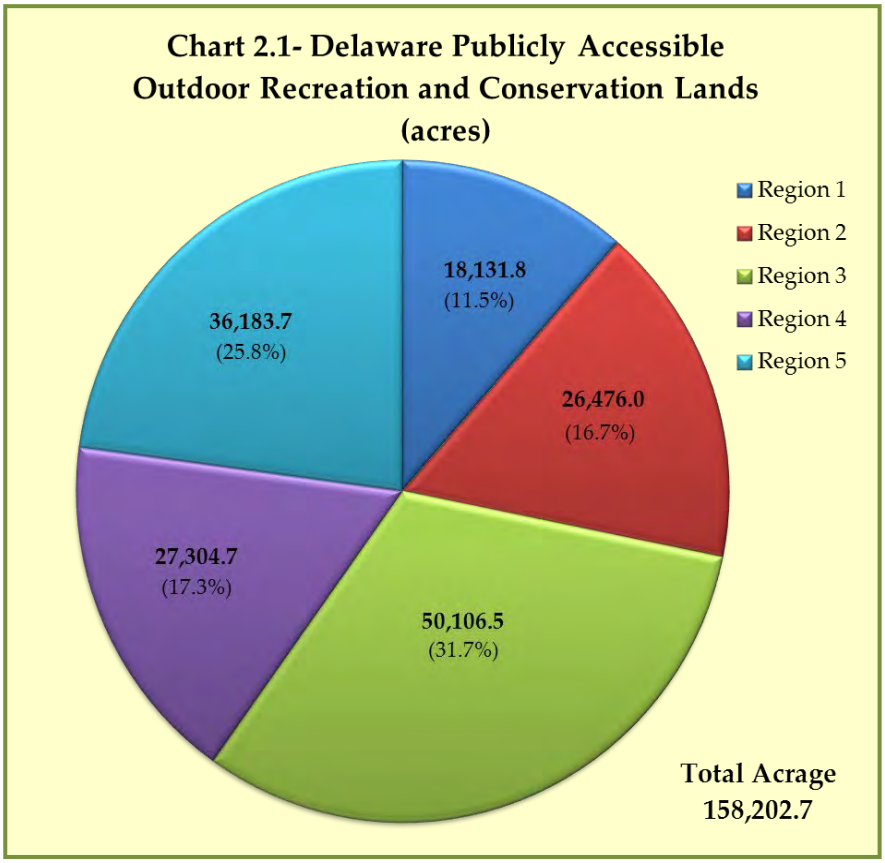
Outdoor Recreation Inventory

Goal: Incorporate the Outdoor Recreation Inventory in state and local planning decisions and educational outreach

Before analyzing outdoor recreation needs, it is essential to have an understanding of recreational facilities that are already in place. The Delaware Division of Parks and Recreation maintains an Outdoor Recreation Inventory (ORI) for the state. The ORI is an asset registry of open space, protected land, parks and recreational facilities managed by federal, state, county, and municipal governments, private conservation groups and school districts. At the Federal and State levels, public recreation and conservation lands in Delaware are managed by the US Fish and Wildlife Service; Department of Natural Resources and Environmental Control, Division of Parks and Recreation, the Division of Fish and Wildlife, and the Delaware Coastal Programs; the Department of Agriculture, State Forest Service; and the

Department of the State, Division of Historical and Cultural Affairs. While one park district and fifty-seven municipal and three county governments manage park lands and outdoor recreational facilities at the local level.



The ORI database contains information on a wide range of outdoor recreation amenities. The first computer-based statewide inventory of publicly-owned recreation areas was created in 1993. Subsequent comprehensive ORI updates were completed in 1999, 2002, 2006, and again during the summer of 2011. This most recent review, conducted for this SCORP, involved site visits to most outdoor recreation areas throughout the state to verify park amenities as well as the first data assemblage of privately held recreation facility information. Chart 2.1 displays the recreation-related acreage for local, county, state, and federal public lands by SCORP Planning Region and Table 2.1 summarizes individual outdoor recreation facilities for each Region. Additionally, Maps 2.1 through 2.5 graphically depicts the locations of publicly accessible recreation lands. A complete list of Delaware's Outdoor Recreation Inventory can be found in Appendix A.

The ORI is an invaluable tool for conducting generalized level of service analyses, calculating the amount of outdoor recreation space available and identifying specific types of outdoor recreation facilities and their location within each SCORP Planning Region. Delaware boasts nearly 160,000 acres of land that is publicly accessible for active and eco-based outdoor recreation. Delaware's outdoor recreation

estate is distributed among the five SCORP planning regions with Region 3 having the largest percentage (31.7%) of land dedicated as public recreation space. Regions 5 (25.8%), Region 4 (17.3%), and Region 2 (16.7%), follow with slightly less land dedicated for public outdoor recreation, while Region 1 (11.5%) has the least acreage in the public domain.

This acreage breakdown is understandable when looking at the size of each region. Region 3 and Region 5 are the largest of the five regions and thus, proportionally, should have the most land dedicated for outdoor recreation. However, careful consideration must be used when utilizing the ORI for service analyses. The designation of 'use' within the ORI must be taken into account when looking at close-to-home recreation opportunities. Region 3 has the largest acreage, but most of that land consists of large tracts of conservation lands, wetlands and refuges that are suited for passive recreation activities. In reality, only 6.2% of the ORI acreage in Region 3 is close-to-home active recreation facilities. As shown in Chart 2.2, relatively low percentage of active outdoor recreation opportunities is seen in all of the planning regions except Region 1.

Chart 2.2- Outdoor Recreation Inventory by SCORP Planning Region

	Region 1	Region 2	Region 3	Region 4	Region 5
Outdoor Recreation Acreage within each Planning Region *	18,131.75	26,475.98	50,106.54	27,304.67	36,183.74
% of Outdoor Recreation Acreage	11.5%	16.7%	31.7%	17.3%	25.8%
% of the Region's Recreation Acreage that is Close-to-Home Active Recreation**	54.1%	15.9%	6.2%	13.0%	24.4%

* Publicly Accessible Conservation and Outdoor Recreation Lands

** Calculation does not include public school facilities

Table 2.1- Publicly Owned Outdoor Recreation Facilities

		Region 1	Region 2	Region 3	Region 4	Region 5	Statewide
Water based Facilities	Swimming in Ocean	0	0	1	0	10	11
	Swimming Pool	7	2	2	0	0	11
	Spray Park	5	0	1	0	0	6
	Fishing area (saltwater)	2	7	7	0	23	39
	Fishing area (freshwater)	42	8	26	24	22	122
	Piers	10	17	9	11	30	77
	Marinas	0	2	0	0	1	3
	Boat Ramps	4	11	23	12	21	71
Field Sport Facilities	Baseball/Softball Fields	139	14	26	12	6	197
	Football Fields	6	2	3	2	1	14
	Soccer Fields	22	3	10	3	0	38
	Tracks	2	1	0	0	0	3
	Multipurpose Fields	34	14	20	0	4	72
Court Sport Facilities	Tennis Courts	125	20	9	0	7	161
	Basketball Courts	164	14	17	5	8	208
	Volleyball Courts	21	3	15	2	9	50
Picnic & Playground Facilities	Playgrounds	190	29	30	10	17	276
	Tot Lots	161	27	21	10	15	234
	Swings	552	65	68	46	35	766
	Tot Swings	401	64	41	17	27	550
	Pavillion	65	40	27	19	35	186
	Picnic Area	122	27	32	19	28	228
Camping Facilities	RV & Tent Camping	0	2	1	1	2	6
	Youth Camping	2	1	1	1	2	7
	Primitive Camping	0	2	1	2	3	8
	Cabins	0	0	11	8	5	24
	Yurts	0	2	0	2	0	4
	Cottages	0	0	0	0	12	12
Other Facilities	Gardening	1	0	0	0	0	1
	Skate Parks	5	4	2	0	0	11
	Disc Golf	5	2	2	0	1	10
	Golf	2	1	2	1	0	6
	Dog Areas	4	3	2	0	0	9
	Nature Centers	4	3	4	2	3	16

As Delaware's outdoor recreational opportunities continues to grow, either with new lands or additional facilities, it is crucial to work with local governments to update the ORI database to track the supply of facilities available for public use. With a majority of local governments lacking GIS software or staff to manage this data, the Division of Parks and Recreation has created a spatial ORI dataset that can be shared and viewed using either GIS software or Google Earth. The spatial dataset includes land boundaries represented by polygons and recreational facilities represented by points. The tabular data associated with the ORI includes the facility name and type, acreage, managing agency/owner, whether it is publically accessible, and any on-site amenities. All public and privately protected lands whether or not they are open for public recreation are included in the dataset. The ORI is a critical tool for locating and mapping publicly-held parks, forests, wildlife areas and outdoor recreation facilities.

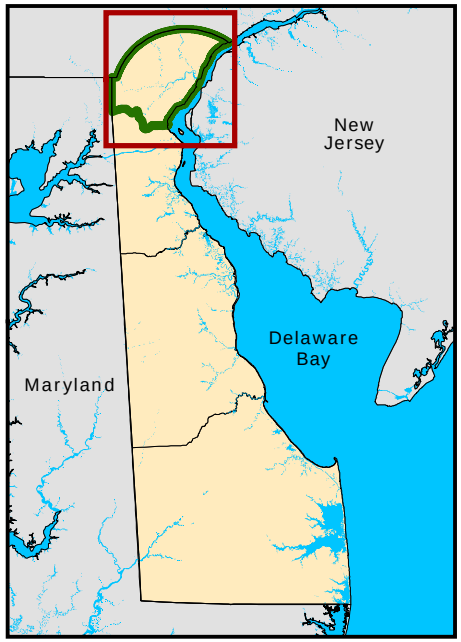
Though the ORI is a comprehensive database for publicly-owned and protected lands, it currently cannot give an overall picture of outdoor recreation supply in Delaware. Private recreation facilities, such as swimming pools, tennis courts and private playgrounds throughout the state play an important role for supplementing outdoor recreation needs. A complete understanding of private facilities and services and their distribution throughout the state combined with the existing ORI would provide a second-to-none analysis of outdoor recreation supply.

With the wealth of outdoor recreation data contained in the ORI, there are discussions of creating a searchable online website for statewide recreation resources. Using an interactive online interface, the ORI could be viewed freely and used in a variety of ways. For residents, it is a useful tool for finding a specific recreational facility or discovering close-to-home and work opportunities. For data managers, the information assists in monitoring all publicly-owned park, recreation and conservation sites for maintenance and stewardship responsibility including LWCF and DTF sites that require protection in perpetuity.

Recommendation:

Develop an online clearinghouse of all public outdoor recreation facilities.

Map 2.1
Publicly Accessible Outdoor Recreation Areas
SCORP Region 1



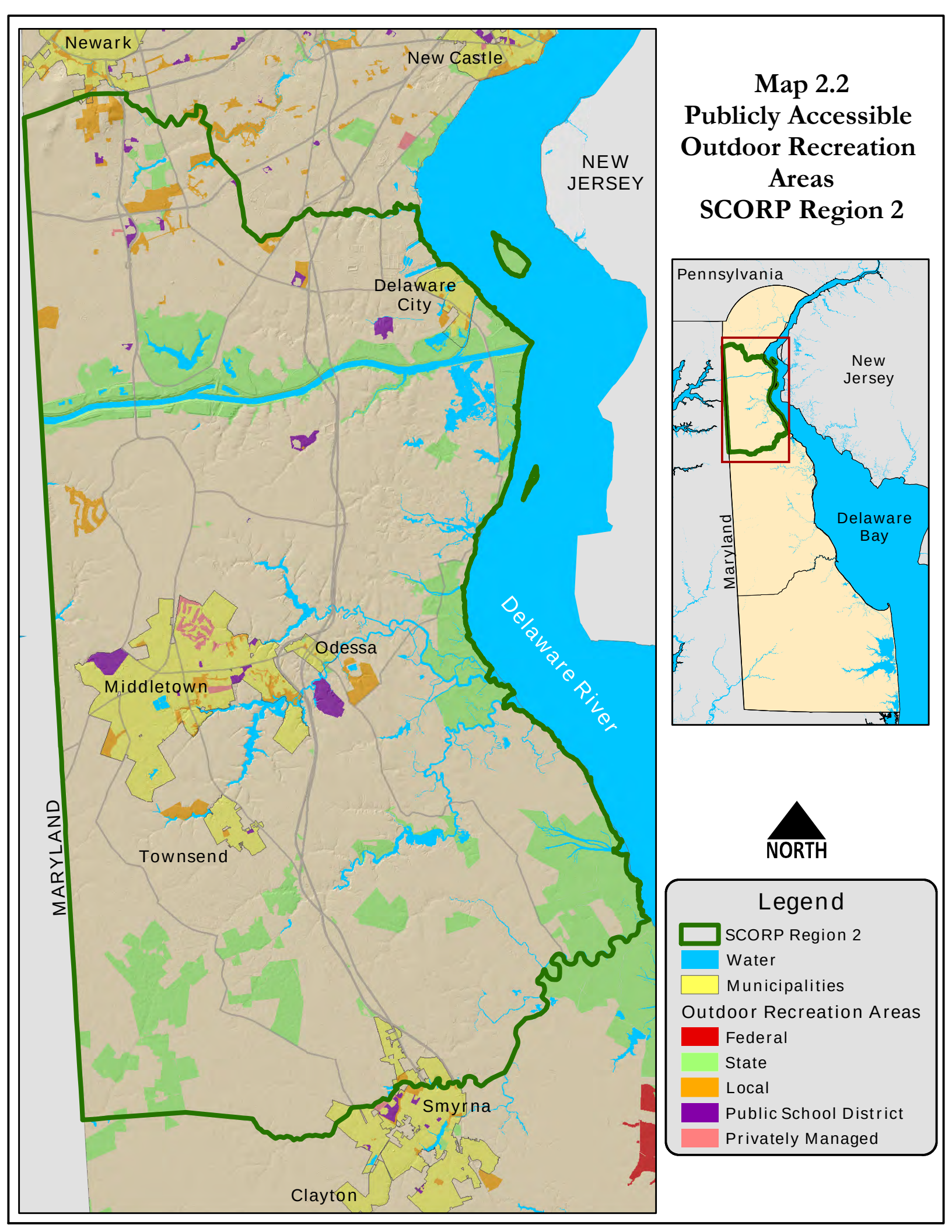
NORTH

Legend

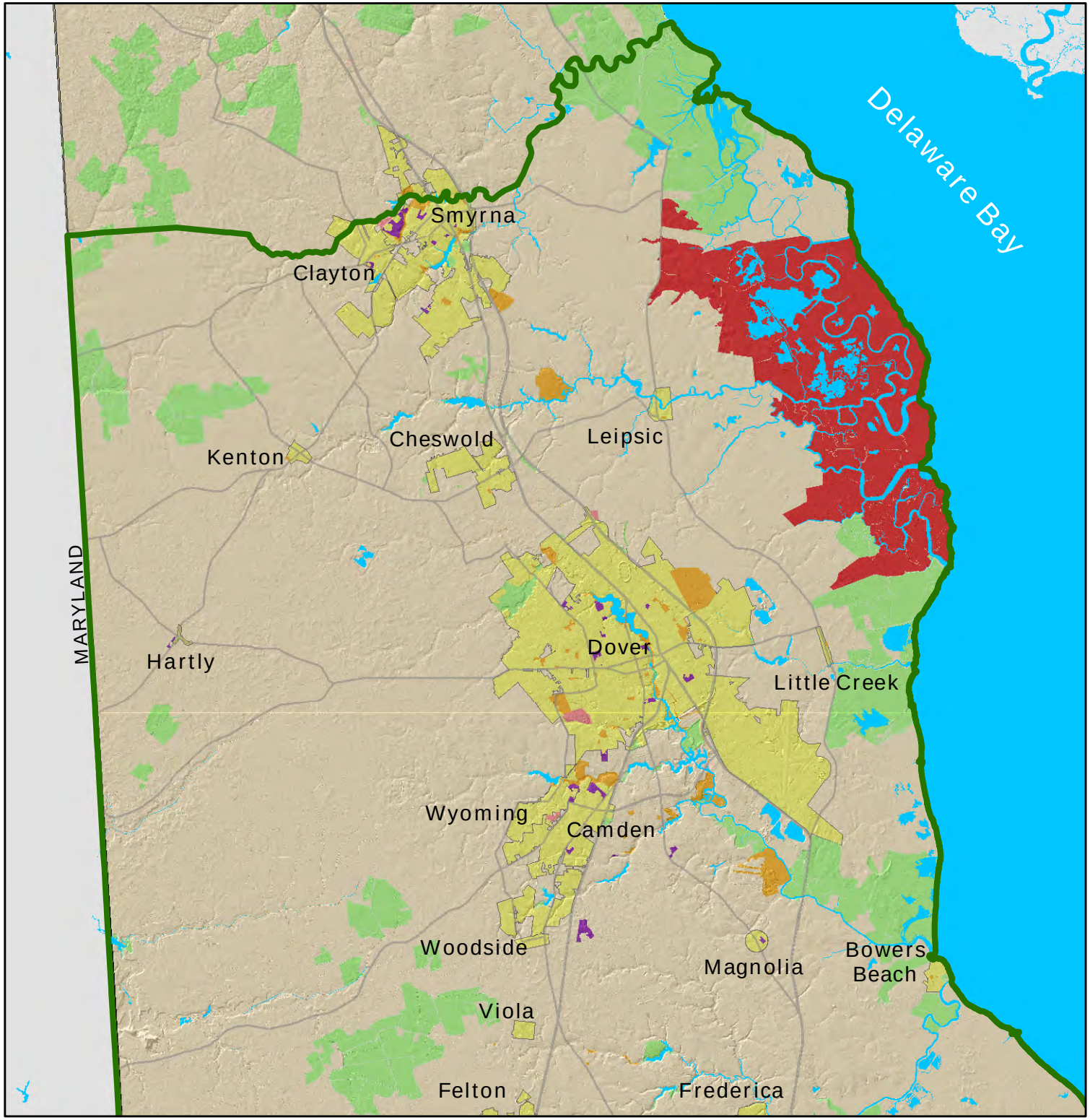
- SCORP Region 1
- Water
- Municipalities

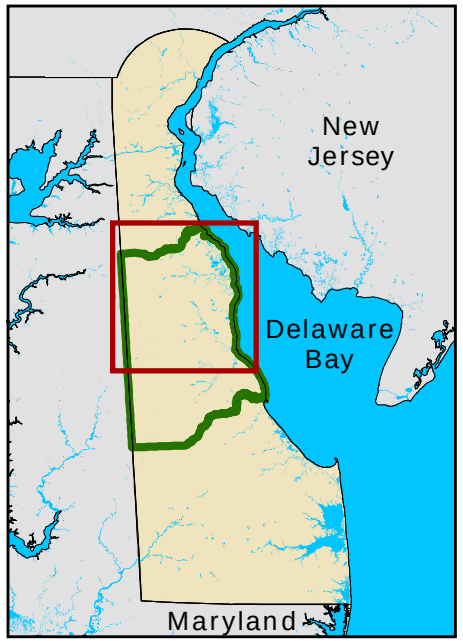
Outdoor Recreation Areas

- State
- Local
- Public School District
- Privately Managed


Map 2.2
Publicly Accessible
Outdoor Recreation
Areas
SCORP Region 2
Newark
New Castle
NEW
JERSEY
Delaware
City
Odessa
Middletown
Townsend
MARYLAND
Delaware River
Smyrna
Clayton
Pennsylvania
New
Jersey
Maryland
Delaware
Bay
NORTH
Legend
SCORP Region 2
Water
Municipalities
Outdoor Recreation Areas
Federal
State
Local
Public School District
Privately Managed

Map 2.3a
Publicly Accessible Outdoor Recreation Areas
SCORP Region 3





NORTH

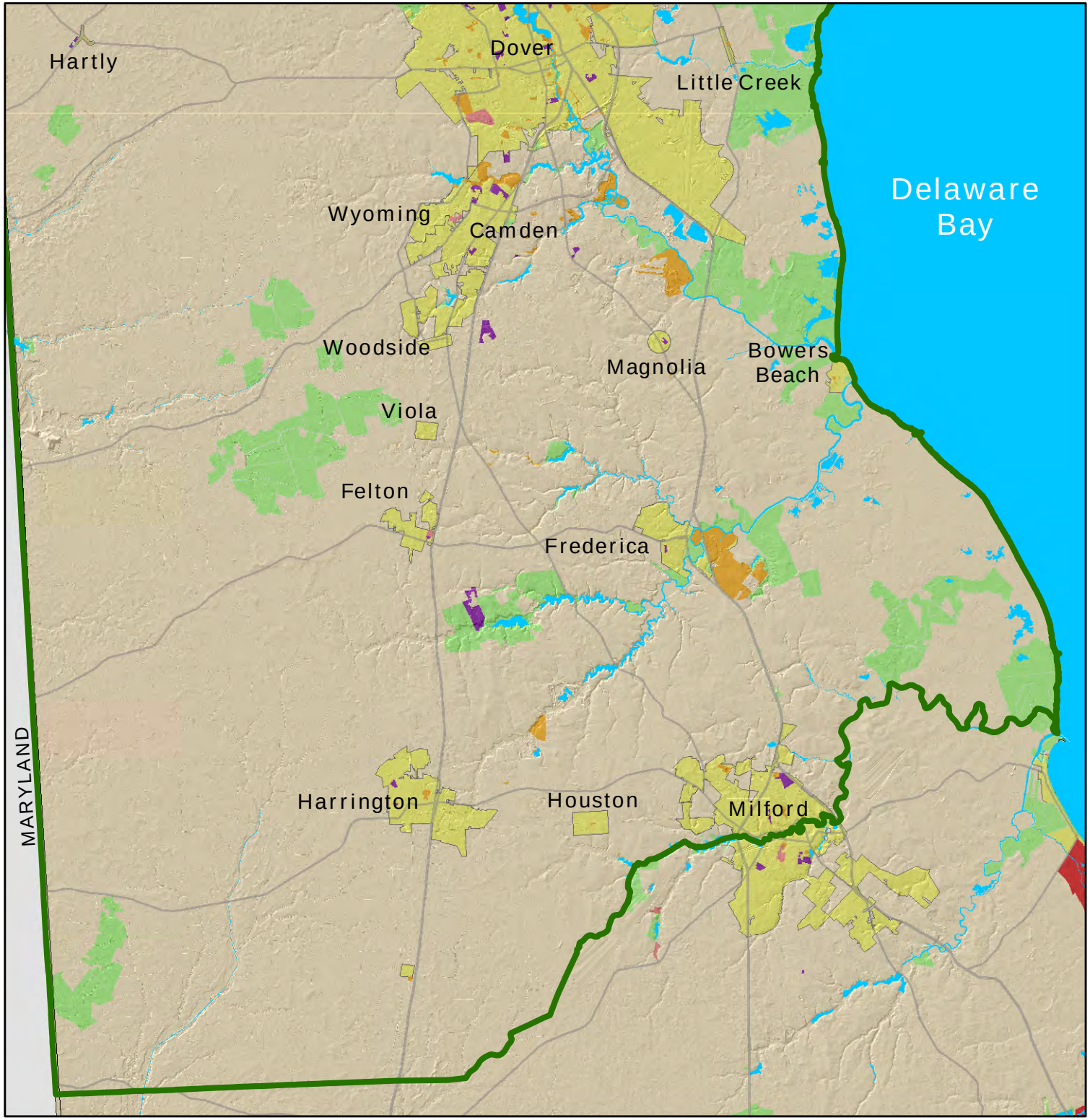
Legend

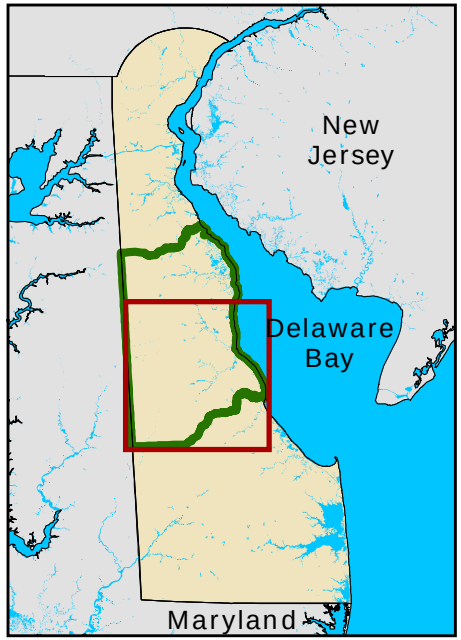
- SCORP Region 3
- Water
- Municipalities

Outdoor Recreation Areas

- Federal
- State
- Local
- Public School District
- Privately Managed

Map 2.3b
Publicly Accessible Outdoor Recreation Areas
SCORP Region 3





NORTH

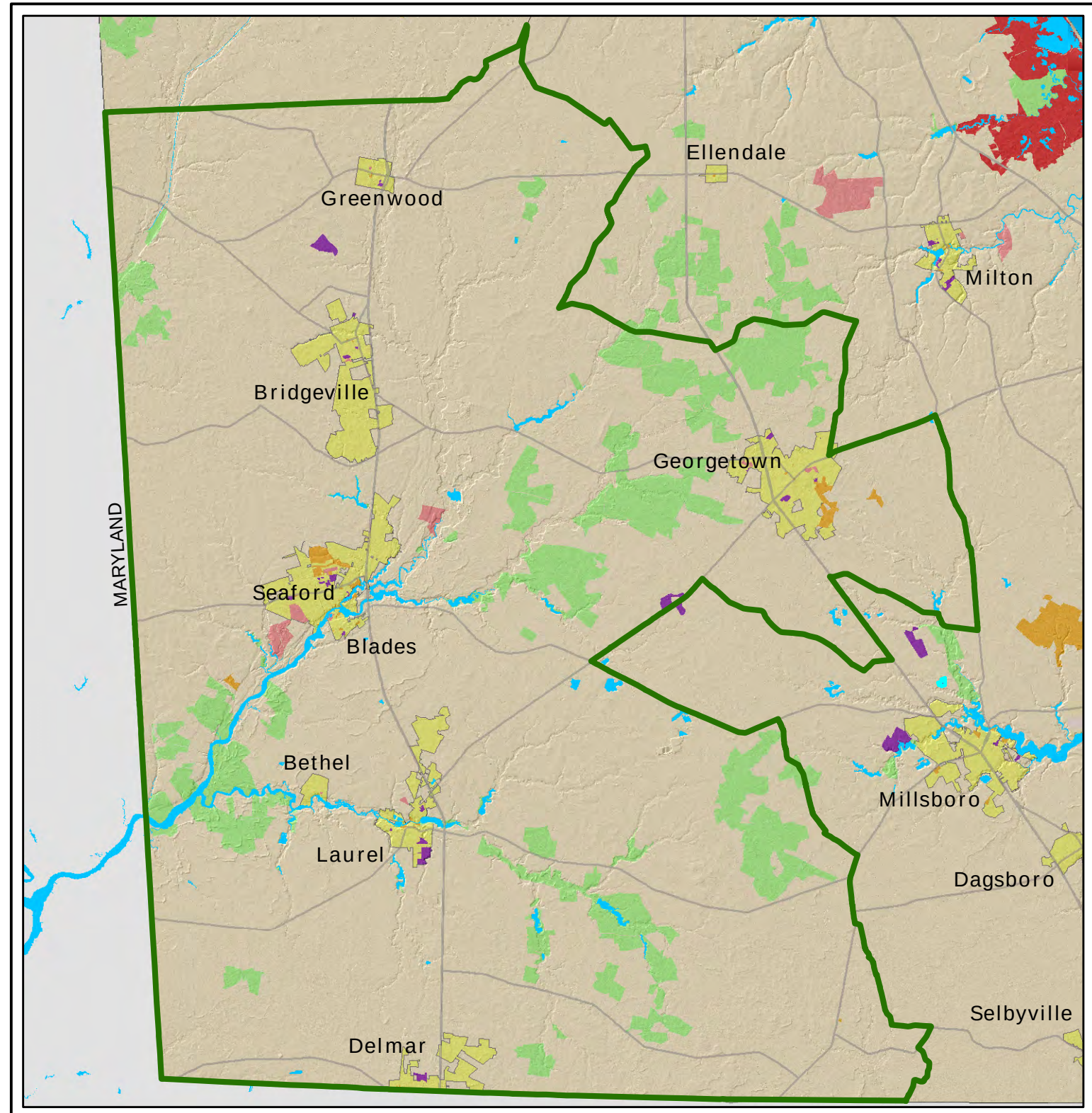
Legend

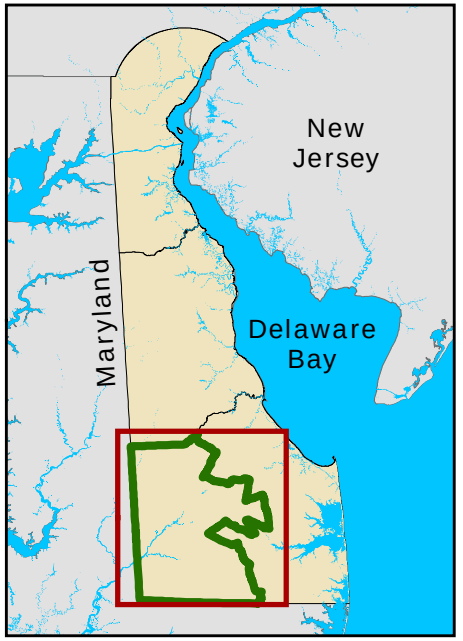
- SCORP Region 3
- Water
- Municipalities

Outdoor Recreation Areas

- Federal
- State
- Local
- Public School District
- Privately Managed

Map 2.4
Publicly Accessible Outdoor Recreation Areas
SCORP Region 4





NORTH

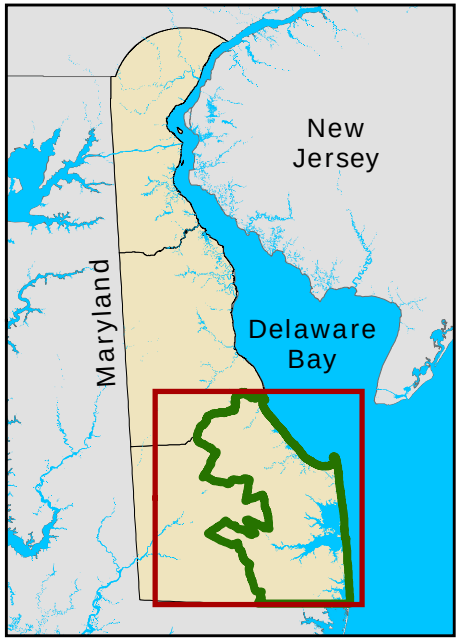
Legend

- SCORP Region 4
- Water
- Municipalities

Outdoor Recreation Areas

- Federal
- State
- Local
- Public School District
- Privately Managed

Map 2.5
Publicly Accessible Outdoor Recreation Areas
SCORP Region 5



NORTH

Legend

- SCORP Region 5
- Water
- Municipalities

Outdoor Recreation Areas

- Federal
- State
- Local
- Public School District
- Privately Managed

Houston
Harrington
Slaughter Beach
Delaware Bay
Milford
Farmington
Ellendale
Greenwood
Milton
Lewes
Rehoboth Beach
Bridgeville
Georgetown
Seaford
Blades
Bethel
Millsboro
Dagsboro
Bethany Beach
Laurel
Millville
Frankford
South Bethany
Delmar
Selbyville
Fenwick Island

Level of Service Analysis of Outdoor Recreation Facilities

Delaware is developing robust analytical models that analyze outdoor recreation facility distribution and level of service. This is a departure from past approaches that looked solely at acreage of publicly accessible land. Though important, large tracts of land, which have been protected primarily for conservation provide limited recreation opportunities and skew the overall assessment of active outdoor recreation spaces. Population centers, projected population growth, outdoor recreation facility distribution and facility availability are all key factors in conducting level of service analyses. As such, a spatial representation of Delaware's ORI is a valuable component in both land use and park planning.

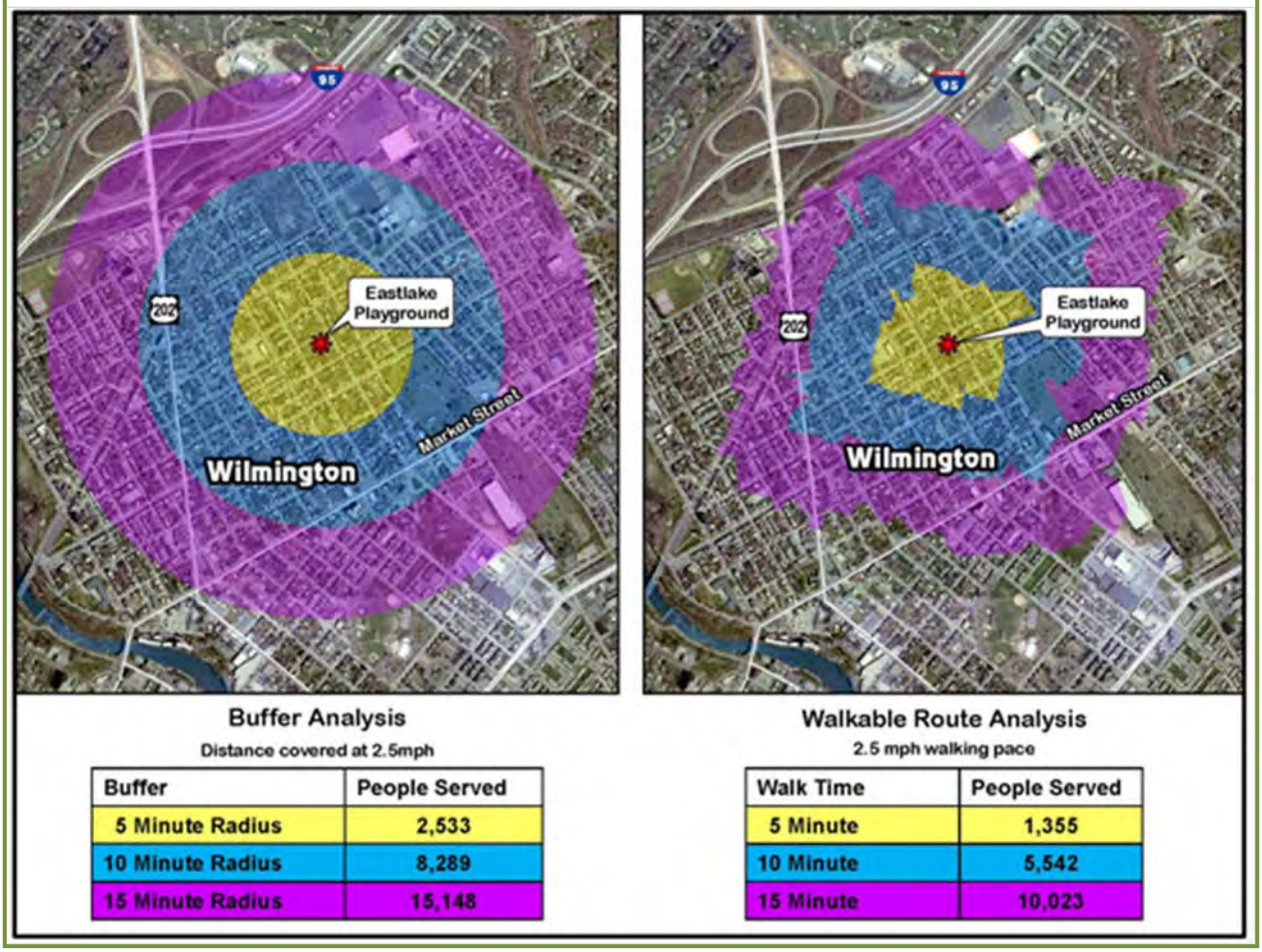
In the Spring of 2012, the Division of Parks and Recreation contracted Azavea, a geospatial firm specializing in location-based application development, to create GIS models that assist in park and recreation planning. The three models developed use GIS infrastructure data to identify walk-sheds, drive-sheds, and transit-sheds for parks and recreation spaces throughout the state. The models are built using the Network Analyst extension of ArcGIS combined with 2010 Census statistics to estimate the service areas for recreational facilities recorded in Delaware's ORI. Differing from a basic buffer analysis, these models use actual road and pedestrian travel networks providing more accurate estimates of populations served. For the first time, the utility of employing a network analysis can easily and accurately assist park planners at a very local level. The following sections present examples of spatial network analyses and their utility in planning and decision-making. The Division of Parks & Recreation will conduct these analyses when providing technical assistance to county and local parks departments and use this information to prioritize funding decisions.

Walk-shed Analysis

A walk-shed is a pedestrian travel zone defined by the walkable area around a particular point of interest, in this case parks and recreational facilities. A walk-shed network uses pedestrian travel networks like neighborhood streets, sidewalks, trails and pedestrian pathways to calculate a true route of travel. Traditional buffer analyses do not account for certain impedances like rivers, railroads, buildings, and major roadway crossings that could prevent access to facilities or make a walking trip longer.

As a result, buffer analyses can drastically overestimate a park or recreation facility's level of service. Figure 2.1 demonstrates level of service estimates using both a simple buffer analysis and a walkable route analysis conducted using existing pedestrian travel networks around the Eastlake Playground in Wilmington.

Figure 2.1- Level of Service Comparison (Buffer Analysis vs. Walkable Route Analysis)



Buffer Analysis

Distance covered at 2.5mph

Buffer	People Served
5 Minute Radius	2,533
10 Minute Radius	8,289
15 Minute Radius	15,148

Walkable Route Analysis

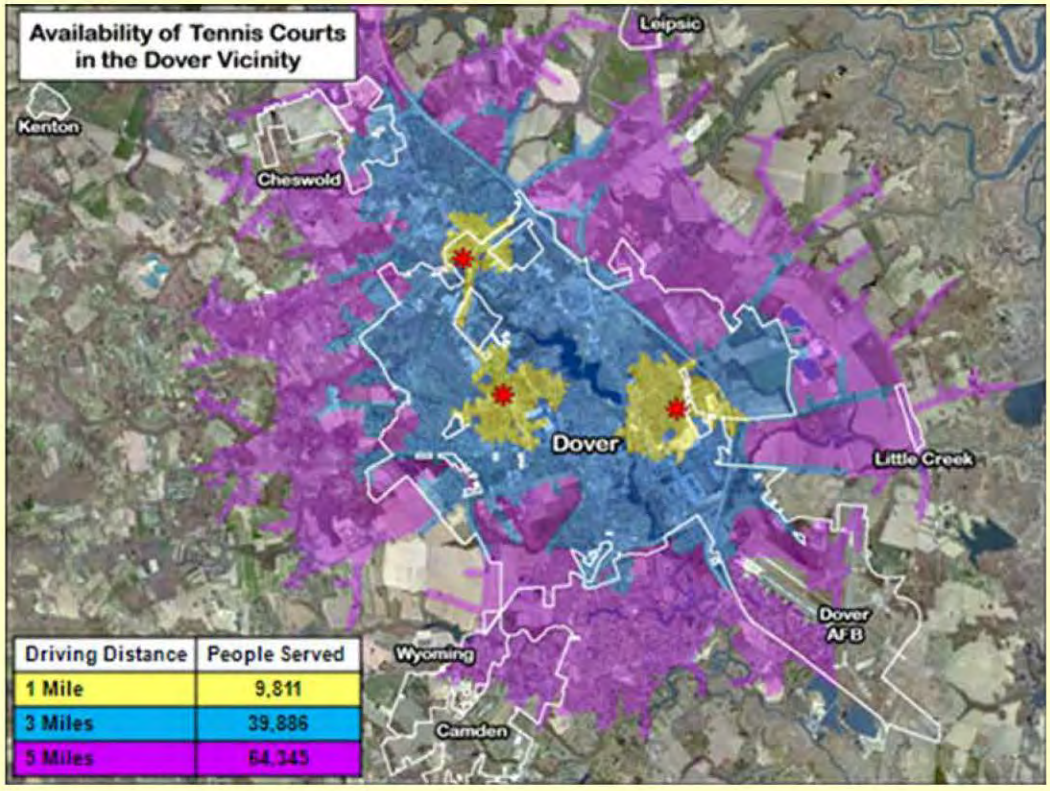
2.5 mph walking pace

Walk Time	People Served
5 Minute	1,355
10 Minute	5,542
15 Minute	10,023

As shown, the circular buffer analysis increases the level of service in a 5 minute walking radius to Eastlake Park by more than one thousand people, by nearly three thousand people within a 10 minute walk, and close to five thousand individuals within a 15 minute walk. The Figure 2.1 buffer analysis does not account for difficulties crossing major roads nor the inability to cross Interstate 95. A walkable route analysis accounts for such barriers and more accurately reflect pedestrian access to the Eastlake Playground. At a reasonable walking pace of 2.5 miles per hour, 1,355, 5,542 and 10,023 people live within five, ten, and fifteen minutes respectively of the playground.

Drive-shed Analysis

Using the state road network, the same type of spatial network analyses can be conducted to identify drive-sheds for parks and recreation facilities. Similar to a walk-shed, a drive-shed is a vehicular travel zone defined by a road network around a particular point of interest. A drive-shed network analysis uses information from the state road network to calculate the number of people served within a defined driving distance of a park facility. Figure 2.2 contrasts the walk-shed and drive-shed level of service functionalities for tennis courts located in Dover.



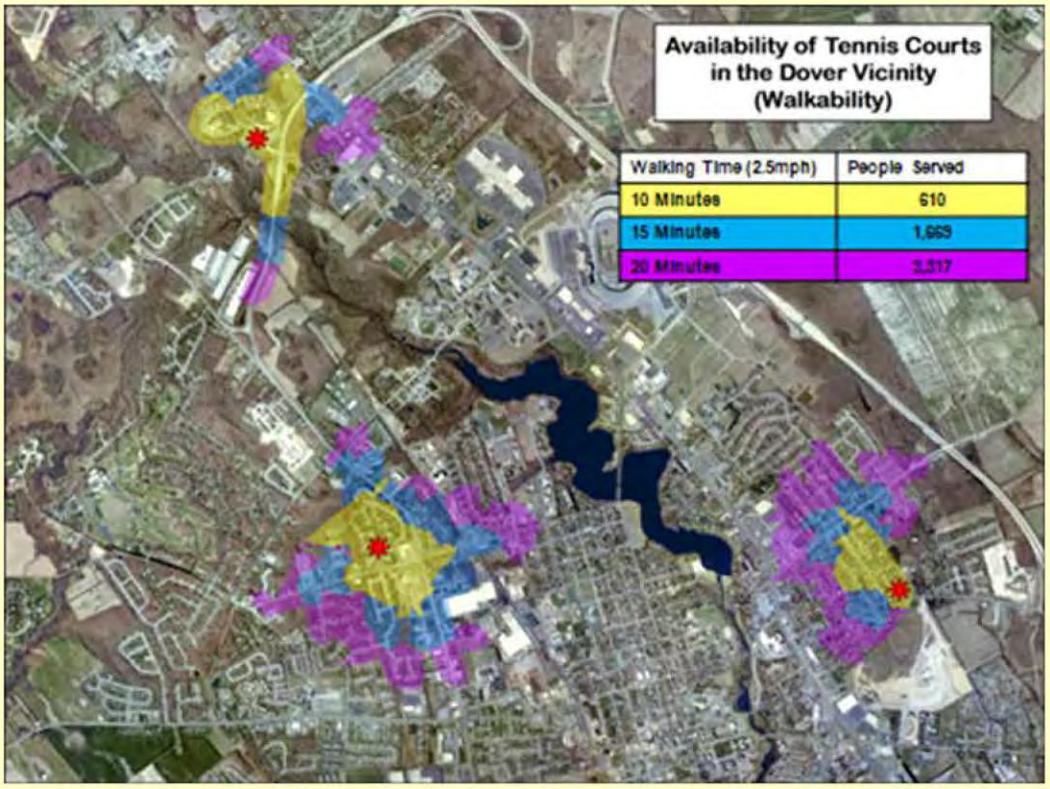
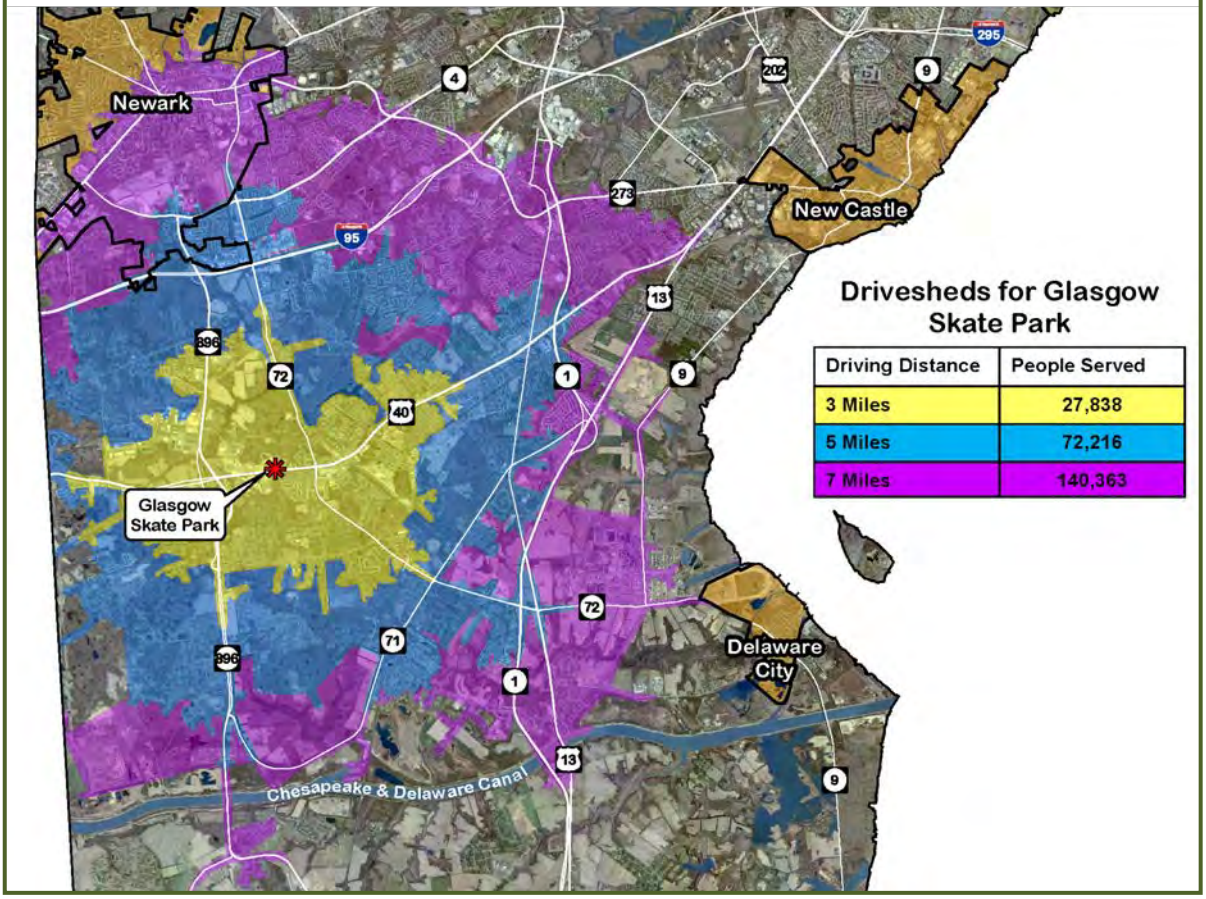


Figure 2.2- Drive-shed and Walk-shed Analysis for Public Tennis Facilities in Dover, DE

Drive-shed analyses are useful for regional and district parks, those that have unique features and amenities that are designed to serve a larger population because people are willing to drive further. Glasgow Park, managed by New Castle County, is home to a 24,000 square foot skate park, the largest publicly-owned skate facility in the state. As shown in Figure 2.3, by locating the skate park in central New Castle County, the skate facility is within a short seven mile drive to more than 140,000 residents.

Figure 2.3- Level of Service Analysis for Glasgow Regional Park, New Castle County, DE



Replacement of Aging Facilities

Network analyses can have great value in planning for the replacement of aging facilities and properly allocating park investments. Specific information for each amenity in a park including the year in which an amenity was built and the average

lifespan of the amenity combined with the number of people that are served can be vital information for investment decisions.

As demonstrated in Figure 2.4 Chatham Park is a neighborhood park in New Castle County. More than one thousand people live within a 15 minute walk and five thousand people live within 1 mile drive from this park. As Chatham Park is the only park in the immediate area, the amenities and services of the park are vital for close to home recreation opportunities. If amenities are removed, in disrepair, or obsolete in meeting local needs, residents around this park become underserved. Tracking the date in which facilities are built (in a relational database) and understanding the average life span of individual amenities can aid in facility management and planning for maintenance and replacement. Bolstering the spatial data of the Outdoor Recreation Inventory to include detailed information, such as constructed date, about individual amenities will strengthen the utility of the ORI for all park professionals.

Figure 2.4- Chatham Park Walk-shed and Drive-shed Analysis

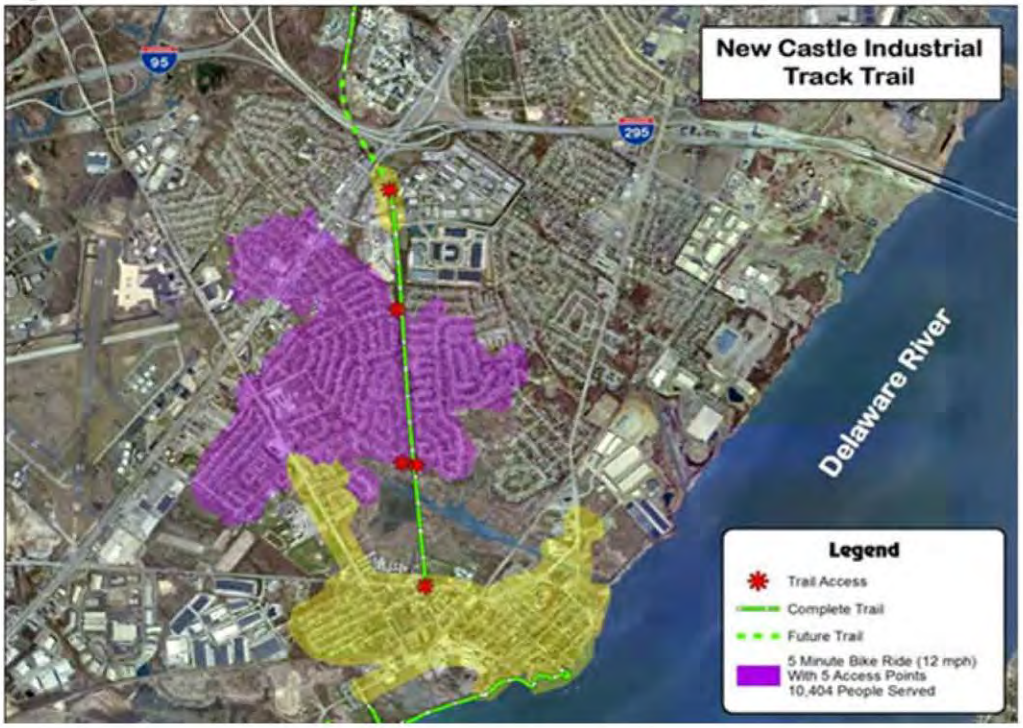
Identifying the Best Location for Amenities

Single amenity level of service analyses enables park professionals to look at a specific facility and identify the facility's service network access via driving, biking and walking as well as the number of people living within that defined service area. This type of network analyses can assist in identifying the best location for new community connections to parks and recreation facilities and guide investments that will have the greatest return for the community. Figure 2.5 illustrates the southernmost extent of the New Castle Industrial Track Trail that, when complete, will provide an off-road connection from the City of New Castle to the City of Wilmington. Currently there are two access locations, one on each end of the trail. With the current trail access locations, the trail serves just over 3,500 people who live within a five minute bike ride.

Aerial photo and field reviews determined locations for three potential trail access points. Using a network analysis, the number of community residents served can be determined. In this example, adding three strategically placed trail access points, at a relatively low cost, can nearly triple the number of people who live within a five minute bike ride of the New Castle Industrial Track Trail (Figure 2.6). With trail demand high, as found in the Outdoor Recreation Participation and Trends Survey, creating community trail connections will begin to satisfy public trail needs.

Figure 2.5- Existing Conditions for the New Castle Industrial Track Trail

Figure 2.6- Additional Access to the New Castle Industrial Track Trail



Strengthening Recreation Data

Private recreation providers play an integral role in providing outdoor recreation opportunities throughout the state. To get a complete understanding for outdoor recreation services in Delaware, private facilities should be included in these types of network analyses. Certain private facilities provide services to portions of the population that may be categorized as underserved when looking only at publicly accessible facilities. As an example, golf facilities are located around the state, but most are privately-owned and managed. Looking at only the golf facilities that are publicly-owned and operated would mistakenly inflate the need for golf facilities. Unfortunately, there is no single information source for the supply of private recreation facilities and/or provider information. Strengthening public and private partnerships would help fill this gap of information and allow for an overarching, all inclusive outdoor recreation level of service analysis. The amount of information that could be garnered from including private facilities would only enrich planning efforts for public recreation providers by not duplicating private sector services and directing funding where most needed.

Recommendation:

Identify private recreation facilities to be incorporated in a statewide level of service analysis.

Though spatial network analyses are powerful tools for recreation facility planning and understanding level of service, they do not give complete pictures. The analyses output can only be as accurate as the data upon which it is based. Delaware's Outdoor Recreation Inventory is the most robust dataset available for publicly accessible parks and recreation areas, but can be strengthened to include more detailed information on individual facilities, such as age and condition. Additionally, more accurate spatial data representing road, sidewalk and pedestrian pathways would enhance the analyses. For more detailed planning, U.S. Census information can be queried by age, ethnicity, and socio-economic status to get a better understanding of level of service for each demographic.

Recommendation:

Broaden the Outdoor Recreation Inventory to include facility age and condition analyses. This data will help managers plan for maintenance and replacement of outdoor recreation facilities.

Identify missing information needed to conduct more accurate spatial analyses.

Assist county and local parks and recreation officials with level of service and spatial analyses of their local parks and recreation facilities. This information will help planners and local decision makers in setting investment priorities that meet the outdoor recreation needs of local residents.

Conduct outdoor recreation spatial analyses to inform health impact assessments for local and regional community designs.

Outdoor Recreation Inventory

Goal: Incorporate the Outdoor Recreation Inventory in state and local planning decisions and educational outreach

RECOMMENDATIONS	IMPLEMENTERS	AGO
1. Identify private recreation facilities to be incorporated in a statewide level of service analysis.	*Outdoor Recreation Industry, State and Local recreation providers, DPR*	
2. Broaden the Outdoor Recreation Inventory to include facility age and condition analyses.	*DPR, State and Local recreation providers*	
3. Identify missing information needed to conduct more accurate spatial analyses.	*DNREC, DELDOT, State and Local planning agencies and parks departments, SCORP TAC*	
4. Assist county and local parks and recreation officials with level of service and spatial analyses of their local park and recreation facilities to determine geographical representation of recreational facility needs.	*DPR, State and Local recreation officials*	
5. Conduct outdoor recreation spatial analyses to inform health impact assessments for local and regional community designs.	*DE HEAL, DPH, OSPC, DNREC, DE Greenways, WILMAPCO, Kent/Sussex MPO*	
6. Develop an online clearinghouse of resources that disseminates detailed information for all recreation facilities in Delaware.	*DNREC, USFWS, State and Local recreation providers.*	

**See Outdoor Recreation and Conservation Issues and Recommendations Section (page 4.1) for explanation of table.*