DVRPC

WHITE PAPER

Exploring Ferry Access on the Delaware River







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Appendix

Appendix A: New Jersey Attractions

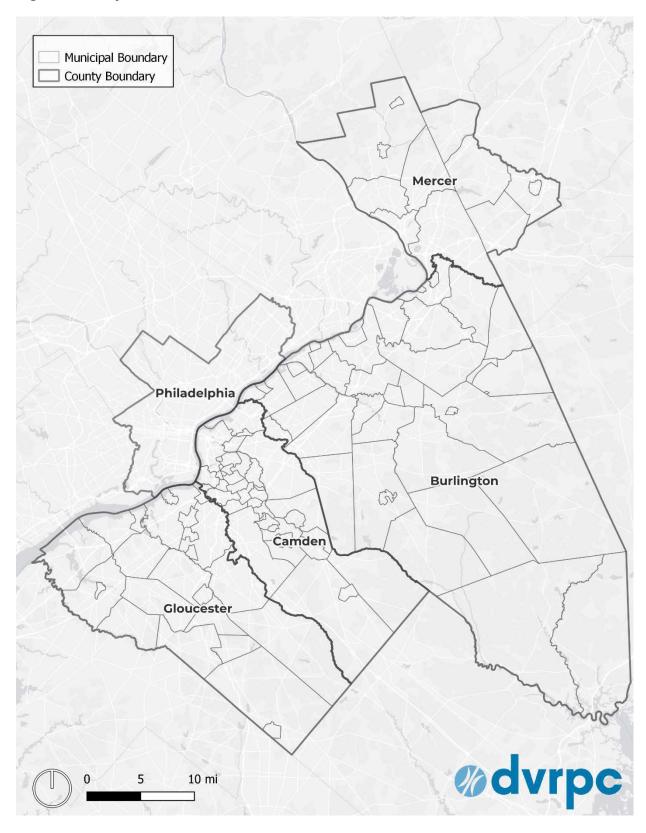
Introduction

Greater Philadelphia has a long history of ferries dating back to the 17th century. Prior to bridges, tunnels, and expressways, ferries were essential to move throughout the region and played a key role in the formation of towns and cities. During the 20th century, however, the development of bridges like the Ben Franklin Bridge (1926), Tacony-Palmyra Bridge (1929), and the Walt Whitman Bridge (1957) led to the decline of ferry services in the region (Nepa 2015).

The Delaware Valley Regional Planning Commission (DVRPC) previously evaluated potential ferry service in the *Gloucester County Ferry Service Study* (2007), which identified opportunities for new ferry service between Gloucester County and points of interest in Pennsylvania. The potential benefits and challenges outlined in the 2007 study include an alternative form of transportation, reduced air pollution and congestion, increased connectivity, and support for existing and new development. Potential challenges include parking availability, increased traffic in local communities, the competitive cost of driving, access to Center City Philadelphia, and funding. This white paper analysis will highlight that the potential benefits and challenges are unchanged.

At the request of Burlington County officials, DVRPC staff explored the feasibility of adding a seasonal ferry service as an additional transportation option to promote tourism between Old City Philadelphia and Burlington, Camden, Gloucester, and Mercer counties in New Jersey. The geography focus of this analysis is shown in Figure 1. The existing RiverLink Ferry operates seasonally between Old City (Philadelphia) and Camden City. This additional seasonal service explores an expansion of service to points north in Mercer County and points south in Gloucester County. To understand potential schedules, this analysis conducted five trip scenarios for further study.

Figure 1: Study Area



Data Sources and Methodology

This section outlines the data sources utilized, methodologies, and assumptions.

For the purposes of this analysis, the term *access* has two definitions. First, access is used to refer to physical accessibility. For example, a tourist destination may exist on the banks of the Delaware River, but if there is no dock location nearby, then this destination would not be considered physically accessible under current conditions. It is possible that a dock could be built around this area to increase accessibility, but that will have to be factored in during the service option decision-making process. Second, access is also used to evaluate time. Although seasonal ferry routes do not value travel time as commuter services, there may be certain thresholds where the ferry is no longer considered accessible relative to other options.

Data Source: Tourist Attractions

Identification of potential tourist attractions was used to evaluate where there may be demand for additional ferry service from Philadelphia. Approximately 242 tourist attractions were identified using data from Visit South Jersey and Visit Princeton-Mercer. (The full list of attractions used for this analysis is available in Appendix A.)

A three-prong tiering system was created to help prioritize potential dock locations and the accessibility of potential attractions. Tier classifications were used to evaluate trips from Philadelphia to New Jersey, capturing tourist attractions that Philadelphia tourists may visit. Because the trip via ferry is only one half of the trip, drivesheds around each dock were calculated with proximate population and travel demand to Philadelphia for each dock. (The driveshed analysis results are explained in greater detail on page 12.)

Tier 1 attractions should be prioritized because they require a short walk and are considered the most accessible from Old City (Philadelphia). Since attractions that fall into Tiers 2 and 3 rely on a transfer to some other mode, they were used to evaluate secondary benefits of a service (e.g., the number of attractions within a 15- or 30-minute drive of all docks in a scenario). Attractions symbolized by tier are shown in Figure 2.

Tier Classification

Tier 1

Included in the top tier are tourist destinations that are accessible via walking. This was accomplished by establishing a one-mile walkshed using the sidewalk network around potential dock locations. A one-mile walkshed was established around the potential dock location that established a 20-minute walk at a pace of 3.5 miles per hour.

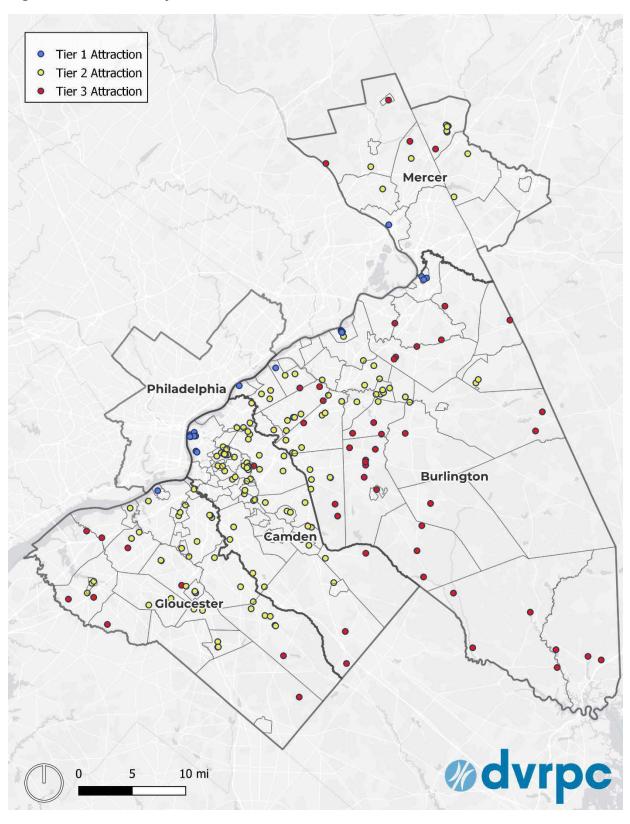
Tier 2

Included in the second tier are tourist destinations that require an additional trip mode to the ferry ride. It is assumed the second mode will be public transportation.

Tier 3

Included in the third tier are tourist destinations that will either be three-seat trips or accessible only via private vehicles, given the lack of public transit options.

Figure 2: Attractions by Tier



Sources: DVRPC, 2022; Visit South Jersey, 2022; Visit Princeton-Mercer, 2022

Data Source: Household Travel Survey (2012)

The second part of the analysis needed to determine travel behaviors and patterns. To estimate travel demand in both directions across the river (including the reverse trip) to the identified tourist attractions, non-work recreational trips between Philadelphia and Traffic Analysis Zones (TAZs) in Burlington, Camden, Gloucester, and Mercer counties were queried from the dataset. TAZs were used because they rely on real-world data (in this case, the Household Travel Survey (HTS) travel survey) to extrapolate travel trends.

In addition to travel demand, drive-time isochrones (polygons on a map that represent travel time) were generated, which are used to calculate the population, number of attractions, and HTS travel demand within 15- and 30-minute drivesheds, respectively. These drivesheds serve two purposes: to determine the feasibility of reaching attractions from a dock via public transit or rideshare (to expand the number of attractions accessible from each dock), but also to understand the travel demand for the inverse: trips that originate in New Jersey but might end in Camden or Philadelphia.

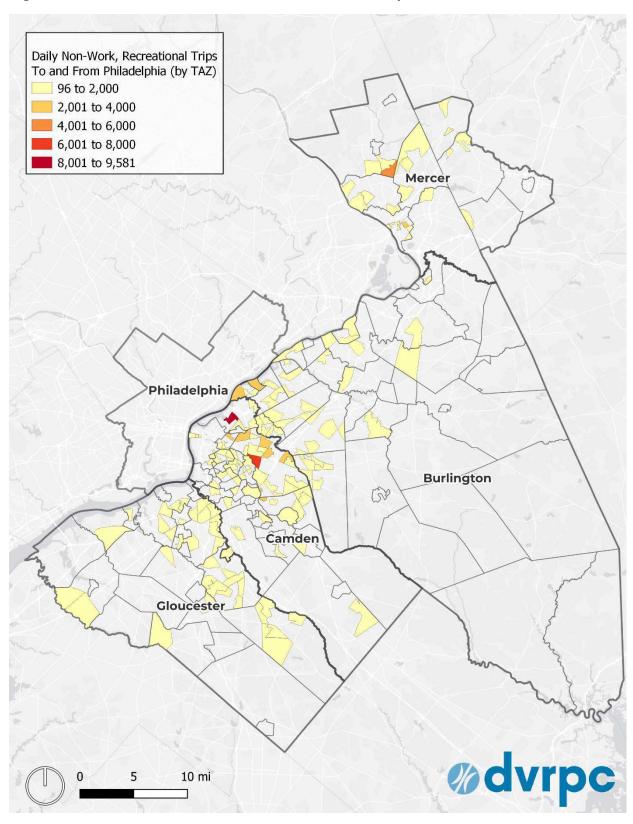
What is the Household Travel Survey (HTS)?

The HTS collected data about the daily travel behaviors of residents in Southern New Jersey and Southeastern Pennsylvania to determine how to improve roads, reduce traffic congestion, enhance walking and bicycle paths, and upgrade public transportation. The HTS includes all trip types and modes, and provides estimates of trips serving many destinations and purposes. Randomly selected participants used a travel diary to record how, where, and when they traveled for a single day. This data was then extrapolated to the population at large.

These trips are more likely to start with a private vehicle than trips that start in Center City Philadelphia, so drive times to docks were calculated and included.

Figure 3 shows non-work recreational trips in both directions between Philadelphia and New Jersey. For New Jersey, all TAZs in the study are included and analyzed. For Philadelphia, only trips to TAZs in greater Center City were evaluated, as Center City contains the greatest number of tourist destinations and hotels. TAZs in Philadelphia were also grouped together (and are not shown in Figure 3) because the purpose of this study is to evaluate demand to and from New Jersey, rather than to and from specific TAZs in Philadelphia. The area with the highest recreational travel demand along the river is the Pennsauken/Palmyra area. Of the HTS trips shown in Figure 3, 81 percent use private automobiles.

Figure 3: Recreational Travel Demand Between Philadelphia and NJ TAZs



Ferry Feasibility Considerations

This section outlines five considerations for potential seasonal ferry service. They include infrastructure, accessibility, cost and revenues, travel times, and environmental factors pertaining to the Delaware River. Each of these considerations must be explored further in order to determine if a seasonal ferry service is viable for the geography identified in this analysis.

Infrastructure

For this analysis, four major components of relevant infrastructure were considered: docks, transit routes, Circuit Trail network, and the sidewalk network. These components are important for multimodal access to and from a potential ferry service.

1. Docks

Approximately 51 existing docks along the Delaware River were inventoried. Aerial photography from Near map was used to locate existing docks. U.S. Coast Guard ship activity data was used to determine which docks were used by freight or other commercial activity versus which were primarily recreational. The analysis showed that 18 docks are used for freight, resulting in 31 potential ferry dock locations. Two potential docks were added for consideration: (1) Bordentown Township, where a new park plan is likely to spur development; and (2) Pennsauken Township, where the Atlantic City Line and the River LINE meet. All 33 docks considered for this analysis (31 existing + 2 proposed/planned), along with tourist attractions in the study area, are shown in Figure 4. (Note: Ownership of docks was not considered and would be a necessary component of further evaluation.)

2. Transit Routes

Transit stops and connections were the second infrastructure network taken into consideration and used as a consideration for a potential new dock in Pennsauken and Tier 2 attractions. The transit route network is shown in Figure 5.

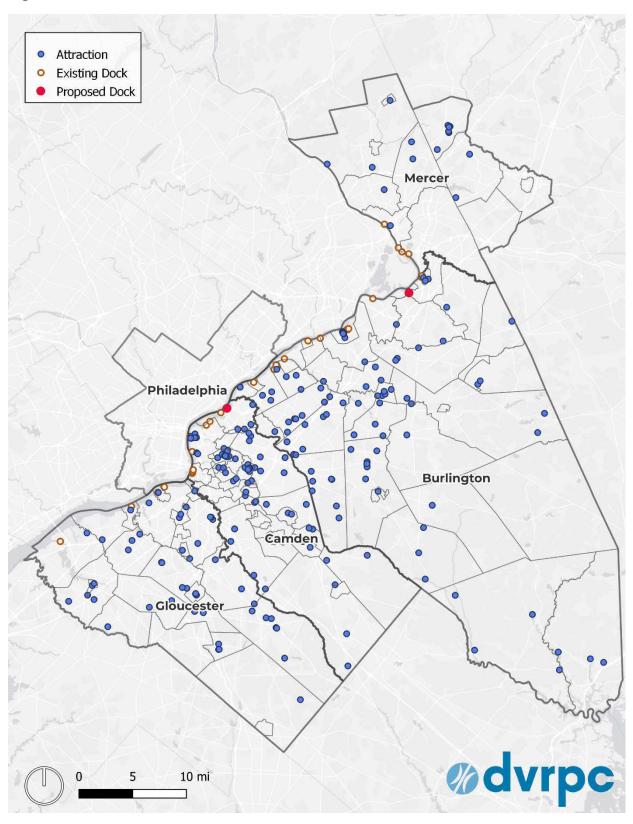
3. Circuit Trail Network

Circuit trails were used not only as a consideration to determine walkability from the docks but also for access to potential development along the waterfront in Bordentown Township that would create a park and connect sections of the Circuit Trail network. The Circuit Trail network is shown in Figure 6.

4. Sidewalk Network

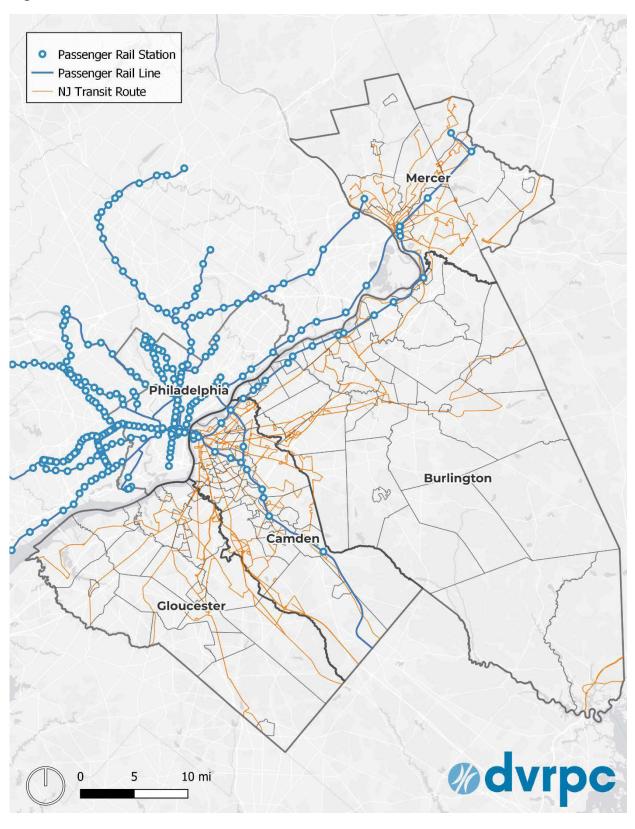
DVRPC's sidewalk network dataset was used to assess walkability around and to the docks. For the purposes of the walkshed analysis, trails were also considered part of this network. The regional sidewalk network is shown in Figure 7.

Figure 4: Docks and Tourist Attractions Considered



Sources: DVRPC, 2022; Visit South Jersey, 2022; Visit Princeton-Mercer, 2022

Figure 5: Transit Routes



Source: DVRPC, 2022, NJTransit (2020), SEPTA (2020)

Figure 6: Circuit Trail Network

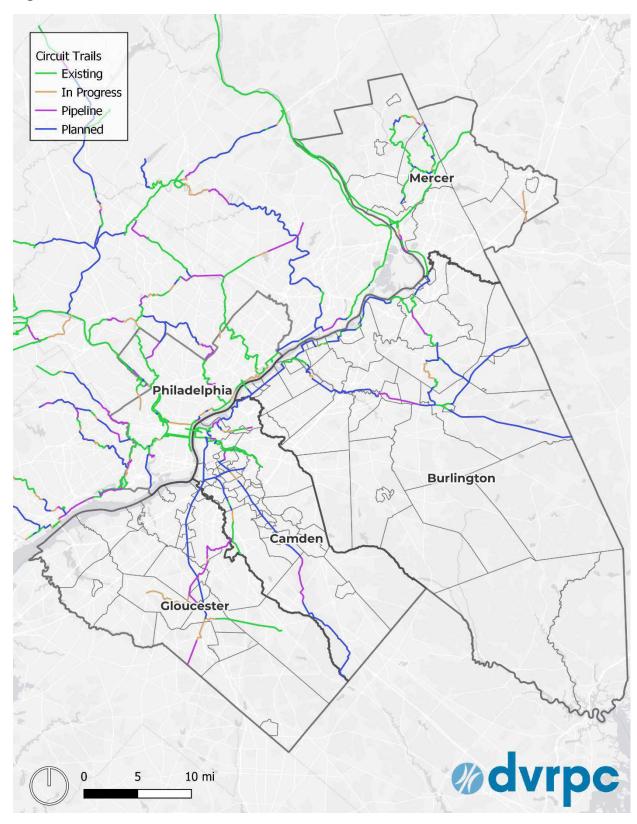
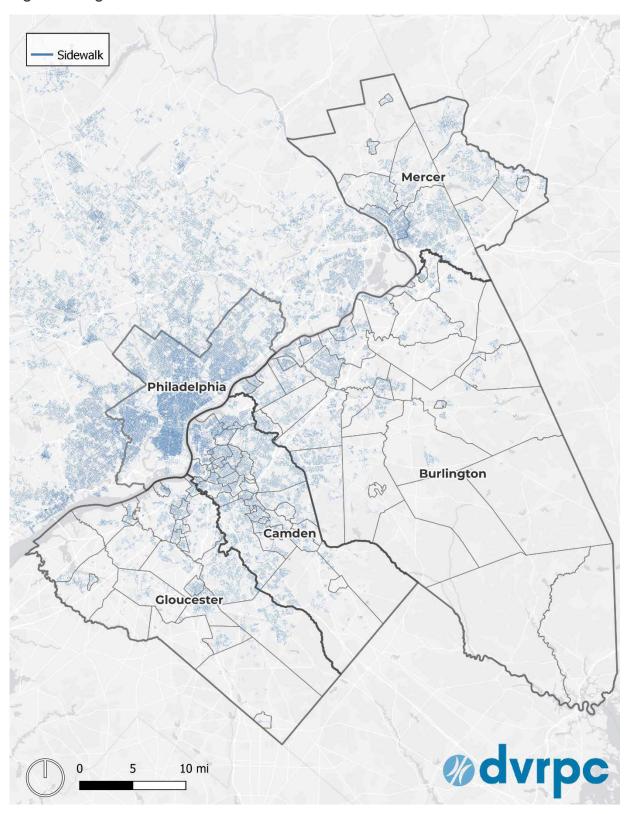


Figure 7: Regional Sidewalk Network



Accessibility

To understand which docks are most accessible, existing docks (plus two potential docks) were analyzed for walkability using the existing segments of the trail network as shown in Figure 6 and Figure 7. However, determined travel time is critical to assess accessibility. Therefore, isochrones were used to understand and display potential travel time.

What is an Isochrone?

An isochrone is a diagram on a map that shows travel time along a network assuming a certain speed.

Isochrone Analysis

A one-mile isochrone walkshed was created around each dock, which amounts to approximately a 20-minute walk for a person traveling at 3.5 miles per hour. Isochrones were then evaluated, and destinations were aggregated by isochrone. The isochrone analysis is shown in Figure 8.

Camden City had the highest number of attractions (10) within walking distance of a dock. Burlington City had five destinations, and Bordentown City had three. Other municipalities had one or fewer destinations within a one-mile walk of their respective docks.

Although walkshed attractions are the most directly accessible from a ferry, drivesheds acknowledge that rideshare or transit could extend the ferry's reach. Drivesheds were also included to capture nearby population and HTS travel data, primarily for estimating potential demand in the inverse direction (from a particular dock to Philadelphia or Camden).

Table 1 highlights the results of the driveshed isochrone analysis for each dock surveyed, ordered from the southernmost dock (Logan Township) to the northernmost (Trenton). The columns representing trips show daily non-work recreational trips to areas that are within the 15- or 30-minute driveshed according to the HTS. These columns combine demand both to and from Philadelphia. Data included for the isochrone analysis includes tourist attractions (Appendix A) and population data (aggregated at the TAZ level from the Census Transportation Projects Program). (Note: When interpreting the table, care should be taken not to combine the results of multiple docks in the same municipality as there is overlap between the isochrones of each dock.)

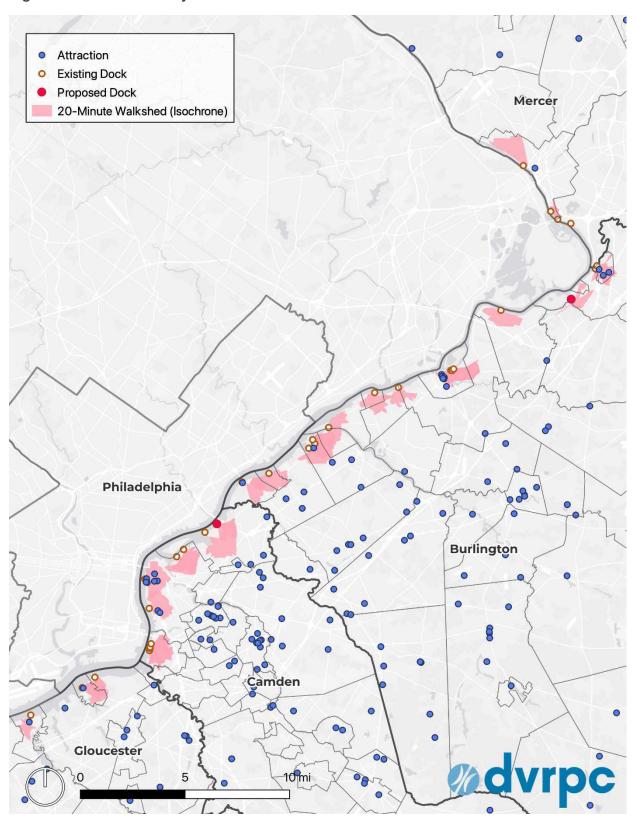
Table 1: Driveshed Isochrone Analysis

| | | Trips (Drive) | | Attractions | | | Population (Drive) | |
|-------------------------|------------|---------------|---------|--------------------|-----------------|-----------------|--------------------|-----------|
| Municipality | Dock ID | 15 min | 30 min | 1-mile walkshed | 15 min drive | 30 min drive | 15 min | 30 min |
| Logan Township | 0 | 3,868 | 16,350 | 0 | 11 | 40 | 48,970 | 304,230 |
| Paulsboro Borough | 7 | 4,680 | 97,345 | 1 | 15 | 106 | 125,420 | 717,884 |
| National Park Borough | 12 | 30,106 | 113,137 | 1 | 37 | 139 | 287,695 | 889,414 |
| West Deptford | 13 | 29,650 | 113,137 | 0 | 35 | 138 | 275,460 | 882,389 |
| Gloucester City | 16 | 76,448 | 116,519 | 0 | 67 | 159 | 474,170 | 1,003,539 |
| Gloucester City | 17 | 76,448 | 116,519 | 0 | 67 | 159 | 474,170 | 1,003,539 |
| Gloucester City | 18 | 84,229 | 116,519 | 0 | 68 | 157 | 463,480 | 1,003,164 |
| Gloucester City | 19 | 74,359 | 116,519 | 0 | 66 | 155 | 460,950 | 1,005,144 |
| Camden City | 22 | 79,327 | 113,633 | 2 | 61 | 152 | 428,370 | 985,684 |
| Camden City | 26 | 76,790 | 114,250 | 8 | 61 | 146 | 400,100 | 963,019 |
| Camden City | 27 | 77,692 | 113,677 | 0 | 63 | 155 | 384,485 | 964,129 |
| Camden City | 28 | 77,593 | 113,677 | 0 | 63 | 156 | 383,470 | 960,809 |
| Pennsauken Township* | 991 | 72,843 | 112,473 | 0 | 70 | 150 | 381,960 | 933,599 |
| Pennsauken Township | 29 | 79,430 | 112,865 | 0 | 74 | 157 | 416,295 | 962,809 |
| Palmyra Borough | 33 | 70,143 | 109,148 | 1 | 63 | 149 | 342,590 | 876,409 |
| Riverton Borough | 34 | 66,038 | 108,289 | 0 | 51 | 148 | 337,855 | 860,744 |
| Delran Township | 35 | 38,547 | 105,228 | 1 | 39 | 146 | 294,940 | 830,810 |
| Delran Township | 36 | 38,398 | 105,228 | 0 | 39 | 142 | 278,560 | 817,485 |
| Delran Township | 37 | 38,398 | 105,228 | 0 | 39 | 142 | 278,560 | 817,485 |
| Delanco Township | 38 | 27,061 | 104,279 | 0 | 33 | 139 | 237,550 | 773,590 |
| Beverly City | 39 | 16,900 | 92,728 | 0 | 32 | 133 | 201,390 | 760,455 |
| Edgewater Park | 40 | 11,134 | 87,434 | 0 | 26 | 130 | 188,595 | 761,385 |
| Burlington City | 41 | 5,608 | 66,605 | 5 | 32 | 99 | 196,140 | 800,485 |
| Burlington City | 42 | 5,608 | 66,605 | 5 | 32 | 99 | 196,140 | 800,485 |
| Burlington City | 43 | 5,608 | 66,605 | 5 | 32 | 99 | 196,140 | 800,485 |
| Florence Township | 44 | 3,735 | 30,812 | 0 | 16 | 67 | 107,410 | 645,870 |
| Bordentown Township* | 992 | 7,615 | 27,575 | 0 | 16 | 70 | 224,590 | 688,340 |
| Bordentown City | 45 | 7,096 | 22,027 | 3 | 8 | 60 | 264,965 | 678,870 |
| Bordentown City | 46 | 7,096 | 22,027 | 3 | 8 | 61 | 269,065 | 679,120 |
| Hamilton Township | 47 | 6,980 | 16,894 | 0 | 5 | 33 | 243,185 | 498,185 |
| Hamilton Township | 48 | 14,084 | 18,632 | 0 | 6 | 42 | 301,470 | 588,010 |
| Trenton City | 49 | 14,084 | 18,632 | 0 | 6 | 42 | 301,470 | 588,010 |
| Trenton City | 50 | 14,084 | 16,582 | 0 | 8 | 31 | 284,850 | 494,960 |

Sources: DVRPC, 2022; Visit South Jersey, 2022; Visit Princeton-Mercer, 2022

^{* =} new/proposed dock

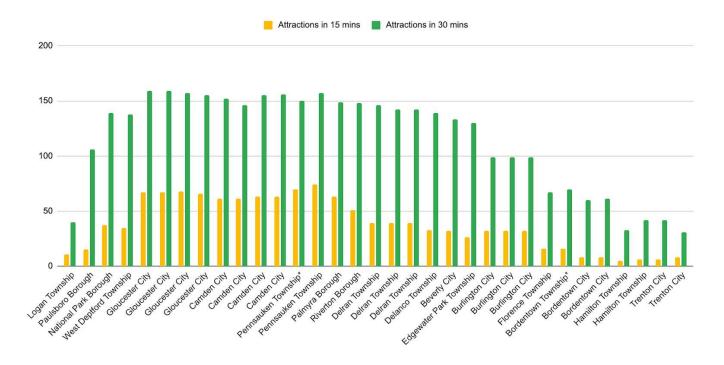
Figure 8: Isochrone Analysis



Sources: DVRPC, 2022; Visit South Jersey, 2022; Visit Princeton-Mercer, 2022

Figure 9 shows the number of attractions within 15- and 30-minute drivesheds respectively. Attractions are more concentrated between Gloucester City and Palmyra, particularly within a 15-minute drive.

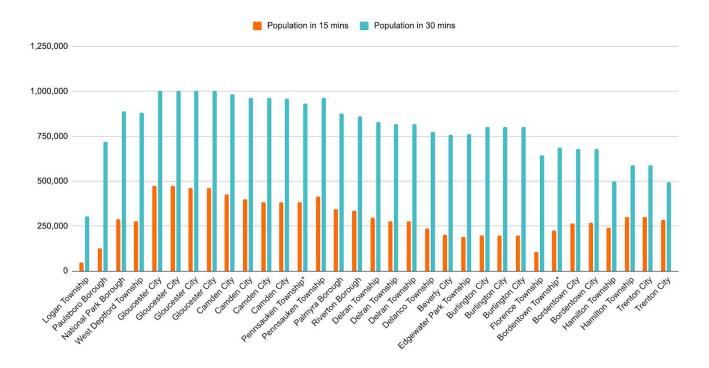
Figure 9: Number of Attractions within Dock Drivesheds



Sources: Visit South Jersey; Visit Princeton- Mercer; DVRPC, 2022 *proposed/potential dock

Figure 10 shows population within 15- and 30-minute drivesheds. Similar to attractions and trips, population is clustered between Gloucester City and Palmyra Borough. The curve is less pronounced here, with less of a difference between populations accessible across municipalities.

Figure 10: Population within Dock Drivesheds



Source: Census Transportation Projects Program, 2016 *proposed/potential dock

Cost and Revenues

This section provides cost and revenue estimates for a potential recreational ferry service. These numbers are derived from previous reports and studies, including the *Hillsborough County Water Ferry Feasibility Study*, which was prepared for the Hillsborough County Metropolitan Planning Organization by Cambridge Systematics, Inc., and Jacobs Engineering. Published in February 2011, this report provided the most robust information of ferry service costs. Since these publications were published at different times, focus on different geographies, and have different scopes, a broad range of estimates and potential revenue sources are provided. Ferry service costs are broken down into capital, operating, and maintenance expenses.

Capital costs include acquiring vessels and potentially costs such as dredging, dock construction, and/or land acquisition. Operating costs include labor, fuel, vessel storage, insurance, and business and administrative costs. Maintenance costs include all expenses associated with keeping assets in working condition.

1. Capital Expenses

Table 2 shows the range of costs for a new vessel based on passenger capacity, max speed, and hull type. Although this table shows a large range, research showed that the cost of a vessel—including used vessels—generally ranges from \$150,000 to \$2.5 million (Cambridge Systematics, Inc. 2011). The prices vary widely depending on vessel age, performance, and size. Multiple reports used a cost of \$400,000–700,000 for vessels that carry approximately 40 to 100 passengers (Cambridge Systematics, Inc. 2011). Additionally, these services typically require between two and four vessels, resulting in total vessel costs ranging between \$800,000 and \$3.2 million. To get a more precise estimate of total vessel costs would require selecting a more precise range for ferry riders.

Table 2: Vessel Costs

| Passenger | Max Speed | New Vessel Cost (2022 Dollars) | | | |
|-----------|------------------|--------------------------------|--------------|--------------|--|
| Capacity | (miles per hour) | Low | High | Average | |
| 12–30 | 18–29 | \$112,000 | \$372,000 | \$242,000 | |
| 31–50 | 9–28 | \$248,000 | \$743,000 | \$496,000 | |
| 31–50 | 14–35 | \$223,000 | \$1,227,000 | \$725,000 | |
| 51–100 | 9–23 | \$279,000 | \$1,239,000 | \$760,000 | |
| 51–100 | 24–44 | \$558,000 | \$3,717,000 | \$2,137,000 | |
| 101–150 | 12–23 | \$496,000 | \$2,230,000 | \$1,363,000 | |
| 101–150 | 24–40 | \$867,000 | \$9,913,000 | \$5,390,000 | |
| 151–300 | 9–43 | \$1,016,000 | \$14,126,000 | \$7,571,000 | |
| 25–100 | 6–17 | \$1,239,000 | \$6,196,000 | \$3,717,000 | |
| 100–500 | 10–17 | \$4,089,000 | \$9,293,000 | \$6,691,000 | |
| 100–500 | 10–17 | \$8,674,000 | \$22,304,000 | \$15,489,000 | |
| 250–500 | 45–48 | \$30,978,000 | \$53,281,000 | \$42,129,000 | |

Source: U.S. Department of Transportation, 2021

For additional capital costs, such as dock building or dredging, the existing conditions are crucial to get a cost estimate. In the literature reviewed, docks were already existing, and therefore there are no cost estimates to share for this phase of the process.

2. Operating Expenses

Operating costs include labor, fuel, vessel storage, insurance, and administrative/business costs. Labor, which primarily comprises the ship crew (captain, first mate, shore hand), will be dependent upon the size/and number of vessels, number of passengers, frequency of trips, etc. For approximately 800 riders per day, which was used in a Cambridge Systematics, Inc., analysis, the labor costs were \$1,255/day. The estimated cost of fuel is \$972/day, and vessel storage is \$69/day. Insurance costs, which are approximately 20 percent of the aforementioned cost, were \$459/day. Administrative/business costs are approximately 10 percent of all aforementioned operating costs (including insurance), which works out to \$276/day. In total, the estimated total operating costs for the service scenario was \$3,000/day.

3. Maintenance Costs

According to the previously mentioned Cambridge Systematics, Inc. analysis, maintenance costs are approximately 30 percent of operating costs. Therefore, with \$3,000/day as the operating costs, the maintenance costs end up being approximately \$900/day, resulting in operating and maintenance costs of \$3,900/day.

Revenues

The primary source of revenue with ferry service is fares. Fare prices present tradeoffs: a higher fare could result in more revenue per rider, but it could potentially decrease the number of riders. That said, maximizing revenue is not necessarily the primary focus of this ferry service, as that depends on additional funding that is available.

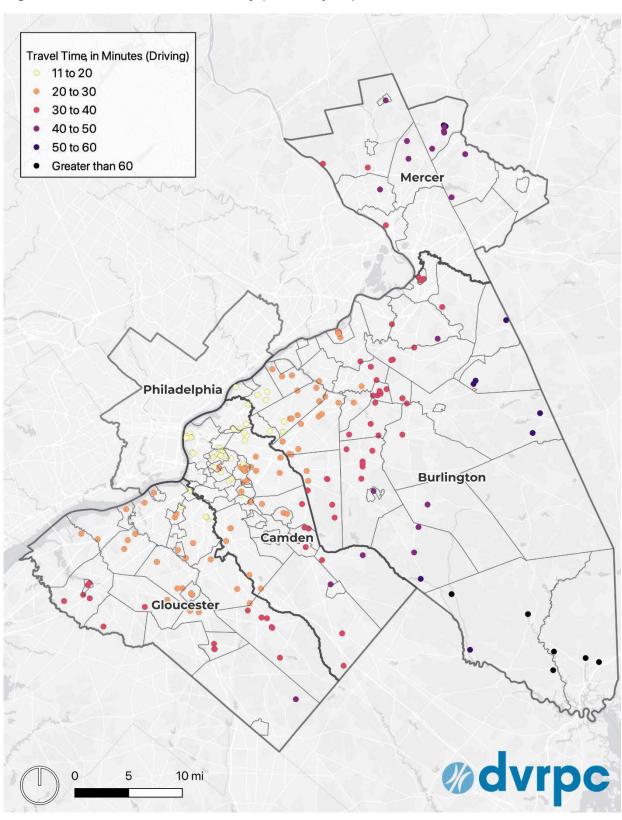
1. Fares

The previously mentioned Cambridge Systematics, Inc., analysis included three different price points for fares in their estimates: \$2.50, \$4.00, and \$5.60. However, they assumed a constant number of riders in these estimates and did not get into the tradeoffs of introducing higher fares. The resulting fare revenues per day were \$2,000; \$3,200; and \$4,480, respectively. It should be noted that these were fairly direct routes and therefore routes with a longer duration (such as the proposed loop route) would have to increase fares to compensate for increased labor and fuel costs.

Travel Time

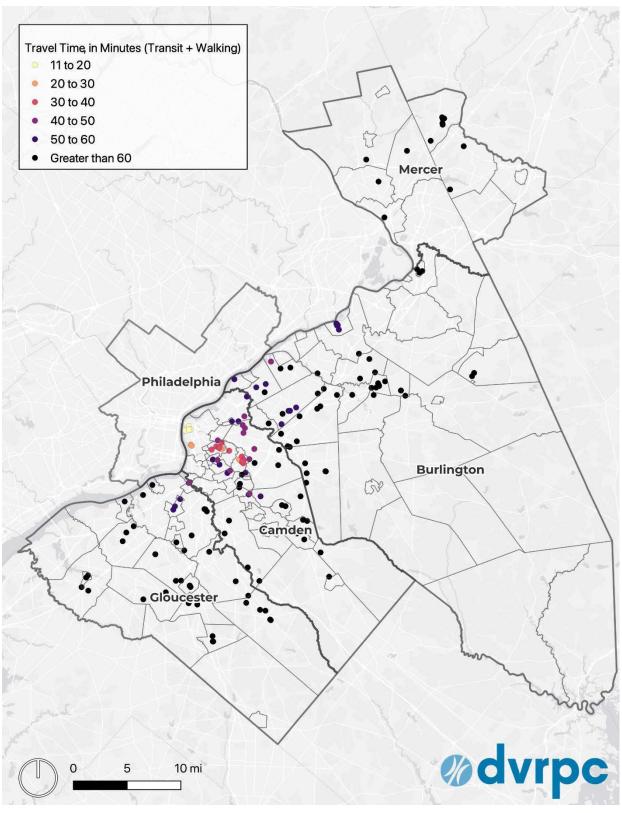
To understand travel time and duration, a computer script to query Google's directions application programming interface (API) was created that provided the driving and transit travel times and distances for each of the 242 tourist attractions. Travel time was evaluated using transit and driving time to understand how destinations could currently be reached from the existing ferry dock in Old City (Philadelphia) using different travel modes. Travel time by private vehicle is shown in Figure 11 and travel time by public transportation is shown in Figure 12. There are only five attractions where transit time is faster than driving time, and all are located in Camden: the Adventure Aquarium, the Camden Children's Garden, the BB&T Pavilion, the Walt Whitman House, and the Battleship New Jersey. These destinations are well served by the existing ferry as well as the PATCO High Speed Line.

Figure 11: Travel Time from Old City (Philadelphia)



Sources: DVRPC, 2022; Google Travel Time API, 2022

Figure 12: Travel Time from Old City via Public Transportation (Includes Walking)



Sources: DVRPC, 2022; Google Travel Time API, 2022

Environmental Factors

Depth

Another key component of ferry access is water depth. The depth of the Delaware River could present operational challenges to a potential ferry service north of Bordentown City. The draft of a vessel is measured as the depth that the boat sits in the water. Data from the 2020 NCFO was used to understand the average draft of non-vehicular, non-freight, passenger vessels. The average draft, according to the NCFO, is 8.1 feet. There are sections of the river that are less than eight feet, particularly around Trenton, and there are many rocks that make navigation more difficult. Additionally, the Delaware River is a tidal waterway and depth can vary substantially. A map showing shallower portions of the river is illustrated in Figure 13.

Weather

Weather was one of the components discussed with stakeholders that highlighted the need for a seasonal tourist ferry, as ice sheets on the Delaware River could also impede navigation. The U.S. Coast Guard does utilize icebreaking vessels on the river, but heavy freezes can still restrict river traffic until ice sheets are addressed by the agency.

River Depth (feet) • 0 to 10 11 to 30 31 to 40 Greater than 40 Mercer Philadelphia 🐔 0 Burlington 50 Camden Gloucester ødvrpc 5 10 mi

Figure 13: Depth of the Delaware River near Mercer County

Source: U.S. Army Corps of Engineers, 2021

Potential Ferry Scenarios

The considerations and data in previous sections were used to create five potential service scenarios. Ferry stops for scenarios were selected based on travel demand, number of attractions reachable via walking and driving, river depth, connections to other transportation, or stakeholder interest. The evaluated service patterns represent both high-frequency scenarios that serve a smaller number of high-demand destinations and lower-frequency scenarios that serve a greater number of total destinations or docks but that have less travel demand. Docks in Mercer County were not included in scenarios due to the insufficient depth of the river. Docks that were not connected to the Circuit Trail or sidewalk networks were not included, except in the case of the two proposed docks, which would include sidewalks and/or trails as part of future development. Docks with high HTS travel demand were prioritized for inclusion in all scenarios. The five scenarios include Big Loop (Figure 14), Smaller Loop (Figure 15), Camden/Burlington (Figure 16), Gloucester/Camden (Figure 17), and Burlington (Figure 18).

Figure 14: Big Loop Proposed Route

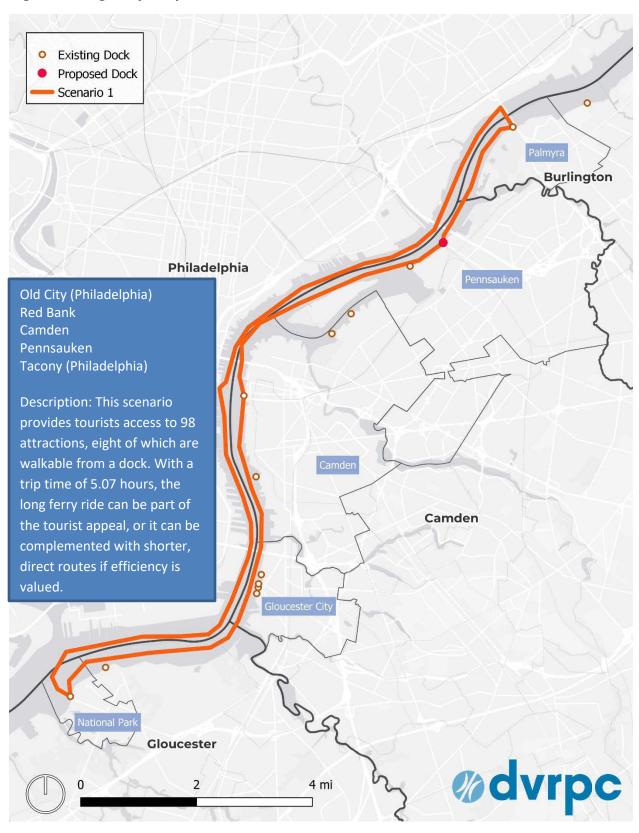


Figure 15: Smaller Loop Proposed Route

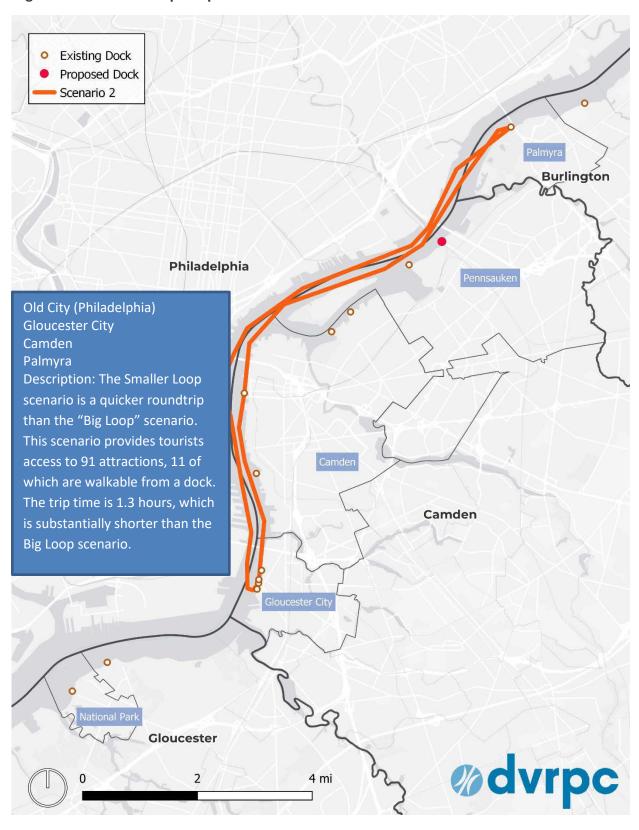


Figure 16: Camden/Burlington Proposed Route

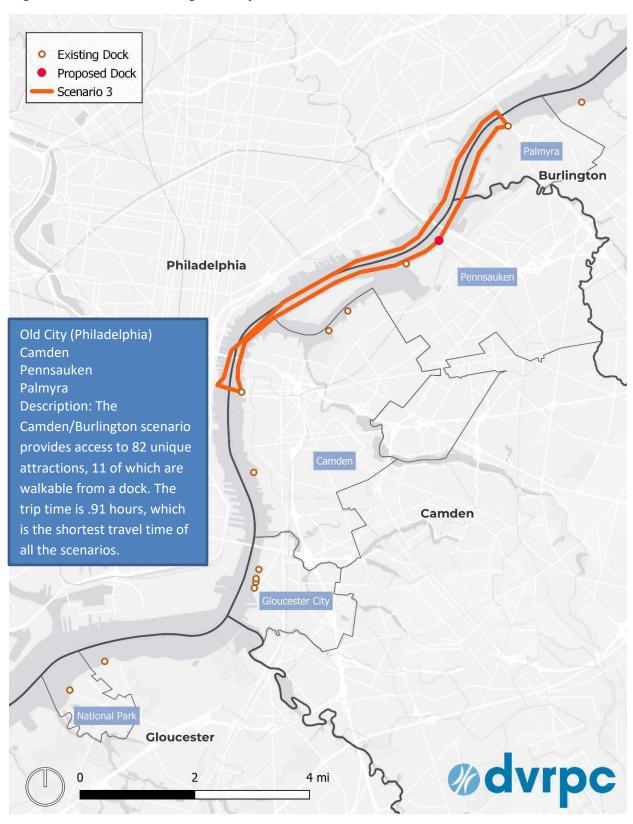


Figure 17: Gloucester/Camden Proposed Route

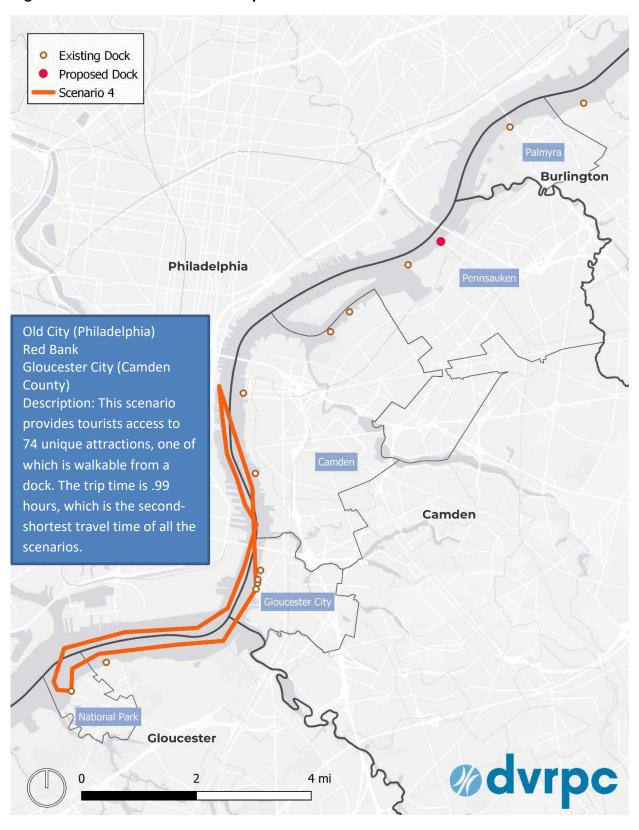
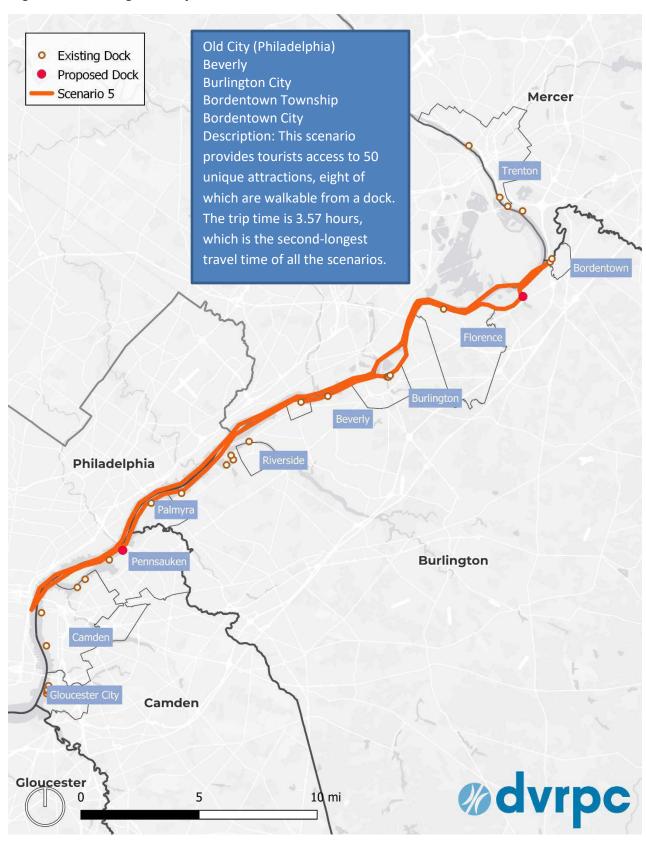


Figure 18: Burlington Proposed Route



Scenario Travel Times

Travel times by ferry were estimated using a speed of 16 miles per hour, which was derived from the average speed of passenger vessels that do not carry vehicles or freight using vessels from the NCFO. Total mileage and travel time for each scenario are shown in Table 3.

Table 3: Ferry Scenario Mileage and Travel Time

| Scenario | Total Distance (miles) | Total Trip Time (hours) |
|-------------------|------------------------|-------------------------|
| Big Loop | 82 | 5.07 |
| Smaller Loop | 21 | 1.30 |
| Camden/Burlington | 15 | 0.91 |
| Gloucester/Camden | 16 | 0.99 |
| Burlington | 58 | 3.57 |

Source: DVRPC, 2022

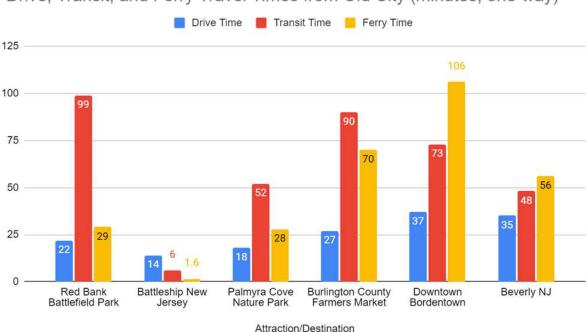
Although travel time was not identified as a stakeholder priority for a new seasonal ferry service, operationally it remains an important consideration as it affects the number of vessels required to maintain desired frequencies. For example, the Camden/Burlington Scenario could reasonably use one vessel, making a loop every hour, whereas the Burlington or Big Loop scenarios would require four to five vessels to maintain hourly frequency. If frequencies are less important, the longer scenarios could operate with only one or two vessels, but the long travel time, coupled with long wait times between vessels, would decrease the utility of the service for riders who do not explicitly plan and budget time for the trip.

Table 4 highlights the number of attractions accessible via the dock driveshed and walkshed. Travel times between modes were compared for a selection of attractions that are accessible via walking from a dock. Red Bank National Park (Gloucester) and Palmyra (Burlington) are the most competitive with driving or transit, and depending on traffic conditions, the ferry could be a faster option. It should be noted that the Battleship New Jersey in Camden is served by an existing ferry, but the existing ferry diverts up and down the river; the travel time shown below would be for a new service pattern going straight across the river from Old City and then on to other destinations. Service from Bordentown City has the highest travel times via ferry, with a 3.5-hour service round trip. Figure 19 shows the scenario travel time by mode to a selection of attractions with high travel demand or high stakeholder interest.

Table 4: Attractions Accessible by Scenario

| Scenario | Unique Attractions Accessible via Driving (within Dock Driveshed) | Unique Attractions Accessible via Walking (within Dock Walkshed) |
|-------------------|--|---|
| Big Loop | 98 | 10 |
| Smaller Loop | 91 | 11 |
| Camden/Burlington | 82 | 11 |
| Gloucester/Camden | 74 | 1 |
| Burlington | 50 | 8 |

Figure 19: Scenario Travel Time by Mode



Drive, Transit, and Ferry Travel Times from Old City (minutes, one-way)

Sources: Google Travel Time API, 2022; DVRPC, 2022

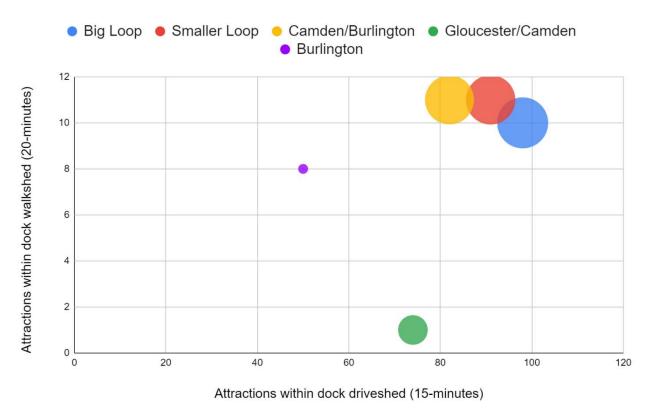
The Big Loop, Camden/Burlington, and Burlington scenarios would have higher relative capital costs than the other scenarios, as they each involve at least one newly constructed dock.

Beyond travel time and cost, the number of attractions accessible by scenario was also evaluated by aggregating the attractions available to individual destinations (shown in Table 4). The 30-minute drivesheds were excluded from the scenario evaluations because the 30-minute drivesheds have substantial overlap between docks, rendering them less useful for a scenario-level evaluation.

The Smaller Loop and Camden/Burlington scenarios have the highest number of destinations within their scenario walksheds. The Big Loop Scenario has the highest number of destinations accessible within a 15-minute drive.

Figure 20 and Figure 21 show the total number of unique attractions (i.e., avoiding double counting a destination where isochrones overlap) accessible via driving and walking. The size of the circles is based on the number of recreational trips to the same 15-minute driveshed, using data from the HTS. The Big Loop, Smaller Loop, and Camden/Burlington scenarios are all similar in terms of number of unique destinations accessible. The Burlington Scenario has the fewest attractions accessible via driving, while the Gloucester/Camden Scenario has the lowest number of destinations via walking.

Figure 20: Attractions Accessible by Scenario and Mode



Source: DVRPC, 2022 (circles scaled to HTS trips)

Combining the attraction and travel times provides further insight into the efficiency of the scenarios by providing an estimate of attractions reachable per ferry service hour. This is highlighted in Table 5. The Camden/Burlington Scenario connects riders to 90 attractions per hour (including those in a 15-minute drive from a dock) and 12 attractions per hour within a 20-minute walkshed of docks. The competitiveness of the Big Loop Scenario dramatically shifts when considering the number of destinations accessible per service hour.

Table 5: Attractions Accessible per Service Hour

| Scenario | | Unique Attractions Accessible per Hour via Walking (within Dock Walkshed) |
|-------------------|----|---|
| Big Loop | 19 | 2 |
| Smaller Loop | 70 | 8 |
| Camden/Burlington | 90 | 12 |
| Gloucester/Camden | 75 | 1 |
| Burlington | 14 | 2 |

Source: DVRPC, 2022

An important note is that this analysis makes no effort to qualify which attractions are more desirable than others, beyond estimating proximate recreational travel demand with HTS travel data. Although

the number of attractions may be higher in one scenario versus another, this says nothing about which destination is more likely to draw tourists. Future study should include a more detailed market analysis of travel demand to attractions in the study area.

Big Loop Smaller Loop Camden/Burlington Gloucester/Camden Burlington

Figure 21: Attractions Accessible per Service Hour by Mode

Source: DVRPC, 2022 (scaled to HTS travel demand within the scenario driveshed)

Service Operators

Although this analysis does not evaluate potential operators, scenarios that serve Camden City could potentially be operated by expanding the existing RiverLink Ferry that connects Camden to Philadelphia. The Smaller Loop and Camden/Burlington scenarios both include only two additional stops, which are relatively close to the existing route.

Attractions per hour (15-minute driveshed)

Next Steps

Further exploration of a seasonal ferry service connecting Old City Philadelphia and the New Jersey counties requires acquiring more robust market research and traveler demand data. Although the HTS can serve as a proxy for travel patterns, the data was collected 10 years ago, and it is possible that travel patterns have changed since then. Detailed visitor count data is critical to determining the feasibility of ferry service to find out where these visitors are coming from. Additionally, implementing a service like this requires participation and engagement from multiple groups. The key here is identifying which tourist destinations and areas to prioritize, which can be based on a myriad of factors, such as visitor volume, existing transportation challenges, interest from municipal planners and government, community engagement, etc.

Further actions to consider include:

- Build consensus with regional leaders and elected officials.
- Work with landowners and evaluate station locations and serviceability.
- Identify and evaluate available vessels.
- Identify and define operator options.
- Refine market estimates.
- Determine financial/business model options.
- Prepare marketing material for initial service.
- Conduct community outreach.
- Develop and implement service; expand service options over time.

Works Cited

- Cambridge Systematics, Inc. *Hillsborough County Water Ferry Feasibility Study*. Tampa, Cambridge Systematics, Inc., 2011.
- Delaware Valley Regional Planning Commission. 2012-2013 Household Travel Suvery for the Delaware Valley Region. Philadelphia: Delaware Valley Regional Planning Commission, 2015.
- ———. Gloucester County Ferry Service Study. Philadelphia: Delaware Valley Regional Planning Commission, 2007.
- Nepa, Stephen. "Ferries." The Encyclopedia of Greater Philadelphia. 2015. philadelphiaencyclopedia.org/essays/ferries/.
- New York City Economic Development Corporation. 2018-2019 NYC Ferry Expansion Feasibility Study. New York: New York City Economic Development Corporation, 2018.

Appendix A

New Jersey Attractions

| Name | Address |
|------------------------------------|---|
| 'Bout The Hops Brewing | 2000 Crawford Place, Mount Laurel Township, NJ 08054 |
| 13th Child Brewery | 345 South Main Street, Williamstown, NJ 08094 |
| Adelphia | 1750 Clements Bridge Road, Deptford, NJ 08096 |
| Adventure Aquarium | 1 Riverside Drive, Camden, New Jersey 08103 |
| Air Victory Museum | 68 Stacy Haines Road, Lumberton, NJ, 08048 |
| Alice Paul Institute | 128 Hooton Road, Mount Laurel, NJ, 08054 |
| All Fired Up | 602 Haddon Avenue, Collingswood, NJ 08108 |
| Amalthea Cellars | 209 Vineyard Road, Atco, New Jersey 08004 |
| AMC Deptford 8 | 1740 Clements Bridge Road, Deptford Township, NJ 08096 |
| AMC Loews Cherry Hill 24 | 2121 New Jersey 38, Cherry Hill, NJ 08002 |
| AMC Marlton 8 | 800 Route 73, Marlton, NJ, 08053 |
| Apple Pie Hill | Wharton State Forest Ringler Avenue, Chatsworth, NJ, 08019 |
| Armageddon Brewing | 900 Chestnut Avenue, Building J, Somerdale, New Jersey 08083 |
| Arts Council of Princeton | 102 Witherspoon Street, Princeton, NJ 08542 |
| Atco Brewing Company | 302 White Horse Pike, B-1, Atco, New Jersey 08004 |
| Atco Raceway | 1000 Jackson Road, Atco, New Jersey 08103 |
| Atsion Village & Recreation Center | Route 206, Shamong, NJ, 08088 |
| Autumn Lake Winery | 870 West Malage Road, Williamstown, NJ 08094 |
| Axe & Arrow Brewing | 105 West High Street, Glassboro, NJ 08028 |
| Bass River State Forest | 762 Stage Road., Tuckerton, NJ, 08087 |
| Batsto Village | 31 Batsto Road, Hammonton, NJ, 08037 |
| Battleship New Jersey | 62 Battleship Place, Camden, NJ 08103 |
| BB&T Pavilion | 1 Harbour Boulevard, Camden, NJ 08103 |
| Berlin Brewing | 220 South White Horse Pike, Berlin, New Jersey 08009 |
| Berlin Farmers Market | 41 Clementon Road, Berlin, NJ 08009 |
| Berlin Park | White Horse Pike, Berlin, NJ |
| Blackwood Farmers Market | 15 South Black Horse Pike and & the Studio at Mainstage Center, Blackwood, NJ 08012 |
| Bonesaw Brewing Co. | 570 Mullica Hill Road, Glassboro, NJ 08028 |
| Boundary Creek | Creek Road, Moorestown, NJ, 08057 |
| Brendan Byrne State Forest | Southampton Township, NJ, 08015 |

| Bridge Players Theater Company | 36 East Broad Street, Burlington, NJ, 08016 |
|--|--|
| Bridgeport Speedway | 83 Floodgate Road, Swedesboro, NJ 08085 |
| Burlington City Farmers Market | 300 High Street, Burlington, NJ, 08016 |
| Burlington Country Club | 170 Burrs Road, Mount Holly, NJ, 08060 |
| Burlington County Farmers Market | 500 Centerton Road, Moorestown, NJ, 08057 |
| Burlington County Footlighters | 808 Pomona Road, Cinnaminson, NJ, 08077 |
| Burlington County Golf Academy | 855 Hedding Jacksonville Road, Mount. Holly, NJ, 08060 |
| Burlington County Historical Society & Museum | 451 High Street, Burlington, NJ, 08016 |
| Burlington County Prison Museum | 128 Hight Street, Mount. Holly, NJ, 08060 |
| Camden Children's Garden | 3 Riverside Drive, Camden, New Jersey |
| Camden County Boathouse | 7050 North Park Drive, Pennsauken, New Jersey 08109 |
| Camden County Golf Academy | 8001 South Route 130, Pennsauken, NJ 08075 |
| Camden Shipyard & Maritime Museum | 1910 Broadway, Camden, NJ 08104 |
| Canvas Mixers | 542 Haddon Avenue, Collingswood, New Jersey 08108 |
| Cecil Creek Farm | 73 Democrat Road, Mickleton, NJ 08056 |
| Center for the Arts in South Jersey | South Elmwood Road, Marlton, NJ, 08053 |
| Challenge Grove Park | Bortons Mill & Caldwell Roads, Cherry Hill, NJ |
| Cherry Hill Mall | 2000 Route 38, Cherry Hill, New Jersey 08002 |
| Chipsfolly Family Campground | 100 Chipsfolly Road, New Gretna, NJ, 08224 |
| Clara Barton SchoolHouse | 142 Crosswicks Street, Bordentown, NJ, 08505 |
| Clarks Landing Yacht Club | 63 St. Mihiel Drive, Delran, NJ, 08075 |
| CoCo Key Water Resort | 915 New Jersey 73, Mount Laurel, New Jersey 08054 |
| Collingswood Farmers' Market | 713 North Atlantic Avenue, Collingswood, NJ 08108 |
| Collingswood Grand Ballroom | 315 White Horse Pike, Collingswood, New Jersey 08107 |
| Collingswood Scottish Rite Theater | 315 White Horse Pike, Collingswood, NJ 08107 |
| Columbus Farmers Market | 2919 Route 206, Columbus, NJ, 08022 |
| Common Sense Brewing | 102 Farnsworth Avenue, Bordentown, New Jersey, 08505 |
| Conte Farms | 299 Flyatt Road, Tabernacle, NJ, 08088 |
| Cooper River Park | 579 South Park Drive, Collingswood, NJ 0810 |
| Cooper River Yacht Club | 450 South Park Drive, Collingswood, New Jersey 08108 |
| Core3 Brewery | 609 North. Delsea Drive, Clayton, NJ 08312 |
| Croft Farms Arts Center | 100 Bortons Mill Road, Cherry Hill, NJ 08034 |
| Cross Keys Brewing Co. | 1038 North Main Street, Williamstown, NJ 08094 |
| Crossroads of the American Revolution National Heritage Area | 101 Barrack Street, Trenton, NJ 08608 |
| | ,, |

| Death of the Fox Brewing Company | 119 Berkley Road, Clarksboro, NJ 08020 |
|---|--|
| Deerwood Country Club | 845 Woodlane Road, Westampton, NJ, 08060 |
| Delrans Farmers Market | 900 Chester Avenue, Delran, NJ, 08075 |
| Deptford Mall | 1750 Deptford Center Road, Deptford, NJ 08069 |
| Devil's Creek Brewery | 1 Powell Lane, Collingswood, New Jersey 08108 |
| Diggerland | 100 Pinedge Drive, West Berlin, New Jersey 08091 |
| Double Nickel Brewing Company | 1585 Route 73, Pennsauken, New Jersey 08110 |
| Downtown Bordentown | Farnsworth Avenue, Bordentown, NJ, 08505 |
| Downtown Burlington City | High Street, Burlington, NJ, 08106 |
| Downtown Collingswood | Haddon Avenue, Collingswood, NJ |
| Downtown Haddon Heights | 1420 Prospect Ridge Blvd, Haddon Heights, NJ 08035 |
| Downtown Haddonfield | Kings Highway & Haddon Avenue, Haddonfield, New Jersey 08033 |
| Downtown Medford | Main Street, Medford, NJ, 08055 |
| Downtown Moorestown | Main Street, Moorestown, NJ, 08057 |
| Downtown Mount Holly | Main Street, Mount Holly, NJ, 08060 |
| Eclipse Brewing | 25 East Park Avenue, Merchantville, New Jersey 08109 |
| Eight & Sand Beer Co. | 1003 North Evergreen Avenue, Woodbury, NJ 08096 |
| Fernbrook Farms Environmental Education Center | 142 Bordentown Georgetown Road, Columbus, NJ, 08022 |
| Flying Fish Brewing Co. | 900 Kennedy Boulevard, Somerdale, NJ 08083 |
| Forgotten Boardwalk Brewing | 1940 Olney Avenue, #100, Cherry Hill, New Jersey, 08003 |
| Fountain Green Golf Course | Building 3512, Fort Dix, NJ, 08640 |
| Fox Meadow Golf Center | 2880 Route 73, North Maple Shade, NJ 08052 |
| Freeway Golf Course | 1858 Sicklerville Road,. Sicklerville, NJ 08081 |
| Garden State Discovery Museum | 2040 Springdale Road, Cherry Hill, New Jersey, 08003 |
| Garden State Park | 100 Haddonfield Road, Cherry Hill, New Jersey 08002 |
| Gino's Drive Range and Miniature Golf | 669 Route 45, Mantua, NJ 08051 |
| Golden Pheasant Golf Course | 141 Country Club Dr.ive, Lumberton, NJ, 08048 |
| Golf Land | 801 Rt. 561, Voorhees, NJ |
| Golf Performance Institute | 2036 Briggs Road, Mount Laurel, NJ, 08054 |
| Greenwich Lake Park | Tomlin Station Road, Greenwich Township, NJ 08027 |
| Haddon Heights Farmers Market | Station & East Atlantic Avenue, Haddon Heights, NJ |
| Haddon Lake Park | Station Avenue to 10th Avenue and & from Kings Highway to the Black Horse Pike, Haddon Heights, New Jersey |
| Haddonfield Farmers Market | 33 East Euclid Avenue, Haddonfield, NJ 08033 |
| Haddonfield Plays & Players | 967 East Atlantic Avenue, Haddonfield, New Jersey 08033 |

| Hadrosaurus | 2 King's Court, Haddonfield, NJ 08033 |
|--|---|
| Hanover Country Club | 133 Larrison Road., Wrightstown, NJ, 08562 |
| Heritage Glass Museum | 25 West High Street, Glassboro, NJ 08028 |
| Heritage Vineyards | 480 Mullica Hill Road, Richwood, NJ 08062 |
| Historic Smithville Park & Mansion | 803 Smithville Road, Mount Holly, NJ, 08060 |
| Historical Society of Princeton | 354 Quaker Road, Princeton, NJ 08540 |
| Holiday Inn Express & Suites – Mt. Laurel | 6000 Crawford Place, Mount. Laurel, NJ, 08054 |
| Hollybush Mansion | 501 Whitney Avenue, Glassboro, NJ 08027 |
| Hopewell Theater | 5 South Greenwood Avenue, Hopewell, NJ 08525 |
| Hopkins Pond | Ooff Grove Street and & Hopkins Lane, Haddonfield, New Jersey |
| Hotel ML | 915 Route 73 Mount Laurel, Mount Laurel, NJ, 08054 |
| Human Village Brewing Co. | 148 South Broadway, Pitman, NJ 08071 |
| Independent Spirits Distillery | 131 Davidson Road, Woolwich Township, NJ 08085 |
| Indian King Tavern Museum | 233 Kings Highway East, Haddonfield, NJ 08033 |
| Indian Spring Country Club | 115 South Elmwood Road., Marlton, NJ, 08053 |
| Iron Plow Vineyards | 26750 Mount Pleasant Road, Columbus, New Jersey, 08022 |
| Ironwood Outdoor Center | 2 cCamp dDrive PO Box 506, Lumberton, NJ, 08048 |
| John Woolman Memorial | 99 Branch Street, Mount Holly, NJ, 08060 |
| Johnson's Corner Farm | 133 Church Road, Medford, NJ, 08055 |
| Kelly Green Brewing Co. | 154 South Broadway, Pitman, NJ 08071 |
| Kelsey Theatre Aat Mercer County Community College | 1200 Old Trenton Road, West Windsor, NJ 08550 |
| Kidsbridge Tolerance Museum | 2000 Pennington Road, Ewing, NJ 08618 |
| King's Road Brewing Co. | 127 Kings Highway East, Haddonfield, New Jersey 08033 |
| Kirby's Farmers Market | 67 North Main Street, Medford, NJ, 08055 |
| Kresson Golf Course | 298 Kresson-Gibbsboro Road, Voorhees, NJ 08043 |
| Labyrinth Books | 122 Nassau Street, Princeton, NJ 08542 |
| Laurel Creek Country Club | 701 Centerton Road, Mount Laurel, NJ, 08054 |
| Laurel Market Pitman | 52 South Broadway, Pitman, NJ 08071 |
| Lewis Center for the Arts | 122 Alexander Street, Princeton, NJ 08542 |
| Liberty Lake Picnic | 1195 Florence-Columbus Road, Bordentown, NJ, 08505 |
| Links Golf Club | 100 Majestic Way, Marlton, NJ, 08053 |
| Little Mill Country Club | 104 Bortons Road, Marlton, NJ, 08053 |
| Little Pond Golf Center | 111 Chews Landing Road, Clementon, NJ 08021 |
| Lower Forge Brewery | 14 South Main Street, Medford, New Jersey, 08055 |
| | |

| Luciens Manor | 81 West White Horse Pike, Berlin, New Jersey 08009 |
|--------------------------------------|--|
| Lunacy Brewing Company | 214 Davis Road, Magnolia, New Jersey 08049 |
| Lyceum Hall Center for the Arts | 432 High Street, Burlington, NJ 08016432 High Street, Burlington, NJ |
| MADE. Artisan Marketplace | 65 North Broad Street, Woodbury, NJ 08096 |
| Maple Ridge Golf Club | 1705 Glassboro Road, Sewell, NJ 08080 |
| Marco's Restaurant & Banquets | 115 South Elmwood Road, Marlton, NJ, 08053 |
| Markeim Arts Center | 104 Walnut Street, Haddonfield, New Jersey, 08033 |
| Maugeri Farm Market | 1991 Oldmans Creek Road, Swedesboro, NJ 08085 |
| McCarter Theater Center | 91 University Place, Princeton, NJ 08540 |
| Mcfaddon Catering and Lakeside Manor | 10 Foster Avenue, Gibbsboro, New Jersey 08026 |
| Medford Arts Center | 18 North Main Street, Medford, NJ, 08055 |
| Medford Historical Society | 275 Church Road, Medford, NJ, 08055 |
| Medford Village Country Club | 28 Golf View Drive, Medford, NJ, 08055 |
| Moorestown Business Association | 16 East Main Street, Moorestown, NJ, 08057 |
| Moorestown Mall | 400 New Jersey 38, Moorestown, NJ, 08057 |
| Moorestown Theater Company | 19 West Main Street., Moorestown, NJ, 08057 |
| Mount Holly Farmers Market | Park Drive & Commerce Street, Mount Holly, NJ, 08060 |
| Neck of the Woods Brewing | 614 Lambs Road, Suite 7, Pitman, NJ 08071 |
| Nerd Mall | 164 South Broad Street, Woodbury, NJ 08096 |
| Old Stone House Village | 208 Egg Harbor Road, Sewell, NJ 08080 |
| Our Shared Ground | 500 Centerton Road, Moorestown, NJ, 08057 |
| Palmyra Cove Nature Park | 1335 Route 73, Palmyra, NJ, 08065 |
| Pennsuaken Country Club | 3800 Haddonfield Road,. Pennsauken, NJ 08109 |
| Pennypacker Park | Kings Highway, Haddonfield, NJ |
| Perkins Center for the Arts | 395 Kings Highway, Moorestown, NJ, 08007 |
| Peter Mott House | 26 Kings Court, Lawnside, NJ 08045 |
| Philadelphia South/Clarksboro KOA | 117 Timberlane Road, Clarksboro, NJ 08020 |
| Pilgrim Lake Campgrounds | 940 Stage Road, New Gretna, NJ, 08224 |
| Pinelands Adventures | 1005 Atsion Road, Shamong, NJ, 08088 |
| Pinelands Golf Course | 887 South. Mays Landing Road., Winslow Township, NJ 08037 |
| Pinsetters Bar & Bowl | 7111 Maple Avenue, Pennsauken Township., New Jersey 08109 |
| Pitman Golf Club | 501 Pitman Road, Sewell, NJ 08080 |
| Playground Paintball Park | 669 Bridgeton Pike, Mantua, NJ 08051 |
| Princeton Garden Theatre | 160 Nassau Street, Princeton, NJ 08543 |
| | |

| Princeton Tour Company | 98 Nassau Street, Princeton, NJ 08542 |
|--|--|
| Ramblewood Country Club | 200 Country Club Parkway, Mount Laurel, NJ, 08054 |
| Rancocas Golf Club | 12 Club Ridge Lane, Willingboro, NJ, 08046 |
| Rancocas Nature Center | 794 Rancocas Road, Westampton, NJ, 08060 |
| Rancocas Woods Village Shops | 204 Creek Road, Mount Laurel, NJ, 08054 |
| Red White and Brew Beer Co. | 100 West Merchant Street, Audubon, New Jersey 08106 |
| Regal Burlington Stadium 20 | 250 Bromley Boulevard, Burlington Township, NJ, 08016 |
| Regal Moorestown Mall Stadium 12 & RPX | 400 Route 38, Moorestown, NJ, 08057 |
| Revolution Coffee Roasters | 13 Fern Avenue, Collingswood, New Jersey 08108 |
| Riverton Country Club | 1416 Highland Avenue, Cinnaminson, NJ, 08077 |
| Riverwinds Golf & Tennis Club | 270 Eagle Point Road, West Deptford, NJ 08096 |
| Russo's Fruit & Vegetable Farm | Medford Lakes & Carranza Roads, Tabernacle, NJ, 08088 |
| Rutgers-Camden Center for the Arts | 303 Cooper Street, Camden, NJ 08102 |
| Sahara Sam's Oasis Indoor & Outdoor Waterpark | 535 North Route 73, West Berlin, New Jersey 08091 |
| Sharrott Winery | 320 South Egg Harbor Road, Blue Anchor, New Jersey 08037 |
| Skydive Cross Keys | 300 Dahlia Avenue, Williamstown, NJ 08094 |
| Smithville Mansion | 803 Smithville Road, Eastampton, NJ, 08060 |
| Smithville Park | 39 East Railroad Avenue, Mount. Holly, NJ, 08060 |
| South Camden Theatre Company | 400 Jasper Street, Camden, New Jersey 08104 |
| South Jersey Wine Tours | 1450 Kings Highway, Swedesboro, NJ 08085 |
| Spellbound Brewing | 10 Lippincott Lane, Unit 12, Mount Holly, NJ, 08060 |
| Springdale Farms | 1638 Springdale Road, Cherry Hill, New J 08003 |
| Springfield Golf Center | 855 Jacksonville-Mount Holly Road., Mount Holly, NJ, 08060 |
| Summit City Farms and Winery | 500 University Boulevard, Glassboro, NJ 08028 |
| Swedesboro Brewing Company | 95 Woodstown Road, Swedesboro, NJ 08085 |
| Symphony in C | 576 Haddon Avenue, Collingswood, NJ 08108 |
| Tavistock Country Club | 100 Tavistock Lane, Haddonfield, NJ 08033 |
| Terhune Orchards | 330 Cold Soil Road, Princeton, NJ 08540 |
| The Bradford Estate | 1910 Marne Highway, Hainesport, NJ, 08036 |
| The Broadway Theater of Pitman | 43 South Broadway, Pitman, NJ 08071 |
| The Delaware River Heritage Trail | along Delaware River, P.O. Box 15, Stockton, NJ, 08859 |
| The Funplex | 3320-24 New Jersey 38, Mount Laurel, NJ, 08054 |
| The Grand Theatre | 405 South Main Street, Williamstown, NJ 08094 |
| The Merion | 1301 Route 130 South, Cinnaminson, NJ, 08077 |
| | |

| The Moorestown Community House | 16 East Main Street, Moorestwown, New Jersey 08057 |
|---|--|
| The Music Barn | 275 NJ-77, Mullica Hill, NJ 08302 |
| The Promenade at Sagemore | 500 Route 73 South, Marlton, NJ, 08053 |
| The Referend Bier Blendery | 1595 Reed Road, Pennington, NJ 08534 |
| The Ritz Theatre Company | 915 White Horse Pike, Haddon Township, NJ 08107 |
| The Shoppes at Cross Keys | 611 Cross Keys Road, Gloucester Township,. New Jersey 08081 |
| The Shops at Mill Race Village | 5 Church St, , Mount Holly, NJ, 08060 |
| Theater to Go | 7 Holly Lane, Lawrenceville, NJ 08648 |
| Third State Brewing | 352 High Street, Burlington, New Jersey, 08016 |
| Tinicum Rear Range Lighthouse | 70 2nd Street, Paulsboro, NJ 08066 |
| Tonewood Brewing | 215 West Clinton Avenue, Oaklyn, New Jersey 08107 |
| Train Wreck Distillery | 25 Madison Avenue, Mount Holly, NJ, 08060 |
| Trinity Episcopal Church | 1208 Kings Highway, Swedesboro, NJ 08085 |
| Turtle Run Campground | 3 Cedar Lane, Wading River, NJ, 08215 |
| U.S. Army Reserve Museum | 6501 Pennsylvania Avenue, Fort Dix, NJ, 08640 |
| United Artists Washington Township | 121 Tuckahoe Road, Sewell, NJ 08080 |
| Valenzano Winery | 1320 Old Indian Mills Road, Shamong, NJ 08088 |
| Valley Brook Country Club | 200 Golf View Drive, Blackwood, NJ 08012 |
| Valleybrook Country Club | 200 Golfview Drive, Blackwood, NJ 08012 |
| Village Idiot Brewing | 42 High Street, Mount Holly, NJ, 08060 |
| Villari Vineyards | 1166 Tanyard Road, Sewell, NJ 08080 |
| Vincentown- Tabernacle Telephone Company & Museum | 17 Mill Street, Vincentown, NJ, 08088 |
| Voorhees Town Center | 2120 Voorhees Town Center, Voorhees, New Jersey 08043 |
| Wading Pines Camping Resort | 85 Godfrey Bridge Road, Washington, NJ, 08019 |
| Wagonhouse Winery | 1401 NJ Route 45, Swedesboro, NJ 08085 |
| Wallworth Park | Kings Highway and & Brace Road, Cherry Hill, NJ |
| Walt Whitman House | 330 Mickle Boulevard, Camden, NJ 08105 |
| Washington Twp. Municipal | 197 Fries Mill Road., Turnersville, NJ 08012 |
| Wenonah Farmers Market In the Park | 7 West Mantua Avenue, Wenonah, NJ 08090 |
| West Windsor Arts Council | 952 Alexander Road, Princeton Junction, NJ 08550 |
| Westmont Farmers Market | 51 Haddon Avenue, Haddon Township,. NJ 08108 |
| Westville Brewery | 201 Broadway, Suite B, Westville, NJ 08093 |
| Wharton State Forest | Tabernacle Area, Atlantic, Burlington and & Camden Counties, NJ, 08037 |
| White Oaks Country Club | 2951 Dutch Mill Road, Newfield, NJ, 07882 |

| Whitesbog Village | 120-34 Whitesbog Road, Brown Mills, NJ, 08015 |
|---|---|
| Wiggins Park Marina | Dr Martin Luther King Boulevard, Camden, NJ 08103 |
| Wiggins Waterfront Park | Dr. Martin Luther King Boulevard, Camden, NJ 08103 |
| William Heritage Winery | 480 Mullica Hill Road, Mullica Hill, NJ 08062 |
| Williamstown Farmers Market & Village Shoppes | 701 North Blackhorse Pike, Williamstown, NJ 08094 |
| Willow Brook Country Club | 4310 Bridgeboro Road., Moorestown, NJ, 08057 |
| Zaffron | 113 Kings Highway East, Haddonfield, New Jersey 08033 |
| Zed's Beer | 19 North Maple Avenue, Unit B, Marlton, New Jersey, 08053 |

Sources: Visit South Jersey, Visit Princeton-Mercer, 2021

White Paper: Exploring Ferry Access on the Delaware River

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Geographic Area Covered:

Philadelphia, Burlington County, Mercer County, Camden County, Gloucester County

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Accessibility, Ferry, Multimodal, tourism

Abstract:

This study explores the possibility of a seasonal ferry service serving communities along the Delaware River. It analyzes the accessibility of tourist destinations in the New Jersey counties in the region and explores potential service scenarios. It also informs stakeholders of recommended next steps to further explore implementing a ferry service.

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