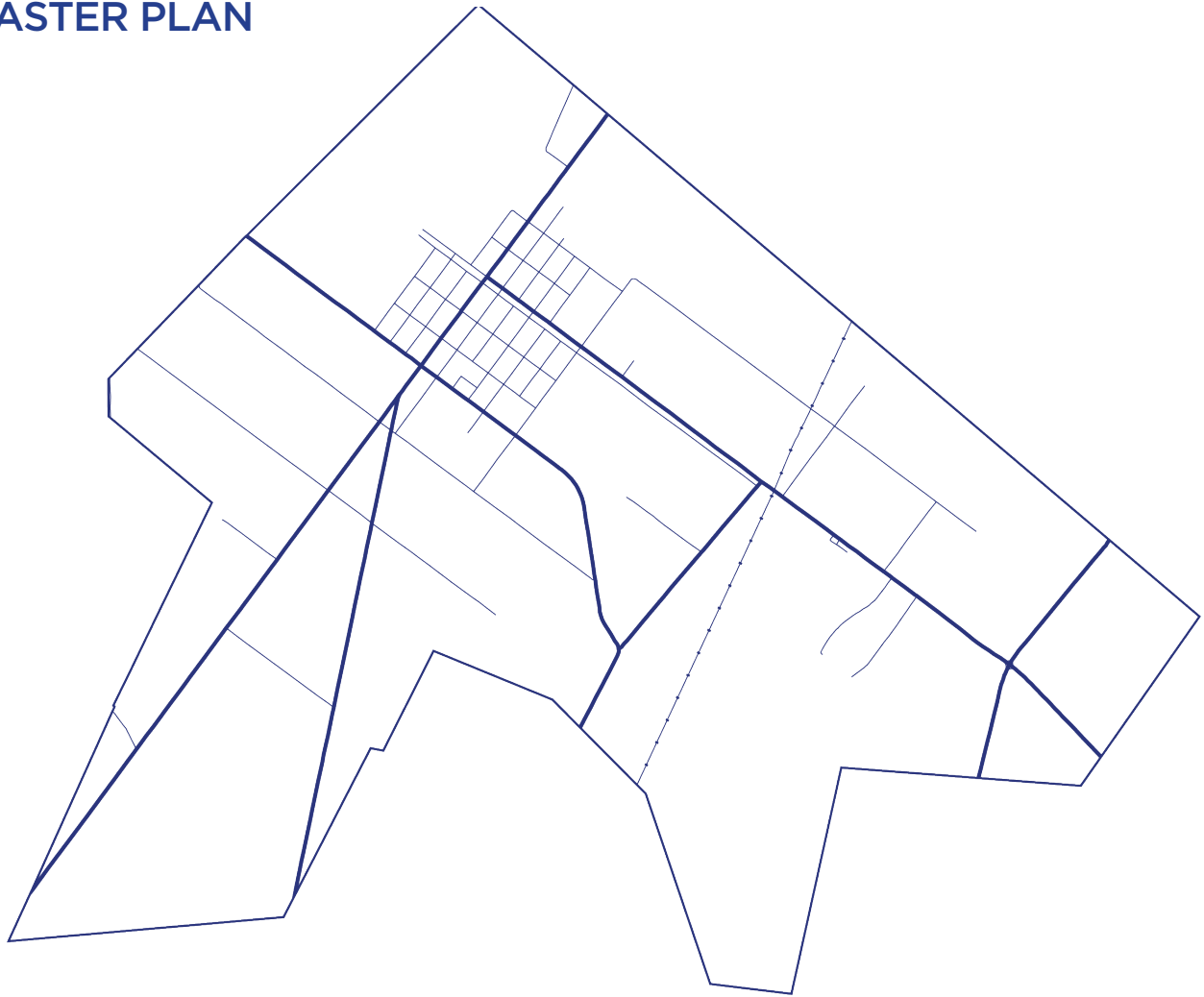
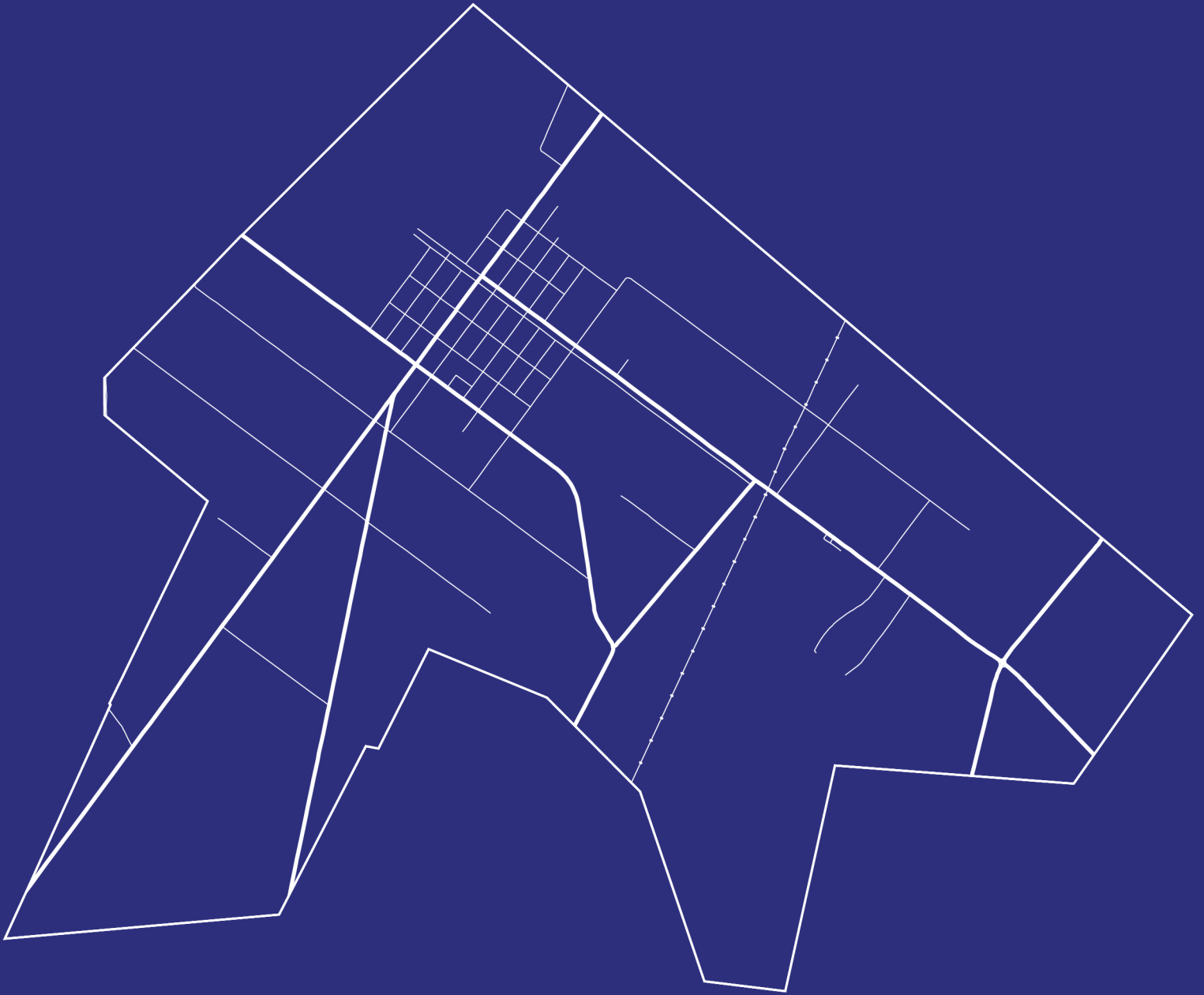


WOODBINE

BICYCLE AND PEDESTRIAN MASTER PLAN



**Sam
Schwartz**



WOODBINE

BICYCLE AND PEDESTRIAN MASTER PLAN

prepared for



The State of New Jersey
**Department of
Transportation**



prepared by

**Sam
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steering committee

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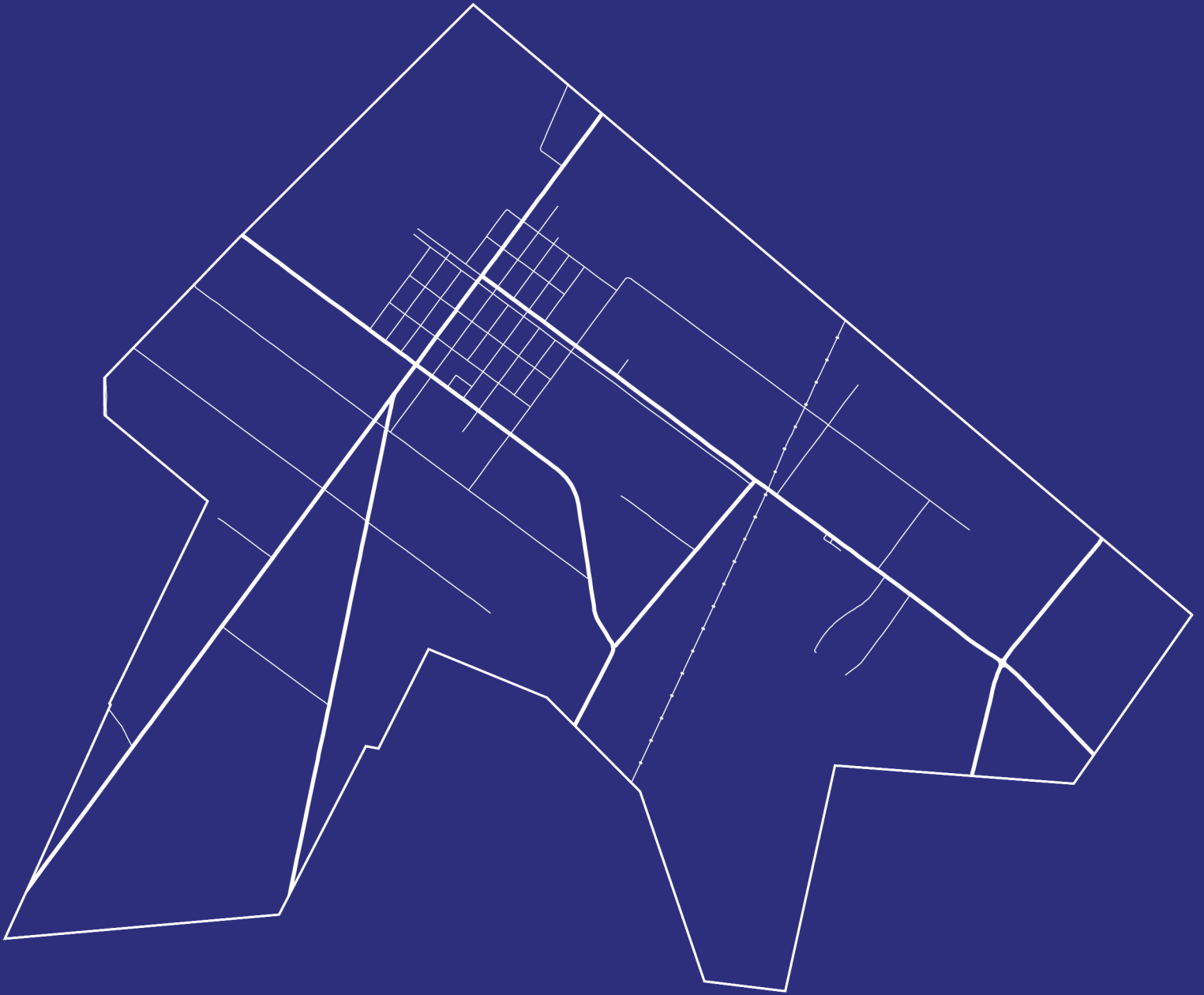
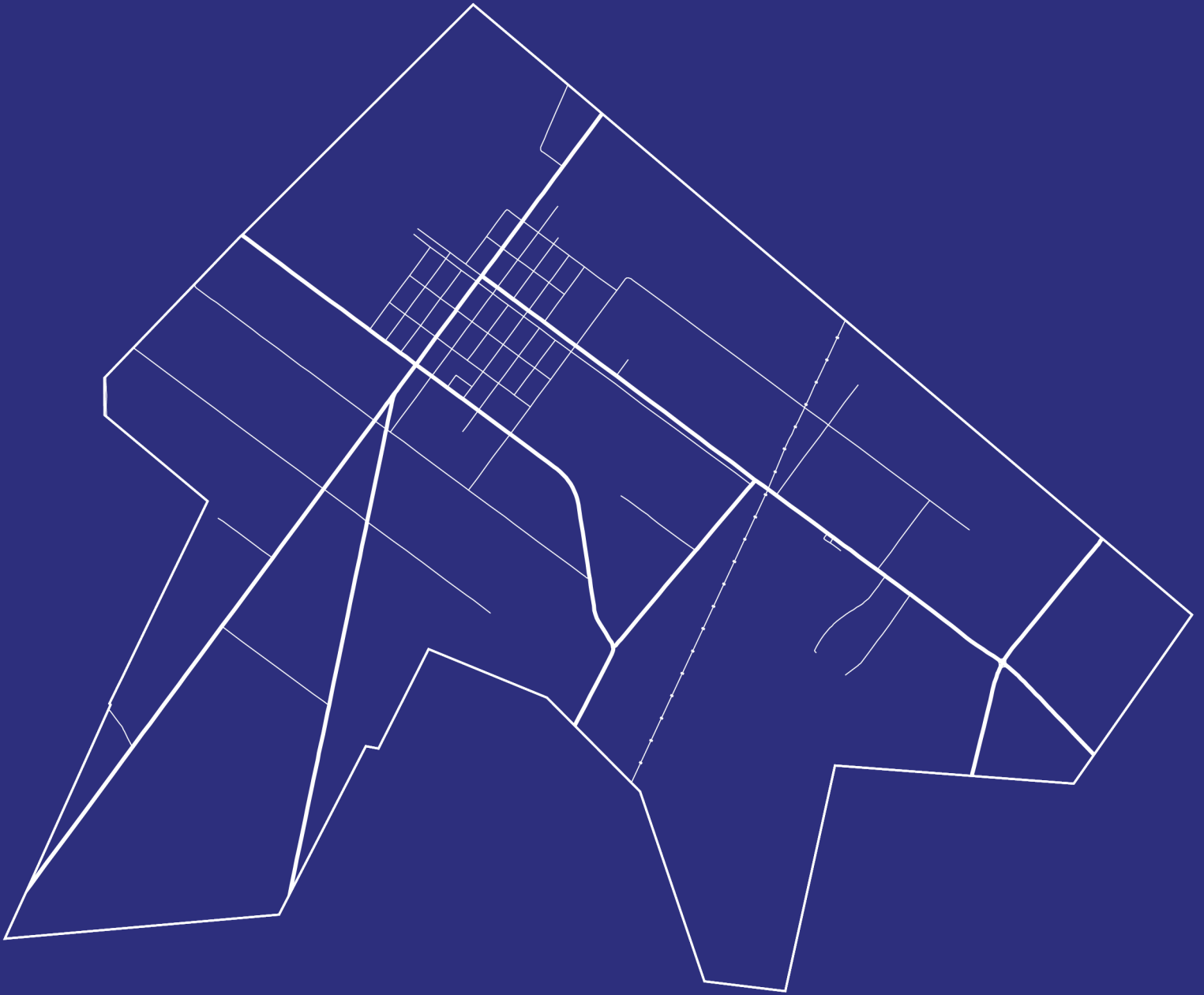


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1. INTRODUCTION

The Borough of Woodbine (Woodbine) is participating in the New Jersey Department of Transportation Bureau of Safety, Bicycle and Pedestrian Programs (NJDOT-BSBPP) Local Technical Assistance (LTA) program to develop an updated Bicycle and Pedestrian Master Plan (the Plan). In coordination with Woodbine and NJDOT-BSBPP, Sam Schwartz Consulting, LLC (Sam Schwartz) is providing technical planning, engineering, and outreach assistance in the development of the Plan.

WHY DEVELOP A BICYCLE AND PEDESTRIAN MASTER PLAN?

Woodbine is committed to improving the quality of life for both residents and visitors by providing walking and bicycling as safe, practical, and efficient modes of transportation and recreation. As a community with a diverse population and roadways that serve as direct routes to the New Jersey Shore, the borough draws many visitors from across New Jersey and beyond.

The Borough of Woodbine is in a unique position, having previously completed a Bicycle and Pedestrian Master Plan in 2008 (Figure 1) and having implemented most of the recommendations the Borough has sought out additional guidance to further improve the biking and walking atmosphere and safety of their community. This plan will serve as a critical tool for guiding Borough staff and the community in building a balanced transportation system that is pedestrian and bicycle-friendly and encourages residents to use these modes of transportation. The goal is to encourage less driving of single occupancy vehicles and promote walking and biking as means of daily transportation.

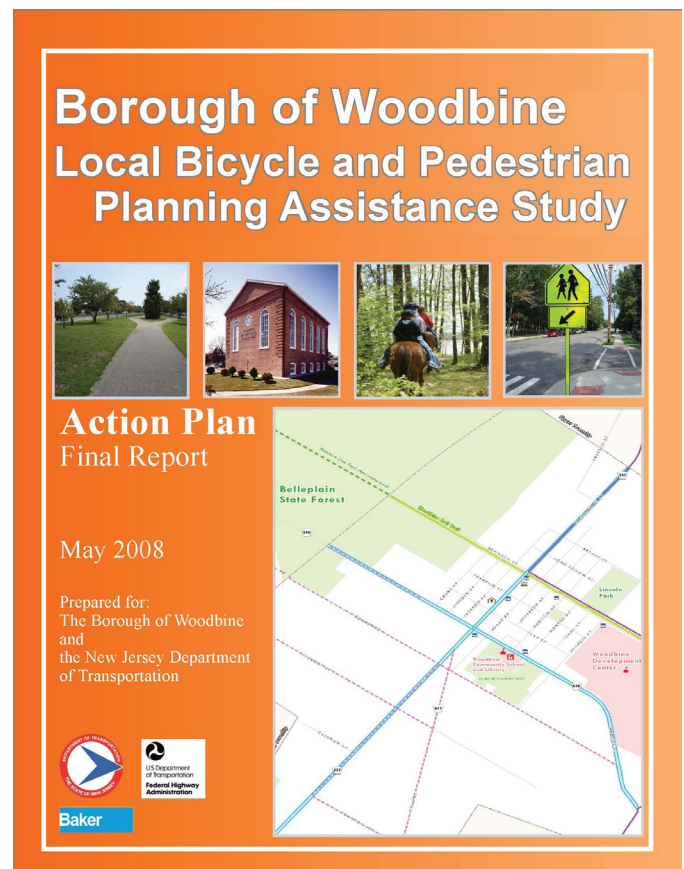


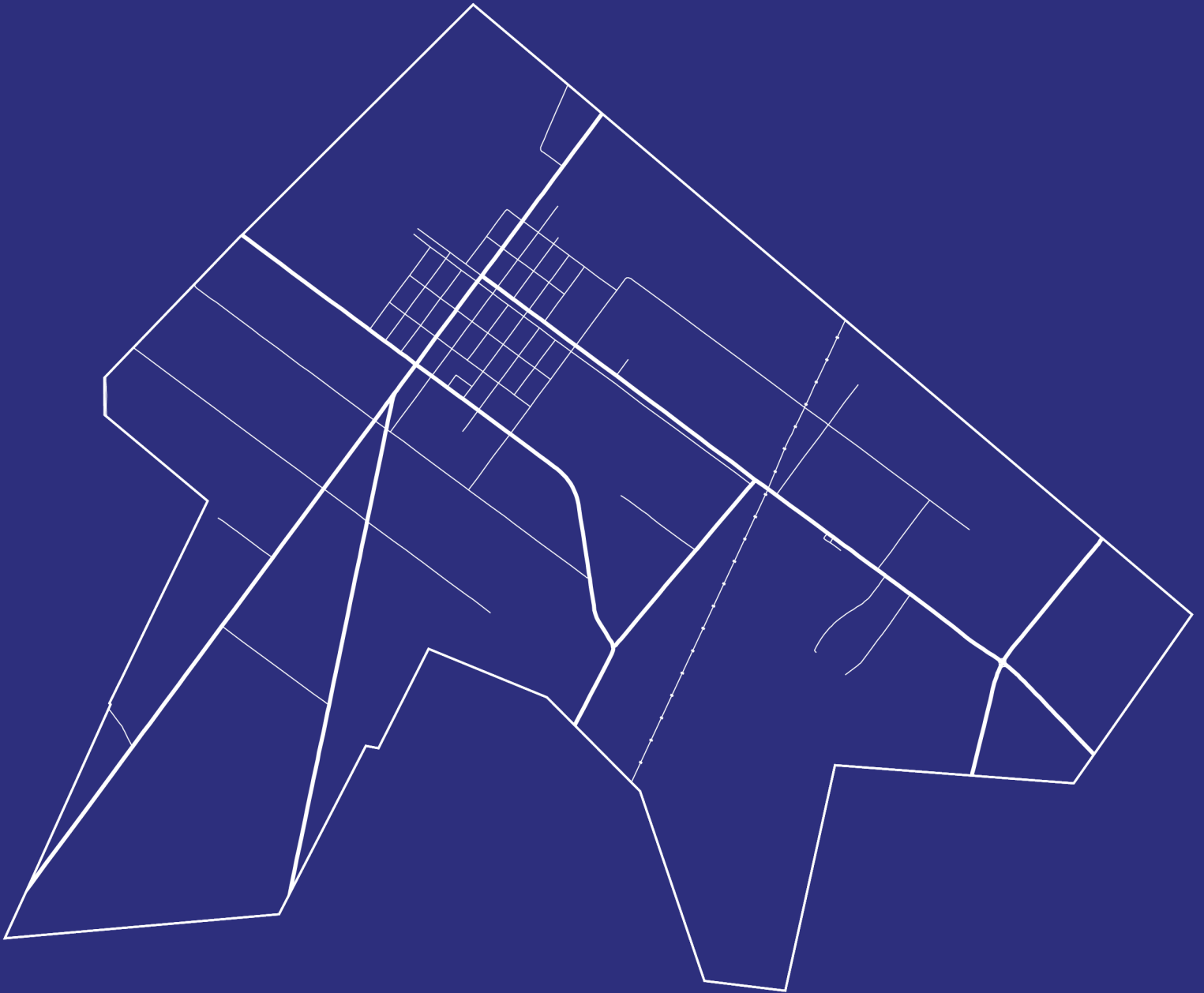
Figure 1: Borough of Woodbine: Local Bicycle and Pedestrian Planning Assistance Study

PURPOSE

The purpose of the Plan is to build on the previously completed Plan (2008) and to identify potential opportunities to enhance the bicycle and pedestrian network and provide improved multimodal access to the destinations throughout Woodbine and the region. The Plan will focus on the development of active transportation infrastructure that improves safety and encourages alternative modes of travel. The result will be a data- and community-driven Plan that serves as a roadmap for reducing walking and bicycling fatalities and serious injuries throughout Woodbine and improving multimodal infrastructure and connections. The Plan will be used as a guide for Borough staff to prioritize locations of greatest concern and to inform the public where Woodbine intends to focus its efforts.

As part of this effort, a bicycle level of traffic stress analysis, sidewalk inventory and assessment, bicycle and pedestrian crash analysis, intersection assessments, and mapping of regional bicycle facilities have been performed. In addition to these typical phases, Sam Schwartz also reviewed the Plan completed in 2008, and have identified recommendations that have been implemented. Those recommendations which have yet to be implemented will be reevaluated for potential inclusion in this Plan. The Bicycle and Pedestrian Master Plan will focus on the selection of specific active transportation improvements and a plan for implementing the improvements.





2. VISION AND GOALS



VISION

The goals of the Plan reflect the priorities expressed by the community throughout the public outreach phase of the Plans development. Discussions with Borough departments, best practices across the state, and input from community stakeholders have shaped the proposed strategies and policies intended to help the Borough achieve these goals.

All the following goals, strategies and policies support the larger town-wide “Complete Streets” policy, which instructs staff to consider the needs of all modes of travel when developing any transportation facility. The goals, strategies, and policies are designed to guide the work of Borough staff and elected officials, partner agencies, and private developers to improve the livability, economic vitality, and non-motorized accessibility for residents and visitors throughout Woodbine. Reducing the amount of driving and automobile ownership is an overarching vision embodied in the Plan.

Vision: Woodbine is a community where walking and bicycling are encouraged as a safe, and practical means of transportation that provides access to schools, parks, shopping, trails, and other community destinations within and outside of the central business district.



GOALS

Number 1: Increase access and favorability.

Design bicycle and pedestrian facilities that are accessible and comfortable for all people of all ages and abilities to use.

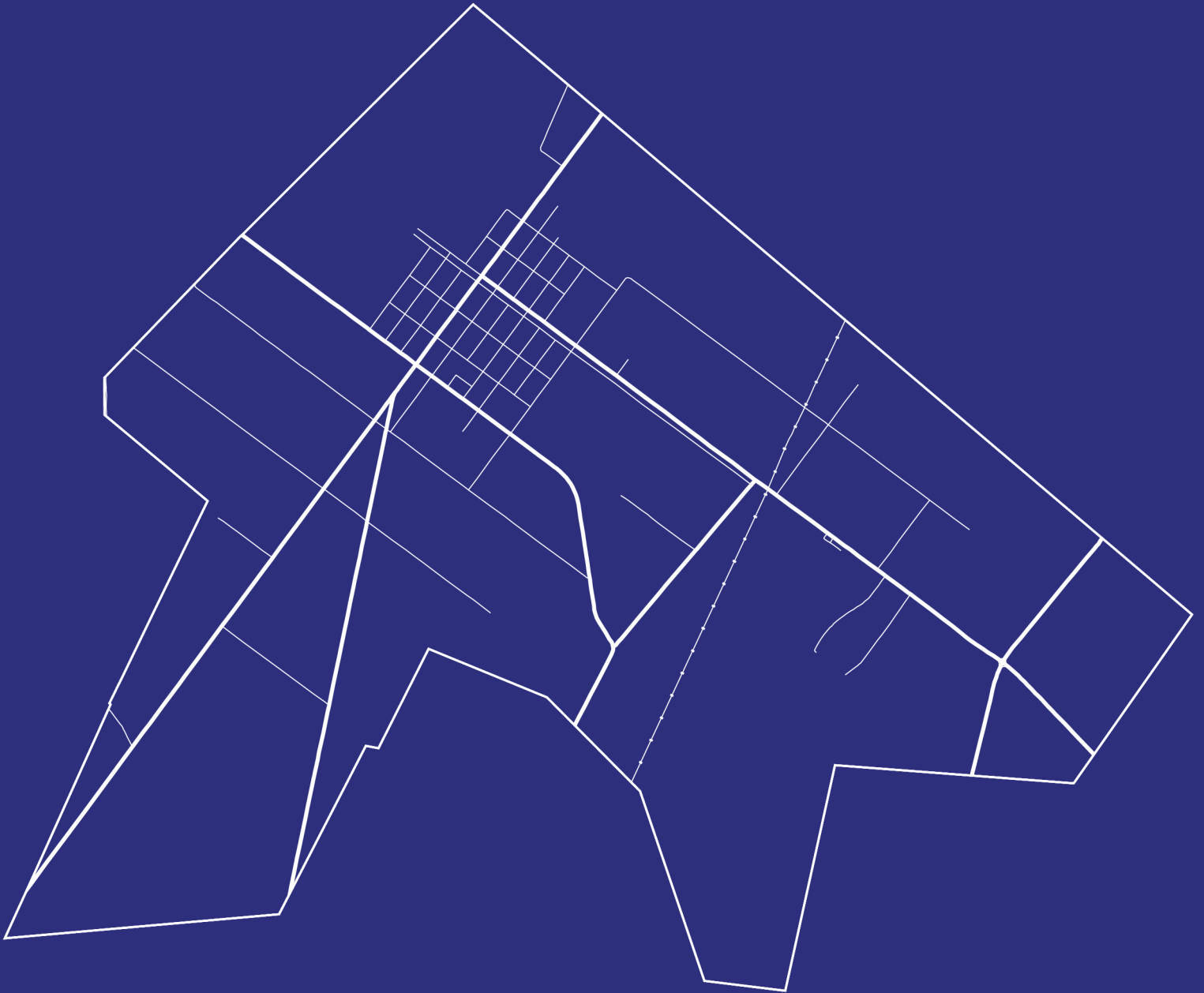
Number 2: Maintain and Expand the Network

Identify, develop, and maintain a complete and convenient bicycle and pedestrian network.

Number 3: Support a Culture of Walking and Bicycling



Figure 2: Access, Network, Culture Goals



3. WOODBINE TODAY

The Borough of Woodbine, located in Cape May County, New Jersey is a town of approximately 2,350 residents. It is located at the base of the Cape May peninsula within the Pineland National Reserve, most of the borough's natural habitat is thus made up of thick pine forest. It is accessible to the rest of the state via The Garden State Parkway and through NJ Transit's 313 Intercity Bus Service that operates between Cape May (town) and Philadelphia. It has a tightknit downtown ringed with small scale agricultural plots, located within it are key cultural and small business operations such as the Sam Azeez Museum, Woodbine Meat Market, and a Dollar Store which is an informal meeting place for locals. The downtown is fully bisected by a Railroad trail that runs east-to-west and forms an extensive piece of public leisure and green space. West of downtown are located the borough's three major employers the Woodbine Developmental Center, Cape May County Municipal Utilities Authority

Sanitary Landfill, and the Woodbine Municipal Airport.

Woodbine's demographic characteristics are unusually complex for rural New Jersey (Figure 3). It has a high level of diversity with large white, hispanic, and black minorities. This divide is driven primarily by the varied nature of specialized services and employment within the community which tend to attract specific ethnic groups and age ranges. Inversely when it comes to income and personal wealth the borough ranks consistently below the state and county average, 38% of households are below the poverty line, a figure which disproportionately affects young families and children. Challenges like these are primary concerns for residents, with many focused on boosting blue-collar salaries and bringing in new opportunities.

WOODBINE AT A GLANCE

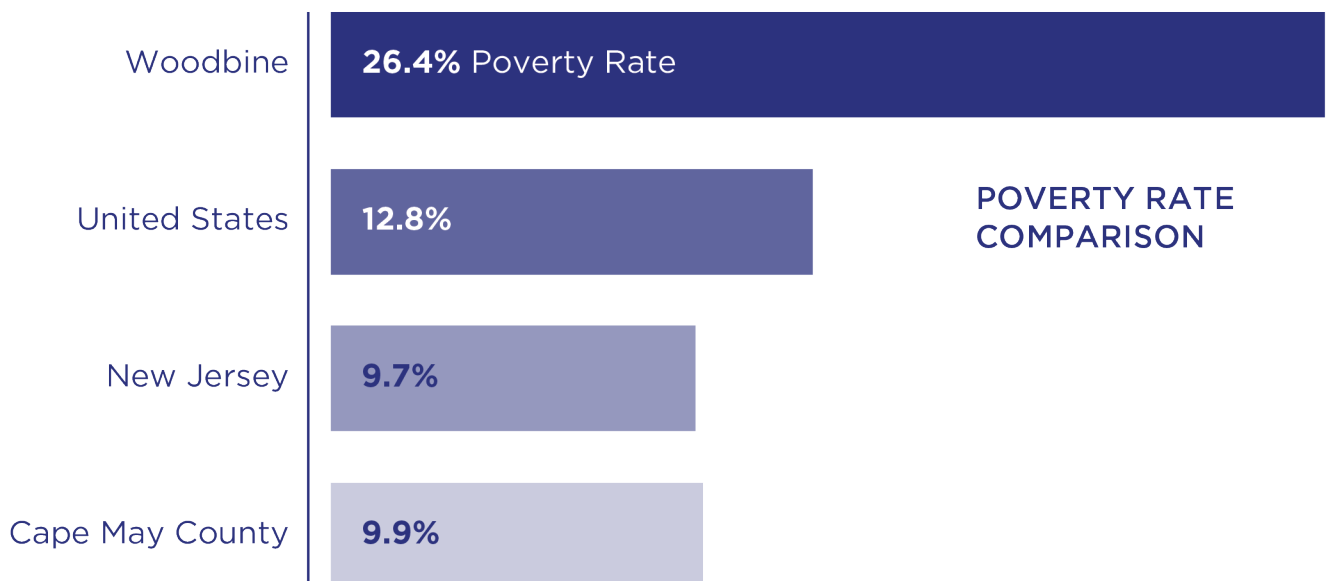
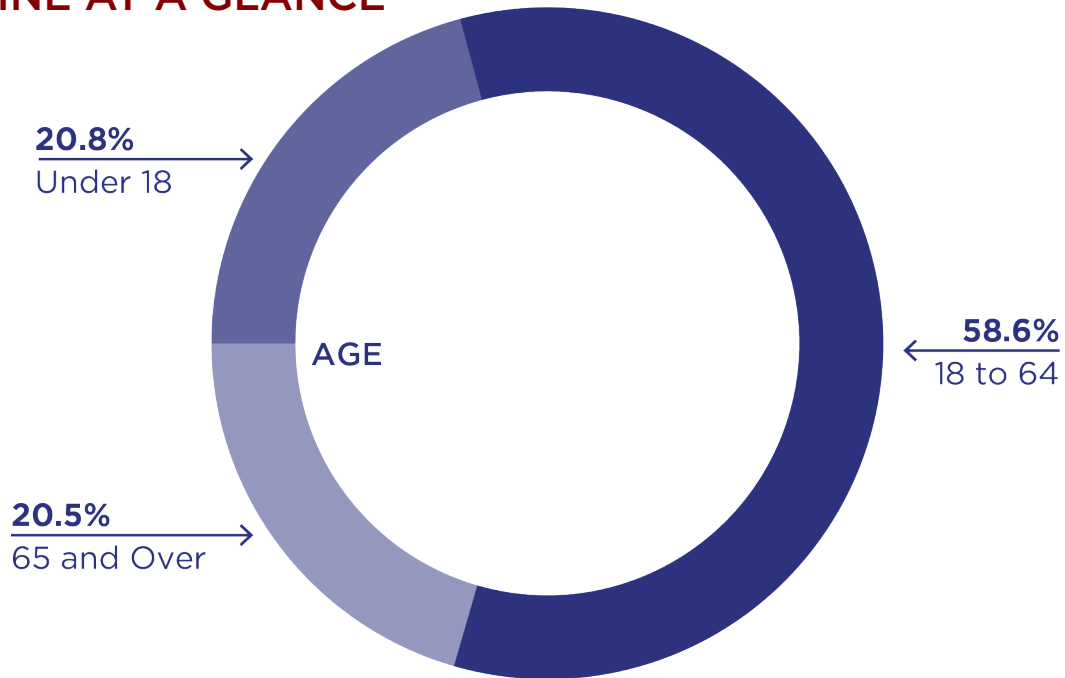
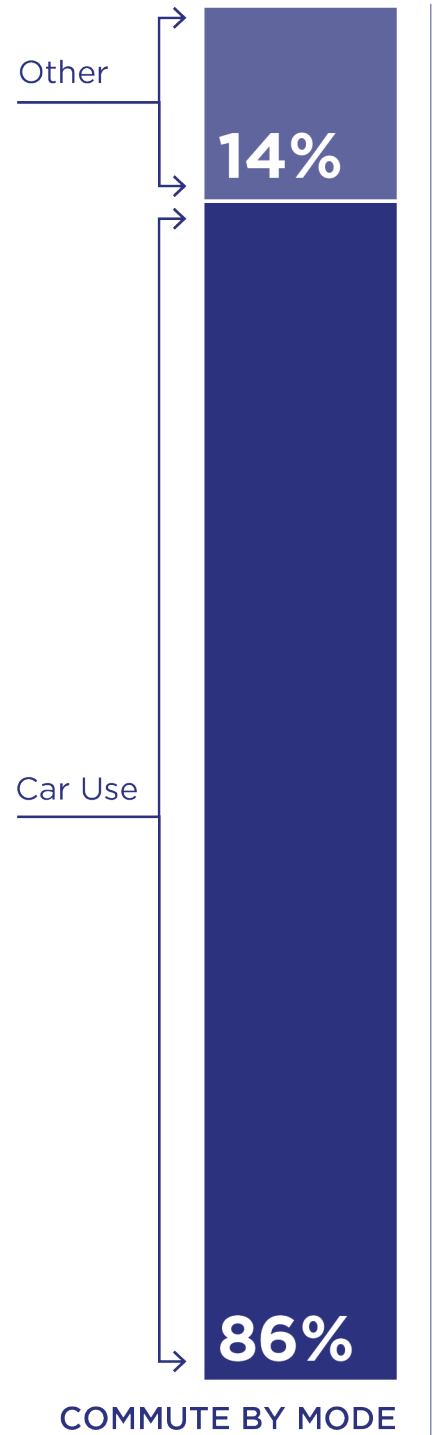
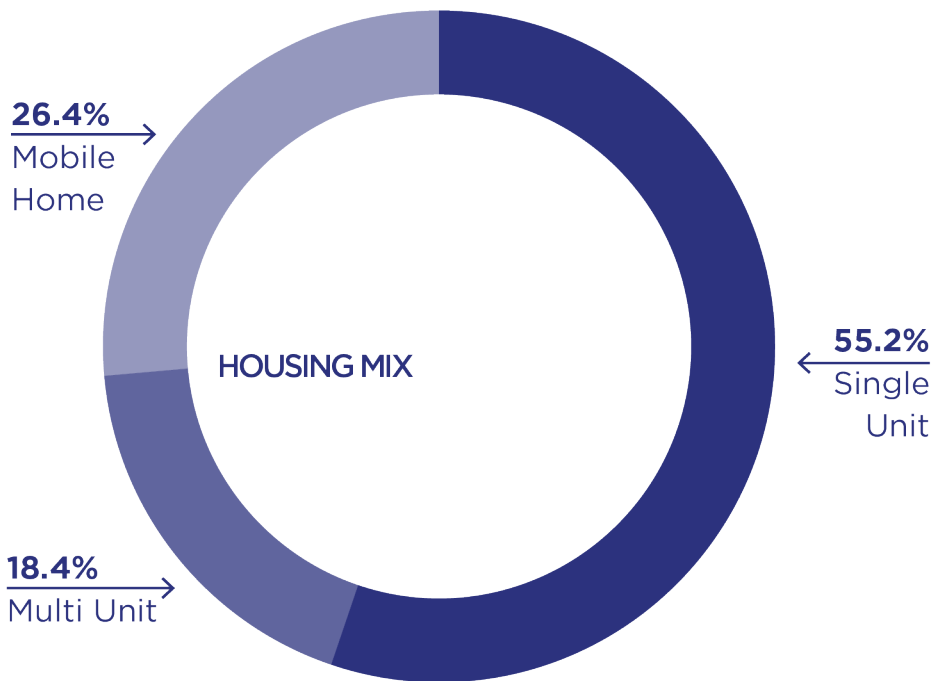
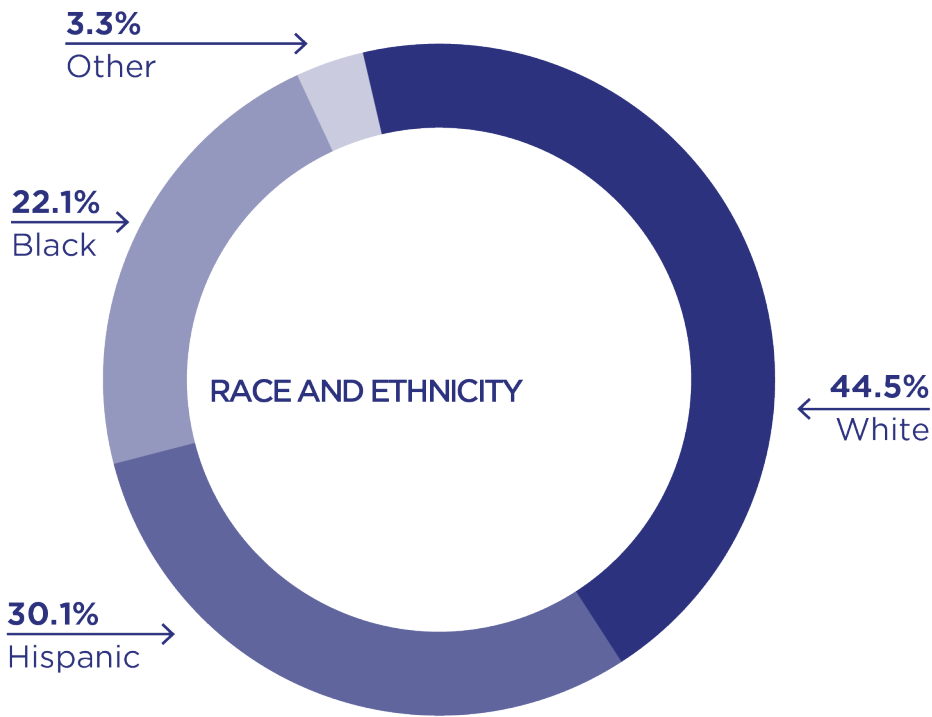


Figure 3: Woodbine at a Glance: Demographic Overview



PRIORITY CORRIDORS

Based on the existing street network, the locations of schools, transit stops and stations, and the downtown area along with feedback from the Steering Committee and the public, 12 priority corridors were identified for this plan (Figure 4). These corridors are:

- **DeHirsch Avenue**
- **DeHirsch Avenue (CR 550)**
- **Fremont Avenue**
- **Webster Street (CR 550/638)**
- **Washington Avenue (CR 537)**
- **Sumner Avenue**
- **Heilprin Avenue**
- **Bryant Street**
- **Freidriechstadt Avenue**
- **Fidler Hill Road (CR 660)**
- **Fidler Road (CR 638)**
- **Tyler Road/Woodbine Road (CR 611)**

It is important to note that County Roads are under the jurisdiction for maintenance and improvements by Cape May County, while municipal roads are the responsibility of Woodbine. However, for the implementation of bicycle facilities that

require pavement markings an agreement could be made between Cape May County and Woodbine in which the municipality is responsible for the installation and maintenance of those markings.

To identify potential deficiencies that need to be addressed during the development of the Bicycle and Pedestrian Master Plan, the project team performed an assessment of the existing conditions of Woodbine's key corridors and intersections. The data collected includes sidewalk conditions and widths, bicycle compatibility, intersection geometry and signal timings, road widths, and speed limits. For the inventory, an initial desktop review was performed, followed by a field visit by the project team.

Roadway elements were inventoried along these corridors which included roadway width, lane and shoulder width, sidewalk width and condition, median and buffer presence and width, speed limit and presence of bicycle facilities. This data was utilized during the existing conditions analysis to provide a bicycle level of traffic stress analysis, identify safety concerns, and determine appropriate improvement treatments. The inventoried roadway data can be found in Appendix A.

EXISTING PLANNING STUDIES AND PROPOSED PROJECTS

The Bicycle and Pedestrian Master Plan should not exist alongside, but rather enhance and incorporate elements of existing plans, visions, and goals for the community. A review was performed of existing plans, planning studies, and proposed projects that may impact or share goals and objectives with the Plan. Available documentation for existing and proposed plans, studies, and projects are included in Appendix B.

Transportation and Circulation Element of the Woodbine Master Plan

The Borough prepared a Transportation and Circulation Element as a part of the Master Plan in 2019. The Bicycle and Pedestrian Master Plan will incorporate elements of the Transportation and Circulation Element of the Woodbine Master Plan, as appropriate and feasible, complementing previously identified goals and objectives. The main objectives are the reports are as follows:

- To promote safe and efficient travel by accommodating both local and pass-through traffic.
- To provide easy and clear access to commercial, residential, and industrial properties.
- To maximize the use of the existing road system by upgrading and improving conditions.

- To increase accessibility and expand recreation opportunities for pedestrians and bicyclists by maintaining the existing and developing new infrastructure.
- To encourage cooperation between the Borough, New Jersey Transit, and Cape May County to increase public transportation options.

The Borough created a series of recommendations, listed below:

1. Continue to increase pedestrian safety by implementing effective traffic calming practices in the Downtown Core, especially along Washington Avenue, DeHirsch Avenue, and Webster Street.
2. Coordinate with Cape May County to study ways to reduce traffic crashes in the Borough, specifically focusing on:
 - a. Addressing the high number of crashes, especially during the summer, at the intersection of Washington Avenue (County Route 550/557) and DeHirsch Avenue (County Route 550), potentially by installing a full traffic signal.
 - b. Addressing the driver visibility issues at the Washington Avenue (County Route 550/557) intersection with Webster Street (County Route 638).
 - c. Reducing truck traffic through the Downtown Core en route to the landfill.
 - d. Extending the no passing zone with signage along Washington Avenue to

include all of all the Town's Commercial Zoning District.

3. Review the status and implement the applicable recommendations set forth in the Local Bicycle and Pedestrian Planning Assistance Study and implement remaining strategies.

4. Implement recommendations within the Pine Barrens Byway Corridor Management Plan.

5. Continue to seek grant funding to complete necessary transportation projects and circulation improvements, such as filling in where sidewalks are missing.

6. Extend Freidriechstadt Avenue between Scott Avenue and County Route 610 to improve connectivity to the industrial area in the Borough.

7. Encourage New Jersey Transit to extend service along 313 Bus Route. Work with the County to provide additional public transportation options in the Borough.

8. Install bicycle lane or shared use path signage, mile markers, bicycle racks and wayfinding and safety signage along all bicycle and shared use paths.

9. Install equestrian route signage along recommended equestrian routes.

10. Coordinate with Cape May County to evaluate all proposed bicycle paths in Woodbine and complete Borough bicycle

network. Create an updated map and promote the bicycle network. Provide static and interactive maps on the Borough and County's websites and social media outlets.

11. Adopt the updated Complete Streets Policy and Checklist to ensure that as road improvement projects take place, bicycle and pedestrian concerns will be addressed.

12. Continue to work with NJDOT (New Jersey Department of Transportation) and Cross County Connection Transportation Management Association to continue to improve safe access to schools through the Safe Routes to School Program, with a particular focus on Webster Street.

13. Encourage the Woodbine Board of Education to change the location of student pick-up and drop-off at the Woodbine Community School to the rear of the building by way of the access road shared with the Eco-Park to decrease conflicts between pick-up and through traffic.

14. Conduct a more detailed pedestrian, bicycle, and equestrian inventory to identify which intersections and roads would benefit with infrastructure improvements.

15. Work with the operator of Cape May Seashore Lines, as well as Cape May County and neighboring municipalities, to encourage the restoration of the excursion line through the Borough.



Borough of Woodbine Complete Streets Policy / Complete Streets Resolution & Checklist

In 2012 the Woodbine adopted a Complete Streets Policy. A Complete Streets Policy is legislature that commits to the creation of “Complete Streets,” a transportation design approach that focuses on the safe and comfortable travel of all users in all transportation modes. Woodbine’s Complete Streets Policy promotes a comprehensive, integrated, and connected multi-modal transportation network by providing connections to bicycling and walking trip generators such as employment, education, residential, recreational, and public facilities, as well as retail and transit centers.



Cape May County Transportation Plan

The last published Transportation Element is from 2006. The main objective of the plan is to create and maintain an adequate and safe transportation system that can address these needs for Cape May County’s citizens and visitors. The basic objectives of the plan were:

- Address Traffic Safety
- Reduce Congestion
- Enhance Public Transit
- Address Air Quality

In “Address Traffic Safety” objective, 10 High priority intersections for crash reduction were identified. One of the identified intersections were in Woodbine, at the intersection of County Road 610 and County Road 550. At the time of this report, Cape May County is producing their draft 2020 Comprehensive Plan and supporting documents, which includes a

Transportation Planning Element. In their published draft materials, they showed a draft Bicycle Facilities map, which showed plans to connect the Woodbine Railroad trail to facilities in Dennis Township at the east terminus. If there are additional materials published or formalized over the course of the study, this section will be updated accordingly.

EXISTING WALKING AND CYCLING CONDITIONS

Locations of existing, proposed, and planned pedestrian and bicycle facilities (including bicycle routes), shared-use paths, and other active transportation networks in Cape May County and adjacent communities were identified during the review of the Cape May Master Plan. In Woodbine, there are no existing facilities that connect to a larger regional network; however, there are several regional facilities that would benefit from active transportation connections that will be noted during the recommendation's development phase of this study (Figure 5). Additionally, there is an on-going SJTPO Regional Trails Network - Feasibility Study for Cape May County that has the potential to connect into the Woodbine Railroad Trail.

Existing

Woodbine Railroad Trail - shared use path along DeHirsch Avenue that has bicycle and pedestrian facilities along it such as bicycle parking and seating. Connects to bicycle facilities at west terminus in Dennis Township

Eco Park Bikeway - shared use path that connects to Woodbine Elementary School to the Eco Park located just south of Monroe and Webster Avenue and the intersection at Heilprin and Sumner Avenue. Path allows for walking, biking, and horseback riding.

Proposed

Sumner Avenue Bike Trail Extension - extend the Woodbine Bikeway system from the intersection of Heilprin and Sumner Avenue easterly along Sumner Avenue to Fidler Hill Road

Fidler Hill Road Bike Trail Extension - connect the Woodbine Railroad Trail bicycle at Fidler Hill Road and DeHirsch Avenue to bicycle facilities along Sumner Avenue

Inventory of the existing sidewalk was conducted on the 12 priority corridors identified. The inventory included determining if there were areas with missing sidewalk, sidewalk width and condition at locations where sidewalk is currently available. Additionally, sidewalks and curb ramps that are not compliant with Americans with Disabilities (ADA) standards were identified. The data from the sidewalk inventory conducted as a part of the 2019 Woodbine Master Plan is also included in this inventory.

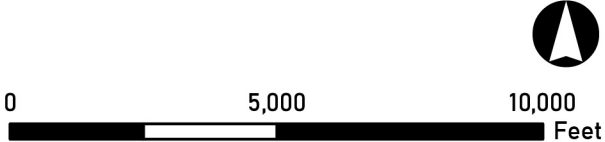
Within the Central Business District of Woodbine, there is an extensive and mostly complete sidewalk network, although some sidewalks are in poor condition or have missing connections.

DeHirsch Avenue has good sidewalk conditions throughout the corridor except for the sections between Grant Avenue and

Upper Township



Dennis Township



WOODBINE SIDEWALK INVENTORY

-
- NJ TRANSIT Commuter Rail
 Industrial Areas
 Parks
 Commercial Areas
 Agriculture
 Good Condition
 Fair Condition
 No Sidewalk

Figure 5: Woodbine Sidewalk Inventory



Lincoln Avenue and between Bay Drive and Fidler Hill Road, where the sidewalks are missing. DeHirsch Avenue (CR 550) also has good sidewalk conditions except for a segment of missing sidewalk between Heilprin Avenue and Fidler Hill Road. Webster Street (CR 550/638) has missing sidewalk from the town line to the west of Grant Avenue. Washington Avenue (CR 557) has sections between Whittier and Emerson Street and from Webster Avenue to the town line with missing sidewalk. Bryant Street has no sidewalk from Monroe Avenue to Heilprin Avenue. Other corridors with extensive missing sidewalks include Fremont Avenue, Sumner Avenue, Freidriechstadt Avenue, Fidler Hill Road (CR 660), Fidler Road (CR 638), and Tyler Road/Woodbine Road (CR 611). The 12 corridors consist of good, fair, and no sidewalk. Poor sidewalk conditions were not determined (Figure 6).

SIDEWALK CONDITIONS

Priority Corridor	<i>Between...</i>	<i>...And</i>	Existing Suitability
DeHirsch Avenue	<i>Grant Avenue</i>	<i>Lincoln Avenue</i>	No Sidewalk
	<i>Lincoln Avenue</i>	<i>Isaacs Avenue</i>	Good
	<i>Isaacs Avenue</i>	<i>Bay Drive</i>	Good
	<i>Bay Drive</i>	<i>Fidler Hill Road</i>	No Sidewalk
DeHirsch Avenue (CR 550)	<i>Grant Avenue</i>	<i>Washington Avenue</i>	Good
	<i>Washington Avenue</i>	<i>Monroe Avenue</i>	Good
	<i>Monroe Avenue</i>	<i>Heilprin Avenue</i>	Good
	<i>Heilprin Avenue</i>	<i>Fidler Hill Road</i>	No Sidewalk
Fremont Avenue	<i>Dead End</i>	<i>Tyler Road</i>	No Sidewalk
	<i>Tyler Road</i>	<i>Dead End</i>	No Sidewalk
Webster Street (CR 550/638)	<i>Town Line</i>	<i>West of Grant Avenue</i>	No Sidewalk
	<i>West of Grant Avenue</i>	<i>Washington Avenue</i>	Fair
	<i>Washington Avenue</i>	<i>Adams Avenue</i>	Fair
	<i>Adams Avenue</i>	<i>Monroe Avenue</i>	Good
	<i>Monroe Avenue</i>	<i>Heilprin Avenue</i>	Good
	<i>Heilprin Avenue</i>	<i>Admiral Drive</i>	Good
Washington Avenue (CR 557)	<i>Whittier</i>	<i>Emerson Street</i>	No Sidewalk
	<i>Emerson Street</i>	<i>DeHirsch Avenue</i>	Good
	<i>DeHirsch Avenue</i>	<i>Webster Avenue</i>	Good
	<i>Webster Avenue</i>	<i>Sumner Avenue</i>	No Sidewalk
	<i>Sumner Avenue</i>	<i>Town Line</i>	No Sidewalk
Sumner Avenue	<i>Fidler Road (CR 638)</i>	<i>Kubiak Road</i>	No Sidewalk
Heilprin Avenue	<i>Sumner Avenue</i>	<i>341 Heilprin Avenue</i>	Fair
	<i>341 Heilprin Avenue</i>	<i>Friederickstadt Avenue</i>	Good
Bryant Street	<i>Jackson Avenue</i>	<i>Washington Avenue</i>	Good
	<i>Washington Avenue</i>	<i>Monroe Avenue</i>	Fair
	<i>Monroe Avenue</i>	<i>Heilprin Avenue</i>	No Sidewalk
Freidriechstadt Avenue	<i>Scott Avenue</i>	<i>Heilprin Avenue</i>	No Sidewalk
	<i>Dennisville -Petersburg Road</i>	<i>Scott Avenue</i>	No Sidewalk
Fidler Hill Road (CR 660)	<i>Fidler Road (CR 638)</i>	<i>Town Line</i>	No Sidewalk
Fidler Road (CR 638)	<i>Admiral Drive</i>	<i>Fidler Hill Road (CR 660)</i>	No sidewalk
Tyler Road/Woodbine Road (CR611)	<i>Washington Avenue</i>	<i>Freemont Avenue</i>	No Sidewalk
	<i>Freemont Avenue</i>	<i>Morris Avenue</i>	No Sidewalk

Figure 6: Sidewalk Conditions

CRASH DATA

Historical crash data provides a snapshot of safety performance along a roadway. While it should not be used exclusively to identify safety deficiencies, it provides valuable insight in determining crash hot spots, diagnosing safety issues, and identifying contributing causes to crashes. For this study, town-wide crash records were obtained from NJDOT's Safety Voyager Database for the most recent three years available (2017-2019). A total of 143 crashes were reported in Woodbine during that time. Of these, 35 (24%) resulted in an injury, injuring 47 people, with no fatalities. Additionally, reported bicycle and pedestrian crash records were obtained for the most recent five years available (2015-2019). A total of three pedestrian crashes were reported in that time, none of which resulted in death or incapacitating injuries. No bicycle crashes were reported. A detailed review of crash data was performed during the existing conditions analysis, including identification of crash hotspots, overrepresented crash types, and contributing circumstances. Raw crash data obtained from NJDOT is included in Appendix C.

Bicycle and Pedestrian Crashes

The bicycle and pedestrian crash review was prepared using crash records obtained for the most recent five-year period available (2015-2019) from NJDOT Safety Voyager crash database. Over this period, there were three crashes in the Borough of Woodbine that involved a pedestrian. No records of bicycle crashes were found (Figure 7).

Within the three-year span, the majority of vehicle crashes occurred at two intersections: Washington Avenue and Webster Street and DeHirsch Avenue and Dennisville-Petersburg Road.

Records also show that out of the 143 crashes, 31 involved animals, specifically deer, on the road. This is 22% of all crashes.

143



VEHICLE CRASHES
FROM 2015 TO 2019

0 DEATHS

MAJORITY OCCURED AT TWO LOCATIONS

22% INVOLVING ANIMALS

3



BICYCLE + PEDESTRIAN CRASHES FROM 2015 TO 2019

0 DEATHS

Figure 7: Bicycle and Pedestrian Crash Statistics

BICYCLE LEVEL OF TRAFFIC STRESS

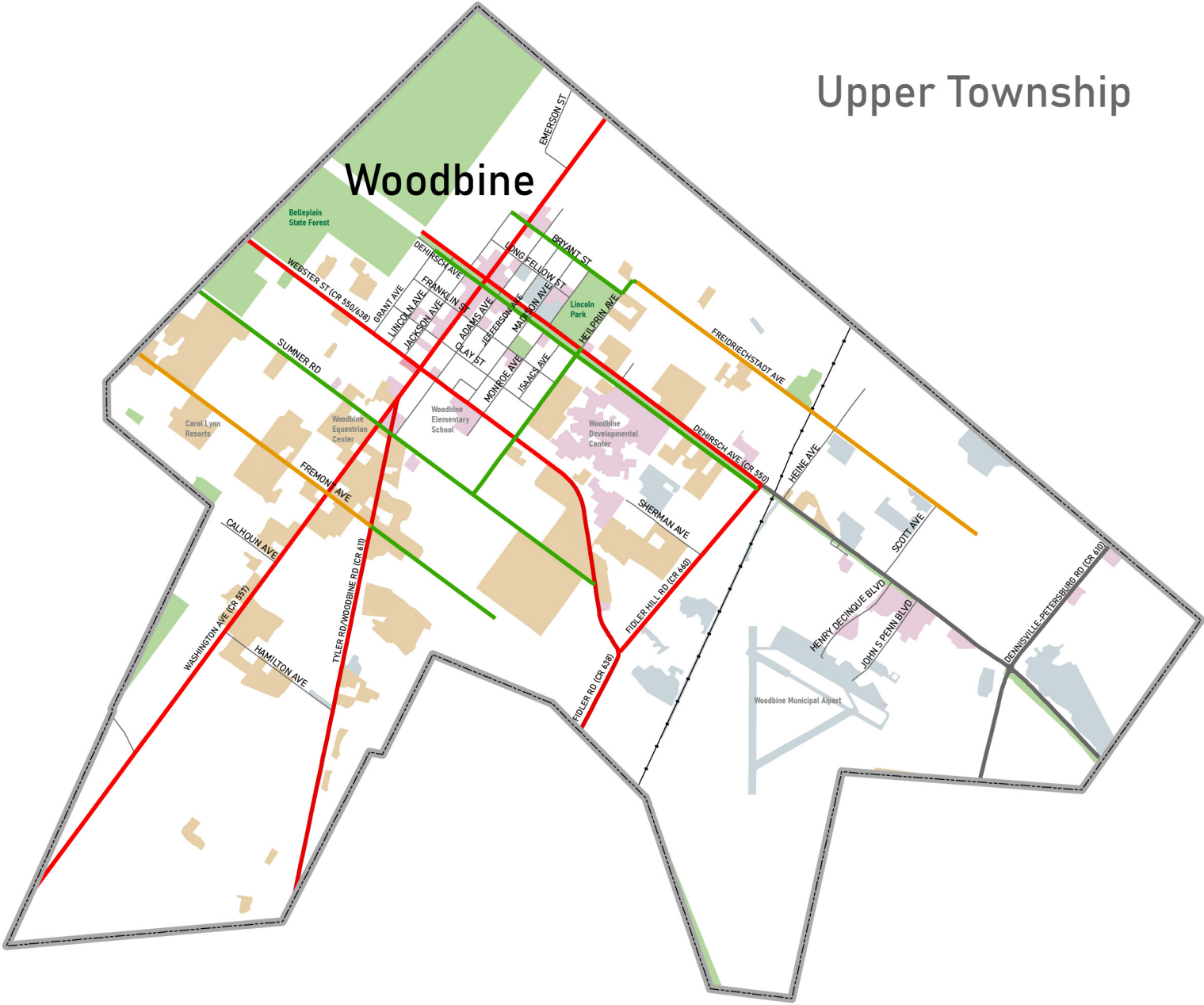
Traffic stress is the perceived sense of danger associated with riding in or adjacent to vehicle traffic. Studies have shown that traffic stress is one of the greatest deterrents to bicycling. The less stressful – and therefore more comfortable – a bicycle facility is, the wider its appeal to a broader segment of the population. A bicycle network will attract a large portion of the population if it is designed to reduce stress associated with potential motor vehicle conflicts and if it connects people with where they want to go.

Research indicates that most people in the United States would bike if dedicated bicycle facilities were provided. However, only a small percentage of Americans are willing to ride if no facilities are provided. It has been shown that most people fall into one of four categories (Figure 10):

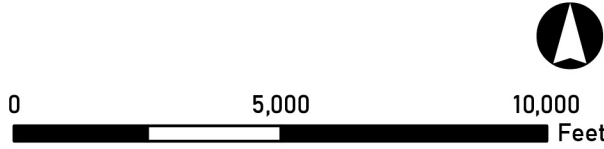
- 1-3% Strong and Fearless: Very comfortable and willing to ride on streets without designate facilities
- 5-10% Enthusiastic and Confident: Very comfortable, but prefer streets with designated bike lanes
- 50-60% Interested but Concerned: Comfortable on trails and streets with buffered or separated bike lanes and interested in biking more
- 30% Not Currently Interested: physically unable or very uncomfortable even on streets with separated bike lanes

In order to better understand and meet the needs of the “Interested, But Concerned” cyclist, the Bicycle Level of Traffic Stress (Bicycle LTS) analysis was developed as an objective, data-driven evaluation model to help identify streets with high levels of traffic stress. The analysis uses roadway network data (i.e. posted speed limit, street width, number of lanes, intersection conditions, presence and character of bikeway facilities, and land use context) to determine bicyclist comfort level.

Upper Township



Dennis Township



WOODBINE BICYCLE LEVEL OF STRESS ANALYSIS

- NJ TRANSIT Commuter Rail
- Industrial Areas
- LTS 1
- Parks
- Agriculture
- LTS 2
- Commercial Areas
- LTS 4

Figure 8: Woodbine Bicycle LTS

BICYCLE LTS

The combination of these criteria creates four levels of traffic stress for existing roadway networks. The lower the number the lower the stress and the higher the level of comfort for those biking. LTS 1 & 2 roads are typically the roadways that appeal to the “Interested but Concerned” cyclist.

The level of traffic stress scores shown in Figure 9 illustrate the low stress connections and gaps along the priority corridors in Woodbine. The Bicycle LTS map approximates the user experience for the majority of Woodbine residents (Figure 8). However, people may have differing opinions of traffic stress depending on their lived experience.

Priority Corridor	Between...	...And	Existing Suitability
DeHirsch Avenue	Grant Avenue	Fidler Hill Road	LTS 1
DeHirsch Avenue (CR 550)	Grant Avenue	Fidler Hill Road	LTS 4
Fremont Avenue	Dead End	Tyler Road	LTS 1
	Tyler Road	Buck Hill Road	LTS 2
Webster Street (CR 550/638)	Town Line	Admiral Drive	LTS 4
Washington Avenue (CR 557)	Whittier	Town Line	LTS 4
Sumner Avenue	Fidler Road (CR 638)	Kubiak Road	LTS 1
Heilprin Avenue	Sumner Ave	Friederickstadt Avenue	LTS 1
Bryant Street	Jackson Avenue	Heilprin Avenue	LTS 1
Freidriechstadt Avenue	Dennisville-Petersburg Road	Scott Avenue	LTS 2
	Scott Avenue	Heilprin Avenue	LTS 1
Fidler Hill Road (CR 600)	Fidler Road (CR 638)	Town Line	LTS 4
Fidler Road (CR 638)	Admiral Drive	Fidler Hill Road (CR 660)	LTS 4
Tyler Road/Woodbine Road (CR611)	Washington Avenue	Morris Avenue	LTS 4

Figure 9: Bicycle LTS by Corridor



Level 1: All Ages and Abilities

Level 1 includes off-street shared use paths and some very low-stress roadways suitable for all ages and abilities. Level 1 makes up 40% of the priority corridors in Woodbine.



Level 2: Average Adult

Level 2 includes roadways that are comfortable enough that the mainstream adult population would ride a bicycle on them. Level 2 makes up 10% of the priority corridors in Woodbine.



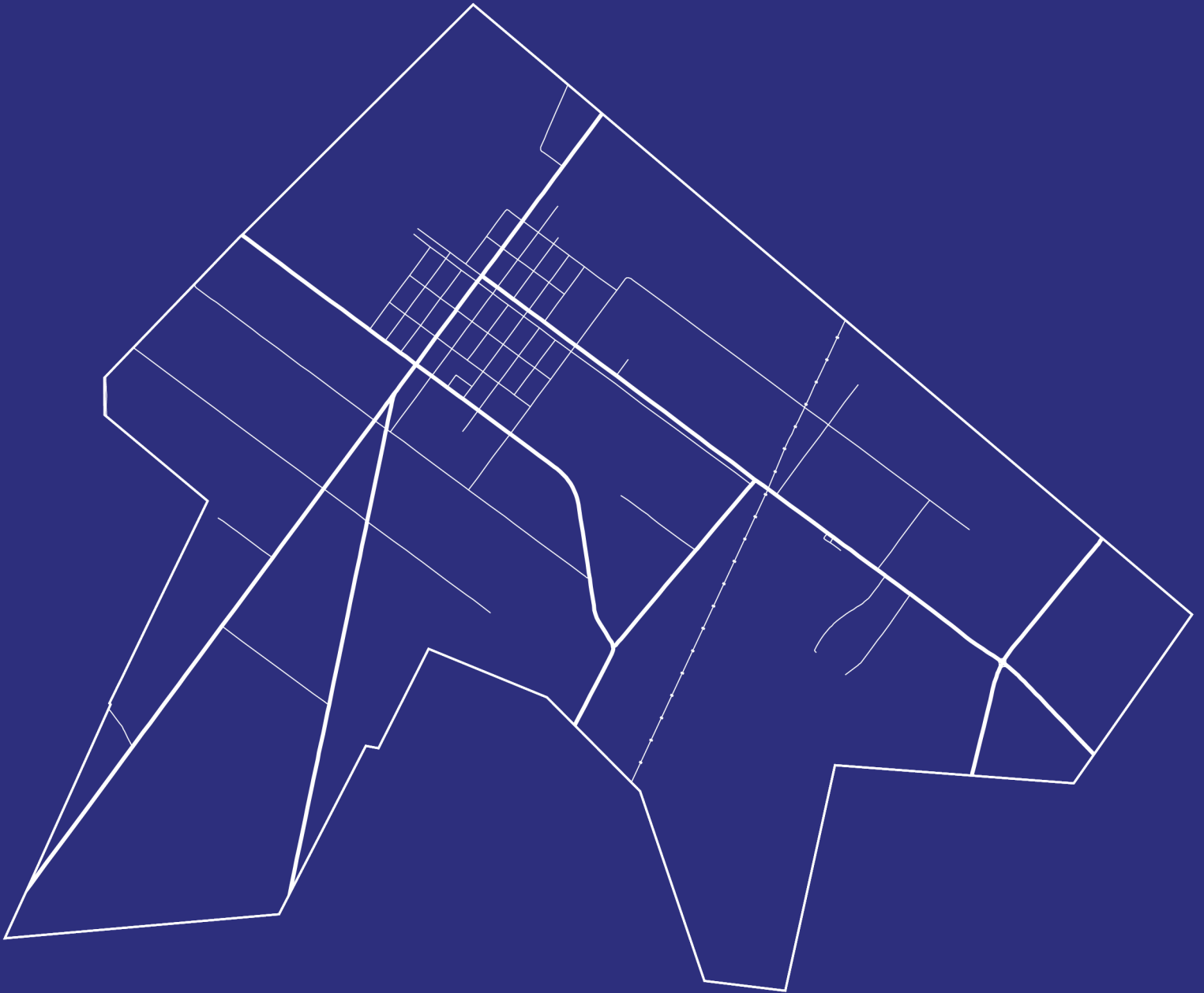
Level 3: Confident Adult

Level 3 includes arterial roadways with bicycle facilities that are probably only comfortable for an experienced, confident bicyclist. Level 3 makes up 0% of the priority corridors in Woodbine.



Level 4: Fearless Adult

Level 4 includes arterial roadways with no dedicated bicycle facilities which, if ridden at all, will be used by only strong or fearless bicyclists.



4. OUTREACH

Engaging with the Woodbine community was a priority throughout the plan development process. A variety of opportunities were used to seek input from Woodbine residents and community members. Ongoing outreach ensured a continuous feedback loop that informed the final implementation matrix and overall goals. This chapter presents an overview of the format and approach for each outreach opportunity, along with a summary of feedback received. Public outreach efforts were conducted both in-person and virtually due to the COVID-19 pandemic. A hybrid approach was utilized in an effort to overcome the internet accessibility issues experienced by many in the Borough.



STEERING COMMITTEE

A steering committee was formed of local, county and state officials, as well as other stakeholders identified by the NJDOT-BSBPP and Woodbine. The committee assisted with identifying deficiencies in and opportunities for active transportation facilities within Woodbine and provided feedback on potential improvements. Representatives of the following offices, organizations and constituencies were invited to participate:

- Mayor of Woodbine
- Woodbine Public Works
- Woodbine Engineer
- Triad Associates
- Cape May County Engineer
- Woodbine Chamber of Commerce
- Woodbine Land Use Board Members

Three steering committee meetings were held. The first was a kick-off meeting with the purpose of presenting the scope, goals, and final deliverables of the project, as well as identifying stakeholder roles and responsibilities. This meeting was held on July 19, 2021. At the second meeting, held October 27, 2021, the steering committee was presented with the initial data collection efforts and analyses. Draft recommendations were reviewed at the third meeting on May 17, 2022.

- Woodbine Planning/Zoning Board Members
- Woodbine School District
- New Jersey Department of Community Affairs
- South Jersey Transportation Planning Organization
- Cross County Connections TMA

PUBLIC INFORMATION CENTERS

Throughout the project, two public information centers were held to present results to the public and receive additional input. The first Public Information Center was held on Saturday, October 9, 2021, at the Woodbine Car Show. This event was used to introduce the project to members of the public and advertise the online and hard copy of the Community Survey. The second Public Information Center was held on Wednesday, April 13, 2022, in combination with a Land Use Board Meeting for the Borough. Draft recommendations were presented to members of the public and board members. The opportunity to provide feedback and input on these recommendations was provided to those in attendance.

Project Webpage

A project webpage was developed by the Borough of Woodbine at the beginning of the study and was included in their existing municipal website. This page was used to post links and information about the project. It was updated periodically with information on the project as it was finalized. Both the Public Information Centers and the Community Survey were advertised through this webpage.



Community Survey

The Community Survey was available online through Survey123, an ArcGIS Application. The link to access the survey was posted on the Borough website and advertised at the Car Show. The survey was available from October through December 2021. A total of 15 completed surveys were received.

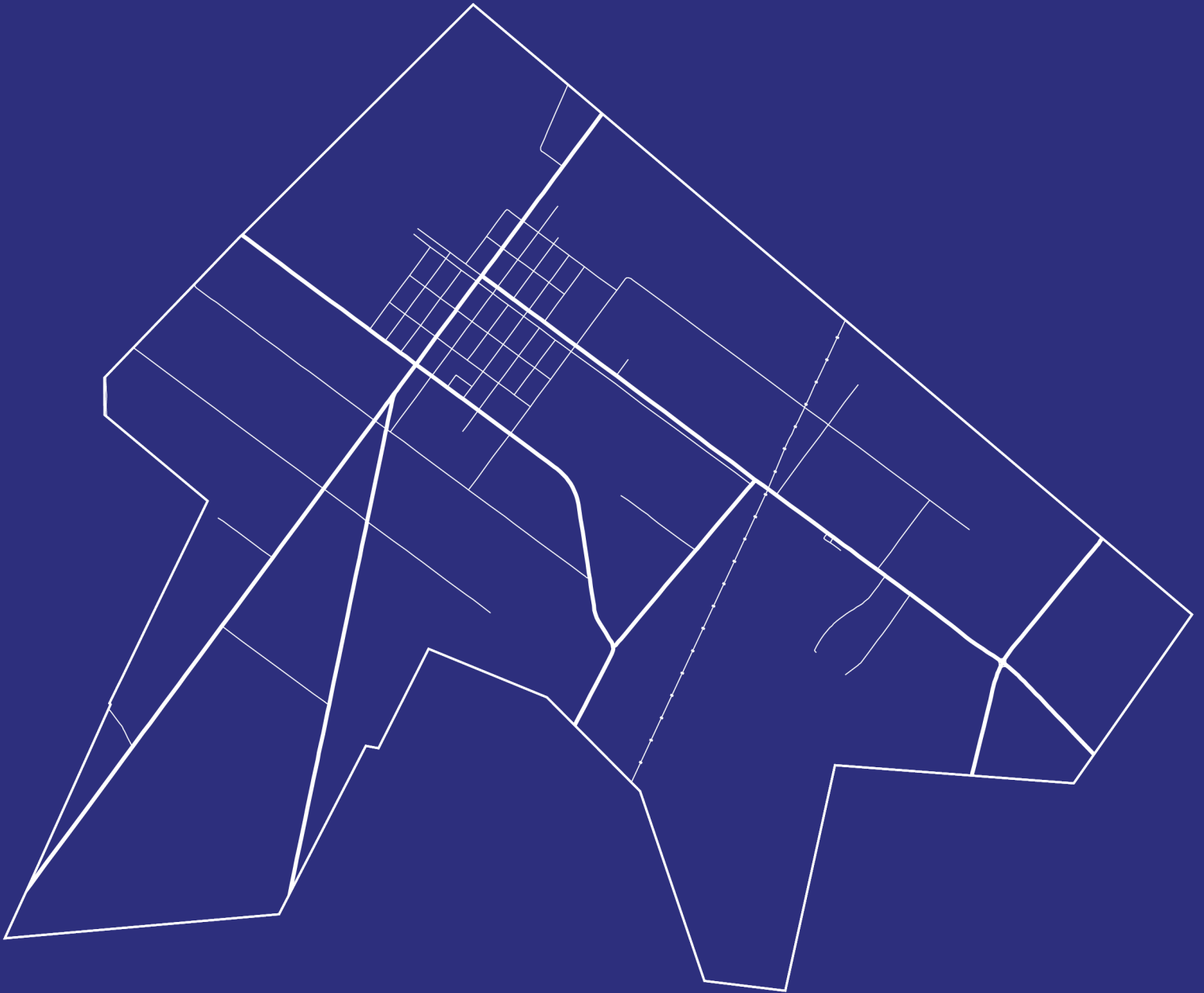
Based on the data collected, 33% of people said they walk once to a few times a week. The biggest challenges mentioned were not having enough time to cross at signalized intersections before stopped cars start moving again, drivers not stopping for them at crosswalks, sidewalks in poor condition, and limited lighting after dark, making them feel unsafe. The most frequent reasons for walking were listed as fitness, walking their dogs, and/or getting to other parts of town. When asked what kind of improvements they would like to see, 47% of respondents said wider and safer sidewalks, 33% said protection from speeding cars, 27% said off-street pedestrian paths, 33% said pedestrian-scale lighting, and 40% said high-quality sidewalks to make the experience pleasant. Please note that respondents could select several answers so the percentages will not add up to 100%.

According to the responses received, 40% of people said they bike a few times

a month. 60% of respondents said they like biking because there are enough destinations within biking distance. The biggest concerns bicyclists had been feeling unsafe after dark due to limited lighting and not enough bike racks around town. When asked what kind of improvements they would like to see, 40% said off-street bike paths, 27% said more bike racks, and 47% said more lighting and reflective bike lane paint.

The Community Survey also collected optional demographic information from participants. Through this data it was noted that 53% of the respondents were above the age of 65 and 87% of them did not have anyone under the age of 18 in their household.





5. WOODBINE TOMORROW



PEDESTRIAN FACILITY RECOMMENDATIONS

An inventory of existing sidewalk was conducted on the priority corridors. Additional sidewalk information was provided by the Borough's Master Plan team as well as the Department of Public Works. The inventory included determining if there are areas of missing sidewalk and areas where sidewalks are not compliant with the Americans with Disabilities Act (ADA).

Woodbine has an extensive sidewalk network but there are some missing connections. The inventory identified the locations of missing sidewalks, sidewalk widths, and sidewalk conditions.

Locations recommended for sidewalk improvements are:

- Webster Street
- Monroe Avenue
- Clay Street
- Franklin Street
- DeHirsch Avenue
- Madison Avenue
- Jefferson Avenue
- Adams Avenue
- Washington Avenue



BICYCLE FACILITY RECOMMENDATIONS

The implementation of bicycle facilities is a critical step towards encouraging cycling in an area as an essential form of transportation. However, it is important that bicycle facilities are properly designed to ensure that they are safe, comfortable and useful to most people. According to the New Jersey Complete Streets Design Guide, there are five guiding principles to achieve effective implementation:

- Continuous: Many bicycle lanes disappear at intersections and other stressful locations.
- Connected: Gaps in a bicycle network can discourage potential riders. Bicycle routes should be interconnected to create a robust network that connects where people live and where they want to go.

FACILITY TYPE	FACILITY WIDTH	ROADWAY SPEED LIMIT (MPH)	AVERAGE DAILY TRAFFIC (ADT)
Bicycle Lane	5-foot	25-35	< 10,000
Buffered Bicycle Lane	5-foot Bike Lane and 3-foot Buffer	25-45	< 15,000
Separated Two-Way Bike Lane	12-foot	≤45	Any
"Sharrow"		≤ 25	< 10,000
Advisory Bike Lane	5-foot	≤ 25	< 10,000
Shared-Use Path	10 to 14-foot	Any	Any

Figure 11: Bicycle Facility Typologies

- **Convenient:** A bicycle network must conveniently and directly connect cyclists to key destinations to encourage higher rates of cycling.
- **Complete:** A successful network considers what happens when a bicycle ride ends. This means considering how complete a street is, including the presence of sidewalks, bicycle parking, and access to transit.
- **Comfortable:** A bicycle network should be comfortable and inviting for riders of all ages and abilities, providing the sense that bicycling is a safe and convenient activity.
- The New Jersey Complete Streets Design Guide outlines types of on-road bicycle facilities.

The recommended bicycle facilities are proposed to improve bicycle compatibility and accessibility in Woodbine (Figure 11). They include a variety of bicycle facility treatments such as “sharrows,” bicycle lanes, buffered bicycle lanes, and shared-use paths. The recommendations are intended to be implemented within the existing width of the roadway as part of resurfacing, restriping or other roadway reconstruction projects.

Bicycle lanes are a common on-road facility and there are several opportunities to install them on roadways in Woodbine. In locations where sufficient roadway width is available, a buffer could be included between the bike lane and the parking lane or between the bike lane and the travel lane. A buffer may be preferred by less-skilled bicyclists when higher traffic volumes and speeds are present.

In locations where space is constrained and bicycle lanes cannot be accommodated, shared-use arrows, or “sharrows,” are proposed. Sharrows may be used to indicate a shared environment for bicycles and automobiles. Under these conditions, it is recommended that “Share the Road” signage and shared-lane markings be incorporated to reinforce the concept.

The following table outlines the recommended bicycle facilities and roadway conditions necessary to accommodate them. These recommendations can be found in the New Jersey Complete Streets Design Guide. The proposed cross-section alternatives for each priority corridor can be found in Appendix D. Several alternatives are proposed for many of the locations and guidance from the State of New Jersey should be consulted to determine which alternatives are best for Woodbine.



“Sharrows”

A type of shared-lane marking, shared-use arrows, or “sharrows,” are used on roadways when it is not feasible to have a dedicated bicycle facility. Shared-lane markings are used to show that the roadway environment is to be shared between bicycles and automobiles. These markings should not only show that the roadway is shared but should also suggest where on the roadway a bicyclist should ride when practicable (when not turning left or avoiding debris). This helps motorists to anticipate the presence of bicyclists.



Bicycle Lanes

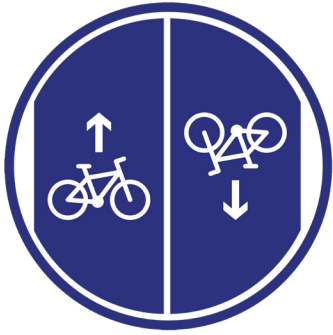
According to the New Jersey Complete Streets Design Guide, bicycle lanes provide an exclusive space for bicyclists using pavement markings and signage. It is sometimes preferred to paint these lanes green to draw awareness to them and further increase bicycle safety. Bike lanes are meant for one-way travel and typically are located on both sides of two-way streets and one side of one-way streets. Bicycle lanes can enable cyclists to ride at their preferred speed, without interference from motorists. The minimum bicycle lane width with no on-street parking is five feet when adjacent to a curb.



Buffered Bicycle Lanes

Buffered bicycle lanes follow the same guidelines as typical bike lanes, plus they include a marked buffer space that separates the bicycle lane from the adjacent travel lanes or parking lanes. Buffers decrease the risk of conflict between bicycles and motor vehicles. The preferred width of a buffered bicycle lane is five feet with a one- to three-foot buffer.





Two-Way separated bicycle lanes

Two-way separated bicycle lanes are physically separated lanes that allow bicycle movement in both directions on one side of the road. Two-way separated bike lanes share many of the same design characteristics as one-way buffered bicycle lanes but might require additional considerations at driveway and side street crossings. The preferred width of two-way separated bicycle lanes is twelve feet, with a minimum of ten feet.



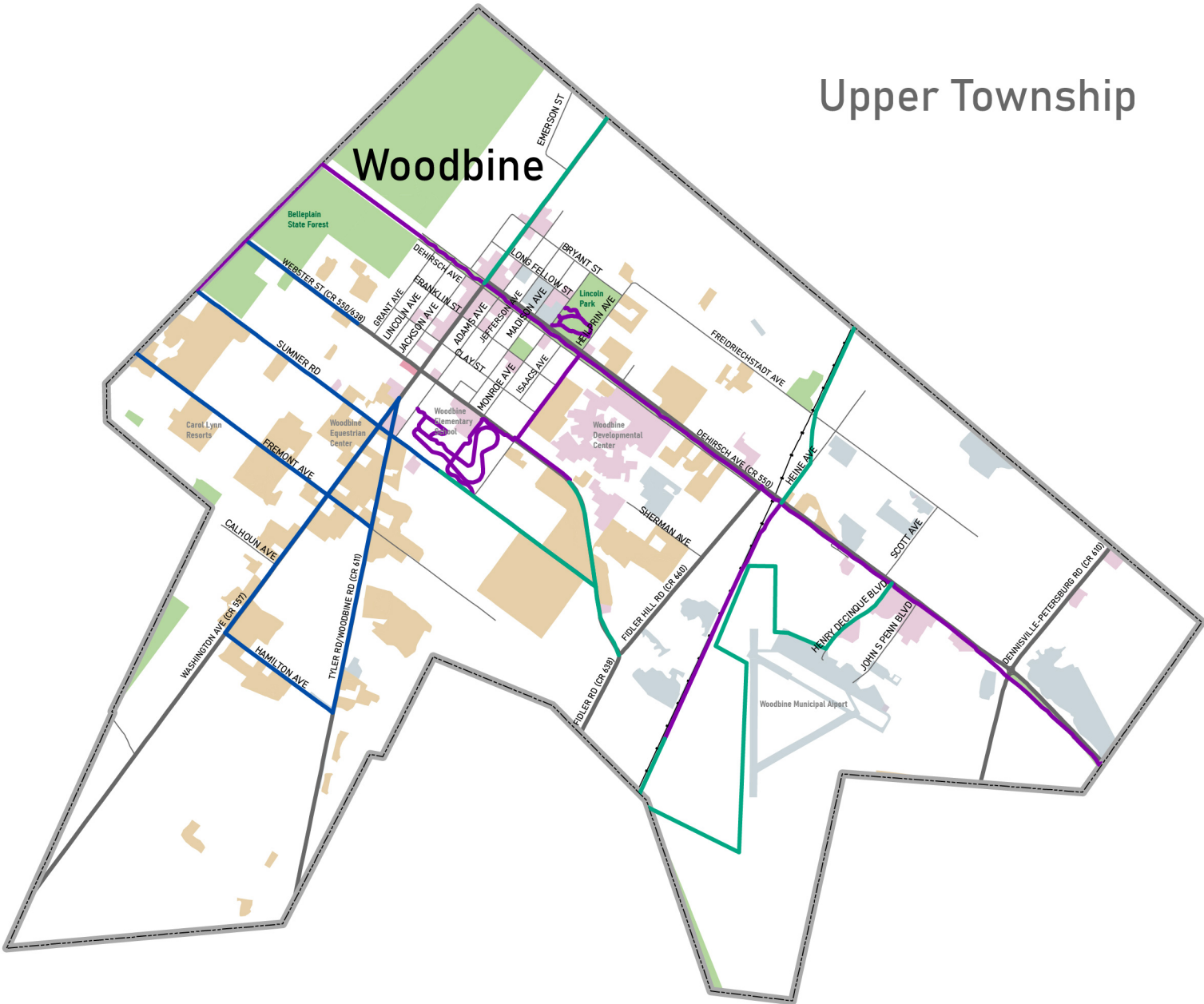
Shared-Use Path

Shared-use paths are similar to bike lanes; however, they can be used by people using other modes of non-motorized transportation such as walking, running, or skateboarding. They are also more distinctly separated from the roadway. Shared-use paths should be located outside of the roadway pavement width, separated from traffic by either open space or a barrier. Unlike bike lanes, shared-use paths are designed for two-way travel. The minimum width for a shared-use path is ten feet.

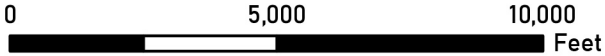


Upper Township

Woodbine



Dennis Township



WOODBINE EQUESTRIAN ROUTES & BICYCLE/PEDESTRIAN PATHS

-
- NJ TRANSIT Commuter Rail
 Industrial Areas
 Existing Bicycle/Pedestrian Path
- Parks
 Agriculture
 Proposed Bicycle/Pedestrian Path
- Commercial Areas
 Equestrian Route

Figure 12: Woodbine Equestrian and Bicycle/Pedestrian Paths



INTERSECTION REMEDIATIONS

Intersections are one of the most critical parts of any transportation network. They are key points for all users as they travel through a street network and can act as important nodes of activity for community life. While they can have positive impacts on community life they also account for the most serious and frequent conflicts between all travel modes. If an intersection is not functioning properly, it can dramatically reduce mobility and safety for all modes. However, a well-designed intersection that facilitates visibility and predictability for all users can reduce crashes. Intersection design should allow the street space to be effectively shared by pedestrians, bicyclists and drivers.

Pedestrians are encouraged to cross at controlled intersections. These intersections should be properly delineated for pedestrian crossings. Additionally, crosswalks must be ADA compliant and signalized intersections should include countdown pedestrian signal heads. At intersections within commercial districts and areas conducive to pedestrian traffic, crosswalks should be properly signed and striped, and the use of longitudinal thermoplastic stripes should be considered to delineate crosswalks. Along with signage and striping, intersections should have pedestrian-scale lighting and traffic calming measures where feasible. The following are different strategies and traffic calming measures recommended throughout Woodbine.

High-Visibility Crosswalks

A crosswalk is a portion of a roadway designated for pedestrians to cross streets. The striping of a crosswalk is important; it creates a high level of visual contrast with the surface of the roadway to draw the attention of both pedestrians and drivers. Some striping styles are more visible than others. It is recommended that Woodbine use a continental or ladder style striping. These have been shown to be more visible and are recommended in the New Jersey Complete Streets Guide.





Curb Ramps

Curb ramps assist in providing a smooth transition from the sidewalk level to the street level and back again and are helpful to people using crutches, walkers, canes or wheelchairs. Detectable warning surfaces should be included on the ramps. These warning surfaces help people with visual impairments to determine safe crossing locations.



Curb Extensions

Curb extensions, also referred to as bulb-outs or bump-outs, are an example of a traffic calming measure. A curb extension extends the curb line and sidewalk into the existing roadway, thus expanding the available pedestrian realm. The benefits of curb extensions include the following:

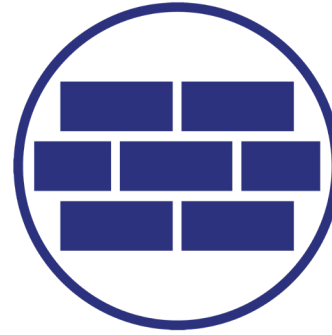
- Increases visibility for pedestrians and drivers
- Reduces pedestrian crossing distance and exposure to motor vehicles
- Provides a traffic calming effect
- Shields on-street parking from traffic





Rectangular Rapid Flashing Beacons (RRFBs)

RRFBs are a lower cost alternative to traffic signals and hybrid signals. They are shown to significantly increase driver yielding behavior at crosswalks when used to supplement standard pedestrian crossing warning signs and markings. RRFBs are user-actuated amber LEDs and are recommended at uncontrolled intersections or mid-block crosswalks. They can be activated manually by push button or passively via a pedestrian detection system.



Raised/Textured Crossings and Intersections

One of Woodbine’s unique infrastructure features is its use of brick pavers at intersections and crosswalks. These are part of the downtown’s identity and are beloved by the community. The existing brick pavers have been in Woodbine for several years. In order to maintain these features and ensure they remain in good condition, a number of recommendations are offered. They would also apply to any additional textured crosswalks or intersections the Borough might decide to install.

- **Construction:** In building brick crosswalks and intersections, it is important to check key conditions. These include (but are not limited to) the efficacy of stormwater drainage at the location, set and proposed speed limits, the placement and arrangement of pavers, and the quality of the soil or substrate underneath. Pavers should not be laid if stormwater does not drain efficiently from their proposed location, if set speed limits exceed 25 mph, and if there is not adequate support underneath them (natural bedrock and clay or poured concrete and gravel).
- If any of these negative conditions are present at existing instances of brick pavers it is important that they are remedied immediately and



if possible, during summer and fall months. This will reduce the need for maintenance and improve pedestrian and traffic conditions.

- Use: Brick crosswalks and intersections have slight performance differences to those painted on asphalt. The primary advantage to pedestrians is greater traction and thus safety during periods of rain or icing that create slippery conditions. When slightly elevated or placed perpendicular to traffic flow they have the further benefits of slowing and alerting vehicles respectively to pedestrian crossings and safety.
- Pedestrians do stand the greatest risk from poorly maintained brick crosswalks, with improperly placed, dislodged, and/or missing pavers creating serious tripping hazards, especially for children and the

elderly. These same conditions pose further risks to bicyclists, motorcyclists, and when they are severe, to motorists as well. Proper and frequent inspection by relevant personnel and a responsive and educated community are essential to preventing such incidents. It should also be noted that people who use wheelchairs often find brick pavers to be jarring. This is why smooth pavement is sometimes installed between areas of brick at crosswalks. Furthermore, crosswalks with only brick are not very visible to motorists in inclement weather and low-light conditions. Retroreflective striping should also be used.

- Maintenance: As opposed to conventional paved intersections, brick crosswalks need - and are required by a



patchwork of state laws – near constant inspection and observation to ensure that dislodged and/or uneven brick placement is properly repaired. This is the main reason why these intersections have low utilization outside of historic or pedestrian focused urban projects. Damage to brick pavers can be frequent and is often created by improper

or excessive vehicle stress on their placement area. It is recommended that vehicles (especially large personal and commercial trucks) maintain speeds at/ or below 25 mph in spring, summer, and fall and 15-20 mph in the winter when crossing brick paved elements.

- In climate conditions similar to Woodbine’s, the foremost reason for brick damage occurs in the winter months. It should be established policy that public and private snowplow operators lift their plows to avoid damaging the pavers. Proper drainage of the directly adjacent paved road areas is critical to prevent ice and frost damage which is common and can easily loosen individual brick pavers.

Intersection recommendations are proposed for:

- Lincoln & Webster (Figure 13)
- Washington & Franklin (Figure 14)
- Washington & Webster (Figure 15)



LINCOLN & WEBSTER



1: Rectangular Rapid-Flashing Beacon (RRFB)
2: High Visibility Crosswalk
3: Stop Bar

4: Double Yellow Centerline
5: Curb Extension

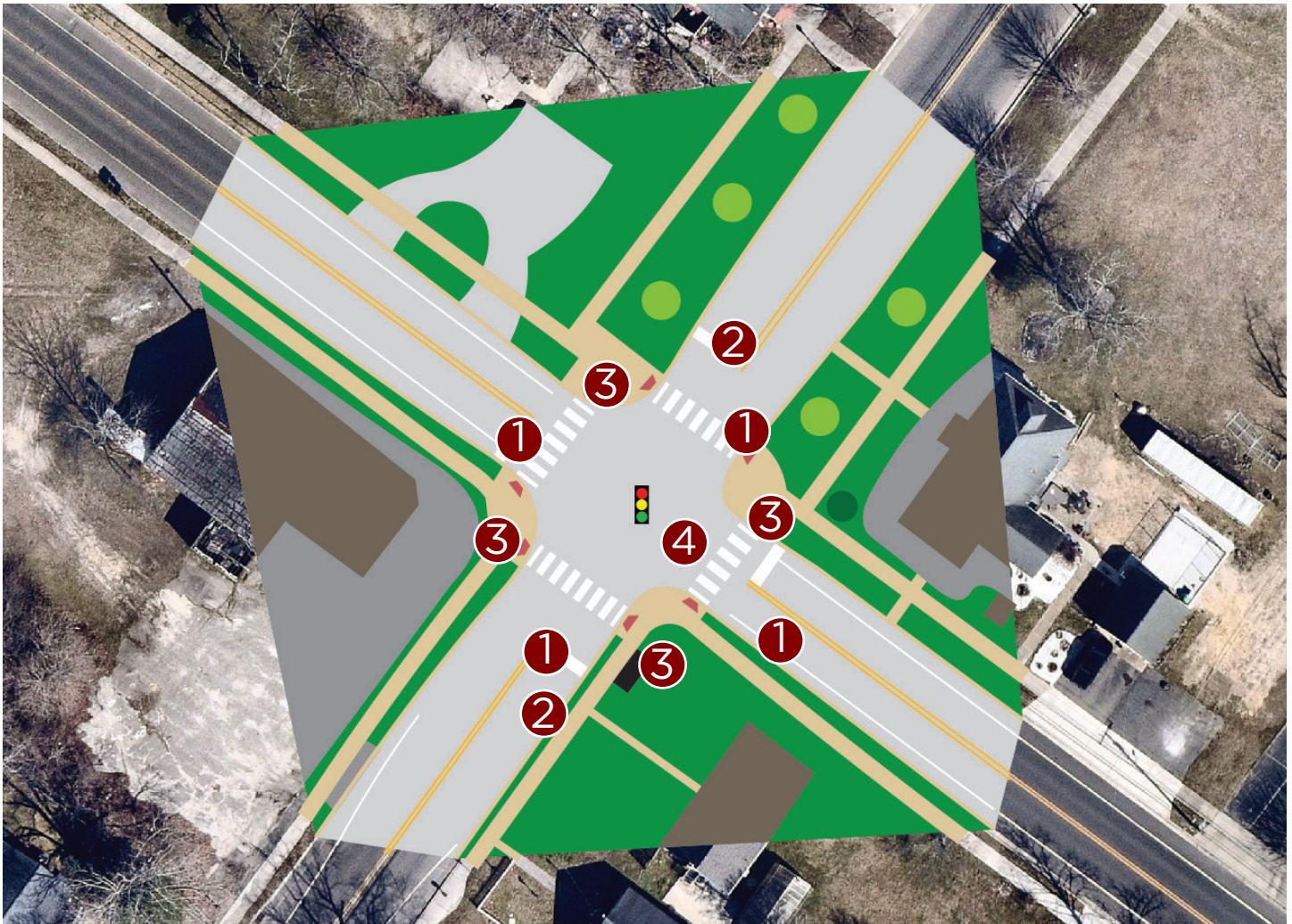
Figure 13: Lincoln & Webster Intersection Plan

WASHINGTON & FRANKLIN



Figure 14: Washington & Franklin Intersection Plan

WASHINGTON & WEBSTER



- 1: High Visibility Crosswalk
- 2: Stop Bar
- 3: Curb Extension
- 4: Traffic Light

Figure 15: Washington & Webster Intersection Plan

BOROUGHWIDE RECOMMENDATIONS

In addition to specific infrastructure projects and related programmatic efforts, some amenities are needed boroughwide to complete the active transportation network. These should be installed as a matter of policy in conjunction with any project as opportunities arise, or when development occurs. Amenities recommended in this plan include a comprehensive wayfinding program, secure bike parking, and pedestrian lighting.



Wayfinding Recommendations

An important step in advertising and promoting the facility improvements being made to these priority corridors is wayfinding signage. The National Association of City Transportation Officials (NACTO) defines a bicycle wayfinding system as comprehensive signing and/or pavement marking that guide bicyclists to their destinations along preferred bicycle routes. Typically, signs are placed at decision points along bicycle routes, such as intersections or other major locations. Wayfinding signage helps to make less-experienced bicyclists more comfortable in the environment and encourages them to use the safest routes available.

Wayfinding systems can be implemented and designed formally by a municipality or business improvement district. However, in many cases walking and biking advocates have organized informal wayfinding systems.





Benefits:

- Familiarize bicyclists with the bicycle network
- Identify preferred routes to key destinations
- Increase awareness of the bicycle network to drivers
- Increase accessibility and convenience of the bicycle network to visitors and casual users
- Can minimize the tendency to overestimate the amount of time necessary to travel to a destination if mileage and/or travel time information is included

The New Jersey Complete Streets Design Guide outlines guidance for wayfinding:

- Signage should maintain a clean, visible, and consistent design
- Signs should be placed on both sides of the street or trail
- Maps should be oriented so that the direction the user is facing is at the top
- A “You Are Here” symbol should be included
- Distances should be provided next to the time needed to reach the destination

Bicycle Parking Recommendations

No bicycling network is complete without convenient and secure parking. Bicycle parking can take many forms, from a simple bike rack to secure storage in a locker or gated area. This plan recommends the Borough continue to expand its bicycle parking as opportunities arise and development occurs.

Short-Term Bicycle Parking

Bicycle parking can be categorized into short- and long-term parking. Bike racks are the preferred device for short-term bicycle parking. These racks serve people who leave their bicycles for relatively short periods of time, typically for shopping, errands, dining or recreation. Bike racks provide a high level of convenience and moderate security. The rack types illustrated on the right and recommended for use in Woodbine are consistent with the School Bike Parking Guide from NJDOT. The Borough may also choose to partner with local artists to pursue customized racks that serve as both bicycle parking and public art. Where possible, on-street bicycle corrals can be used to provide increased bike parking where demand is high or limited sidewalk space exists.



Long Term Bicycle Parking

Long-term bike parking includes lockers and secure parking areas and serves people who intend to leave their bicycles for longer periods of time. Bike lockers may vary in design and operation including keyed lockers that are rented to one individual on an annual or monthly basis or e-lockers that can be reserved online in hourly increments and unlocked with a credit card or an access code.

These facilities provide a higher level of security than bicycle racks, and are typically found at transit stations, multifamily residential buildings, commercial buildings and in other areas where bicyclists running multiple errands would benefit from a secure place to store parcels in addition to their bicycle.

Pedestrian-Scale Lighting

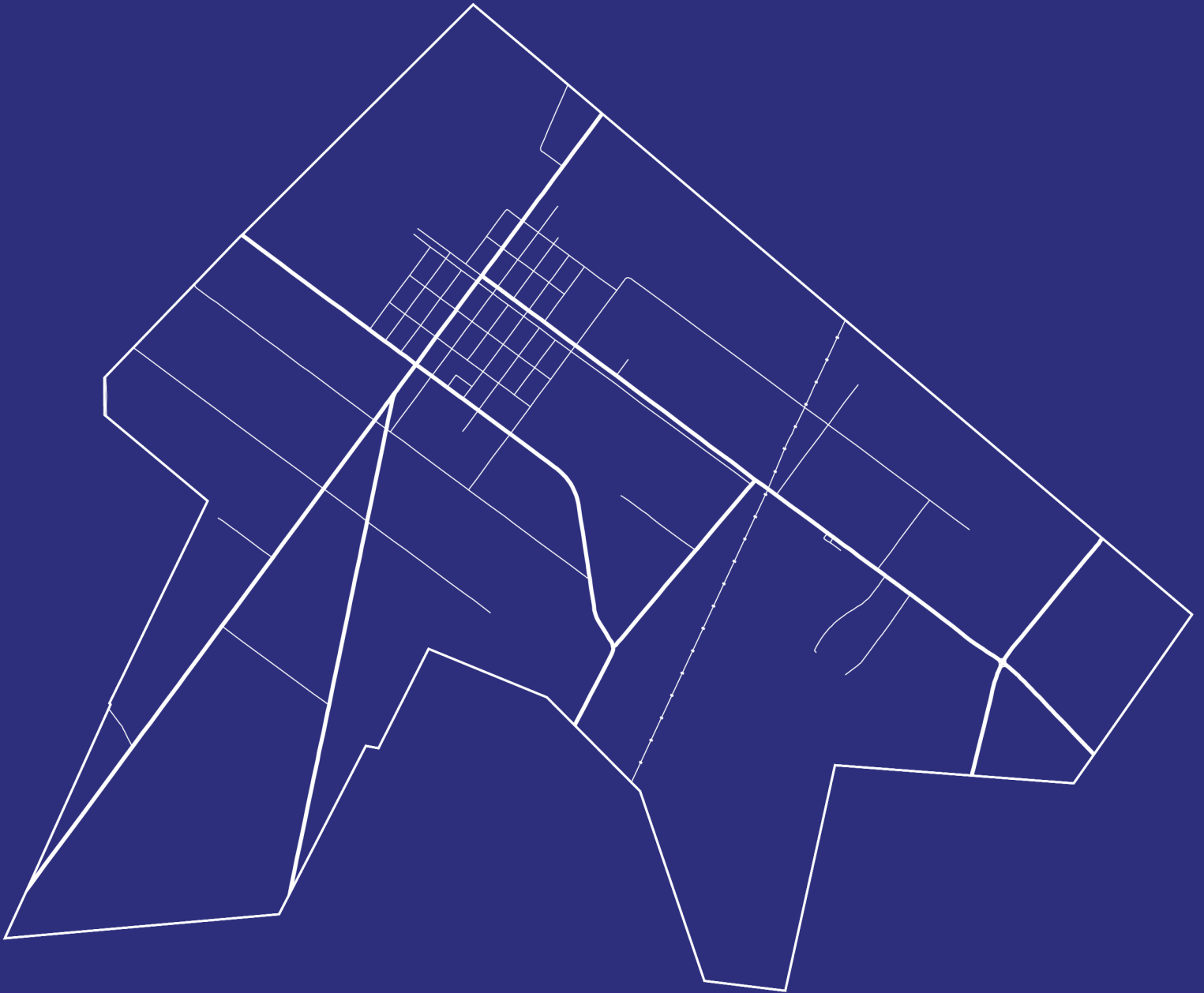
Pedestrian-scale lighting is a type of lighting with frequent lampposts at low heights. This typically includes poles 12- to 15-foot high spaced 25 feet apart, directly above walking areas. Pedestrian-scale lighting not only increases visibility of pedestrians for drivers, it contributes to a more comfortable and inviting streetscape for people walking at night.

Pedestrian-scale lighting should be appropriately designed to illuminate only the areas needed and be no brighter than necessary. Street trees should be appropriately maintained so they do not obstruct illumination from the lighting along sidewalks and pathways.

The plan recommends that Woodbine evaluate locations where pedestrian-scale lighting may improve pedestrian comfort and encourage walking, including in the downtown area, near schools, and trails.

Amenities

Sidewalk and trail furnishings like benches, shade structures, restrooms, water fountains, and trash receptacles contribute to a cleaner, more comfortable, and more pedestrian-oriented public realm. These elements not only encourage the use of Woodbine's sidewalk and trail networks, they contribute to a more accessible pedestrian network for all residents. The plan recommends that the Borough identify and pursue opportunities to provide amenities in the downtown, near transit stops and along trails in the community.



6. POLICIES AND ACTION



PLANNING

Policy 1: Integrate bicycle and pedestrian network and facility needs into all city planning documents and capital improvement projects.

- Action 1.1: Review the existing Complete Streets policy and update it based on the Complete & Green Streets for All: Model Policy & Guide. Include and utilize the Complete Streets checklists to assure consideration of pedestrian and bicycle facility needs in transportation projects and roadway improvements.
- Action 1.2: Evaluate all streets during pavement resurfacing to determine if bicycle facilities can be provided (e.g., bike lanes, wider shoulders) when the striping is reapplied.
- Action 1.3: Ensure that all traffic impact studies, analyses of proposed street changes, and development projects address impacts on bicycling and walking facilities. Specifically, the following should be considered:
 - Consistency with the Master Plan, and the Bicycle and Pedestrian Master Plan policies and recommendations
 - Impact on the existing bikeway and pedestrian network
 - Degree to which bicycle and walking travel patterns are altered or restricted by the projects

- Safety of future bicycle and pedestrian operations

- Action 1.4: Require new development or reconstruction, if applicable, to address the pedestrian and bicycle circulation element of the Municipal Master Plan based on the above considerations.
- Action 1.5: Continue to implement the guidelines set forth in this report for all new development projects to support integration of transportation into land use planning decisions.

Policy 2: Coordinate with other agencies and stakeholders to incorporate the elements of the Woodbine Bicycle and Pedestrian Master Plan.

- Action 2.1: Work with adjacent governmental entities, public service companies, coordinating agencies, and transit agencies to ensure the Plan recommendations are incorporated into their planning and areas of responsibility, and vice versa.
- Action 2.2: Work with transit providers (NJTRANSIT) to improve bicycle and pedestrian access (first/last mile connections) to bus stops and the comfort of transit stops and onboard transit vehicles, especially during peak commute hours, and to provide secure bike parking, benches, and covered waiting areas at stations and stops.

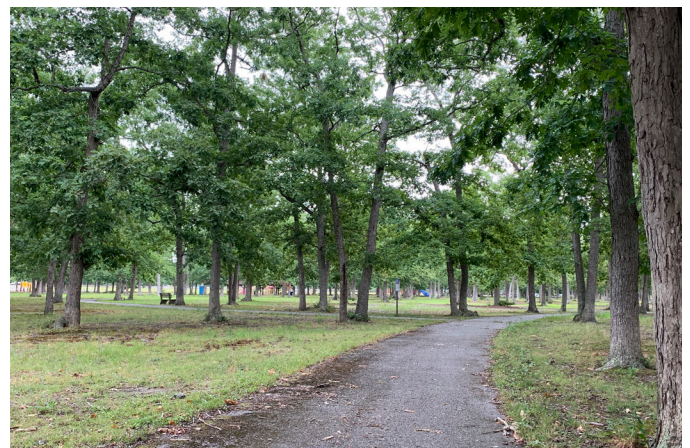
DESIGN

Policy 3: Design a Low-Stress Bikeway Network suitable for the “Interested but Concerned” cyclist in order to include people of all ages and ability levels.

- Action 3.1: Design a network of continuous low-stress bikeways as identified in this plan. Projects that improve comfort at intersections and along corridors with high levels of traffic stress should be prioritized.
- Action 3.2: Utilize the design guidelines in this plan, the New Jersey Complete Streets Design Guide, NACTO guidance, and the most recent State and Federal design standards to develop plans for on-street bicycle facilities along additional corridors and at intersections.
- Action 3.3: Follow a multi-disciplinary design process that incorporates and balances the needs of all modes and stakeholders, both internal and external; the design process should include the Town divisions, departments, and staff responsible for emergency response, parking, law enforcement, maintenance, and other affect areas as well as other responsible external stakeholder agencies.

Policy 4: Design a connected, convenient, and comfortable pedestrian network to serve people of all ages and abilities.

- Action 4.1: Include sidewalks on all new or retrofitted roadways within reason.
- Action 4.2: Identify and construct sidewalks in areas where they are incomplete.
- Action 4.3: Enforce sidewalk maintenance to ensure that adjacent property owners maintain the sidewalk properly.
- Action 4.4: Plan and develop well-connected streets, sidewalks, and pathways that provide the most direct paths of travel for pedestrians. Remove barriers to walking where feasible.
- Action 4.5: Routinely evaluate locations for enhancing crosswalks.



Policy 5: Design accessible, comfortable, and continuous off-street paths that contribute to the framework of Woodbine’s active transportation network.

Action 5.1: Utilize the design guidelines in this Plan and most recent State and Federal design standards and guidelines to develop plans for ADA-compliant off-street trails.

Action 5.2: Utilize Crime Prevention Through Environmental Design (CPTED) principles in the design of trails.

Action 5.3: Identify opportunities for trailhead enhancements to include gateway treatments, public art, wayfinding, and placemaking.

Policy 6: Develop an easy to read, unified and comprehensive wayfinding system for bicyclists, pedestrians, and trail users.

- Action 6.1: Pursue grant funding to develop a consistent citywide wayfinding program and replace all prior wayfinding signs.



OPERATIONS AND MAINTENANCE

Policy 7: Maintain designated facilities to be comfortable and free of hazards to bicycling and walking.

- Action 7.1: Trim overhanging and encroaching vegetation to maintain a clear path of travel along pedestrian and bicycle facilities.
- Action 7.2: Incorporate maintenance needs into the design of separated bikeways to ensure proper maintenance after construction.

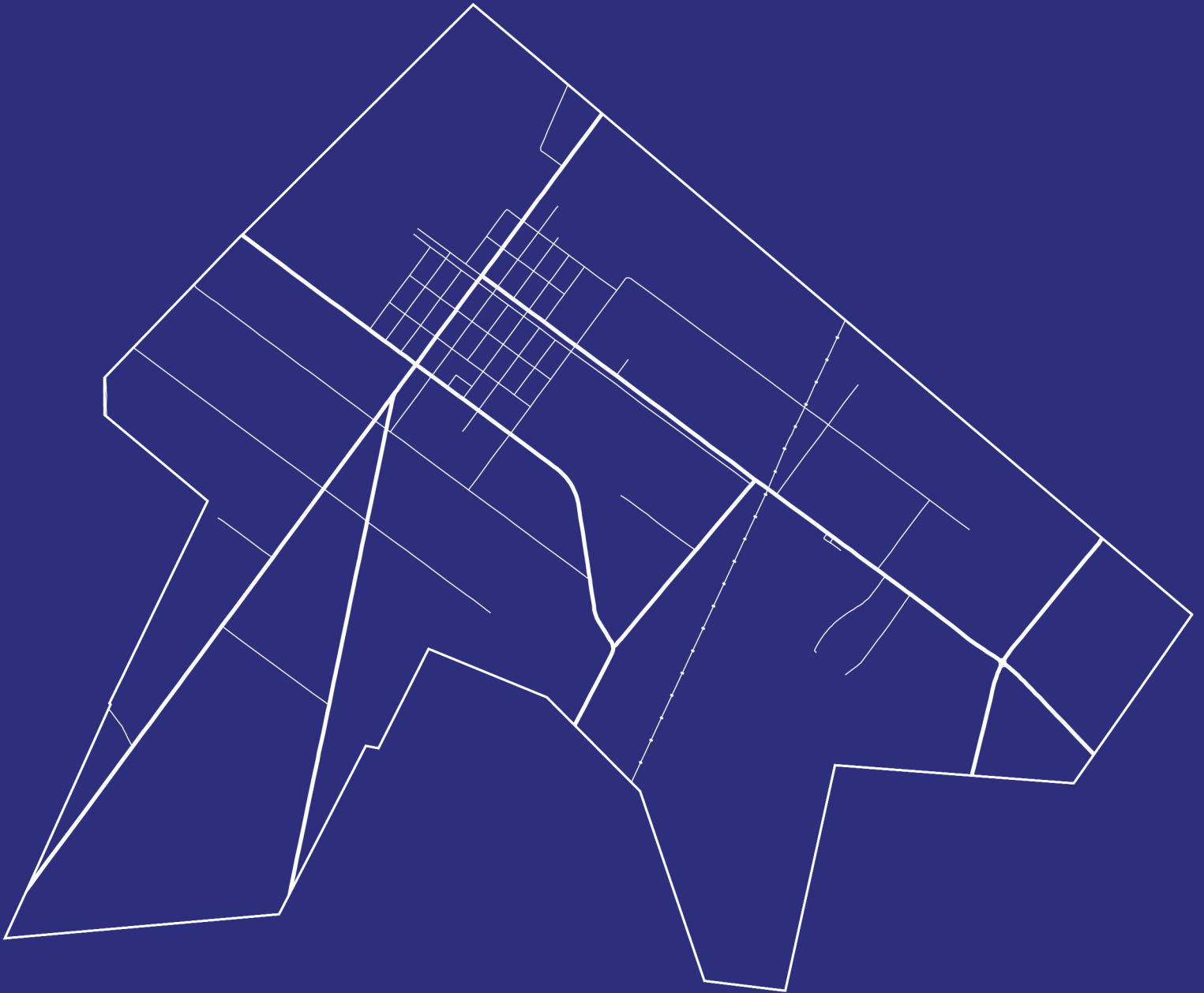
Policy 8: Maintain bicycle parking

- Action 8.1: Develop a procedure for inspection and prompt replacement of damaged bicycle racks.
- Action 8.2: Remove abandoned bikes from bicycle racks and donate to local non-profits or bicycle shops for use in youth education programs.

Policy 10: Report annually on the implementation of this plan.

- Action 10.1: Prepare and present a report on the progress in:
 - Achieving the three Goals of the Plan in terms of their specific performance measures.
 - Implementing the Policies and Action of this Plan.





7. IMPLEMENTATION

The recommendations outlined in this Bicycle and Pedestrian Master Plan provide an opportunity to enhance biking and walking throughout Woodbine. There are multiple opportunities to improve bicycle and pedestrian access and mobility. The following sections provide guidance on coordination, planning, education, and funding sources that can serve as a resource for advancing and implementing the proposed facilities throughout Woodbine.

COORDINATION

Coordination between Woodbine, neighboring communities, and Cape May County should be initiated to advance improvements for bicycle and pedestrian accommodations. A potential next step could be the formation of a working group (e.g. Complete Streets Task Force) to spearhead a public information campaign and pursue opportunities and resources to support the design and implementation of active transportation facilities. The working group would be led by a Complete Streets “Champion” and could assist with advancing priority recommendations, building upon the preliminary network and regional connections identified in this plan, and identifying opportunities for improving biking and walking through future development.

The working group should create partnerships within the Borough of Woodbine to advance the Bicycle and Pedestrian Master Plan. Local businesses, private developers and neighborhood associations can be important allies in providing ongoing support. Partnerships with neighboring municipalities, Cape May County, and NJDOT can help to achieve consistency in design treatments for roads operated by different agencies.

Additionally, it is recommended that Woodbine adopt this plan into their existing Municipal Master Plan.

EDUCATIONAL PROGRAMMING

To encourage safe use of existing and proposed facilities and more walking and bicycling trips, it is recommended that the Borough of Woodbine promote active transportation and implement educational programs on best practices and safety. Education programs are recommended for all types of users of all ages. Efforts should be made to educate bicyclists, pedestrians, and motorists on the rules of the road and how to safely share the road. Widespread education efforts can contribute to safer roadways for all. Encouragement is also needed to promote the spread of bicycling and walking as a means of transport, recreation, and physical activity.

Safe Routes to School (SRTS) is a federally funded program with the goal of making it safer and more convenient for students, including those with disabilities, to walk and bike to school. NJDOT provides funding to schools and communities to improve walking and bicycling conditions through a SRTS Infrastructure Grant Program. At the local level, SRTS programs are funded by NJDOT and are provided by the New Jersey SRTS Resource Center and the state’s eight Transportation Management Associations (TMAs).

Cross County Connection is a non-profit TMA located in Burlington County that provides free Safe Routes to School programming to communities in its service area, including Woodbine. Cross County Connection completed a School Travel Plan for Woodbine in 2012. The TMA advocates



for safe walking and biking to school for students K-8 with programs such as Walk and Bike to School days, Learn-To-Bike Rides and in-class activities that teach students the rules of the road. SRTS and Cross County Connection can provide an educational component of Complete Streets to students in Woodbine Schools. To set up programming, Woodbine is encouraged to contact the Safe Routes to School Coordinator at Cross County Connection. Additional SRTS resources can be found on the New Jersey SRTS Resource Center website and the National Center for Safe Routes to School website.

In addition to SRTS, Cross County Connection also provides programming for the StreetSmart Campaign. StreetSmart is a public education, awareness and behavioral change campaign. The program utilizes visibility enforcement, education, and public awareness to address pedestrian safety issues. StreetSmart is administered by the North Jersey Transportation



Planning Authority (NJTPA). The goals of this initiative are to:

- Change pedestrian and motorist behavior to reduce pedestrian crashes, injuries and fatalities in New Jersey.
- Educate motorists and pedestrians about their roles and responsibilities in safely sharing the roadways.
- Increase enforcement of pedestrian safety laws.

For more information visit the Cross County Connection or NJTPA website.

PROMOTIONAL ACTIVITIES

A wide variety of programs are available to encourage Woodbine residents to walk or bike more often. Below are some recommended educational programs:

- **Walk to School Day:** This is one of the most fundamental strategies for encouraging younger residents to walk or bicycle. Sometimes referred to as “Walk and Roll to School Day,” this can be a one day, one week or monthlong event. Students and their families are encouraged to walk, bike, skateboard or scooter to and from school. The event often leads to SRTS programming throughout the school year. For example, safe walking and bicycling could be one of the units available in physical education classes. Teachers could enroll students in walking and bicycling events for a minimum number of miles. Cross County Connection can provide assistance in coordinating Walk to School events.
- **Walking or Bicycling Clubs:** Residents of Woodbine can start a club to encourage others to log a certain number of miles per week on foot or bicycling.
- **Special Events:** Walk to School Day is just one example; others include Trails Day, Car Free Day, Traffic Safety Day, and Bike to Work Day.
- **Awareness Campaign:** Public Service announcements on cable television, posters, brochures, and bumper stickers promote walking and bicycling for errands, work trips, school and other purposes, or to promote special events.
- **Commuter of the Month:** Woodbine businesses and public agencies could recognize the employee that walks or bicycles to work with the greatest frequency or over the greatest distance.



ENFORCEMENT

An important component of a safe and well-traveled transportation system is an enforcement program for traffic regulations as they apply to each type of roadway user: motorist, bicyclists, and pedestrians. The Borough of Woodbine can improve travel habits and behavior through enforcement. This process should include reviewing current ordinances and traffic regulations to identify elements that may unnecessarily affect certain roadway users, such as

bicyclists. As bicycle facilities are installed, it is recommended that local ordinances and regulations be developed or revised to clarify items such as: application of vehicle laws to bicyclists, permitted movements on and across bicycle facilities (e.g. permitted motor vehicle movements across bicycle lanes), bicycling on sidewalks, and bicycle parking requirements.

In addition, a review of enforcement regulations and practices may help to identify opportunities to partner with community, county, or state organizations to inform users about safe bicycle travel behavior. This includes the required use of helmets by bicyclists under the age of 17 (N.J.S.A 39:4-10.1), the requirement that motorists stop for pedestrians in marked crosswalks (N.J.S.A 39: 4-36), and the requirement that bicyclists ride in single file (N.J.S.A 39:4-14.2). As of March 1, 2022 New Jersey also has a Safe Passing Law. This requires drivers to use due caution whenever they encounter vulnerable road users. Specifically, drivers are asked to provide four feet of space when passing a cyclist or pedestrian.

Outreach and promotion through community channels and events are critical in reminding motorists, bicyclists, and pedestrians of applicable laws and recommended travel practices. The StreetSmart Campaign discussed above is one method of doing so.



CAPITAL IMPROVEMENT PROJECTS

The Borough of Woodbine should review their Capital Improvement Projects to determine where bicycle and pedestrian improvements can be integrated. The majority of bicycle facility recommendations outlined within this plan can be implemented as part of regular roadway resurfacing and/or restriping projects. When implemented as part of a larger maintenance or construction project the added cost for roadway markings and signage is minor within the scope of the larger project.



FUNDING

Several federal and state programs are commonly used to fund bicycle and pedestrian improvement projects. Figure 16, provides a list of programs, program administrators, eligible applicants, and the estimated amount of funding available for an individual allotment. Note: the estimated amounts are based on previous grant awards to municipalities and counties. The Borough of Woodbine can use this plan to pursue funding through these programs.

The South Jersey Transportation Planning Organization (SJTPO) works with its federal partners, NJDOT, its subregions and other state and local agencies to make travel safer and more reliable for all who use the transportation system in southern New Jersey. To support these efforts, SJTPO solicits candidate projects for implementation through several different programs. Details of each can be found in the South Jersey Bicycle & Pedestrian Funding Guide developed by Cross County Connection.

Many improvements (“Share the Road” or wayfinding signage, bike lanes, etc.) can be implemented quickly and at a relatively low cost. There are a number of opportunities for grants to fund bicycle and pedestrian improvements. The Borough should also coordinate with Cape May County on county road projects that run through Woodbine.

PROGRAM NAME	PROGRAM ADMINISTRATOR	ESTIMATED AWARD (\$)	ELIGIBILITY	ADDITIONAL NOTES
Local Safety Program	NJTPA	N/A	Applies to local and county roads eligible for federal aid.	The project sponsor should demonstrate a safety need supported by crash data.
Municipal Aid	NJDOT	\$100,000 - \$500,000	Municipalities are eligible to apply for improvement of any public road or bridge governed by the municipality.	
County Aid	NJDOT	\$5 Million - \$10 Million	Counties are eligible to apply for improvement of public roads and bridges under county jurisdiction.	Each county must develop an Annual Transportation Program.
Safes Routes to School	NJDOT	Under \$500,000	Any county, municipality, school, school district, or board of education are eligible to apply.	Funds are intended to be used for projects that facilitate walking and/or bicycling to school.
Safe Streets to Transit	NJDOT	Under \$500,000	Counties and municipalities are eligible to apply.	
Bikeway Grants	NJDOT	\$100,000 - \$300,000	Counties and municipalities are eligible to apply	Funds support the State's goal of constructing 1,000 new miles of dedicated bicycle paths.
Transportation Enhancement / Transportation Alternatives Program	NJDOT	\$100,000 - \$500,000	Counties and municipalities are eligible to apply	
Sustainable Jersey Grants Program	Sustainable Jersey	\$1,000 - \$35,000	Municipalities are eligible to apply.	
NJHCN Community Grant Program	New Jersey Healthy Communities Network	N/A	Municipalities, non-profit organizations, parks and recreation departments, school boards, are eligible to apply.	
New Jersey Transportation Bank	NJDOT and New Jersey Infrastructure Bank	N/A	Municipalities, counties, regional transportation authorities, or any other political subdivision of the state are eligible to apply.	
Recreational Trails Grant	New Jersey Department of Environmental Protection	Under \$50,000	Government agencies and non-profit organizations are eligible to apply.	
Safe Streets and Roads for All	USDOT	N/A	Government agencies and non-profit organizations are tribal initiatives.	

Figure 16: List of Funding Opportunities

The recommended concepts for both bicycle and pedestrian projects could be eligible for the following potential funding sources:

- NJDOT Municipal Aid: Each year NJDOT invites municipalities to apply for funds for road improvement projects. This includes resurfacing, rehabilitation, reconstruction and signalization. NJDOT has set a goal to award up to 10% of Municipal Aid program funds to projects such as pedestrian safety improvements, bikeways and streetscapes.
- NJDOT County Aid: These funds are used for the improvement of public roads and bridges that are under county jurisdiction. Public transportation and other transportation projects are also included.
- NJDOT Safe Routes to School: This



program provides federal funds for infrastructure projects that enable and encourage children in grades K-12, including those with disabilities, to safely walk and bicycle to school. Bonus points are given to applicants with School Travel Plans, a Complete Streets policy or Transit Village designation.

- NJDOT Safe Streets to Transit: These state funds are intended to construct safe and accessible pedestrian linkages to transit facilities and to promote increased usage of transit by all segments of the population.
- NJDOT Transportation Enhancements/Transportation Alternatives: This program provides federal funds for community-based “non-traditional” transportation projects designed to strengthen the cultural, aesthetic and environmental aspects of the nation’s intermodal system. Bonus points are awarded to municipalities that have an

NEW JERSEY Safe Routes



adopted Complete Streets policy or Transit Village designation.

- Sustainable Jersey: This program provides capacity building grants to municipalities to support local green teams in their work toward Sustainable Jersey certification.
- New Jersey Healthy Communities Network: This is a partnership of grantees, funders, and advocate organizations who seek collective impact on a community's well-being by supporting healthy eating and active living. The Community Grant Program provides the opportunity to develop healthy environments for people to live, work, learn and play by funding policies, projects and programs that support walking and biking.
- New Jersey Transportation Bank: The Bank provides low interest loans to local government units for transportation infrastructure projects. It is a partnership

between NJDOT and the New Jersey Infrastructure Bank (I-Bank).

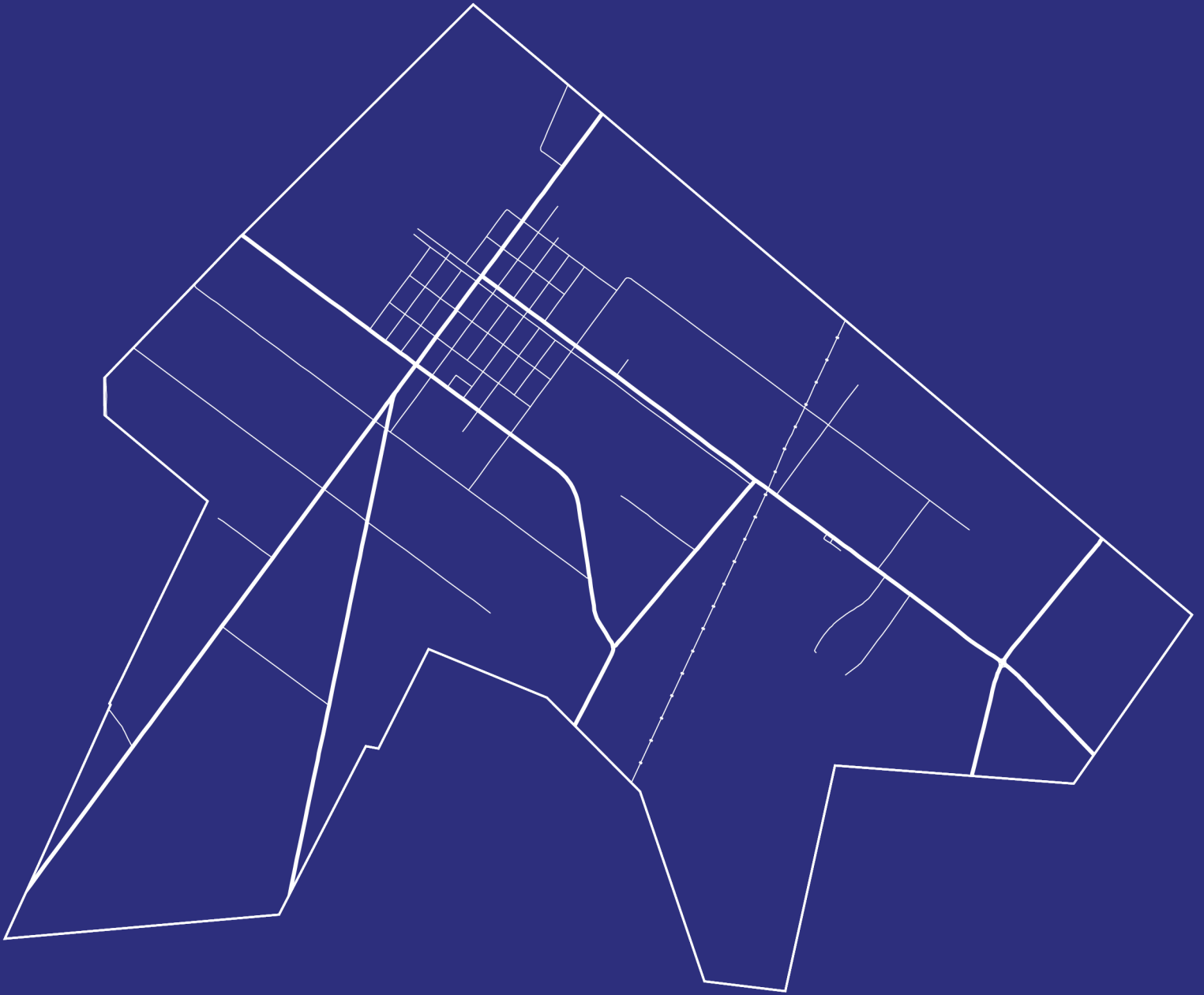
- NJDEP Recreational Trails Program: The Federal Highway Administration's Recreational Trails Program provides financial assistance to states for developing and maintaining trails and trail facilities. New Jersey Department of Environmental Protection administers the grants.
- Safe Streets and Roads for All (SS4A): This new program was created in the Bipartisan Infrastructure Law (BIL). The SS4A program funds regional, local and Tribal initiatives through grants to prevent roadway deaths and serious injuries. Funds may be used for the development of comprehensive safety action plans; for planning, design and development activities in support of an action plan; and to carry out projects and strategies identified in an action plan.

IMPLEMENTATION MATRIX

It is recommended that Woodbine determine a practical means for implementing the recommendations made within this plan. An implementation matrix for the proposed improvements is included as Figure 17. The matrix is intended to assist the Borough with prioritizing the recommendations for a phased implementation, as well as with identifying costs and the appropriate agency to carry them out. Prioritization should be determined by the proximity to the downtown, schools and other points of interest. It can also be affected by other projects that may be occurring in the same space, for example, road resurfacing or new development.

	Improvements	Location	Timeframe	Cost	Priority	Agency	
Engineering	Traffic Signal Warrant Analysis	Washington Avenue (CR 557) & Webster Street (CR 550/638)	Long	Medium	High	Cape May County	
	High Visabilty Crosswalk		Short	Low	Low	Cape May County	
	Curb Extensions		Medium	Medium	Medium	Cape May County	
	Stop Bar		Short	Low	Low	Cape May County	
	Install Pedestrian Heads		Long	Medium	Low	Cape May County	
	Traffic Signal Warrant Analysis	Washington Avenue (CR 557) & Franklin Street	Long	Medium	High	Cape May County	
	High Visabilty Crosswalk		Short	Low	Low	Cape May County	
	Curb Extensions		Medium	Medium	Medium	Cape May County	
	Stop Bar		Short	Low	Low	Cape May County	
	Install Pedestrian Heads	Lincoln Avenue & Webster Street (CR 550)	Long	Medium	Low	Cape May County	
	High Visabilty Crosswalk		Short	Low	Low	Cape May County	
	Install RRFBs		Medium	Low	Medium	Cape May County	
	Stop Bar		Short	Low	Medium	Cape May County	
	Curb Extensions	Railroad Trail	Long	Medium	Medium	Cape May County	
	Add Striping and Update Signage		Short	Low	Medium	Woodbine	
	Sharrows / Shared Lane Markings		Bryant Street	Short	Low	Low	Woodbine
			Sumner Avenue	Short	Low	Medium	Woodbine
		Webster Street (between Adams and Monroe Avenue)	Short	Low	High	Cape May County	
		Fremont Avenue	Short	Low	Low	Woodbine	
		Fidler Road (CR 638)	Medium	Low	Low	Cape May County	
	Conventional Bike Lane	Heilprin Avenue	Medium	Low	High	Woodbine	
	Buffered Bike Lane	Tyler Road / Woodbine Road (CR 611)	Medium	Medium	High	Cape May County	
		Washington Avenue (CR 557)	Medium	Medium	High	Cape May County	
		Webster Street (CR 638)	Medium	Medium	High	Cape May County	
	Shared-Use Path	Fidler Hill Road (CR 660)	Long	High	Medium	Cape May County	
		Freidrichstadt Avenue	Long	High	Low	Woodbine	
	Sidewalk Improvements	Webster St	Short	Medium	High	Woodbine	
		Monroe Ave	Short	Medium	Medium	Woodbine	
		Clay St	Short	Medium	High	Woodbine	
		Franklin St	Short	Medium	High	Woodbine	
		Dehirsch Ave	Short	Medium	High	Woodbine	
		Madison Ave	Short	Medium	Low	Woodbine	
Jefferson Ave		Short	Medium	Low	Woodbine		
Adams Ave		Short	Medium	Low	Woodbine		
Streetscaping/Amenities	Washington Ave	Short	Medium	High	Woodbine		
	Project Areawide	Medium	Low	Low	Woodbine		
Policy	Update Complete Streets Policy	Borough Wide	Short	Low	Low	Woodbine	
Educational	Update Safe Routes to School Plan	Borough Wide	Short	Low	Low	Woodbine/CCC	
Encouragement	Awareness Campaign	Borough Wide	Short	Low	Low	Woodbine	
	Creation of a Complete Streets Working Group	Borough Wide	Short	Low	Low	Woodbine	

Figure 17: Implementation Matrix



FIGURES AND APPENDIX

FIGURES

Figure 1: Borough of Woodbine: Local Bicycle and Pedestrian Planning Assistance Study

Figure 2: Access, Network, Culture Goals

Figure 3: Woodbine at a Glance: Demographic Overview

Figure 4: Woodbine Priority Corridors

Figure 5: Woodbine Sidewalk Inventory

Figure 6: Sidewalk Conditions

Figure 7: Bicycle and Pedestrian Crash Statistics

Figure 8: Woodbine Bicycle LTS

Figure 9: Bicycle LTS by Corridor

Figure 10: Bicycle LTS Levels

Figure 11: Bicycle Facility Typologies

Figure 12: Woodbine Equestrian and Bicycle/Pedestrian Paths

Figure 13: Lincoln & Webster Intersection Plan

Figure 14: Washington & Franklin Intersection Plan

Figure 15: Washington & Webster Intersection Plan

Figure 16: List of Funding Opportunities

Figure 17: Implementation Matrix

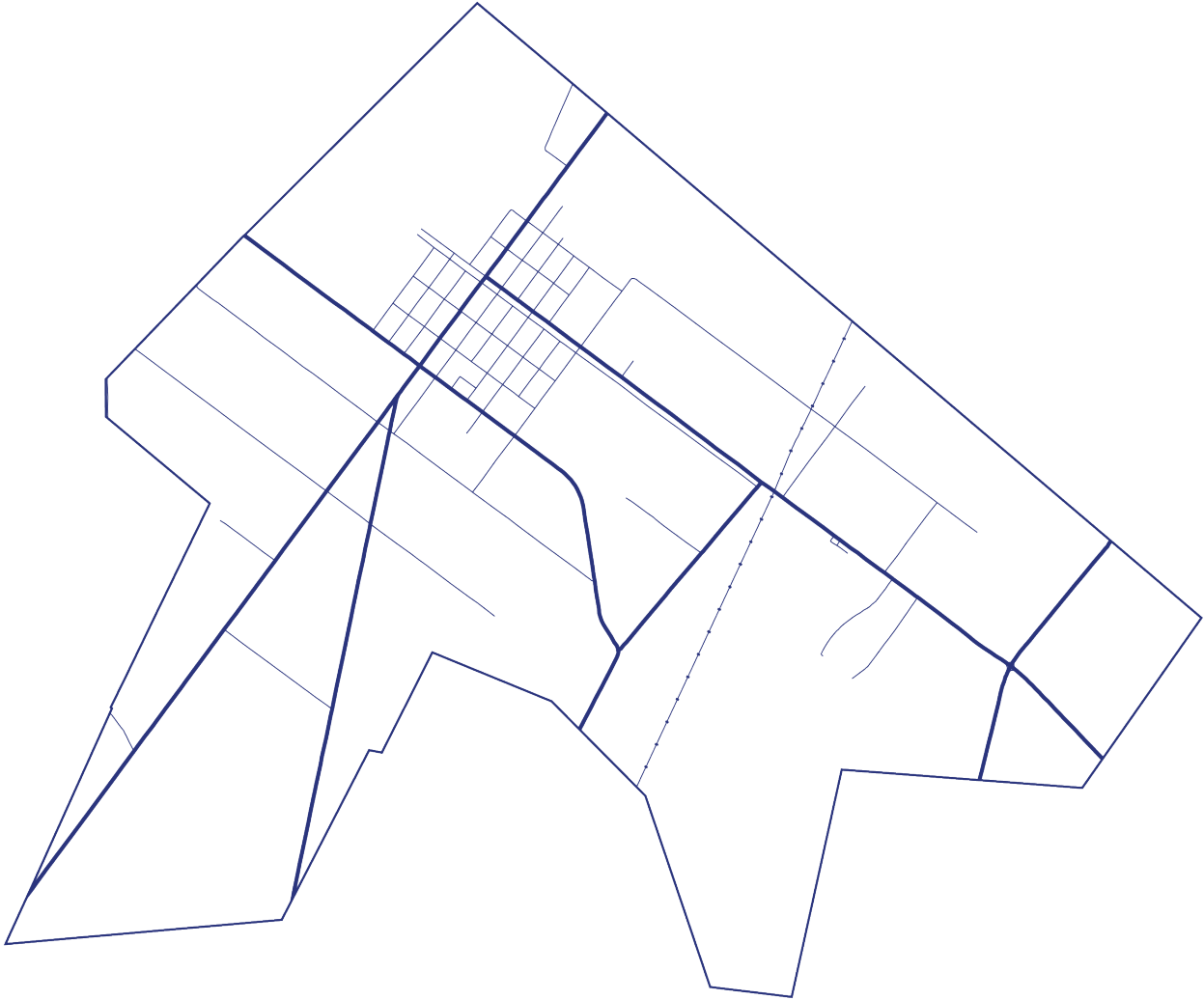
APPENDIX

A: Roadway Inventory

B: Previous Plans, Studies and Projects

C: Bicycle and Pedestrian Crash Data

D: Cross Section Alternatives



**Sam
Schwartz**