

route **9** corridor
Paths Plan



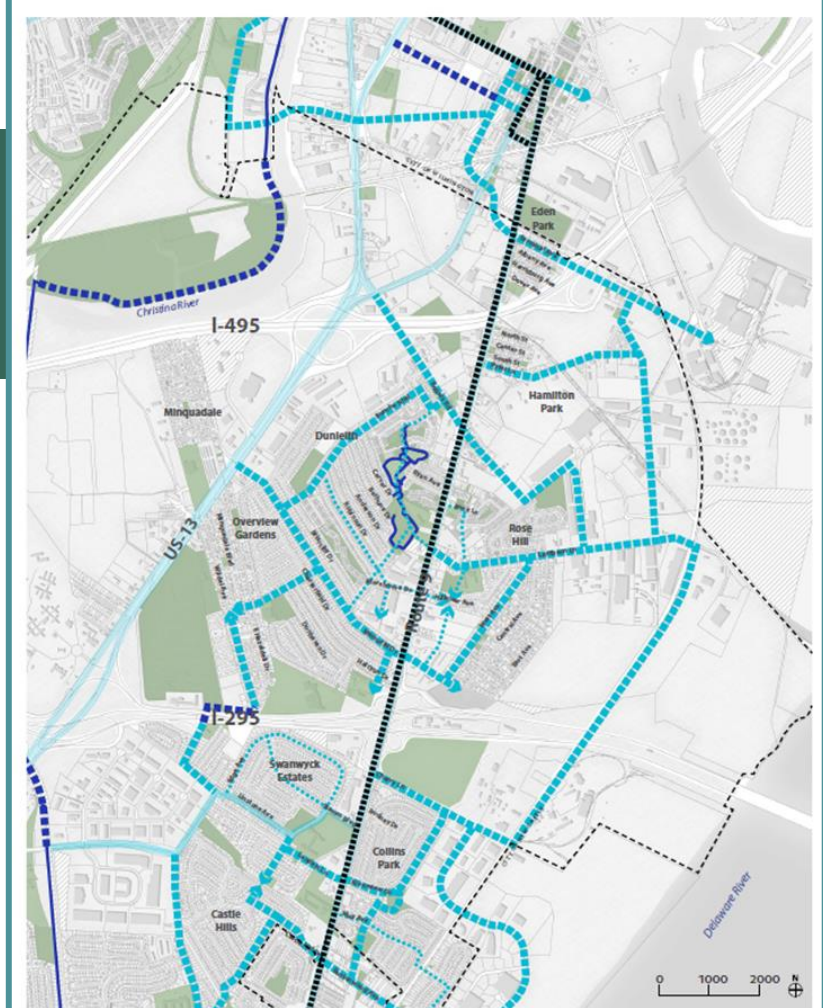
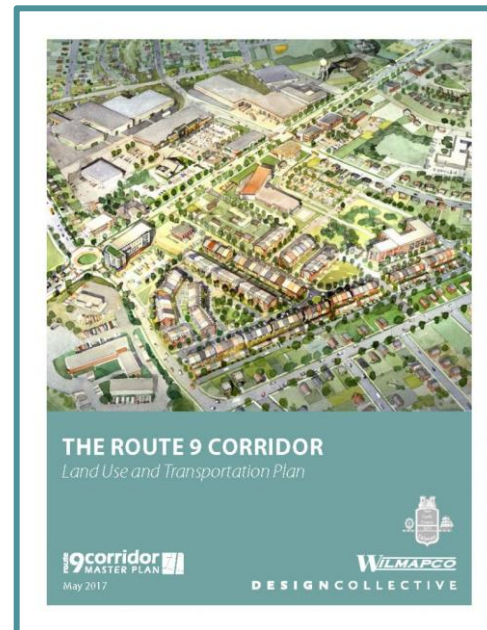
Overview Presentation

August 2020

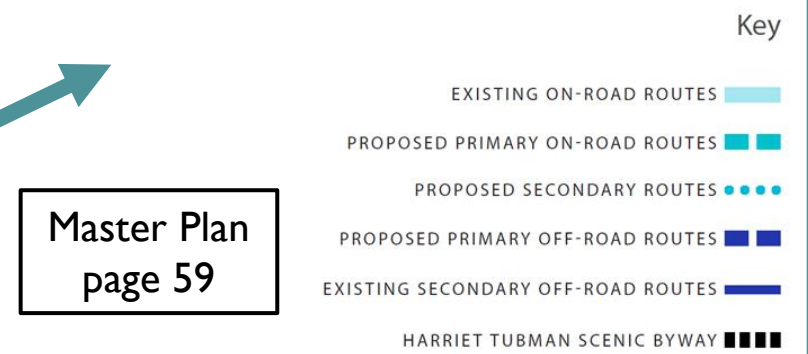
What is the Route 9 Paths Plan?

The Route 9 Paths Plan is a new plan that is branching off of the Route 9 Corridor Master Plan. This plan will expand on and refine the bicycle and pedestrian recommendations presented in the Master Plan.

The map on the right side of this slide is from the Route 9 Corridor Master Plan and shows the proposed pathway network as well as existing paths in the corridor. This map serves as the groundwork for the Route 9 Paths Plan.



Existing and Recommended Bicycle On- and Off-Road Routes



Master Plan
page 59

What are neighborhood pathways?

The Route 9 Paths Plan will propose a mixture of off-road trails, paved park paths, short connectors between neighborhood streets, sidewalks, and on-street bike lanes, based on context of the surrounding neighborhood and the needs of the community. Here are a few examples of different types of walking and biking paths.



Mixed-use path



Path between houses



Two-way protected bike lane

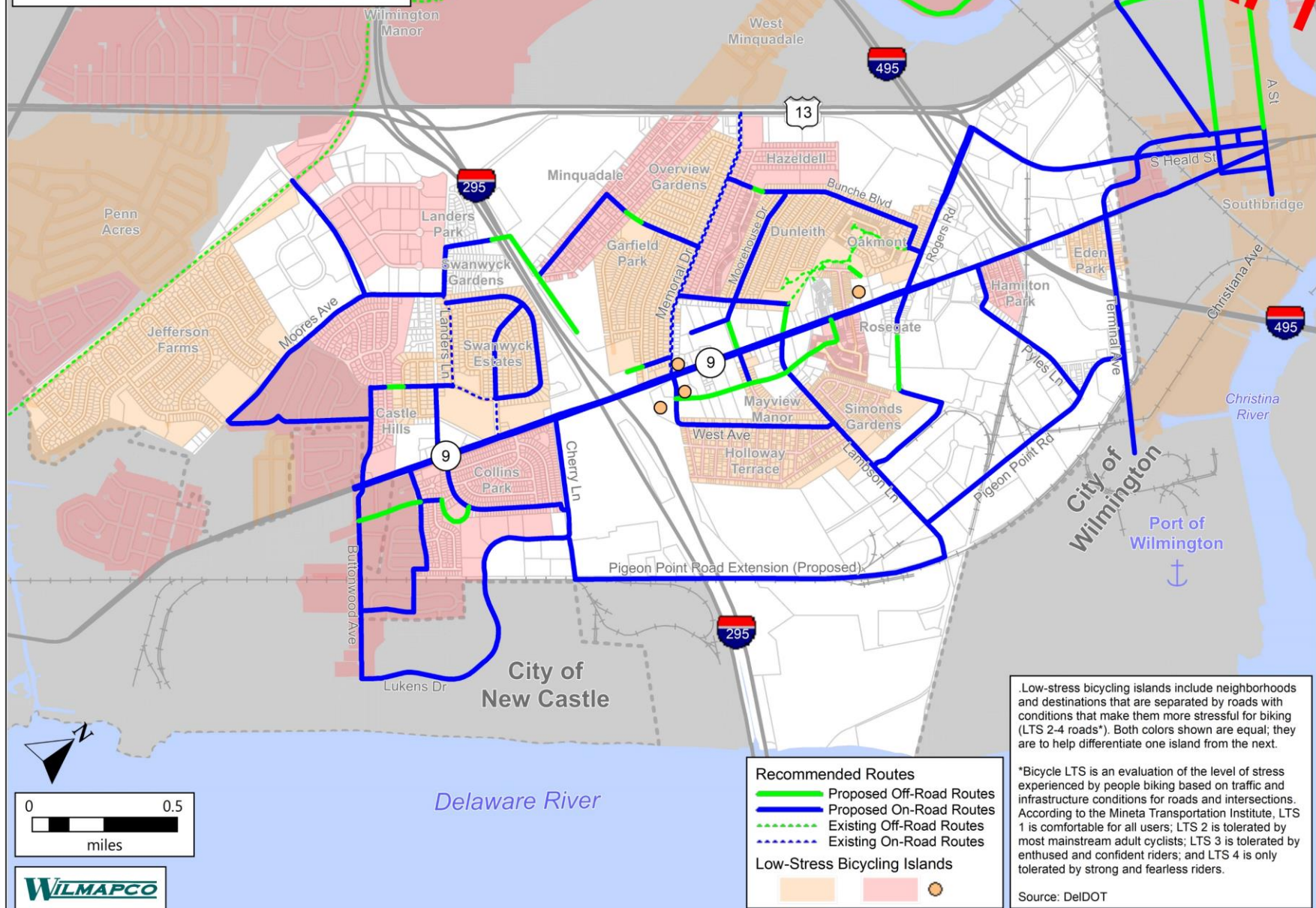


Sidepath

Route 9 Paths Plan

Recommendations from Recent Plans

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This map shows bicycle and pedestrian recommendations from recent plans, including the Route 9 Corridor Master Plan.

This map is currently a draft and will be updated as the plan progresses, based on public feedback and analysis of infrastructure needs. When completed, the final version of this map will propose a network of neighborhood pathways for the Route 9 corridor.

Low-stress bicycling islands include neighborhoods and destinations that are separated by roads with conditions that make them more stressful for biking (LTS 2-4 roads*). Both colors shown are equal; they are to help differentiate one island from the next.

*Bicycle LTS is an evaluation of the level of stress experienced by people biking based on traffic and infrastructure conditions for roads and intersections. According to the Mineta Transportation Institute, LTS 1 is comfortable for all users; LTS 2 is tolerated by most mainstream adult cyclists; LTS 3 is tolerated by enthused and confident riders; and LTS 4 is only tolerated by strong and fearless riders.

Source: DelDOT

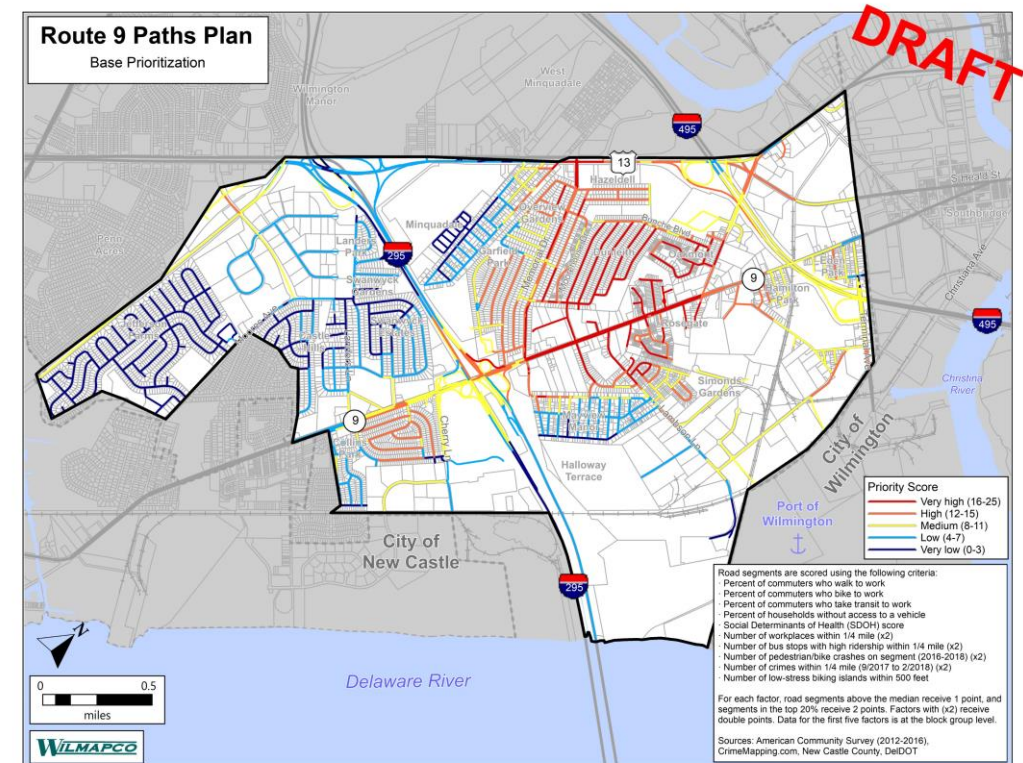


Draft Prioritization

To better understand walking and biking infrastructure needs on each individual block in the corridor, WILMAPCO has put together a draft technical scoring process. This process uses a series of transportation and demographic data to give a score to each road segment in the study area. A high score means that area will benefit more from bicycle and pedestrian improvements.

This process helps ensure that the communities that are in most need of improvements have their needs addressed. This will also help the Delaware Department of Transportation (DelDOT) prioritize projects and spending when it comes time for implementation. Lower scoring areas may also see improvements, but they will be considered lower priority.

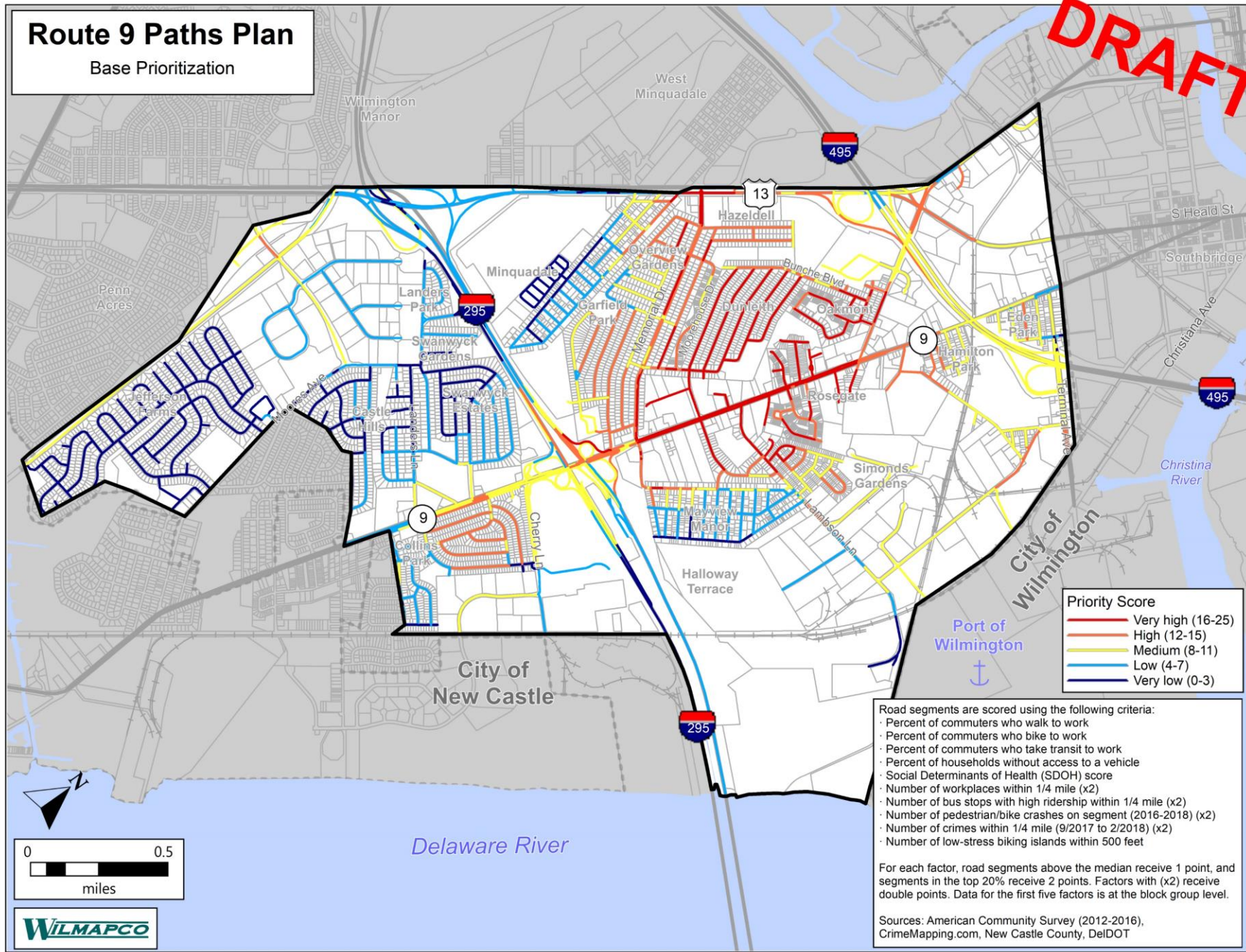
See the next slide for a larger version of this map.



Route 9 Paths Plan

Base Prioritization

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In the draft prioritization, road segments are scored using the following criteria:

- % of commuters who walk to work
- % of commuters who bike to work
- % of commuters who take transit to work
- % of households without access to a vehicle
- Social Determinants of Health (SDOH) score
- Low-stress biking islands within 500 feet
- Workplaces within 1/4 mile (2x points)
- Bus stops (25+ daily riders) within 1/4 mile (2x points)
- Crashes involving pedestrian or cyclist (2x points)
- Crimes within 1/4 mile (2x points)

Each road segment receives points for each criteria, and the sum of these is its priority score. Higher scores are in red.

Road segments are scored using the following criteria:

- Percent of commuters who walk to work
- Percent of commuters who bike to work
- Percent of commuters who take transit to work
- Percent of households without access to a vehicle
- Social Determinants of Health (SDOH) score
- Number of workplaces within 1/4 mile (x2)
- Number of bus stops with high ridership within 1/4 mile (x2)
- Number of pedestrian/bike crashes on segment (2016-2018) (x2)
- Number of crimes within 1/4 mile (9/2017 to 2/2018) (x2)
- Number of low-stress biking islands within 500 feet

For each factor, road segments above the median receive 1 point, and segments in the top 20% receive 2 points. Factors with (x2) receive double points. Data for the first five factors is at the block group level.

Sources: American Community Survey (2012-2016), CrimeMapping.com, New Castle County, DelDOT

Bicycle Level of Traffic Stress (Bike LTS)

Bicycle level of traffic stress, or bike LTS, is an analysis of the level of stress people experience when biking on each road, based on traffic and infrastructure conditions.

Each road segment or intersection receives a bike LTS score ranging from 1 to 4. As shown in the chart to the right, a road (or trail) with level of traffic stress 1 is safe for everyone to use. An LTS 4 road is only tolerated by strong and fearless riders.

A bike-friendly street is often also a pedestrian-friendly one, so a low bike LTS score is a good indicator that an area is also comfortable and safe for walking.

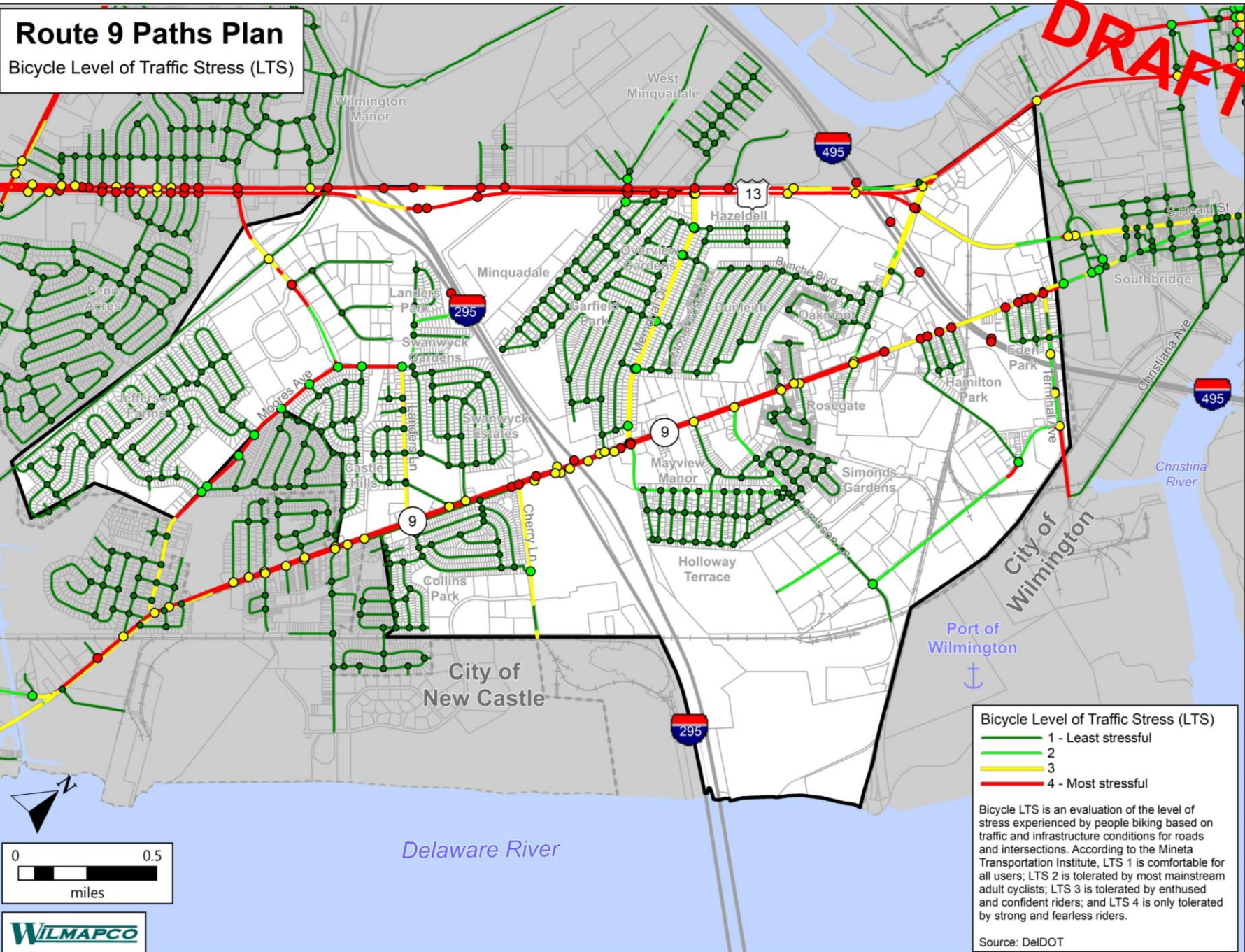
By applying DelDOT's bike LTS analysis to the Route 9 corridor, we can better understand which areas can be improved to make biking and walking a safer, more convenient, and more accessible way to get around the corridor and beyond.

Level of Traffic Stress	Description	Example
1	Safe for children to use; Usually completely separated from auto traffic	 Photo by Bob Patten
2	Tolerated by most mainstream adult populations of cyclists; Roads with low volume and low speed auto traffic	
3	Tolerated by riders who are enthused and confident; Heavy traffic with separated bike facility	
4	Only tolerated by strong and fearless riders; cyclists must interact with high volumes or speeds of auto traffic.	

Route 9 Paths Plan

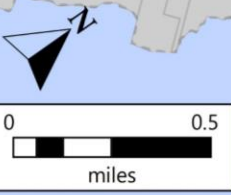
Bicycle Level of Traffic Stress (LTS)

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This map shows the bicycle level of traffic stress (bike LTS) for each road segment and intersection in the Route 9 corridor. The least stressful roads and intersections for biking are shown in dark green, and the most stressful roads and intersections are shown in red.

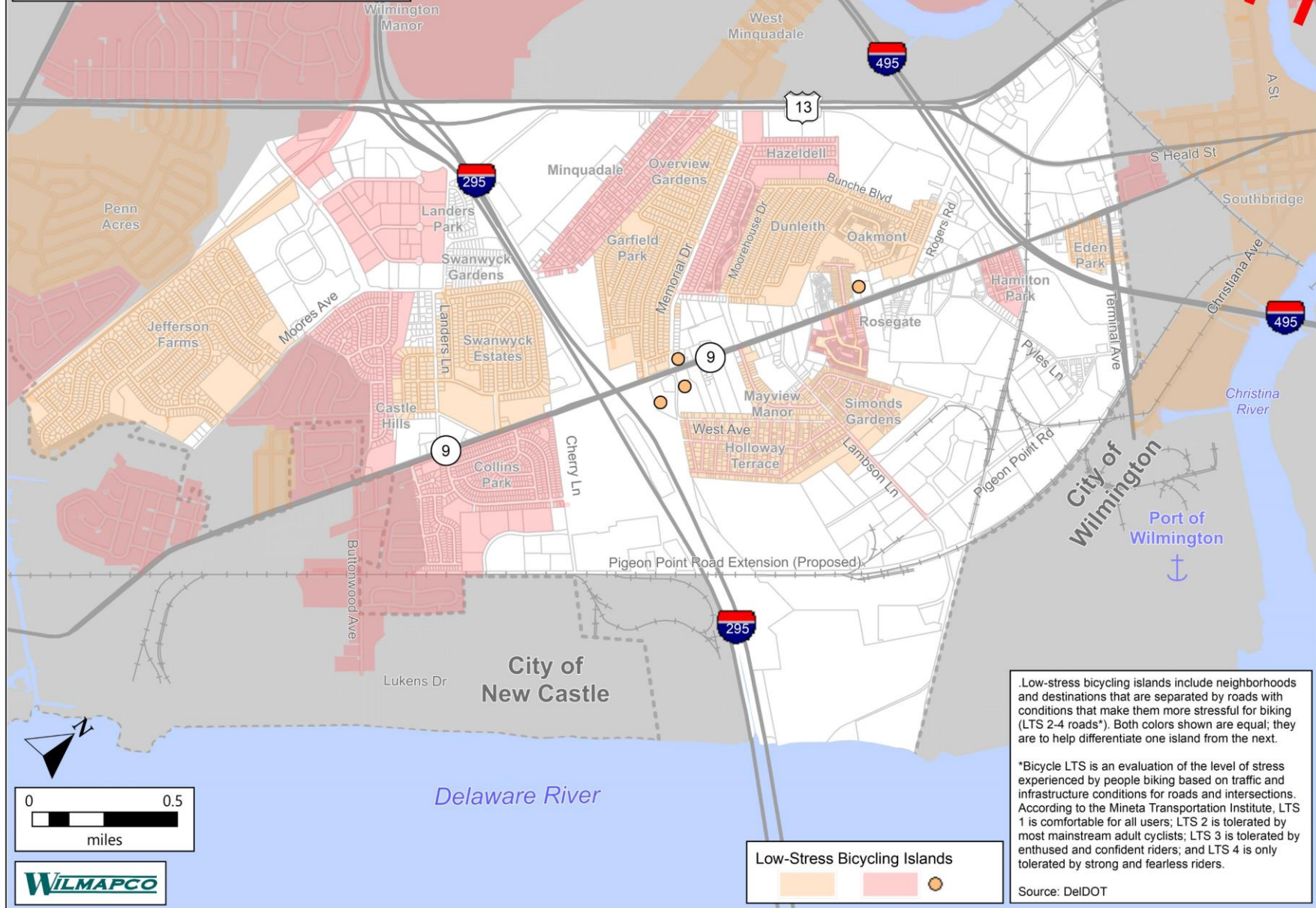
You may notice that most smaller neighborhood streets have a low bike LTS score, and these neighborhoods are surrounded by higher stress roads. These low stress neighborhoods are considered “low-stress biking islands”. See the next slide for more info.



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Low-Stress Bicycling Islands

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Low-stress bicycling islands include neighborhoods and destinations that are separated by roads with conditions that make them more stressful for biking (LTS 2-4 roads*). Both colors shown are equal; they are to help differentiate one island from the next.

*Bicycle LTS is an evaluation of the level of stress experienced by people biking based on traffic and infrastructure conditions for roads and intersections. According to the Mineta Transportation Institute, LTS 1 is comfortable for all users; LTS 2 is tolerated by most mainstream adult cyclists; LTS 3 is tolerated by enthused and confident riders; and LTS 4 is only tolerated by strong and fearless riders.

Source: DelDOT

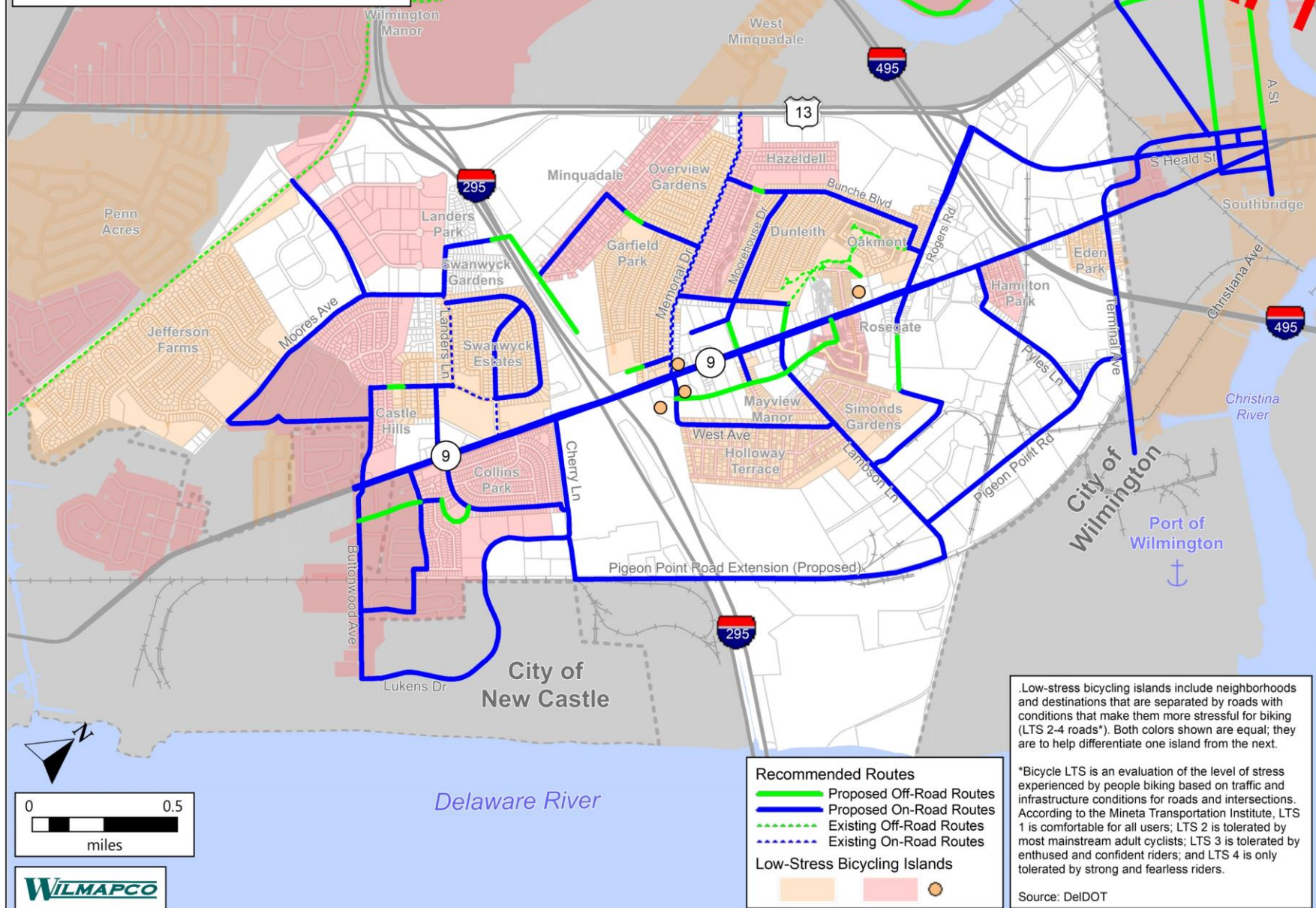
This map shows low-stress bicycling islands. These islands consist entirely of low stress roads, but are surrounded by higher stress roads. This means that it is comfortable and safe for most people to bike or walk around these neighborhoods, but getting to another neighborhood poses additional safety concerns.

The ultimate goal of the Route 9 Paths Plan is to connect as many of these islands as possible, so that people can bike and walk comfortably throughout the corridor and beyond.

Route 9 Paths Plan

Recommendations from Recent Plans

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Here is the map of recommendations from recent plans, which was shown earlier in the presentation. This map shows proposed routes on top of the LTS islands. This helps show how these recommendations could make connections between islands, which would make it possible for more people to bike and walk comfortably outside of their neighborhoods.

Low-stress bicycling islands include neighborhoods and destinations that are separated by roads with conditions that make them more stressful for biking (LTS 2-4 roads*). Both colors shown are equal; they are to help differentiate one island from the next.

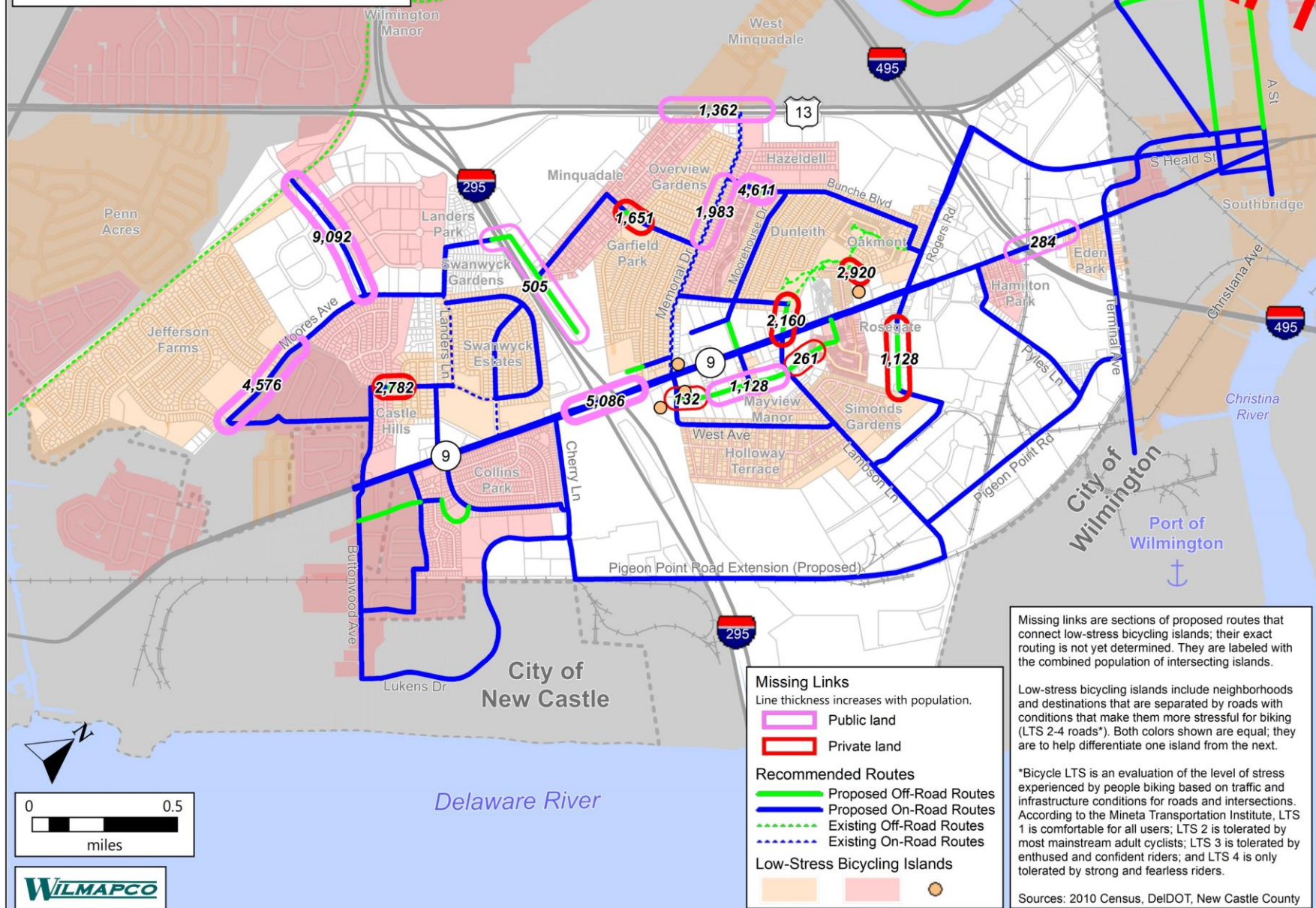
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Source: DelDOT

Route 9 Paths Plan

Missing Links

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“Missing links” are sections of proposed routes that connect LTS islands, where exact routing is not yet determined.

They are labeled with the total population each missing link could connect.

Missing links in pink cross over public land. Missing links in red cross over private land and are only considered as long term goals in the event that land becomes available to build a path connection.

Missing links are sections of proposed routes that connect low-stress bicycling islands; their exact routing is not yet determined. They are labeled with the combined population of intersecting islands.

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Sources: 2010 Census, DelDOT, New Castle County

Route 9 Paths Plan

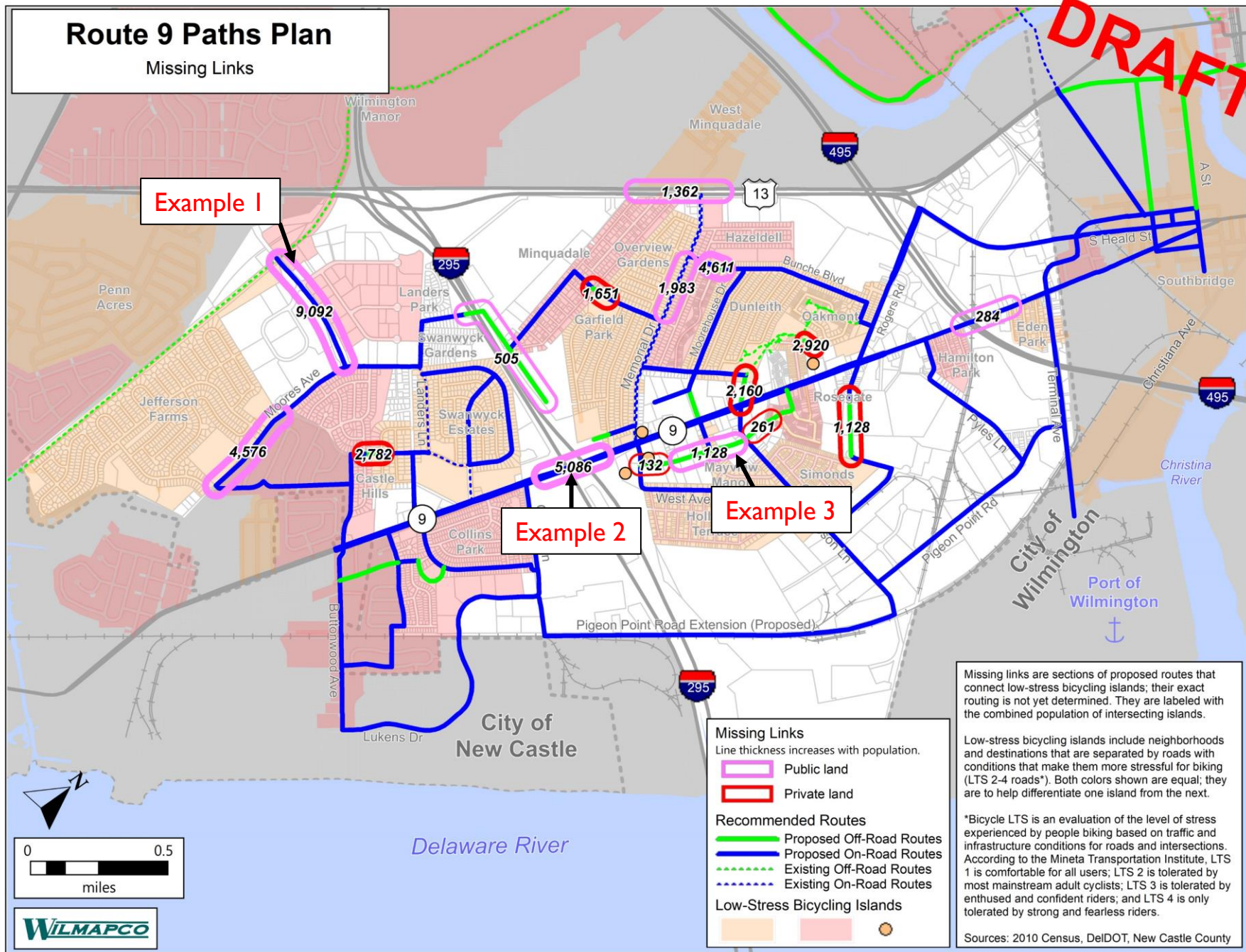
Missing Links

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Example 1

Example 2

Example 3



The following 3 slides show examples of missing links in more detail. These examples include:

- Boulden Boulevard connection to Markell Trail
- Route 9, where it crosses over I-295
- The Route 9 Library area

Missing links are sections of proposed routes that connect low-stress bicycling islands; their exact routing is not yet determined. They are labeled with the combined population of intersecting islands.

Low-stress bicycling islands include neighborhoods and destinations that are separated by roads with conditions that make them more stressful for biking (LTS 2-4 roads*). Both colors shown are equal; they are to help differentiate one island from the next.

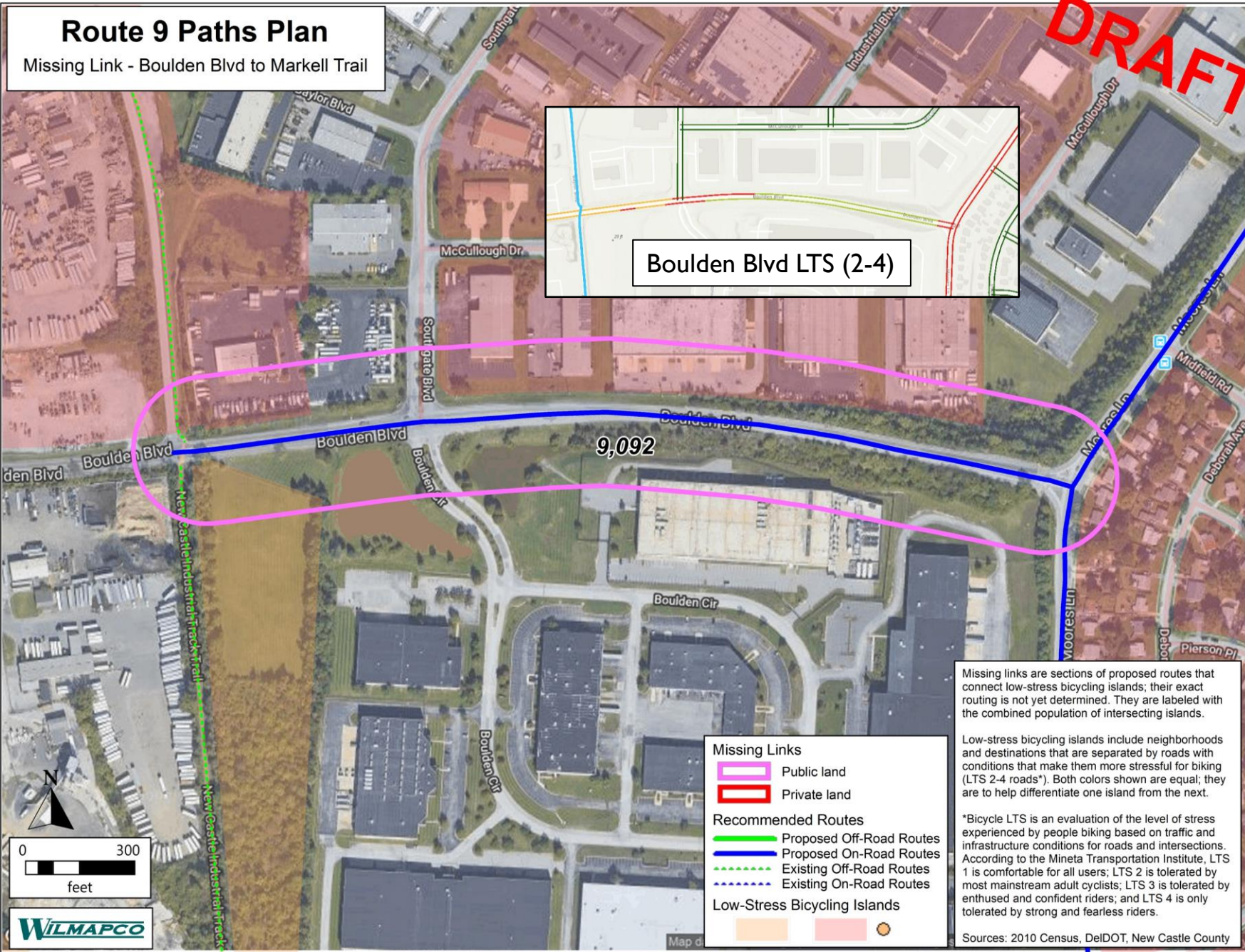
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Sources: 2010 Census, DelDOT, New Castle County

Route 9 Paths Plan

Missing Link - Boulden Blvd to Markell Trail

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Boulden Blvd LTS (2-4)

9,092

Missing links are sections of proposed routes that connect low-stress bicycling islands; their exact routing is not yet determined. They are labeled with the combined population of intersecting islands.

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Sources: 2010 Census, DelDOT, New Castle County

Boulden Boulevard is the most impactful missing link, as it could connect over 9000 people in the immediate area. By connecting to the Markell Trail (and potentially as far as US-13), it could connect many thousands more people all the way from Wilmington to New Castle.

The inset map shows the level of traffic stress in the area. Boulden has some high stress sections, so an improved path connection is needed here.

Moores Lane (LTS 4) would also need a path connection in order to connect Boulden to the neighborhoods.

Route 9 Paths Plan

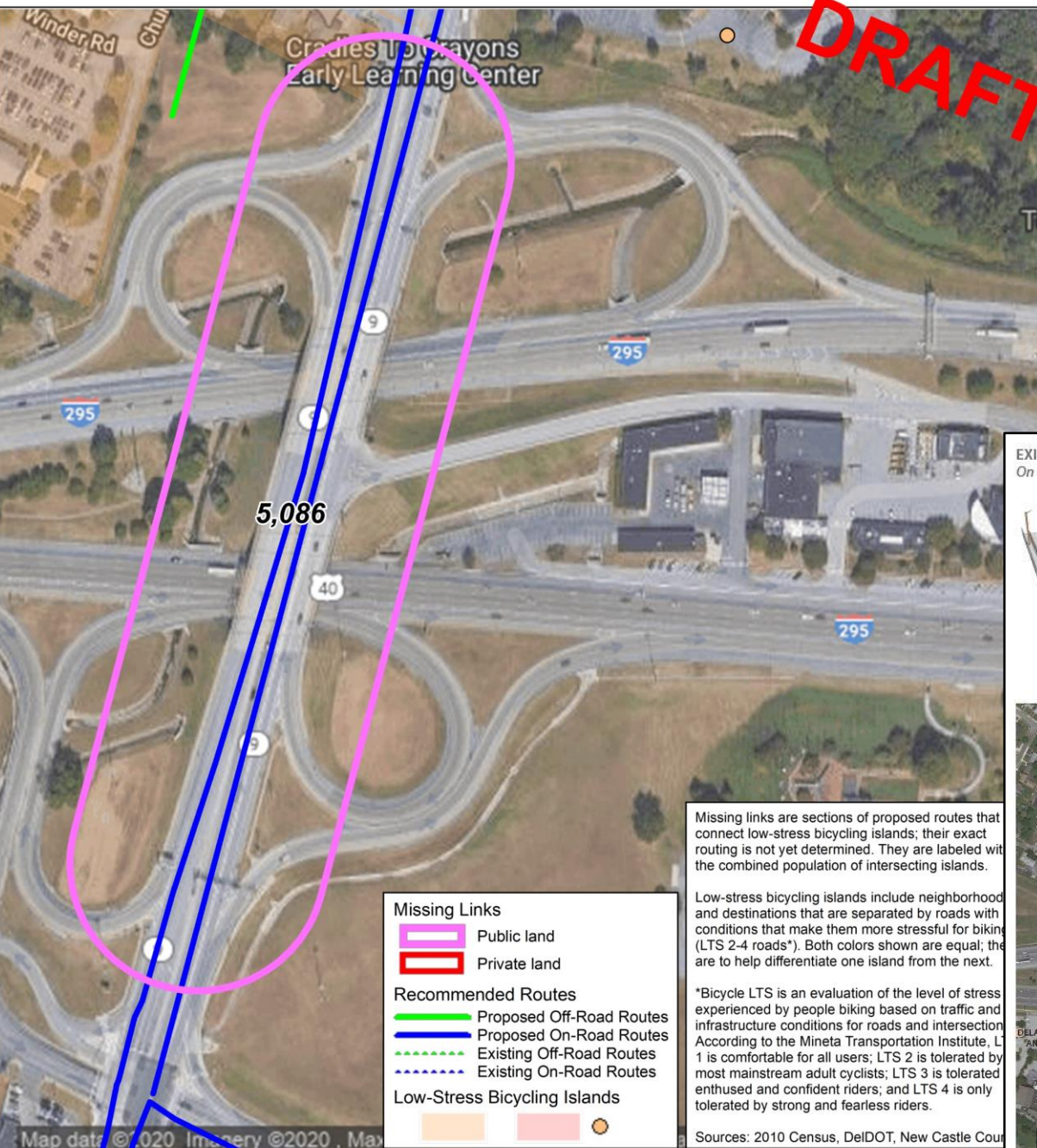
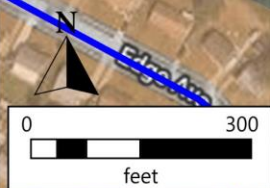
Missing Link - Route 9 over I-295

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This connection could connect over 5000 people and bring together neighborhoods that are currently divided by I-295. The Master Plan has a recommendation for a protected center path (see below), which would make this interchange much safer for people biking and walking.



Route 9 LTS (4)



5,086

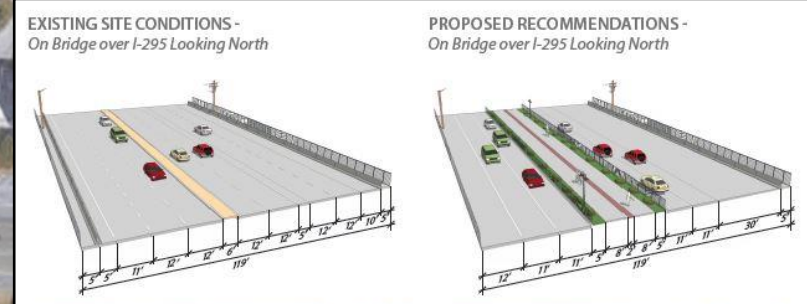
- Missing Links**
- Public land
 - Private land
- Recommended Routes**
- Proposed Off-Road Routes
 - Proposed On-Road Routes
 - Existing Off-Road Routes
 - Existing On-Road Routes
- Low-Stress Bicycling Islands**
- -
 -

Missing links are sections of proposed routes that connect low-stress bicycling islands; their exact routing is not yet determined. They are labeled with the combined population of intersecting islands.

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Sources: 2010 Census, DelDOT, New Castle County

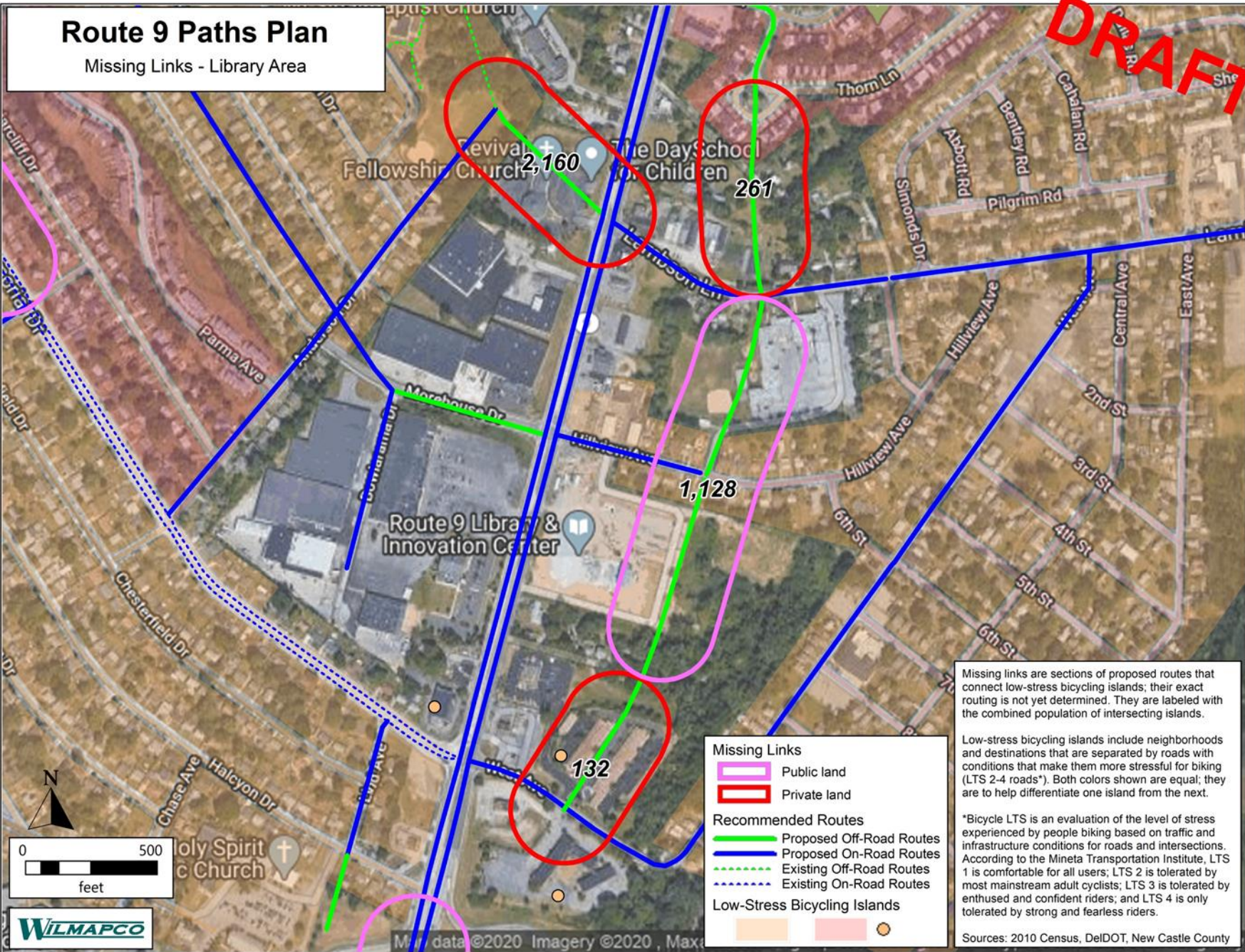


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Route 9 Paths Plan

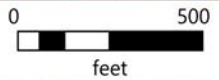
Missing Links - Library Area

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There are many proposed routes near the Route 9 Library, which, in total, could connect over 3600 people.

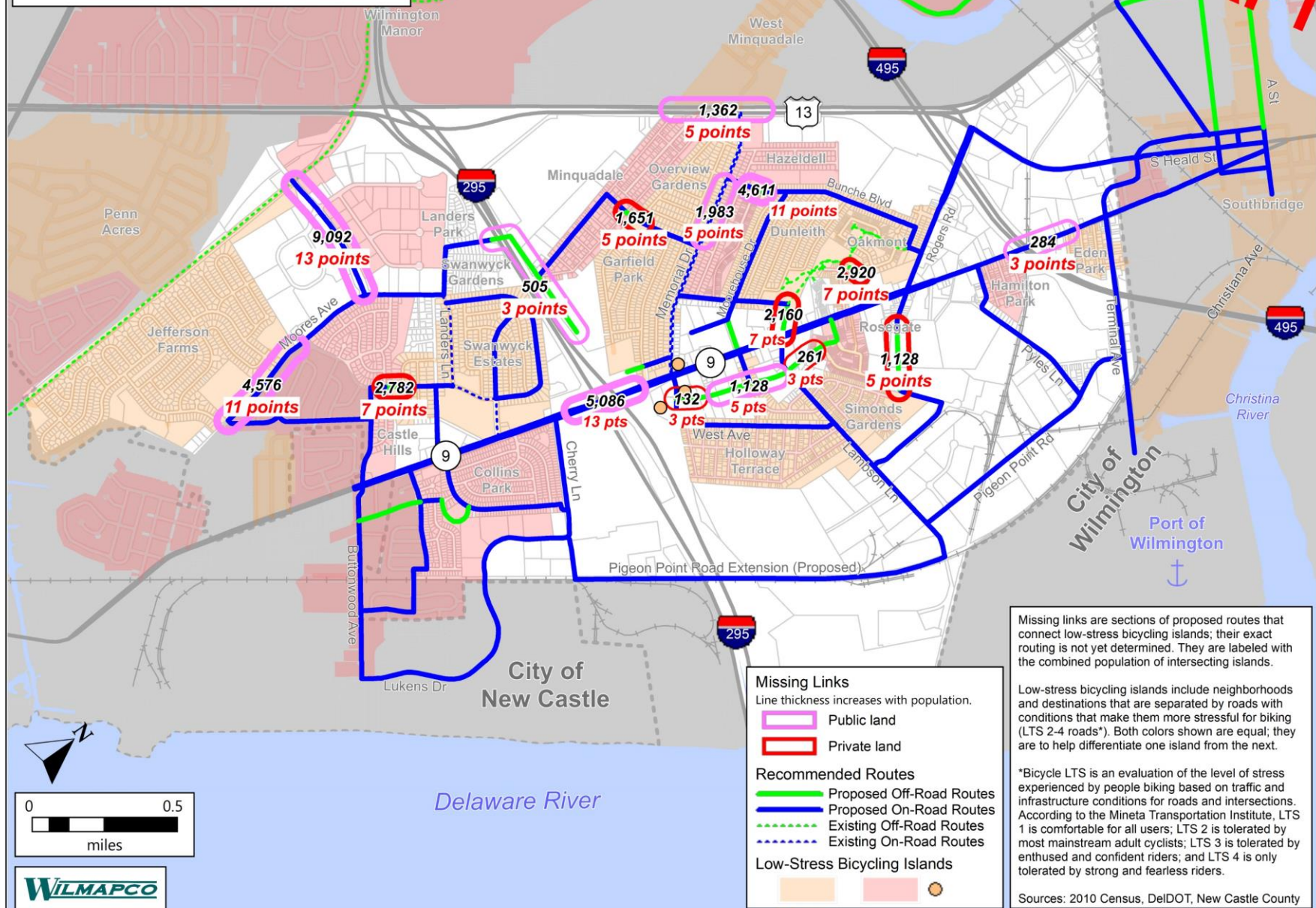
A path connection behind the Route 9 Library could connect to the Rose Hill Community Center and serve as a car-free alternative to biking or walking on Route 9 itself. However, parts of this proposed connection currently cross over private land, so alternative routes may be considered.



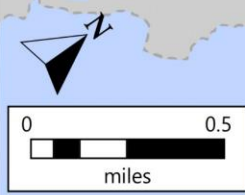
Route 9 Paths Plan

Missing Links

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In order to incorporate the missing links into the prioritization, we gave each missing link a score based on the population connected. Missing links that connect a greater number of people receive more points.



Missing Links
Line thickness increases with population.

- Public land
- Private land

Recommended Routes

- Proposed Off-Road Routes
- Proposed On-Road Routes
- Existing Off-Road Routes
- Existing On-Road Routes

Low-Stress Bicycling Islands

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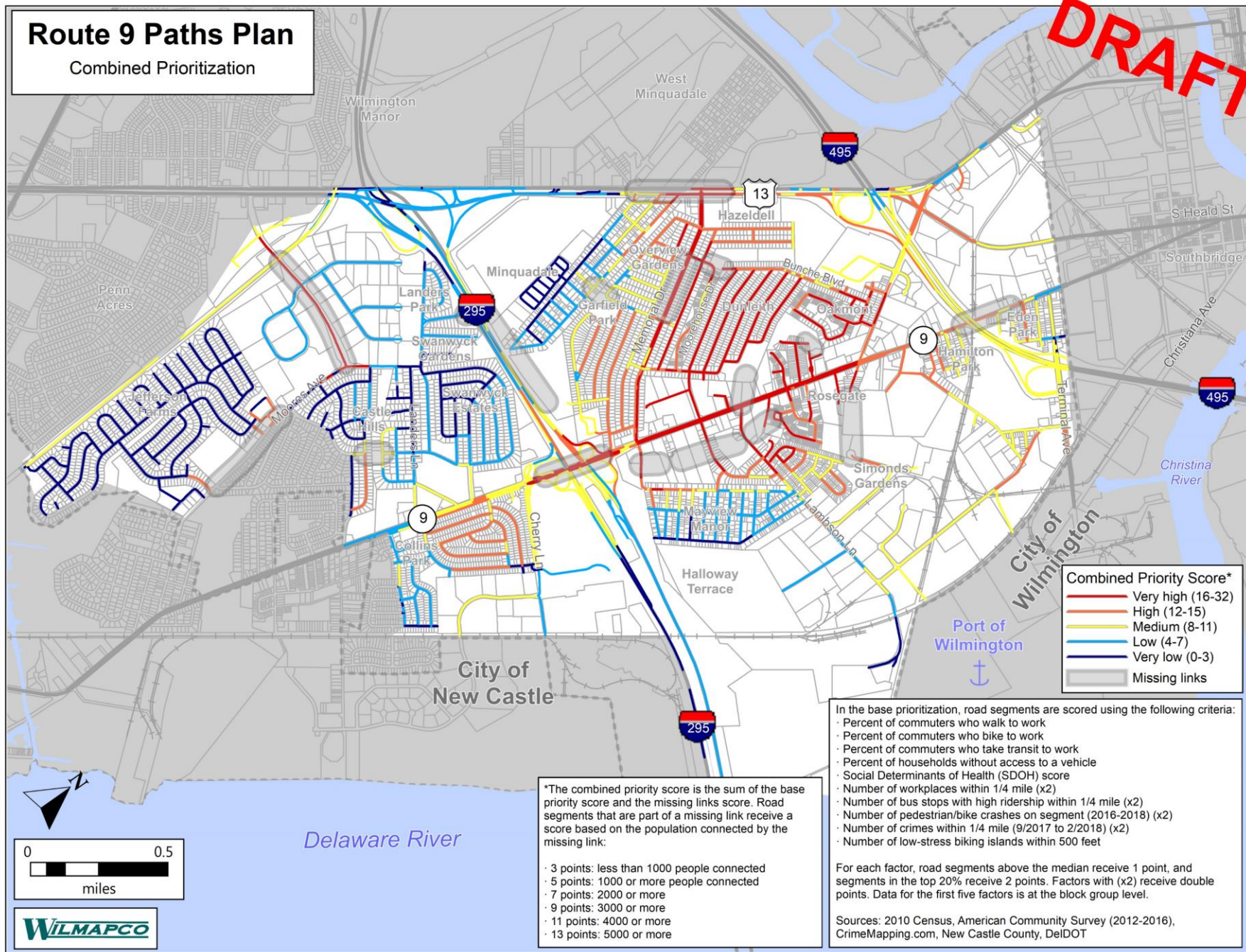
Sources: 2010 Census, DelDOT, New Castle County



Route 9 Paths Plan

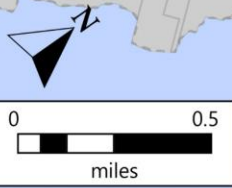
Combined Prioritization

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This combined prioritization map shows the combined priority score of each road segment in the Route 9 corridor, which is the sum of the base prioritization score (shown on slide 6) and the missing links score.

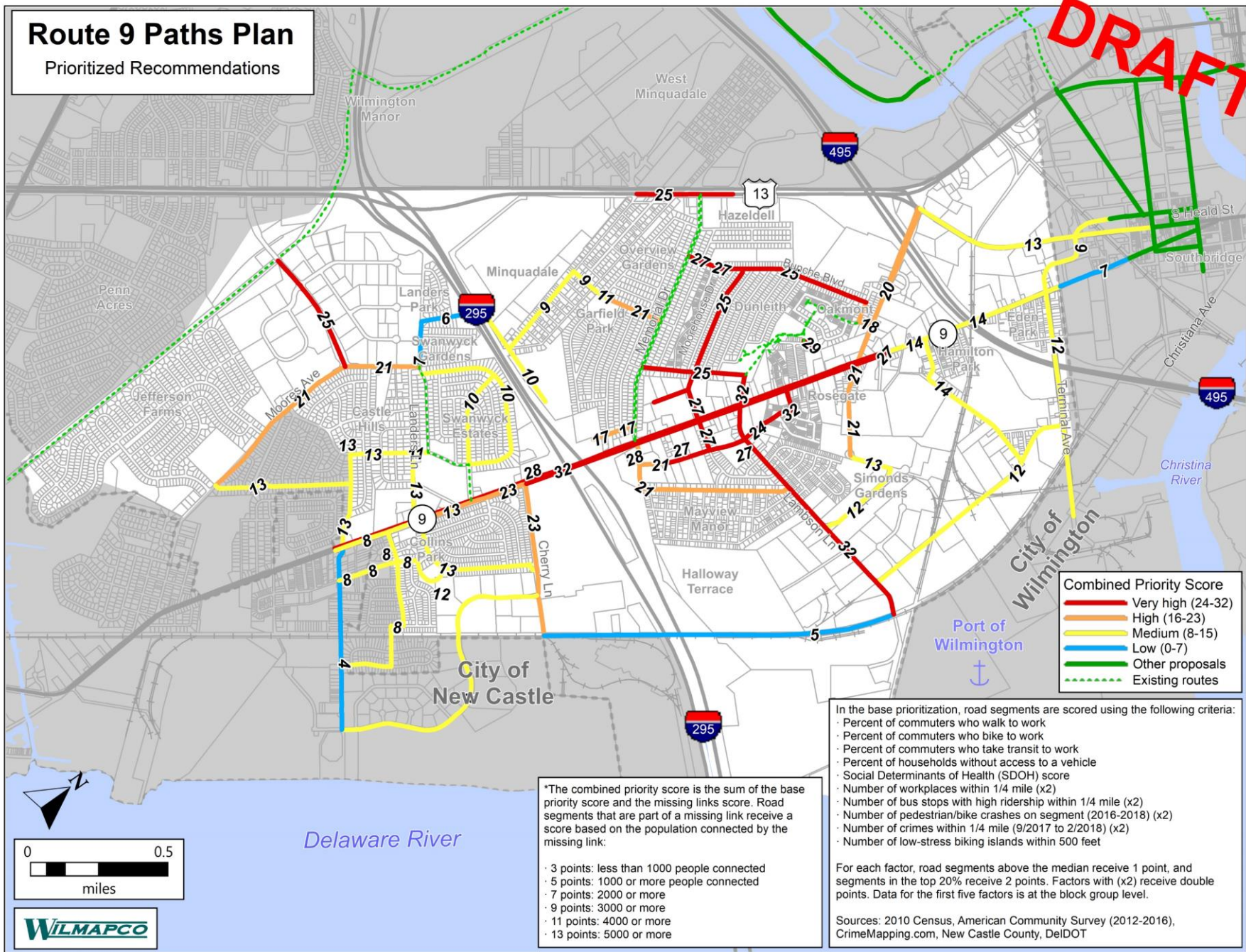
As a result, areas where connections could be made between LTS islands received a noticeable boost in their scores.



Route 9 Paths Plan

Prioritized Recommendations

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This map shows the proposed recommendations from recent plans with their combined prioritization scores.

After the plan is finalized, this prioritization will help guide DelDOT to implement projects in order of priority. Projects with higher scores offer the potential benefit to connect greater numbers of people and communities in a safer manner. Lower scoring projects would also be considered. Design challenges and public feedback during implementation may shuffle some of the prioritization, but in good intention.

We want to hear from you!

Please take a few minutes to complete the [Route 9 Paths Plan Public Survey](#), now available on our website. This survey is an opportunity for you to weigh in on all of the information in this presentation and share your thoughts on walking and biking infrastructure in the Route 9 corridor. Feedback from the survey will be used to help ensure that the Route 9 Paths Plan best meets the needs of the community.

For comments and questions, please contact:

Jake Thompson

jthompson@wilmaco.org



The screenshot shows the WILMAPCO website header with the logo and navigation menu. The main content area features the "route 9 corridor Paths Plan" logo and a section titled "About the Plan" with a paragraph of text.

WILMAPCO
Wilmington Area Planning Council

Home Contact Us News Committees Public Outreach Data & Maps Plans and Reports Calendar

route 9 corridor
Paths Plan

About the Plan

The Route 9 Paths Plan will further develop the concepts for new walking and biking neighborhood pathways proposed in the Route 9 Corridor Master Plan. While these concepts were derived from community feedback and enjoy strong community support, they are high level ideas that would benefit from further thought, detail, and public outreach. This plan will propose a network of walking and biking pathways in the Route 9 Corridor, including on-road connections, off-road connections between neighborhoods, and low-stress neighborhood streets with mixed traffic.

wilmaco.org/route9pathsplan