to Trainor Place	10 feet	5 feet	N/A
Trainor Place to Lawrence Drive	11-foot through lanes with one 8-foot parking lane	5 feet	2 feet
Lawrence Drive to Pine Mill Court	11-foot through lanes with one 11-foot turn lane	5 feet	4–6 feet
Pine Mill Court to Pine Mill Road	11 feet	5 feet	4–6 feet
Pine Mill Road to Dunkin' Donuts	11 feet (existing width)	5 feet	1–6 feet
Dunkin' Donuts to Pear Avenue	10–11 feet with dedicated left turn lanes	5 feet	0–5 feet
Pear Avenue to Pemberton-Browns Mills Road	10–11 feet with dedicated turn lanes	5 feet	N/A
Pemberton-Browns Mills Road to St. Ann's Church	10 feet with one turn lane	Sharrows	3 feet
St. Ann's Church to Circle Drive	11 feet	5 feet	2 feet
Circle Drive to Lakehurst Road	10 feet with striped/gored median	5.5 feet	N/A

ADD LEADING PEDESTRIAN INTERVALS (LPI) AT THE PEMBERTON-BROWNS MILLS ROAD AND BROADWAY STREET INTERSECTION.

Adding LPIs at the major signalized intersection would give pedestrians a few seconds to begin crossing before the green signal allows vehicles to turn. This contributes to a safer and more convenient experience for those traveling on foot, since they are more visible to motorists and their through movements are given priority over turning vehicle traffic. See Figure 23.

CONSIDER WIDENING TRENTON ROAD BETWEEN DANS ROAD AND PEMBERTON BOULEVARD.

North of Dans Road, there is an approximately 300-foot section of Trenton Road that is only 28 feet wide. The narrow road width limits the types of bicycle facilities that can safely and comfortably be accommodated within the existing paved area. Widening this section to at least 30 feet would create space for 10-foot travel lanes and five-foot bike lanes, or 11-foot travel lanes and four-foot bikeable shoulders. This would form a key bicycle connection to low-stress streets in residential neighborhoods to the east of Trenton Road. However, extending the impervious road surface would require the county or township to comply with stormwater regulations, as directed by the Pinelands Commission. Additionally, Trenton Road travels over the Ong Run stream bed just south of Wren Street, making road widening more challenging in this area.

SUPPORT JB MDL WITH EFFORTS TO EXTEND BICYCLE FACILITIES.

North of the township line, Trenton Road (also called Texas Avenue) is owned and maintained by JB MDL. The base has expressed interest in providing safe bike routes to and from Browns Mills for its personnel and families that live on the base. Pemberton and Burlington County officials should continue working with JB MDL planners to ensure that bicycle facilities added to Trenton Road are well connected to any future facilities installed on Texas Avenue.



View south on Trenton Road near Pemberton Boulevard
Source: Derek Lombardi, DVRPC

FIGURE 19: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR TRENTON ROAD AT DANS ROAD



FIGURE 20: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR TRENTON ROAD AT CHICKS WAY



FIGURE 21: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR TRENTON ROAD AT LAWRENCE DRIVE



FIGURE 22: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR TRENTON ROAD AT BROTHERS DINER



FIGURE 23: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR TRENTON ROAD AT PEMBERTON-BROWNS MILLS ROAD/BROADWAY

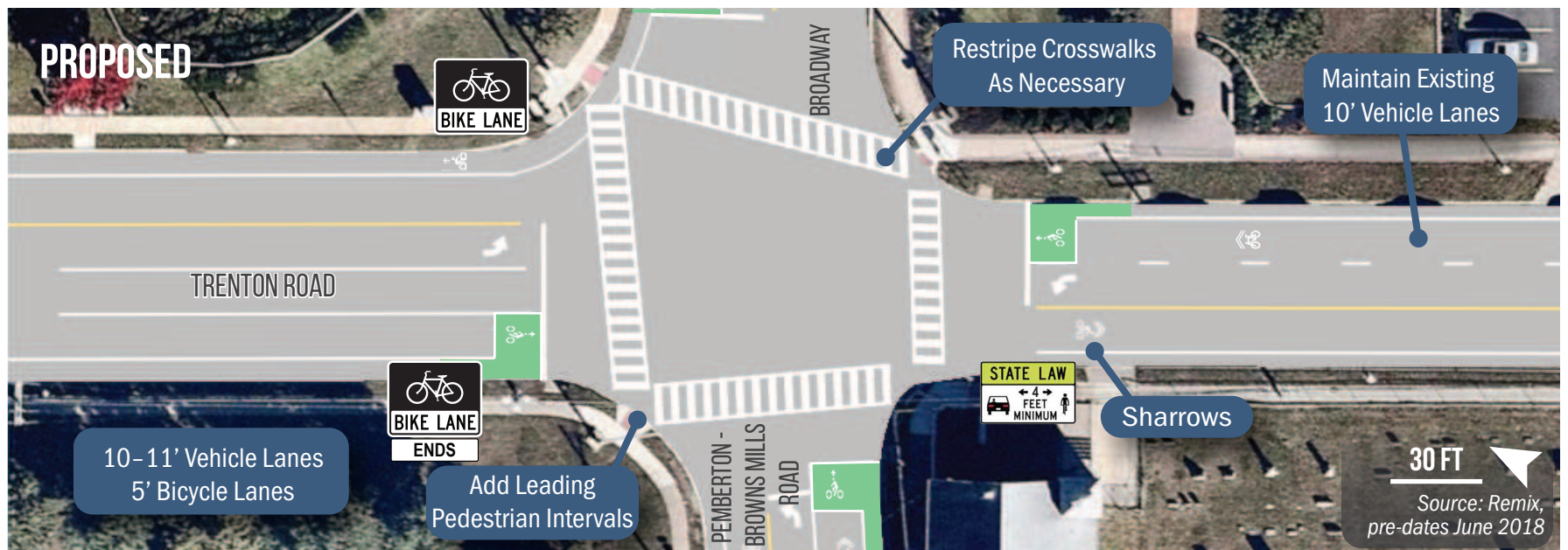


FIGURE 24: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR TRENTON ROAD AT ST. ANN'S CHURCH

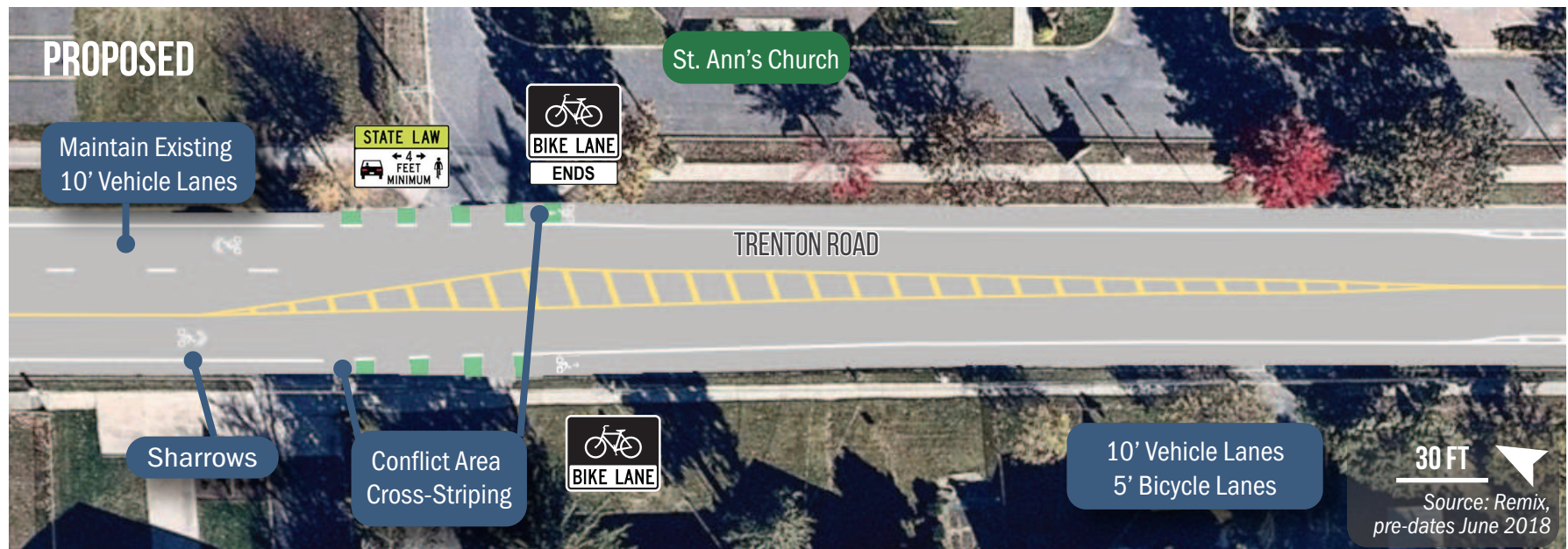


FIGURE 25: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR TRENTON ROAD AT CIRCLE DRIVE



Lakehurst Road

EXISTING CONDITIONS

The following section details the existing conditions on and around a short 0.2-mile segment of Lakehurst Road (CR-530) between Trenton/Juliustown Roads and Rancocas Lane. In this segment, Lakehurst Road passes over Mirror Lake via a bridge and dam structure.

LOCATION AND OWNERSHIP

Lakehurst Road makes up a portion of County Route 530, carrying traffic between downtown Browns Mills and the eastern part of the township. It forms a three-way intersection at Trenton and Juliustown Roads and extends to Route 70 near the border with Ocean County, roughly 5.5 miles from downtown.



View southeast to Lakehurst Road from Trenton Road
Source: Google Maps, 2021

SURROUNDING LAND USE

Land use is characterized by a few commercial properties and Reflections Park, which overlooks Mirror Lake.

ROADWAY CHARACTERISTICS

For much of this segment, Lakehurst Road has four 10- to 11-foot lanes, with two travel lanes in each direction. At the complex three-way intersection, there are dedicated westbound lanes to access Juliustown and Trenton Roads, with a wide striped median between them, as well as a dedicated left turn into the Advanced Auto Parts store on the southwest side of the intersection. The intersection at Clubhouse Road also has a dedicated left turn lane for eastbound vehicles. On the bridge, striped medians briefly narrow the eastbound side to a single through lane east of Clubhouse Road, and the westbound side to a single through lane west of Rancocas Lane.

Shoulder widths vary from two to five feet between Juliustown/Trenton and Clubhouse Roads, and are roughly three feet wide along the bridge between Clubhouse Road and Rancocas Lane.

Speed limits through this segment are 35 mph.

PEDESTRIAN AMENITIES

This segment of Lakehurst Road has sidewalks for its entire length, and they are especially wide relative to the rest of the study area. The eastbound side of Lakehurst Road has roughly nine-foot sidewalks between Juliustown and Clubhouse Roads, and the bridge structure has six- to eight-foot wide decorative stamped red brick sidewalks on both sides. Pedestrian-scale globe lights primarily line the north (westbound) side of the roadway, along the lake. There are no formal locations to cross Lakehurst Road between the intersection at Juliustown and Trenton Roads and the intersection at Junction Road and S. Lakeshore Drive, a distance of over 1,300 feet. Crosswalks are marked with transverse lines on nearly all intersecting streets, including Note Boom Avenue, Clubhouse Road, and the Advanced Auto Parts driveway. Rancocas Lane does not have a marked crosswalk.

BICYCLE FACILITIES

No formal bicycle facilities or amenities currently exist on Lakehurst Road, though there are signs posted along Lakehurst Road indicating a bicycle route. Lakehurst Road has an LTS level of 4 out of 4 (high stress). The Burlington County Bicycle Master Plan proposed bike lanes on Lakehurst Road, extending from Trenton Road to NJ Route 70.

TRANSIT ACCESS

The BurLINK B1 bus route travels on Lakehurst Road between Trenton Road and Rancocas Lane.

CRASHES

This short segment was the location of 50 crashes from 2017 through 2020. The complicated and staggered intersections and shifting lane configurations create challenges not just for drivers, with significant concerns for the more vulnerable pedestrians and bicycles that may need to safely access, use, or cross the corridor. One cyclist-involved collision was recorded near Note Boom Avenue, while no pedestrian crashes were observed during these years.



View northwest on Lakehurst Road near Reflections Park
Source: Derek Lombardi, DVRPC

RECOMMENDATIONS

Recommended treatments for Lakehurst Road are detailed below and in Appendix E. A rough cost estimate for the proposed improvements can be found in Appendix I. Like Pemberton-Browns Mills and Trenton Roads, Lakehurst Road is a county-owned road and may require a shared services agreement between the county and township.

MODIFY THE TRIANGLE INTERSECTION TO SAFELY ACCOMMODATE BICYCLE LANES AND CLEARLY DELINEATE ALL TURNING MOVEMENTS.

Five-foot (5') bicycle lanes should extend on Lakehurst Road to allow bicyclists to safely travel between Trenton Road and other recommended connections, low-stress routes, and future trails located to the east. Vehicle lane widths remain at a minimum of 10 to 11 feet. Cross-striping helps to delineate the eastbound bike lane through the intersection so that riders can safely navigate to Lakehurst Road during the same phase as southbound motorists. The white-striped gore area and centerlines between the westbound through lane to Juliustown Road and the northbound right-turn lane to Trenton Road can be realigned to clarify traffic patterns and prohibited turning movements for all road users. See Figure 26 for more details.

IMPLEMENT A ROAD DIET ALONG THE MIRROR LAKE BRIDGE.

A road diet on Lakehurst Road would reduce the roughly 300-foot, four-lane segment to three lanes, extending the traffic patterns currently in place near Clubhouse Road (two westbound lanes, one eastbound lane) and Rancocas Lane (two eastbound lanes, one westbound lane) to the center of the bridge. Vehicle lane widths are narrowed to 10 feet to calm traffic and enhance pedestrian and bicycle safety. A striped median extends the full length of the bridge, widening from five feet at the western and eastern ends to 14 feet in the center, where the lanes shift from one to two in either direction. The new configuration creates room for bicycle lanes with a two- to three-foot buffer in each direction. See Figure 27.

ADD A MEDIAN ISLAND AND SAFE CROSSING AT RANCOCAS LANE.

A new crossing at Rancocas Lane would allow for safe access across Lakehurst Road without forcing pedestrians to detour to one of the only existing crossings at Juliustown and Trenton roads roughly 930 feet to the west, or at Junction Road/S. Lakeshore Drive roughly 350 feet to the east. A crosswalk here enhances access between residential areas south of Lakehurst Road and downtown Browns Mills. Furthermore, bicycle traffic can use the crossing to comfortably transition between Rancocas Lane—which will eventually connect to the planned Rancocas Creek Greenway (See Rancocas Lane on page 62 for additional details)—and the new westbound bike lane on Lakehurst Road. By painting the crosswalk through a proposed median island, the crossing distance is broken up into two segments, and pedestrians have a safe place to wait before crossing a second lane. Each crossing can be supplemented with RRFBs, which allow pedestrians to manually activate LED lights warning approaching drivers to stop. The installation of pedestrian refuge islands with RRFBs requires a shared service agreement between the county and township to cover upfront costs. See Figure 28 for more details.

FIGURE 26: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR THE INTERSECTION OF TRENTON, JULIUSTOWN, AND LAKEHURST ROADS

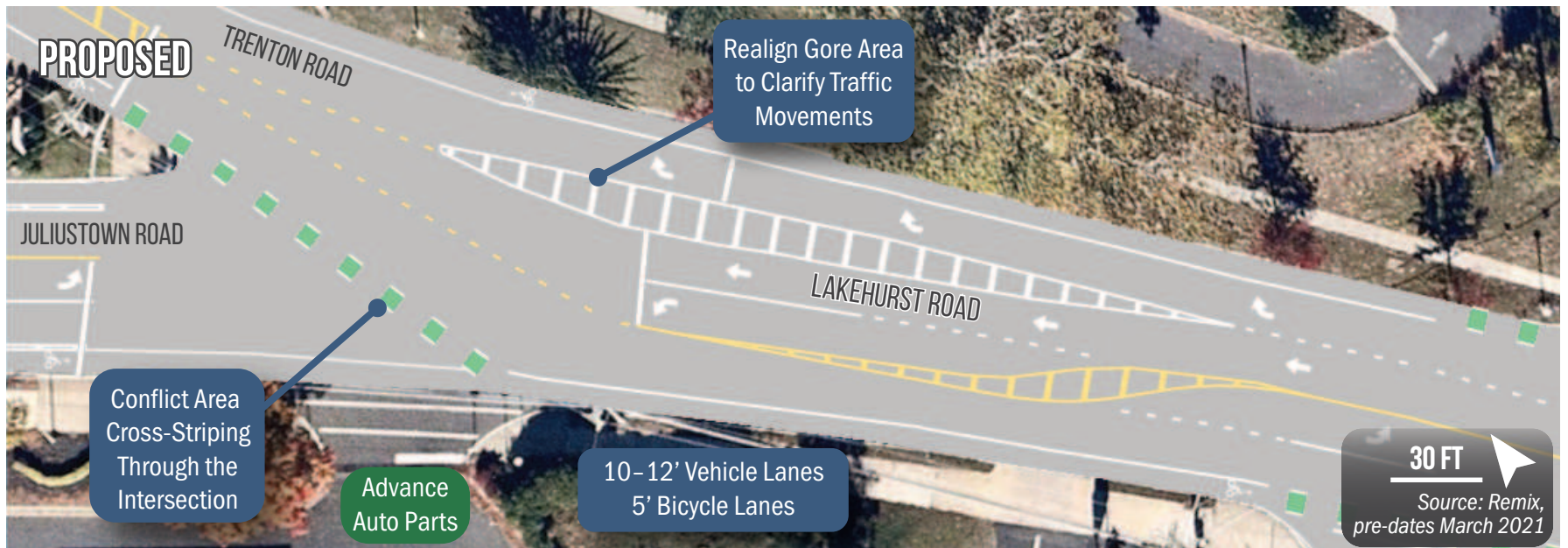
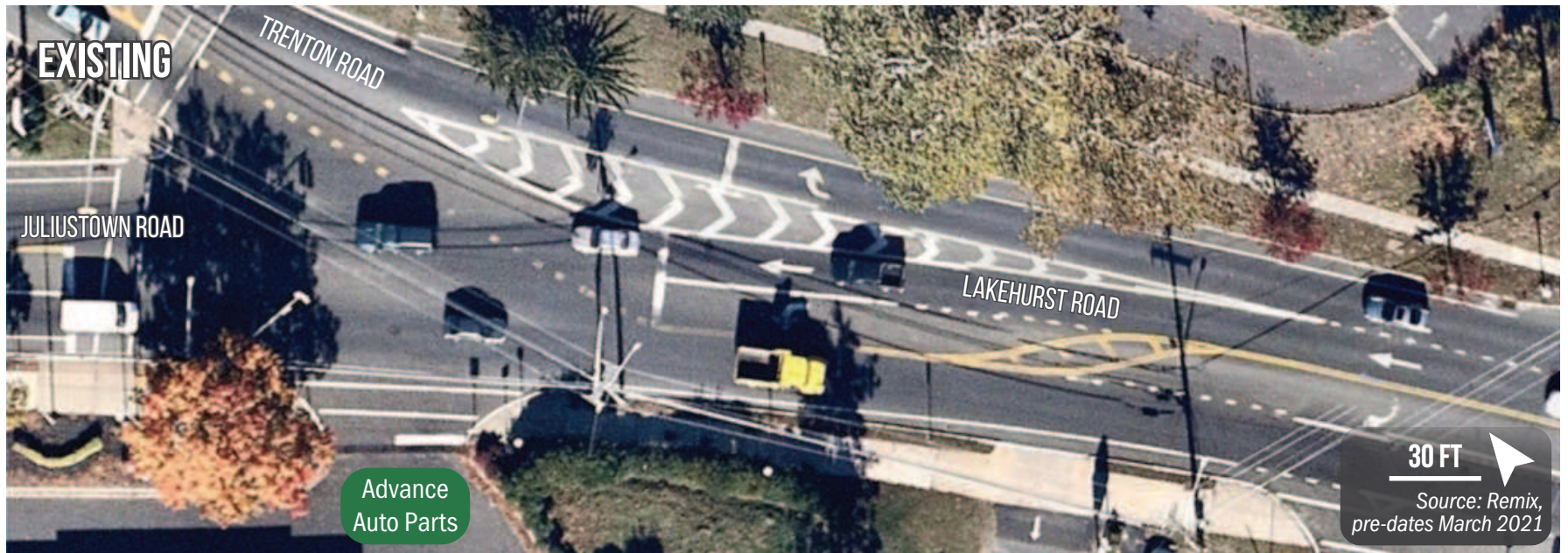


FIGURE 27: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR LAKEHURST ROAD AT CLUBHOUSE ROAD

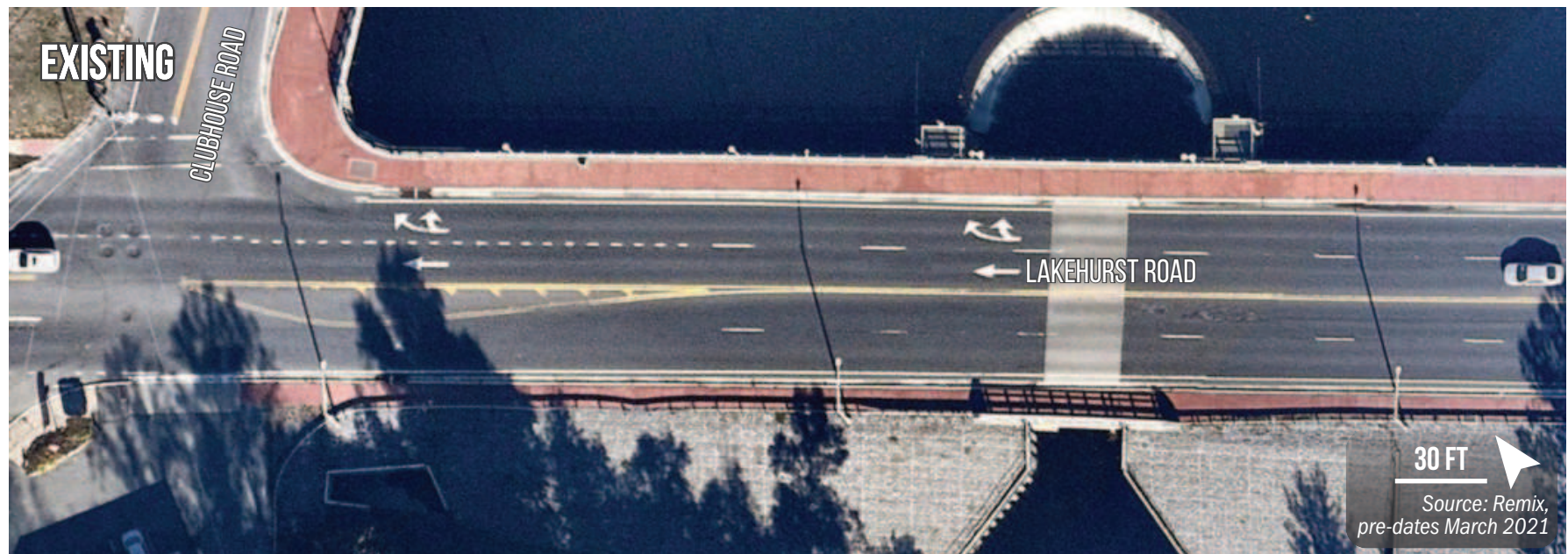
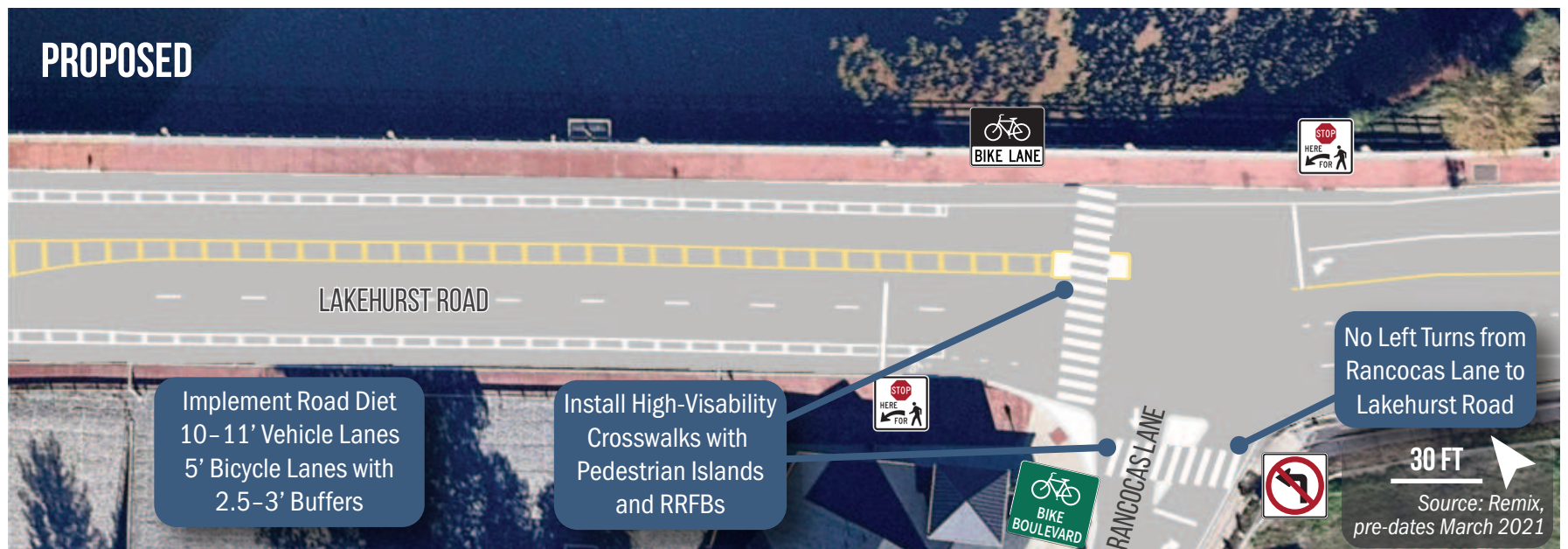
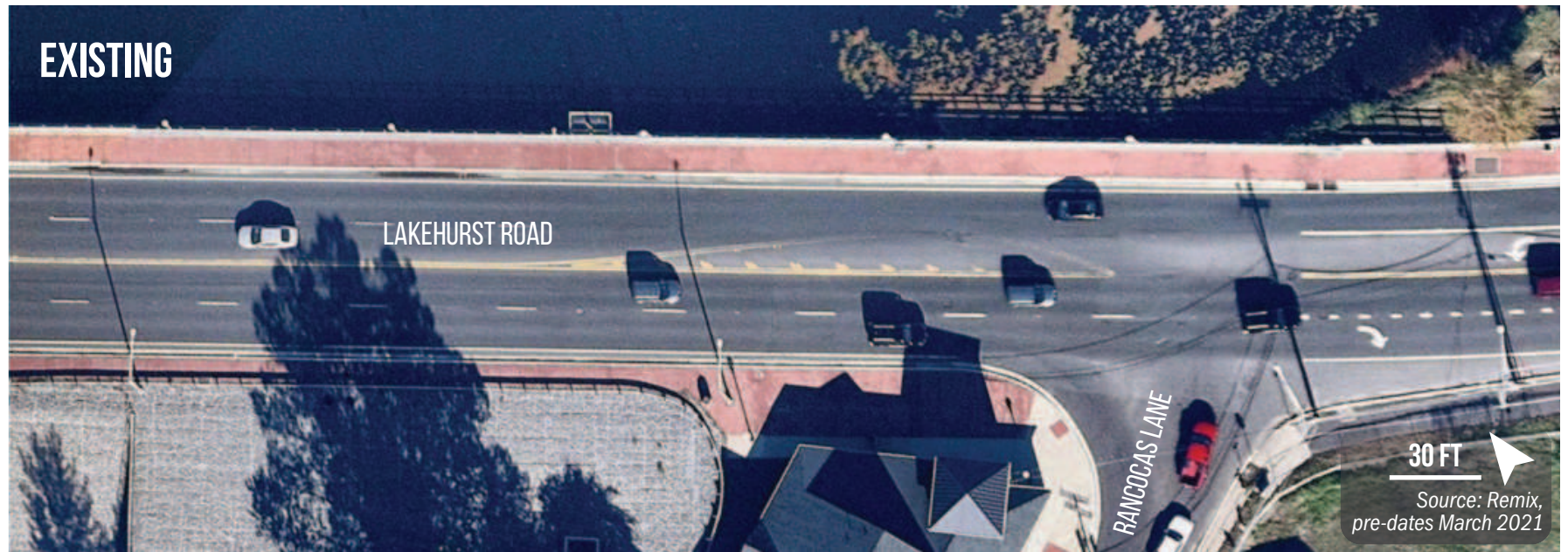


FIGURE 28: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR LAKEHURST ROAD AT RANCOCAS LANE



Rancocas Lane, Scammell Drive, and Weymouth Road

EXISTING CONDITIONS

The following section details the existing conditions on and around portions of Rancocas Lane, Scammell Drive, and Weymouth Road that travel through the neighborhood between Lakehurst Road and Mount Misery Road.

LOCATION AND OWNERSHIP

Rancocas Lane is a local road that travels mostly north-south connecting Lakehurst Road and Junction Road. Approximately 0.6 miles of Rancocas Lane, between Lakehurst Road and roughly Concord Drive, is owned by the township. Another mile, south of Weymouth Road near the Denbo-Crichton Elementary School, is owned by the School District. Between Concord Drive and Weymouth Road, Rancocas Lane is privately owned by the Belaire Estates residential community. The southernmost segments are largely owned by Jersey Central Power & Light (JCP&L). Here, Rancocas Lane meets a utility corridor with defunct rail right-of-way, which is the planned route for the Rancocas Creek Greenway (RCG) Trail. The RCG Trail will be constructed and maintained by the Burlington County Resource Conservation Department. The trail will eventually link communities on the Delaware River in the western part of the county to the border of neighboring Ocean County, east of Pemberton Township.

Scammell Drive is a local road that intersects Rancocas Lane just south of Lakehurst Road, then runs mostly parallel to Rancocas Lane for about a half-mile to an intersection with Weymouth Road and Cabot Drive to the south. Weymouth Road is an east-west local road that links Scammell Drive back to Rancocas Lane. The township owns the full extent of Scammell Drive and it owns Weymouth Road east of Rancocas Lane.

SURROUNDING LAND USES

Between Lakehurst Road and Weymouth Road, Rancocas Lane travels through a residential area comprising single family detached homes, and some woodlands and manufactured housing (Belaire Estates) to the west. South of Weymouth Road, Rancocas Lane is unimproved with a gravel or dirt surface, where the surrounding land uses are mostly wooded with isolated residential properties. Both Scammell Drive and Weymouth Road are almost entirely residential, aside from the small Blueberry Manor Park near the intersection with Cabot Drive.

ROADWAY CHARACTERISTICS

Rancocas Lane generally has two lanes but lacks striping on the centerline and shoulders. The width varies from as wide as 24 feet between Lakehurst Road and Scammell Drive, to between 15 and 20 feet wide in the unpaved sections south of Weymouth Road.

Scammell Drive and Weymouth Road also have two lanes with no centerline. The northern segment of Scammell Drive is 38 to 40 feet wide allowing for on-street curbside parking. South of Concord Drive, it narrows to around 30 feet with on-street parking. Weymouth Road is also around 30 feet wide with on-street parking.

The speed limit on Rancocas Lane, Scammell Drive, and Weymouth Road is 25 mph.

PEDESTRIAN AMENITIES

Rancocas Lane has a roughly five-foot wide sidewalk for around 0.3 miles on the east (northbound) side between Lakehurst Road and Scammell Drive, linking residential areas to the lakefront park and downtown Browns Mills. Another 600-foot sidewalk segment, also on the east side of Rancocas Lane, links Weymouth Drive with the elementary school to the south. Scammell Drive has narrower sidewalks around three feet wide on both sides of the street from Berkeley Drive to Weymouth Road, a distance of just over 800 feet. Weymouth Road has three- to four-foot sidewalks on both sides, stretching around 1,000 feet. Most intersections lack painted

crosswalks. Four transverse crosswalks are marked at the intersection of Scammell Drive and Berkeley Drive. Ladder-style crosswalks span Scammell Drive and Weymouth Road where they intersect with Cabot Drive, and across Weymouth Road where it meets Rancocas Lane. Only one intersection with existing sidewalks also has accessible curb ramps, at Weymouth Road and Coville Drive.

BICYCLE AMENITIES

No formal bicycle facilities or amenities currently exist on Rancocas Lane. Rancocas Lane has an LTS level of 3 out of 4 (moderate stress), while Scammell Drive and Weymouth Road have the lowest stress level of 1 out of 4. At Junction Road, Rancocas Lane intersects and overlaps with the utility corridor that is the planned alignment for the future county-owned RCG Trail.

TRANSIT ACCESS

The BurLINK B1 bus route travels on Rancocas Lane and Scammell Drive, connecting riders to downtown Browns Mills and Country Lakes, and uses residential cross-streets for access to Junction Road and points west.

CRASHES

Only four crashes were recorded on these segments from 2017 to 2020, though one resulted in a possible injury to a bicyclist at Scammell Drive and Adams Avenue.



View southwest on Rancocas Lane from Lakehurst Road
Source: Google Maps, 2021

RECOMMENDATIONS

Recommended treatments for Rancocas Lane, Scammell Drive, and Weymouth Road are detailed below and in Appendix F. A rough cost estimate for the proposed improvements can be found in Appendix I.

MODIFY INTERSECTION OF LAKEHURST ROAD AND RANCOCAS LANE.

In its current configuration, this intersection allows left turns from northbound traffic on Rancocas Lane to westbound Lakehurst Road. To make this movement, vehicles must cut across the two eastbound lanes of Lakehurst Road and also merge into any oncoming westbound traffic. The angle of the intersection limits visibility to the west. The recommended reconfiguration prohibits this turning movement, using triangular curbing to channel all northbound traffic on Rancocas Lane to eastbound Lakehurst Drive. The western corner of the intersection is also squared off with additional curb space to slow vehicles turning from eastbound Lakehurst Road onto southbound Rancocas Lane. In addition to calming traffic, these curb extensions also make crossing the intersection safer and more comfortable for pedestrians and bicyclists, enhancing their visibility and shortening their crossing distance. Other signage and pavement markings would further improve compliance and safety. The crosswalk spanning Rancocas Lane connects to the recommended new crossing on Lakehurst Road as well, improving pedestrian access between residences near Rancocas Lane, downtown Browns Mills, and Mirror Lake, and giving those on bicycles a safer way to reach the westbound bike lane. See Figure 29 for more details.

ADD BICYCLE BOULEVARD TREATMENTS TO RANCOCAS LANE, SCAMMELL DRIVE, AND WEYMOUTH ROAD.

As discussed in Chapter 3, a bicycle boulevard is a street with lower traffic speeds and volumes that has been optimized for bicycle travel. A bicycle boulevard in this neighborhood would need to be routed along township-owned street segments or by securing easements

from the right-of-way owners. A comfortable, bidirectional bicycle boulevard could be implemented on the township-owned northern extent of Rancocas Lane (between Lakehurst Road and Scammell Drive), Scammell Drive (between Rancocas Lane and Weymouth Road), and the eastern extent of Weymouth Road (between Cabot Drive and Rancocas Lane). This comprises roughly 1.1 miles or just over 6,000 feet. Along the bicycle boulevard, traffic calming elements like chicanes and speed tables, signage and pavement markings, and intersection crossing treatments should be installed around every 500 feet. These treatments allow cyclists to travel comfortably while discouraging similar through trips by nonlocal motorized traffic. See the callout box on page 65, Figure 30, and Figure 31 for more details.



Intersection of Scammell and Cabot Drives and Weymouth Road
Source: Derek Lombardi, DVRPC

BICYCLE BOULEVARD ELEMENTS

Bicycle boulevards use a variety of tools to decrease auto traffic volumes and speeds to provide a low-stress environment for bicyclists and pedestrians. To create a street that is comfortable for bicyclists of all ages and skill levels, traffic calming, traffic reduction, signage and pavement markings, and intersection crossing treatments are used.

Chicanes are a traffic calming strategy that use offset curb extensions to increase public space along a roadway and force drivers to maneuver small bends, slowing speeds.



Example of a chicane
Source: NACTO

Speed Tables have a flat area between the sloped edges. The longer traversable surface calms traffic less abruptly than speed humps; they can be crossed at up to 25–30 mph. If a speed table is needed in the same location as a crosswalk, a raised crosswalk should be installed.



Example of a speed table
Source: NACTO

Bicycle wayfinding systems combine comprehensive signage and/or pavement markings to guide cyclists to destinations along bicycle routes while familiarizing users with the network. Wayfinding systems are typically applied over the entirety of the corridor or streets with the bicycle facility for continuity.



Example of bicycle boulevard signage
Source: NACTO

PAVE RANCOCAS LANE SOUTH OF WEYMOUTH ROAD AND EXTEND BICYCLE BOULEVARD TO FUTURE RANCOCAS CREEK GREENWAY TRAIL.

Rancocas Lane is mostly unimproved south of Weymouth Road, consisting of a gravel surface that stretches roughly 0.6 miles or just over 3,100 feet to the future alignment of the RCG trail. To create a comfortable connection to the trail, the township should work with the School District and JCP&L to pursue paving and secure easements that allow for the bicycle boulevard and related treatments to extend along the remaining southern sections of Rancocas Lane. Signage can be used to discourage vehicular through trips (e.g., “Local Traffic, Pedestrians, and Bicycles Only”). See Figure 32.



Unimproved portion of Rancocas Lane near Denbo-Crichton Elementary School
Source: Derek Lombardi, DVRPC

FIGURE 29: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR RANCOCAS LANE AT LAKEHURST ROAD

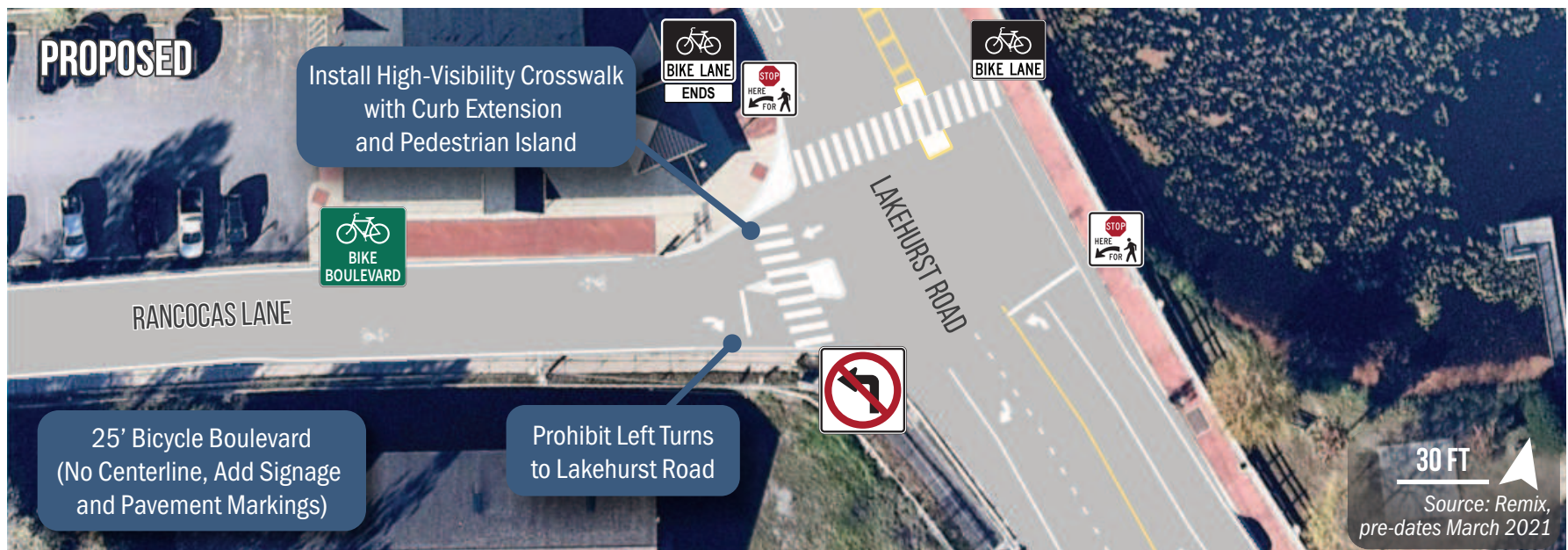


FIGURE 30: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR RANCOCAS LANE BETWEEN LAKEHURST ROAD AND SCAMMELL DRIVE



FIGURE 31: EXTENT OF PROPOSED BICYCLE BOULEVARD ON RANCOCAS LANE, SCAMMELL DRIVE, AND WEYMOUTH ROAD

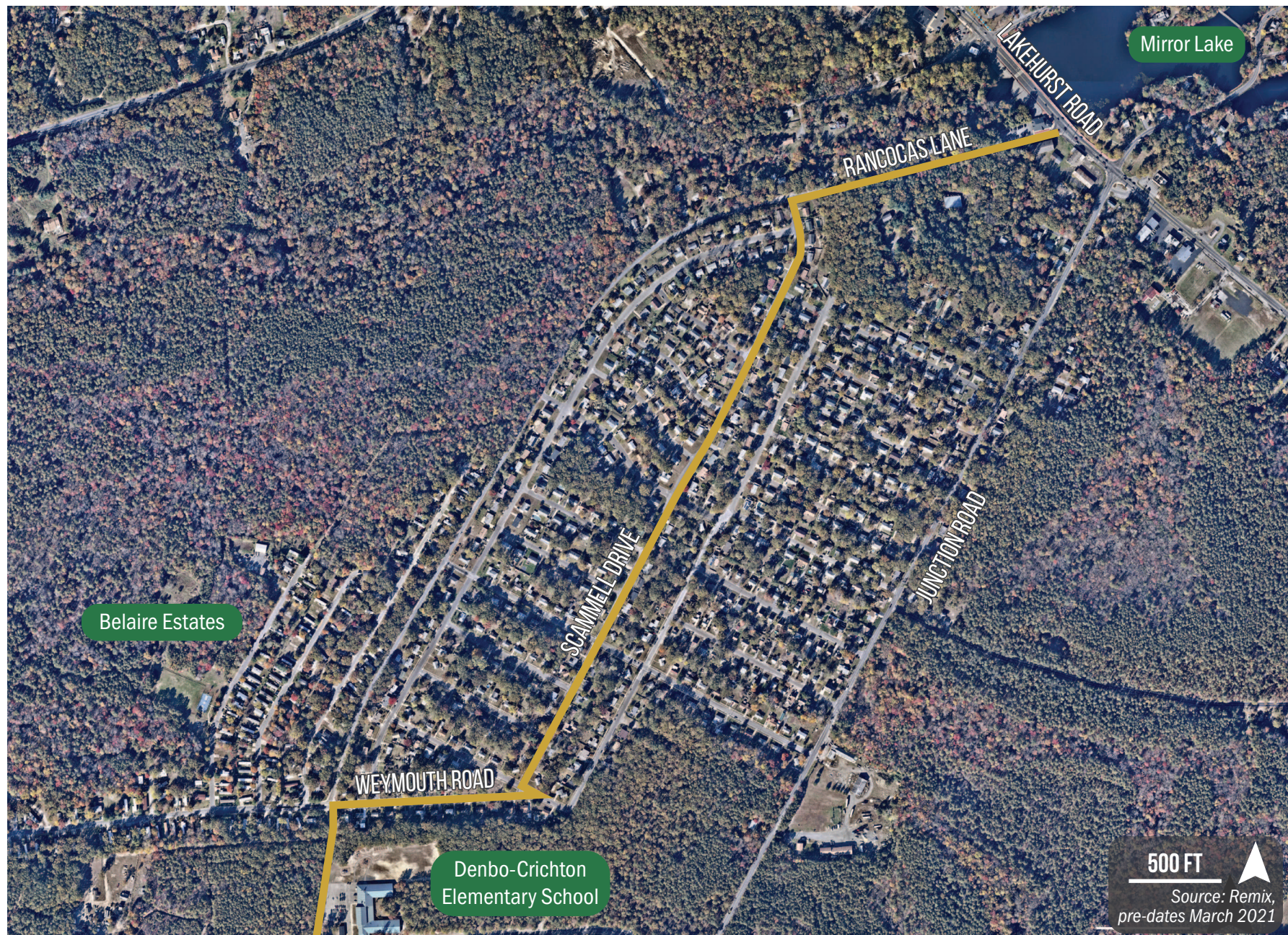
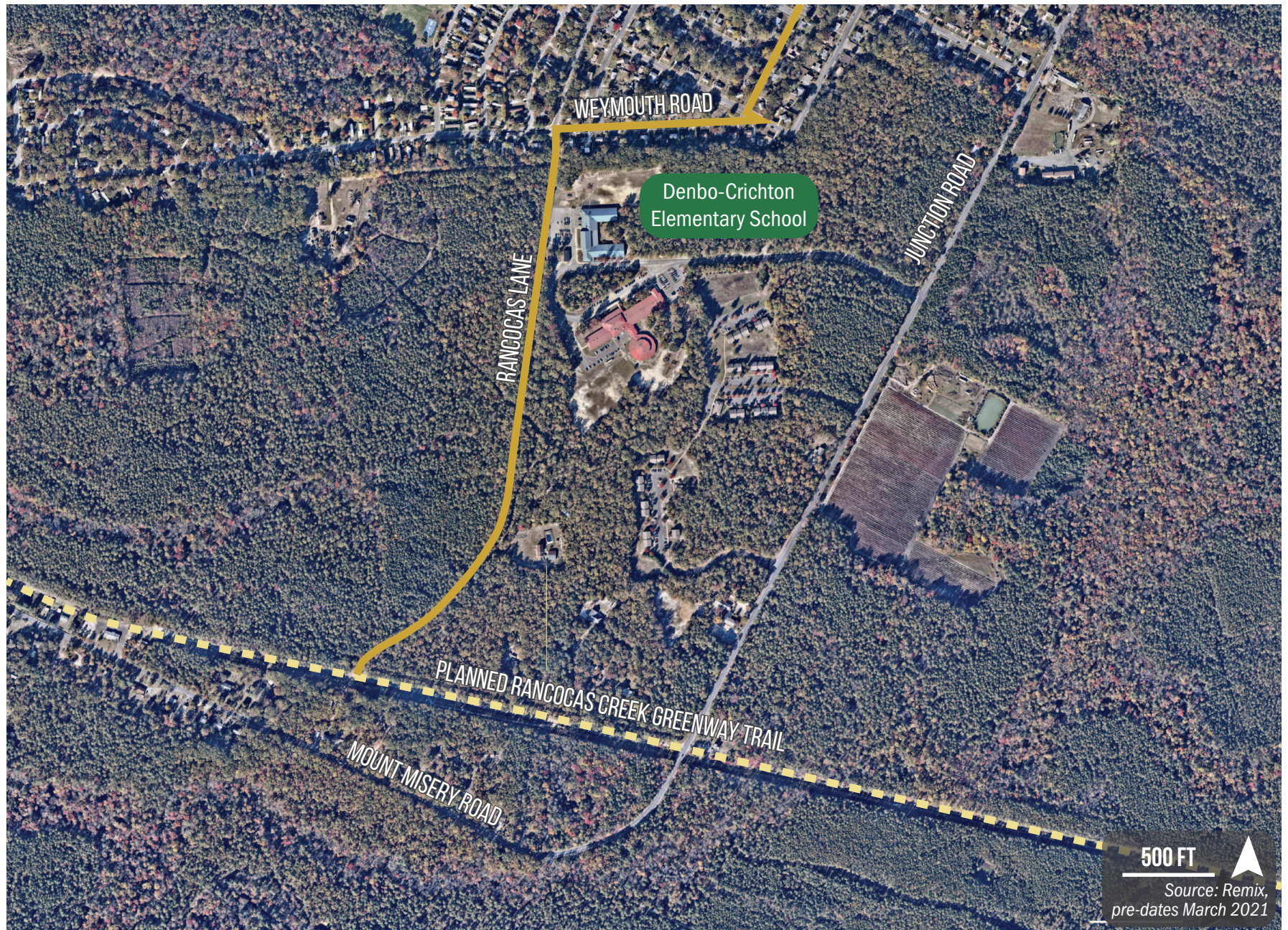


FIGURE 32: EXTENT OF PROPOSED BICYCLE BOULEVARD ON RANCOCAS LANE BETWEEN WEYMOUTH ROAD AND THE RANCOCAS CREEK GREENWAY TRAIL



Spring Lake and Whispering Pines Boulevards

EXISTING CONDITIONS

The following section details the existing conditions on and around a roughly 0.4-mile section of Spring Lake Boulevard between Chippewa Trail and Tecumseh Trail. It also focuses on a roughly 2.9-mile stretch of Whispering Pines Boulevard and the unpaved “fire lane,” which together run parallel to Route 70, between Upton Station Road and Washington Boulevard.

LOCATION AND OWNERSHIP

Spring Lake Boulevard is a local road that travels mostly north-south for 1.5 miles between Chippewa Trail, near Country Lake, and NJ Route 70. The project team focused on the roughly 0.4-mile extent between Chippewa Trail and Tecumseh Trail. South of Country Lake Estates, a utility corridor with defunct rail right-of-way is the planned route for the Rancocas Creek Greenway (RCG) Trail, which will be constructed and maintained by the Burlington County Resource Conservation Department. The trail will eventually link communities on the Delaware River in the upper part of the county to the border of neighboring Ocean County, east of Pemberton Township. Near Route 70, the RCG trail would intersect with unimproved road sections that could provide a future safe pedestrian and bicycle connection between Country Lake Estates and Presidential Lakes. These sections include a roughly 2.9-mile stretch of Whispering Pines Boulevard and the unpaved “fire lane,” which together run parallel to Route 70, approximately 240 feet to the north, between Upton Station Road and Washington Boulevard. Part of this segment is publicly owned, while some of it passes through private properties. Of the roughly 14,300 feet under consideration for this study, just under half is adjacent to or passes through privately owned land (~6,400 feet) and a little over half is adjacent to or passes through publicly-owned land (~7,900 feet).

SURROUNDING LAND USES

Between Chippewa Trail and Tecumseh Trail, Spring Lake Boulevard is in the neighborhood of Country Lake Estates, which has primarily single-family detached houses and a few recreational facilities like Spring Lake Beach and Jean Ammerman Park. Whispering Pines Boulevard mostly travels through wooded areas. There are 23 privately owned properties adjacent to it, with most having residential uses or remaining undeveloped, and one commercial property at the corner of Washington Boulevard.

ROADWAY CHARACTERISTICS

Spring Lake Boulevard is over 65 feet wide, with 20-foot travel lanes—one in each direction—separated in the middle by a 25- to 30-foot grass median. The speed limit is 25 mph. South of Tecumseh Trail, Spring Lake Boulevard narrows to 11- to 12-foot lanes with no median and very narrow shoulders of one foot or less. The speed limit here increases to 50 mph, and passing in the opposite lane of travel is allowed for long stretches.



Spring Lake Boulevard looking north

Source: Derek Lombardi, DVRPC

Whispering Pines Boulevard has a width of 10 feet or less, generally allowing for safe passage of only one vehicle at a time in either direction. No speed limit is posted but the unimproved condition generally prohibits vehicles from reaching high speeds. On Route 70, the speed limit is 55 mph, creating a very uncomfortable environment for walking or biking.

PEDESTRIAN AMENITIES

None of the segments in this focus area have sidewalks or painted crosswalks. While there are stop controls at all intersections, many have wide turning radii that encourage vehicles to turn at high speeds, potentially endangering vulnerable pedestrians or cyclists. The RCG Trail will also allow for pedestrian use upon completion.

BICYCLE AMENITIES

No formal bicycle facilities or amenities are currently present on the segments under consideration for this project. However, the future RCG Trail will form an east-west connection across Spring Lake Boulevard to other parts of the township and county upon completion. The exact alignment and design of the trail is still to be determined. There is an existing 0.3-mile long bike lane on Spring Terrace/Choctaw Drive, connecting the two sides of Country Lake just to the west of the intersection of Spring Lake Boulevard and Chippewa Trail. The bike lane is bidirectional and on the southbound side of the road. At only five feet wide, it does not safely accommodate bicyclists traveling in both directions. Most of the residential section of Spring Lake Boulevard has an LTS level of 1 (lowest stress), with a short stretch that is rated level 2. South of Tecumseh Trail, the LTS level increases to 3. The fire lane and Whispering Pines Boulevard do not have LTS ratings as they do not currently support bicycling due to their unimproved condition.

CRASHES

There were 12 crashes recorded on or near the residential portion of Spring Lake Boulevard between 2017 and 2020. Four crashes

resulted in possible injuries to motorists or passengers. None involved pedestrians or bicycles, though a pedestrian fatality occurred on nearby Choctaw Drive in 2018. The other segments of this focus area are trails or unimproved roads, so there is no recent crash history. However, the number of crashes on NJ Route 70 illustrates the need for safe access between Country Lakes and Presidential Lakes for vulnerable road users. There were 56 vehicle crashes on this nearly three-mile stretch from 2017 to 2020, with one resulting in a suspected serious injury.



Looking south from Spring Lake Boulevard to the fire lane/Whispering Pines Boulevard
Source: Derek Lombardi, DVRPC

RECOMMENDATIONS

Recommended treatments for Spring Lake and Whispering Pines Boulevards are detailed below and in Appendix G.

REDUCE VEHICLE LANE WIDTHS ON SPRING LAKE BOULEVARD TO 10 FEET, AND ADD ON-STREET BICYCLE LANES AND VISUALLY SEPARATED PEDESTRIAN LANES.

The excessive width of the travel lanes on Spring Lake Boulevard encourages speeding and potentially dangerous turning movements while offering no dedicated space for bicycles or pedestrians. The travel lanes could be divided in half, with the inner lanes remaining 10 feet wide for use by motor vehicles, and the remaining nine to ten feet being striped exclusively for biking and walking. The outermost lanes become designated space for pedestrians, each between four and five feet wide, without needing to build any new sidewalk. Between the pedestrian lane and the vehicle lane, there is room for a five-foot bicycle lane on each side. This new configuration provides a safe route for people to walk and bike between recreational facilities on Country Lake and the future RCG trail, and creates multimodal links to nearby residences on neighboring cross-streets. See Figure 33 and Figure 34.



Intersection of Spring Lake Boulevard and Chippewa Trail
Source: Derek Lombardi, DVRPC

CONVERT THE INTERSECTION OF SPRING LAKE BOULEVARD AND CHIPPEWA TRAIL TO A THREE-WAY/ALL WAY STOP WITH CROSSWALKS.

Currently, cross traffic on Chippewa Trail does not have to stop at Spring Lake Boulevard. Creating an all way stop at this intersection would slow vehicular traffic and allow pedestrians and bicyclists using the new dedicated lanes to safely access recreational facilities on either side, or to more comfortably transition to or from the mixed traffic conditions on Chippewa Trail. See Figure 33.

IMPROVE INTERSECTION SAFETY BETWEEN CHIPPEWA TRAIL AND TECUMSEH TRAIL.

To make it safer for people to walk and bike on the new dedicated lanes, treatments like crosswalks, stop bars, corner striping, and delineator posts should be considered at each intersection. These recommendations enhance the visibility of pedestrians and bicyclists, calm vehicular traffic, and reduce corner radii forcing drivers to make slower turns. Intersection radii should remain wide enough to accommodate boat trailers, recreational vehicles, and emergency vehicles. See Figure 34 for more information.

ADD TRAFFIC CALMING ELEMENTS AND A SAFE CROSSING AT THE INTERSECTION WITH THE FUTURE RANCOCAS CREEK GREENWAY TRAIL.

The eventual construction of a major county recreational facility across Spring Lake Boulevard has the potential to create conflict points between vulnerable trail users and vehicular traffic using the higher speed stretch of roadway south of Tecumseh Trail. Traffic calming elements should be installed along with a high-visibility crosswalk to ensure that trail users can safely travel from one side to the other. This should include signage and beacons directing trail traffic to stop and vehicular traffic to yield at the intersection, striping and/or delineators that narrow the lane width to slow vehicles down, and other tools such as rumble strips. An extension of the median on the northern parts of Spring Lake Boulevard could be added to the south of the trail crossing to serve as an additional deflection for approaching vehicles. Signage

should also be used to notify traffic where the in-street pedestrian and bicycle lanes begin and end on Spring Lake Boulevard, and wayfinding should direct those walking and biking to the appropriate facilities. See Figure 35 for additional details.

IMPROVE THE EXISTING FIRE LANE AND WHISPERING PINES BOULEVARD AS AN EXTENSION OF THE RCG TRAIL BETWEEN UPTON STATION ROAD AND SPRING LAKE BOULEVARD, WITH A TOWNSHIP-OWNED TRAIL EXTENSION TO PRESIDENTIAL LAKES.

Because the traffic speeds and volumes on Route 70 preclude safe use of the roadway by bicycles and pedestrians, an alternative route between Country Lakes and Presidential Lakes is recommended. The township should investigate access rights and pursue easements for segments of the existing fire lane and Whispering Pines Boulevard and consider improvements that make these facilities usable by bikes, pedestrians, and local traffic. A paved trail should be 10 feet wide, to allow for occasional use by vehicles accessing adjacent residences. Burlington County is in the process of planning segments of the RCG trail that would connect Upton Station Road to Spring Lake Boulevard, and other points north like the Whitesbog Historic Village. The township would be responsible for extending the trail south of Spring Lake Boulevard to Washington Boulevard and the Presidential Lakes neighborhood. Intersection treatments should be used to allow for trail users to safely cross Spring Lake Boulevard, including yield signage and stop bars. Other signage should be used to direct trail traffic to area destinations and warn of private driveway crossings and deter trespassing. See Figure 36 for the planned route and connections.



Looking north from Washington Boulevard to the fire lane/Whispering Pines Boulevard
Source: Derek Lombardi, DVRPC

FIGURE 33: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR SPRING LAKE BOULEVARD AT CHIPPEWA TRAIL

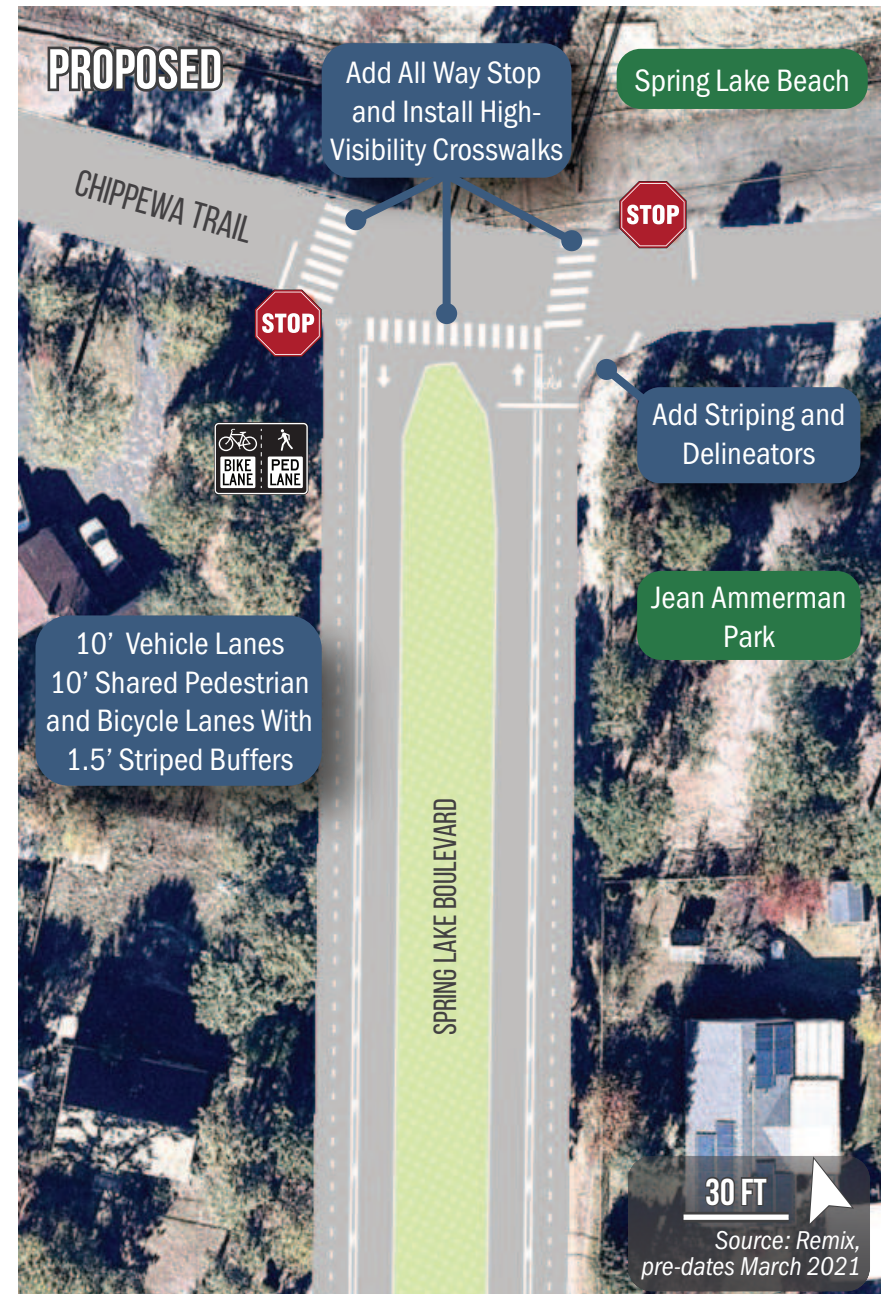


FIGURE 34: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR SPRING LAKE BOULEVARD AT CHEROKEE DRIVE



FIGURE 35: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR SPRING LAKE BOULEVARD AT THE INTERSECTION OF THE FUTURE RANCOCAS CREEK GREENWAY TRAIL



FIGURE 36: EXTENT OF PROPOSED BICYCLE FACILITIES BETWEEN COUNTRY LAKE ESTATES AND PRESIDENTIAL LAKES ESTATES



Other Recommendations

This section includes brief descriptions of three additional bicycle and pedestrian facilities that the township may want to explore in the future to continue to connect communities and expand bicycle and pedestrian access in and around Browns Mills. Additional details can be found in Appendix H.

PEMBERTON-EVERGREEN BICYCLE BOULEVARD

A bicycle boulevard along Pemberton and Evergreen Boulevards would connect residential areas to the north and east of downtown Browns Mills on Pemberton Boulevard, which travels east-west to the east of Trenton Road near the township's northern border, and Evergreen Boulevard, which travels north-south between Pemberton Boulevard and W. Lakeshore Drive (see Figure 37). These two corridors are locally owned and primarily residential streets with lower traffic volumes and speeds (25 mph). Both streets have LTS ratings of 2, with the exception of a short segment on the westernmost part of Pemberton Boulevard between Trenton Road and Lark Street, where the LTS rating is 3. Along the bicycle boulevard, traffic calming elements like chicanes and speed tables, signage and pavement markings, and intersection crossing treatments should be installed roughly every 500 feet. These treatments allow cyclists to travel comfortably while discouraging similar through trips by nonlocal motorized traffic. The facility would connect to the new footbridge over Ongs Run, forming a link to the proposed bike lanes on Broadway/Pemberton-Browns Mills Road and improving non-motorized access between downtown, residences, and other facilities like parks, schools, shops, the library, the hospital, and the base. By formalizing a bicycle boulevard on Pemberton and Evergreen Boulevards, the township can encourage people to make their bike trips on a route that generates lower stress than Trenton Road.

JULIUSTOWN ROAD BIKE LANES

Though Juliustown Road was not one of the corridors considered within the scope of this project, it is an important connection between downtown and the base, traveling at a northwest-southeast angle and intersecting with Trenton Road and Lakehurst Road at the triangular intersection referenced in earlier sections. Juliustown Road also crosses Pemberton-Browns Mills Road near the Browns Mills Shopping Center. It does not have the width to accommodate bike lanes for its entire length within Browns Mills, but Juliustown Road is generally wide enough to fit bike lanes to the north of Pemberton-Browns Mills Road and to the south of Busansky Lane, while maintaining 11-foot vehicle lanes. On the northern extent, bike lanes would link residences on Juliustown Road and in neighboring communities on Carp Lane to the rest of downtown. On the southern extent, bike lanes would connect commercial properties to the bike lanes proposed on Lakehurst Road. These would allow the township to offer an even more complete set of bicycle facilities within Browns Mills. Juliustown Road, also known as County Route 669, is a county-owned roadway so Burlington County would need to approve and install bike lanes in collaboration with the township, as is also the case on Pemberton-Browns Mills and Trenton Roads.

MULTI-USE SIDEPATH CONNECTION ON SCHOOL DISTRICT PROPERTY

The township can also consider connecting Trenton Road to Juliustown Road via an off-street shared-use path on adjacent, publicly-owned properties—the school district campus that faces Trenton Road and the bus garage site that faces Juliustown Road. Such a sidepath could travel alongside existing driveways, and around the perimeter of the properties, linking to proposed bike lanes and existing sidewalks. This could be useful for safely connecting residents on the western side of downtown to the schools, hospital, and other destinations that are more centrally located or east of downtown. See Figure 38.

FIGURE 37: EXTENT OF THE PROPOSED PEMBERTON-EVERGREEN BICYCLE BOULEVARD

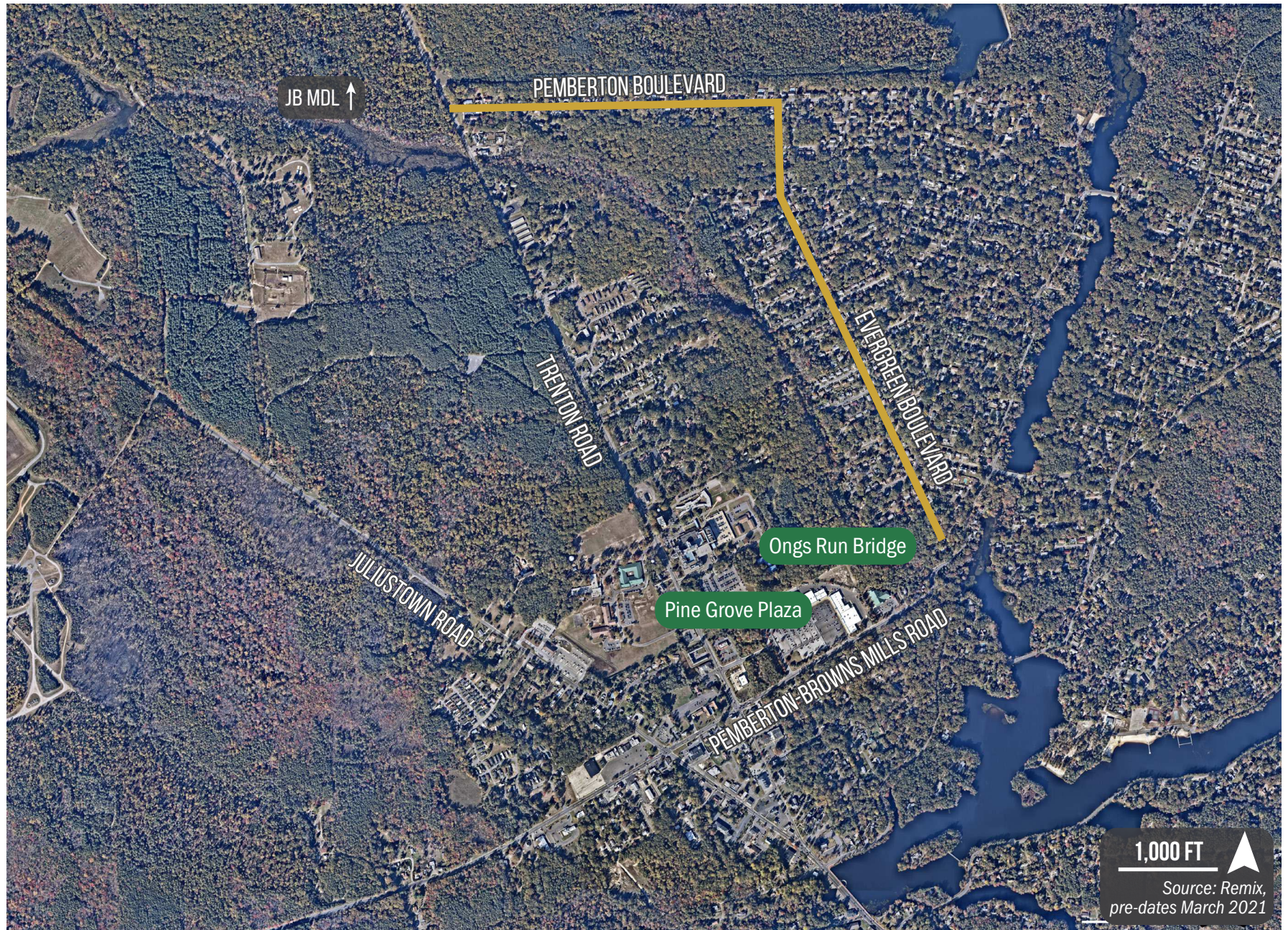


FIGURE 38: EXTENT OF THE PROPOSED MULTI-USE SIDEPATH BETWEEN JULIUSTOWN AND TRENTON ROADS





CHAPTER 5: Next Steps

This section discusses the next steps that the Township should take to implement the set of bicycle and pedestrian improvements proposed in this action plan.

Next Steps

Enhancing the bicycle and pedestrian network throughout and around Browns Mills has the potential to better connect residents and visitors to all that Browns Mills has to offer—recreational opportunities, community facilities, health care facilities, and more. However, implementing the improvements proposed in this action plan will require the work of many partners, including the township, various county agencies, bicycle and pedestrian advocates, residents, and more.

The township has already taken steps to pursue funding, which would allow them to implement a subset of the proposed improvements. Other segments will require future exploration to better understand the cost, land ownership issues, and/or potential environmental impacts. Some next steps are detailed below.

PURSUE TRANSPORTATION ALTERNATIVES (TA) SET-ASIDE FUNDING

The TA Set-Aside Program provides federal funds for community-based, "non-traditional" surface transportation projects designed to strengthen the cultural, aesthetic and environmental aspects of the nation's intermodal system. The TA Set-Aside Program provides funds to build pedestrian and bicycle facilities, improve access to public transportation, create safe routes to school, preserve historic transportation structures, provide environmental mitigation, and create trail projects that serve a transportation purpose while promoting safety and mobility.

Pemberton Township intends to apply to the TA Set-Aside Program to help to fund bicycle and pedestrian improvements for the segments along Pemberton-Browns Mills Road, Trenton Road, Lakehurst Road, and Rancocas Lane from Lakehurst Road to Scammell Drive.

UNDERTAKE ADDITIONAL NEAR-TERM ACTIONS:

To advance all of the recommended bicycle and pedestrian improvements, Pemberton Township should undertake the following near-term actions:

PEMBERTON-BROWNS MILLS ROAD

- As noted on page 35, Pemberton Township should work with the appointed developer for the Browns Mills Shopping Center to ensure that bicycle and pedestrian improvements such as widened sidewalks, bus shelters, and fewer curb cuts, are prioritized in the redevelopment of the shopping center.

RANCOCAS LANE, SCAMMELL DRIVE, AND WEYMOUTH ROAD

- The township could explore the cost of using township staff to install traffic calming elements like chicanes, speed tables, pavement markings, and signage within this segment.
- The township could also consider a pop-up or demonstration project, possibly through the DVRPC Experimental Pop-ups (ExPo) program, to test some of the proposed traffic calming measures and collect community feedback. For more information on the DVRPC ExPo program, please visit www.dvrpc.org/expo.
- The township should clarify ownership and pursue easements for the unpaved section of Rancocas Lane between Weymouth Road and the future Rancocas Creek Greenway Trail.
- The township should work with the Pinelands Commission to determine if the crushed gravel surface of the unpaved segment is already considered impervious and therefore would not require additional stormwater BMPs.

SPRING LAKE BOULEVARD

- The township could explore the costs of striping the roadway and installing delineator posts and armadillos along Spring Lake Boulevard between Chippewa Trail and Tecumseh Trail using township staff.

WHISPERING PINES BOULEVARD

- As noted on page 72, the township should clarify property ownership and pursue easements for segments of the existing fire lane and Whispering Pines Boulevard between the future Rancocas Creek Greenway Trail and Presidential Lakes.
- Once ownership and easement issues have been resolved, the township should consider improvements that make these facilities usable by bikes, pedestrians, and local traffic.
- The township will also need to work with the Pinelands Commission to address potential stormwater requirements.



Unpaved segment of Rancocas Lane near Denbo Crichton School looking south
Source: Google, August 2022



CHAPTER 6: Acknowledgments

DVRPC is extremely grateful to our partners and supporters who participated in advisory committee meetings, promoted the survey to their networks, contributed ideas, and provided feedback on the proposed improvements. This plan would not have been possible without their contributions.

Matthew Bell

Joint Base McGuire-Dix-Lakehurst

David Benedetti

Pemberton Township

Christine Black

Browns Mills Resident

Elise Bremer-Nei

New Jersey Department of Transportation

Joseph Brickley

Burlington County Department of Public Works

Rick Brown

Pemberton Township Resident

Joseph Chirachella

Deborah Hospital

Thomas Czerniecki

Rowan University at Burlington County

Ernest Deman

Pinelands Commission

Nate Dorfman

Cross County Connection Transportation Management Association

Deanna Drumm

Burlington County Department of Public Works

Patrick Farley

Cross County Connection Transportation Management Association

Rhyan Grech

Pinelands Preservation Alliance

Susan Grogan

New Jersey Pinelands Commission

Daniel Hornickel

Pemberton Township

Jason Howell

Rancocas Conservancy

Matt Johnson

Burlington County Department of Resource Conservation

Joseph Marrolli

Formerly of Pemberton Township

Tom McNaughton

Pemberton Township

Douglas Miller

Joint Base McGuire-Dix-Lakehurst

Luis Olivieri

Browns Mills Resident and DVRPC Public Participation Task Force Member

Hon. David Patriarca

Pemberton Township

Nicole Pittman

Pemberton Township

Joe Rapp

New Jersey Department of Transportation

Mary Pat Robbie

Burlington County Department of Resource Conservation

William Sheaffer

Burlington County Department of Public Works

Conner Smith

Joint Base McGuire-Dix-Lakehurst

P. Conrad Smith

Joint Base McGuire-Dix-Lakehurst

Tom Stanuikynas

Burlington County Bridge Commission

Greg Volpe

Rowan University at Burlington County



Pedestrian Crossing Sign and Crosswalk on Trenton Road at Pear Avenue
Source: Derek Lombardi, DVRPC



Appendices

- A. Browns Mills Transportation Survey
- B. Survey Responses Presentation
- C. Pemberton-Browns Mills Road
- D. Trenton Road
- E. Lakehurst Road
- F. Rancocas Lane, Scammell Drive, and Weymouth Road
- G. Spring Lake and Whispering Pines Boulevards
- H. Other Recommendations
- I. Selected Cost Estimates

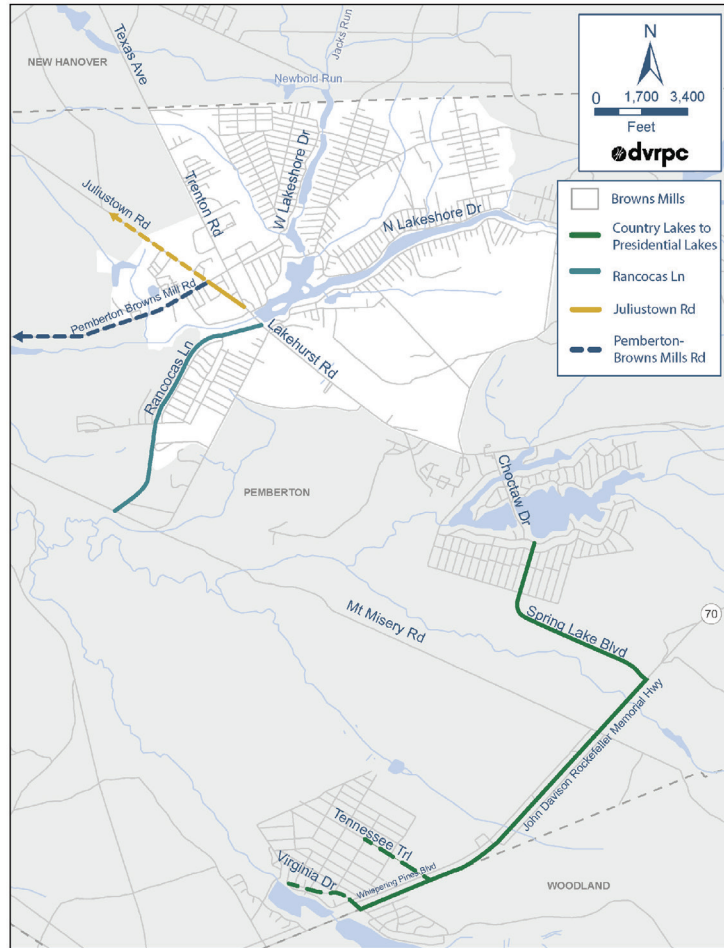
APPENDIX A:

Browns Mills Transportation Survey

Browns Mills Transportation Survey

The Delaware Valley Regional Planning Commission is working with Pemberton Township to develop a targeted Bicycle and Pedestrian Action Plan for Browns Mills. The plan will provide specific and actionable recommendations for a limited number of sites, focusing on projects that will support better health outcomes and increase connections to parks, community facilities, the Town Center, and/or neighboring communities. The selected sites are shown on the map below. We want to know about your experiences walking and biking in Browns Mills, specifically in these four areas.

Please help us by completing this 5 minute survey. Thank you!



1. On average, how frequently do you WALK in the Browns Mills area for the following reasons?

	Daily	Several times per week	Several times per month	Fewer than 1 or 2 times per month
To go to work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To go to school (or walk child to school)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To go shopping/run errands	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To get to and from a transit stop	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To exercise or go to the park	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other reasons	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. If you noted other above, please share the other reasons that you WALK here:

3. What do you perceive as the biggest barriers to WALKING in Browns Mills? Please rate the following.

	Major Barrier	Minor Barrier	Not a Significant Barrier	Unsure
Missing or broken sidewalk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sidewalks too narrow or obstructed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Faded or poorly marked crosswalks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inadequate curb ramps	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of pedestrian X-ing signage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inadequate lighting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heavy and/or speeding automobile traffic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visually unappealing surroundings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. On average, how frequently do you BIKE in the Browns Mills area for the following reasons?

	Daily	Several times per week	Several times per month	Fewer than 1 or 2 times per month
To go to work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To go to school (or walk child to school)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To go shopping/run errands	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To get to and from a transit stop	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To exercise or go to the park	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other reasons	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. If you noted other above, please share the other reasons that you BIKE here:

6. What do you perceive as the biggest barriers to BIKE travel? Please rate the following.

	Major Barrier	Minor Barrier	Not a Significant Barrier	Unsure
Limited bicycle facilities (trails, bike lanes, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dangerous automobile traffic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Limited bicycle parking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dangerous intersection crossings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Don't know safe/low stress routes to destinations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Issues in the Study Area

For the following questions, please refer to the map on page 1 for the locations of the specific study areas.

7. Rancocas Ln?

8. Juliestown Rd?

9. Pemberton Browns Mills Rd?

10. Country Lakes to Presidential Lakes?

Potential Improvements

Share your thoughts on potential improvements to support walking and bicycling in and around Browns Mills.

11. How important do you think the following infrastructure improvements would be in supporting walking and bicycling in and around Browns Mills?

	Very important	Somewhat important	Not important	Unsure
More sidewalks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
More bike lanes (on-road)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
More trails or off-road side paths for walking and biking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maintenance of sidewalks, bike lanes, and trails	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Safer intersections (pedestrian signals/ crosswalks)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
More separation from vehicle traffic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. How important do you think the following improvements would be in supporting walking and bicycling in and around Browns Mills?

	Very important	Somewhat important	Not important	Unsure
Better street lighting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Education/ enforcement for motorists, pedestrians, and bicyclists	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Secure bicycle parking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
More streetscape amenities (ie. benches, trash cans, street trees)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
More separation from vehicle traffic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. How would the following affect your willingness to walk in Browns Mills? Examples of some options are illustrated below.



	Greatly increase	Somewhat increase	Neither increase nor decrease	Somewhat decrease	Greatly decrease
Curb extension	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pedestrian refuge island	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Decorative crosswalk/ intersection treatment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pedestrian signage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Raised crosswalk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. How would the following affect your willingness to ride a bike? Examples of some options are illustrated below.



15. Where would you like to see more bike parking?

- ☐ Downtown Browns Mills
- ☐ Mirror Lake Beach
- ☐ Parks
- ☐ Other

16. Do you have any other thoughts on walking and biking in and around Browns Mills?

Please tell us about yourself: optional demographic questions

The responses from this survey will ideally represent the Browns Mills area by geographic and demographic diversity. Please help us create a more inclusive group by sharing some of your demographic characteristics. Thank you so much for your time and input!

17. What is your home zip code?

18. If you are employed or are a full-time student, please share your work or school zip code.

19. Please tell us your age.

- ☐ 15 or under
- ☐ 16-24
- ☐ 25-34
- ☐ 35-44
- ☐ 45-54
- ☐ 55-64
- ☐ 65-74
- ☐ 75 and over
- ☐ Prefer not to answer

20. Gender: How do you identify?

- ☐ Female
- ☐ Male
- ☐ Non-binary
- ☐ Prefer not to answer
- ☐ Prefer to self-describe

Self-describe here:

21. Are you of Spanish, Hispanic, or Latino Origin?

- ☐ Yes
- ☐ No
- ☐ Prefer not to answer

22. What race do you identify with? Choose all that apply.

- ☐ Asian/South Asian/Pacific Islander
- ☐ Black/African American
- ☐ Middle Eastern
- ☐ Native American/American Indian
- ☐ White/Caucasian
- ☐ Prefer not to answer
- ☐ Other

Enter other here:

23. Please share your email if you would like to receive further updates on the Browns Mills Bicycle and Pedestrian Action Plan.

Survey Responses Presentation

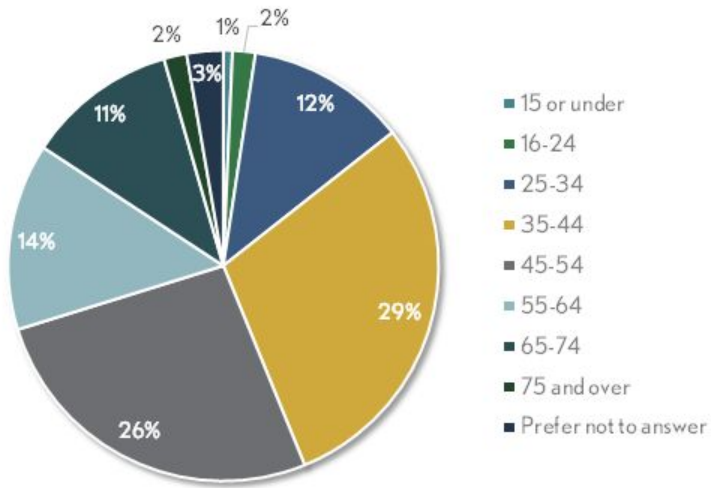


Public Engagement

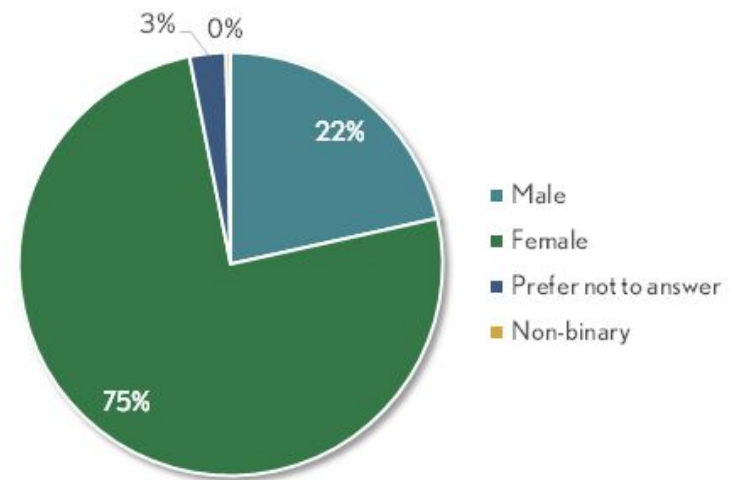
- Survey purpose:
 - If and why people walk and/or bike around Browns Mills;
 - What makes it hard to walk and/or bike, specifically on the selected corridors; and
 - What improvements people would like to see.
- Survey promotion:
 - Shared with the Advisory Committee and asked to share it with your networks.
 - Shared on DVRPC's social media pages.
 - Direct request to other partners, including the Pemberton Twp School District, which shared it with parents and students.
- Open for about a month.
- Had 293 responses.



Demographic Questions

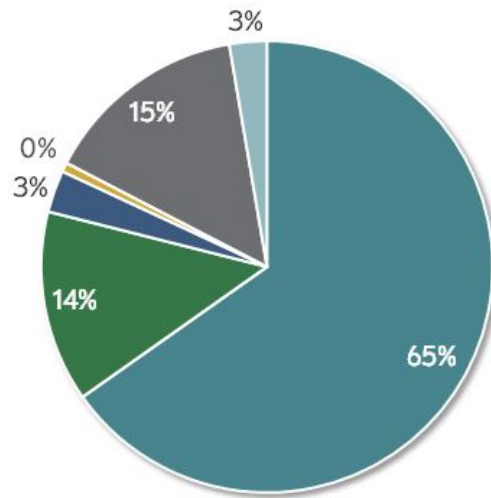


AGE



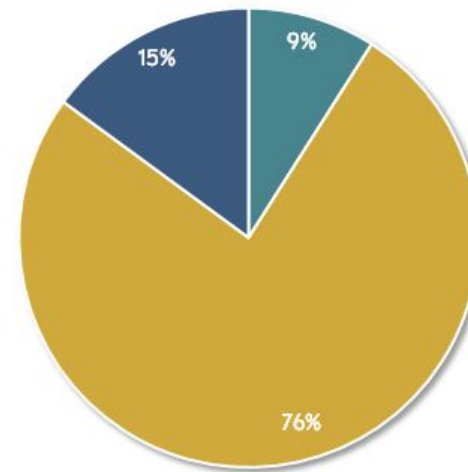
GENDER

Demographic Questions



RACE

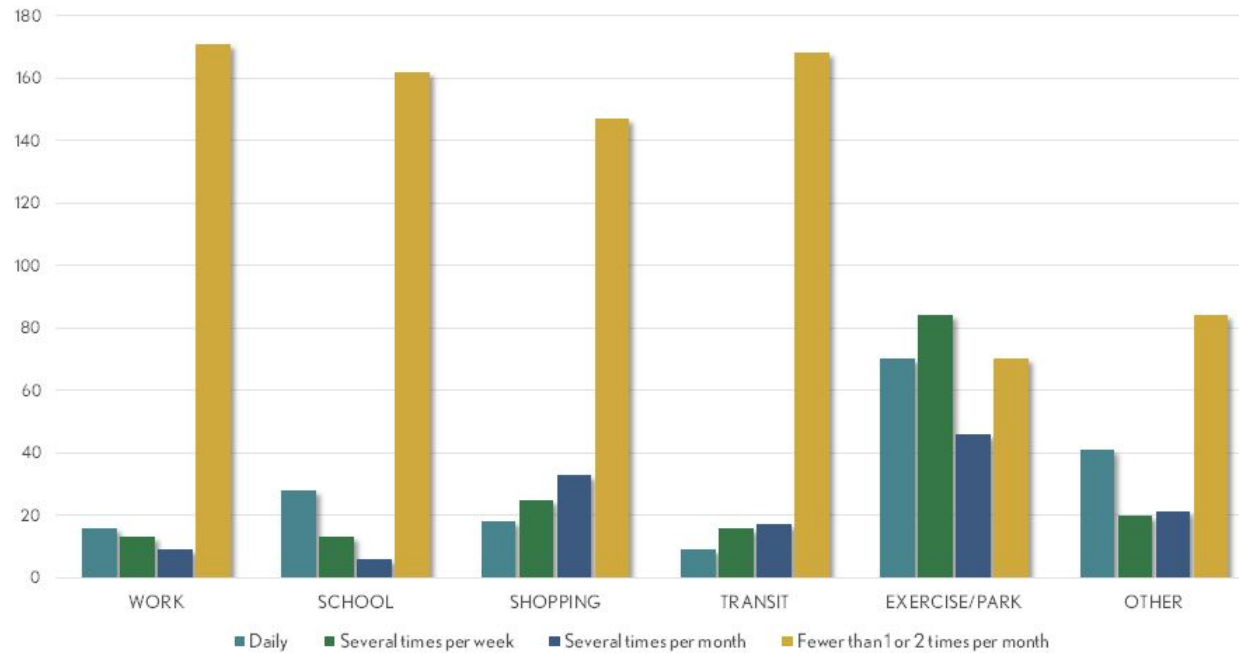
- White/Caucasian
- Black/African American
- Asian/South Asian/Pacific Islander
- Native American/American Indian
- Prefer not to answer
- Other



SPANISH OR LATINO ORIGIN

- Yes
- No
- Prefer not to answer

1. On average, how frequently do you WALK in the Browns Mills area for the following reasons?



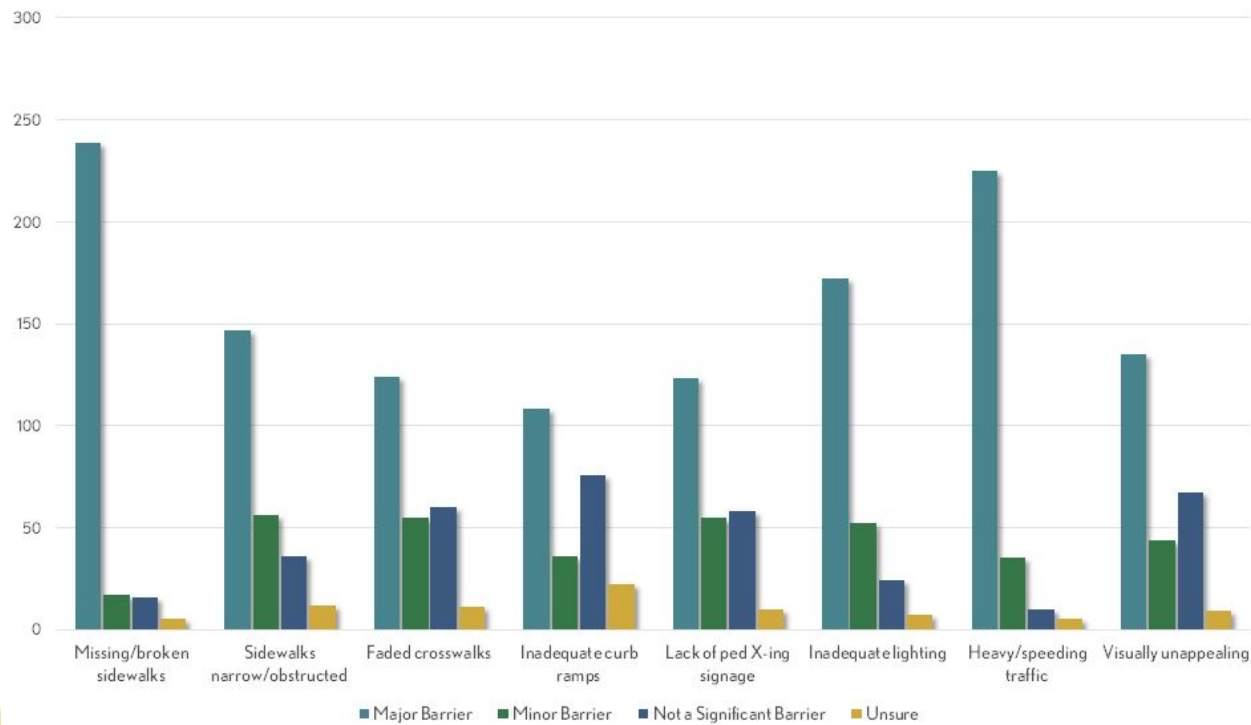


2. If you noted other above, please share the other reasons that you WALK here:

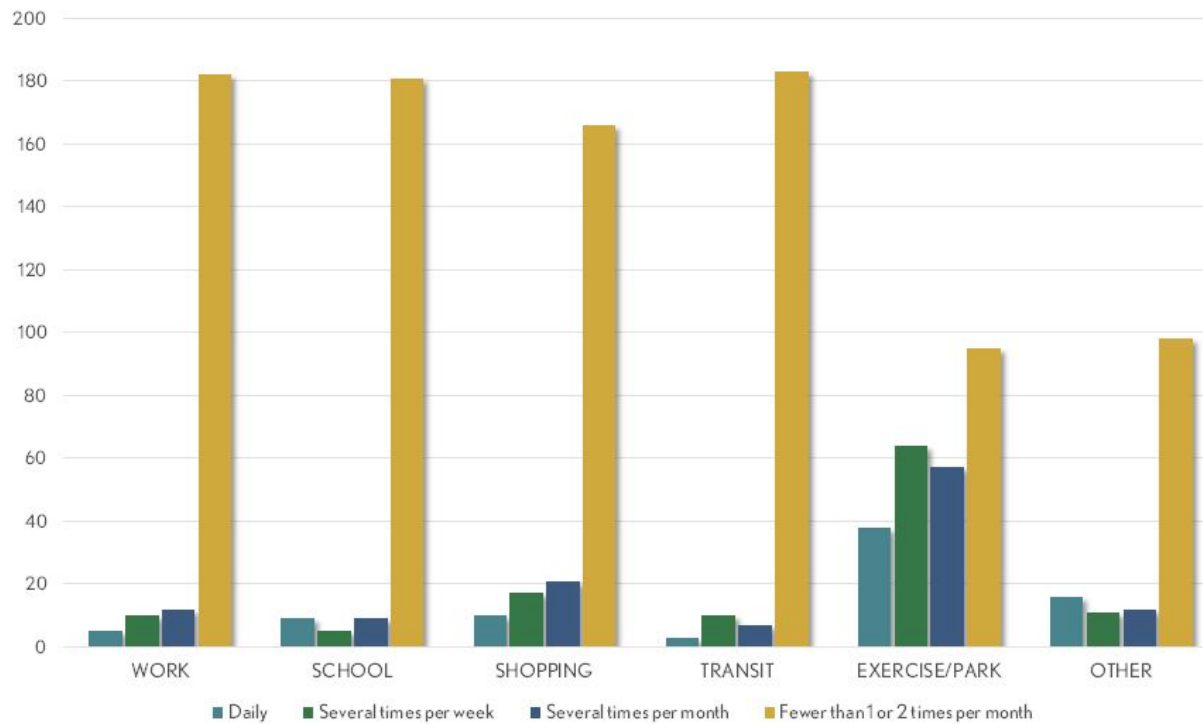
Generalized responses in order of prevalence:

- Recreation/leisure/nature
- Dog walking
- Visit friends/family
- Children
- Volunteering/stewardship
- Auto repair
- Pick up food
- Doctors appts

3. What do you perceive as the biggest barriers to WALKING in Browns Mills? Please rate the following:



4. On average, how frequently do you BIKE in the Browns Mills area for the following reasons?





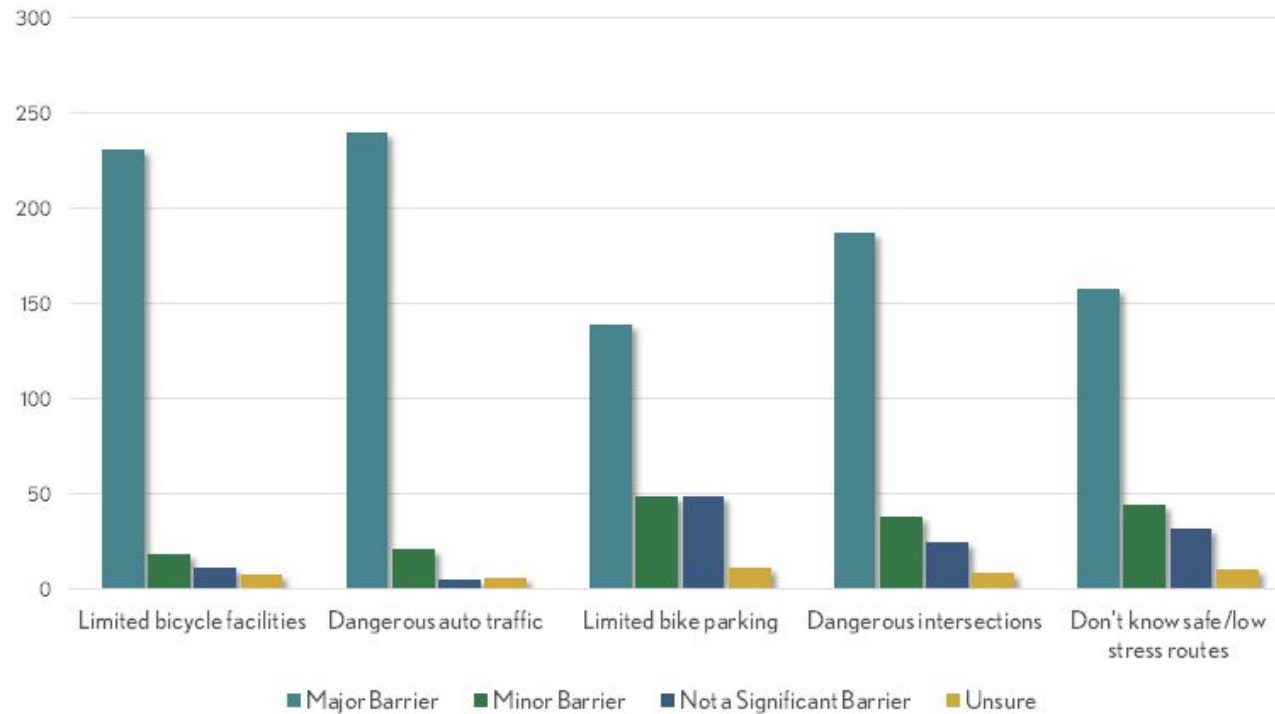
5. If you noted other above, please share the other reasons that you BIKE here:

Generalized responses in order of prevalence:

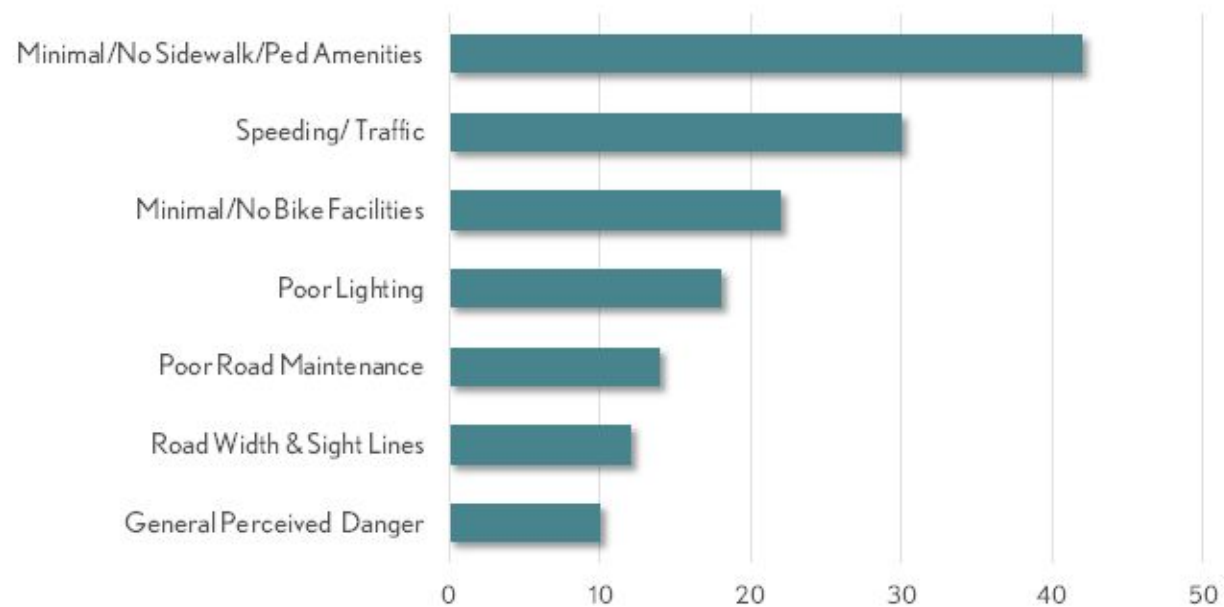
- Recreation/leisure/nature
- Visit friends/family
- Children
- General/visit



6. What do you perceive as the biggest barriers to BIKE travel?

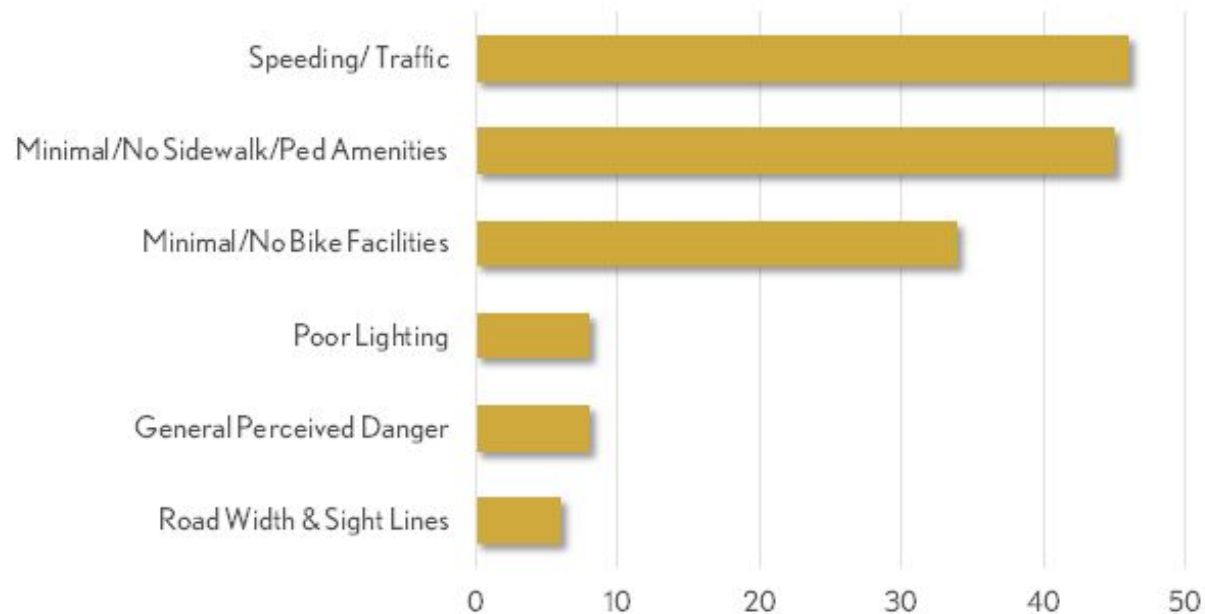


7. Issues reported for Rancocas Ln.



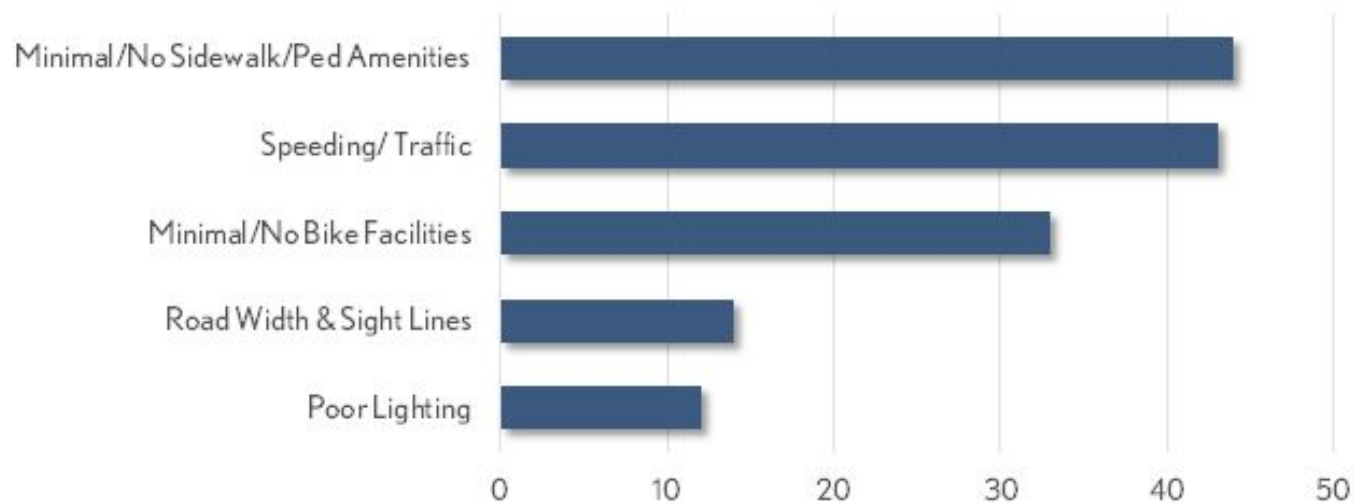
**37 Other Responses*

8. Issues reported for Juliustown Rd.



**21 Other Responses*

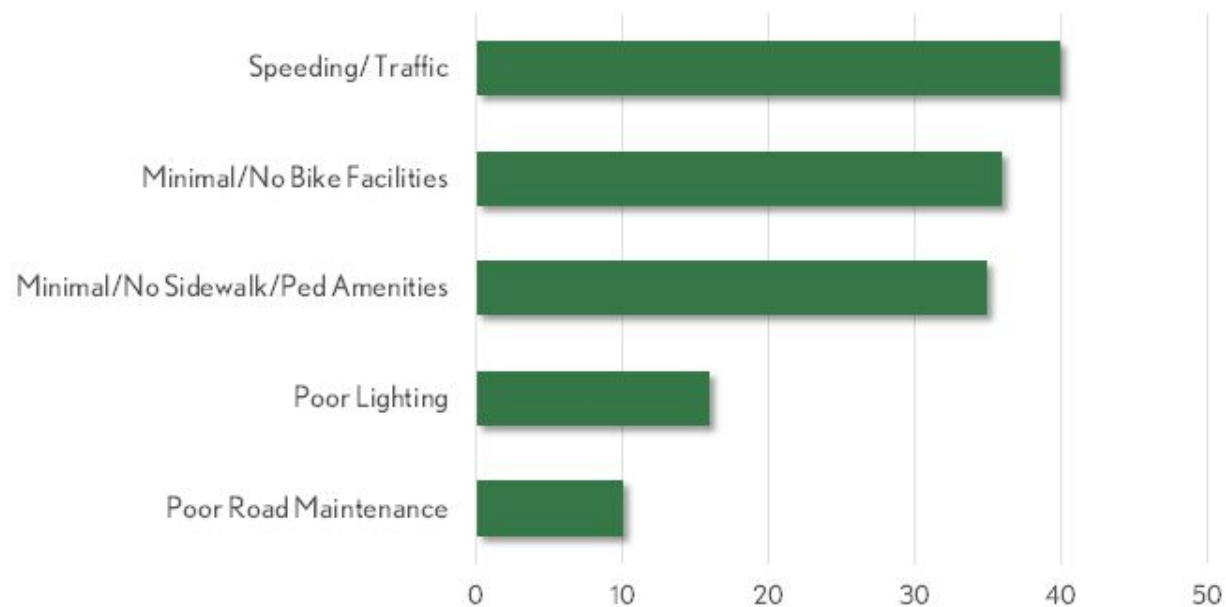
9. Issues reported for Pemberton-Browns Mills Rd.



**29 Other Responses*

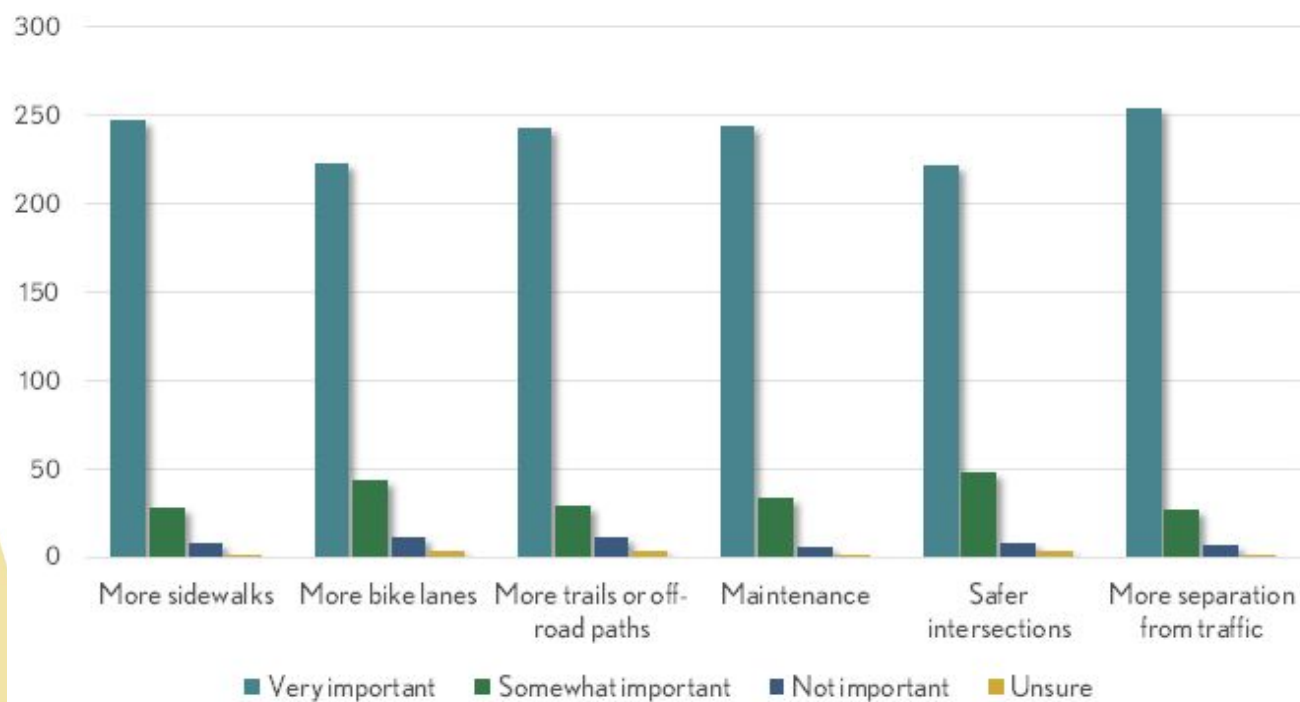


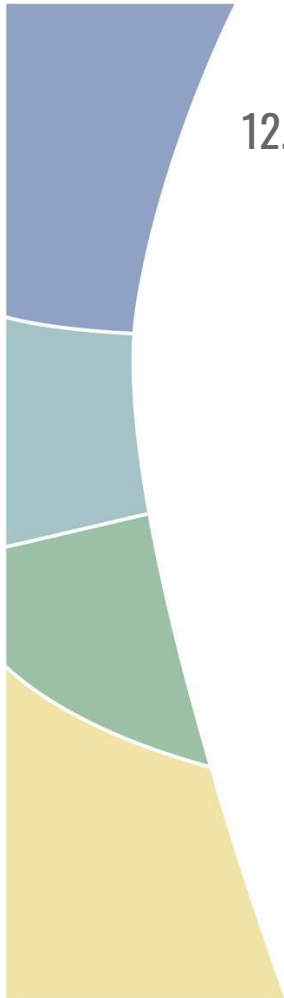
10. Issues reported for Country Lake to Presidential Lakes



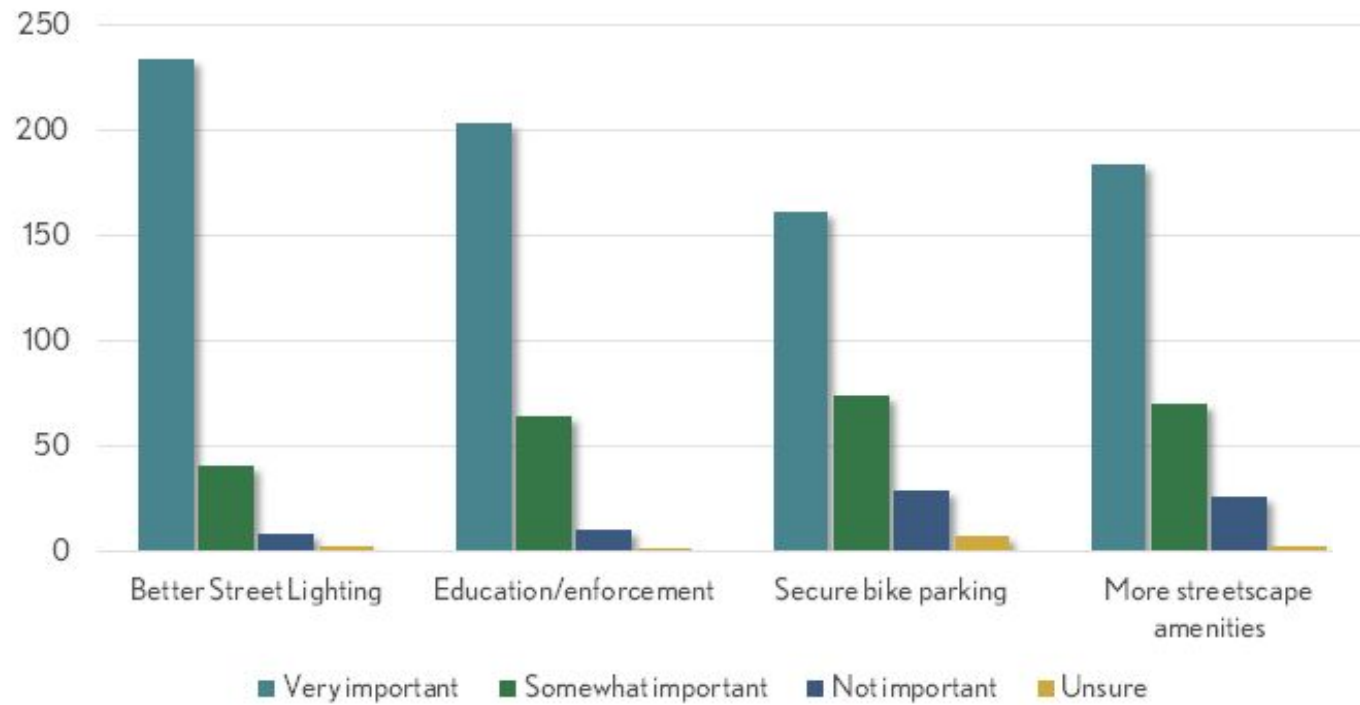
**33 Other Responses*

11. How important do you think the following infrastructure improvements would be in supporting walking and bicycling in and around Browns Mills?





12. How important do you think the following improvements would be in supporting walking and bicycling in and around Browns Mills?



13. How would the following affect your willingness to walk in Browns Mills?

Examples of some options are illustrated below.

Curb Extension



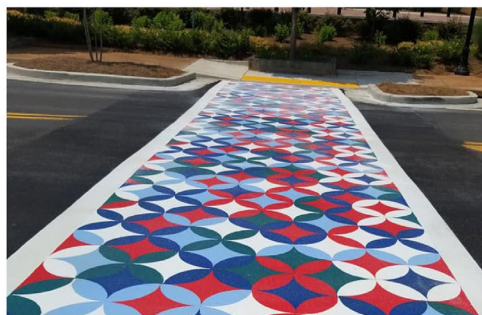
Source: Wikimedia User Richard Drdul

Pedestrian Refuge Island



Source: Wikimedia User Richard Drdul

Decorative Crosswalk



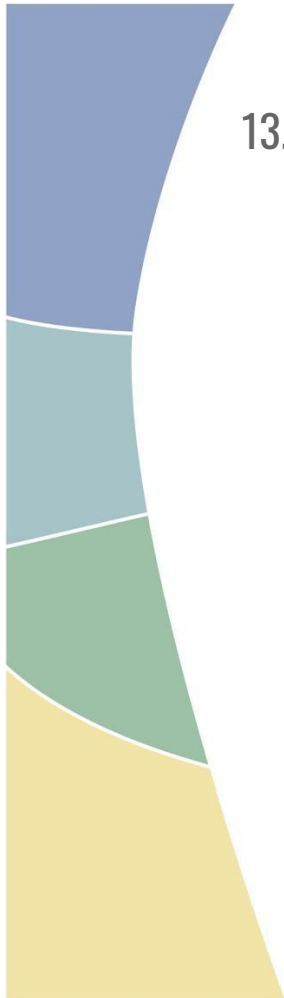
Source: Facebook User Downtown Braselton

Pedestrian Signage

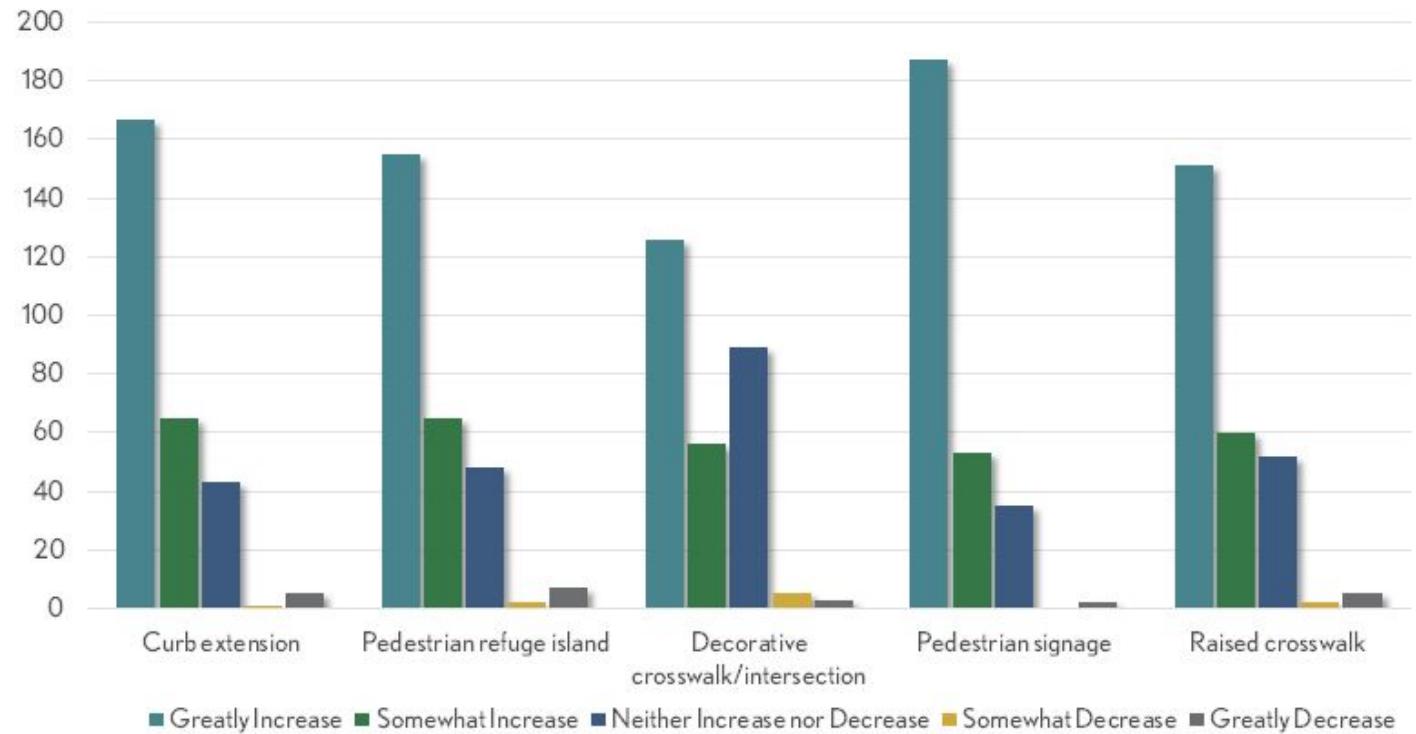


Source: Texas A&M Transportation Institute





13. How would the following affect your willingness to walk in Browns Mills?



14. How would the following affect your willingness to ride a bike?

Examples of some options are illustrated below.

Conventional, On-Road Bike Lane



Source: Flickr User Charmeck.org

Separated Bike Lane



Source: Flickr User Robert Ashworth

Painted Bike Lane



Source: Flickr User Gene Bisbee

Striped Bike Crossing



Source: Small Town and Rural Design Guide, Taylor Lonsdale, WTI

Sharrow



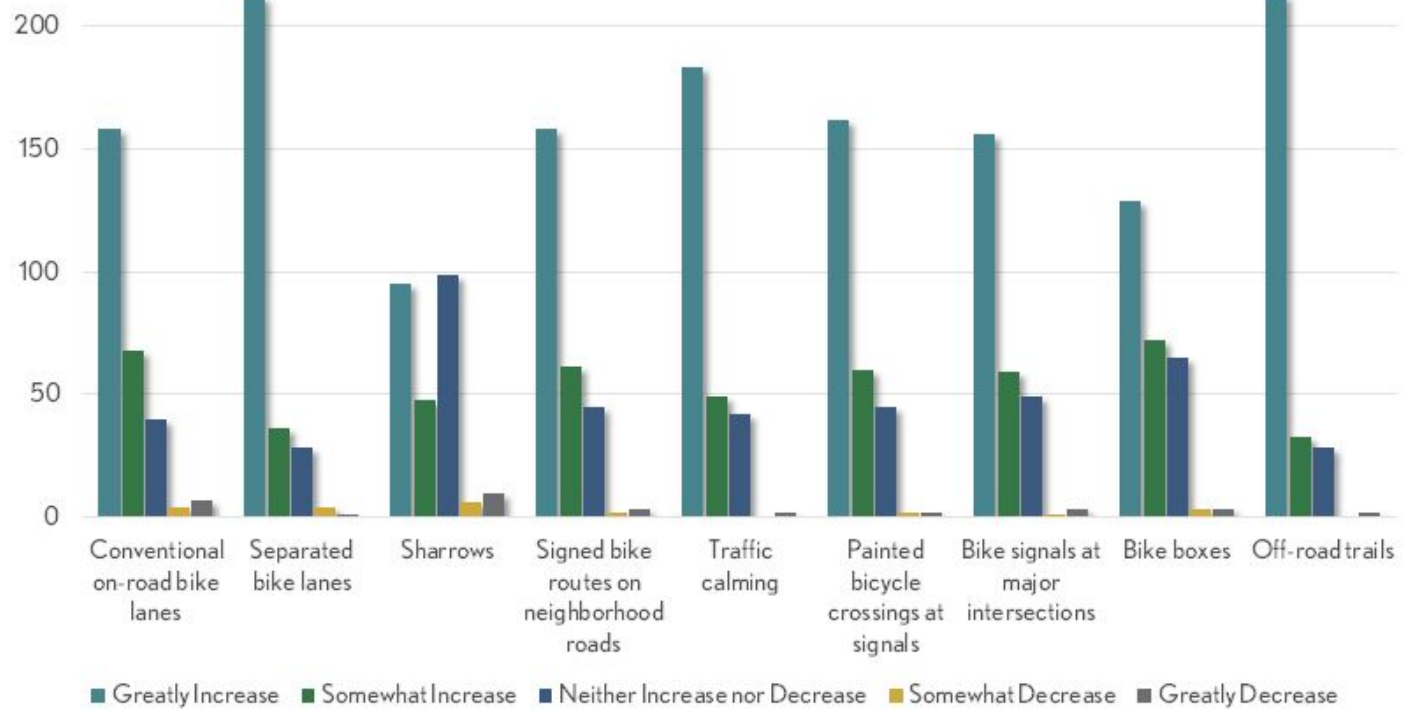
Source: Flickr User Elly Blue

Two-Way Protected Bike Lane

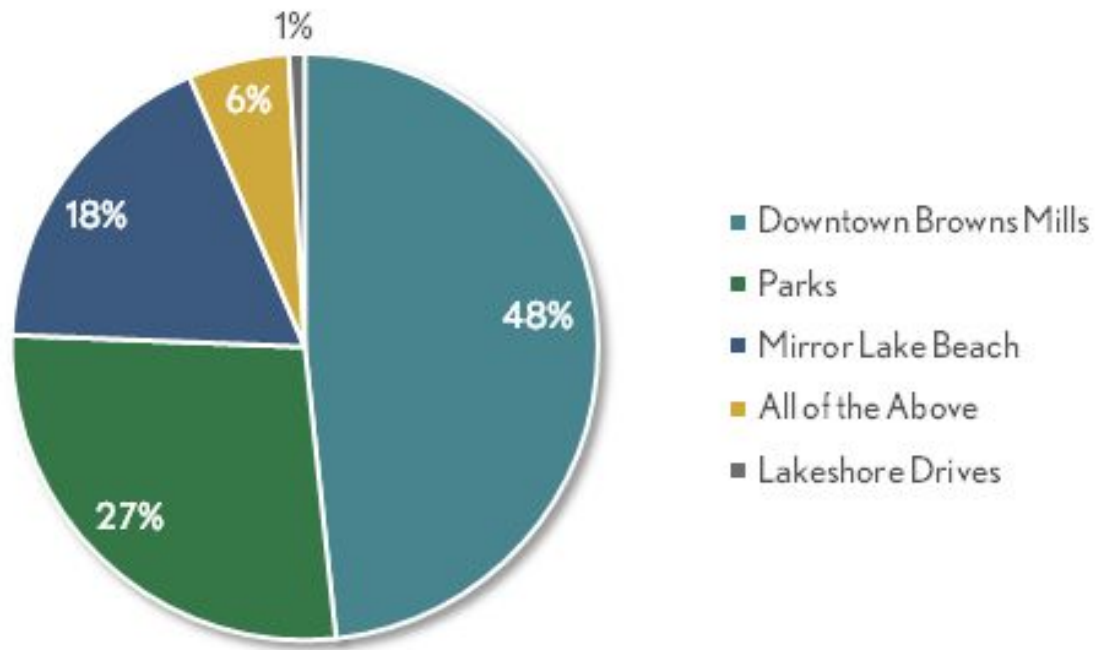


Source: Wikimedia User Kenneth C. Zirkel

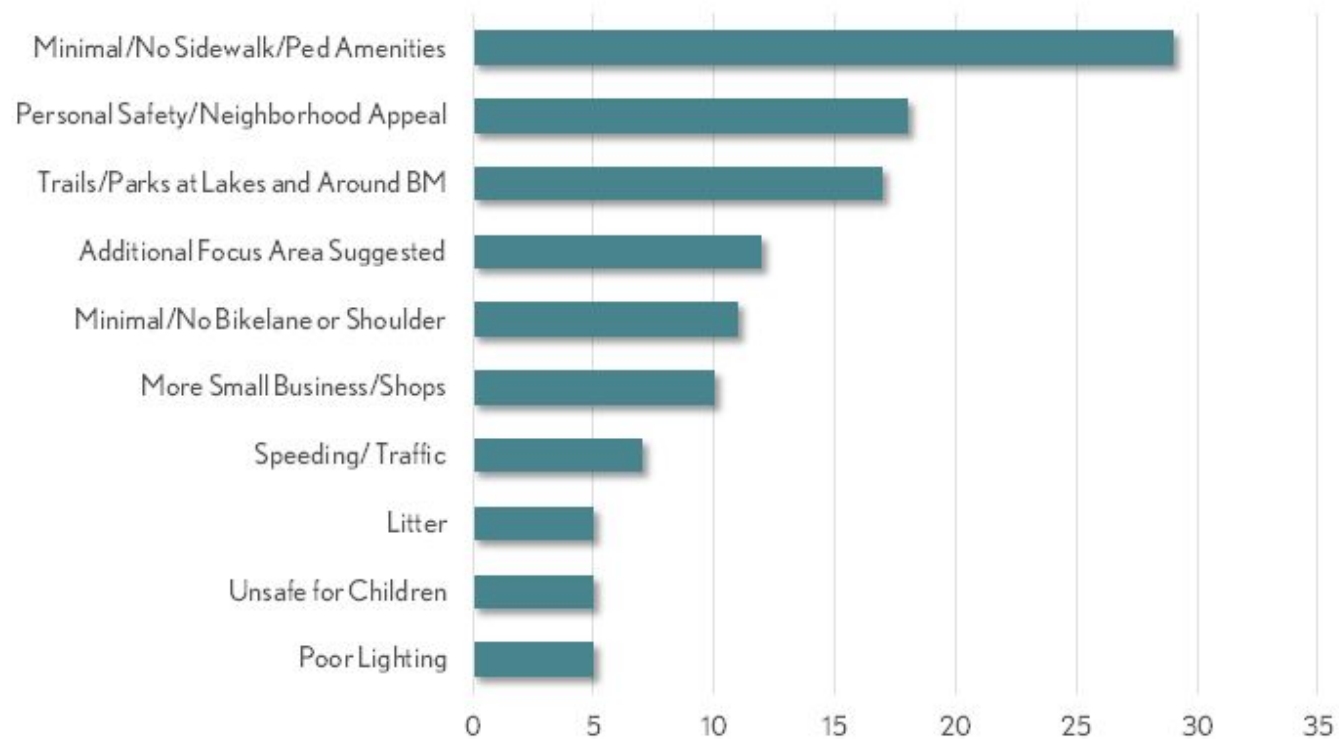
14. How would the following affect your willingness to ride a bike?



15. Where would you like to see more bike parking?



16. Do you have any other thoughts on walking and biking in and around Browns Mills?



APPENDIX C:

Pemberton-Browns Mills Road

The following details the existing conditions and proposed bicycle and pedestrian improvements along Pemberton-Browns Mills Road between Browns Mills Avenue to the west and Dover Place/Ongs Run trail to the east.

FIGURE C-1: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR PEMBERTON-BROWNS MILLS ROAD AT BROWNS MILLS AVENUE



FIGURE C-2: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR PEMBERTON-BROWNS MILLS EAST OF MIWA STREET

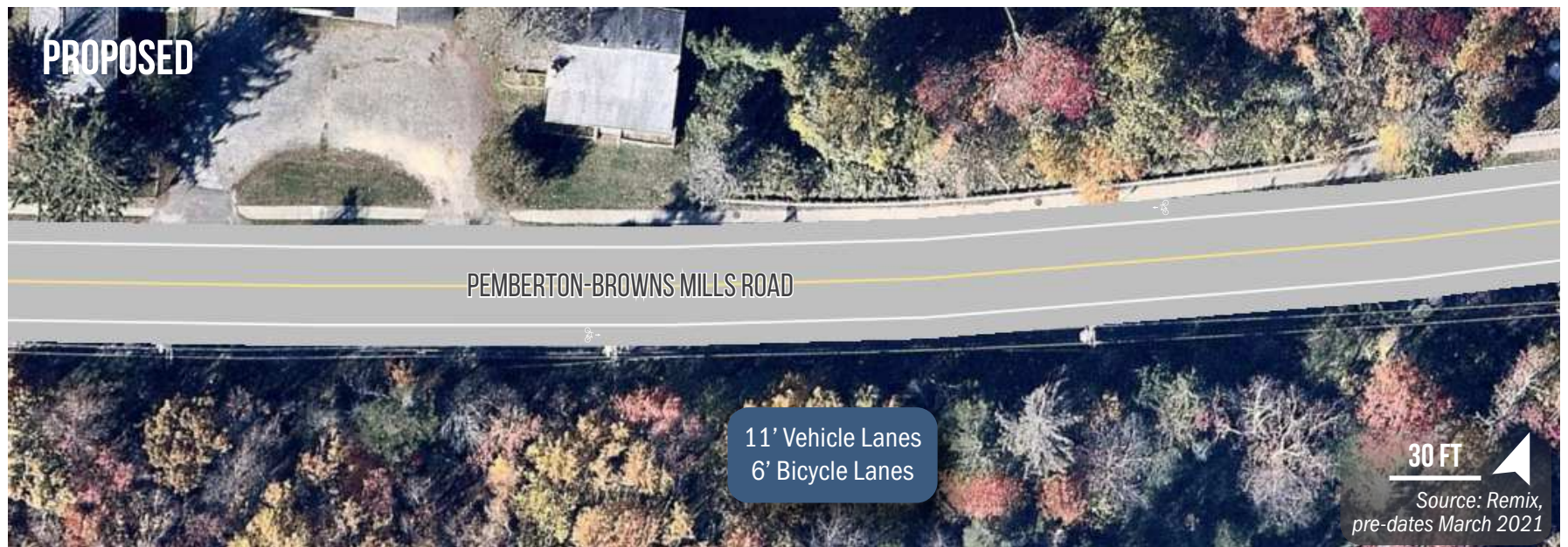


FIGURE C-3: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR PEMBERTON-BROWNS MILLS ROAD WEST OF DICKENS STREET



FIGURE C-4: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR PEMBERTON-BROWNS MILLS ROAD BETWEEN DICKENS AND BEVERLY STREETS



FIGURE C-5: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR PEMBERTON-BROWNS MILLS ROAD AT BERKSHIRE STREET

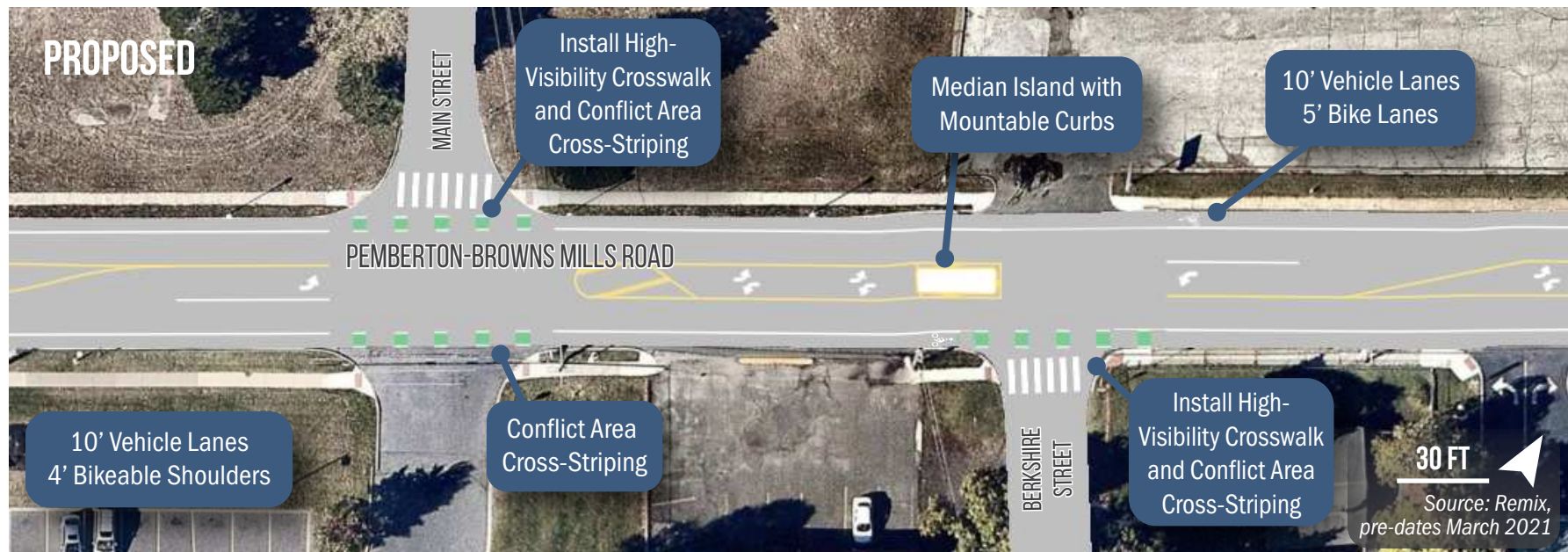


FIGURE C-6: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR PEMBERTON-BROWNS MILLS ROAD AT FAIRFIELD AND ASHTON STREETS



FIGURE C-7: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR PEMBERTON-BROWNS MILLS ROAD AT BROOK STREET AND JULIUSTOWN ROAD

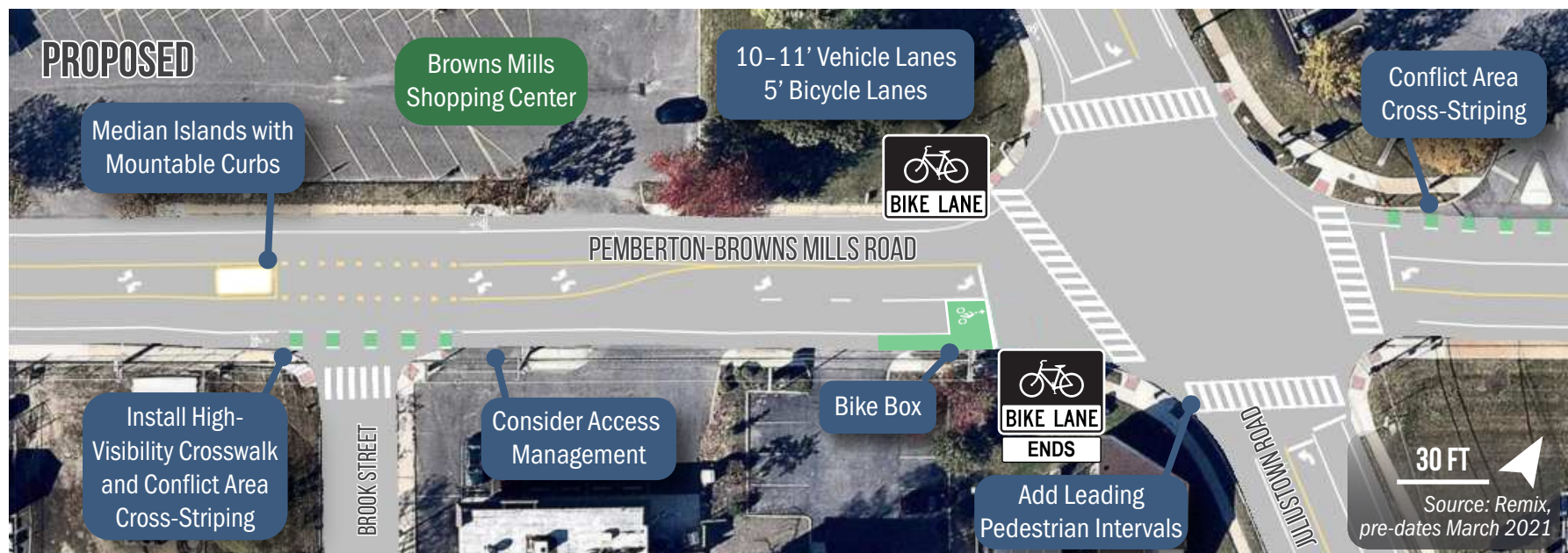
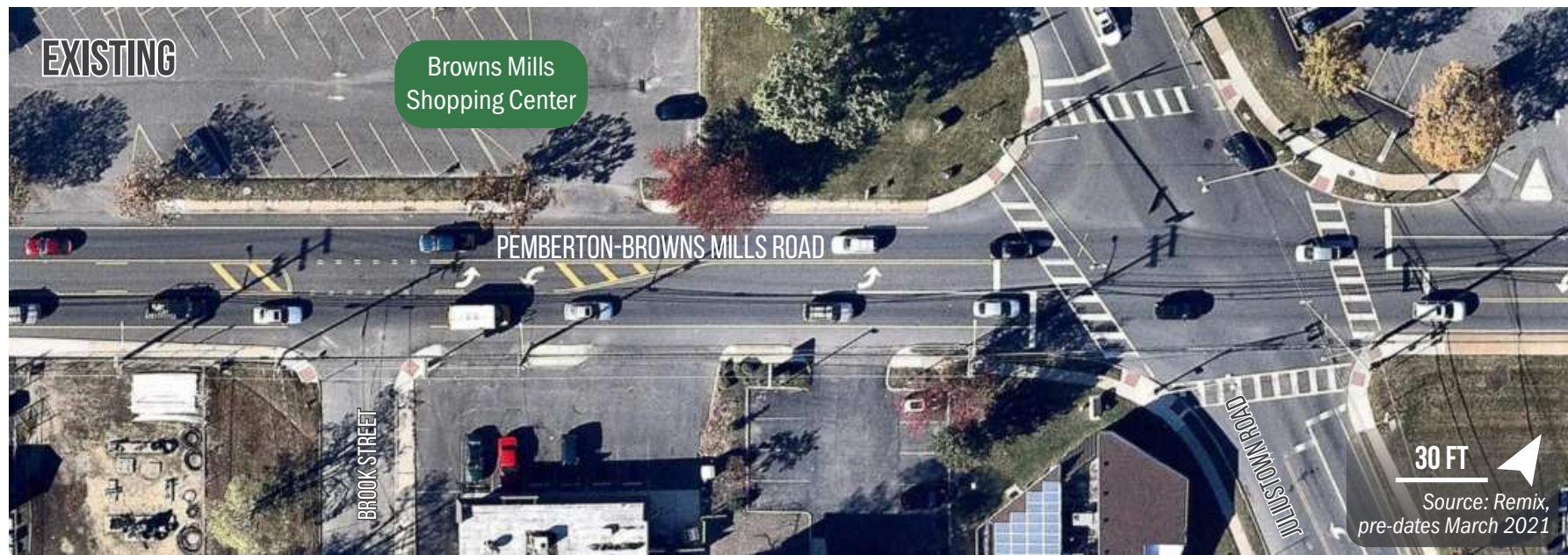


FIGURE C-8: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR PEMBERTON-BROWNS MILLS ROAD AT MARKET STREET

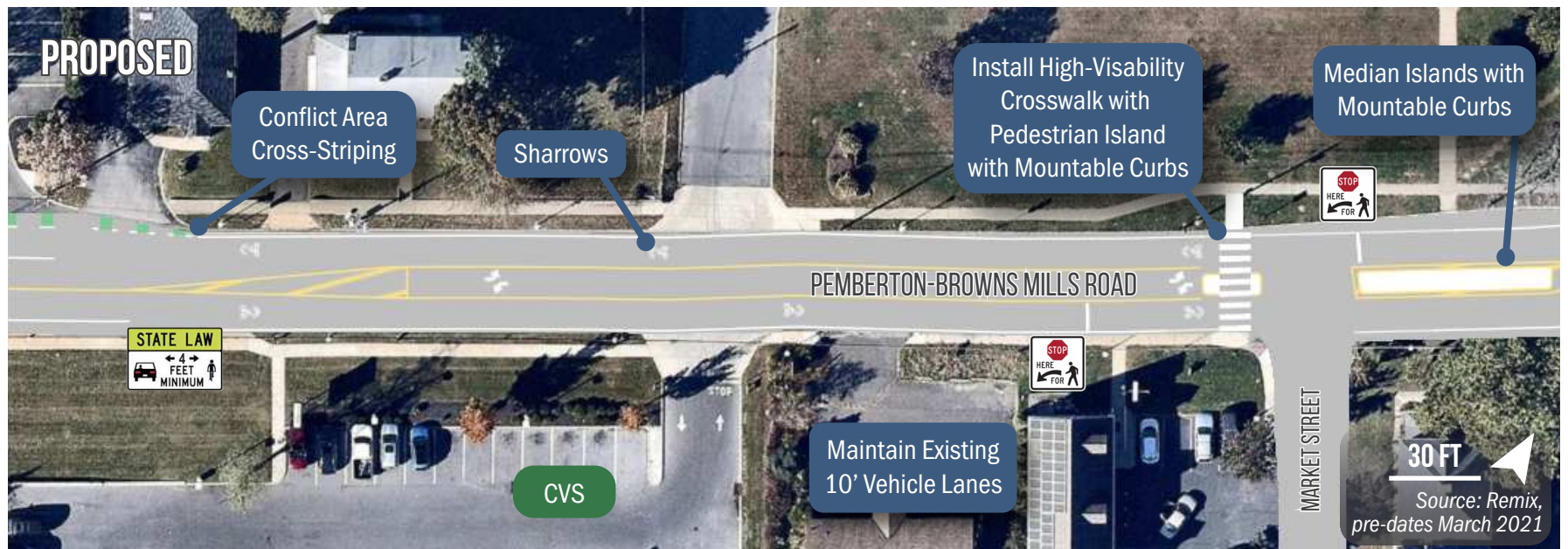
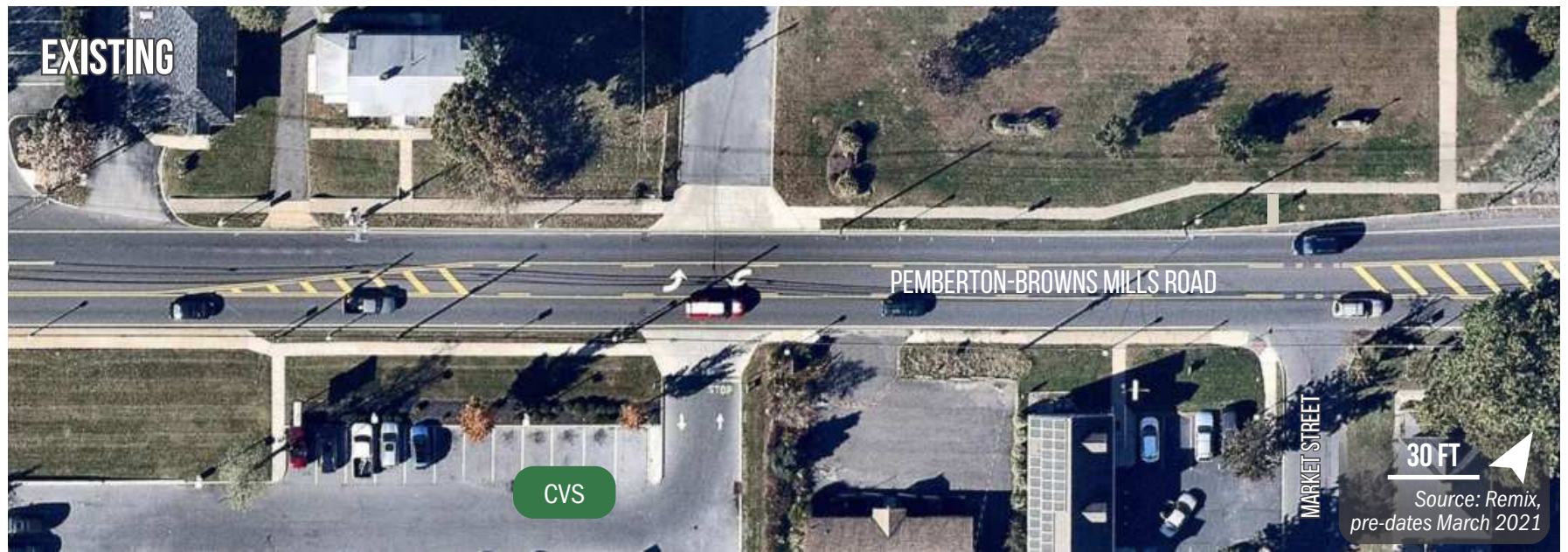


FIGURE C-9: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR PEMBERTON-BROWNS MILLS ROAD AT TRENTON ROAD

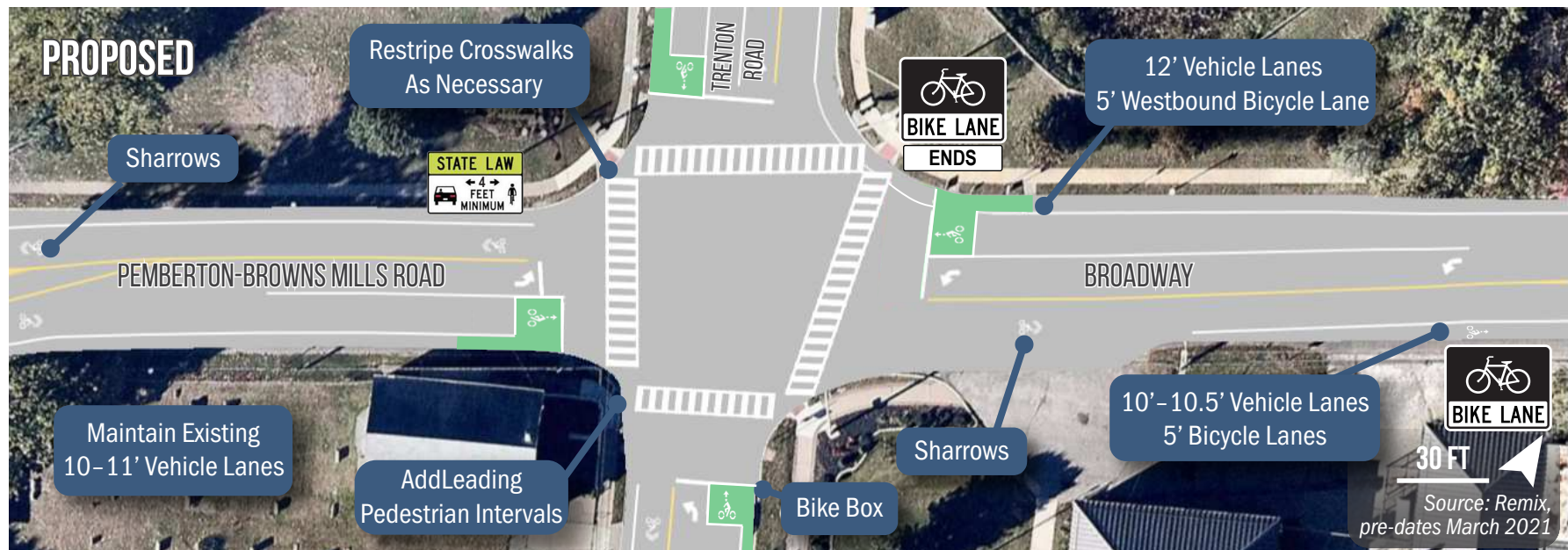


FIGURE C-10: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR BROADWAY AT PEAR AVENUE

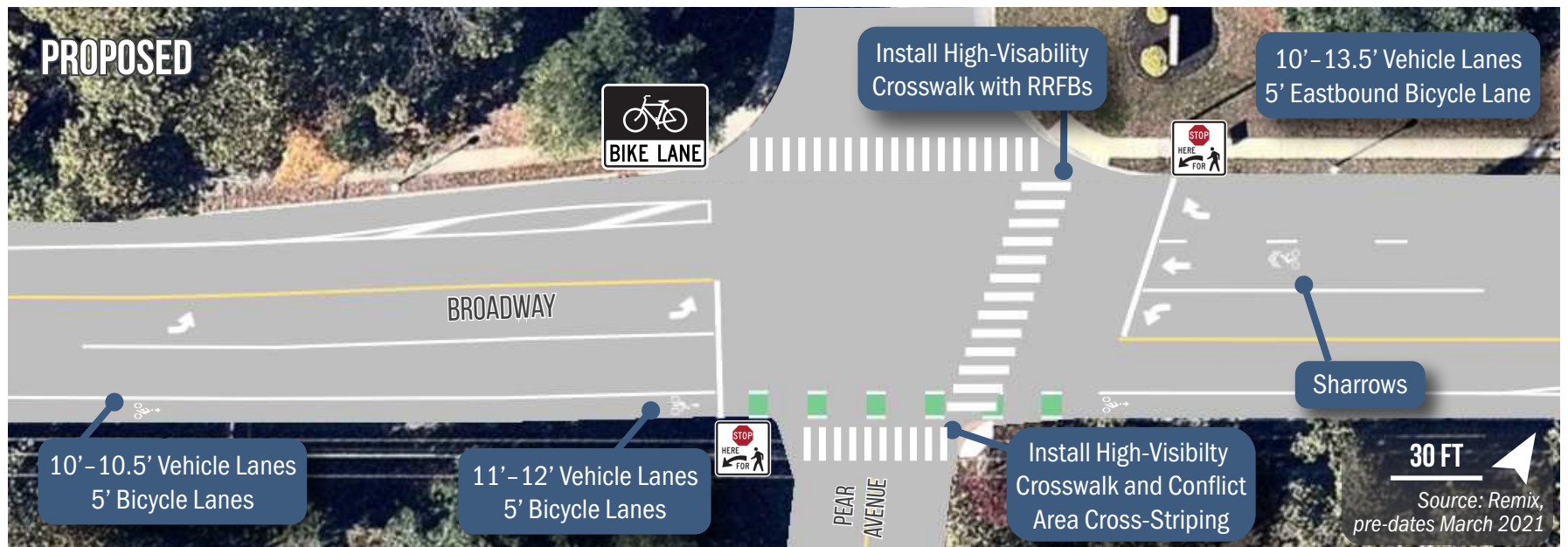


FIGURE C-11: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR BROADWAY EAST OF PEAR AVENUE

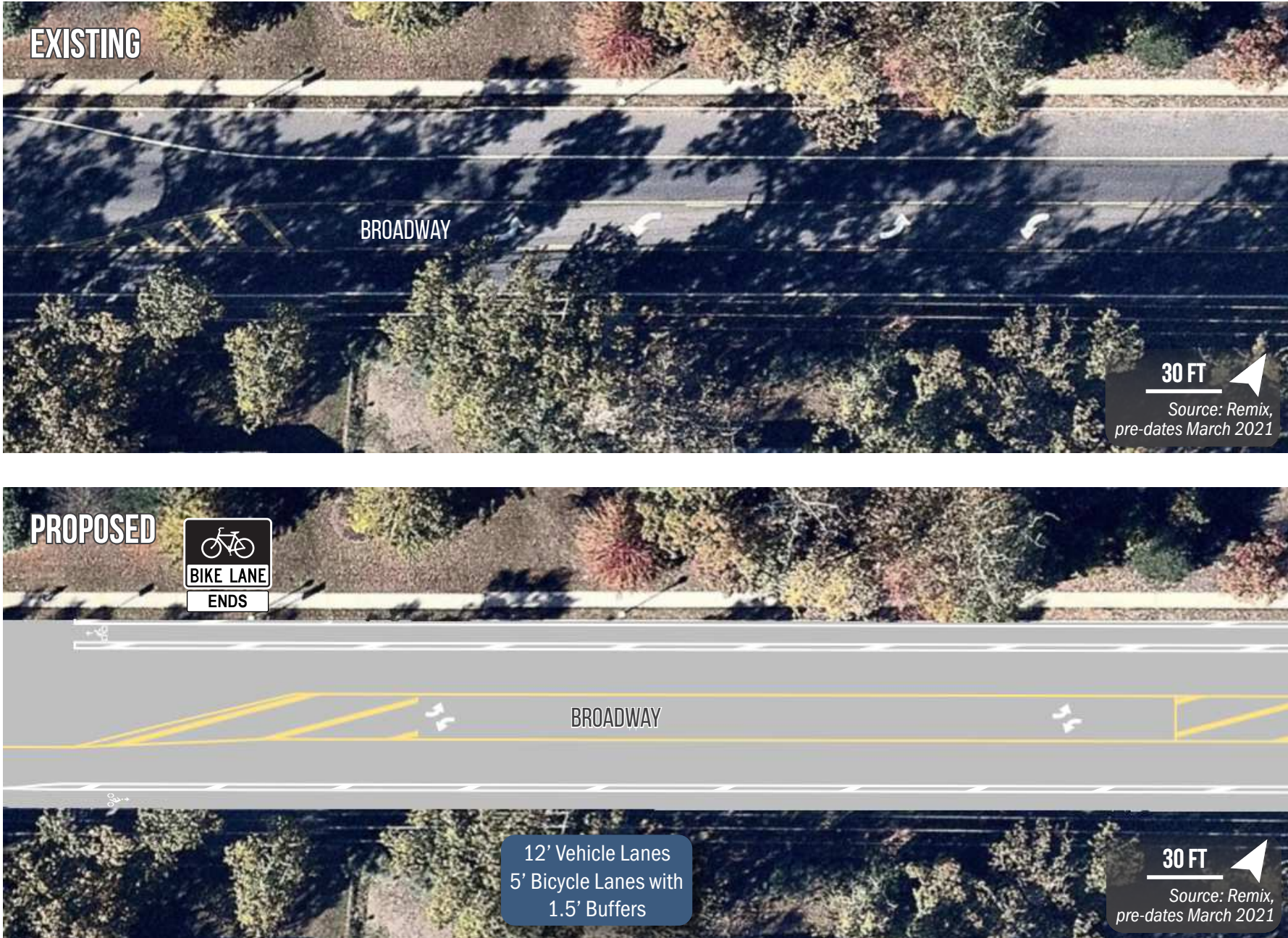


FIGURE C-12: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR BROADWAY NEAR PINE GROVE PLAZA

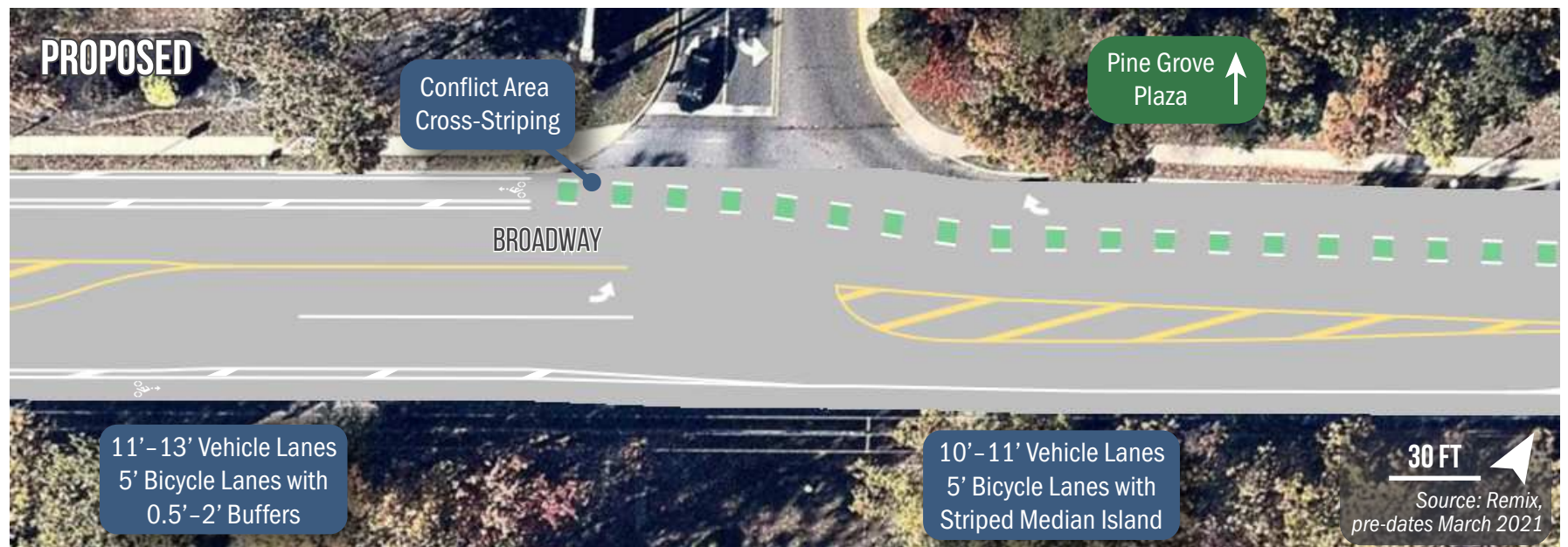


FIGURE C-13: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR BROADWAY NEAR THE PEMBERTON COMMUNITY LIBRARY



FIGURE C-14: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR BROADWAY NEAR ONGS RUN



APPENDIX D:

Trenton Road

The following section details the existing and proposed bicycle and pedestrian improvements on and around Trenton Road between Pemberton Boulevard to the northwest and Lakehurst Road to the southeast.

FIGURE D-1: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR TRENTON ROAD AT DANS ROAD



FIGURE D-2: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR TRENTON ROAD SOUTH OF DANS ROAD



FIGURE D-3: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR TRENTON ROAD NORTH OF CHICKS WAY



FIGURE D-4: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR TRENTON ROAD AT CHICKS WAY, BRIAN DRIVE, AND ALFRED DRIVE



FIGURE D-5: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR TRENTON ROAD AT TRAINOR PLACE



FIGURE D-6: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR TRENTON ROAD AT LAWRENCE DRIVE



FIGURE D-7: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR TRENTON ROAD AT EARLIN AVENUE



FIGURE D-8: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR TRENTON ROAD AT PINE MILL COURT



FIGURE D-9: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR TRENTON ROAD AT PINE MILL ROAD

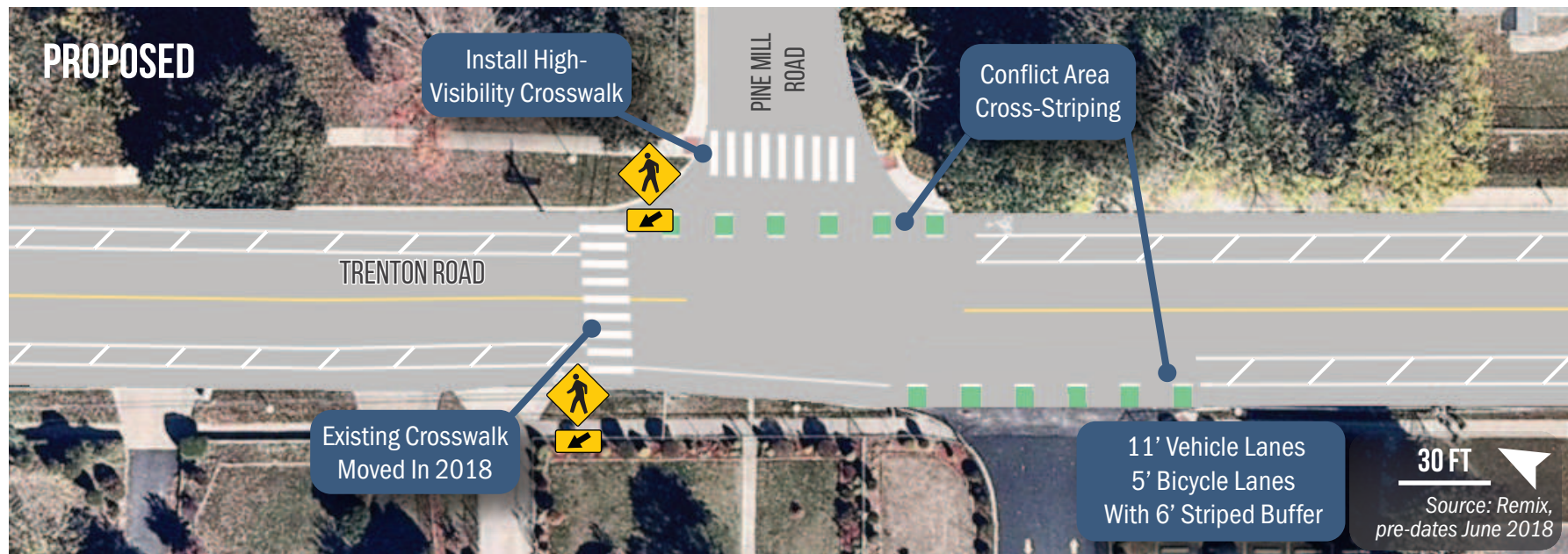
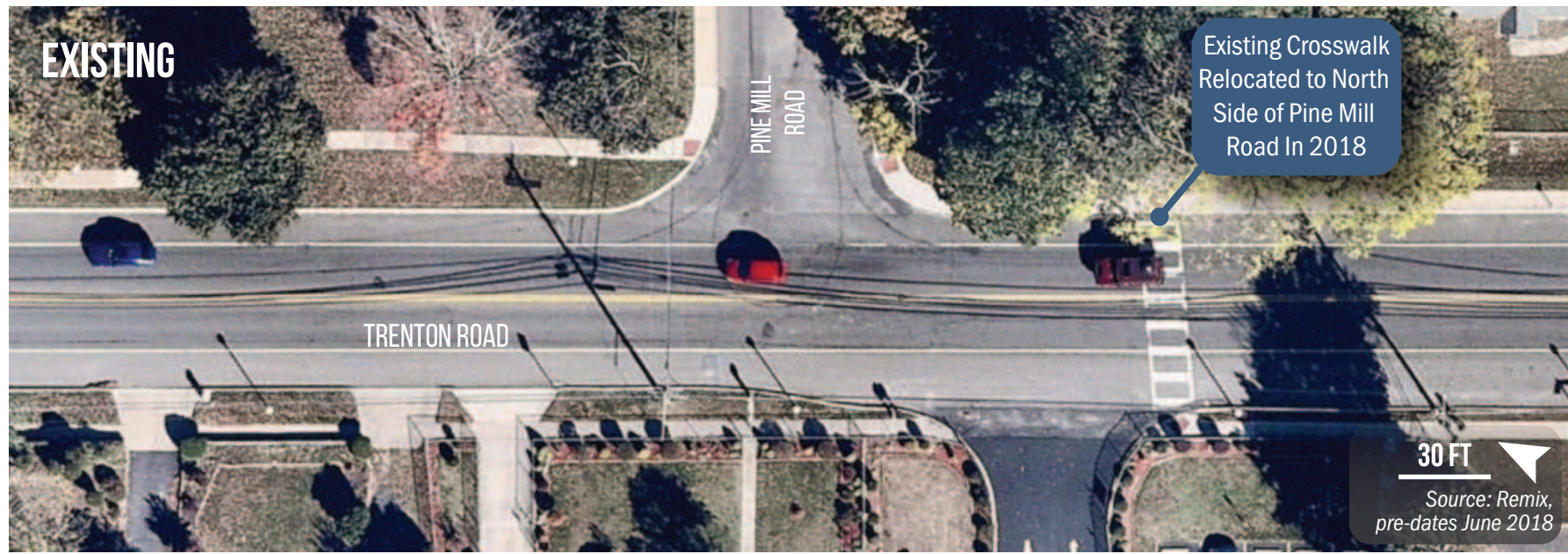


FIGURE D-10: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR TRENTON ROAD AT BROTHERS DINER



FIGURE D-11: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR TRENTON ROAD AT DUNKIN' DONUTS

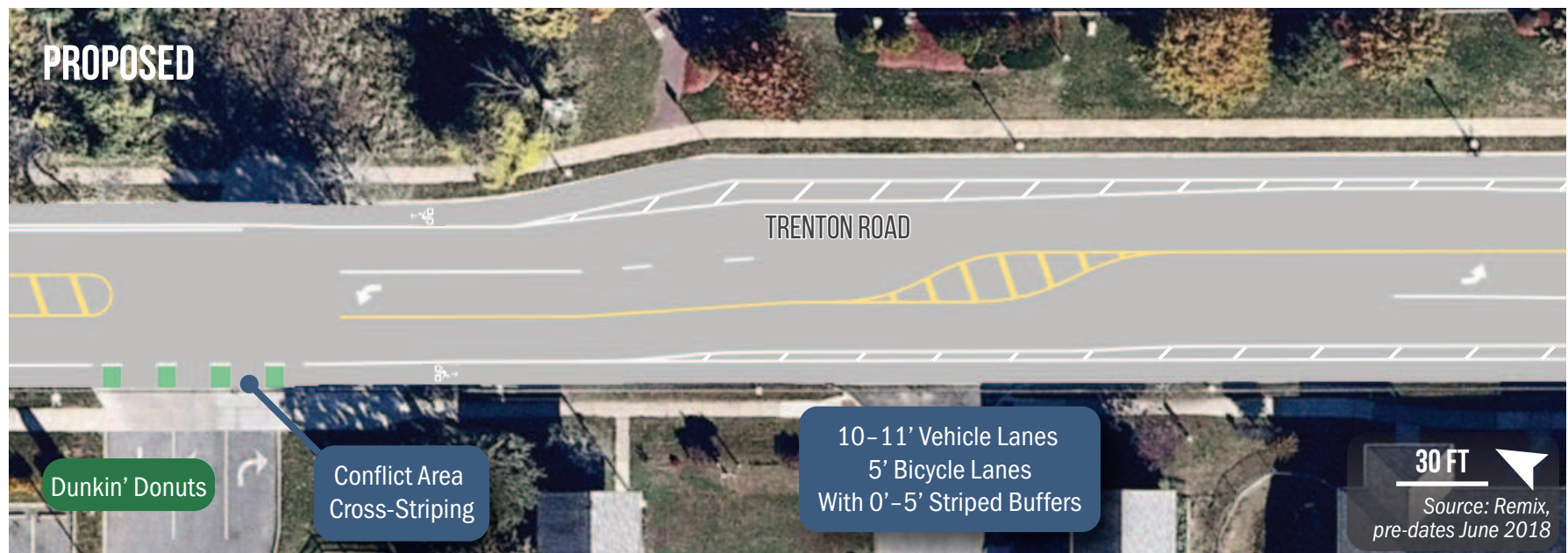


FIGURE D-12: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR TRENTON ROAD AT PEAR AVENUE

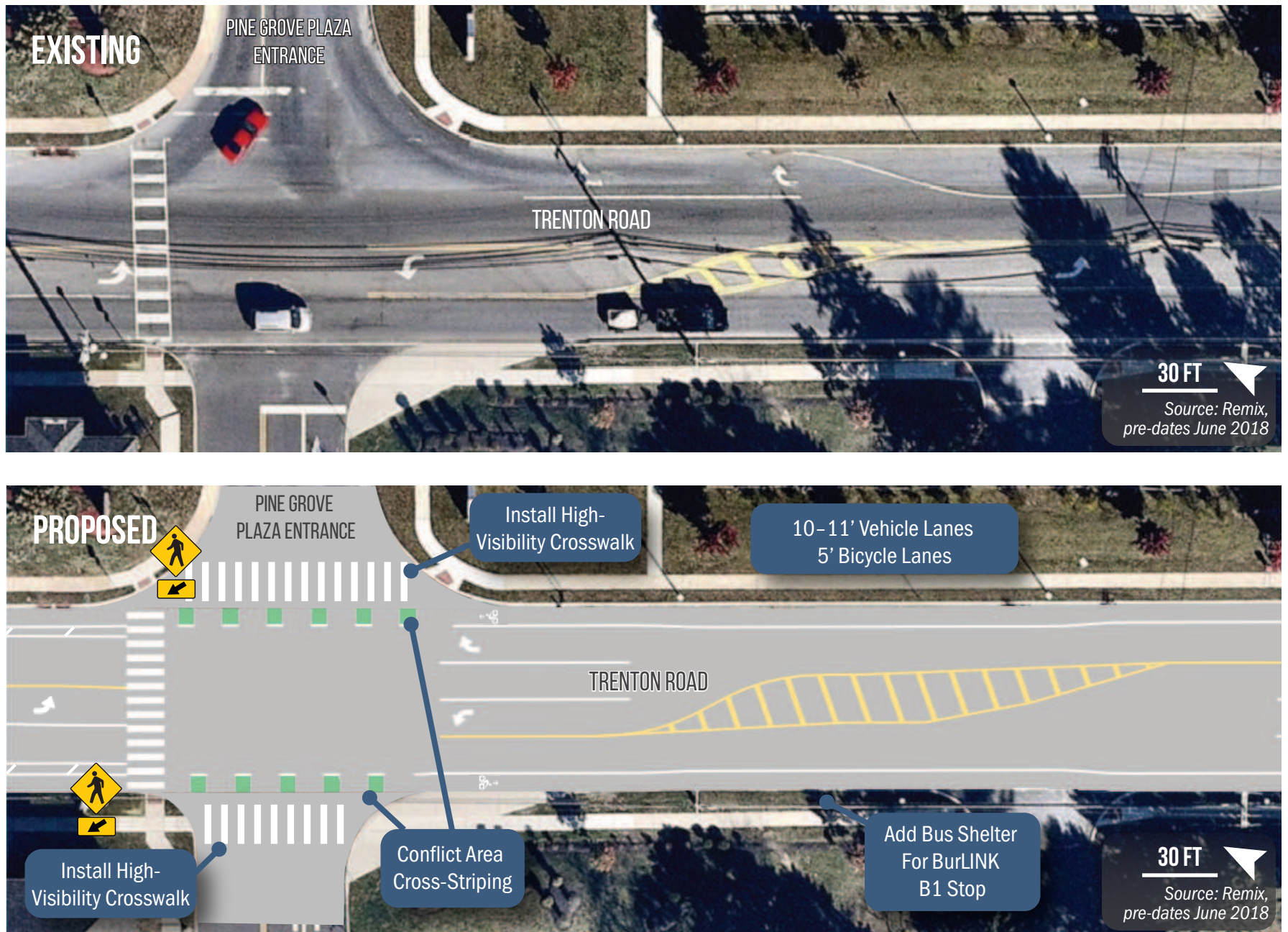


FIGURE D-13: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR TRENTON ROAD AT PEMBERTON-BROWNS MILLS ROAD



FIGURE D-14: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR TRENTON ROAD AT ST. ANN'S CHURCH



FIGURE D-15: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR TRENTON ROAD AT BUSANSKY LANE

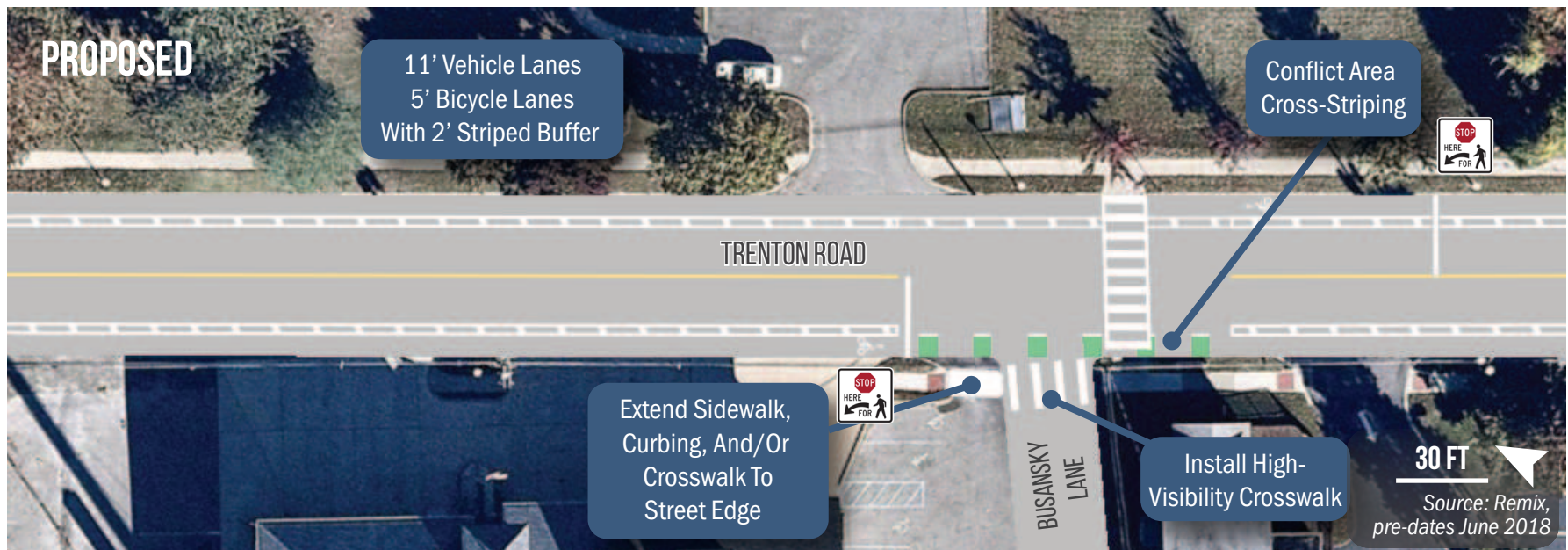


FIGURE D-16: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR TRENTON ROAD AT CIRCLE DRIVE



APPENDIX E:

Lakehurst Road

The following section details the existing and proposed bicycle and pedestrian improvements on and around a short 0.2-mile segment of Lakehurst Road (CR-530) between Trenton/Juliustown Roads and Rancocas Lane. In this segment, Lakehurst Road passes over Mirror Lake via a bridge and dam structure.

FIGURE E-1: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR THE INTERSECTION OF TRENTON, JULIUSTOWN, AND LAKEHURST ROADS

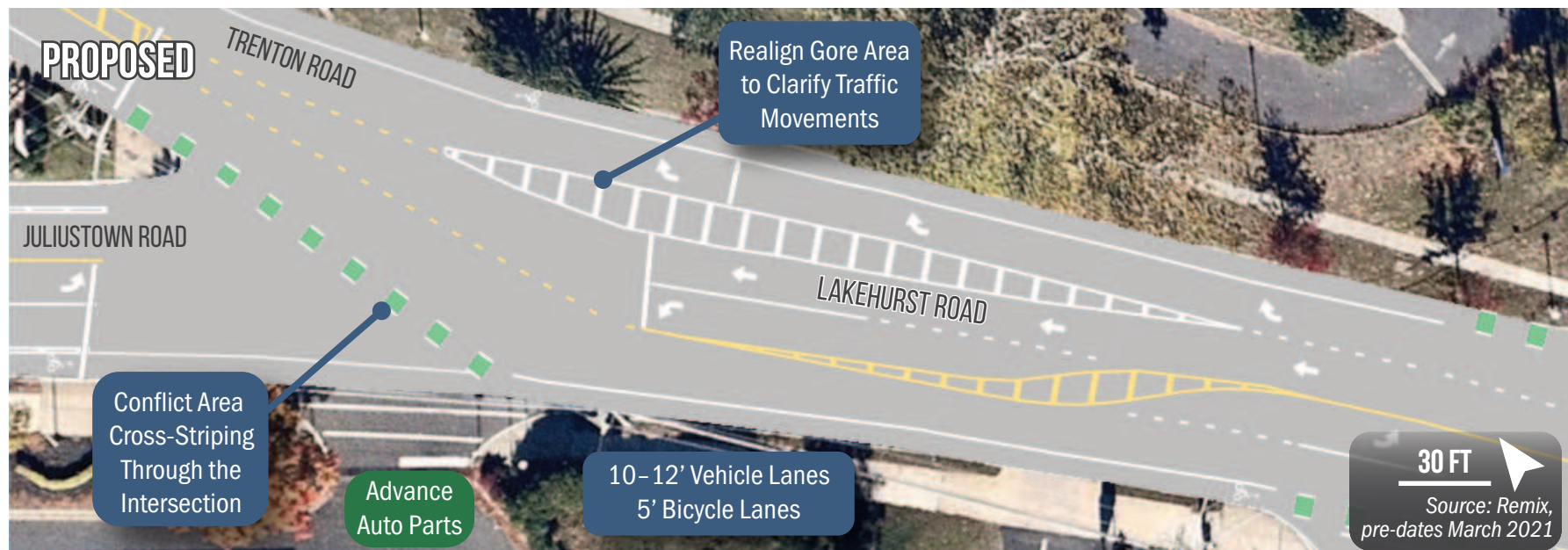
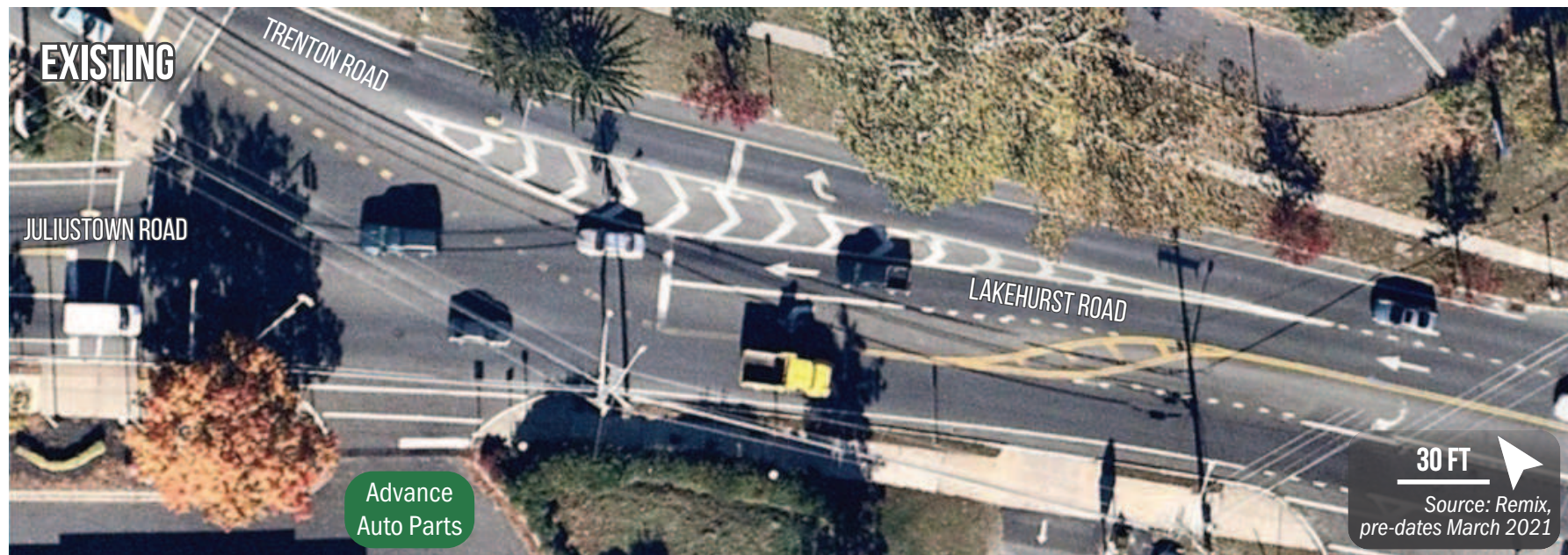
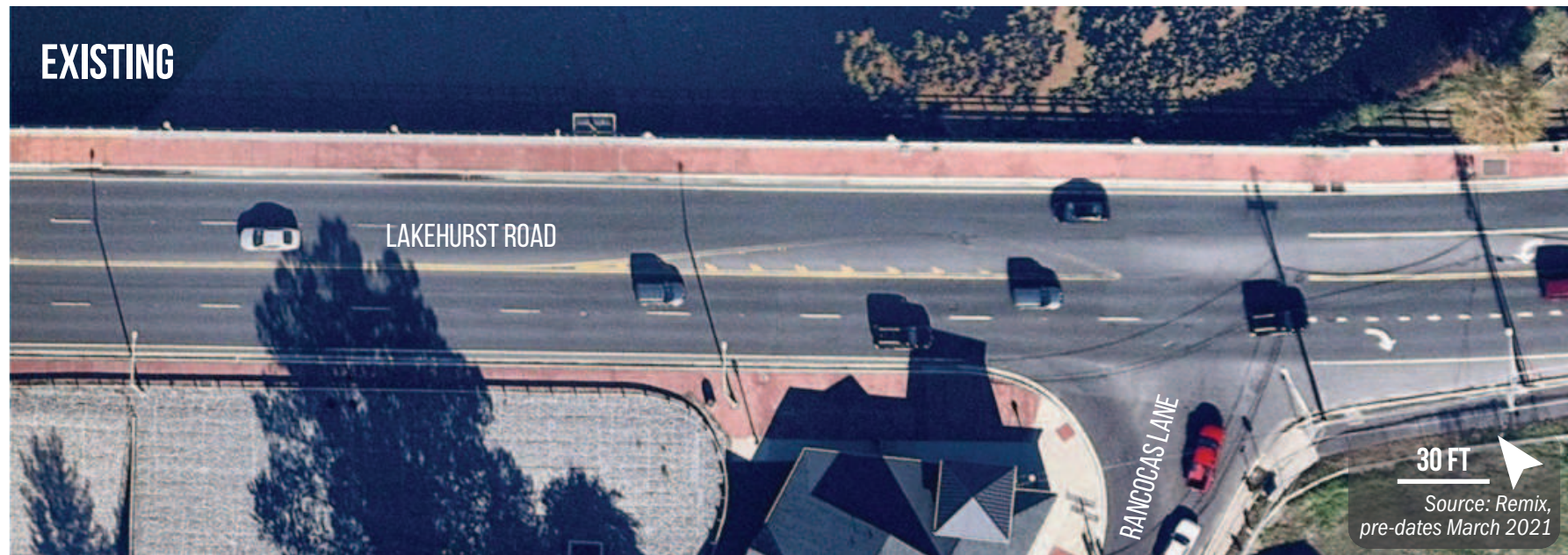


FIGURE E-2: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR LAKEHURST ROAD AT CLUBHOUSE ROAD



FIGURE E-3: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR LAKEHURST ROAD AT RANCOCAS LANE



APPENDIX F:

Rancocas Lane, Scammell Drive, and Weymouth Road

The following section details the existing and proposed bicycle and pedestrian improvements on and around portions of Rancocas Lane, Scammell Drive, and Weymouth Road that travel through the neighborhood between Lakehurst Road and Mount Misery Road.

FIGURE F-1: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR RANCOCAS LANE AT LAKEHURST ROAD

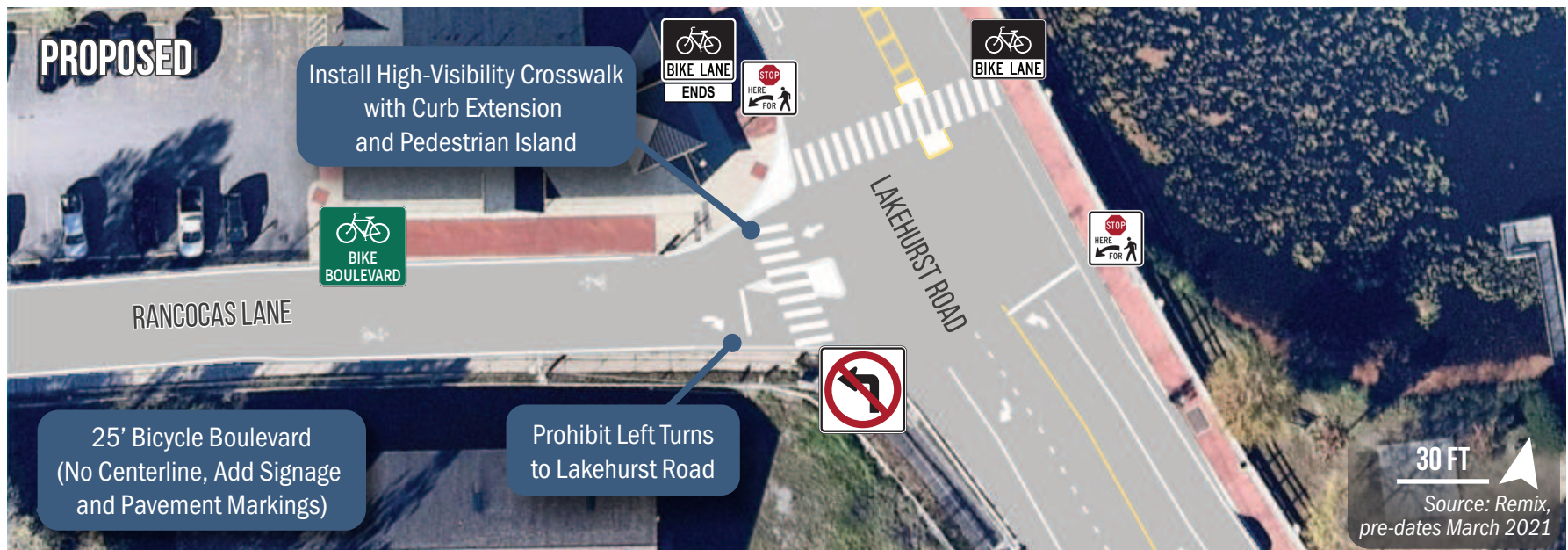


FIGURE F-2: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR RANCOCAS LANE BETWEEN LAKEHURST ROAD AND SCAMMELL DRIVE



FIGURE F-3: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR RANCOCAS LANE AT SCAMMELL DRIVE

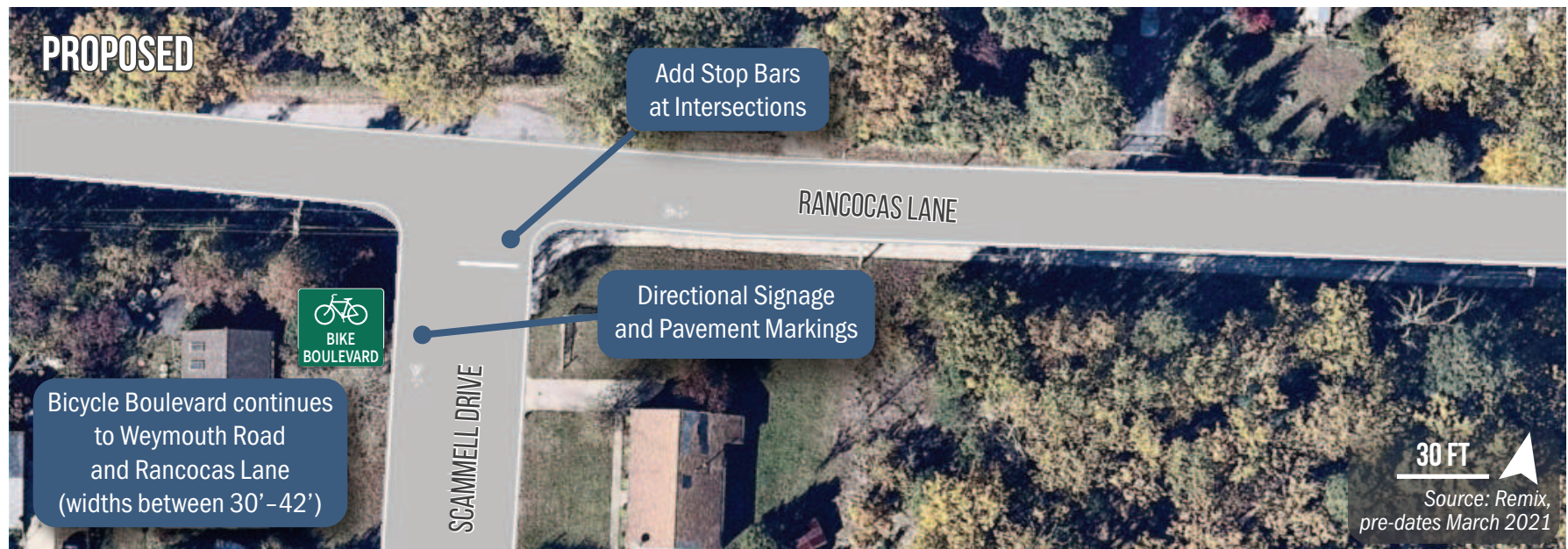


FIGURE F-4: EXTENT OF THE PROPOSED BICYCLE BOULEVARD ON RANOCAS LANE, SCAMMELL DRIVE, AND WEYMOUTH ROAD

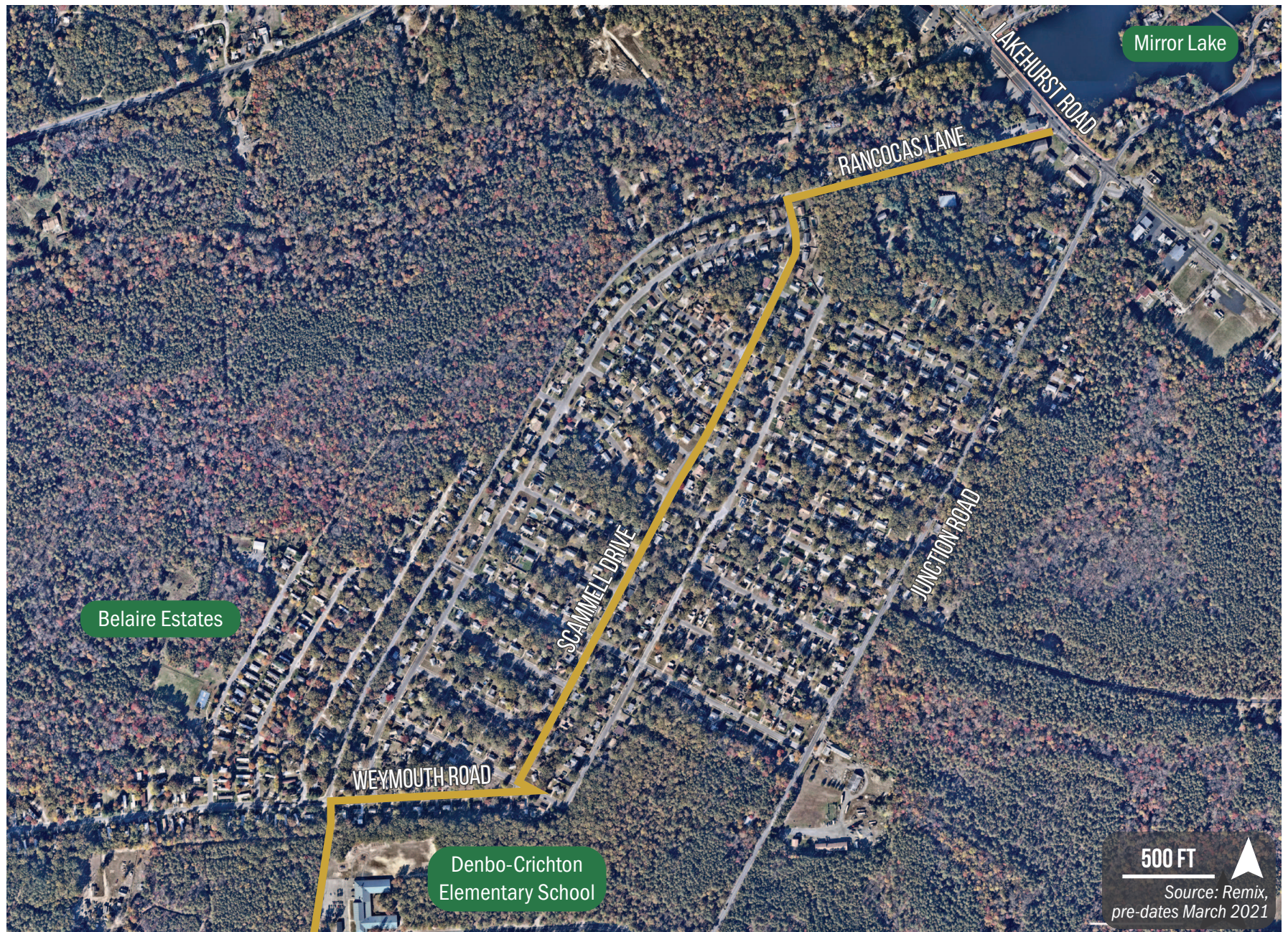
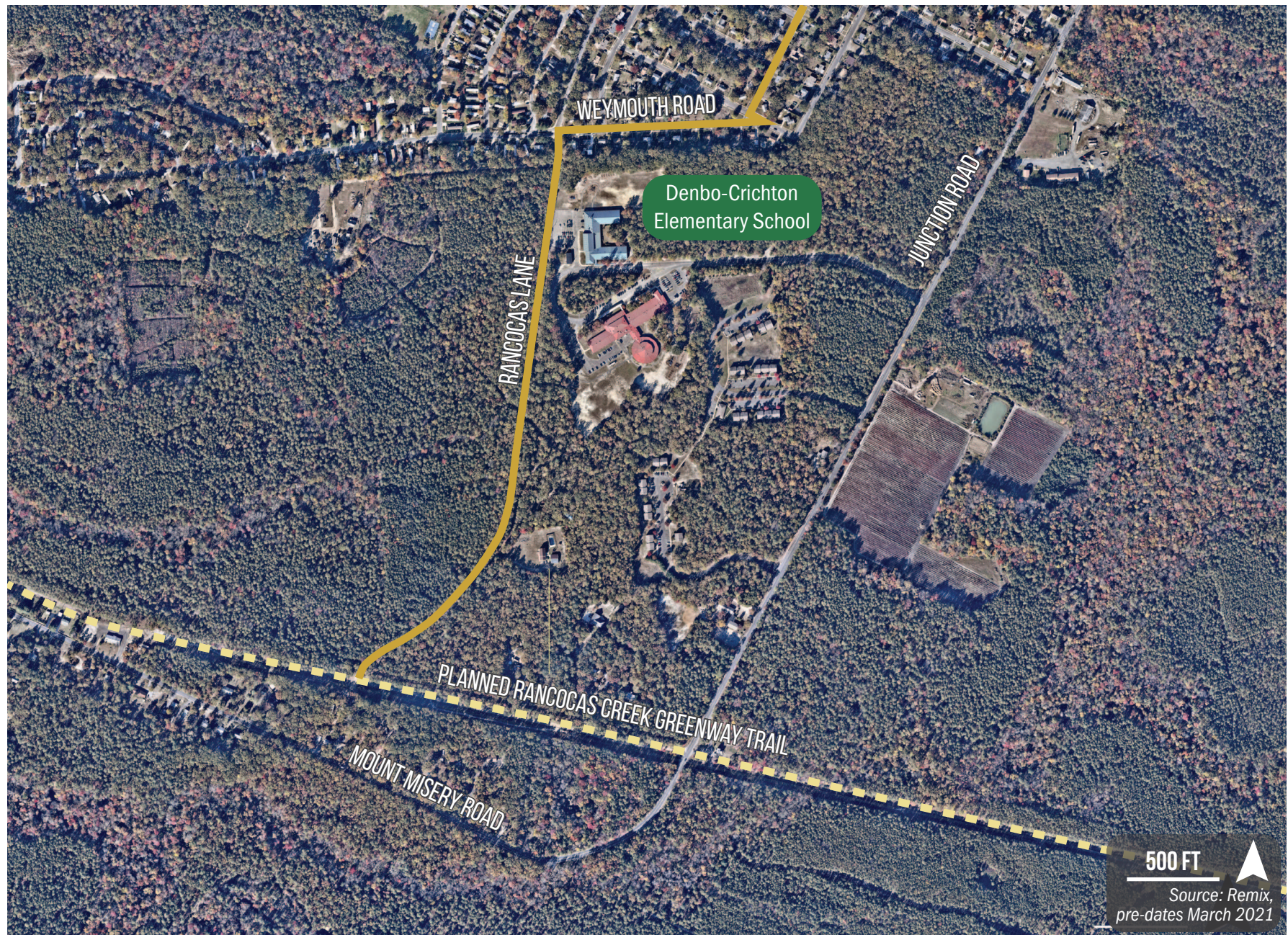


FIGURE F-5: EXTENT OF PROPOSED BICYCLE BOULEVARD ON RANCOCAS LANE BETWEEN WEYMOUTH ROAD AND THE RANCOCAS CREEK GREENWAY TRAIL



APPENDIX G:

Spring Lake and Whispering Pines Boulevards

The following section details the existing and proposed bicycle and pedestrian improvements on and around a 0.4-mile section of Spring Lake Boulevard between Chippewa Trail and Tecumseh Trail. It also focuses on a roughly 2.9-mile stretch of Whispering Pines Boulevard and the unpaved “fire lane,” which together run parallel to Route 70, between Upton Station Road and Washington Boulevard.

FIGURE G-1: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR SPRING LAKE BOULEVARD AT CHIPPEWA TRAIL

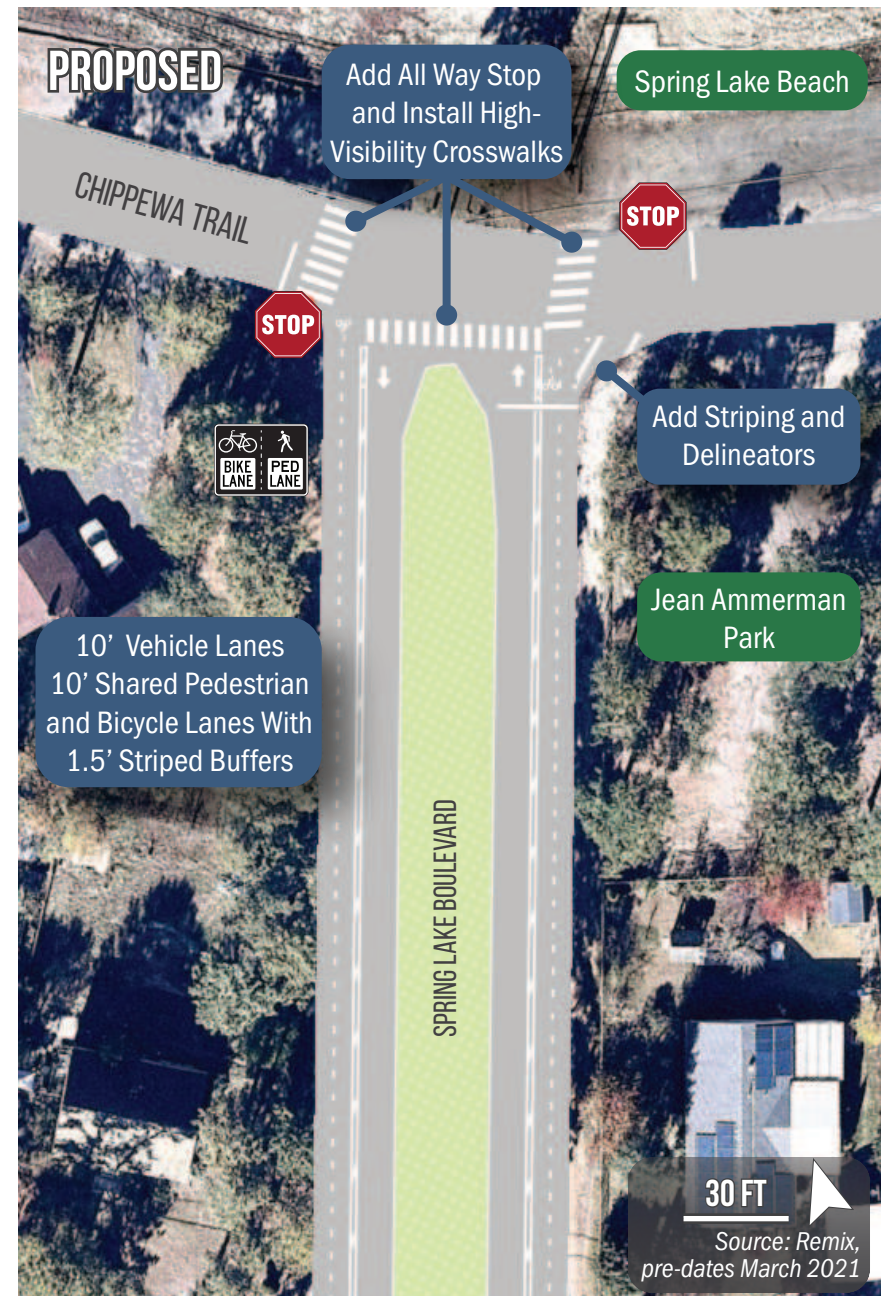


FIGURE G-2: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR SPRING LAKE BOULEVARD AT CHEROKEE DRIVE



FIGURE G-3: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR SPRING LAKE BOULEVARD AT RED FEATHER TRAIL

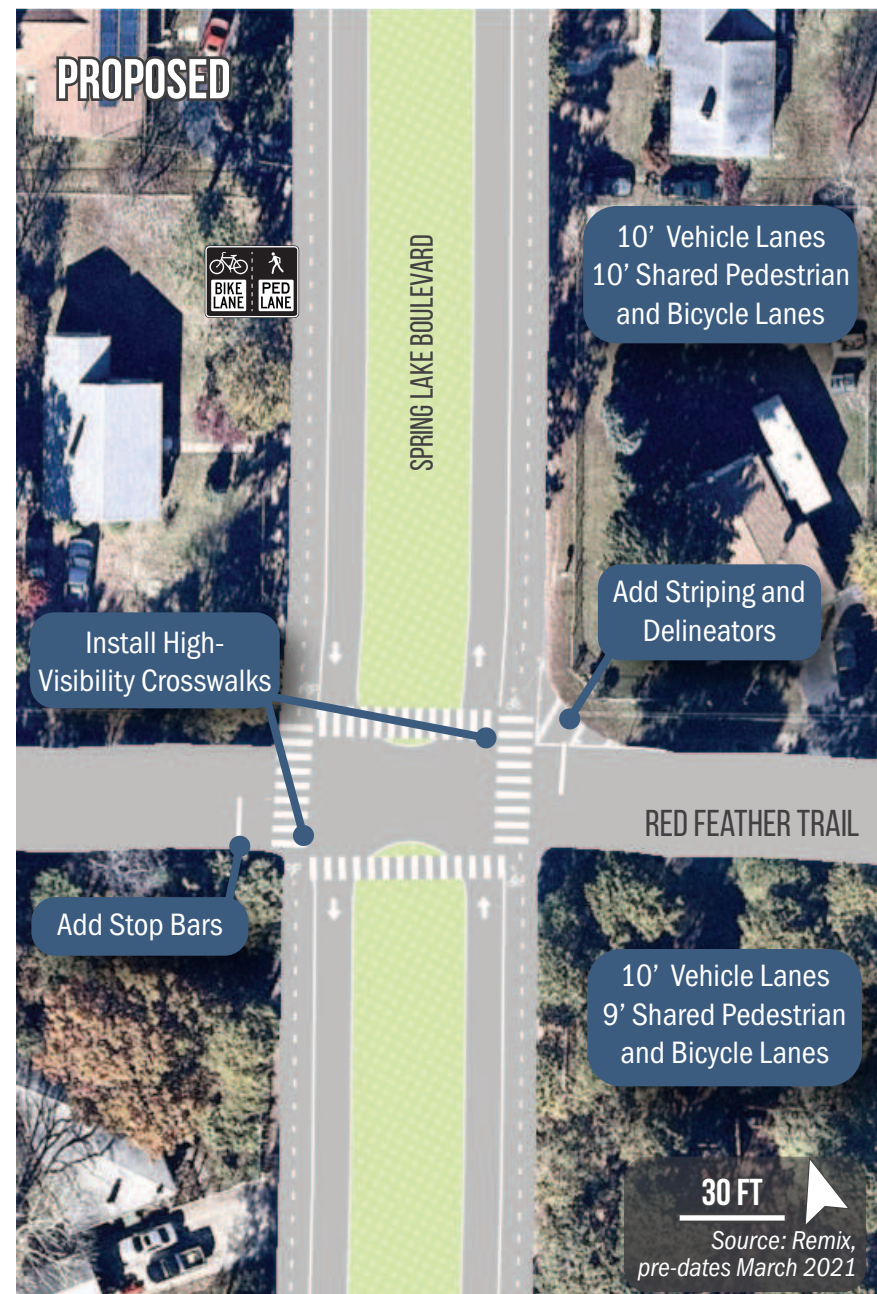
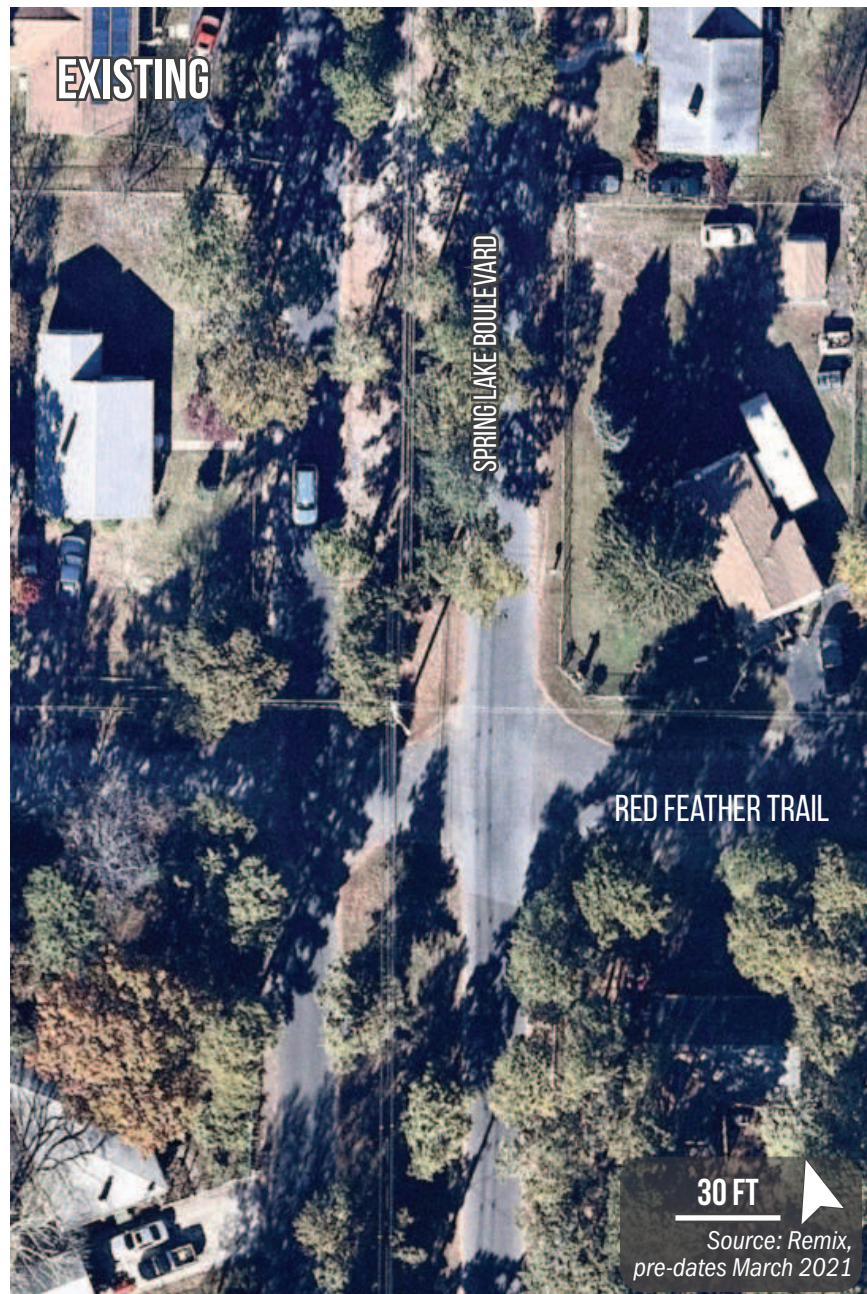


FIGURE G-4: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR SPRING LAKE BOULEVARD AT TECUMSEH TRAIL



FIGURE G-5: EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR SPRING LAKE BOULEVARD AT THE INTERSECTION OF THE FUTURE RANCOCAS CREEK GREENWAY TRAIL



FIGURE G-6: EXTENT OF PROPOSED BICYCLE FACILITIES BETWEEN COUNTRY LAKE ESTATES AND PRESIDENTIAL LAKES ESTATES



APPENDIX H:

Other Recommendations

The following section provides brief descriptions of two additional bicycle and pedestrian facilities that the township may want to explore in the future to continue to connect communities and expand bicycle and pedestrian access in and around Browns Mills. One recommended facility is a bicycle boulevard along Pemberton Boulevard, which travels east-west to the east of Trenton Road near the township's northern border, and Evergreen Boulevard, which travels north-south between Pemberton Boulevard and W. Lakeshore Drive. The second facility detailed is a multi-use sidepath connecting Juliustown and Trenton Roads on Pemberton Township School District property.

FIGURE H-1: EXTENT OF THE POTENTIAL PEMBERTON-EVERGREEN BICYCLE BOULEVARD

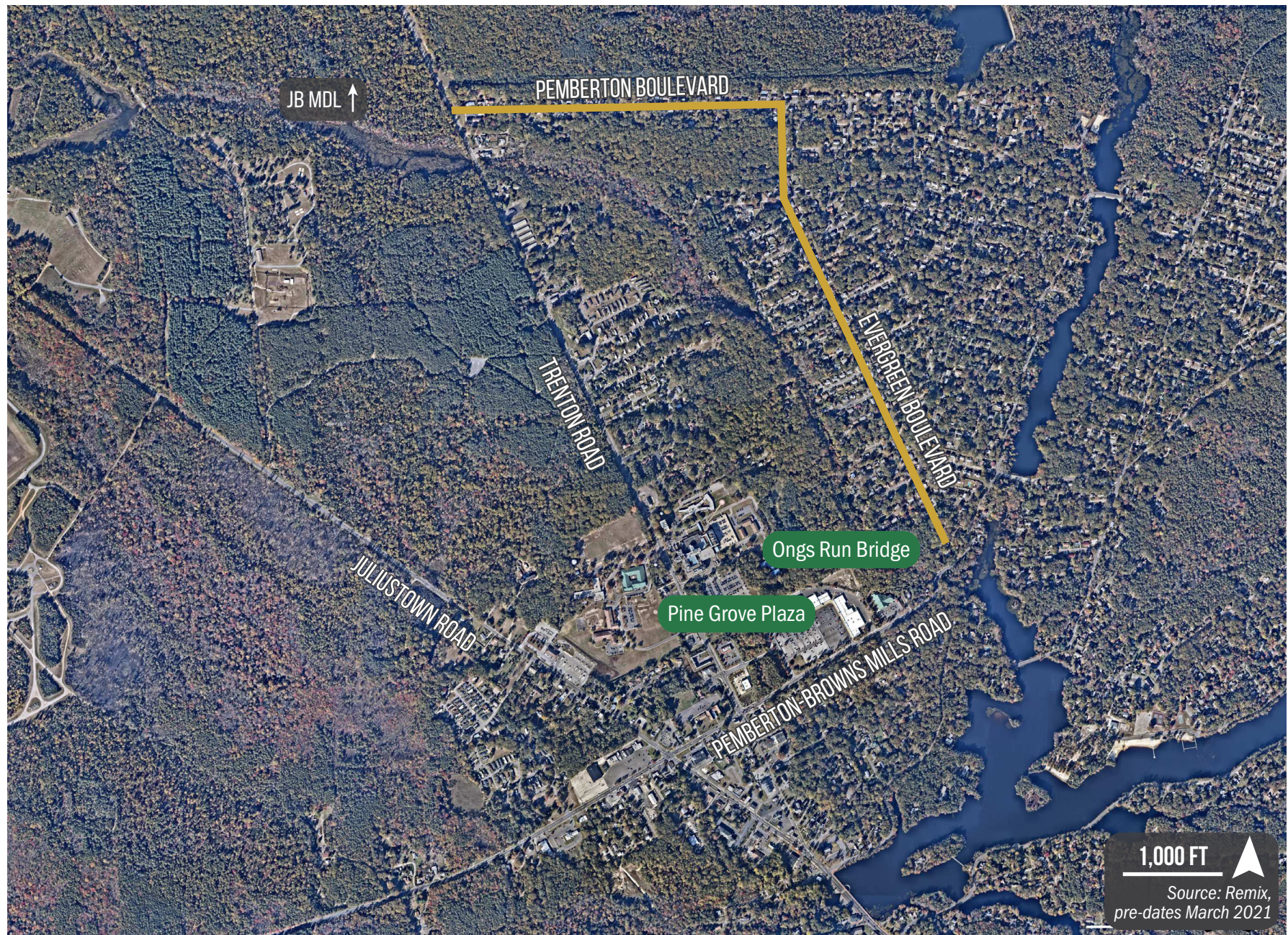


FIGURE H-2: EXTENT OF THE POTENTIAL MULTI-USE SIDEPATH BETWEEN JULIUSTOWN AND TRENTON ROADS



APPENDIX I:

Selected Cost Estimates

The following section provides rough cost estimates for the proposed improvements along Pemberton-Browns Mills, Trenton, and Lakehurst Roads and the section of Rancocas Lane between Lakehurst Road and Scammell Drive.

TABLE I-1: PEMBERTON-BROWNS MILLS ROAD

ITEM	UNIT	MEASUREMENT	COST	TOTAL COSTS	NOTES
4" White	3,100	LF	\$2	\$6,200	
24" White (crosswalks)	2,250	LF	\$9	\$20,250	
Buffered Bike	2,400	LF	\$2	\$4,800	
Green Hatch	3,000	SF	\$15	\$45,000	
Bike Box	4	EA	\$250	\$1,000	
ADA Ramp	7	EA	\$10,000	\$70,000	Includes materials (concrete curb, sidewalk, detectable warning surface)
Concrete curb	650	LF	\$150	\$97,500	
Concrete Islands	20	SY	\$250	\$5,000	
Bike Legends	24	EA	\$500	\$12,000	Located every 500'
Signage	10	EA	\$500	\$5,000	
Sharrows	12	EA	\$600	\$7,200	
RRFB	6	EA	\$15,000	\$90,000	Includes signage and pavement markings
Eradicate pavement markings	4,000	LF	\$5	\$20,000	
Bus Shelter	1	EA	\$5,000	\$5,000	
Materials and Labor Subtotal				\$388,950	
Maintenance and Protection of Traffic	5% of Materials and Labor Subtotal			\$19,448	
Mobilization	5% of Materials and Labor Subtotal			\$19,448	
Construction Inspection	15% of Materials and Labor Subtotal			\$58,343	
Subtotal				\$97,238	
TOTAL				\$486,188	

Key: SY=Square Yard; LF=Linear Feet; EA=Each; LS=Lump Sum

Notes:

- If ADA ramps are Design Build, add \$1,000 in construction phase.
- Stop bars at side streets, drainage, and sidewalk costs not included.

TABLE I-2: TRENTON AND LAKEHURST ROADS

ITEM	UNIT	MEASUREMENT	COST	TOTAL COSTS	NOTES
4" White	10,500	LF	\$2	\$21,000	
24" White (crosswalks)	2,100	LF	\$9	\$18,900	
Buffered Bike	7,300	SF	\$2	\$14,000	
Green Hatch	3,600	SF	\$15	\$54,000	
Bike Legends	30	EA	\$500	\$15,000	Located every 500'
Signage	12	EA	\$500	\$6,000	
Sharrows	4	EA	\$600	\$2,400	Green-backed
RRFB	2	EA	\$15,000	\$30,000	Includes signage and pavement markings
Eradicate pavement markings	800	LF	\$5	\$4,000	Quantity may vary
Bus Shelter	1	EA	\$5,000	\$5,000	
Materials and Labor Subtotal				\$170,900	
Maintenance and Protection of Traffic	5% of Materials and Labor Subtotal			\$8,545	
Mobilization	5% of Materials and Labor Subtotal			\$8,545	
Construction Inspection	15% of Materials and Labor Subtotal			\$25,635	
Subtotal				\$42,725	
TOTAL				\$213,625	

Key: SY=Square Yard; LF=Linear Feet; EA=Each; LS=Lump Sum

Notes:

- If ADA ramps are Design Build, add \$1,000 in construction phase.
- Stop bars at side streets, drainage, and sidewalk costs not included.
- Does not include repainting of existing crosswalks at Deborah Hospital.
- Does not include costs associated with access management/driveway consolidation.

TABLE I-3: RANCOCAS LANE BETWEEN LAKEHURST ROAD AND SCAMMELL DRIVE

ITEM	UNIT	MEASUREMENT	COST	TOTAL COSTS	NOTES
4" White	3000	LF	\$2	\$6,000	
24" White (crosswalks)	200	LF	\$9	\$1,800	
Concrete Sidewalk	10	SY	\$250	\$2,500	
ADA Ramp	2	EA	\$10,000	\$20,000	
Concrete curb	100	LF	\$150	\$15,000	Located every 500'
Sharrows	6	EA	\$600	\$3,600	
Signage	3	EA	\$500	\$1,500	Green-backed
Arrows	2	EA	\$500	\$1,000	Includes signage and pavement markings
Materials and Labor Subtotal				\$51,400	
Maintenance and Protection of Traffic	5% of Materials and Labor Subtotal			\$2,570	
Mobilization	5% of Materials and Labor Subtotal			\$2,570	
Construction Inspection	15% of Materials and Labor Subtotal			\$7,710	
Subtotal				\$12,850	
TOTAL				\$64,250	

Key: SY=Square Yard; LF=Linear Feet; EA=Each; LS=Lump Sum

Notes:

- If ADA ramps are Design Build, add \$1,000 in construction phase.
- Stop bars at side streets and drainage costs not included.

Browns Mills Bicycle & Pedestrian Action Plan

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Abstract:

The Browns Mills Bicycle and Pedestrian Plan presents a set of bicycle and pedestrian recommendations for Browns Mills, New Jersey that support better health outcomes and enhance connections to the Town Center, recreational destinations, and neighboring communities. It provides detailed recommendations for five locations throughout and around Browns Mills that the community, Pemberton Township, and Advisory Committee identified as both the highest priority and most achievable. The recommendations build on Browns Mills' existing bicycle and pedestrian infrastructure with facilities that will create safer and more complete roads, trails, and intersections.

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