Chapter 12: Multimodal Needs Assessment

What are Multimodal Transportation Needs?

Chapter 1 defined "multimodal transportation" and explained why this plan focuses on moving people by modes other than the automobile. Pedestrians (including people who use wheelchairs and other mobility devices), bicyclists, scooter riders, and transit passengers are the primary focus of this plan.

Public input as part of this process has shown that Norfolk's residents want a city where walking, riding a bicycle or scooter, and taking transit are safe and easy. They want safe and affordable choices for everyone to meet their daily needs for mental, physical, and financial well-being without having to rely on a car. Achieving this vision implies many changes. Most of Norfolk's streets were built decades ago, long before people envisioned the travel needs of today.

Multimodal transportation needs in this plan refer to improvements that need to be made to Norfolk's streets to achieve that future vision, such as:

- New sidewalks
- New crosswalks
- New bicycle lanes
- New or more frequent bus routes
- New bus-only lanes or other transit-priority treatments
- New shelters, benches, or trash cans at bus stops
- Extended hours of bus service
- Other changes to Norfolk's streets to make it safer and easier to get around without a car

Physical changes to Norfolk's streets are called "capital" needs, meaning they are adding something new to the transportation infrastructure. There are also "operating and maintenance" needs, which refer to money needed to make sure the roads and facilities we have today are kept in good condition, as well as ongoing costs to run bus and light rail transit service.

Transportation needs are not necessarily projects or solutions. A need states a problem, not a specific solution, and could be solved by multiple possible solutions. A key part of this multimodal plan is to identify transportation needs by mode.

New bicycle lanes, like the ones on 35th Street, are an example of a multimodal transportation need.

New amenities and upgrades to bus stops are examples of multimodal transportation needs.

As described below, this was done through a combination of public input, data, and analysis. Figure 12-1 shows an overview of how the needs assessment was built.

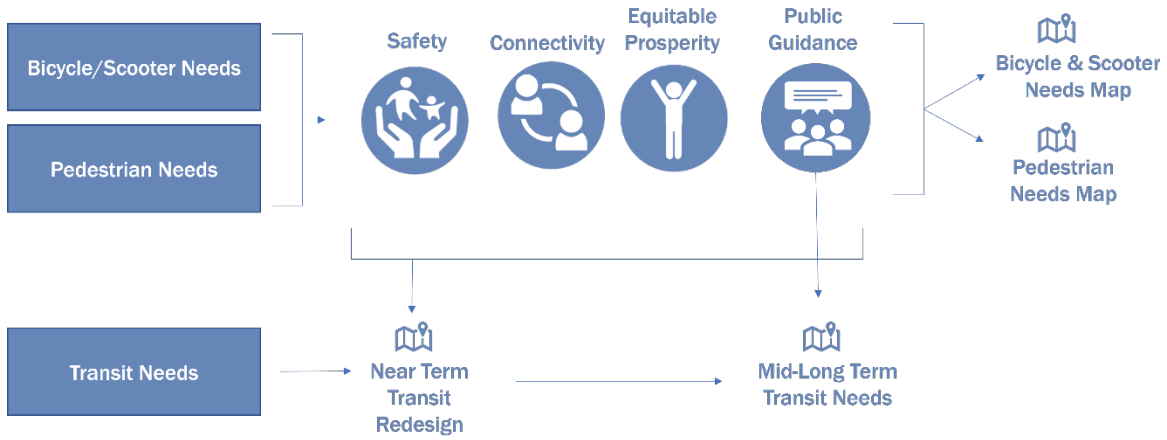
The resulting needs assessment was summarized in the form of maps that show travel need by category for pedestrian, bicycle, and scooter needs. Transit needs were analyzed separately based on the public process and analysis conducted during the Transit System Redesign.

This process yielded a lot of helpful comments, some of which are not a direct part of this multimodal transportation master planning process. As explained previously, this plan is focusing primarily on bicycle, scooter, pedestrian, and transit needs, since many other plans and policies address auto-related issues and needs.

Maintenance and operations comments will be handled by the transit department and public works as part of our ongoing maintenance and operational improvements work. Enforcement comments would be handled by the police department and enforcement departments as part of their ongoing efforts.

Not all needs can be addressed immediately because funding for making improvements is limited and changes to the street can take a long time to design, fund, and construct. This chapter describes the process to identify the most pressing multimodal transportation needs in Norfolk. The program of projects described in Chapter 13 provides a list of projects to address the highest needs and describes funding considerations.

FIGURE 12-1: MULTIMODAL NEEDS ASSESSMENT METHODOLOGY



Pedestrian, bicycle, and scooter needs were determined through public guidance and a data-guided analysis of Safety, Connectivity, and Equitable Prosperity needs. Pedestrian, bicycle, and scooter needs are shown on two sets of needs maps. Transit needs were identified through the transit system redesign process which included public guidance as well.

How were Norfolk's Multimodal Needs identified?

Multimodal needs were identified through a combination of public input and data-driven analysis.

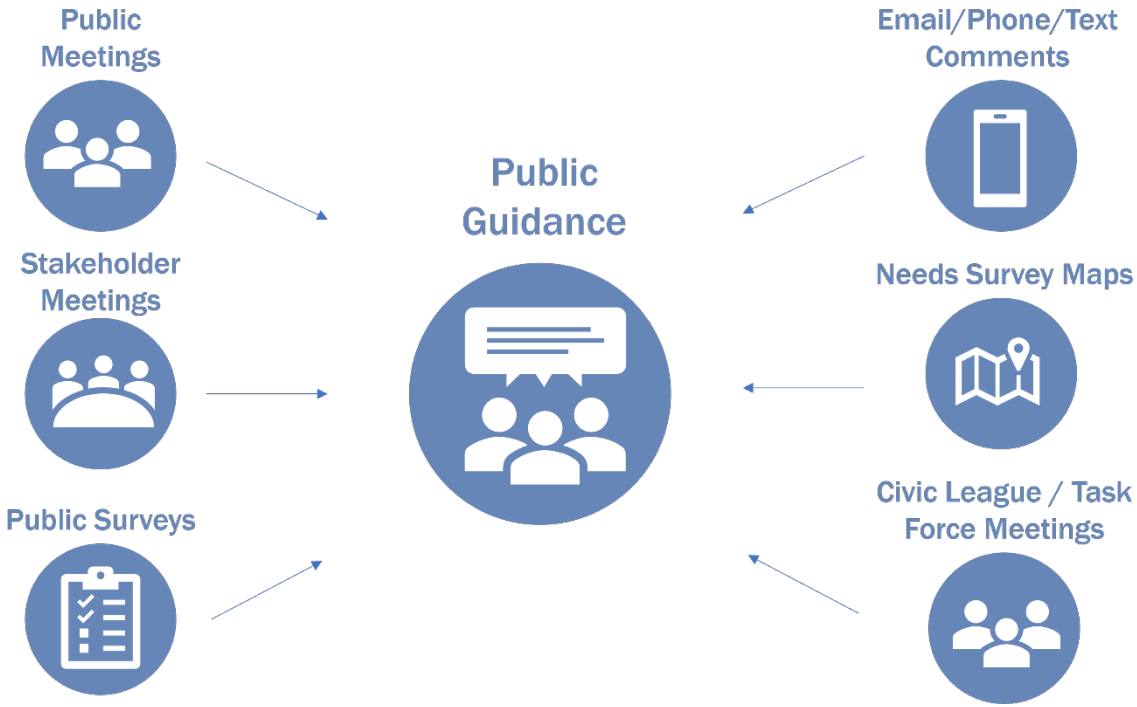
Public Input

As explained in Chapter 3, this Multimodal Norfolk Transportation Master Plan is built on a foundation of public input, and public input was a key component of identifying needs.

Norfolk's residents identified a variety of multimodal transportation needs throughout the development of this plan, including several rounds of outreach. Chapter 3 explains the four rounds of public and stakeholder engagement that occurred throughout the two-year process. Opportunities for input on the multimodal transportation needs included a variety of in-person and online public meetings, mapping exercises, and input at civic league and task force meetings, as shown in **Figure 12-2**.

One of these opportunities included an interactive online map, shown in **Figure 12-3**, through which anyone could drop a pin and identify a need or concern. The map shown in **Figure 12-3** was available for public comment from January through June 2021, in addition to other opportunities to give input throughout the process.

FIGURE 12-2: SOURCES OF INPUT FOR PUBLIC GUIDANCE



Public guidance informing the multimodal needs assessment came from a variety of sources. Norfolk's residents could provide input through civic league meetings, public surveys, written comments, and targeted meetings.

Residents who did not have internet access could identify needs by calling a phone number and leaving a voicemail message.

Public input consisted of specific ideas for improvements as well as general concerns and suggestions. Ideas for improvements included extending existing and providing new on-street bicycle lanes, including repurposing lanes to make them more multimodal on streets like Granby Street and Oceanview Avenue, providing protected crosswalks across multi-lane high speed roads like Hampton Boulevard and Tidewater Drive, installing sidewalks at interstate interchange areas and underpasses, pavement repairs, and more visible and well-lit paths for walking and bicycling.

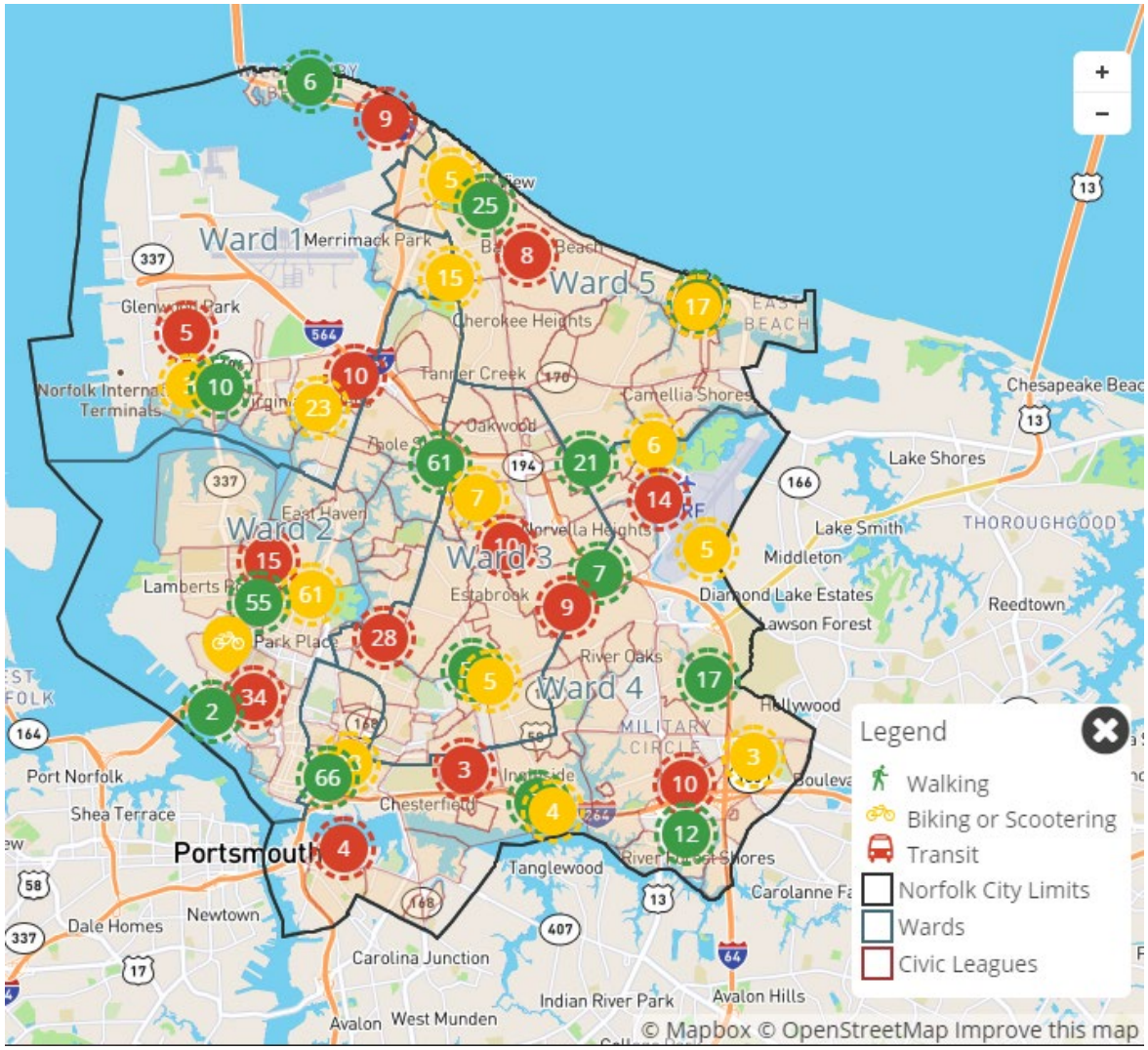
Over 800 comments were received. **Figure 12-4** summarizes the needs comments. All comments were reviewed and categorized into three comment types, as shown in **Figure 12-5**.

New Infrastructure comments on bicycle, scooter, and pedestrian needs were carried forward for incorporation into the program of projects, as described in Chapter 13.

Comments falling under the Maintenance/ Repair/ Operations/ Enhancements and Enforcement/Ordinances categories were reviewed and recorded for future reference and may be addressed through the City of Norfolk's maintenance and enforcement programs.

Comments on transit needs were reviewed and incorporated into the identification of transit needs discussed at the end of this chapter.

FIGURE 12-3: INTERACTIVE ONLINE MAP FOR IDENTIFYING MULTIMODAL TRANSPORTATION NEEDS IN NORFOLK



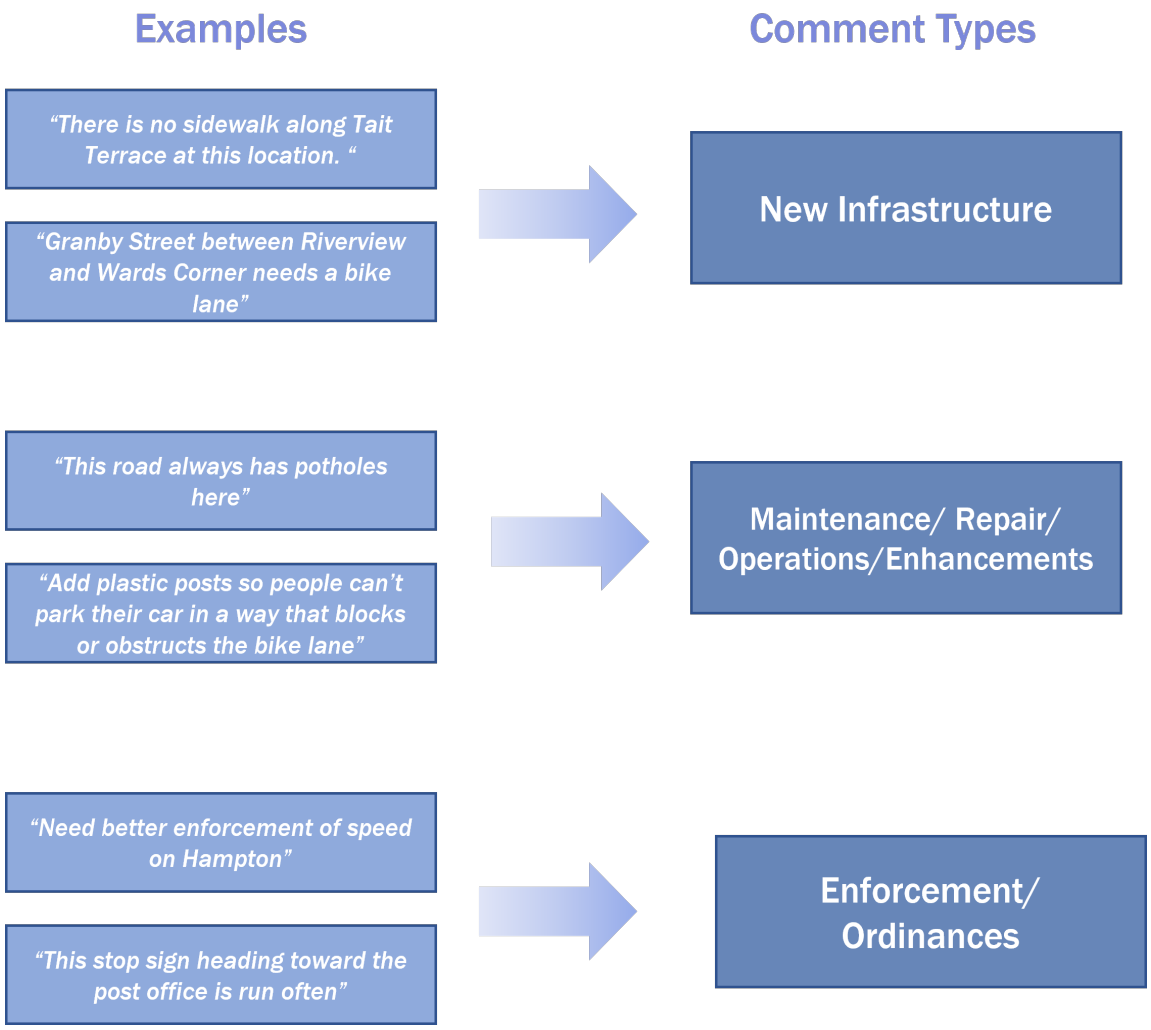
Norfolk's residents identified multimodal transportation needs through an interactive online map. This interactive map was one of several opportunities for residents and other stakeholders to give input and identify needs.

FIGURE 12-4: SUMMARY OF PUBLIC INPUT ON MULTIMODAL NEEDS

The public submitted over 800 comments identifying multimodal needs in Norfolk.

Each comment was also assigned to one or more modes – pedestrian, bicycle/scooter, transit, and auto. As explained in the next section, comments related to pedestrian and bicycle/scooter needs were combined with the pedestrian and bicycle/scooter needs maps that were produced through a data-driven analysis. Comments related to transit needs were incorporated into the transit needs assessment, described later in this chapter. Comments related to autos were recorded and saved for incorporation into future planning efforts.

FIGURE 12-5: PUBLIC INPUT EXAMPLES AND COMMENT TYPES FOR PEDESTRIAN AND BICYCLE/SCOOTER NEEDS



Over 800 comments were received through the online map, meetings, emails, and other input sources. All comments were reviewed and categorized into three comment types.

Data-Guided Analysis

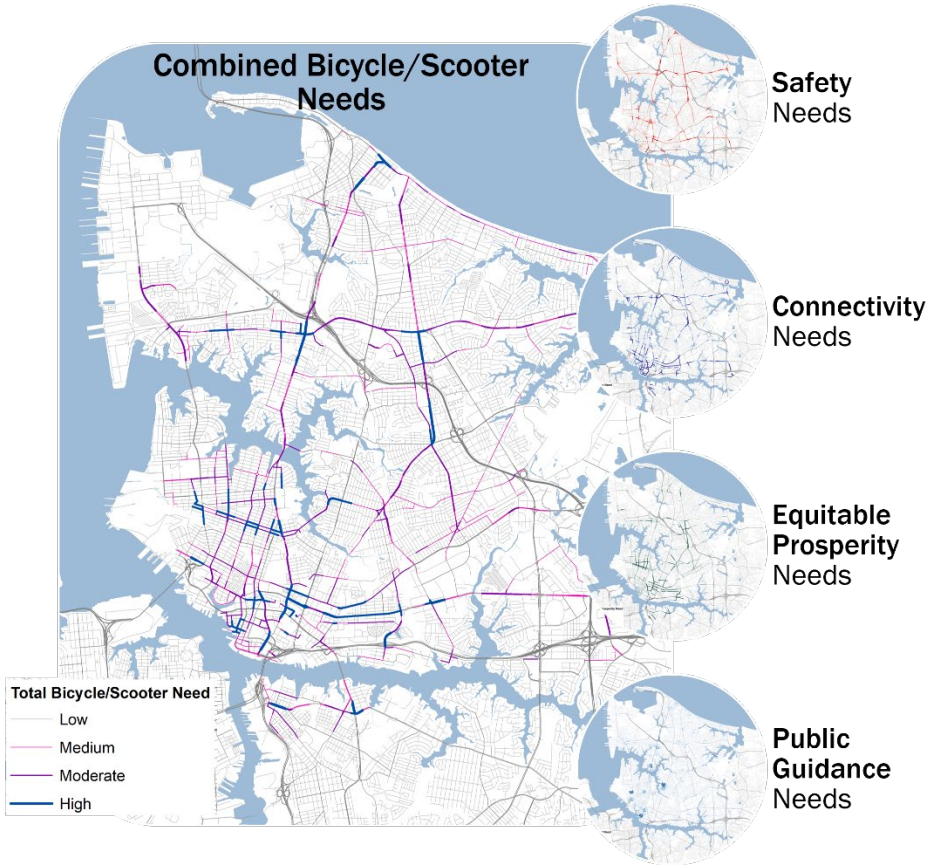
Multimodal transportation needs were also identified through a data-guided analysis. Two different types of analysis were used – one for identifying pedestrian and bicycle/scooter needs, and another for identifying transit needs.

Pedestrian, Bicycle, and Scooter Needs

The data used to identify pedestrian and bicycle/scooter needs relate to the three goals of this plan - Safety, Connectivity, and Equitable Prosperity. The data used to identify pedestrian and bicycle/scooter needs included data on population demographics, activity areas and the impacts of traffic on safety and comfort to users. A full description of the criteria used in the analysis can be found in **Appendix F**.

Each of the needs criteria was overlaid onto a map of Norfolk's streets. As the data from each criterion was overlaid onto the map, a picture began to emerge of the highest need areas in the city for each mode. A composite map was then made showing the sum total of all the needs data for each travel mode. This was shown in the form of a heat map where is the darkest areas had the highest concentrations of needs data. **Appendix F** explains how the needs maps were developed. **Figure 12-6** shows how several different maps were produced and incorporated into the final needs maps.

FIGURE 12-6: HOW THE NEEDS ASSESSMENT MAPS WERE BUILT



The Bicycle/Scooter Needs maps were built from a combination of safety, connectivity, equitable prosperity, and public guidance maps.

The resulting maps of pedestrian and bicycle/scooter needs are shown in **Figure 12-7** and **Figure 12-8**. The maps show individual segments of Norfolk's streets classified into four levels of need – Low, Medium, Moderate, and High – based on the concentrations of needs data from the analysis.

As described in Chapter 13, the pedestrian needs maps and bicycle/scooter needs maps were incorporated into the program of projects.

Figure 12-7: Map of Pedestrian Needs Analysis Results

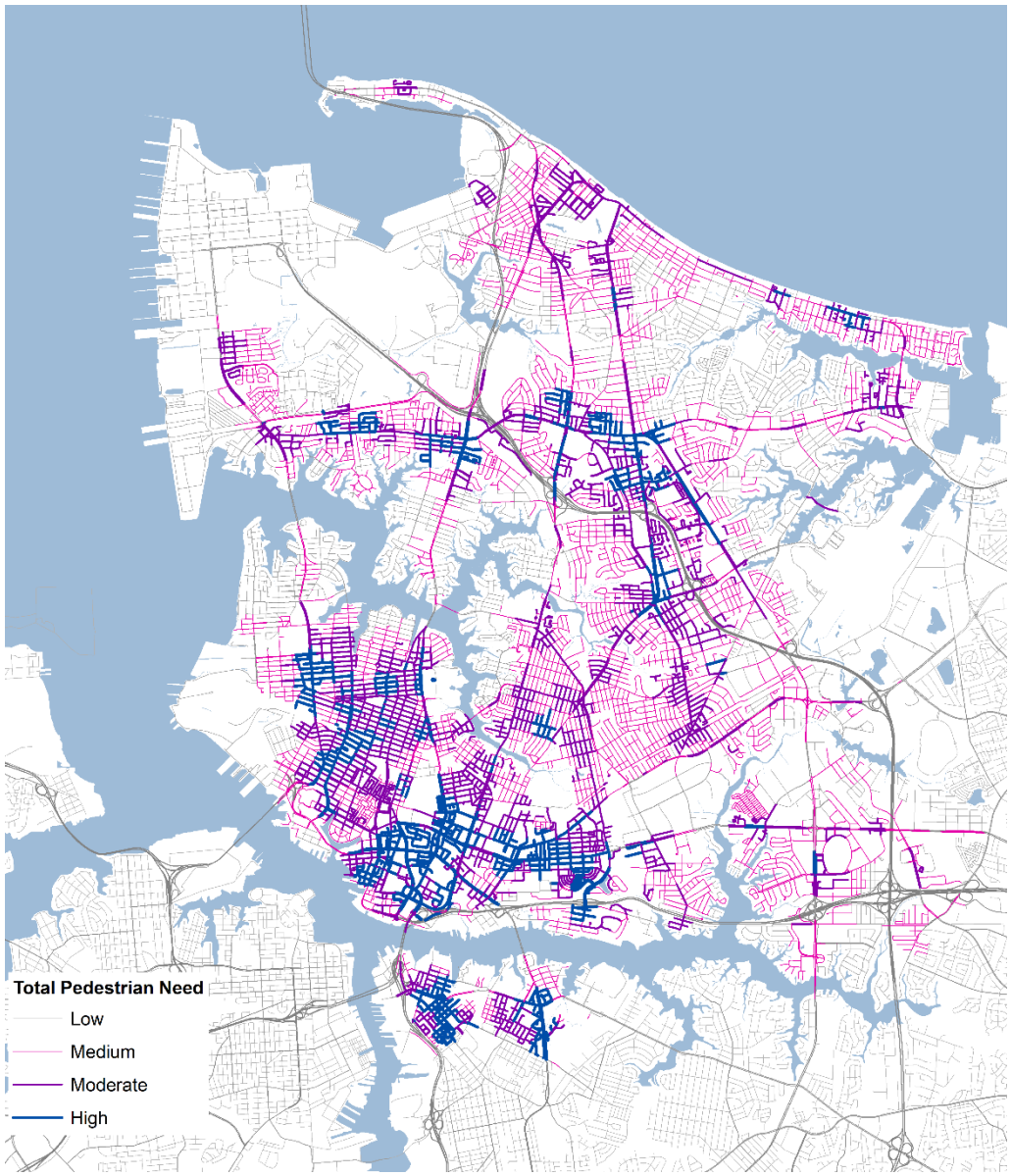
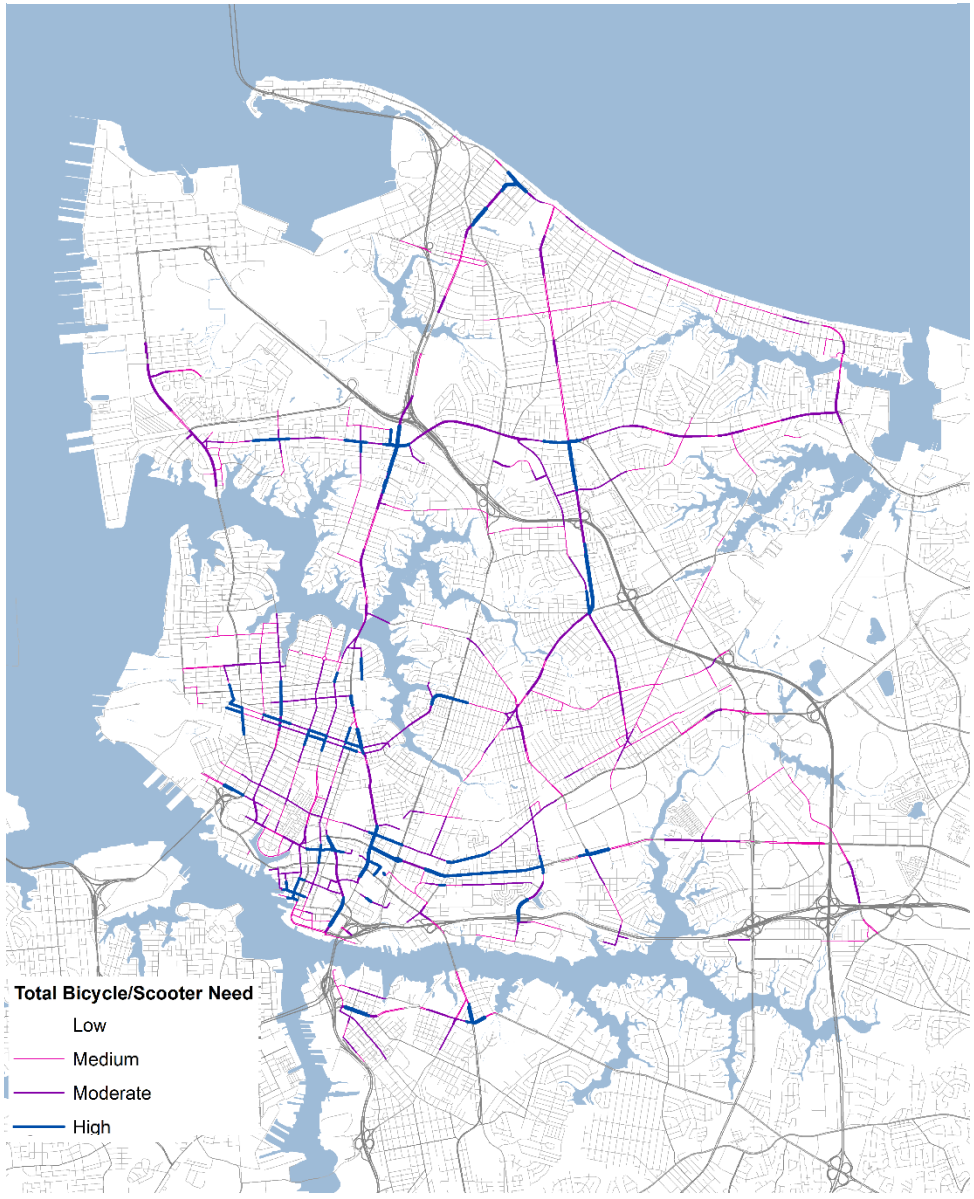


Figure 12-8: Map of Bicycle & Scooter Needs Analysis Results



Transit Needs

Transit needs were identified based on a combination of public comments during the various rounds on engagement during the Multimodal Norfolk process and on technical assessments.

Transit needs can be defined into two broad categories:

1. needs for service, as in where transit service is provided and how, and
2. needs for infrastructure, as in where shelters or transit centers are needed to make it easier to access transit service.

The markets and needs for transit service in Norfolk have been considered throughout the Transit System Redesign process (described in more detail in Chapter 11), and the resulting network maps define where Norfolk will invest in transit service to meet the needs that the City finds sufficiently necessary to serve in the short and long-term.

Through that process key infrastructure needs have been identified to improve the ability to use transit, to improve the speed and reliability of transit, and allow transit to operate more effectively and efficiently within Norfolk.

Key needs identified include:

- Additional shelters and amenities at many existing and planned bus stops.
- Dedicated bus lanes at key choke points where congestion causes delays for bus riders.
- Improved or relocated transit centers to create better connections between bus routes in the city.

STOP AMENITIES

Amenities at stops can be a key part of encouraging higher ridership. Research shows that riders at stops without amenities perceive their wait as more than double the actual time. When riders have shelters and benches at their stops, their perceived wait time drops to only 30% more than actual, and when real-time information is added, the perceived wait time is only 10% more than actual.

A University of Utah study found that stops with shelters, benches, and sidewalk connections had ridership gains compared to stops without such amenities. The same study also found that demand for paratransit service declined where amenities were provided at stops, suggesting that such amenities can shift disabled riders from paratransit to less costly fixed-route service.

As shown in the analysis conducted for the Transit System Redesign Choices Report, many stops in Norfolk that qualify for a shelter or bench under existing HRT policy do not have such amenities. The City is dedicated to ensuring that all stops that meet current HRT policies should have the amenities recommended.

IMPROVED TRANSIT CENTERS

Transit centers are critical places in the transit network: a place where people can make connections between multiple routes, multiplying the usefulness of the network and the freedom and access it provides. Therefore, transit centers need to be located in ways that are easy to get into and out of for buses and safe and comfortable for riders to navigate and use. The improvement of four transit centers in and around Norfolk would significantly improve transit connectivity and the safety and comfort of riders.

The relocation of the current **Evelyn T. Butts Transit Center** is critical to improving access in the northern parts of Norfolk. A new facility located near Little Creek Road and Sewells Point Road would be more central to where transit routes need to connect, closer to commercial and retail outlets in the corridor, larger to handle more buses for more connections, and safer and more comfortable with more amenities to provide shade, benches, information, and other amenities for riders.

The current **Pretlow Library** stop is inadequate to meet the needs of more frequent buses serving this area in the future. A new set of stops in front of the library would be safer and provide easier and faster circulation for buses terminating at this location and for buses passing through.

The current **Wards Corner Transit Center** is awkwardly located between I-564 and the railroad, disconnected from the surrounding neighborhoods and retail areas. It also forces buses going through the facility to make extra turns through a congested area to get into and out of the facility, slowing buses down and delaying riders. In the long-term, this transit center should be relocated to either an on-street facility along a redesigned Admiral Taussig Boulevard site or into the property of the former Farm Fresh grocery store at Admiral Taussig Boulevard and Little Creek Road.

Although the current **Liberty Street and Seaboard Avenue** Transit Center is located in Chesapeake, it is less than ¼ mile south of the City of Norfolk and it is an important connection point for many routes that come from or go to Norfolk and connect to regional destinations. In the long-term, this transit center will be the connection point for two frequent routes that serve South Norfolk. The current location forces long deviations for buses to circulate around and reach the shelters that are only on the northbound side of Liberty Street. Also, in the long-term, the more natural convergence point for bus routes in this area is the intersection of Liberty Street and Poindexter Avenue. While it is not within the City of Norfolk, it is valuable to City residents and businesses to have more effective and efficient transit connections to and from destinations across the region. A relocated transit center closer to Liberty Street and Poindexter Avenue in Chesapeake would be beneficial to the City and the entire region.

DEDICATED LANES FOR TRANSIT

Norfolk has limited road space and it would be highly destructive to expand roadways. More and more people are trying to use a fixed amount of road space. If they are all in cars, they simply will not fit in the space available. The result is congestion, which cuts people off from opportunity and strangles economic growth. *To make the most efficient use of the limited road space, the most space efficient modes (buses, bikes, and walkers) need dedicated space at the most severe choke points to maximize access to opportunity for the most people most efficiently.*

For buses, it is best to have dedicated space where the frequency of service is high and there is a high likelihood that buses would be caught in congestion without a dedicated lane. The following corridor segments are high priorities for dedicated lanes or queue jump lanes to allow buses to avoid congestion:

- Brambleton Avenue from Park Avenue to Church Street (13 buses per hour per direction in 2030)
- Boush Street from Brambleton Avenue to City Hall Avenue (4 buses per hour per direction in 2030)
- St. Pauls Boulevard/Monticello Avenue from Virginia Beach Boulevard to Main Street (approximately 14 buses per hour per direction in peak segment).

Chapter Summary

The needs assessments and resulting needs maps described above give an objective picture of the highest need areas for transportation improvements that can be used to guide future transportation investments and priorities for the city.

Having this analysis ensures that there is an objective framework against which to measure the value and importance of proposed improvement projects. Candidate projects in the future can be compared to these needs maps to see how they line up with areas that both public input and data assessment have shown to be the most significant need areas in the city.

The needs assessments and resulting maps were used to identify higher priority projects for funding assessments in the program of projects, as described in the next chapter.