

Route 9 Paths Plan

September 2021







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Executive Summary

The Route 9 Paths Plan proposes a network of walking and biking paths for the Route 9 corridor, between the City of Wilmington and the City of New Castle. Building on years of planning and outreach, this plan is an expansion and refinement of the walking and biking recommendations presented in the Route 9 Corridor Master Plan. While these recommendations were derived from community feedback and enjoy strong community support, they were high level ideas that would benefit from further thought, detail, and public outreach.

Existing conditions data were collected to better understand the transportation needs of each community in the corridor. These data were used to develop a technical prioritization process, which identifies which areas in the corridor would benefit the most from walking and biking improvements, and this process was applied to prior recommendations to determine which routes could have the biggest impact. By taking a closer look at those recommendations, a "missing links" analysis identified where crucial walking and biking connections could be made between neighborhoods.

Amid the COVID-19 pandemic, a safely socially distanced, but thorough, public outreach process increased awareness of this planning effort and collected feedback to ensure that the plan meets each neighborhood's needs. Feedback was collected in a public survey, which was distributed both online and door-to-door to ensure that all neighborhoods had the opportunity to participate. This feedback reinforced the need for improved walking and biking infrastructure in the corridor, helped refine the

proposed path network, and identified additional recommendations to improve the walking and biking experience.

The path network proposed in this plan serves as a guide for the ideal locations of walking and biking paths and which types of paths are appropriate for each location. This path network can be implemented by DelDOT, New Castle County, and other agencies, with consideration of the order of priority determined in the technical prioritization process. If funding is available, the majority of the path network can be completed within ten years, with short-term recommendations making an immediate impact to connect neighborhoods, improve safety and public health, and increase access to opportunities.

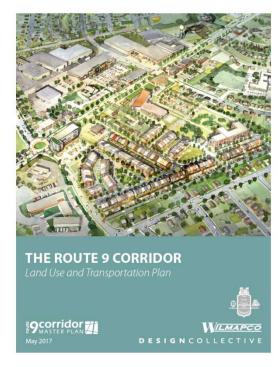


James F. Hall Trail, Newark, DE



Background

In 2015, New Castle County requested WILMAPCO to develop a transportation and land use master plan for the Route 9 corridor between the City of New Castle and the City of Wilmington. Completed in May 2017, the Route 9 Corridor Master Plan identifies the best reinvestment and redevelopment strategies for the corridor, based on extensive community outreach and study of existing conditions. The Master Plan focuses on reinvestment, better zoning, safety, quality of life, public health, and mixed-income and mixed-use redevelopment. As part of its transportation recommendations, the Plan proposes a series of changes to improve the pedestrian and bicycle network in the corridor, including a network of on- and off-road walking and biking routes.



The Route 9 Monitoring Committee was formed in September 2017 to oversee and fulfill the recommendations of the Master Plan. Committee members include implementing agencies, local civic and community leaders, and other key stakeholders. As part of the Monitoring Committee, a Health Subcommittee was formed to focus on issues relating to public health in the corridor. In 2019, the Health Subcommittee identified the need to further develop the concepts for new walking and biking paths proposed in the Master Plan, as these are high level ideas that would benefit from further thought, detail, and public outreach. A more complete and connected neighborhood paths network would give residents and visitors better opportunities for active transportation and recreation, improve public health, and enhance safety for all modes of transportation, especially those who already rely on walking, biking, and public transportation to travel within and through the corridor.

The purpose of the Route 9 Paths Plan is to expand on and refine the bicycle and pedestrian recommendations proposed in the Master Plan. This planning process has been guided by the Health Subcommittee, with presentations and progress updates as a recurring agenda item. Development of the Route 9 Paths Plan began in September 2019 with an analysis of existing conditions. Progress on this effort was impacted by the COVID-19 pandemic, as the group had to find new ways to reach out to the public while remaining socially distanced. Despite this, a thorough and extensive public outreach effort was completed between August 2020 and February 2021. A draft report was developed in May 2021 and reviewed by the Health Subcommittee. The Route 9 Paths Plan was finalized and endorsed by the WILMAPCO Council in September 2021.



Existing Conditions

Existing conditions data were collected to better understand the transportation needs of each community in the corridor and to develop a technical prioritization process, detailed in the next section. These data were selected based on the priorities set in the Master Plan and its own transportation project prioritization process (see http://wilmapco.org/Rt_9/Route9MP_TransportationPriorityWhitePaper.pdf for more information). These data include transportation mode share data (commuters who bike, walk, and take transit to work), bus ridership, households without access to a vehicle, roadway conditions for people biking, public health indicators, workplaces, and criminal activity. Maps of these data are shown on the following pages.

Transportation Data

Commuters who walk or bike to work are concentrated north of I-295, particularly in Dunleith, Oakmont, Garfield Park, Rosegate, and nearby neighborhoods. Transit commuters are more evenly spread throughout the corridor, but with higher concentrations in Dunleith, Oakmont, and Hazeldell. These commuters must also walk or bike to transit stops, and therefore would benefit from improved walking and biking connections. Households without access to a vehicle are distributed similarly to transit commuters, but with higher concentrations in and around Jefferson Farms. These data are at the block group level and are based on American Community Survey 5-year averages between 2012 and 2016.

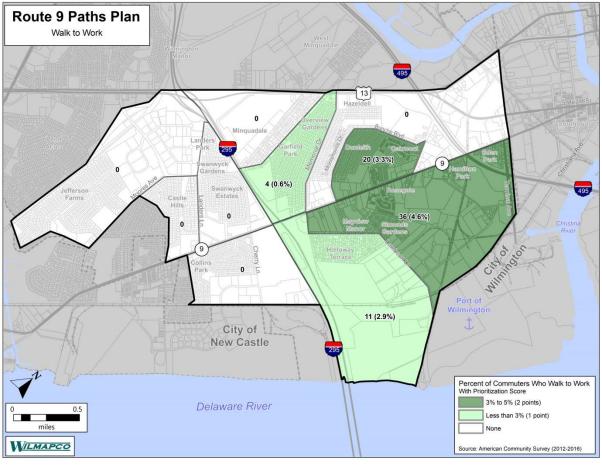
From 2016 to 2018, 35 crashes within the study area involved people walking and 2 crashes involved people biking, based on crash data provided by DelDOT. The majority of these crashes occurred along Route 9 and Route 13.

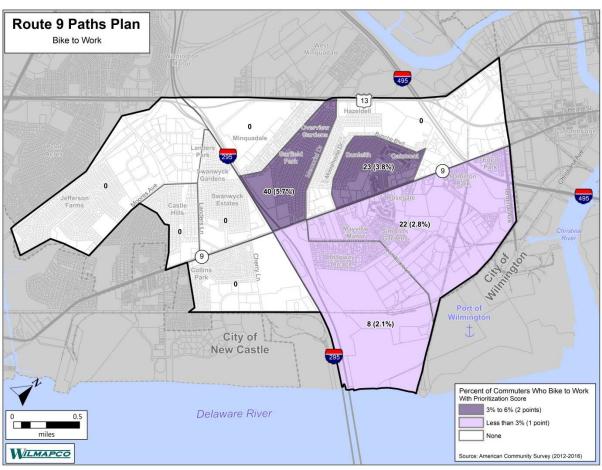
Bus routes and ridership data provided by DelDOT illustrate which routes and stops are most heavily used in the corridor. Busier bus stops are more likely to have higher pedestrian activity, and improved path connections make accessing these stops safer and more convenient. Lesser used bus stops may see an increase in ridership from

improved path connections. On the average weekday in October 2019, the most heavily used bus stops in the corridor were along Route 9 (particularly near businesses and the Route 9 Library), along Route 13, and just outside of the study area in Southbridge and the Port of Wilmington. Please note that these counts are from pre-pandemic levels, and during the fall when schools are in session and few people are on vacation.

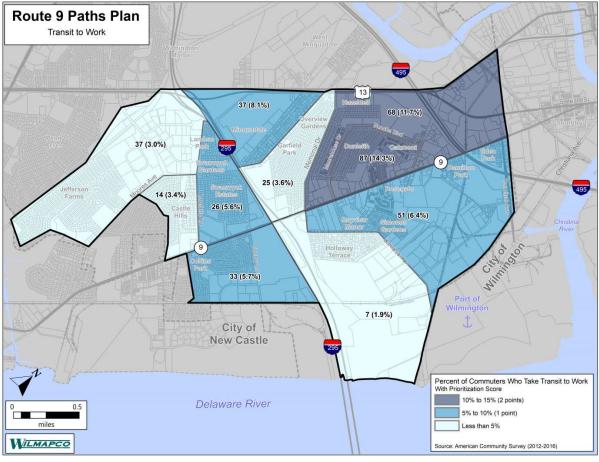


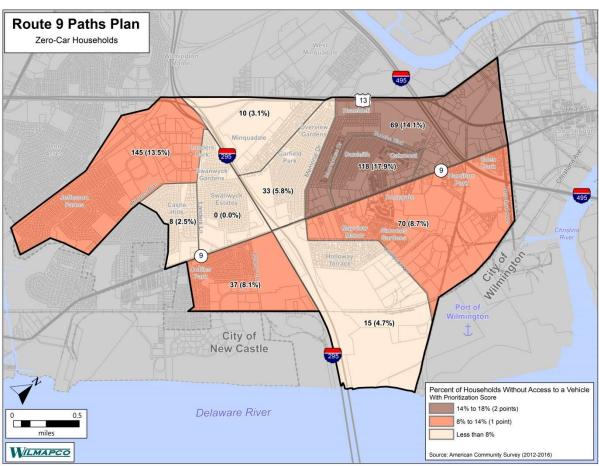




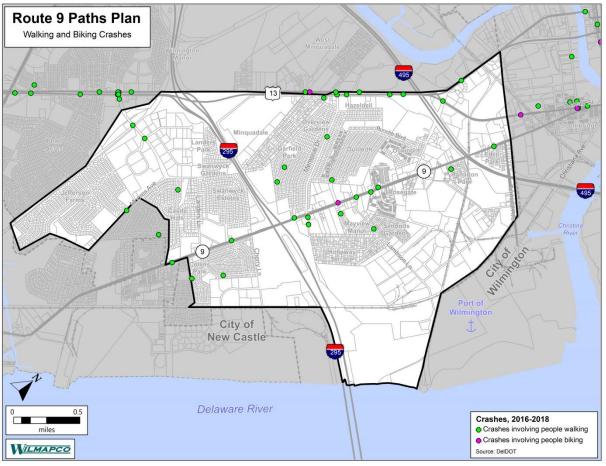


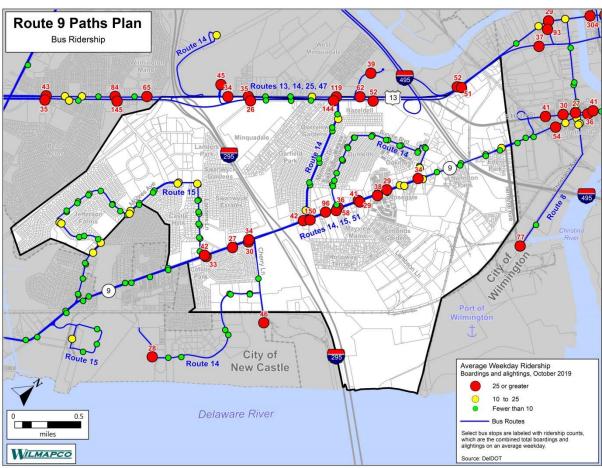














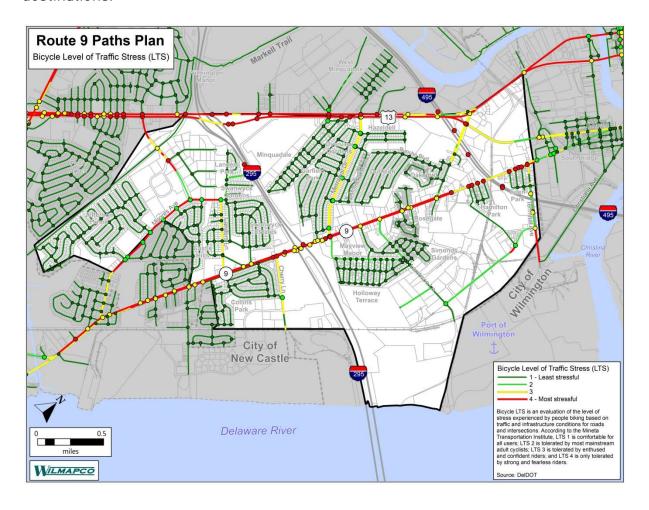
Bicycle Level of Traffic Stress

Bicycle level of traffic stress (bike LTS) is an analysis of infrastructure conditions such as traffic speeds, traffic volumes, and the number of lanes to determine how stressful roads are for bicycling. DelDOT has developed its own methodology to give each road segment, trail, and intersection in Delaware a bike LTS score ranging from 1 (least

stressful) to 4 (most stressful). The map below shows bike LTS scores within and surrounding the study area. Most residential streets, as well as the Jack A. Markell Trail, have a bike LTS score of 1 and are comfortable for everyone to use, including children, seniors, and inexperienced riders. However, most neighborhoods are surrounded by higher stress roads, such as Route 9, Route 13, and Memorial Drive. These high stress roads limit the ability for many people to bike outside of their neighborhoods to amenities, job opportunities, and other destinations.



The interim Memorial Drive road diet improved its bike LTS score, from 4 to 3.





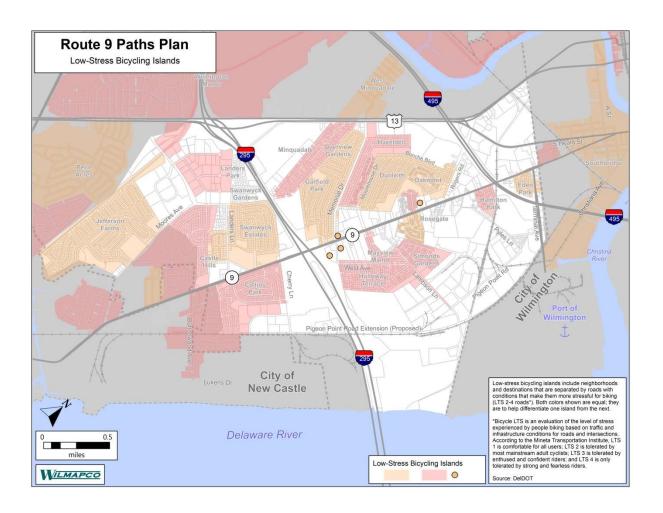
Low-Stress Bicycling Islands

The map below shows low-stress bicycling islands in the corridor, which are contiguous sections of low-stress (bike LTS 1) roads. This helps illustrate how higher stress roads isolate neighborhoods from one another by biking or walking, as a bike-friendly street is also a good indicator of a walkable street. Most people are comfortable walking or biking within these neighborhoods, but accessing another

neighborhood requires crossing or traveling on a higher stress road. In addition to these neighborhoods, three hotels and a trailer park were identified as being inaccessible using only LTS 1 roads. Each of these islands would benefit from an improved path connection, which would reduce the total number of islands and make it possible for more people to walk and bike for transportation, thereby improving access to opportunities and amenities.



Karlyn Drive is a low-stress (bike LTS 1) neighborhood street.

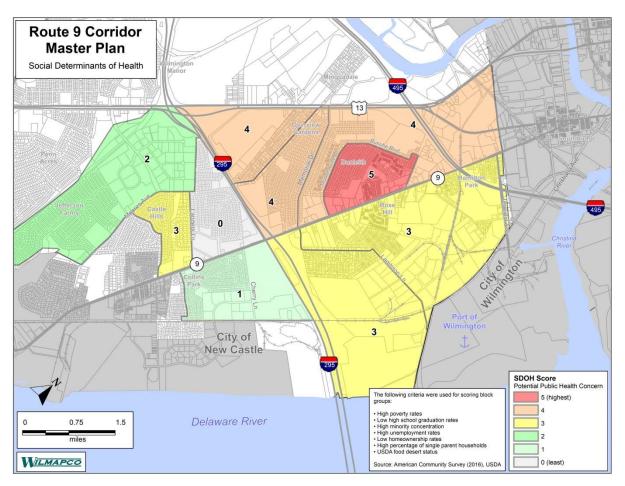




Social Determinants of Health

Social determinants of health (SDOH) are conditions in which people are born and live that impact public health. These conditions have been defined using a variety of quantitative and qualitative factors by the World Health Organization as well as many non-profit organizations and government agencies. In 2019, WILMAPCO developed its own data report which measures the potential public health impact of all block groups in the WILMAPCO region, giving each a score using a series of eight factors measurable with nationally available data. These scores are relative to the WILMAPCO region. To view WILMAPCO's SDOH Data Report and accompanying interactive map, visit http://www.wilmapco.org/data-reports.

This methodology was also applied to the ten block groups in the Route 9 corridor, with scores relative to just this study area. As shown in the map below, the highest negative potential public health impact is in the block group containing the Dunleith neighborhood, with surrounding neighborhoods also scoring highly. These neighborhoods are most likely to experience negative public health impacts, and would benefit the most from an improved path network. SDOH scores are lower east of Route 9 and south of I-295, with the lowest scores in Swanwyck Estates and Collins Park. These neighborhoods are least likely to experience negative public health impacts, but would still benefit from improved walking and biking infrastructure.





Workplaces

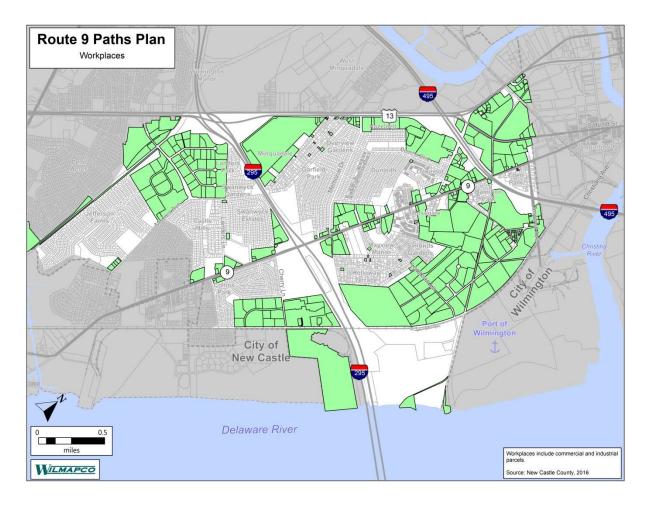
Workplaces in the study area were identified using New Castle County parcel data by locating commercial and industrial parcels. As shown in the map below, these workplaces surround most of the residential neighborhoods at all sides. Notable

clusters of workplaces include the commercial businesses along Route 9, the Port of Wilmington, and the industrial parks on both sides of Boulden Boulevard. The neighborhoods of Eden Park and Hamilton Park are both surrounded by industry and were recommended for rezoning in the Master Plan. Walking and biking paths could increase access to job opportunities, improve commutes for existing workers, encourage more people to walk or bike to work, and enhance the



The Route 9 Library and Innovation Center (Source: New Castle County)

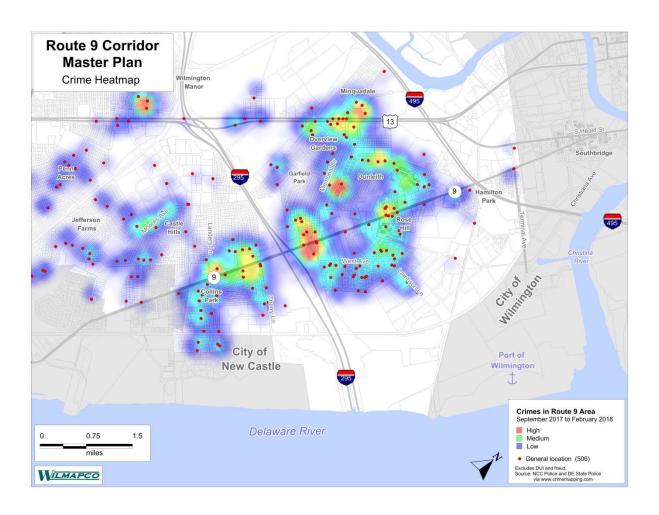
local economy by bringing more patrons to local businesses.





Criminal Activity

The map below shows a heatmap of all crimes that occurred in the corridor between September 2017 and February 2018, excluding DUI and fraud crimes, with locations generalized to protect privacy. Crimes occurred more frequently north of I-295 than south of the highway, with hotspots near the intersection of Route 9 and Memorial Drive and in the Dunlieth and Minquadale neighborhoods. Eliminating chronic crime was identified as the top community need in the Master Plan, according to public outreach. Walking and biking infrastructure have been shown to reduce crime, and additional lighting may help residents feel at ease, especially when walking or biking at night. Improvements to the path network may also require repaving and landscaping existing roads, which may help reduce crime by improving aesthetics. By encouraging walking and biking, more eyes on the street can help deter crime.

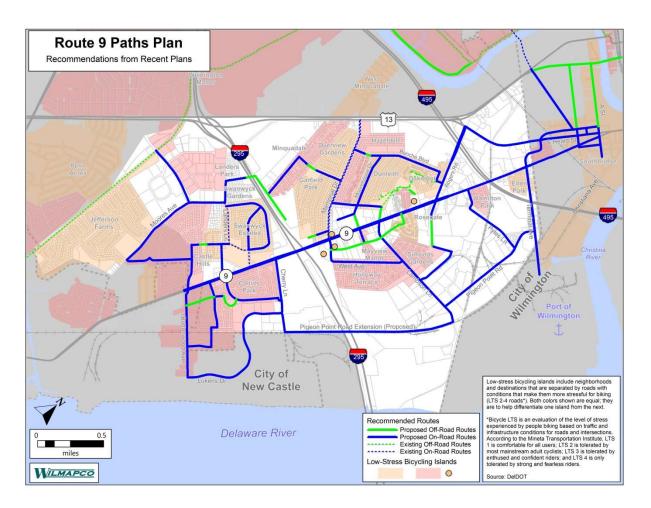




Recommendations from Recent Plans

The map below shows a revision of the existing and proposed pedestrian and bicycle routes from page 59 of the Master Plan. This map includes additional proposed routes from other planning efforts, including the A Street Pathway and the Elbert-Palmer Safe Routes to School program. The interim Memorial Drive road diet has been completed and is now shown as an existing on-road route. These existing and proposed routes are displayed above the low-stress bicycling islands identified on page 10, in order to demonstrate where connections could be made between islands.

This map is used as a starting point for the Route 9 Paths Plan, as this plan builds on the pedestrian and bicycle recommendations that have already been proposed for the corridor.

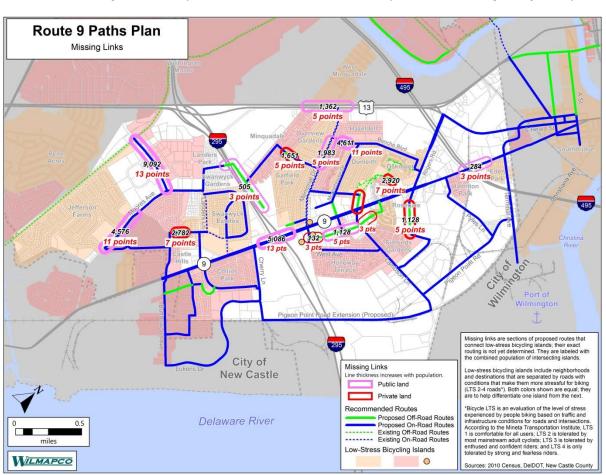




Missing Links Analysis

The group took a closer look at specific sections of prior recommendations that could make connections between low-stress bicycling islands. These "missing links", shown in the map below, include sections that cross over private land, make short connections where no right-of-way currently exists, or otherwise make crucial connections between adjacent islands. Most make direct connections between neighborhoods, while some cross over major corridors like I-295 or consist of sections of high-stress roads that could connect multiple neighborhoods.

The potential impact of each of these missing links was identified by calculating the sum of the population of each low-stress bicycling island that each missing link would connect. By this measure, the most impactful missing link would be Boulden Boulevard from Moores Lane to the Markell Trail, which could connect over 9,000 residents in the immediate area to as far north as the Wilmington Riverfront and as far south as Battery Park in New Castle. The second most impactful missing link would be where Route 9 crosses I-295, which is currently the only right-of-way between Route 13 and the Delaware River that connects neighborhoods divided by I-295. This stretch is frequently used by people walking and biking despite a complete lack of safe infrastructure, high traffic speeds and volumes, and the presence of highway ramps.





Technical Prioritization Process

Introduction and Methodology

A technical prioritization process was developed in order to determine which areas of the corridor would benefit the most from pedestrian and bicycle improvements, as well as which proposed routes could have the greatest impact. This process uses a series of transportation, demographic, and public health data to give a score to each road segment in the study area. These criteria, as well as this methodology, were reviewed by the Health Subcommittee and are described in detail in the Existing Conditions section (pages 5–13), including the basis for their inclusion in the prioritization process. After the missing links analysis was completed (page 15), additional points were added to road segments within each missing link, in order to boost the priority of these areas where crucial connections could be made in the path network.

Five of the prioritization criteria are based on American Community Survey data, and points were given to road segments based on the Census block group where they are located. These criteria include the percent of commuters who walk to work, bike to work, and take transit to work; the percent of households without access to a vehicle; and the Social Determinants of Health (SDOH) score. The remaining five criteria give points based on proximity to each road segment. These include the number of workplaces within ½ mile of a segment, the number of bus stops with at least 25 daily weekday riders within ½ mile of a segment, the number of crimes that occurred within ½ mile, the number of low-stress bicycling islands within 500 feet, and the number of crashes involving a person walking or biking that occurred directly on the segment.

Scores are relative to the study area, in order to weight road segments against one another. For each of the ten criteria listed in the previous paragraph, road segments above the median receive 1 point, and road segments in the top 20% receive 2 points.

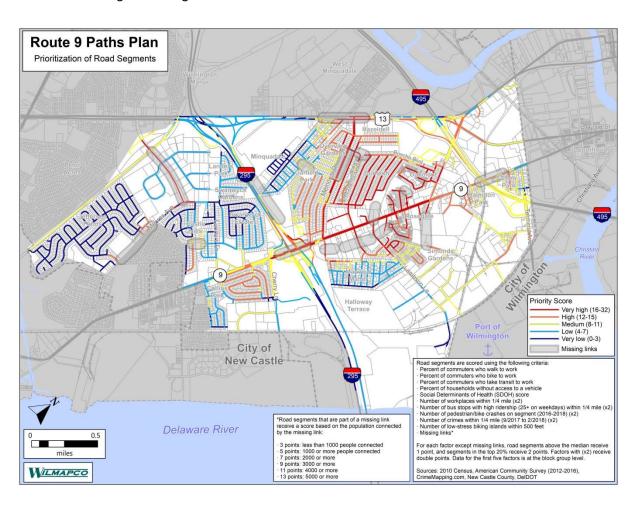
Road segments received double points (0, 2, or 4 points) for four criteria: bus stops, pedestrian/bike crashes, crimes, and low-stress bicycling islands. Improving access to bus stops, improving safety for people walking and biking, and eliminating chronic crime were among the top priorities identified in the Master Plan based on public feedback. The primary goal of the Paths Plan is to connect low-stress bicycling islands, thereby creating a continuous path network and making it possible for many more people to walk and bike outside of their neighborhoods for transportation.

In order to increase the priority of areas with missing links, each missing link was given a score based on the population it connects. Missing links connecting less than 1000 people receive 3 points, with an additional 2 points for each 1000 people, up to 13 points for connecting over 5000 people. These scores are shown on the map on the previous page, and are given to each road segment within each missing link.



Prioritization of Road Segments

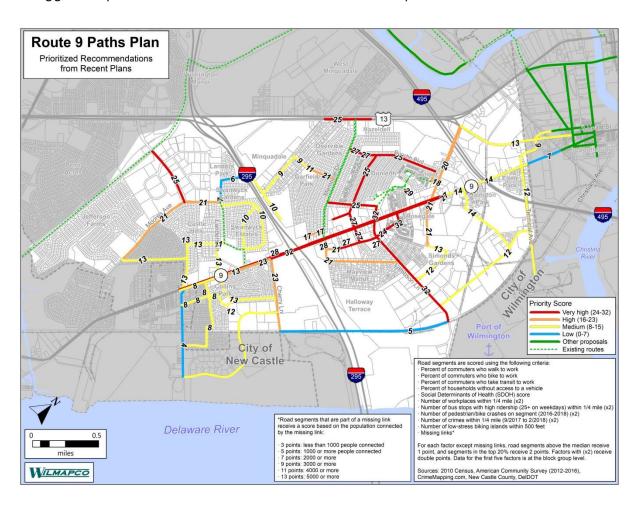
The map below shows the result of the technical prioritization process. Priority scores are higher towards the center of the corridor, particularly in Dunlieth, Oakmont, Rosegate, and surrounding neighborhoods. Boulden Boulevard and Collins Park also scored highly. These neighborhoods would benefit the most from an improved path network, although all neighborhoods would benefit.





Prioritized Recommendations

The map below shows the priority scores for each segment of each recommendation from recent plans, which are described on page 14. Three new proposed routes were added during the planning process, including a section of Route 13, an off-road path from Rose Hill Gardens to Rose Hill Park, and an off-road path from Route 9 to the end of Morehouse Drive. For proposed off-road routes and other recommendations that are not located exactly on an existing right-of-way, the score of the nearest road segment was applied. This process helps identify which recommendations could have the biggest impact and should be considered first for implementation.



The chart on the following page shows these results in more detail, including sections of proposed routes that have unique scores. The results are ranked by priority score, with on-road sections highlighted in blue and off-road sections in green. This is raw data based on technical analysis, and as such it should not be used as a guide for implementation. The recommendations proposed in the Route 9 Paths Plan use this data as a starting point; they are refined based on public feedback and input from the Health Subcommittee.



Pro	oposed Route Segment (From Recent Plans)	From	То	Туре	Priority Score
1	Lambson Lane	Route 9	Pigeon Point Road extension (proposed)	On-road	32
2	Route 9	Rogers Road	West Avenue	On-road	32
3	Surratte Park path extension*	Surrate Park/Anderson Drive	Route 9	Off-road	32
4	Rose Lane/Thorn Road	Route 9	Thorn Court	Off-road	32
5	Rose Hill Gardens connection* [new]	Rose Hill Gardens	Rose Hill Park	Off-road	29
6	Route 9	I-295 northbound	Cherry Lane	On-road	28
7	Route 9 over I-295*	West Avenue	I-295 northbound	On-road	28
8	Hillview Avenue	Route 9	Rose Lane/Thorn Court trail	On-road	27
9	Parma Avenue (on-road section)	Memorial Drive	Bunche Boulevard	On-road	27
10	Morehouse Drive off-road path [new]	Bowlerama Drive	Route 9	Off-road	27
11	Path behind Rose Hill Community Center*	Lambson Lane	Hillview Avenue	Off-road	27
12	Path behind Route 9 Library*	Hillview Avenue	Behind Route 9 Library	Off-road	27
_	Parma Avenue*	Parma Avenue	Bunche Boulevard	Off-road	27
14	Bunche Boulevard	Talladega Drive	Parma Avenue	On-road	25
\rightarrow	Bizarre Drive/Anderson Drive	Memorial Drive	Surratte Park	On-road	25
\rightarrow	Robinson Drive alley	Bunche Boulevard	Bowlerama Drive	On-road	25
-	Boulden Boulevard*	Moores Lane	Markell Trail	On-road	25
\rightarrow	Route 13* [new]	Fernwood/Wildel Avenue	Hessler Boulevard	On-road	25
	Path to Rose Hill Community Center*			Off-road	24
	· · · · · · · · · · · · · · · · · · ·	Thorn Court	Lambson Lane		
\rightarrow	Cherry Lane	Route 9	Pigeon Point Road extension (proposed)	On-road	23
\rightarrow	Route 9	Cherry Lane	Riverview Drive	On-road	23
\rightarrow	West Avenue	Route 9	Lambson Lane	On-road	21
-	Moores Lane	Linstone Avenue	Boulden Boulevard	On-road	21
\rightarrow	Moores Lane*	Boulden Boulevard	Arden Avenue	On-road	21
25	Sutton Lane*	Route 9	Dock View Drive	On-road	21
26	Karlyn Drive	E. Hazeldell Avenue	Memorial Drive	On-road	21
27	Path behind Route 9 Library*	Behind Route 9 Library	West Avenue	Off-road	21
28	Rogers Road	S. Heald Street	Route 9	On-road	20
9	Oakmont Drive	Rogers Road	Talladega Drive	On-road	18
30	Talladega Drive	Bunche Boulevard	Oakmont Drive	On-road	18
31	Lind Avenue	Memorial Drive	Halcyon Drive	On-road	17
32	Lind Avenue path extension	Halcyon Drive	Winder Road	Off-road	17
_	Pyles Lane	Route 9	Pigeon Point Road	On-road	14
	Route 9	South Street	Rogers Road	On-road	14
_	Route 9	Eden Park	South Street	On-road	14
\rightarrow	Dock View Drive	Sutton Lane	Harbor View Drive	On-road	13
\rightarrow	Arden Avenue/Roxeter Road	Moores Lane	Castle Hill Drive	On-road	13
-			Route 9		
\rightarrow	Castle Hill Drive	Glen Avenue		On-road	13
\rightarrow	Landers Lane	Glen Avenue	Route 9	On-road	13
-	Riverview Drive	Route 9	Cherry Lane	On-road	13
\rightarrow	Glen Avenue	Chelwynne Road	Castle Hill Drive	On-road	13
\rightarrow	Route 9	Riverview Drive	May Avenue	On-road	13
_	S. Heald Street	C Street	S. Market Street	On-road	13
44	Glen Avenue*	Queen Avenue	Chelwynne Road	Off-road	13
¥5 I	Pigeon Point Road	Terminal Avenue	Lambson Lane	On-road	12
46	Harbor View Drive	Dock View Drive	Lambson Lane	On-road	12
¥7	Terminal Avenue	Route 9	Container Road	On-road	12
48	Collins Park path (proposed)	RIverview Drive	South Place	Off-road	12
19	Glen Avenue	Linstone Avenue	Castle Hill Drive	On-road	11
50	Karlyn Drive*	E. Hazeldell Avenue	Memorial Drive	Off-road	11
51	Stamm Boulevard	Edge Avenue	Glen Avenue	On-road	10
\rightarrow	Edge Avenue	Landers Lane	Stamm Boulevard	On-road	10
_	McCullough proposed trail*	McCullough Middle School	I-295 crossing (proposed)	Off-road	10
	Lewes Street	Wildel Avenue	E. Hazeldell Avenue	On-road	9
\rightarrow	Wildel Avenue	Lewes Street	E. Hazeldell Avenue	On-road	9
	Terminal Avenue extension (proposed)	Elbert Place	Route 9	On-road	9
	Lukens Drive	Cherry Lane	Buttonwood Avenue	On-road	8
	May Avenue/Daniel Lane	Route 9	Buttonwood Avenue	On-road	8
\rightarrow					
\rightarrow	South Place	Collins Park trail (proposed)	Buttonwood Avenue	On-road	8
_	Route 9	May Avenue	City of New Castle boundary	On-road	8
_	I-295 crossing (proposed)*	McCullough proposed trail	Landers Spur	Off-road	8
\rightarrow	South Place	May Avenue	Buttonwood Avenue	Off-road	8
3	Meehan Lane	Arbutus Avenue	Buttonwood Avenue	Off-road	8
4	Collins Park path	May Avenue	Buttonwood Avenue	Off-road	8
5	Landers Lane	Landers Spur	Moores Lane	On-road	7
66	Landers Spur	Landers Lane	I-295 crossing (proposed)	On-road	6
57	Pigeon Point Road extension (proposed)	Lambson Lane	Cherry Lane	On-road	5
			Lukens Drive		4

^{*}This segment is a missing link and crosses over <u>private</u> land.

^{*}This segment is a missing link and crosses over <u>public</u> land.



Public Outreach

Outreach Methods

After collecting existing conditions data and developing the technical prioritization process, a through public outreach process was used to ensure that the Route 9 Paths Plan meets the needs of the community. With guidance from the Health Subcommittee, the group determined multiple methods to increase community awareness of the Paths Plan and to collect public feedback.

The COVID-19 pandemic limited the public outreach opportunities that could be used while maintaining safe social distancing. However, as a result of prior public outreach efforts used for the Master Plan, many community members are already aware of the transportation planning process and plans to improve transportation infrastructure in the Route 9 corridor. The Route 9 Paths Plan website

(http://www.wilmapco.org/route9pathsplan) was used as a hub of information and updates on the plan, in both English and Spanish. The website includes an introduction to the plan, an Overview Presentation, and a section defining neighborhood pathways, with photo examples from around the world, to make the purpose of the plan very clear. The Overview Presentation includes information that would normally be made available at an in-person public workshop, including an introduction, detailed overview of maps and data, and ways to share public feedback.

An online public survey was developed to collect feedback. The survey questions, which are covered in detail in the Analysis of Public Survey Results section (pages 22-28), ask about current walking and biking habits, neighborhood infrastructure conditions and areas of concern, the importance of criteria used in the prioritization process, and how proposed routes, which scored highly in the prioritization, could benefit the community. These questions are presented in a non-technical manner to ensure that they are easily understandable and to solicit useful feedback. After review by the Health Subcommittee, the public survey was finalized and opened to responses in August 2020. To encourage participation, respondents who fully completed the survey had the option to be entered into a drawing for a \$25 Visa gift card.

The survey and the plan were promoted in several ways: through targeted Facebook ads, the WILMAPCO Transporter and E-News, and the Colonial Clippings, which is distributed to staff and families in the Colonial School District. In addition, WILMAPCO staff gave a presentation via video conference to an AP Human Geography class at William Penn High School in December 2020. The presentation introduced students to WILMAPCO and the Master Plan, the benefits of a walkable and bikeable community, and the Paths Plan. Students learned about GIS methodology and took the survey.

Based on WILMAPCO's research, the Route 9 corridor is a "tech desert", a community where a higher percentage of households than the regional average lack access to

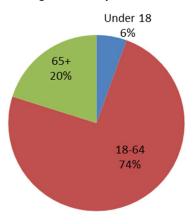


computers, smartphones, and the internet. To ensure that every neighborhood in the corridor is aware of the plan and has the opportunity to share their thoughts, a paper version of the survey was developed. Like the online survey, it was available in both English and Spanish. Ms. Dora Williams, an area resident who serves as the Community Engagement Coordinator for the Route 9 Monitoring Committee and the New Castle Prevention Coalition, conducted a door-to-door survey, with a quota of at least five responses per neighborhood. After this quota was exceeded, the survey was closed in February 2021, and a gift card was awarded to a randomly selected respondent.

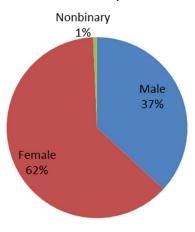
Public Survey Reach and Demographics

In total, 181 people completed the public survey. 74 responses were completed online, and 107 were received from the door-to-door field survey. 5 were taken in Spanish. The majority of respondents were adults under 65, 20% were seniors, and 6% were from children under 18. Respondents were majority female. 77% of respondents live in the corridor, with the highest number of responses in the neighborhoods of Rosegate and Southbridge.

Age of Respondents



Gender of Respondents



Which neighborhood do you live in?

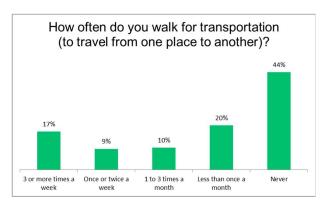
Neighborhood	Respondents		
Castle Hills	4%	7	
Collins Park	4%	7	
Dunleith	3%	5	
Eden Park	4%	6	
Garfield Park	3%	5	
Hamilton Park	3%	5	
Hazeldell	3%	5	
Holloway Terrace	4%	6	
Jefferson Farms	4%	6	
Landers Park	3%	5	
Mayview Manor	4%	7	
Minquadale	3%	5	
Oakmont	3%	5	
Penn Acres	4%	7	
Rosegate	6%	10	
Rose Hill	4%	6	
Simonds Gardens	4%	6	
Southbridge	5%	9	
Swanwyck Estates	4%	6	
Swanwyck Gardens	3%	5	
West Minquadale	3%	5	
Not sure	1%	2	
Other	23%	39	

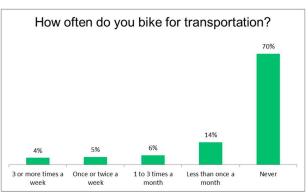


Analysis of Public Survey Results

Walking and Biking Habits

The first two questions ask respondents how often they walk and bike for transportation. Respondents who answered "less than once a month" or "never" to either of these questions were asked to share the main reasons they don't walk or bike for transportation, respectively. The responses to these open-ended questions were categorized. Based on these responses, insufficient walking and biking infrastructure was the most discouraging factor when choosing how to get around the corridor, followed by long distances between destinations.

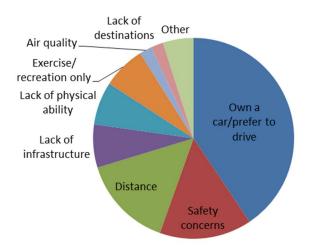




For respondents who answered "less than once a month" or "never" to the above question:

For respondents who answered "less than once a month" or "never" to the above question:

What are the main reasons you don't walk for transportation?



What are the main reasons you don't bike for transportation?





To gauge public interest in the plan, respondents were asked how much they agree or disagree, on a sliding scale, that creating a better network of pathways will result in more people walking and biking. On average, respondents mostly agreed, suggesting that the community is mostly in support of the plan.

Community Buy-in

Do you agree or disagree with this statement?				
"Creating a better network of pathways will result in more people walking and biking."				
0%	100%			
Completely disagree	Completely agree			
0				
Average agreement level: 73%				

Destinations

To identify destinations that warrant a walking or biking connection based on the community's needs, respondents were asked where they would like to bike or walk to. Responses to this open-ended question were categorized, with the largest portion saying they would like to bike or walk to Route 9 itself, followed by neighborhood parks, the cities of Wilmington and New Castle, local businesses, the Markell Trail, and the Route 9 Library. Specific parks that were mentioned include Battery Park in New Castle and Simonds Gardens. Local businesses included the Crossroads shopping center, the Super G Market, ShopRite, and neighborhood convenience stores. Other destinations included the Rose Hill Community Center, Garfield Park, connections between neighborhoods, Cherry Lane, and Buttonwood Street.

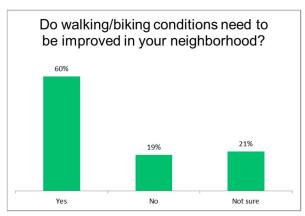
Are there any destinations you would like to bike or walk to, if there was a safer way to do so?





Neighborhood Infrastructure Conditions

The majority of respondents (60%) believe that walking and biking conditions need to be improved in their neighborhood, providing further evidence of community buy-in and the need for this study. By asking which neighborhood respondents live in, the survey also collected neighborhood-specific feedback. The number of responses received from each neighborhood ranges from five to ten, which is too small of a sample size to represent each neighborhood accurately,



Overall results

but from those who responded, the percentage of people who agree with this statement is highest in Holloway Terrace and lowest in Landers Park, Minquadale, and Castle Hills.

Do walking/biking conditions need to be improved in your neighborhood?

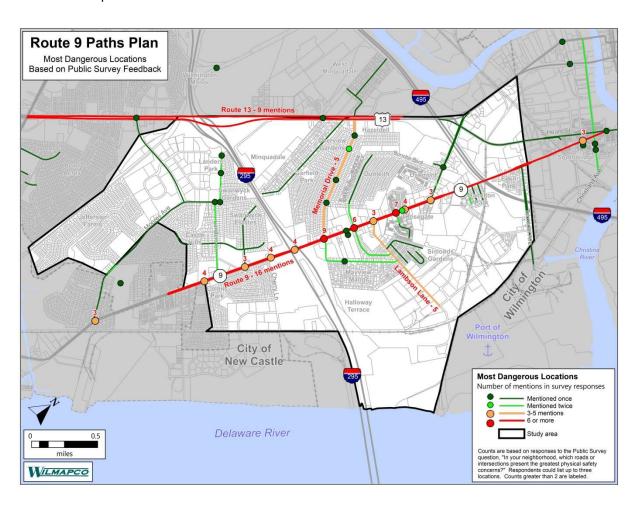
Neighborhood	Responses	Yes	Not sure	No	% Yes
Holloway Terrace	6	6	0	0	100%
Jefferson Farms	6	5	0	1	83%
Rose Hill	6	5	0	1	83%
Oakmont	5	4	1	0	80%
Hamilton Park	5	4	0	1	80%
West Minquadale	5	4	0	1	80%
Southbridge	9	7	2	0	78%
Mayview Manor	7	5	1	1	71%
Rosegate	10	7	1	2	70%
Eden Park	6	4	2	0	67%
Hazeldell	5	3	1	1	60%
Dunleith	5	3	0	2	60%
Garfield Park	5	3	0	2	60%
Collins Park	7	4	2	1	57%
Swanwyck Estates	6	3	2	1	50%
Penn Acres	7	3	3	1	43%
Swanwyck Gardens	5	2	1	2	40%
Simonds Gardens	6	2	3	1	33%
Landers Park	5	1	3	1	20%
Minquadale	5	1	3	1	20%
Castle Hills	7	1	3	3	14%

Results by neighborhood



Locations with Physical Safety Concerns

Respondents were asked which roads or intersections in their neighborhood present the greatest physical safety concerns, which were defined as unsafe walking and biking conditions. They could list up to three locations. The results are shown in the map below, with a count of how many times each location was mentioned. Route 9 was the most frequently mentioned location, followed by Route 13; intersections along Route 9 at Memorial Drive, Rose Lane, and Morehouse Drive; Memorial Drive itself; and Lambson Lane. This data helps identify which roads and intersections require the most attention, according to residents and visitors. The results closely match the higher stress roads identified in the bike level of traffic stress analysis (page 9). In addition to reducing the risk of injuries and crashes, making improvements to these locations can improve the perception of safety and encourage more people to walk and bike for transportation.





Feedback on the Prioritization Process

In order to ensure that the prioritization process (pages 16-19) accurately reflects the needs of the community and prioritizes road segments and proposed routes appropriately, the public survey asked respondents to rank the prioritization criteria. This question was asked in a non-technical manner that did not require an explanation of the prioritization process. The survey asked, "Which of the following measures are most important, when considering where limited funding should be spent on walking and biking projects?" The list of criteria is preceded with "Areas with more..." to imply that these are based on geography. Respondents could then rank nine of the prioritization criteria. Two criteria were excluded for simplicity: missing links and low-stress bicycling islands. Connecting low-stress bicycling islands is the primary goal of the Paths Plan and is addressed indirectly through other survey questions, and missing links are based in part on the low-stress bicycling islands.

As shown in the chart to the right, people walking to work was the most highly ranked measure, followed by criminal activity and indicators of public health concern. This suggests that the community values physical safety, personal safety, and public health, which mirrors feedback received for the Master Plan. However, the scores used to determine overall rank, which could range from 1 to 10, do not vary significantly, which suggests that all of

Rank	Measure	Score*
1	People walking to work	6.23
2	Criminal activity	5.78
3	Indicators of public health concern	5.7
4	People biking to work	5.59
5	People taking the bus to work	5.22
6	Households without cars	4.88
7	Bus stops	4.24
8	Walking/biking crashes	4.2
9	Job sites	3.95

*Score calculated by SurveyMonkey based on average ranking.

these measures are important to at least a notable number of respondents, and that the prioritization process is on the right track.

The survey then asks if there are any other measures that should be considered for determining the importance of a proposed pathway. Most responses included specific recommendations or concerns that do not specifically answer this question; that feedback is recorded on page 28. However, three people responded with specific measures: the safety of children and seniors, community resources, and people with disabilities.



Rating Proposed Routes

To gather feedback on the proposed routes, the team selected seven routes that scored highly in the prioritization process and asked survey respondents to rate them. Respondents could rate each location on a scale from 0% (not beneficial at all) to 100% (very beneficial). The results are ranked by the average rating, with the highest scoring route being Route 9 where it crosses over I-295 and the lowest being Bunche Boulevard, though all scored highly.

How beneficial would it be to add walking or biking improvements to the following locations? These are just a few examples of potential connections.

Rank	Location	Average % Beneficial
1	Route 9, where it crosses I-295	82%
2	Rogers Road	79%
3	Boulden Boulevard, from the Markell Trail to Moores Avenue	78%
4	Lambson Lane	77%
5	Route 9, excluding where it crosses I-295	76%
6	Morehouse Drive	71%
7	Bunche Boulevard	70%

The survey then asked how connections they rated highly should be made, providing examples to give respondents some ideas. Most respondents used these examples, but some other ideas were shared as well. For all seven locations, mixed-use paths, off-road trails, and sidewalks were mentioned frequently, with bike lanes being mentioned less frequently. This shows that there is a preference for off-road infrastructure and a need for sidewalks in many locations.

For any of the above connections that you consider to be very beneficial, how would you like to see the connection made? Examples include sidewalks, on-road bicycle lanes, mixed-use paths alongside roads, and off-road paved trails.

Number of mentions

Location	Mixed-use path/ off-road trail	Sidewalks	Bike lanes	Other ideas
Route 9, where it crosses I-295	14	14	6	
Route 9, excluding where it crosses I-295	9	9	4	Crosswalk at Route 9 & West Ave
Boulden Boulevard, from the Markell Trail to Moores Avenue	11	8	2	
Morehouse Drive	7	8	2	Street lights, extend crosswalk signal time at Route 9 & Morehouse Drive
Bunche Boulevard	6	6	2	
Lambson Lane	10	12	4	
Rogers Road	13	14	6	Street lights



Additional Feedback

The survey asked respondents to share any additional thoughts they may have about walking and biking in their neighborhood or in the Route 9 corridor as a whole. This page compiles all additional feedback, including responses to other open-ended questions that did not fit into the analysis on the previous pages. This feedback has been categorized, counted by the number of times mentioned (in parentheses), and listed in order of mention count for each category. Feedback without a number was mentioned once.

General recommendations

- Complete and repair sidewalks (6)
- Trees and landscaping (5)
- Contiguous path connections (4)
- Improved lighting (4)
- Improve existing paths (2)
- Wider sidewalks and paths (wide enough to share)
- Bike lanes
- Bus shelters
- Traffic calming

Concerns

- Traffic safety (14)
- Criminal activity (5)
- Accessibility for people with disabilities
- Cleanliness of the paths

General support for the plan

- "It's a good idea"
- "It's a wonderful place to live, everybody needs an upgrade once in a while"
- "Good for pedestrian safety"
- "Good potential for enhanced tourism and recreation"

Specific recommendations

- Neighborhood connections to Markell Trail (3)
- Hillview Avenue traffic calming
- Connections to McCullough Middle School
- Connection from Thorn Court to Route
- Connection from Rose Hill Gardens Park to Route 9
- Improvements to Memorial Drive, Landers Lane, Cherry Lane, Davidson Lane, Parma Avenue, and Minquadale neighborhood (1 mention each)
- Intersection improvements
 - o Route 9 & Mansion Parkway (2)
 - Route 9 & West Avenue
 - o Route 9 & Lambson Lane

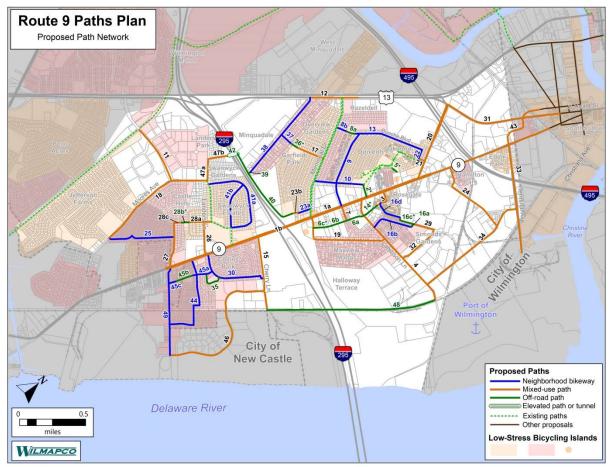


Recommendations

Proposed Path Network

The Route 9 Paths Plan proposes a network of walking and biking paths for the Route 9 corridor, bounded by the City of Wilmington to the north, the City of New Castle to the south, Route 13 to the west, and the Delaware River to the east. Based on public feedback, existing right-of-way, and the bike LTS analysis, the appropriate type of path was determined for each route. These path types include off-road paths, mixed-use paths, and neighborhood bikeways with sidewalk improvements. These path types are described with examples on page 32.

This proposed path network is a refinement and expansion of the map of bicycle and pedestrian routes presented in the Route 9 Corridor Master Plan. Those routes were prioritized using a technical scoring process, and they were given a rank based on their priority score. Ranks were then adjusted based on public feedback, with frequently requested connections increased in rank. Geographically adjacent paths with similar priority scores were given adjacent ranks, so that they are more likely to be implemented in succession to form a complete route. Path ranks are given letter suffixes if they consist of multiple sections with different path types.



*Approximate location. An alternative route may be considered based on available land.



Rank	Proposed Route Segment	From	То	Priority Score	Recommendation
1a	Route 9 (excluding section 1b)	City of Wilmington boundary	City of New Castle boundary	32	Mixed-use path
1b	Route 9 over I-295	Memorial Drive	Cherry Lane	28	Mixed-use path in median
2	Surratte Park path extension*	Surrate Park/Anderson Drive	Route 9	32	Off-road path
3	Rose Lane/Thorn Road	Route 9	Thorn Court	32	Mixed-use path
4	Lambson Lane	Route 9	Pigeon Point Road extension (proposed)	32	Mixed-use path
5	Rose Hill Gardens connection* [new]	Rose Hill Gardens	Rose Hill Park	29	Off-road path
6a	Path behind Rose Hill Community Center*	Lambson Lane	Hillview Avenue	27	Off-road path
6b	Path behind Route 9 Library*	Hillview Avenue	Behind Route 9 Library	27	Off-road path
6c	Path behind Route 9 Library*	Behind Route 9 Library	West Avenue	21	Off-road path
7	Hillview Avenue	Route 9	Rose Lane/Thorn Court trail	27	Mixed-use path
8a	Parma Avenue*	Parma Avenue	Bunche Boulevard	27	Off-road path
8b	Parma Ave	Memorial Drive	Bunche Boulevard	27	Neighborhood bikeway
9	Morehouse Drive	Bunche Boulevard	Route 9	27	Neighborhood bikeway
10	Bizarre Drive/Anderson Drive	Memorial Drive	Surratte Park	25	Neighborhood bikeway
11	Boulden Boulevard*	Moores Lane	Markell Trail	25	Mixed-use path
12	Route 13* [new]	Fernwood/Wildel Avenue	Hessler Boulevard	25	Mixed-use path
13	Bunche Boulevard	Talladega Drive	Parma Avenue	25	Neighborhood bikeway
14	Path to Rose Hill Community Center*	Thorn Court	Lambson Lane	24	Off-road path
15	Cherry Lane	Route 9	Pigeon Point Road extension (proposed)	23	Mixed-use path
	Simonds Gardens Park paths [new]	Simonds Drive	Dock View Drive	17	Off-road path
	Simonds Drive [new]	Lambson Lane	Simonds Gardens Park	15	Neighborhood bikeway
	Simonds Gardens Park connection*	Thorn Lane	Dock View Drive	17	Off-road path
	Thorn Lane [new]	Thorn Road	Simonds Gardens Park	17	Neighborhood bikeway
17	Karlyn Drive	E. Hazeldell Avenue	Memorial Drive	21	Mixed-use path
18	Moores Lane*	Linstone Avenue	Arden Avenue	21	·
19		Route 9	Lambson Lane		Mixed-use path
	West Avenue			21	Mixed-use path
	Rogers Road	S. Heald Street	Route 9	20	Mixed-use path
21	Oakmont Drive	Rogers Road	Talladega Drive	18	Mixed-use path
	Talladega Drive	Bunche Boulevard	Oakmont Drive	18	Neighborhood bikeway
	Lind Avenue	Memorial Drive	Halcyon Drive	17	Neighborhood bikeway
	Church Drive	Halcyon Drive	Winder Road	17	Mixed-use path
	Pyles Lane	Route 9	Pigeon Point Road	14	Mixed-use path
	Arden Avenue/Roxeter Road	Moores Lane	Castle Hill Drive	13	Neighborhood bikeway
	Landers Lane	Glen Avenue	Route 9	13	Mixed-use path
27	Castle Hill Drive	Glen Avenue	Route 9	13	Mixed-use path
28a	Glen Avenue	Linstone Avenue	Castle Hill Drive	11	Mixed-use path
28b	Glen Avenue*	Queen Avenue	Chelwynne Road	13	Off-road path
28c	Glen Avenue	Chelwynne Road	Castle Hill Drive	13	Mixed-use path
29	Dock View Drive	Sutton Lane	Harbor View Drive	13	Mixed-use path
30	Riverview Drive	Route 9	Cherry Lane	13	Neighborhood bikeway
31	S. Heald Street	C Street	S. Market Street	13	Mixed-use path
32	Harbor View Drive	Dock View Drive	Lambson Lane	12	Mixed-use path
33	Terminal Avenue	Route 9	Container Road	12	Mixed-use path
34	Pigeon Point Road	Terminal Avenue	Lambson Lane	12	Mixed-use path
35	Collins Park path	Riverview Drive	South Place	12	Off-road path
36	Garfield Park connection*	Lewes Street	Karlyn Drive	11	Off-road path
37	Lewes Street	Wildel Avenue	E. Hazeldell Avenue	9	Neighborhood bikeway
38	Wildel Avenue	Route 13	E. Hazeldell Avenue	9	Neighborhood bikeway
39	Wildel Avenue	Lewes Street	E. Hazeldell Avenue	9	Off-road path
40	McCullough proposed trail*	McCullough Middle School	I-295 crossing (proposed)	10	Off-road path
41a	Edge Avenue	Landers Lane	Stamm Boulevard	10	Neighborhood bikeway
	Stamm Boulevard	Edge Avenue	Glen Avenue	10	Neighborhood bikeway
	I-295 crossing*	McCullough proposed trail	Landers Spur	8	Elevated path or tunnel
	Terminal Avenue extension (proposed)	Elbert Place	Route 9	9	Mixed-use path
44	May Avenue/Daniel Lane	Route 9	Buttonwood Avenue	8	Neighborhood bikeway
	South Place	Riverview Drive	Collins Park Addition	8	Neighborhood bikeway
	Collins Park path	May Avenue	Buttonwood Avenue	8	Off-road path
	Meehan Lane	Arbutus Avenue	Buttonwood Avenue	8	Neighborhood bikeway
				8	-
46	Lukens Drive	Cherry Lane	Buttonwood Avenue	7	Mixed-use path
	Landers Caus	Landers Spur	Moores Lane		Mixed-use path
47b	Landers Spur	Lambson Lane	I-295 crossing (proposed)	6	Mixed-use path
48	Pigeon Point Road extension (proposed)	Lambson Lane	Cherry Lane	5	Off-road path
49	Buttonwood Avenue	Route 9	Lukens Drive	4	Neighborhood bikeway

^{*}This segment is a missing link and crosses over <u>private</u> land. An alternative route may be considered based on available land.

^{*}This segment is a missing link and crosses over $\underline{\text{public}}$ land.



Additional Details

The chart on the previous page provides additional details for the proposed path network presented in the map on page 29, including each segment's extent, technical priority score, and recommended path type. Chart rows are colored based on path type, and new proposals that were added during the planning process are noted in bold. Below are additional details for some of the proposed paths.

1 - Route 9 mixed-use path: The Route 9 Corridor Master Plan proposes mixed use



Preferred concept for path in median of Route 9 over I-295 (Master Plan page 83)

paths on both sides of Route 9 between the Cities of Wilmington and New Castle (section 1a), with the exception of section 1b, which crosses over I-295. This interchange will feature a single mixed-use path located in the median, to avoid conflicts with on- and off-ramps. Section 1a and section 1b will be connected by roundabouts at Memorial Drive and Cherry Lane, which can be used to change between the median path and the outer paths.

- **6 Route 9 Library off-road path**: This path will serve as an alternative to Route 9, connecting the Rose Hill Community Center and the Route 9 Library from Lambson Lane to West Avenue. Section 6c crosses over private land and may require an easement or an alternate route.
- 16 Simonds Gardens Park connections: The Master Plan proposed an off-road connection directly from Sutton Lane to Simonds Gardens Park, but that is impossible without land acquisition. This alternative route proposes an on-road connection on Simonds Drive (16b) to new off-road paths in the park (16a), and/or an on-road connection on Thorn Lane (16d) to an off-road path (16c) which is currently on private, but undeveloped, land. These could connect to the proposed mixed-use path on Dock View Drive (29).



Simonds Gardens Park



Path Types

Mixed-Use Paths

Mixed-use paths are built on or alongside existing roads, are fully separated from traffic, are paved, and can accommodate two-way walking and biking traffic. Generally, mixed-use paths are only needed on one side of a road, but can be built on both sides if sufficient right-of-way exists, especially if there are destinations on both sides and on wider roads that are difficult or unsafe to cross. A mixed-use path can take the place of a sidewalk or exist alongside one. Lane markings are optional and can increase the cost, but they can help walking and biking traffic move more smoothly and safely along busier routes.



Walnut Lane, Philadelphia, PA



Museum Park, West Reading, PA

Off-Road Paths

Off-road paths do not follow an existing right-of-way and can be built in parks, on undeveloped land, or between buildings, where land and funding are available. These paths are an effective way to close gaps between neighborhoods that are otherwise only connected by major roads, thereby significantly shortening trips. Because they are not alongside roads, they can offer a safer and quieter trip than on-road infrastructure, encouraging more people to walk or bike to nearby destinations.

Neighborhood Bikeways

Neighborhood bikeways are streets that can safely accommodate bicycle traffic in the same lane(s) as motor vehicles. This is a low-cost solution, consisting of paint and signage, for low-stress streets that lack sufficient road width for dedicated infrastructure. Neighborhood bikeways can help calm traffic and encourage more people to bike in and between neighborhoods, and they should be accompanied with sidewalk upgrades as needed.



South 13th Street, Philadelphia, PA



General Recommendations

Complete and repair sidewalks: Sidewalks should be complete and continuous, free of obstructions, and meet ADA standards. Sidewalk improvements should be made in order of priority, based on the prioritization of road segments on page 17, particularly on roads designated as neighborhood bikeways. Mixed-use paths can replace sidewalks, and sidewalks should connect directly to mixed-use paths where they intersect. DelDOT has conducted a statewide inventory of pedestrian and bicycle infrastructure, which can help identify sidewalk gaps, but an independent study may be needed to locate sidewalks in need of improvements in this area.

Make path connections contiguous: As paths are built, they should be contiguous to ensure a smooth and safe transition, especially for bicycle and wheelchair users. Sidewalks connecting to mixed-use or off-road paths should be level and without a curb. Sidewalks and paths connecting to neighborhood bikeways should be continuous

or connected by an ADA-compliant ramp as needed.

Improve lighting: Sidewalks and paths should have sufficient lighting to ensure the safety of all users and deter crime. Off-road paths, in particular, should be built with pedestrian-scale lighting, as they will be built in currently undeveloped areas away from existing street lights. An independent study may be needed to identify roads and existing paths that lack adequate lighting, and lighting gaps should be addressed in order of priority. Pedestrian-scale lighting is preferred over roadway lighting, as it more adequately lights sidewalks, promotes sidewalk and path use, and helps to deter crime.



Pedestrian-scale lighting (Source: Alta Planning + Design)



Neighborhood bikeway signage (Source: City of Alexandria, VA)

Name and sign paths: Off-road paths should be given names based on the roads or destinations they connect, or as decided through a community outreach process, and signs should be placed at path entrances. On neighborhood bikeways, signage can indicate that they are neighborhood bikeways and that they are shared between people biking and driving. Wayfinding signs can direct path users to nearby paths and destinations, noting distances in miles, minutes walking, or minutes biking.



Next Steps

The proposed path network should be implemented in order of priority, with higher ranking projects constructed first (as listed on page 30). As the primary implementing agency, DelDOT will design, engineer, and construct each segment, with this plan serving as a guide for path routing, path type, and prioritization. Path segments may also be implemented by New Castle County or other agencies.

Funding for path projects can be pursued through several mechanisms, including the Capital Transportation Program (CTP), the Community Transportation Fund (CTF), the Statewide Bicycle and Pedestrian Improvements Program, and the Transportation Alternatives Program (TAP), which includes Safe Routes to School (SRTS). Repaving projects could implement portions of this plan, as was the case with the interim Memorial Drive road diet.

WILMAPCO, in coordination with DelDOT, administers the Safe Routes to School program in this region. WILMAPCO has worked with the Colonial School District to develop ongoing SRTS programs in this study area, including at Eisenberg Elementary School and McCullough Middle School. Through these SRTS programs, school staff, faculty, and students can help to further refine proposed paths to meet each school's needs.

Neighborhood bikeways are the lowest cost path type proposed in this plan, and they can be implemented within five years. Dedicated paths, including mixed-use paths and off-road paths, are medium to high cost, and should be implemented as funding becomes available within the next ten years. The proposed elevated path over or tunnel under I-295 (rank 42) is a high cost project and should be implemented in less than twenty years, in conjunction with or after connecting paths 40 and 47b, but will serve as a crucial, car-



Markell Trail tunnel under Route 13 (Source: Delaware Greenways)

free connection between several neighborhoods currently divided by the highway.

As projects are developed, ongoing community outreach should ensure residents are aware of projects in their neighborhoods and that their needs are met. The Route 9 Monitoring Committee, which is open to the public, will continue to oversee the implementation of transportation projects within the Route 9 corridor.