



# NATURAL RESOURCE INVENTORY

## COLLINGSWOOD, NJ

PREPARED BY TIM IFILL

SEPTEMBER 30, 2019

# CONTENTS

*Introduction - Page 4*

*A Brief History of Collingswood - Page 7*

*Location and Population - Page 14*

*Physiography, Topography, and Climate - Page 16*

*Hydrology - Page 29*

*Biological Resources- Page 44*

*Land Use - Page 52*

*The Built Environment - Page 56*

*Environmental Issues - Page 76*

*Acknowledgments - 82*

*Appendix A - Information and Data Sources - Page 83*

*Appendix B - Detailed Soil Characteristics - Page 87*

*Appendix C - Tree Survey - Page 95*

*Appendix D - Bird Species - Page 99*

*Appendix E - Zoning Map - Page 101*

*Appendix F - Water Quality Report - Page 103*

*Appendix G - Pending/Closed Contaminated Sites - Page 113*

*Appendix H - Sustainability Actions - Page 119*

*List of Maps:*

*Map 1 - Collingswood, New Jersey - Page 5*

*Map 2 - Aerial Imagery - Page 6*

*Map 3 - Steep Slopes - Page 18*

- Map 4 - Soil - Page 19*
- Map 5 - Hydrology - Page 30*
- Map 6 - Flood Hazard Zones - Page 34*
- Map 7 - Impervious Surfaces - Page 36*
- Map 8 - Landscape Project Priority Habitats - Page 49*
- Map 9 - Land Use (2015) - Page 54*
- Map 10 - Highway Network - Page 60*
- Map 11 - Rail Service - Page 62*
- Map 12 - Listed Historic Districts and Sites - Page 66*
- Map 13 - Protected Open Space - Page 68*
- Map 14 - Circuit Trails - Page 70*
- Map 15 - Known Contaminated Sites and CEAs - Page 80*

# INTRODUCTION

Collingswood is a historic New Jersey town 10 minutes outside Philadelphia. Known for its eclectic downtown and BYO restaurant scene, it has taken home national recognition including being named a Top 10 Transformed Neighborhood by Forbes, the Best Place to Go Car Free by Men’s Journal magazine, a Classic Town of Greater Philadelphia by the Delaware Valley Regional Planning Commission, a Great Place in America (Haddon Avenue) by the American Planning Association and is home to the Collingswood Farmers’ Market, voted best in America by the American Farmland Trust.

A Natural Resource Inventory (also known as an Environmental Resource Inventory) is a way for a municipality to document an environmental baseline, cataloging the community’s various assets, challenges, and environmental concerns. The goal of the report is to be an objective index of resources including maps, data tables, and visuals. It does not contain recommendations, proposals, or future plans.

Natural Resource Inventories are an important tool for environmental commissions, planning boards, and zoning boards of adjustment. The report can be adopted as part of a Master Plan and serves as the first step to protecting, preserving, or enhancing the natural resources within a municipality.

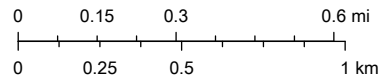
This report was prepared in September 2019. All data and maps in the report represent the most up-to-date publicly available records.



# Map 1 - Collingswood, New Jersey



1:25,000



Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

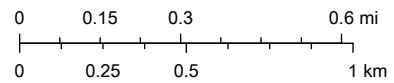
Web AppBuilder for ArcGIS  
State of New Jersey, Esri, HERE, Garmin, INCREMENT P, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA |

## Map 2 - Aerial Imagery



9/30/2019, 12:53:20 AM

1:25,000



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Web AppBuilder for ArcGIS  
USDA FSA |

# A BRIEF HISTORY OF COLLINGSWOOD

The Delaware Valley, including the lands around modern Collingswood, has been inhabited for at least 10,000 years, with Paleo-Indians moving to the area as the glaciers receded at the end of the last Ice Age. Little is known of these early hunter-gatherer arrivals. Other groups and cultures occupied and visited the land over time. Sometime around 1000 AD, the Lenape arrived.

At the time of European contact, all of modern New Jersey, Eastern Pennsylvania within the Delaware watershed, and the lower Hudson Valley collectively comprised Lenapehoking, the homeland of the Lenape people. The Lenape lived in autonomous settlements of likely several hundred people along the tributaries of the Delaware and near the sea coast. They



Detail of a 1639 map of New Netherland showing Lenape settlements. The settlement marked Amakaraonck would have been near modern Collingswood. The Delaware is at the top of the map, and South is to the left. Credit: Library of Congress

had a network of trails that crisscrossed the region, including the Manahawkin Trail, which connected the Delaware River near modern Camden to the Atlantic Ocean, roughly along the current Route 70. They also engaged in trade and occasional warfare with Iroquois groups in the Susquehanna River Valley and modern Upstate New York.

The Lenape subsisted on hunting, fishing, gathering, and agriculture (primarily maize, beans, and squash). While there was some movement back and forth to different seasonal camps, they were mostly a sedentary as opposed to nomadic society. There is also evidence that they engaged in land management techniques including prescribed burns in order to facilitate both agriculture and game management.

The Lenape of Southern New Jersey spoke the Unami language, and 17th century European maps indicate a group of Lenape known as the Amakaraonck lived north of Big Timber Creek near modern Collingswood. These maps show several apparent settlements along the Delaware's tributaries on the New Jersey side..

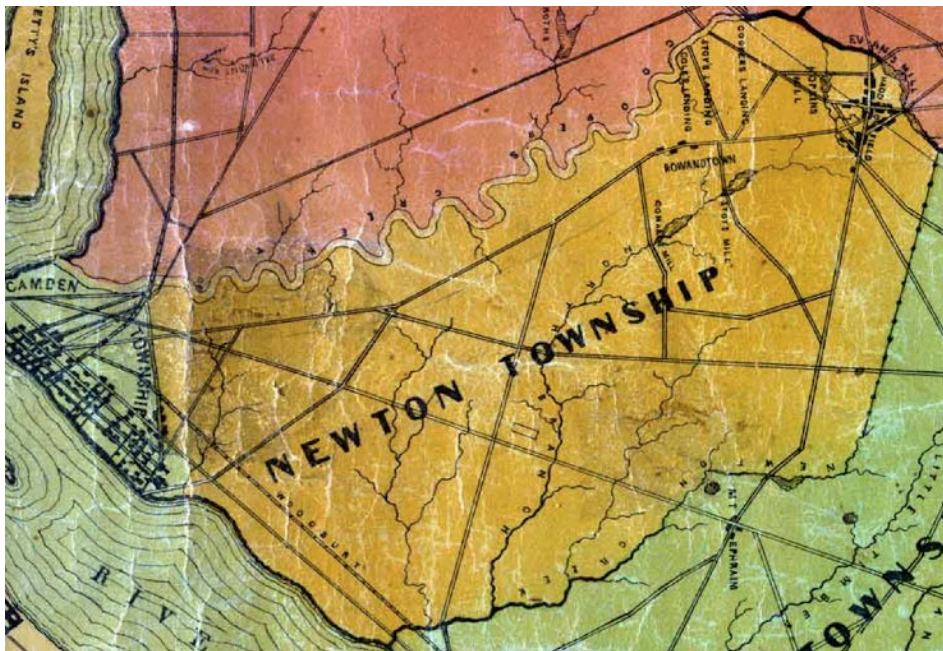
By the time the first Europeans began permanently settling in the Delaware Valley, the Lenape population would very likely have been decimated by exotic diseases encountered during the initial European contact. However, the Lenape retained a measure of control of the region for much of the 17th century, even as Dutch and Swedish settlers began arriving and tussling over territory in the Delaware Valley and Bay. The Lenape regularly engaged in trade with the early Dutch, Swedish, and Finnish settlers of the area, mostly pelts for durable goods. The Dutch built Fort Nassau at the mouth of nearby Big Timber Creek in the 1620s, control of which passed several times between the Dutch and the Swedes.

The English took over New Netherland in 1664, and the portion west of the Hudson River was named New Jersey. Later, a half share of New Jersey was sold to a group of wealthy Quakers, causing it to be split into separate provinces, East and West New Jersey. The Quakers began settling the region in the 1670s, though not nearly in the numbers that they eventually settled neighboring Pennsylvania. On September 10th, 1677, a group of commissioners appointed by the ownership group purchased all of the lands between Big Timber and Rancocas Creeks, including the land that eventually became Collingswood, from the Lenape in exchange for English textiles and tools. A separate purchase, finalized two weeks later, for the land south of Big Timber Creek up to Oldman's Creek gives an idea of what the Lenape would have received for this land: "30 match coats, 20 guns, 30 kettles, and one great one, 30 pairs of hose, 20 fathoms of duffields, 30 petticoats, 30 narrow hoes, 30 bars of lead, 15 small barrels of powder, 70 knives, 30 axes, 70 combs, 60 pair of tobacco tongs, 60 scissors, 60 tinshaw looking-glasses, 120 awl blades, 120 fish-hooks, 2 grasps of



red paint, 120 needles, 60 tobacco-boxes, 120 pipes, 200 bells, 100 jews-harps, 6 anchors of rum."

In 1682, a group of Irish Quakers including William Bates, George Goldsmith, Mark Newbie, Thomas Sharp, Thomas Thackara, and Robert Zane founded Newton Colony along the banks of Newton Creek and began farming the area. It was the third English settlement of West New Jersey after Salem and Burlington. Their settlement eventually became Newton Township, which comprised the modern communities of Camden, Collingswood, Haddon Township, Audubon, Haddonfield, and Pennsauken. Many descendants of the original settlers, along with the Collins (later Collings) family, another early Quaker arrival in the area, went on to farm the area for the next two centuries.



By the mid-19th century, most of what is now Collingswood was farmland crisscrossed by several regional roads. Most important was the Haddonfield-Camden Turnpike (now Haddon Avenue), along which several homes and businesses appeared, including the Half-Way House, an inn and tavern, built in 1828 at Woodlawn Avenue.

*Newton Township in 1846. Credit: Rutgers Special Collections*

In 1832 Newton Township (which by then was separated from the original portion of Camden) "contained 199 householders, whose ratables did not exceed \$30; 6 stores, 2 fisheries, 3 grist mills, 1 saw mill, 1 fulling mill, 1 tan yard, 2 distilleries, 643 neat cattle, and 287 horses and mules above 3 years of age." Cultivated land at the time was "employed principally in raising vegetables and fruit for market."

Newton Township was dissolved in 1865, and the New Jersey Legislature designated the western portion, including the future site of Collingswood, as Haddon Township. The Camden and Atlantic Railroad added a stop in the burgeoning village in 1871, and two years later, residents voted to ban the sale of alcohol, a prohibition which stands (mostly) intact today. In 1881, the federal government granted a petition to open a post office, which required a name for the neighborhood. Residents decided on the name "Collingswood," referencing the family with the largest landholdings.

In 1888, residents voted in a referendum to break away from Haddon Township, and Collingswood was established as a borough by the New Jersey legislature. Around this same time, landholders, no doubt inspired by the railroad-fueled suburban development that was already taking place in nearby Merchantville and Haddonfield, began pursuing



*Park Avenue was one of the earliest residential blocks to be developed in Collingswood. Credit: Historical Society of Riverton*

development opportunities locally. Edward Collings Knight, by that time a successful Philadelphia businessman, acquired his family farm along with most of the Zane family holdings. Companies such as the Collingswood Land Company, the Collingswood Real Estate Company, and the Collingswood Realty Company began subdividing Knight's holdings and other tracts along Haddon Avenue into 20-40 foot lots.

As Camden industrialized and urbanized, more residents were drawn to these new planned suburban communities. The real estate companies aggressively promoted Collingswood, taking out ads and running special free trains from the city. Among the earliest areas to be developed were the blocks between Haddon Avenue and Linwood Avenue, which by 1898 were laid out in a street grid, with several dozen modern builder-designed homes having been built.

Edward Knight donated a portion of his holdings to the town, and the 61-acre Knight Park was dedicated in 1893. Park grounds were laid out by Philadelphia landscape architect

and civil engineer Alfred R. Egerton and included small artificial lakes for boating and skating, winding paths, and areas for athletic and social events.

Development continued apace into the early 20th century, with developers enticing city dwellers with sizable houses, fresh air and modern services. A street car line in and out of Camden

began operating along Haddon Avenue in the early 1900s. Most of Collingswood's housing stock was built during the first decades of the twentieth century, amid a great deal of speculative development. Haddon Avenue became a busy commercial corridor at this time as well. Builders offered buyers basic housing plans that could be slightly customized. Most houses were built in dominant architectural styles at the time - colonial revival,

American four square, and bungalows, with a few high style Queen Anne homes in the mix as well. During this building boom, population increased from just 539 just after the borough's founding in 1890 to 1,663 in 1900, then to 4,975 in 1910, and to 8,714 by 1920. Schools, churches, and social organizations grew up to support the growing community.

In 1926, the Delaware River (now Benjamin Franklin) Bridge opened, connecting Camden County to the city of Philadelphia by automobile. Auto-oriented development in areas surrounding



*Knight Park Credit: Historical Society of Riverton*

Bring the Family Out to

# Collingswood, N. J.



New, modern houses on the *Homestead Tract* are being bought as fast as they're built, because located in the fastest growing and healthiest suburb in New Jersey.

**Don't keep the children in crowded city streets**

—but come out now and see these new homes equipped with every advantage that you have in city. With plenty of room, healthful, pure water, fresh air, and delightful surroundings you can't get at any price in the city. It will take you but 16 minutes to get to and from your business by frequent train service.

**Pure Water**  
**Pure Air**  
**High Ground**  
**Paved Streets**  
**Sewerage**  
**Electric Lights, Gas**  
**Fine Schools**  
**All Churches**  
**Train or Trolley**

**GET OFF TROLLEY AT HOMESTEAD AVENUE**

**New Houses for Sale on \$3,000 Finer and More Elaborate**  
**Easy Terms as Low as \$4,800 Homes up to \$4,800**

**Always Open for Inspection. Jno. M. Kelley, Builder** On Ground, or Third & Market Sts., Camden, N. J.



*Credit: Historical Society of Riverton*

Collingswood, such as along the Admiral Wilson Boulevard and Route 130, soon followed. One of New Jersey's iconic traffic circles, known as the Collingswood Circle (replaced in 2009 by an at-grade intersection with jugghandles) was built at the far western edge of town where Rt. 130 met the White Horse Pike, but aside from that, Collingswood itself was largely built out by that point and so escaped large scale transformation.

In 1969, the PATCO Speedline began operation, connecting Center City Philadelphia to Lindenwold, NJ via high speed rail with a stop in Collingswood.



*An aerial survey of Collingswood from 1930. Credit: NJDEP*

By the late 20th century, the business district was declining, with a high percentage of empty storefronts. Business leaders banded together to protect the main street character and promote opportunities in the borough. Their efforts resulted in popular events and a thriving dining scene, driven by BYOB restaurants, which attracts visitors and new residents to Collingswood today.



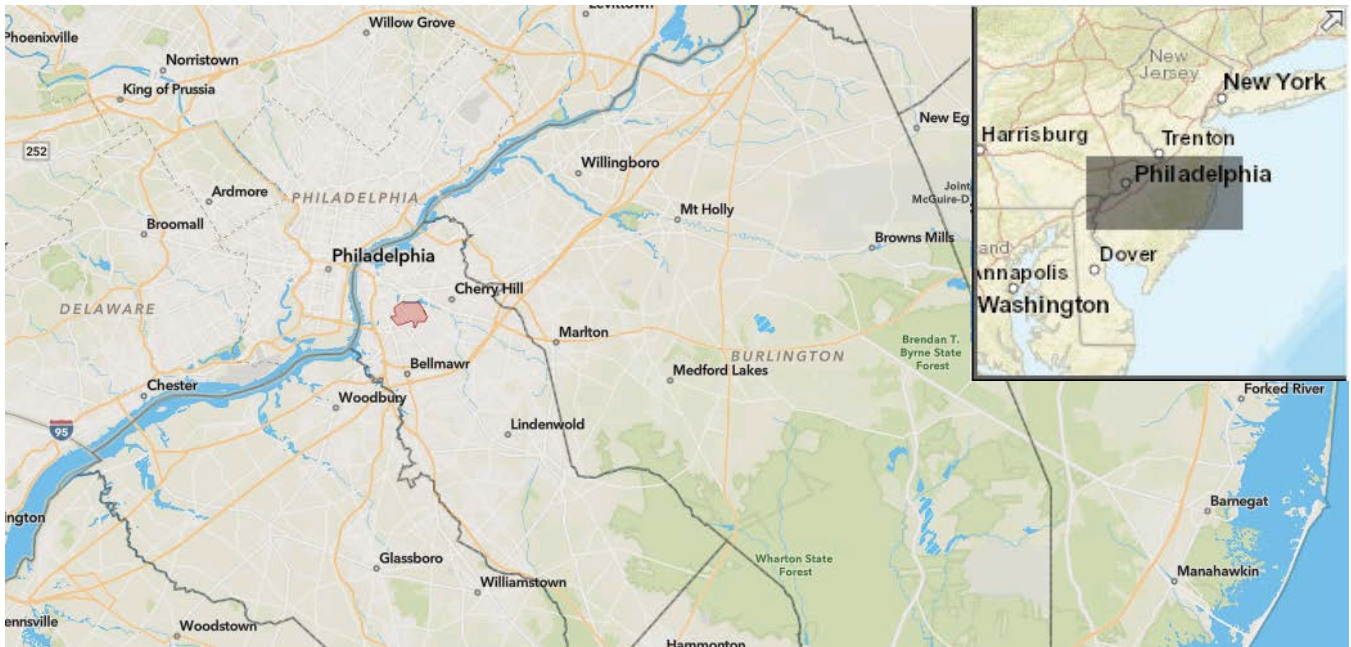
*Credit: Borough of Collingswood*



*Credit: Tim Ifill*

# LOCATION AND POPULATION

Collingswood is a borough located in the Northwestern portion of Camden County in Southern New Jersey. It is bordered on the north by Cooper River and on the south by Newton Creek. Adjacent municipalities are Camden and Woodlynne to the West, Pennsauken to the North, Haddon Township to the East (and one discontinuous section to the Southwest), and Oaklyn to the South. Collingswood is located five miles east of Center City Philadelphia, and it is part of the Philadelphia-Camden-Wilmington Metropolitan Statistical Area.

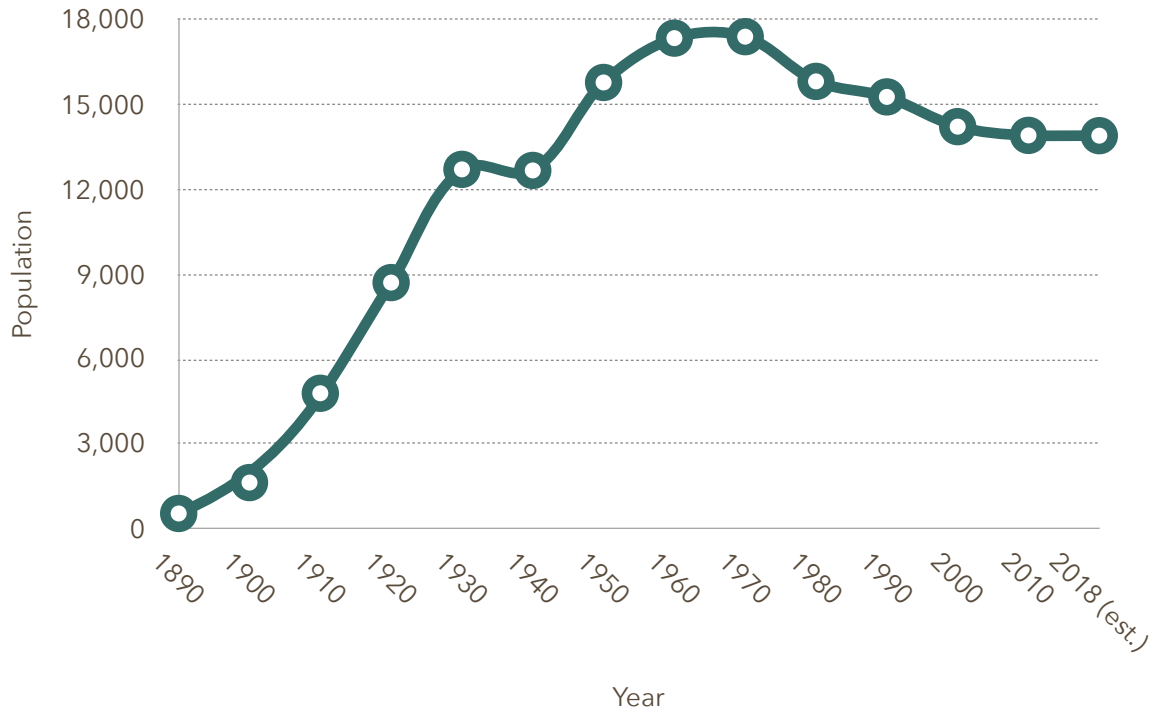


Collingswood has an area of 1.92 square miles (4.98 square km), or 1,239 acres. Most is land, with 0.100 square miles being water (5.19%).

## *Population and Demographics*

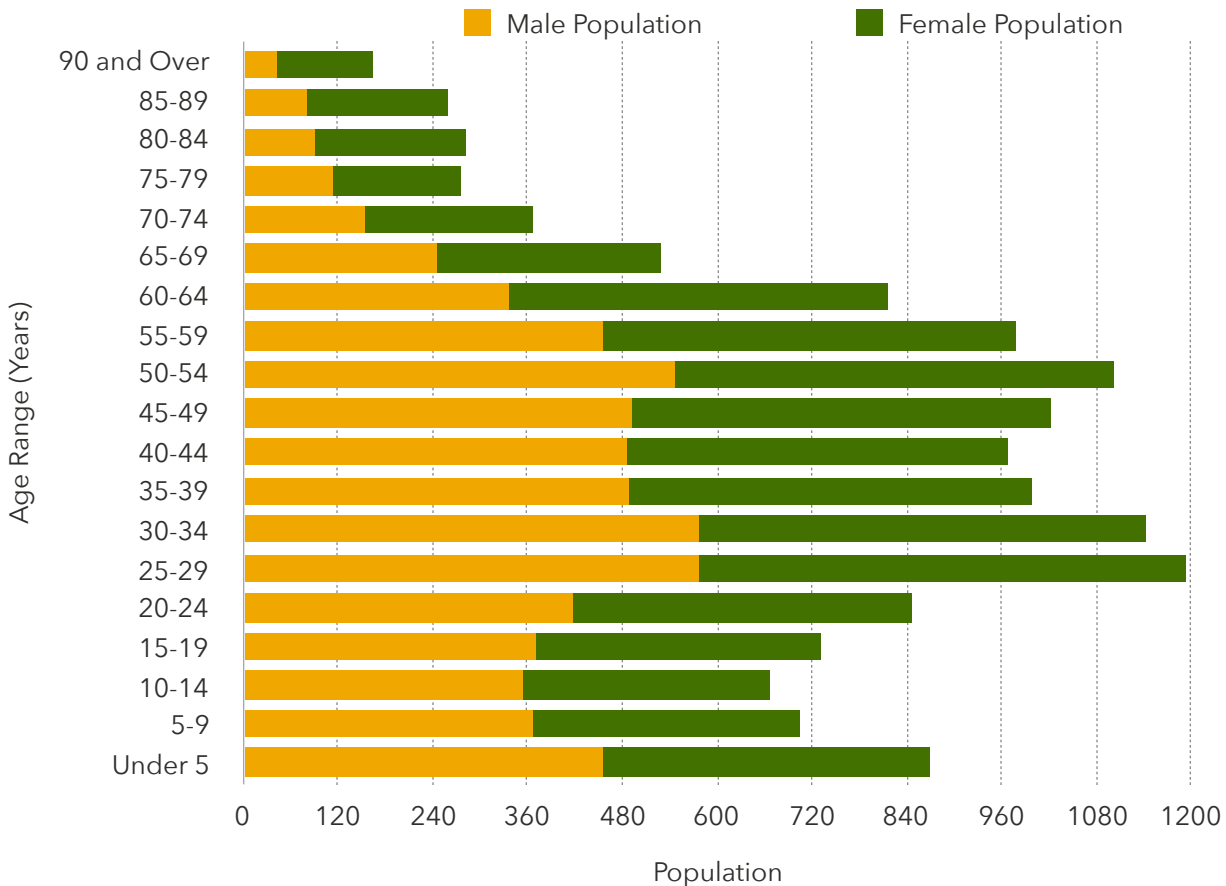
The population at the time of the 2010 census was 13,926 (the Census Bureau's 2018 population estimate was 13,916).

## COLLINGSWOOD HISTORIC POPULATION



The median age of all Collingswood residents in 2010 was 39.0 (37.0 for males, 40.7 for females). This chart breaks down age and sex data for the Collingswood population based on 2010 census figures.

## COLLINGSWOOD POPULATION BY AGE AND SEX (2010)



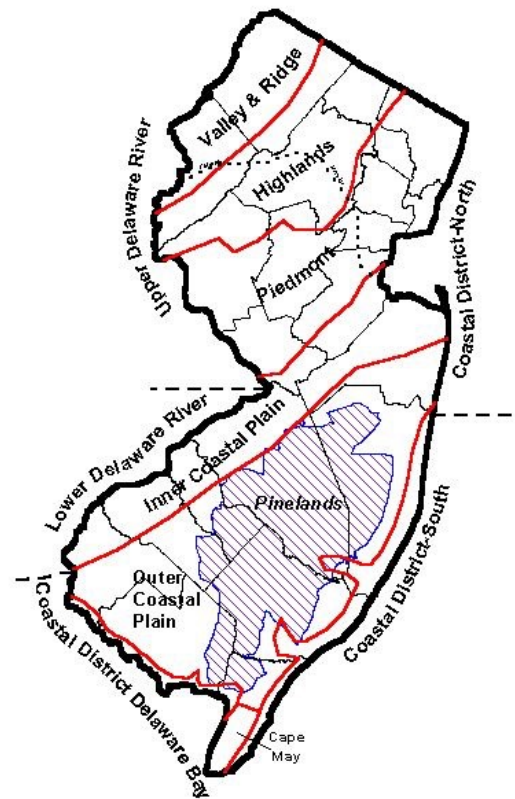
# PHYSIOGRAPHY, TOPOGRAPHY, AND CLIMATE

New Jersey is divided into four distinct physiographic provinces based on underlying geology. From North to South they are the Valley and Ridge Province, the Highlands, the Piedmont, and the Coastal Plain. The latter is further divided into the Inner Coastal Plain, and the Outer Coastal Plain. The properties of these provinces have had a profound effect on the state's settlement and development patterns. Among other measures, population density, major travel and transit corridors, agricultural patterns, and historical industrial sites all correlate neatly with these physiographic provinces and their boundaries, especially the fall line, which is where the Coastal Plain ends and the Piedmont begins.

Collingswood is located within the Inner Coastal Plain, which is characterized by lowlands and unconsolidated (i.e. not rocky) sediment.

## *Collingswood Geology*

The NJ Geological Survey describes the bedrock geology of this portion of New Jersey as "unconsolidated Coastal Plain formations that overlie metamorphic basement rocks. The Coastal Plain formations include sand, clay, and glauconite clay laid down in coastal, nearshore marine, and continental shelf settings between 95 and 75 million years ago. The underlying metamorphic rocks are much older and were originally laid down as sediments between 700 and 550 million years ago, and later compressed and deformed several times." Collingswood itself lies entirely atop the Merchantville Formation, which is further characterized thusly: "Glauconite clay. Olive, dark gray, black where unweathered, olive-brown to yellowish-brown where weathered. As much as 50 feet thick. Glauconite occurs primarily in soft grains of fine-to-medium sand size. Sand fraction is chiefly quartz; feldspar,





mica, and pyrite are minor constituents. Iron cementation is common. Late Cretaceous (early Campanian) in age based on ammonite fossils. Unconformably overlies the Magothy Formation.”

Surficial sediments in this part of New Jersey are generally less than 20 feet thick, but can be thicker closer to the Delaware River. Collingswood’s surface geology is primarily comprised of the Cape May Formation. Most of the town is on Unit 2 of this formation, with roughly the Northeast quadrant of town on Unit 1. The NJ Geological Survey describes this formation as “Fine-to-coarse sand, minor silt and clay; yellow, brownish-yellow, reddish-yellow, very pale brown, light-gray; minor pebble gravel. Massive to well stratified. Sand is quartz with a little glauconite and a trace of mica and feldspar. Gravel composition as in unit Qtu. As much as 40 feet thick. Unit 2 ... is an estuarine or fluvial-estuarine deposit of Sangamon age (about 125,000 years ago), when sea level was approximately 30 feet higher than at present in this region. Cape May 1 unit was deposited in a temperate, interglacial climate. Because it is at higher elevation than Sangamon-age deposits, it was probably laid down during a pre-Sangamon interglacial sea-level highstand and is of early or middle Pleistocene age.”

## *Topography, Elevation, and Slopes*

Collingswood is very level. Most of the borough sits at around 20 feet above seal level. Maximum elevations are 40 feet. There are few steep slopes within Collingswood. The only steep areas of any significance are the primarily wooded slopes just south South Park Drive near the Cooper River between the Marina Park Apartments and roughly the terminus of Madison Avenue. See **Map 3 - Steep Slopes**.

## *Soil*

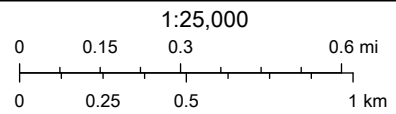
The Natural Resources and Conservation Service (NRCS) studies and classifies soil all over the country. Soils are described in terms of their locations on the landscape, their profile characteristics, relationships to one another, suitability for different uses, and their needs for particular types of management. Soil types can affect an area’s potential for agriculture, or, more relevant for places like Collingswood, the ability to develop or build on the land.

A soil series is a three-dimensional unit of soil that has unique properties distinguishing it from other series, and it is the fundamental soil mapping concept. A soil map unit is a collection of areas defined and named in terms of their soil components (e.g., different

# Map 3 - Steep Slopes



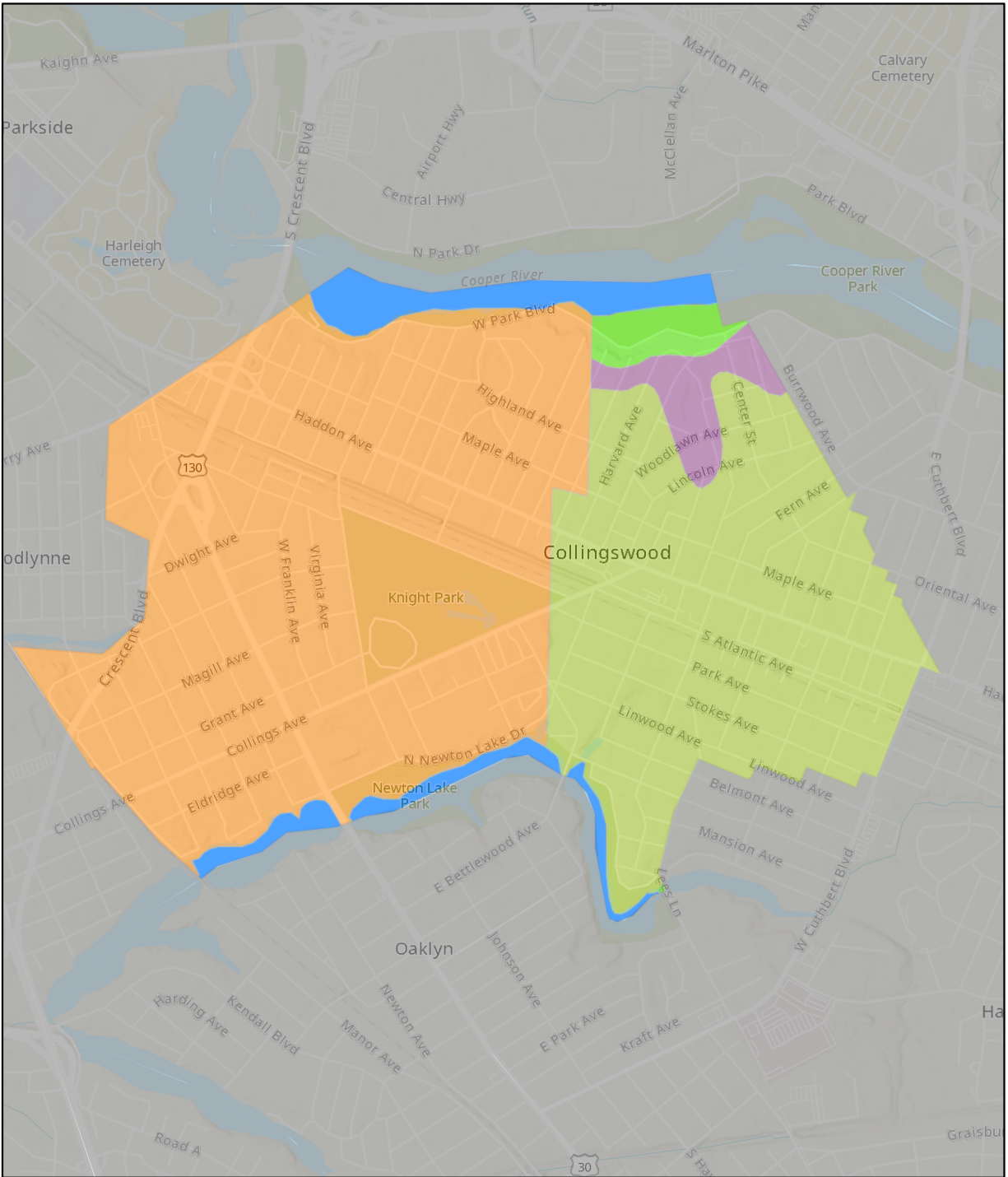
9/30/2019, 1:25:10 AM



Airbus,USGS,NGA,NASA,CGIAR,NCEAS,NLS,OS,NMA,Geodatastyrelsen,G and the GIS User Community, Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Web AppBuilder for ArcGIS  
State of New Jersey, Esri, HERE, Garmin, INCREMENT P, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA |

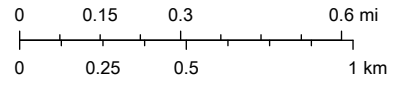
# Map 4 - Soil



9/30/2019, 12:41:26 AM

- Soil Map Units
- FrpB
  - WATER
  - PssA
  - FrpkB
  - UR

1:25,000



Source: NRCS Soil Survey Geographic Database

Web AppBuilder for ArcGIS  
Test

series) or miscellaneous areas, or both. A soil complex is a map unit consisting of two or more dissimilar components that occur in a consistent pattern.

Urban land, in soil science, is a miscellaneous area where the soil profile is typically disturbed and has been extensively modified by intensive development, and therefore doesn't resemble any mapped soil unit. The majority of the borough's area is classified as urban land. Three additional soil types have been identified within Collingswood. **See Map 4 - Soil.**

TABLE: SOILS IN COLLINGSWOOD AND THEIR CHARACTERISTICS

Map unit symbol	Map unit name	Acres in Borough	% of Borough	Hydric?	Drainage Class	Flooding Frequency Class	Ponding Frequency Class	Potential Frost Action	Depth to Water Table
FrpB	Freehold-Downer-Urban land complex, 0 to 5 percent slopes	407.9	32.90%	No	Well-drained	None	None	Moderate	>200 cm
FrpkB	Freehold-Downer, clayey substratum-Urban land complex, 0 to 5 percent slopes	34.1	2.80%	No	Well-drained	None	None	Moderate	>200 cm
PssA	Psammments, 0 to 3 percent slopes	22.5	1.80%	No	Well-drained	None	None	Low	122 cm
UR	Urban land	709.1	57.20%	Unranked	n/a	None	None	Not Rated	>200 cm

*Source: NRCS*

## EXPLANATION OF SOIL CHARACTERISTICS

### Hydric Soils

These formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic (oxygen-free) conditions in their subsurface. Their properties are typically associated with wetlands, and hydric soils present limits to potential development. None of the major soil components within Collingswood are classed as hydric, though some of their minor components (less than 15% makeup) are hydric.

### Drainage Class

Drainage class (natural) refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized-excessively drained, somewhat excessively drained, well drained,

moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained.

### Flooding Frequency Class

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. "None" means that flooding is not probable, or the chance of flooding is less than once in 500 years.

### Ponding Frequency Class

Ponding is standing water in a closed depression. The water is removed only by deep percolation, transpiration, or evaporation or by a combination of these processes. Ponding frequency classes are based on the number of times that ponding occurs over a given period. Frequency is expressed as none, rare, occasional, and frequent.

"None" means that ponding is not probable. The chance of ponding is nearly 0 percent in any year.

### Potential Frost Action

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, saturated hydraulic conductivity ( $K_{sat}$ ), content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

### Depth to Water Table

"Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

## SOIL MAP UNITS IN COLLINGSWOOD

### Freehold-Downer-Urban land complex (FrpB)

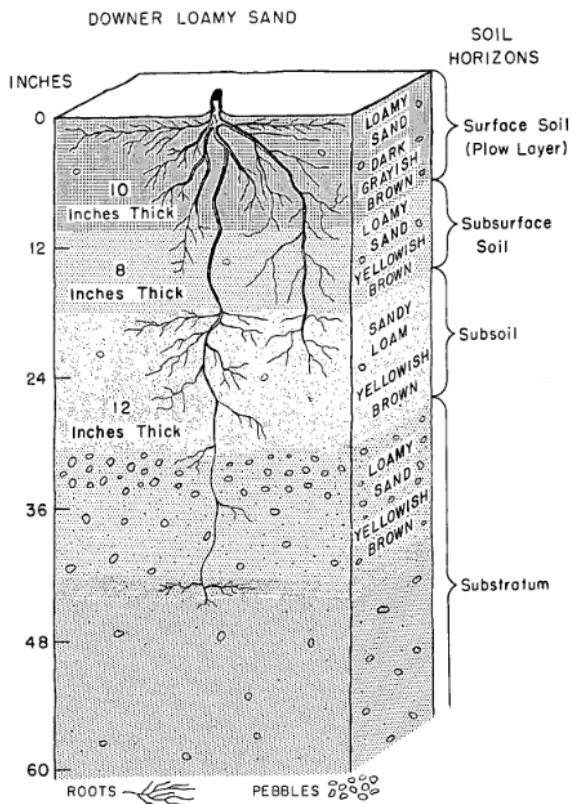
Composition:

- Freehold and similar soils: 35 percent
- Downer and similar soils: 30 percent
- Urban land: 20 percent
- Minor components (including Shrewsbury, Collington, and Holmdel soils): 15 percent

### Freehold-Downer, clayey substratum-Urban land complex (FrpkB)

Composition:

- Freehold, clayey substratum, and similar soils: 35 percent
- Downer, clayey substratum, and similar soils: 30 percent
- Urban land: 20 percent
- Minor components (including Shrewsbury, Collington, and Holmdel soils): 15 percent



A typical profile of Downer Loamy Sand  
Credit: NRCS

### Psamments (PssA)

Composition:

- Psamments, nearly level, and similar soils: 85 percent
- Minor components (including Atsion, Berryland, and Mullica soils): 15 percent

### Urban Land (UR)

Composition:

- Urban land: 95 percent

- Minor components (Udorthents): 5 percent

## SOIL COMPONENT DESCRIPTIONS

The following soil series are present in Collingswood as major components in the borough's map units.

### Freehold Series

These are well-drained, moderately permeable soils that formed in coastal marine deposited sediments containing glauconite. They are found on coastal plains uplands. A typical profile would be fine sandy loam between 0 and 9 inches, mostly sandy loam between 9 and 42 inches deep, and stratified loamy sand and sandy loam from 42 to 60 inches. In parts of Collingswood, these soils can have a clayey substratum associated with them. The soils are typically strongly acid, though extensive lime applications during historical agricultural use can increase the pH.

### Downer Series

Downer soils are well-drained with moderate to moderately rapid permeability. Their parent material was loamy fluviomarine deposits and/or gravelly fluviomarine deposits. A typical profile would be sandy loam from 0 to 24 inches, gravelly loamy sand from 24 to 30 inches, then stratified gravelly sand to loamy sand from 30 to 60 inches. A clayey substratum can also be present. The soils are typically strongly acid, though as above, extensive lime applications during historical agricultural use can affect that.

### Psamments

Psamments are an example of Entisols, which are soils that have no diagnostic horizons. Psamments occur all over the country, and are essentially unconsolidated sand deposits. As such, they are very well-drained.

### Urban Land

These are soils that have been extensively modified during development and whose characteristics are therefore no longer consistent with natural mapped soil units. The soils' characteristics and ratings are therefore highly variable based on the level and type of disturbance they've experienced.

For a more complete description of soils, see **Appendix B - Detailed Soil Characteristics**.

## SOIL LIMITATIONS FOR DEVELOPMENT

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. This table shows the degree and kind of soil limitations that affect dwellings and small commercial buildings in Collingswood. Dwellings are single-family houses of three stories or less. Small commercial buildings are structures that are less than three stories high and do not have basements. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

### SOIL LIMITATIONS FOR DEVELOPMENT

Map symbol and soil name	Dwellings without basements	Dwellings with basements	Small commercial buildings
FrpB—Freehold-Downer-Urban land complex, 0 to 5 percent slopes	Not limited	Not limited	Not limited
FrpkB—Freehold-Downer, clayey substratum-Urban land complex, 0 to 5 percent slopes	Not limited	Not limited	Not limited
PssA—Psammments, 0 to 3 percent slopes	Not limited	Somewhat limited	Not limited
Reason(s):		Depth to saturated zone	
UR—Urban land	Not rated	Not rated	Not rated

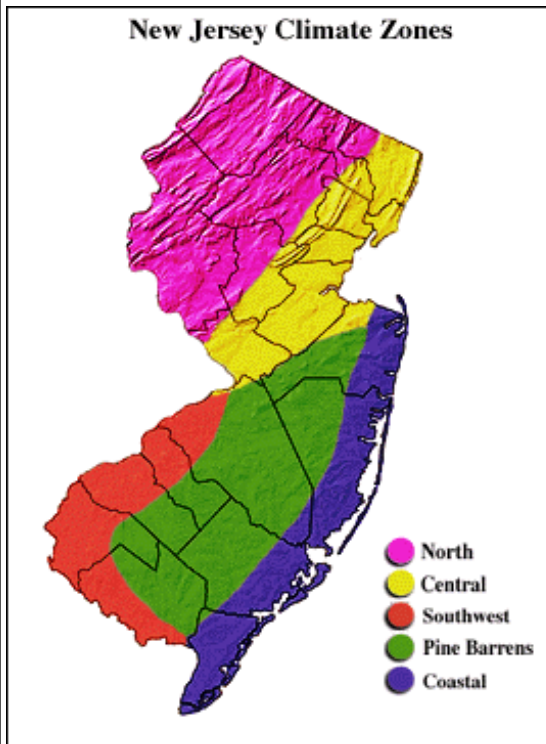
Source: NRCS



## Climate

Collingswood is located in New Jersey's Southwest Climate Zone.

THE SOUTHWEST ZONE LIES BETWEEN SEA LEVEL AND APPROXIMATELY 100 FEET ABOVE SEA LEVEL. THE CLOSE PROXIMITY TO DELAWARE BAY ADDS A MARITIME INFLUENCE TO THE CLIMATE OF THIS REGION.



Source: Office of the NJ State Climatologist

THE SOUTHWEST HAS THE HIGHEST AVERAGE DAILY TEMPERATURES IN THE STATE AND WITHOUT SANDY SOILS, TENDS TO HAVE HIGHER NIGHTTIME MINIMUM TEMPERATURES THAN IN THE NEIGHBORING PINE BARRENS. THIS REGION RECEIVES LESS PRECIPITATION THAN THE NORTHERN AND CENTRAL REGIONS OF THE STATE AS THERE ARE NO OROGRAPHIC FEATURES AND, IT IS FARTHER AWAY FROM THE GREAT LAKES-ST. LAWRENCE STORM TRACK. IT IS ALSO FAR ENOUGH INLAND TO BE AWAY FROM THE HEAVIER RAINS FROM SOME COASTAL STORMS, THUS IT RECEIVES LESS PRECIPITATION THAN THE COASTAL ZONE.

PREVAILING WINDS ARE FROM THE SOUTHWEST, EXCEPT IN WINTER WHEN WEST TO NORTHWEST WINDS DOMINATE. HIGH HUMIDITY AND MODERATE TEMPERATURES PREVAIL WHEN WINDS FLOW FROM THE SOUTH OR EAST. THE MODERATING EFFECT OF THE WATER ALSO ALLOWS FOR A LONGER GROWING SEASON. AUTUMN FROSTS USUALLY OCCUR ABOUT FOUR WEEKS LATER HERE THAN IN THE NORTH AND THE LAST SPRING FROSTS ARE ABOUT FOUR WEEKS EARLIER, GIVING THIS REGION THE LONGEST GROWING SEASON IN NEW JERSEY.

- THE OFFICE OF THE STATE CLIMATOLOGIST

Rainfall for the Collingswood area typically ranges from between 43 and 60 inches annually. The nearby Somerdale weather station averaged 95 days per year with measurable rain greater than .05 inches. Mean snowfall totals at that station were 22.0 inches per year between 2000 and 2019.

## MEAN MONTHLY PRECIPITATION (2000-2019)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
3.47	3.21	4.40	3.89	3.88	5.00	4.29	4.75	4.15	4.43	3.39	4.55	<b>49.8</b>

Source: NRCS AgACIS for Somerdale, NJ

Southwest New Jersey experiences cold winters along with hot, humid summers. First frosts in the Collingswood area typically occur in late October or early November, and lasts frosts are generally in mid-April.

## TABLE MONTHLY AVERAGE TEMPERATURES (2000-2019)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Monthly Mean Max</b>	40.3	43.4	52.1	64.5	73.7	82.3	87.1	85.5	79.1	66.1	55.6	45.2
<b>Monthly Mean Min</b>	23.8	24.9	32.2	42.3	52.1	61.9	67.0	65.6	59.0	46.4	36.3	28.8
<b>Monthly Mean</b>	32.1	34.0	42.2	53.4	62.9	72.1	77.1	75.5	69.0	56.3	45.9	37.0

Source: NRCS AgACIS for Pennsauken, NJ

## USDA PLANT HARDINESS ZONE

Plant hardiness zones are used to help gardeners and growers determine which plants will thrive best in an area based on cold hardiness factors. Collingswood is located in Zone 7a, which typically experiences annual extreme low temperatures of 0 to 5 degrees.

## *Ecoregion*

Ecoregions are areas where ecosystems (and the type, quality, and quantity of environmental resources) are generally similar. Mapping of these regions is carried out by the EPA in collaboration with other federal and state agencies. They are designed to serve as a spatial framework for monitoring and assessments of ecosystems. They are identified by analyzing an area's geology, landforms, soils, vegetation, climate, land use, wildlife, and hydrology. There are four hierarchical levels of ecoregions, starting at the twelve Level 1 ecoregions in the continental U.S. These are divided and subdivided based on finer analysis of their features down to 967 Level IV ecoregions.

## COLLINGSWOOD'S ECO-REGIONS, LEVEL I-IV

Level I - 8.0 Eastern Temperate Forest

Level II - 8.5 Mississippi Alluvial and Southeast USA Coastal Plains

Level III - 84 Atlantic Coastal Pine Barrens

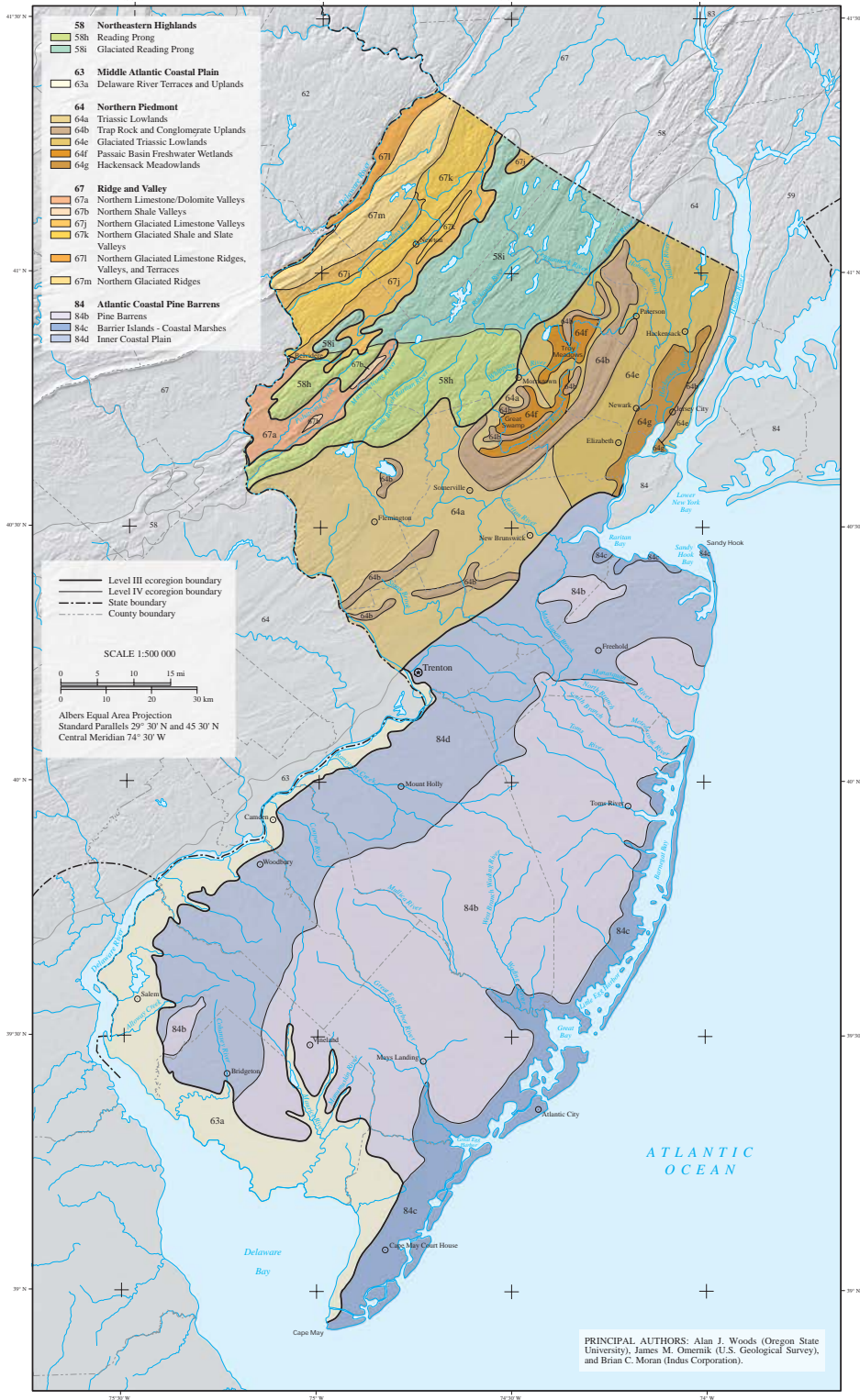
Level IV - 84d Inner Coastal Plain

Description of Eco-Region 84d:

- UNDULATING PLAIN PRIMARILY UNDERLAIN BY CRETACEOUS UNCONSOLIDATED SEDIMENTS THAT WAS ONCE COVERED BY MIXED OAK AND BEECH-OAK FORESTS, BUT NOW DOMINATED BY AGRICULTURE, URBAN DEVELOPMENT, AND TRANSPORTATION INFRASTRUCTURE; LAND USE AND POTENTIAL NATURAL VEGETATION, ARE DISTINCT FROM THE PINE BARRENS (84B) AND BARRIER ISLANDS - COASTAL MARSHES (84C).
- UNDERLAIN PRIMARILY BY CRETACEOUS UNCONSOLIDATED GRAVELS, SANDS, AND CLAYS. HOWEVER, PARTIALLY INDURATED SANDS AND GRAVELS ALSO OCCUR, AND FORM A BELT OF LOW CUESTAS THAT SEPARATE ECOREGION 84D FROM THE MAINLY TERTIARY SEDIMENTS OF ECOREGION 84B. ECOREGION 84D IS LITHOLOGICALLY DISTINCT FROM THE REDDISH SHALE, SANDSTONE, ARGILLITE, AND SILTSTONE OF THE NEIGHBORING TRIASSIC LOWLANDS (64A). IT HAS OLDER DEPOSITS THAN ECOREGION 84B AND 84C.
- SOILS USUALLY HAVE A LARGER PROPORTION OF CLAY, AND ARE MORE MOIST, MORE FERTILE, AND BETTER SUITED TO AGRICULTURE THAN THE SOILS OF THE PINE BARRENS (84B), WHICH ARE OFTEN XERIC AND DOMINATED BY QUARTZ SAND.
- NATIVE UPLAND VEGETATION IS PROBABLY MIXED OAK FORESTS AND BEECH-OAK FORESTS; WHITE AND BLACK OAKS ALONG WITH AMERICAN BEECH, PIGNUT AND MOCKERNUT HICKORIES, BLACK WALNUT, TULIP TREE, AND RED MAPLE ONCE OCCURRED.
- KUCHLER POTENTIAL NATURAL VEGETATION IS APPALACHIAN OAK FOREST. IT IS DISTINCT FROM THE NORTHEASTERN OAK-PINE FOREST THAT DOMINATES ECOREGION 84B, AND THE NORTHERN CORDGRASS PRAIRIE THAT OCCURS IN ECOREGION 84C.
- TODAY, VERY LITTLE MATURE UPLAND FOREST REMAINS. NEARLY ALL OF ECOREGION 84D HAS BEEN CLEARED, SETTLED, AND CONVERTED TO AGRICULTURE OR URBAN USES. EXTENSIVE CORN, WHEAT, SOYBEAN, VEGETABLE, DAIRY, AND POULTRY FARMING OCCURS. ONLY THE WETTEST LOWLANDS STILL RETAIN EXTENSIVE TRACTS OF NATURAL VEGETATION.

- "LEVEL III AND IV ECO-REGIONS OF NEW JERSEY" BY ALAN J. WOODS, JAMES M. OMERNIK, AND BRIAN C. MORAN

# DRAFT LEVEL III AND IV ECOREGIONS OF NEW JERSEY



Source: EPA

# HYDROLOGY

## *Surface Water*

There are two main waterways in Collingswood. On the northern border of the borough is the Cooper River, which has its headwaters in Gibbsboro and drains into the Delaware River in Camden City. The Cooper has an impoundment at Kaighns Avenue in Camden which forms a Cooper River Lake on the portion bordering Collingswood. The municipal boundary runs along the channel, with Pennsauken Township to the north.



*Newton Lake Credit: Tim Ifill*

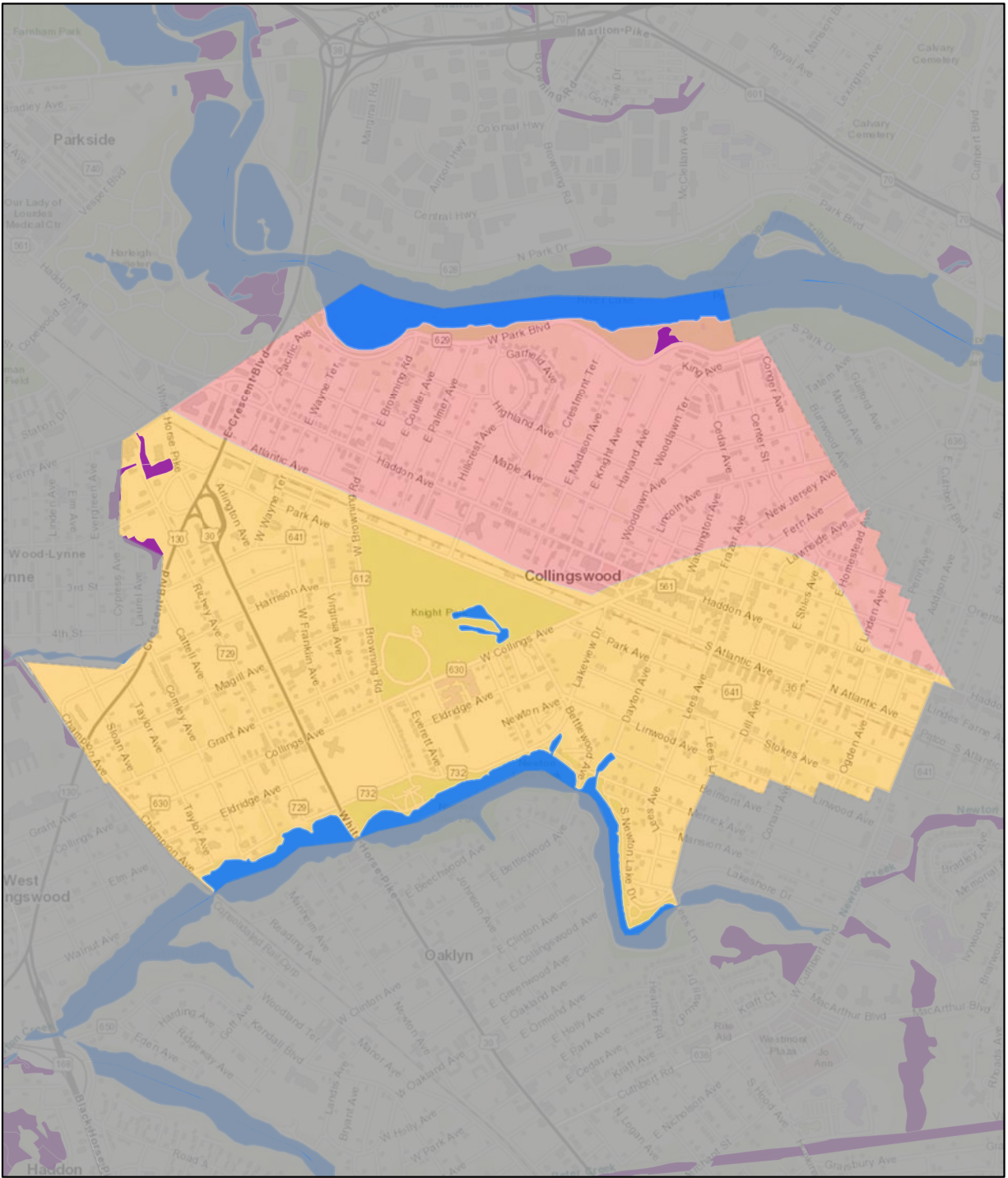
On the southern boundary of the borough is Newton Lake, which is formed by an impoundment of the main branch of Newton Creek at the Black Horse Pike. Oaklyn shares this boundary, which runs down the center of the lake.

The area alongside each of these waterways in Collingswood is parkland owned by Camden County (Cooper River Park and Newton Lake Park, respectively).

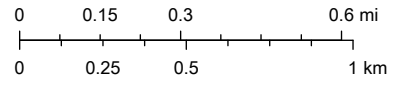
There is also a small artificial pond in Knight Park on the site of a former cedar swamp.

Two narrow creeks enter Newton Lake with brief surface portions. One emerges from culverts at Stokes Avenue and enters Nichols Pond, a small arm of Newton Lake at Merrick and Bettewood. The other emerges at Park and Collings Avenues before being routed back underground near Bettewood and entering another pond at South Newton Lake Drive.

# Map 5 - Hydrology



1:25,000



Wetlands of New Jersey (from Land Use/Land Cover 2012 Update)

HUC-14 Watersheds

Cooper River (Rt 130 to Wallworth gage)

Newton Creek (LDRV-Kaighn Ave to LT Ck)

Source: NJ DEP

## Watersheds

A watershed is the area of land from which surface water drains to a common point. Collingswood, like all of western New Jersey, is in the Delaware watershed, and all waterways drain to the Atlantic Ocean via that river. Every major watershed is divided and sub-divided into ever smaller hydrologic units (or sub-watersheds).

The United States Geological Survey (USGS) has organized the country into hydrologic units starting at the regional level and subdivided into nesting, hierarchical units. Each of these receives a hydrologic unit code (HUC), the number of digits included in which indicates the unit's level of classification. The hydrologic units are as follows for Collingswood:

02 - The Mid-Atlantic region (HUC-2)

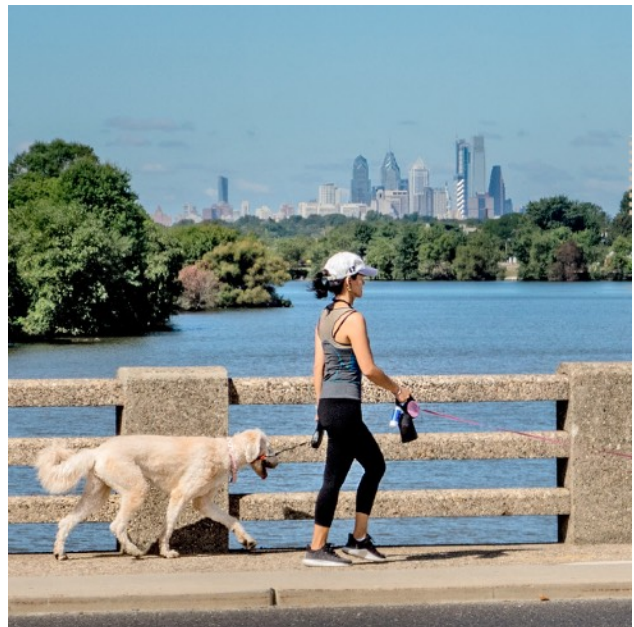
0204 - The Delaware sub-region (HUC-4)

020402 - The Lower Delaware accounting unit (HUC-6)

02040202 - Lower Delaware (HUC-8)

New Jersey has 150 HUC-11 watersheds (average size: 51.9 square miles) that collectively contain 921 HUC-14 subwatersheds (average size: 8.5 square miles). Collingswood lies within two HUC-11 watersheds (i.e. 11-digit classifications). They are the Cooper River watershed to the North and the Woodbury/Big Timber/Newton Creek Watershed to the South. The dividing line runs along the Speedline on the West side of town, swinging slightly North at Cuthbert to follow Maple and Haddon Avenues (see map).

of these watersheds are divided into several HUC-14 subwatersheds, and Collingswood once again sits within two of these. **See Map 5 - Hydrology.**



Cooper River Park Credit: Camden County

## WATERSHEDS AND SUBWATERSHEDS

Watershed (HUC-11)	Subwatershed (HUC-14)	Hydrologic Unit Code	Total Acreage	Collingswood Acreage	% of Borough
Cooper River		2040202110	32,781	467	38%
	Cooper River (Rt 130 to Wallworth gage)	2040202110050	7,882.1	467	38%
Woodbury/Big Timber/Newton Creek Watershed		2040202120	63,244	773	62%
	Newton Creek (LDRV-Kaighn Ave to LT Ck)	2040202120090	8,687.8	773	62%

Source: NJ DEP

Despite the presence of the impoundment at the Black Horse Pike, Newton Creek/Lake is tidal in its Collingswood portion, as are the two connecting ponds on either side of Battlewood Avenue. Tidal influence on the Cooper River ends at its impoundment at Kaighn Avenue, though historically it went as far inland as Haddonfield.

### Watershed Management Area



The New Jersey DEP has divided the state into 20 total Watershed Management Areas. Collingswood is located in WMA 18 - Lower Delaware. The state uses these WMAs to better manage water quality standards and prevent degradation. WMA 18 includes Western Camden County, a portion of Northwestern Burlington County, and Western Gloucester County, encompassing 291 square miles. It includes the watersheds of Cooper River, Big Timber, Mantua, Newton, Oldmans, Pennsauken, Pompeston, Raccoon,

WMA 18 - Credit: NJ DEP



Repaupo and Woodbury Creeks, as well as Baldwin Run, Swede Run and Maple Swamp.

## *Flood Hazards*

The Federal Emergency Management Agency (FEMA) identifies flood hazard zones according to varying levels of flood risk.

Areas identified as having a 1% Annual Chance Flood Hazard are often referred to as 100-year flood plains, and areas with a 0.2% Annual Chance are 500-year flood plains. It is important to note that while FEMA updates its maps regularly, climate change is likely to increase the frequency of these so-called 100-year and 500-year floods.

Collingswood's flood hazard zones (see **Map 6 - Flood Hazard Zones**) are along the Cooper River, Newton Creek, and the North Branch of Newton Creek.

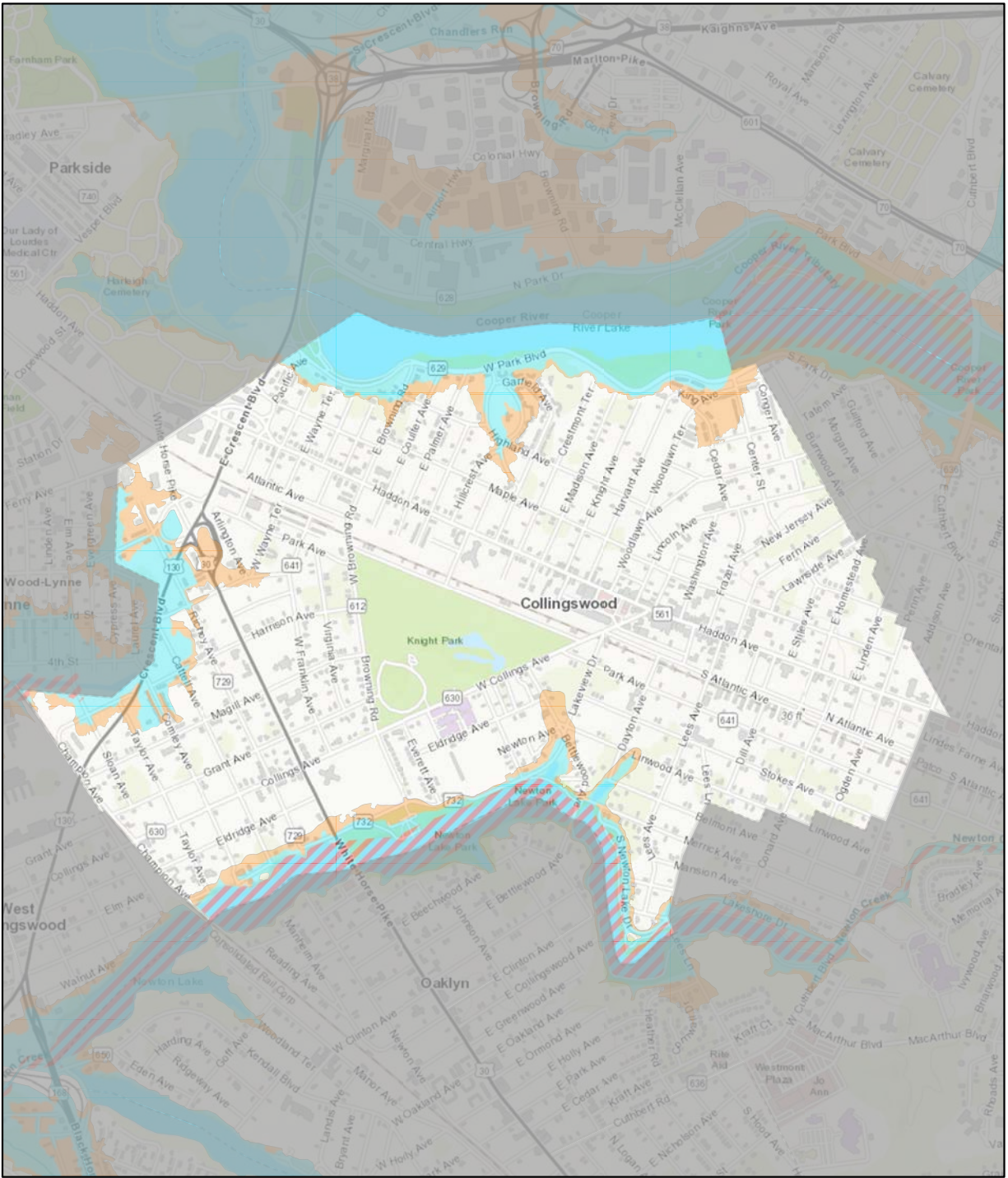
## *Wetlands*

Wetlands are important landscapes that absorb runoff, provide flood control, and improve water quality by filtering chemicals and pollutants. They also provide critical habitat for a wide variety of plant and animal species.

New Jersey protects freshwater wetlands under the New Jersey Freshwater Wetlands Protection Act Rules: N.J.A.C. A 7:7A. The law also protects transition areas, or "buffers," around freshwater wetlands. The New Jersey freshwater wetlands maps provide guidance on where wetlands are found in New Jersey, but they are not the final word. Only an official determination from DEP, called a "letter of interpretation (LOI)," can legally determine for sure if there are freshwater wetlands on a property. An LOI verifies the presence, absence, or boundaries of freshwater wetlands and transition areas on a site. Activities permitted to occur within wetlands are very limited and usually require a permit.

While Collingswood once had extensive wetlands along its creeks, much of it was flooded during the creation of Cooper River Lake and Newton Lake. Collingswood only has four acres that were designated as wetlands on the 2012 Land Use/Land Cover survey. **See Map 5 - Hydrology** for their locations. Other wetland areas were noted by consultants preparing for the Newton Creek dredging, but these total less than one acre and do not appear on the DEP's Land Use/Land Cover maps.

# Map 6 - Flood Hazard Zones

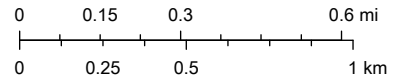


9/30/2019, 2:24:34 AM

1:25,000

**Flood Hazard Zones**

- 1% Annual Chance Flood Hazard
- Regulatory Floodway
- Special Floodway
- Area of Undetermined Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Future Conditions 1% Annual Chance Flood Hazard



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

City of Philadelphia, State of New Jersey, Esri, HERE, Garmin, INCREMENT P, USGS, MET/NASA, EPA, USDA | NJDEP |

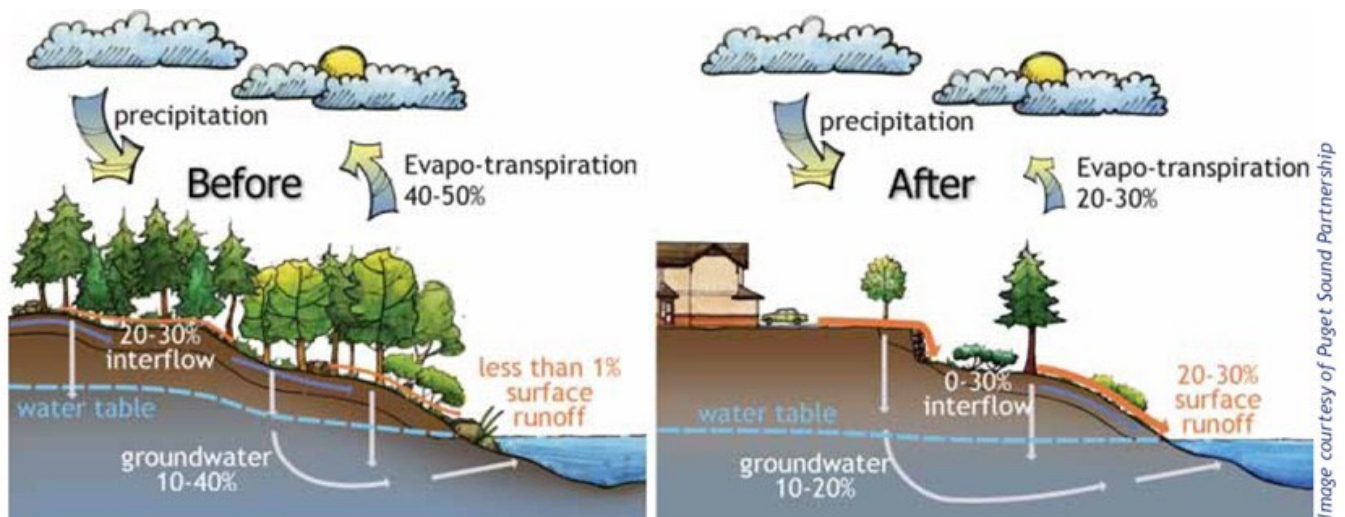
Web AppBuilder for ArcGIS

## VERNAL POOLS

Vernal pools are a distinctive type of wetland that are only seasonally inundated. They are cut off from fish populations, which allows species of amphibians and insects to breed that are vulnerable to fish predation. The New Jersey Landscape Project (DEP) maps vernal pool locations across the state in an attempt to protect these habitats. At this time, no vernal pools have been mapped in Collingswood.

## Impervious Surfaces

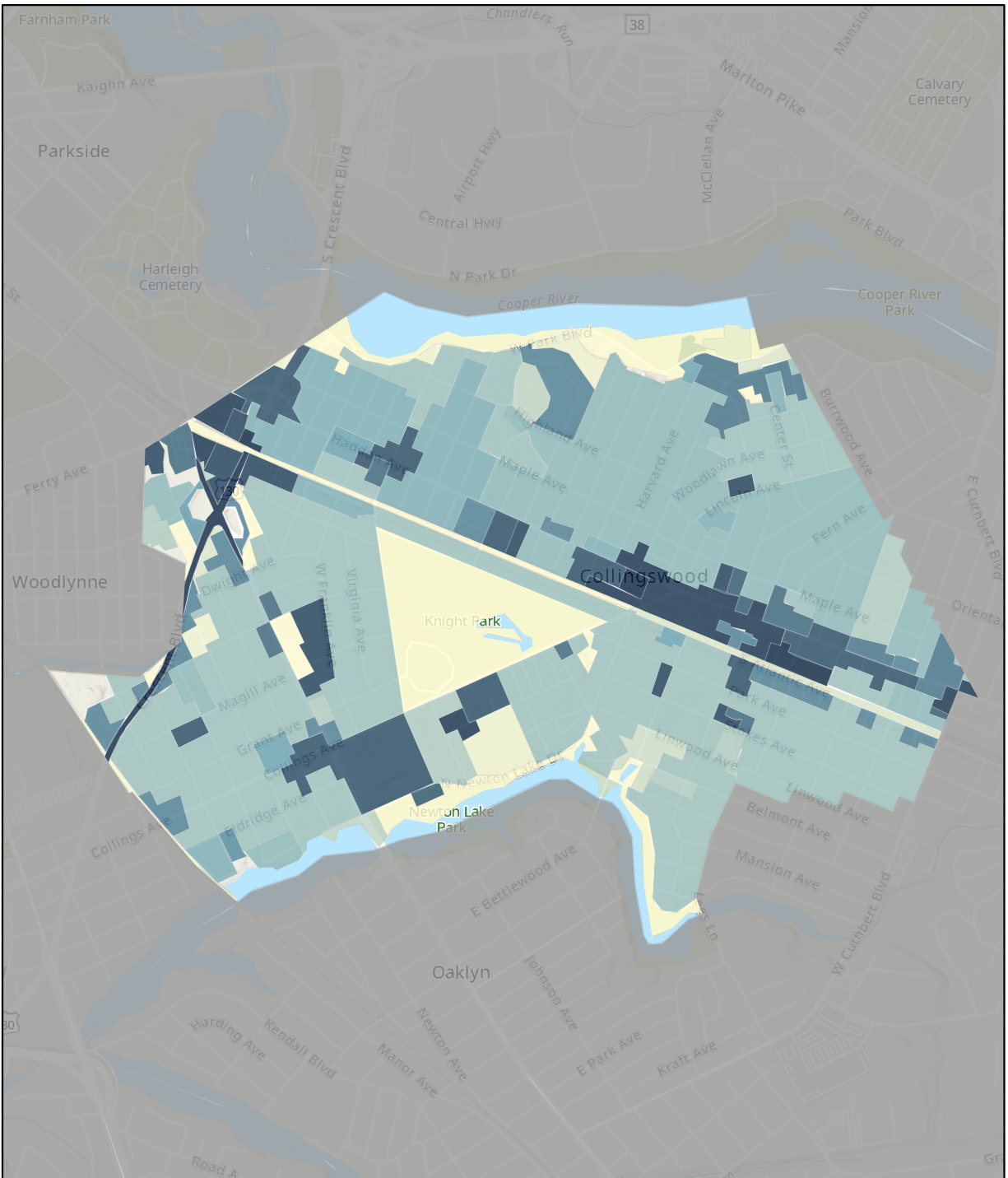
Development patterns can easily disrupt the natural hydrology of a watershed by creating excess runoff, damaging or removing filtering wetlands, and creating point and non-point sources of pollutants.



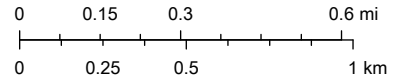
Basic hydrology before and after development Credit: Puget Sound Partnership

In an unaltered state, precipitation that falls on an area is mostly either taken up by plants or recharges groundwater, later to enter streams or lakes as base flow or infiltrate to an aquifer. As little as 1% enters waterways as surface runoff. In a developed landscape, however, impervious surfaces like buildings, parking lots, roads, and driveways disrupt these natural processes. Surface runoff is greatly increased, and that stormwater carries excess sediment and pollutants like pesticides, petrochemicals, fertilizer, animal excrement, road salt, and more. **Map 7 - Impervious Surfaces** shows the percentage of impervious cover for different areas of Collingswood, and the following chart breaks down the cumulative acreage of analysis areas by impervious percentage.

# Map 7 - Impervious Surfaces



1:25,000



Percentage of Impervious Coverage



Source: NJ DEP

Esri, NASA, NGA, USGS, FEMA | State of New Jersey, Esri, HERE, Garmin, INCREMENT P, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA | Web AppBuilder for ArcGIS

## IMPERVIOUS SURFACE

Percent Impervious Coverage of Analysis Area	Cumulative Acreage	Percent of Town
0-5%	121.6	10.9%
6-20%	40.4	3.6%
21-30%	36.5	3.3%
31-40%	608.8	54.4%
41-50%	87.7	7.8%
51-60%	2.0	0.2%
61-70%	63.2	5.6%
71-80%	16.9	1.5%
81-90%	95.3	8.5%
91-100%	47.3	4.2%
<b>Source: NJ DEP 2012 Land Use/Land Cover Analysis</b>		

## *Surface Water Quality Standards*

### *Surface Water Classifications*

The NJ DEP classifies freshwaters in the state as FW1 waters (not subject to any man-made wastewater discharges) and FW2 waters (all other freshwaters except Pinelands waters). FW1 waters are nondegradation waters set aside for posterity because of their unique ecological significance. FW2 waters are further classified based on their ability to support trout, which thrive in cooler stream temperatures. Trout classifications include trout production (FW2-TP), trout maintenance (FW2-TM), and nontrout (FW2-NT).

Both Cooper River Lake and Newton Lake are classified as FW2-NT.

The State also has three tiers of antidegradation standards to protect water quality in designated waterways:

*OUTSTANDING NATIONAL RESOURCE WATERS (ONRW):*

THIS TIER OF ANTIDEGRADATION DESIGNATION IS THE MOST PROTECTIVE AND APPLIES TO SURFACE WATERS CLASSIFIED AS FW1 WATERS, ALSO KNOWN AS NONDEGRADATION WATERS, AND PL WATERS (PINELANDS). PL WATERS MUST BE MAINTAINED IN THEIR NATURAL STATE. THE ONLY CHANGES TO WATER QUALITY ALLOWED IN PL WATERS ARE THOSE THAT RESTORE NATURAL WATER QUALITY.

*CATEGORY ONE (C1) WATERS:*

THIS TIER OF ANTIDEGRADATION DESIGNATION APPLIES TO SURFACE WATERS DESIGNATED AS C1 WATERS (SEE N.J.A.C. 7:9B-1.4). C1 WATERS ARE PROTECTED FROM ANY MEASURABLE CHANGE TO EXISTING WATER QUALITY BECAUSE OF THEIR EXCEPTIONAL ECOLOGICAL SIGNIFICANCE, EXCEPTIONAL RECREATIONAL SIGNIFICANCE, EXCEPTIONAL WATER SUPPLY SIGNIFICANCE, OR EXCEPTIONAL FISHERIES RESOURCES. C1 WATERS HAVE MORE STRINGENT ANTIDEGRADATION REQUIREMENTS THAN CATEGORY TWO WATERS.

*CATEGORY TWO (C2) WATERS:*

THIS TIER OF ANTIDEGRADATION DESIGNATION APPLIES TO SURFACE WATERS DESIGNATED AS C2 WATERS (SEE N.J.A.C. 7:9B-1.4). SOME LOWERING OF EXISTING WATER QUALITY MAY BE ALLOWED IN C2 WATERS BASED UPON A SOCIAL AND/OR ECONOMIC JUSTIFICATION. HOWEVER, ALL EXISTING AND DESIGNATED USES MUST BE PROTECTED IN ALL CASES AND WATERBODIES THAT ARE GENERALLY NOT MEETING CRITERIA MUST BE IMPROVED TO MEET WATER QUALITY CRITERIA. ALL WATERBODIES NOT DESIGNATED AS ONRW OR CATEGORY ONE RECEIVE THE CATEGORY TWO ANTIDEGRADATION DESIGNATION.

-NJ DEP, DIVISION OF WATER MONITORING AND STANDARDS

Collingswood has no ONRW or C1 waters. However, a portion of Cooper River within Camden City has been proposed for C1 designation in 2019.

## WATER QUALITY MONITORING AND ASSESSMENT

The Clean Water Act requires states to prepare Integrated Water Quality Monitoring and Assessment Reports, which are intended to provide effective tools for maintaining high quality waters and improving the quality of waters that do not attain their designated uses. Those designated uses include: aquatic life; recreation; drinking, industrial, and agricultural water supply; fish consumption; and shellfish harvest for consumption, though not all uses apply to every area.

Pollutants that cause impairments can enter waterways from point sources (e.g. wastewater plant discharges, storm drain outflows) or non-point sources (e.g. atmospheric deposition, excess fertilizer runoff, bacteria from animal waste, etc.).

### WATERBODY QUALITY ASSESSMENT REPORTS (2014)

Subwatershed	Aquatic Life	Fish Consumption	Primary Contact Recreation	Public Water Supply
Cooper River (Rt 130 to Wallworth gage)	Impaired: Phosphorous, Acidity	Impaired: Chlordane, DDT in fish tissue	Impaired: E. Coli	Impaired: Arsenic, Lead, Tetrachloroethylene, Trichloroethylene
Newton Creek (LDRV-Kaighn Ave to LT Ck)	Impaired: Phosphorous, Acidity	Impaired: Chlordane, DDT, PCB(s) in fish tissue	Impaired: E. Coli	Impaired: Arsenic

Source: EPA

### TOTAL MAXIMUM DAILY LOADS

Total Maximum Daily Loads (TMDLs) are set by the state for waterways with impairments that prevent them from attaining their designated uses.

THE TMDL MAY BE VIEWED AS A POLLUTANT BUDGET FOR AN IMPAIRED WATERBODY. IT IS THE MAXIMUM AMOUNT OF A POLLUTANT THAT A WATERBODY CAN RECEIVE AND STILL MEET SURFACE WATER QUALITY STANDARDS. THE TMDL MUST BE CALCULATED SO THAT WATER QUALITY STANDARDS WILL BE ATTAINED IN CONSIDERATION OF CRITICAL CONDITIONS AND SEASONAL VARIATION AND MUST INCLUDE A MARGIN OF SAFETY (MOS) TO ACCOUNT FOR UNCERTAINTY. THE TMDL IS ALLOCATED AMONG ALL OF THE SOURCES OF THE POLLUTANT, INCLUDING POINT SOURCES, NONPOINT SOURCES, AND NATURAL BACKGROUND. A TMDL IMPLEMENTATION PLAN IS DEVELOPED TO IDENTIFY THE SUITE OF MEASURES THAT ARE NEEDED TO REDUCE LOADS FROM EACH SOURCE TO LEVELS THAT WILL MEET SURFACE WATER QUALITY STANDARDS. THE MEASURES INCLUDE BOTH REGULATORY AND NON-REGULATORY ACTIONS. REGULATORY MEASURES TYPICALLY INCLUDE EFFLUENT LIMITATIONS OR ADDITIONAL MEASURES THAT ARE INCORPORATED INTO WASTEWATER OR STORMWATER PERMITS ISSUED PURSUANT TO THE NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM (NJPDDES) PROGRAM. NON-REGULATORY MEASURES INCLUDE BEST PRACTICES FOR AGRICULTURAL LAND USE, RIPARIAN RESTORATION, AND PROMOTING WATERSHED STEWARDSHIP ACTIVITIES SUCH AS RAIN GARDENS AND RAIN BARRELS.

Due to the impairments cited above in Collingswood’s waterways, several lake and stream TMDLs are applicable in the borough’s waterways.

LAKE AND STREAM TMDLS FOR COLLINGSWOOD WATERWAYS

Applicable TMDL	Waterway	Pollutant	Year Applied
Total Maximum Daily Load for Mercury Impairments Based on Concentration in Fish Tissue Caused Mainly by Air Deposition to Address 122 HUC 14s Statewide			
	Cooper River (Rt 130 to Wallworth gage)	Mercury (Hg)	2010
	Newton Creek (LDRV-Kaighn Ave to LT Ck)	Mercury (Hg)	2010
Total Maximum Daily Loads for Polychlorinated Biphenyls (PCBs) for Zones 2 - 5 of the Tidal Delaware River			
	Cooper River (Rt 130 to Wallworth gage)	Polychlorinated Biphenyls (PCBs)	2003
	Newton Creek (LDRV-Kaighn Ave to LT Ck)	Polychlorinated Biphenyls (PCBs)	2003
Total Maximum Daily Loads for Total Phosphorus To Address Four Streams Segments and Two Lakes in Cooper River Watershed, Camden County Lower Delaware Water Region			
	Cooper River	Total Phosphorous	2004
	Cooper River Lake	Total Phosphorous	2004

Source: NJ DEP Bureau of Nonpoint Pollution Control

FISH CONSUMPTION ADVISORIES



The DEP publishes advisories on the maximum recommended fish consumption for specific waterways due to toxic chemicals that can accumulate in their tissue. Separate advisories apply to the general population and to high risk populations (e.g. infants, children, pregnant women, nursing mothers).

### LOCAL FISH CONSUMPTION ADVISORIES

Species	Cooper River Lake		Newton Lake	
	General Pop	High Risk	General Pop	High Risk
Largemouth Bass	No restrictions	Once per week	No restrictions	Once per month
Black Crappie	No restrictions	Once per week	Once per week	Once per month
Bluegill Sunfish	No restrictions	No restrictions	No restrictions	No restrictions
Brown Bullhead	Once per month	DO NOT EAT	Once per week	Once per month
Common Carp	No restrictions	No restrictions	No restrictions	No Restrictions

Source: NJ DEP

### STATEWIDE FISH CONSUMPTION ADVISORIES

Species	General Pop	High Risk
Trout	Once per week	Once per week
Smallmouth Bass	Once per week	Once per month
Chain Pickerel	Once per week	Once per month
Sunfish	No restrictions	Once per week
Yellow Bullhead	No restrictions	Once per month

Source: NJ DEP

## Lake Dredging

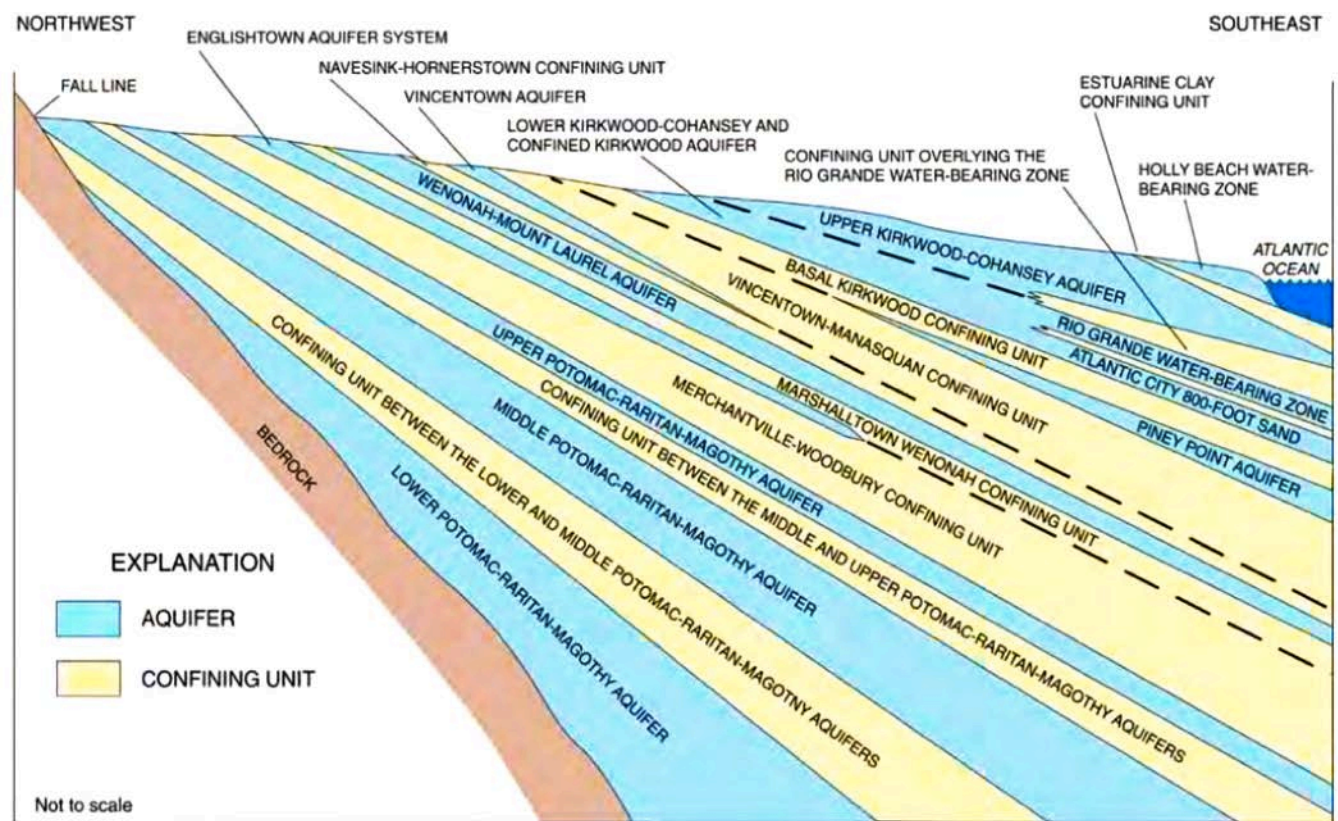
When they were free-flowing, Cooper River and Newton Creek flushed out sediment and excess nutrients through their natural hydrology. However, the presence of the dams disrupts these processes, causing sediment to accumulate in the lakes. Pollution

accumulates in the lakes as well, along with excess nutrients (primarily nitrogen and phosphorous), which harms aquatic life and leads to dangerous algae blooms.

In order to mitigate these issues, Camden County has embarked on dredging projects in both lakes. Dredging was completed in Cooper River Lake in 2017, and it is scheduled to start in Newton Lake in 2020.

## Groundwater Resources

If you were able to view a cross section of South Jersey's geology on an east-west line between the Delaware River and the Atlantic Ocean, you'd find a layer-cake-like stack of aquifer systems, tilted downward towards the East. The unconsolidated layers of gravel and sand hold significant groundwater in their pore spaces from which communities and individuals with private wells draw their drinking water. Separating these aquifers are layers of silt and clay, known as confining units, through which very little water can pass. Each of the aquifers and confining units emerge on the land surface as outcrops. From any point on the surface, one could access any of the aquifers directly below you depending on the depth of the drilling.



*Aquifers of South Jersey. The Delaware River and Camden would appear just to the right of the fall line, with Collingswood lying on the outcrop of the Merchantville-Woodbury Confining Unit.*

Credit: NJ Geological Survey

The Potomac-Raritan-Magothy (PRM) formation is the deepest aquifer, lying just above bedrock, and is itself divided into Upper, Middle, and Lower Aquifers. In the area of Collingswood, the outcrop of the PRM runs from the Delaware River to just west of the municipal boundary. Collingswood itself sits atop the outcrop of the Merchantville-Woodbury Confining Unit, which separates the PRM formation from the Englishtown aquifer system.

Collingswood obtains its water supply from five confined wells within the borough. The wells range from 250 to 320 feet deep, penetrating the confining unit and drawing water from the PRM aquifer. Four of the wells are located at the borough's main water treatment plant at 215 Hillcrest Avenue, and a fifth is at the Comly and Cattell Avenue Water Treatment Plant. As of this writing, a new well is being constructed on S. Cooper Lake Drive (See also: Built Environment - Utilities)



*Credit: Tim Ifill*

# BIOLOGICAL RESOURCES

If left undeveloped, Collingswood's land area would likely be dominated by a mixed hardwood forest of oak, beech, and maple trees, along with the understory and animal species that typically reside there. Wetland environments would have flanked the banks of Newton Creek and Cooper River prior to their damming.

However, these forests were cleared for farming starting in the 17th century, and Collingswood was later urbanized, with structures, the street network, and other impervious surfaces covering much of the acreage (the borough is now 93% urban land). A great deal of the additional space is devoted to lawns and other intensively managed areas, including much of the open space and parks.

Many common types of wildlife do thrive in these suburban landscapes, however, and others can be found in the borough's open spaces, especially in and around the lakes.

## *Tree Survey*

Collingswood conducted a tree survey in 2009, which cataloged all street trees throughout the borough (which are protected by ordinance) as well as those planted on public municipal property. The survey excluded private property and county lands (such as Cooper River and Newton Lake Park, though it did include trees on those properties along the streets). It did include the interiors of Knight Park, Roberts Pool, and the Scottish Rite property.



*Trees in Knight Park Credit: Tim Ifill*

The survey identified 5,565 trees, representing 65 species. Of these, 4,229 were street trees, 1,210 were in the interior of Knight Park, and 126 were in the interiors of other borough properties.

Native trees grow well in our area and play an important role in the ecosystem, supporting a wide variety of wildlife. Invasive trees, on the other hand, are species that did not evolve here but have escaped cultivation and have the potential to outcompete native plants and disrupt local ecosystems (not all exotic species become invasive).

Of the trees in the survey, 2,857 (51% of the total) are either natives or cultivars of natives species. 1,077 (19%) are either invasive or potentially invasive, mostly callery pear trees and Norway maples. The remaining 30% of trees are benign exotic species.

For a complete list of species from the survey and map see **APPENDIX C - Tree Survey**.

TABLE 1-1 MOST COMMON TREES

Common Name	Species	Native ?	Invasive ?	Street Trees	Knight Internal	Other	Total
London Planetree	Platanus x acerifolia			716	81	20	<b>817</b>
Oak, Pin	Quercus palustris	yes		648	139		<b>787</b>
Pear, Callery	Pyrus calleryana		yes	508	13	6	<b>527</b>
Maple, Red	Acer rubrum	yes		411	58		<b>469</b>
Maple, Norway	Acer platanoides		yes	381	49	13	<b>443</b>
Maple, Sugar	Acer saccharum	yes		153	168	3	<b>324</b>
Maple, Silver	Acer saccharinum	yes		237	8		<b>245</b>
Pine	Pinus spp.	yes		15	190	15	<b>220</b>
Cherry, Kwanzan	Prunus serrulata 'Kwanzan'			141	23		<b>164</b>
Honeylocust	Gleditsia triacanthos f. inermis	yes		123		1	<b>124</b>
Plum, Thundercloud	Prunus cerasifera 'Thundercloud'			95	5	5	<b>105</b>
Ash, Green	Fraxinus pennsylvanica	yes		63	28	9	<b>100</b>

**Source: Collingswood Tree Survey (2009)**

## Naturalized Plant Communities

There are exceedingly few wild plant communities in Collingswood. The open spaces in town are intensively managed, with specimen trees growing among turf grasses predominating. Riparian buffers along the waterways are mowed yearly.

There are nevertheless some small naturalized plant communities along Newton Creek and its adjacent ponds and near the Cooper River (on either side of S. Park Drive). Many of these communities feature wetland or riparian plants, though there are a few naturalized upland sections. Tree species present include black cherry, pin oak, silver maple, black willow, eastern red cedar, hackberry, Norway maple



*Goldenrods grow in the riparian buffer around Cooper River Lake*

*Credit: Tim Ifill*

(invasive), black locust, northern catalpa, sweetgum, mimosa tree (invasive), green ash, red maple, and tree-of-heaven (invasive). Other woody plants include false indigo bush, buttonbush, swamp rose-mallow, red osier dogwood, buttonbush, multiflora rose (invasive), wineberry (invasive), and various mulberry species. Woody vines present include English ivy (invasive), Virginia creeper, porcelain berry (invasive), Japanese honeysuckle (invasive), poison ivy, and oriental bittersweet (invasive). Herbaceous plants observed include white snakeroot, various aster species, common milkweed, dogbane, various goldenrod species, smartweeds, English plantain, dandelion, sheep sorrel, spotted jewelweed, Japanese knotweed (invasive), green arrow arum, switchgrass, mannagrass, common reed (invasive), mugwort (invasive), purple loosestrife (invasive), various sedges, various cool-season grasses, and white clover. Spatterdock is widely present in shallow waters, and floating primrose-willow (invasive) is also present.

## RARE PLANTS



*Bouquet Mud-Plantain* Credit: PA Natural Heritage Program, Photo by Andrew Strassman

Given its highly urbanized nature, Collingswood does not have significant populations of rare or threatened plants. A population of Bouquet Mud-plantain (*Heteranthera multiflora*) has been observed in Collingswood. This species is ranked S3 by the NJDEP, meaning it is rare in the state with only 21 to 100 occurrences.

## INVASIVE PLANTS

Invasive plants are a serious problem globally, including here in South Jersey. These are exotic (i.e. non-native) species that have been introduced to an area, escaped cultivation, and outcompete native plant communities, which can be a major disruption for ecosystems. The following invasive species have been observed in Collingswood growing in naturalized areas. This excludes specimens on private property or horticultural specimens that have been planted intentionally.

### OBSERVED INVASIVE SPECIES

Common Name	Species	Type
Norway Maple	<i>Acer platanoides</i>	Tree
Tree-of-heaven	<i>Ailanthus altissima</i>	Tree
Callery Pear	<i>Pyrus calleryana</i>	Tree
Mimosa Tree	<i>Albizia julibrissin</i>	Tree
Multiflora Rose	<i>Rosa multiflora</i>	Shrub
Wineberry	<i>Rubus phoenicolasius</i>	Shrub
English Ivy	<i>Hedera helix</i>	Vine
Porcelain Berry	<i>Ampelopsis brevipedunculata</i>	Vine
Oriental Bittersweet	<i>Celastrus orbiculatus</i>	Vine
Japanese Honeysuckle	<i>Lonicera japonica</i>	Vine
Mile-a-Minute Vine	<i>Polygonum perfoliatum</i>	Vine

Common Reed	Phragmites australis	Herbaceous
Japanese Knotweed	Reynoutria japonica	Herbaceous
Purple Loosestrife	Lythrum salicaria	Herbaceous
Mugwort	Artemesica spp.	Herbaceous
Chinese Bushclover	Sericea lespideza	Herbaceous
Japanese Stiltgrass	Microstegium vmineum	Grass
Floating primrose-willow	Ludwigia peploides	Aquatic
<b>Sources: NJ Invasive Species Strike Team, Newton Lake Individual Flood Hazard Permit, Personal Observations by Tim Ifill</b>		

## Landscape Project Priority Habitats

The New Jersey Division of Fish and Wildlife’s Landscape Project is a “pro-active, ecosystem-level approach for the long-term protection of imperiled species and their important habitats in New Jersey.” Identified priority landscapes are ranked from 1 to 5 according to their importance (5 being the highest).

New Jersey is divided into six habitat regions for the purposes of the project, and Collingswood lies in the Piedmont Plains region. The borough contains habitats ranked in the lowest two priorities totaling 142.97 acres. These habitats are all located in and along waterways (Cooper River, Newton Lake, North Branch of Newton Creek, Knight Park Ponds - See **Map 8 - Landscape Project Priority Habitats**) and have been designated due to their use as foraging sites for Great Blue Herons, a Species of Special Concern in New Jersey.

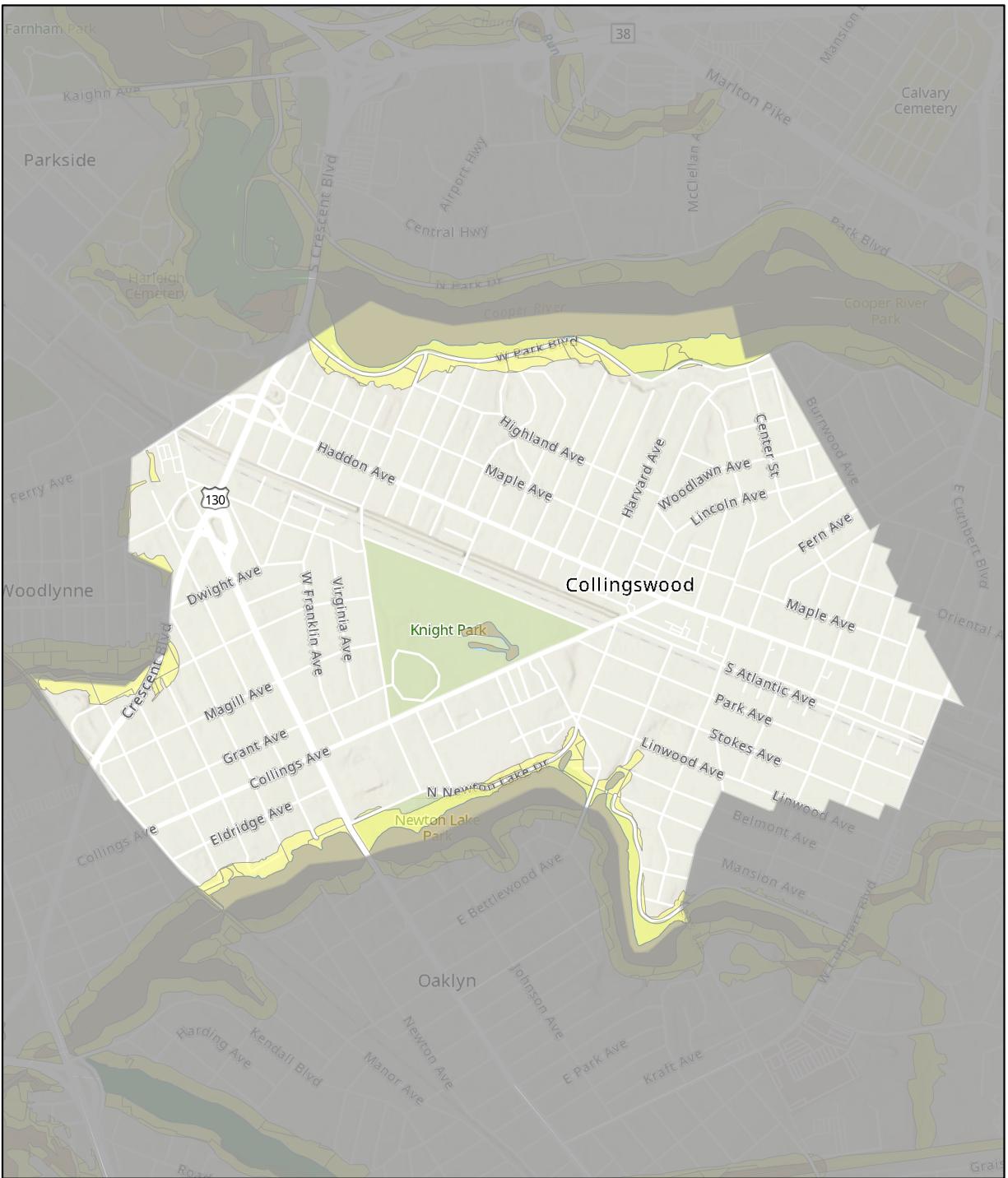
### LANDSCAPE PROJECT PRIORITY HABITATS

Priority Rank	Acres in Collingswood	% of Borough
1 - Habitat specific requirements	72.06	5.81%
2 - Special concern	70.91	5.72%
3 - State threatened	0	0%
4 - State endangered	0	0%
5 - Federal listed	0	0%
<b>Total</b>	<b>142.97</b>	<b>11.53%</b>

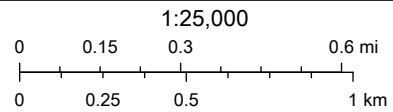
Source: NJ Division of Fish and Wildlife



# Map 8 - Landscape Project Priority Habitats



- Rank 1 - Habitat specific requirements
- Rank 2 - Special Concern
- Rank 3 - State Threatened
- Rank 4 - State Endangered
- Rank 5 - Federal Listed



Source: NJ DEP Landscape Project

## Fish

Fishing is popular in Collingswood's main waterways, including Knight Park, Newton Lake, and Cooper River Park Lake. Species reported include Largemouth Bass, Catfish, Channel Catfish, Yellow Perch, Muskellunge, Carp, Crappie, Sunfish (Source: NJ Division of Fish and Wildlife). Invasive snakeheads have also been reported in both Newton Lake and Cooper River Park Lake.

## Reptiles and Amphibians

Common reptiles and amphibians that are likely to be found in Collingswood's waterways are bullfrogs, red-eared slider turtles, musk turtles, wood turtles, and snapping turtles.

## Mammals

Collingswood's mammal species are fairly typical for a dense suburban environment.

## Birds

With its variety of physiographic provinces, coastal location along major migration routes, and the fact that it occupies a transitional zone between many northern and southern wildlife communities, New Jersey has a wealth of bird diversity. The New Jersey Bird Records Committee has compiled a list of 479 species recorded in the state.

Due to its dense development pattern, many of Collingswood's birds are common backyard species. However, Newton and Cooper River Lakes, and to a lesser extent the Knight Park Pond, provide attractive habitat for a variety of waterfowl, foraging raptors, species that seek nesting sites in the riparian buffers, and visiting birds making stopovers while migrating.

### KNOWN MAMMAL SPECIES

Common Name	Scientific Name
Opossum	<i>Didelphis marsupialis</i>
Eastern Mole	<i>Scalopus aquaticus</i>
Big Brown Bat	<i>Eptesicus fuscus</i>
Little Brown Bat	<i>Myotis lucifugus</i>
Eastern Cottontail	<i>Sylvilagus floridanus</i>
Eastern Chipmunk	<i>Tamias striatus</i>
Gray Squirrel	<i>Sciurus carolinensis</i>
White-footed Mouse	<i>Peromyscus leucopus</i>
Meadow Vole	<i>Microtus pennsylvanicus</i>
Muskrat	<i>Ondatra zibethicus</i>
Red Fox	<i>Vulpes vulpes</i>
Raccoon	<i>Procyon lotor</i>
Striped Skunk	<i>Mephitis mephitis</i>
Beaver	<i>Castor canadensis</i>
White-tailed Deer	<i>Odocoileus virginianus</i>



*Wild Turkey Credit: Wikimedia Commons*

Canada geese are very common in these areas, attracted by the wide lawns near the waterways. Their excrement is a major contributing factor to high nutrient levels in the lakes that lead to occasional algal blooms.

Several species of raptor patrol the skies including Cooper's hawks, red-tailed hawks, and bald eagles. Rafters of wild turkeys are regularly spotted throughout town as well, much to the delight of residents and social media users.

For a more thorough list of bird species that can be found in Collingswood, see **Appendix D - Bird Species**.

## ENDANGERED OR THREATENED BIRDS

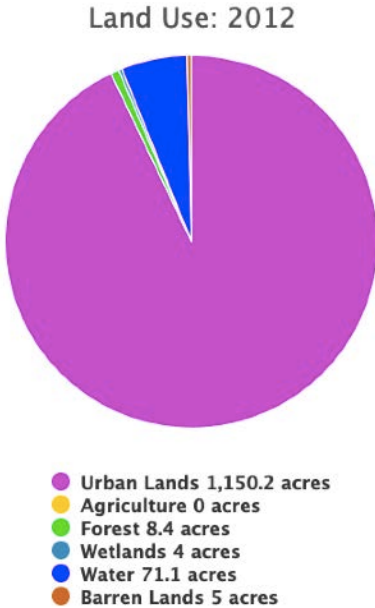
Both Newton Lake and Cooper River Lake are known foraging habitats for bald eagles and great blue herons. Breeding bald eagles are listed in New Jersey as "Endangered" and non-breeding populations are listed as "Threatened." The breeding population of great blue herons are listed as "Special Concern."

Other vulnerable species have been reported in Collingswood, including but not limited to Black-crowned Night-Herons, whose breeding population is threatened, and Wood Thrushes, a Species of Special Concern.

# LAND USE

Nearly all of the borough is classified by the NJ DEP as urban land (92.9% of the total). There are small amounts of forested land (0.3%), Wetlands (0.3%), and Barren Lands (0.4%). The rest is surface water bodies (5.7%), most of which are the portions of Newton Lake and Cooper River that lie within town boundaries.

A more detailed breakdown of land use is offered in the following chart and **Map 9 - Land Use**, based on a 2015 analysis by the Delaware Valley Regional Planning Commission (DVRPC).



General Land Use; Source: NJ DEP

## LAND USE

Land Use Category	Acreeage	Percentage of Borough
Residential: Single-Family	646.27	52.12%
Residential: Multi-Family	138.67	11.18%
Recreation	124.78	10.06%
Water	71.16	5.74%
Commercial	63.48	5.12%
Community Services (schools, churches, nonprofits)	47.67	3.84%
Transportation	30.65	2.47%
Vacant	24.14	1.95%
Parking: Commercial	22.68	1.83%
Parking: Multi-Family	18.82	1.52%

Land Use Category	Acreage	Percentage of Borough
Wooded	18.10	1.46%
Parking: Community Services	13.63	1.10%
Utility	8.35	0.67%
Parking: Transportation	5.73	0.46%
Parking: Recreation	4.53	0.37%
Manufacturing	1.22	0.10%
Agriculture	0.31	0.03%
Parking: Utility	0.12	0.01%

Source: DVRPC (2015)

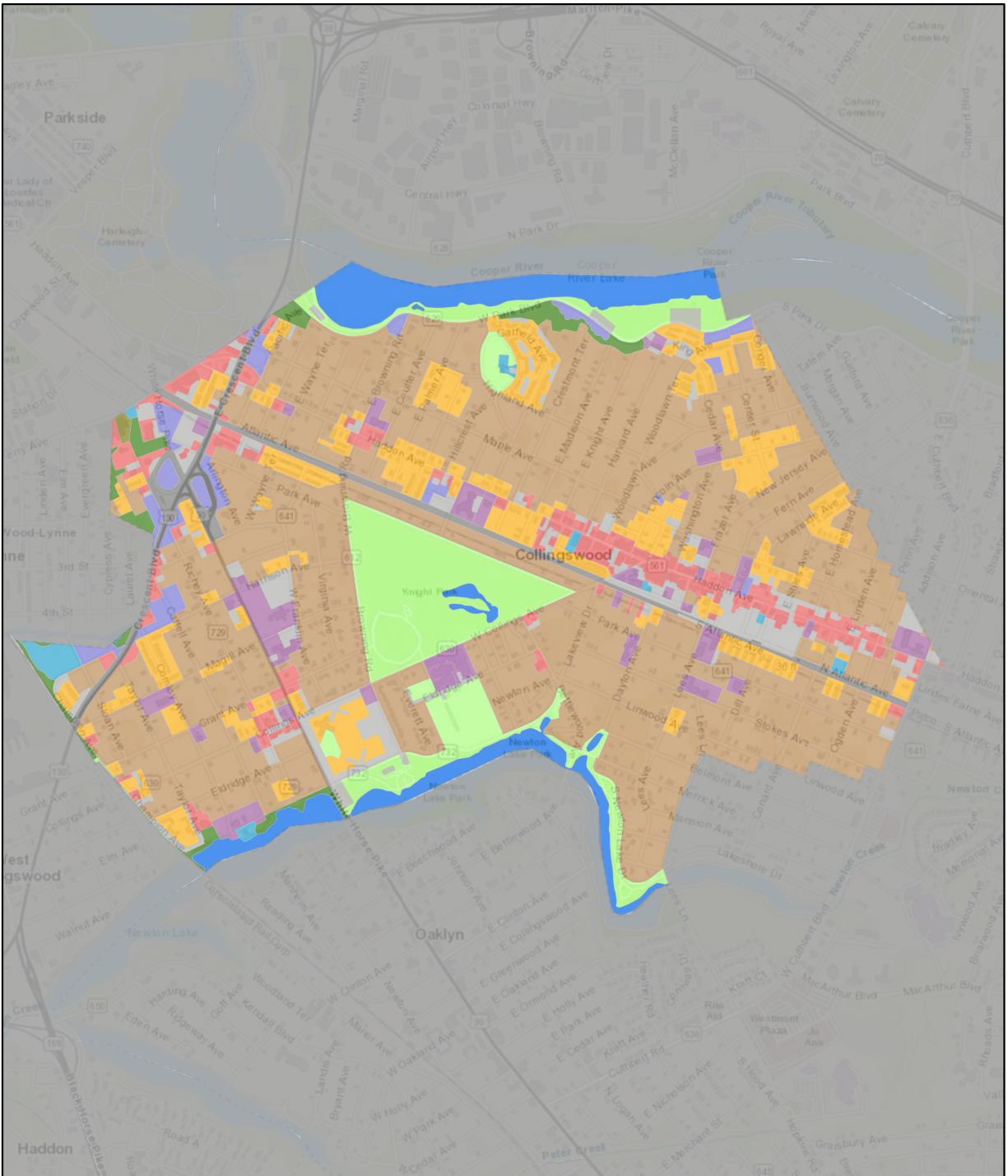
## Parking

In the above land use breakdown, the parking categories do not include on-street parking or driveways in single family homes. The total area of off-street parking, not including single family driveways, is 65.51 acres, representing 5.28% of the borough.

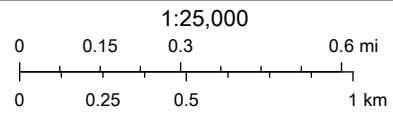


Credit: Tim Ifill

# Map 9 - Land Use (2015)



- |   |  |
|---|--|
| <span style="color: red;">■</span> Commercial                   | <span style="color: cyan;">■</span> Utility        |
| <span style="color: brown;">■</span> Residential: Single-Family | <span style="color: blue;">■</span> Water          |
| <span style="color: orange;">■</span> Residential: Multi-Family | <span style="color: grey;">■</span> Transportation |
| <span style="color: purple;">■</span> Community Services        | <span style="color: purple;">■</span> Agriculture  |
| <span style="color: lightblue;">■</span> Vacant                 | <span style="color: olive;">■</span> Manufacturing |
| <span style="color: lightgreen;">■</span> Recreation            | <span style="color: grey;">■</span> Parking        |
| <span style="color: green;">■</span> Wooded                     |  |



Source: DVRPC Land Use (2015)

# Zoning

Collingswood’s zoning code designates allowable uses for different districts throughout the borough.

## ZONING

Zoning Designation	Permitted Principal Uses (Summary only)
Single Family, Detached Residential District One	Single family detached and semi-detached homes, schools, family day-care homes
Single Family, Detached Residential District Two	same as above
Single Family, Detached Residential District Three	same as above
Single Family, Attached Residential District	single family detached or attached homes, schools, family day-care homes
Multi-Family, Residential District	same as above, plus garden apartments, mid-rises apartment buildings, high rise apartment buildings
Central Business District	Retail stores and service establishments, banks, restaurants excluding fast food, 2nd or 3rd floor residential, other uses
Professional Business District	single family detached homes, professional and medical offices, other uses
Highway Business District	Retail stores, restaurants (including fast food), offices, shopping centers, other uses
Highway Industrial District	Professional and medical offices, wholesale business, laboratories, industry, processing, and manufacturing, and other uses
<b>Source: Borough of Collingswood</b>	

The zoning map with district boundaries can be viewed in **Appendix E - Zoning**.

For all allowable uses, consult the [borough code](#).

# THE BUILT ENVIRONMENT



## *Housing Stock*

Collingswood has 6,807 housing units (single family homes or divisions of multi-family units), of which 6,023 are occupied (n.b. all housing stock figures come from the U.S. Census Bureau's 2013-2017 American Community Survey 5-Year Estimates). Of the occupied units, 3,124 (51.9%) are owner-occupied, and 2,899 (48.1%) are renter-occupied.

### HOUSING BY NUMBER OF UNITS IN STRUCTURE

Units in Structure	Number of Housing Units	Percentage of Total
1-unit, detached	2582	37.9%
1-unit, attached	1206	17.7%
2 units	765	11.2%
3 or 4 units	427	6.3%



5-9 units	124	1.8%
10-19 units	147	2.2%
20 or more units	1556	22.9%
Total	6807	
Source: US Census Bureau, ACS		

There are a total of 1,037 housing units in the four towers of the Park View apartment complex at Collings Avenue and the White Horse Pike.

The vast majority of Collingswood’s housing units are in structures built prior to 1980 (91.9%). Nearly half of Collingswood’s housing units are in structures built prior to 1940. Because many multi-unit structures were built after 1940, it is safe to say that a significant majority of Collingswood’s structures themselves date to 1939 or earlier.

See the Land Use section and **MAP 9 - Land Use** for more about the distribution of different housing types within Collingswood.

#### HOUSING UNITS BY YEAR BUILT

Year Structure Built	Number of Housing Units	Percentage of Total
2014 or later	60	0.9%
2010-2013	42	0.6%
2000-2009	109	1.6%
1990-1999	203	0.3%
1980-1989	139	0.2%
1970-1979	816	12.0%
1960-1969	528	7.8%
1950-1959	1072	15.7%
1940-1949	660	9.7%
1939 or earlier	3178	46.7%
Source: US Census Bureau, ACS		

### *Business Districts*

Collingswood has two main business districts. The primary business district runs along Haddon Avenue. Most structures are 2-3 stories with street-level retail and restaurants. Professional Offices predominate along Haddon on between Fern Avenue and Cuthbert. There is an additional, smaller business district along running two blocks along Collings Avenue to the West of the White Horse Pike. Professional office districts run along Haddon Avenue outside of the commercial district and along the White Horse Pike. See the Land Use Map and Zoning Map for locations of the business districts.



*Development density varies between the central business district and residential neighborhoods. Credits: Borough of Collingswood (left) and Tim Ifill (right)*

## *Transportation*

Collingswood is well-served by the region's transportation infrastructure with easy access to Philadelphia, the surrounding communities, and other metropolitan areas in the mid-Atlantic.

### **HIGHWAYS AND ROADS**

Collingswood is located within 5 miles of several major interstate highways, including I-95, I-295, and I-76, as well as the New Jersey Turnpike. It is possible to travel from the borough to Center City Philadelphia by car over either the Ben Franklin Bridge or the Walt Whitman Bridge in 15-20 minutes.

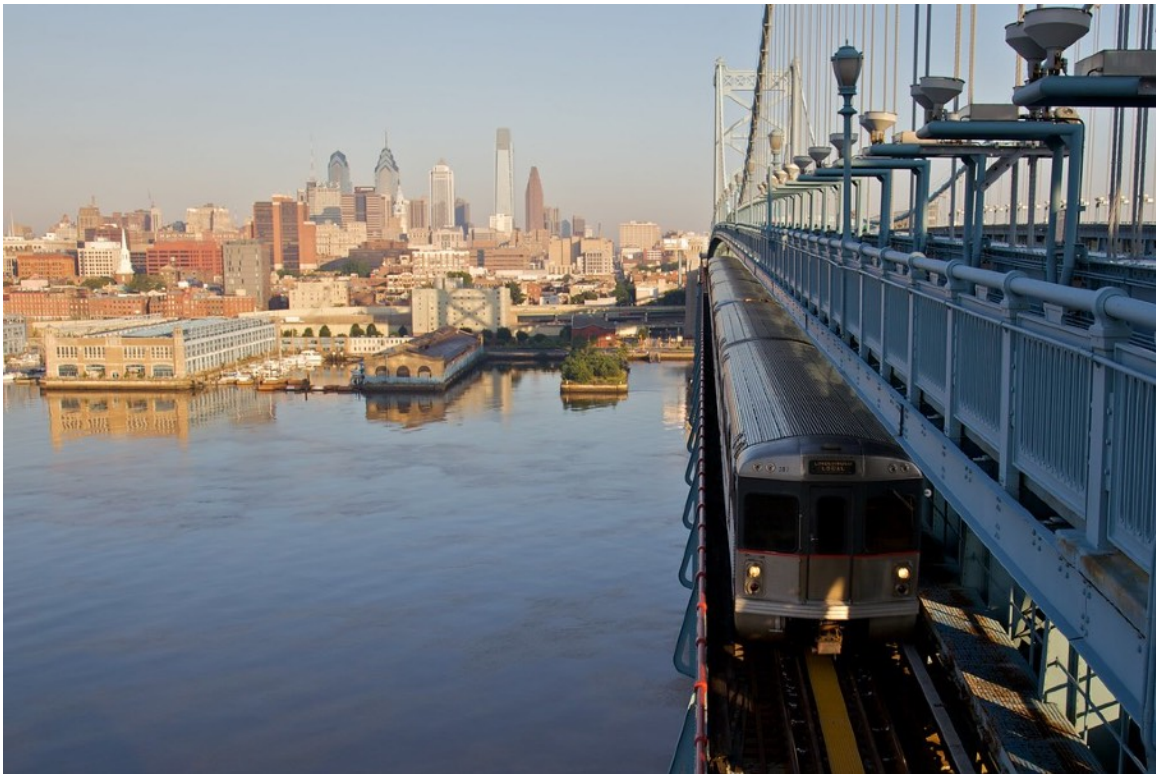
Other U.S. Highways serving Collingswood area are US 30 (White Horse Pike/Admiral Wilson Blvd with access to Philadelphia and South Jersey) and US 130 (Crescent Blvd, running north-south between the Delaware Memorial Bridge and New Brunswick via Trenton).

Drivers can access various points to the east via State Routes 70 and 38, both of which have their western terminus just northwest of Collingswood in Pennsauken.

Haddon Avenue (County Route 561) is the historical and commercial center of town, running east-west across the borough and connecting to Camden to the west and Haddon Township and Haddonfield to the East, where it is also a major commercial corridor. Collings Avenue (County Rt. 630) and Cuthbert Boulevard (County Rt. 636) are also major routes in and out of town. Additional county roads are Park Avenue (County Rt. 641), South Park Boulevard (County Rt. 629), and Browning Road (County Rt. 612).

There are approximately 25 miles of local roads in the borough that are maintained by the Department of Public Works.

**Map 10 - Highway Network** shows Collingswood's position relative to regional highways.

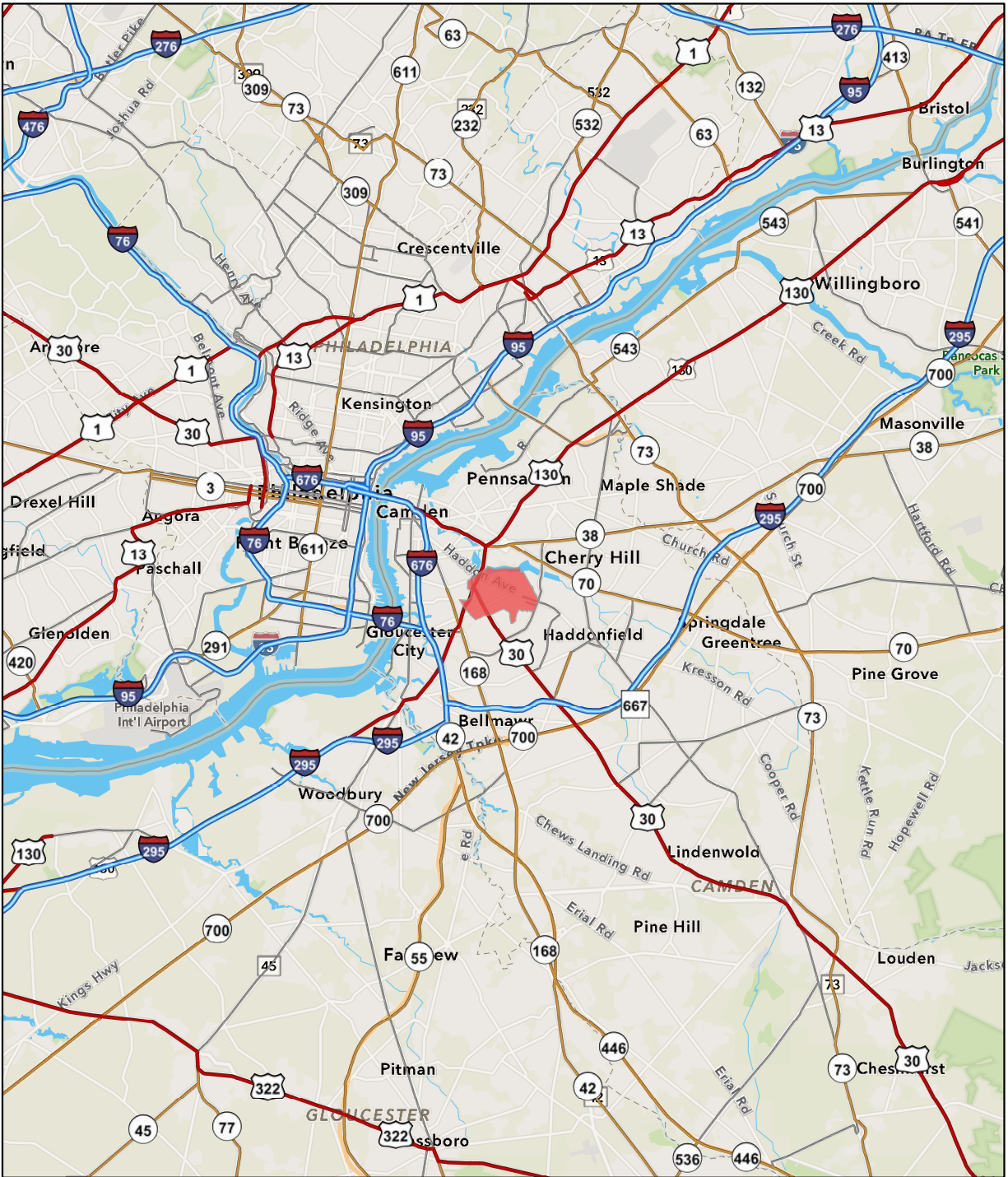


*The Ben Franklin Bridge connects Collingswood residents to Philadelphia by car or rail Credit: Bob Snyder*

## PUBLIC TRANSPORTATION

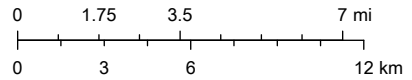
Collingswood's most significant mass transit asset is its location along the PATCO Speedline and its station downtown. The Speedline carries 38,000 riders per day between Center City Philadelphia and South Jersey via the Ben Franklin Bridge. PATCO operates 24 hours a day, as frequently as every 5 minutes during rush hour, with an 18 minute one way

# Map 10 - Highway Network



9/30/2019, 3:53:05 PM

1:288,895



Federal Highway Administration, US Department of Transportation, Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Web AppBuilder for ArcGIS

State of New Jersey, Esri, HERE, Garmin, METI/NASA, USGS, EPA, NPS, USDA | Federal Highway Administration, US Department of Transportation | Recipients of DVRPC digital files are

trip to the 15th/16th and Locust Station in Center City.

Riders can connect with the NJ Transit Riverline (light rail) in Camden, which runs north to Trenton (separate fare required). Easy connections can also be made from PATCO to various SEPTA lines in Center City, including the Market-Frankford Line, Broad Street Line, and all Regional Rail Lines. **Map 11 - Rail Service** shows the borough in relation to the regional network of rail lines.

There is also a station just north of the borough in Cherry Hill for NJ Transit's Atlantic City Rail Line, which connects Philadelphia to Atlantic City.

Several NJ Transit Bus Routes go through or nearby Collingswood. Route 451 runs along Haddon Avenue, connecting Camden with Voorhees Town Center. Route 450 runs along Cuthbert Boulevard connecting the Cherry Hill Mall with Camden via Audubon. And Route 403 follows the White Horse Pike between Camden and Turnersville.

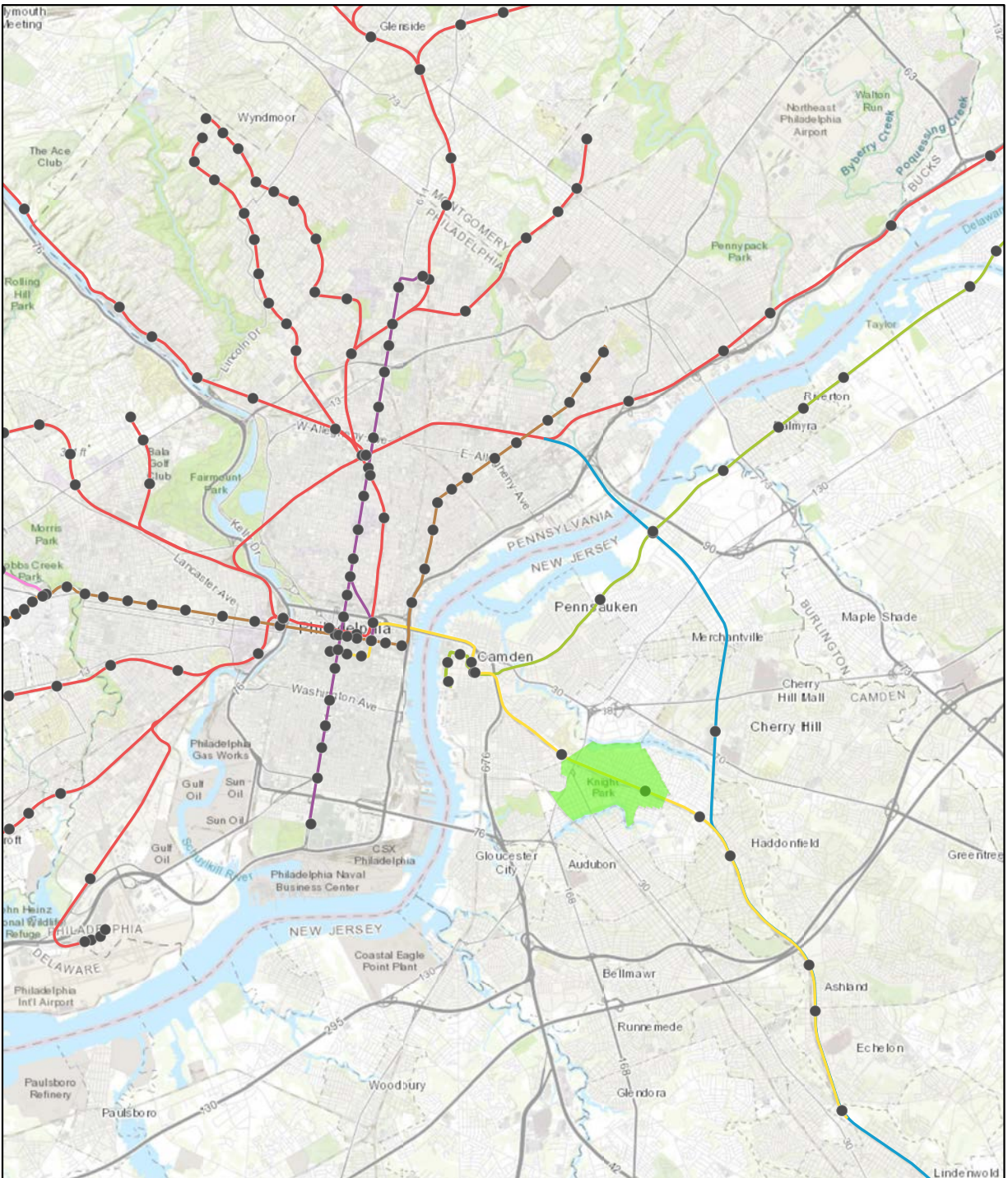
## Walkability

Having been largely laid out in the late 19th century with a linear street grid, Collingswood remains a very walkable community. The vast majority of residents live within a mile of the central business district, and no road within borough limits is wider than two lanes with the exception of a short stretch of US 130 which passes through Collingswood and is the only major barrier to pedestrian travel. The majority of Collingswood residents live within a mile of the central business district, the farthest point from which is only a mile and a quarter away.

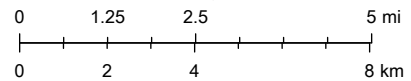


*The Collingswood Farmers' Market draws hundreds of shoppers every Saturday from May to November Credit: Collingswood Farmers' Market*

# Map 11 - Rail Service



1:190,651



- |                       |                   |
|-----------------------|-------------------|
| DVRPC Passenger Rail  | Surface Trolley   |
| Regional Rail         | PATCO             |
| NJ Transit            | Rapid Transit     |
| NJ Transit Light Rail | Subway - Elevated |
| Subway                |                   |

Source: DVRPC

Web AppBuilder for ArcGIS

City of Philadelphia, State of New Jersey, Esri, HERE, Garmin, USGS, NGA, EPA, USDA, NPS | Recipients of DVRPC digital files are encouraged to credit DVRPC as the source of the data when

The Delaware Valley Regional Planning Commission (DVRPC) calculates Connectivity Scores based on the density of non-freeway intersections in a given Traffic Analysis Zone (TAZ, a geographical unit used transportation planning that usually has 3,000 or fewer people). This score is used as a proxy for walkability. Every TAZ within Collingswood received either a “high” or “medium-high” in their Connectivity Score.

## Commuting

A large portion of the Philadelphia metropolitan area, including all of Philadelphia itself, can be reached within an hour by either car or rail.

The Census Bureau’s American Community Survey (2013-2017 five year estimates) found 7,937 workers aged 16 or over. Their mean travel time to work was 27.2 minutes using the following modes:

### COLLINGSWOOD COMMUTING MODES

Mode	Estimated Commuters
Car, truck, or van - drove alone	5,607
Car, truck, or van - carpooled	586
Public transportation	1,195
Walked	103
Other means (primarily bicycle)	112
Worked at home	334

Source: US Census Bureau, ACS

## Historic Resources

There are two historic districts located entirely within borough limits, both of which were listed with the National Register of Historic Places in 1990.

The Collingswood Residential Historic District is centered primarily around Knight Park. The homes and landscape of this district exemplify the development of a late 19th century

suburb going from productive farm land to large tracts (often fueled by speculation), to subdivision by real estate or land companies, with the construction of made-to-order, builder-designed, or prefabricated homes. This district includes Knight Park itself as well as all of the residential lots immediately fronting the park. Also included are all lots on the 500 and 600 blocks of Park Avenue, as well as the lots bounded by Collings And Eldridge Avenues and Colford and Bettewood (the so-called Merrick Villa area).



*The Collings-Knight Homestead Credit: Tim Ifill*

Architectural styles that can be found in this district are Colonial Revival, Dutch Colonial Revival, American Foursquare, Queen Anne, and bungalow. Per its nomination form, the district contains 134 contributing and 23 noncontributing buildings.

The Collingswood Commercial Historic District runs along Haddon Avenue between Woodlawn and Fern, and also includes several parcels fronting Collings Avenue. The buildings and layout “form a classic example of the ‘main street’ of a late-nineteenth and early-twentieth century suburb, assuming significance in the area of community development and commerce,” as described in its nominating document. As of its designation, it contained 80 contributing, and 15 noncontributing buildings.

A portion of the Cooper River Park Historic District also is within the boroughs borders (running from South Park Drive to the borough’s boundary in the middle of Cooper River Lake). This District was listed in 2016 to recognize and preserve a planned landscape designed to adhere to City Beautiful Movement principles (the entire district runs along the river from the Rt. 38 crossing into Haddonfield).

The following sites are all those either within or partially within Collingswood that have either been listed, issued a Certificate of Eligibility, or received an opinion of eligibility by either the National Register of Historic Places or the State Register of Historic Places, along with the date of the listing action.



## COLLINGSWOOD HISTORIC ASSETS

Historic Asset	Location	National Register	State Register
Camden and Atlantic Railroad Historic District	Railroad right-of-way from Camden to Atlantic City		Eligible - 2012
Collings-Knight House	500 Collings Avenue	Listed - 1987	Listed - 1987
Collingswood Commercial Historic District	Along Haddon Avenue	Listed - 1990	Listed - 1990
Collingswood Circle (demolished)	White Horse Pike and Crescent Blvd		Eligible - 1995
Collingswood Residential Historic District	Knight Park/Park Ave	Listed - 1990	Listed - 1990
The Collingswood Theatre	843 Haddon Avenue	Listed - 1982	Listed - 1981
Cooper River Park Historic District	Along Cooper River	Listed - 2016	
Excelsior Scottish Rite Auditorium	315 White Horse Pike		Eligible - 2000
Pure Oil Company Service Station (demolished)	Rt. 130 at Collingswood Circle		Eligibility Opinion - 1995
Stokes-Lee House	615-617 Lees Avenue	Listed - 1987	Listed - 1987
Thackara House	912 Eldridge Avenue	Listed - 1987	Listed - 1987

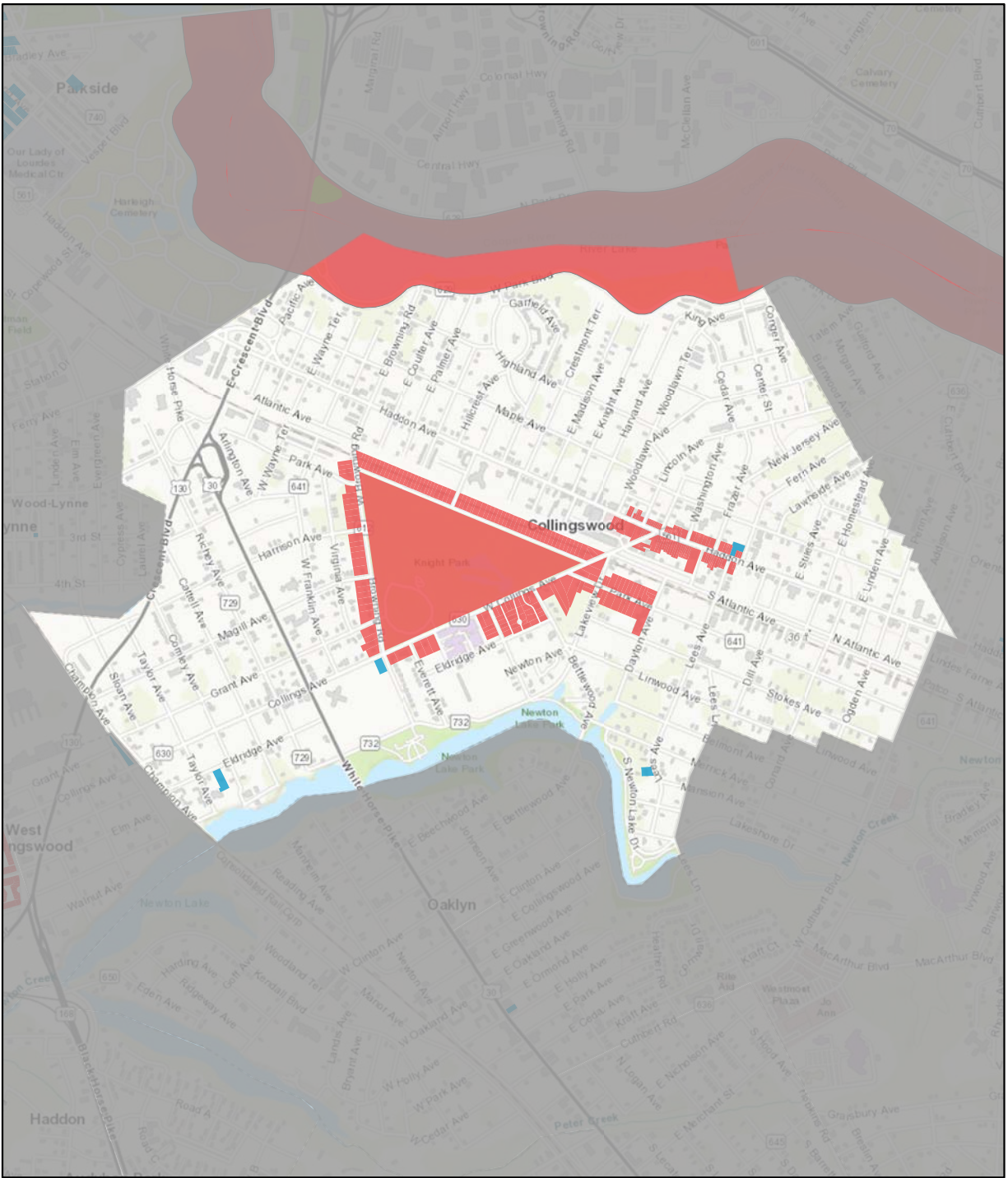
Source: NJ DEP Historic Preservation Office


**Map 12 - Listed Historic Districts and Sites** shows all properties and districts in Collingswood that are listed in either the State or National Register of Historic Places.




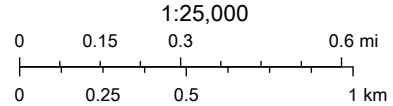
*The Cooper River Park Historic District Credit: Tim Ifill*

# Map 12 - Listed Historic Districts and Sites



 **Listed HD**

 **Listed INDV**



Sources: National and State Registers of Historic Places, NJ DEP

## Open Space, Parks, and Trails

New Jersey has several programs that protect and preserve open space for recreation, wildlife and watershed protection, and other environmental and economic purposes. There are 118.9 acres of protected open space within Collingswood comprising a cumulative 9.6% of the borough's area. **Map 13 - Protected Open Space** shows such sites within and outside of Collingswood, zoomed out slightly to give a sense of Open Space in the broader community.

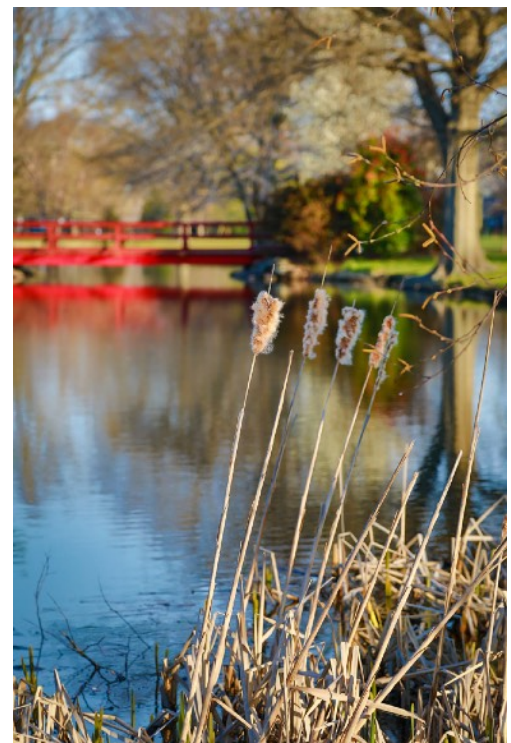
TABLE : PRESERVED OPEN SPACE IN COLLINGSWOOD

Name	Owner	Acreage (within Collingswood)	Use
Cooper River Park	Camden County	65.87	Park
Newton Lake Park	Camden County	48.62	Park
Roberts Pool	Borough of Collingswood	4.43	Municipal Pool

Source: NJ DEP

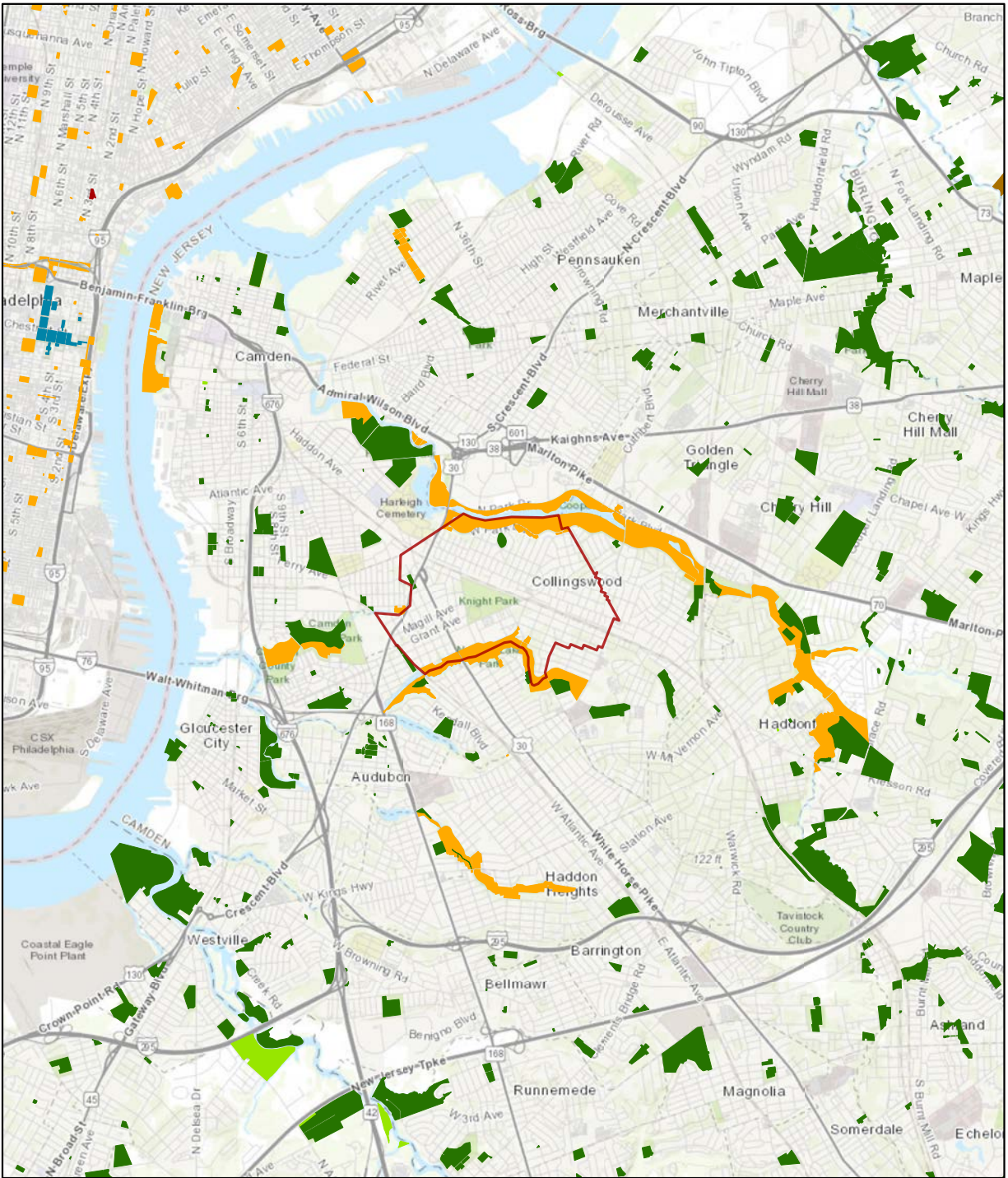
### PUBLIC PARKS

The centerpiece of Collingswood is Knight Park, which sits on land given to the Trustees of Knight Park by the family of Edward C. Knight. While Knight Park has an endowment that came with the donation of the land, it has proved inadequate for the maintenance needs of the park, so the Borough now contributes to its maintenance through Public Works. Knight Park contains athletic fields used by the middle and high school, little league fields as well as soccer fields. There is a playground near the center of the park, and a picnic pavilion is available for rental. A pond was once used for skating and boating, but is now primarily used for fishing and scenic enjoyment. A former Superintendent's Residence/Clubhouse is being renovated for community use. The borough also hosts outdoor movie nights and concerts during the summer

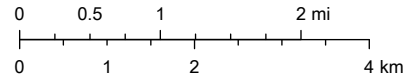


Knight Park Credit: Borough of Collingswood 67

# Map 13 - Protected Open Space



1:95,325



- DVRPC Protected Open Space (2016)
- County Land
- Federal Land
- Municipal Land
- Non-Profit Eased and Owned Land
- Preserved Farmland
- State

Source: DVRPC

months. While Knight Park does not have protected Open Space status from the state, development is restricted by its donation stipulations and status in the Collingswood Residential Historic District. If its acreage were included in the above Open Space calculation, then 14.6% of the borough’s area would be preserved.

Collingswood also contains portions of Cooper River Park and Newton Lake Park, both of which are owned and administered by the county. Note: in the Table below, not all park amenities for the two county parks are located within borough limits.

The borough operates a municipal pool, Roberts Pool, which is open from June through labor day to holders of pool memberships or paid guest passes. The complex contains three pools, a playground, and a refreshment stand.

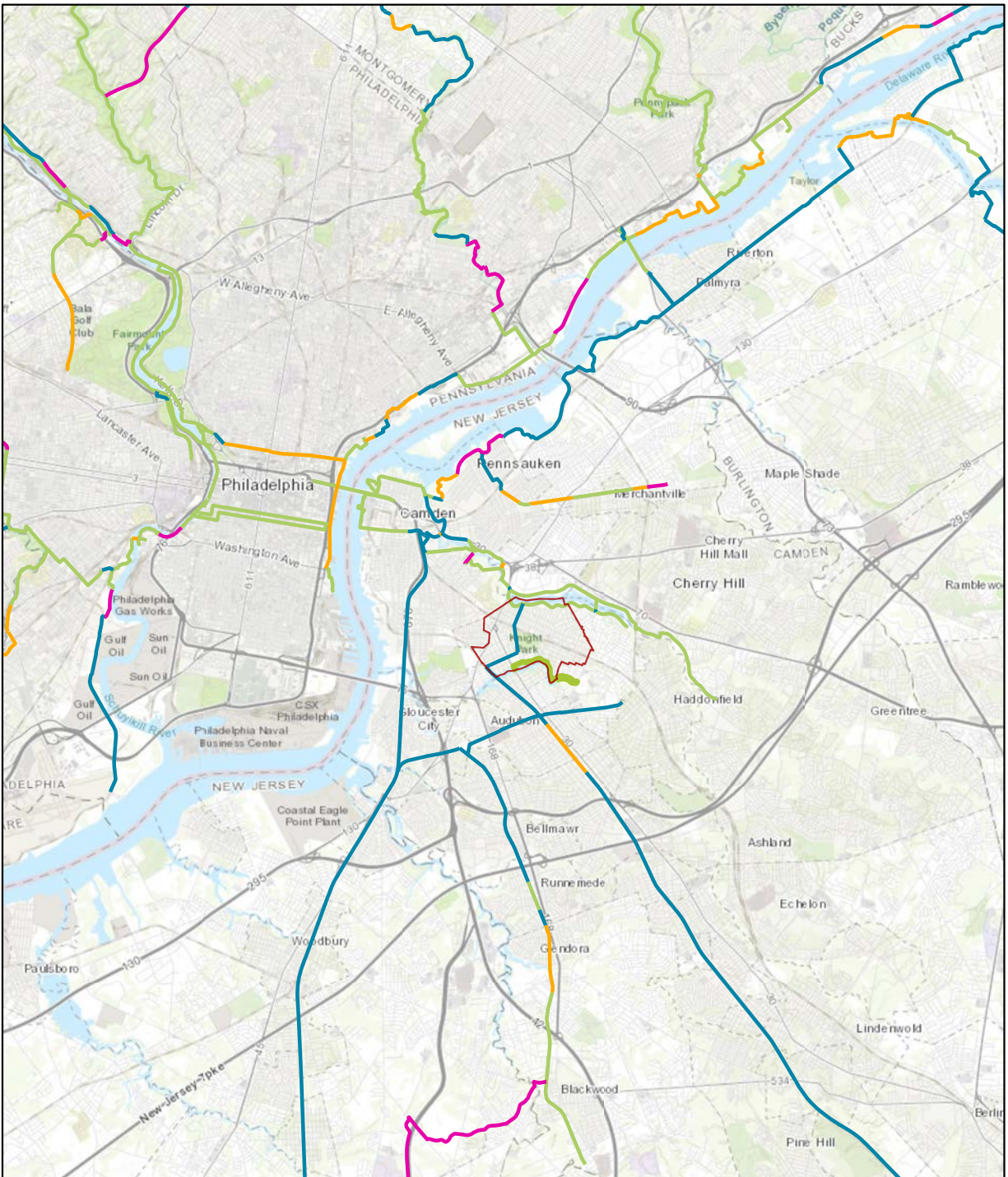
PUBLIC PARKS IN COLLINGSWOOD

Park	Maintained By	Total Acreage	Acreage in Collingswood	Amenities
Knight Park	Trustees of Knight Park and Collingswood Public Works	61	61	Athletic fields, playground, picnic pavilion, fishing pond, walking paths
Cooper River Park	Camden County Dept. of Parks and Recreation	346	65.87	Athletic fields, playground, boating, fishing, walking and bike trails, picnic pavilion, rowing competitions
Newton Lake Park	Camden County Dept. of Parks and recreation	103	48.62	Playgrounds, boating, fishing, walking and bike paths, pavilion with fireplace

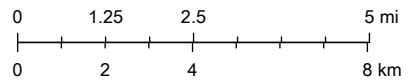
TRAILS AND BIKE LANES

The Philadelphia area has an extensive regional bicycle and pedestrian trail network, known collectively as the Circuit that crosses municipal and county boundaries. Collingswood contains portions of two trails (See **Map 14 - Circuit Trails**). There is a pedestrian/bike trail encircling Cooper River Lake, which also connects to other trails around

# Map 14 - Circuit Trails



1:190,651



- Circuit Trails
- Existing
- In Progress
- Planned
- Pipeline

Source: DVRPC, Circuit Trails

Cooper River Park. Along South Park Boulevard, 1.06 miles of this trail passes through Collingswood. There is also a pedestrian/bike trail around Newton Lake, with a 1.23 mile portion within borough limits.

There are currently no designated on-road bike lanes in Collingswood. However, a pedestrian/bike plan produced jointly with Haddon Township is currently being worked on.

The Cross Camden County Trail was initially proposed in 2015, running from Camden City to the southeast corner of the county in Winslow Township. The planned route includes a connection through Collingswood, extending from the Cooper River Trail south alongside Browning Avenue, then southwest onto Collings Ave up to the Conrail right-of-way, where the Cross-County Trail will continue southeast into Oaklyn and beyond.

## *Education and Schools*

Collingswood has seven public school facilities. Collingswood Middle School and Collingswood High School share a site on Collings Avenue across from Knight Park. There are five K-5 schools, James A. Garfield at Haddon Avenue and Garfield Ave, Mark Newbie at Browning Road and Maple Avenue, Thomas Sharp at Comly Avenue and Magill Avenue, William P. Tatem at Lincoln Avenue and Washington Avenue, and Zane North at Stokes Avenue and Lees Avenue. There is one private school, Good Shepard Regional School at Lees Avenue and Atlantic Avenue.



*James A. Garfield Elementary School Credit: Tim Ifill*

## Utilities and Services

### DRINKING WATER

Drinking water is provided for all borough residents by the Collingswood Water Department. The Department has a shared-services agreement with the Merchantville-Pennsauken Water Commission for operations and management of its water treatment services and wells.

THE BOROUGH OF COLLINGSWOOD SUPPLIES DRINKING WATER TO COLLINGSWOOD, WOODLYNNE AND A PORTION OF HADDON TOWNSHIP. OUR SERVICE AREA COVERS APPROXIMATELY 50 LINEAR MILES OF WATER MAINS RANGING FROM 4 INCHES TO 16 INCHES WITH 6,000 ACTIVE SERVICE CONNECTIONS SERVING APPROXIMATELY 21,000 PEOPLE. THE BOROUGH OF COLLINGSWOOD COMPLIES WITH ALL OF THE NEW JERSEY BOARD OF PUBLIC UTILITIES METER TESTING REGULATIONS.

THE BOROUGH CURRENTLY OBTAINS ITS ENTIRE WATER SUPPLY FROM SEVEN GROUND WATER WELLS DRILLED AND SUNK INTO THE RARITAN AQUIFER THROUGHOUT THE BOROUGH. FIVE OF THE WELLS PUMP UNTREATED WATER TO OUR MAIN TREATMENT PLANT AT HIGHLAND & HILLCREST AVENUE THROUGH A NETWORK OF UNDERGROUND PIPES. TWO ADDITIONAL WELLS LOCATED AT COMLY & CATTELL AVENUES PUMP UNTREATED WATER TO OUR TREATMENT PLANT AT COMLY AVENUE. THE WATER IS PURIFIED AT BOTH PLANTS AND DELIVERED TO OUR CUSTOMERS.

OUR TREATMENT FACILITIES CONSIST OF:

-AERATION: THE PROCESS OF BRINGING WATER AND AIR INTO CONTACT IN ORDER TO REMOVE DISSOLVED GASES WHICH MAY BE CORROSIVE TO OUR WATER SUPPLY.

-SEDIMENTATION: THE PROCESS OF REMOVING SUSPENDED MATTERS SUCH AS IRON AND MANGANESE BY GRAVITY SETTLING.

-FILTRATION: REMOVING ALMOST ALL SUSPENDED MATTER THAT REMAINS BY PASSING THE WATER THROUGH A SAND MEDIUM.

-CORROSION CONTROL: THE ADDITION OF A ZINC PHOSPHATE TO CONTROL SCALING AND DEPOSITS FORMATION ON WATER LINES.

-AIR STRIPPING: A TOWER AERATOR CONSISTING OF A CYLINDRICAL TANK FILLED WITH A PACKING MATERIAL. WATER IS DISTRIBUTED OVER THE MATERIAL AT THE TOP OF THE TANK WHILE AIR IS FORCED THROUGH THE BOTTOM USING A BLOWER. THE PRIMARY PURPOSE OF AIR STRIPPING IS TO REMOVE ALL TRACES OF VOLATILE ORGANIC COMPOUNDS.

-DISINFECTION: CHLORINE IS ADDED AS THE FINAL TREATMENT BEFORE ENTERING THE WATER DISTRIBUTION SYSTEM.

- COLLINGSWOOD WATER DEPARTMENT

For the most recent Water Quality Report, see **Appendix F - Water Quality Report.**



## SEWERS AND WASTEWATER TREATMENT

All developed portions of the borough are equipped with sewer service and separate storm drains. The borough owns and maintains all sewer lines and storm drains, as well as two pumping stations. All sewage from Camden County municipalities is treated by the Camden County Municipal Utilities Authority (CCMUA) at Delaware No. 1 Water Pollution Control Facility in Camden. The plant treats 58 million gallons of sewage daily. Treated wastewater is released into the Delaware River and sludge, a mixture of solid waste and bacteria is dried and used as fuel in cement kilns or beneficially reused as landfill cover.

The treatment process for sewage is as follows:

### PRELIMINARY TREATMENT FACILITY

IN THE PRELIMINARY TREATMENT FACILITY, THE WASTEWATER FLOWS THROUGH THREE MECHANICALLY CLEANED BAR SCREENS WHICH CATCH DEBRIS, RAGS, AND LARGE SOLID OBJECTS. AFTER THIS STAGE, CENTRIFUGAL PUMPS LIFT THE WASTEWATER 35 FEET (A LITTLE MORE THAN TEN METERS) TO BEGIN ITS TRIP THROUGH THE GRAVITY-FED TREATMENT TANKS. NEXT THE WATER ENTERS THREE ROUND GRIT CHAMBERS, WHERE SMALL STONES AND SAND SETTLE OUT. REMOVING SAND AND LARGER SOLID OBJECTS HELPS EXTEND THE LIFE OF EQUIPMENT. THE GRIT AND SCREENINGS ARE PUMPED TO GRIT SEPARATORS AND WASHERS WHERE THEY ARE CLEANED BEFORE BEING TRUCKED TO SANITARY LANDFILLS.

### PRIMARY SEDIMENTATION TANKS

WASTEWATER TAKES 12 TO 15 HOURS TO FLOW THROUGH THE PRIMARY SEDIMENTATION TANKS. DURING THIS SLOW PASSAGE, SOLIDS SETTLE TO THE BOTTOM OF THE TANKS. THESE SOLIDS, CALLED "PRIMARY SLUDGE," ARE SKIMMED OFF THE BOTTOM AND HELD FOR FURTHER PROCESSING. OIL AND GREASE SCUM IS SKIMMED OFF THE TOP OF THE PRIMARY SEDIMENTATION TANKS INTO SCUM WELLS. DELAWARE NO. 1 WATER POLLUTION CONTROL FACILITY HAS TEN PRIMARY SEDIMENTATION TANKS, MEASURING ABOUT 186 FEET BY 50 FEET (57 X 15.24 METERS) WITH AN AVERAGE SIDE WATER DEPTH OF TEN FEET (3 METERS). THE PRIMARY SEDIMENTATION TANKS REMOVE 50-60% OF THE SOLID CONTAMINANTS IN THE WASTEWATER. WHEN THE PLANT WAS RUN BY THE CITY OF CAMDEN, THIS WAS ALL THE TREATMENT PROVIDED BEFORE DISCHARGING THE WASTEWATER INTO THE DELAWARE RIVER. THE CCMUA PURCHASED THE PLANT AND UPGRADED IT TO PRODUCE CLEANER WATER.

### AERATION TANKS

IN THE AERATION TANKS, "PRIMARY WASTEWATER" COMING FROM THE PRIMARY SEDIMENTATION TANKS IS MIXED WITH OXYGEN AND SECONDARY SLUDGE - A MIXTURE OF MICROBES AND BACTERIA COMING FROM THE FINAL SEDIMENTATION TANKS DOWN THE LINE. THE WASTEWATER SPENDS FOUR HOURS IN THE AERATION TANKS. THESE TANKS ARE DESIGNED TO BE "BACTERIA HEAVEN", WITH A COMBINATION OF FOOD (THE ORGANIC SOLIDS IN THE WASTEWATER) AND OXYGEN. UNDER THESE CIRCUMSTANCES, BACTERIA GROW AND CONSUME THE ORGANIC SOLIDS VERY QUICKLY. THERE ARE EIGHT AERATION TANKS AT DELAWARE NO. 1. EACH TANK IS ABOUT 220 FEET BY 55 FEET (67 X 16.76 METERS), WITH AN

AVERAGE LIQUID DEPTH OF 15 FEET (4.6 METERS). MECHANICAL SURFACE AERATORS ARE USED TO MIX THE ACTIVATED SLUDGE, THE PRIMARY WASTEWATER, AND THE OXYGEN.

#### FINAL SEDIMENTATION TANKS

IN THE AERATION TANKS, THE BACTERIA GROW AND CONSUME SOLIDS. HERE IN THE FINAL SEDIMENTATION TANKS, THESE BACTERIA ARE ALLOWED TO SETTLE TO THE BOTTOM FORMING SECONDARY SLUDGE. SECONDARY SLUDGE IS MORE LIQUID THAN PRIMARY SLUDGE. IT IS COMPOSED OF SMALL PARTICLES. ABOUT 30% OF THE SECONDARY SLUDGE IS RECYCLED TO THE AERATION TANKS. THE REST IS REMOVED FOR FURTHER PROCESSING. DELAWARE NO. 1 WPCF HAS EIGHT FINAL SEDIMENTATION TANKS. EACH IS ABOUT 270 FEET LONG BY 78 FEET WIDE (82 X 24 METERS).

#### CHLORINE CONTACT TANKS

THE FINAL STAGE OF TREATMENT TAKES PLACE IN THE CHLORINE CONTACT TANKS. TO KILL ANY REMAINING BACTERIA, THE WATER IS MIXED WITH A SOLUTION OF SODIUM HYPOCHLORITE. (THIS IS THE SAME CHEMICAL FOUND IN HOUSEHOLD CHLORINE BLEACH.)

#### OUTFALL

THE TREATED WASTEWATER IS DISCHARGED THROUGH AN OUTFALL PIPE INTO THE DELAWARE RIVER. IT HAS SPENT ABOUT ONE FULL DAY PASSING THROUGH THE TREATMENT PLANT.

- CAMDEN COUNTY MUNICIPAL UTILITIES AUTHORITY

## GAS, ELECTRIC, AND HOME HEATING

The Public Service Electric and Gas Company (PSE&G) maintains electric transmission lines and underground natural gas lines throughout the borough.

The following is a breakdown of home heating fuel types for the borough:

### HOME HEATING FUEL TYPES IN COLLINGSWOOD

Fuel Type	Estimated Number of Occupied Housing Units	Percentage of Occupied Housing units
Utility gas	4,091	67.9%
Bottled, tank, or LP gas	68	1.1%
Electricity	958	15.9%
Fuel oil, kerosene, etc.	766	12.7%
Other fuel	70	1.1%
No fuel used	70	1.1%

Fuel Type	Estimated Number of Occupied Housing Units	Percentage of Occupied Housing units
Total Occupied Housing Units	6,023	

Source: American Communities Survey 5-year Estimates for 2013-2017

## TRASH AND RECYCLING

The borough collects trash and recycling from residential areas once per week through its contractor, South Jersey Sanitation. Solid waste is incinerated at the Covanta Camden Energy Recovery Center.

Recycling is mandatory and single stream for paper, aluminum cans, glass, and #1 and #2 plastics.

The borough's contractors also collect yard waste weekly from April through September. Public Works provides weekly curbside leaf collection from mid-October through mid-December and Christmas tree collection after the holidays.

## COMPOST AND RAIN BARRELS

The borough provides subsidized compost bins and rain barrels to residents, along with training on their use, in an effort to reduce the solid waste stream and stormwater runoff, respectively.



*Credit: Borough of Collingswood*

# ENVIRONMENTAL ISSUES

## *Known Contaminated Sites*

The NJ DEP tracks locations where environmental contamination may have affected soil, groundwater, surface water, or other aspects of the site. “Active sites are those sites having one or more active cases or remedial action permits where contamination has been confirmed. These sites may have any number of pending and/or closed cases.”

Sites are ranked with a remedial level of increasing severity and complexity from B, C1, C2, C3, or D. As of this writing, the following Known Contaminated Sites are in Collingswood. See **Map 15 - Known Contaminated Sites and CEAs** for locations.

### KNOWN CONTAMINATED SITES

Site ID	Name	Address	PI Number	Lead Agency	Status	Remedial Level
14083	MATTHEY AUTOMOTIVE	300 HADDON AVE	31292	LSRP	Active	C2
10136	BHUTA INC	33 W COLLINGS AVE	18926	LSRP	Active	C2
10137	130 COLLINGSWOOD OPERATING LLC	RT 130 & PARK AVE	9719	LSRP	Active	C2
10143	BOROUGH GARAGE	713 ATLANTIC AVE	4699	LSRP	Active	C1
10149	PENGUIN CLEANERS	1008 HADDON AVE	709358	LSRP	Active	C3
10153	K AND SONS FUEL INC	580 RT 130 N	1605	RAP	Active - RAP	
10154	59796 CRESCENT FUELS	701 CRESCENT BLVD	7340	LSRP	Active	C2
15481	QUALITY FUEL AUTO & TRUCK REPAIR INC	550 CRESCENT BLVD	24394	LSRP	Active	C1
30607	FIRST UNITED METHODIST CHURCH	DAYTON & PARK AVES	25010	POST-REM	Active - Post Rem	C2
45815	COLLINGSWOOD POLICE DEPT	735 N ATLANTIC AVE	4696	LSRP	Active	C1
45816	COLLINGSWOOD WATER PLANT	HIGHLAND & HILLCREST AVES	4697	LSRP	Active	C1
42462	BOB'S EXTRA	505 HADDON AVE	2814	LSRP	Active	C2

42883	SHERMAN IND T/A WHISTLE CLEAN	RTE 130 & CLAY AVE	4056	PENDING	Pending	
24348	RAYS AUTO	200 202 LINCOLN AVE	471651	LSRP	Active	C1
64828	VACANT LOT @ 610 HARRISON AVENUE	610 HARRISON AVE	G00002 4189	LSRP	Active	C2
59318	WAYNES AUTO	350 RT 130	90464	LSRP	Active	C1
196364	606 610 HADDON AVENUE	606 610 HADDON AVE	257795	RAP	Active - RAP	C2
175964	SCHENK CLEANERS	1100 HADDON AVE	230602	PUB FUNDED	Active	C2
74011	1 WHITEHORSE PIKE	1 WHITEHORSE PK	G00003 7018	LSRP	Active	C2
187505	COLLINGSWOOD HARDWARE	726 HADDON AVE	246474	UHOT	Active	C1
74633	226 WHITE HORSE PIKE	226 WHITE HORSE PK	G00004 0350	UHOT	Active	C1
75301	MOHRFELD INC	24 LEES AVE	G00004 3350	POST-REM	Active - Post Rem	C2
517623	ACE CLEANERS FORMER	806 HADDON AVE	650274	LSRP	Active	C2
452457	BANK OF AMERICA	846 846 HADDON AVE	569127	LSRP	Active	B
537425	27 WASHINGTON AVENUE (AKA SENHOLZI RESIDENCE)	27 WASHINGTON AVE	674361	LSRP	Active	C2
538333	HADDON & BILLSON AVE GROUNDWATER CONT	HADDON & BILLSON AVE	675423	PUB FUNDED	Active	C2
630165	COLLINGSWOOD WD WELLFIELD CONTAMINATION	HILLCREST AVE & HIGHLAND AVE	805446	PUB FUNDED	Active	C3

**Source: NJ DEP**

**Lead Agency Explanations:**

- LSRP - CASE IS BEING HANDLED UNDER THE LICENSED SITE REMEDIATION PROFESSIONAL (LSRP) PROGRAM
- PUB FUNDED - SITES WHERE TARGETED REMEDIATION IS UNDERTAKEN BY THE DEPARTMENT'S PUBLICLY FUNDED ELEMENT FOR SITUATIONS WHERE THE RESPONSIBLE ENTITY IS UNKNOWN, UNWILLING OR UNABLE TO PERFORM THE NECESSARY REMEDIATION TO ENSURE THAT THE HEALTH AND SAFETY OF THE PUBLIC AND/OR THE ENVIRONMENT ARE NOT JEOPARDIZED.
- POST-REM - SITES WHERE AN NFA OR RAO WITH LIMITED RESTRICTED USE AND/OR RESTRICTED USE INSTITUTIONAL CONTROL HAS BEEN ISSUED.
- UHOT - UNREGULATED HEATING OIL TANK PROGRAM CASE - HOMEOWNER HEATING OIL UST DISCHARGE CASES
- PENDING - SITE WHERE CONTAMINATION HAS BEEN IDENTIFIED BUT A FORMAL EVALUATION OF THE EXTENT OF THE CONTAMINATION HAS YET TO BE PERFORMED.

- RAP - REMEDIAL ACTION PERMIT CASE. RESTRICTED USE OR LIMITED RESTRICTED USE NFA/RAO CASE WITH AN ASSOCIATED SOIL AND/OR GROUND WATER REMEDIAL ACTION PERMIT. THE CASE IS NOW UNDER THE AUSPICES OF THE BUREAU OF REMEDIAL ACTION PERMITS, WITH BIENNIAL CERTIFICATION REQUIRED.

- NJ DEP

## *Pending and Closed Sites*

Pending sites are those sites having one or more pending cases, no active cases, and any number of closed cases. Sites/cases with remedial action permits are not included in this category. Collingswood has 11 Pending sites as of this writing.

In addition there are 111 closed sites in the borough. Please see **Appendix G - Pending and Closed Sites** for a list of pending and closed sites.

## *National Priorities List*

On a federal level, the EPA monitors hazardous waste sites and places facilities with high potential to release hazardous substances on the National Priorities List. These sites are colloquially known as Superfund sites given their eligibility to receive cleanup funds. There are nine such sites in Camden County (and one additional proposed site), but none are located in Collingswood. The closest sites are in Camden City, near the Delaware waterfront.

## *Classification Exception Areas (CEAs)*

Collingswood has several CEAs where wells are restricted due to groundwater contamination. While Known Contaminated Sites are represented merely as points on the property on all state maps, CEAs can extend beyond the boundary of the property where the contamination occurred.

TABLE 1-2 CEAS (GROUNDWATER CONTAMINATION)

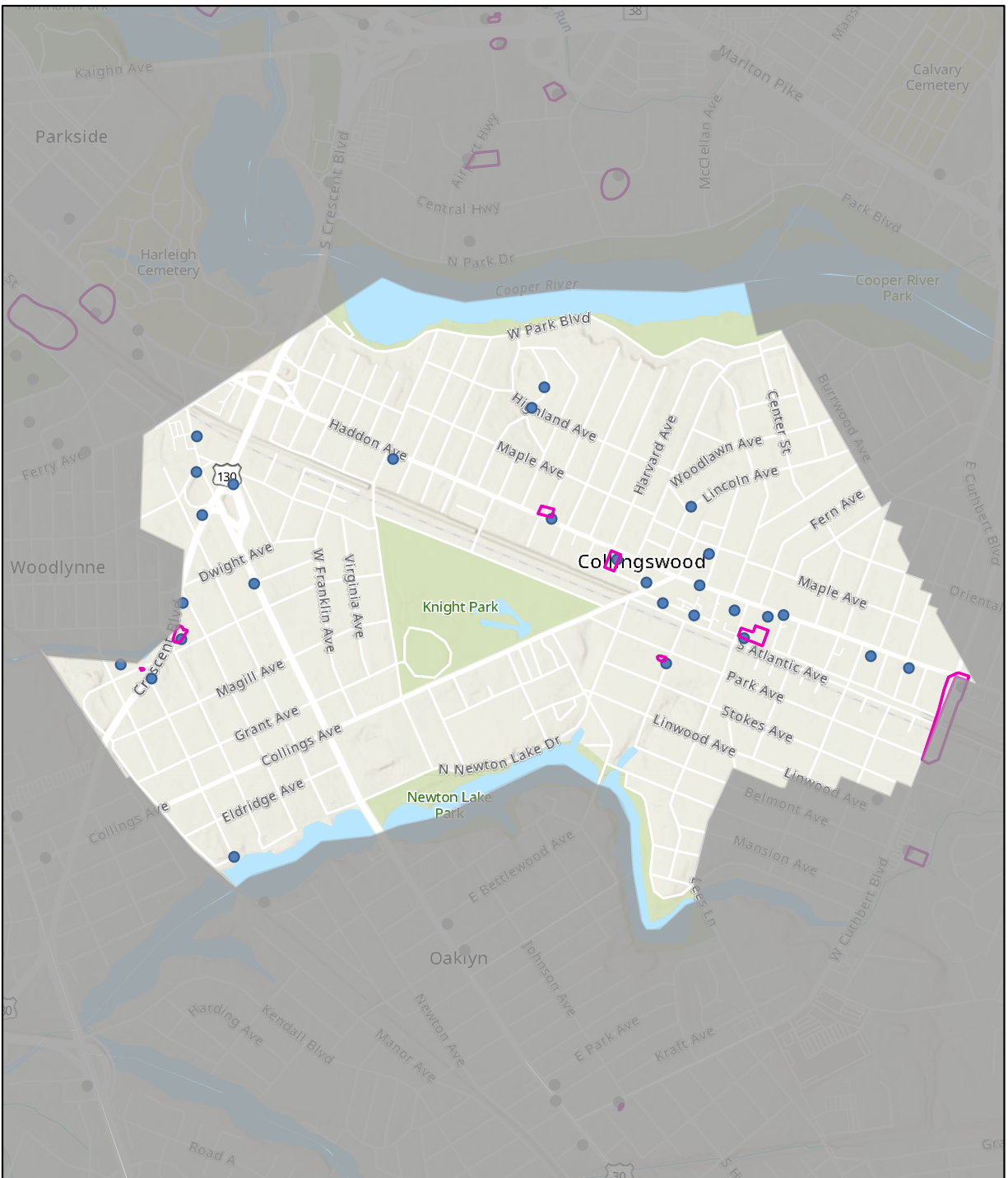
CEA Name	Address	DESCRIPTION	DEPTH (ft.)	Contaminants	ACRES
Bob's Xtra Service Station	505 Haddon Ave	CEA underlies the site's parking lot and extends offsite to the W/NW, terminating beneath the property across Crestmont Ave.	100	Benzene, Lead, Xylenes	0.37
First Methodist Church	Dayton Ave & Park Ave	CEA is located within the property boundaries, defined by sample locations B-3, RW-2 and the downgradient edge of the plume is located approximately 200' north of MW-3.	50	Benzene	0.11
Westmont Mobil Service Station #15-H6E - 2	2 Haddon Ave & Cuthbert Blvd (Haddon Township)	CEA extends from the site and along Cuthbert Blvd. and includes the Right-of-Way areas of Cuthbert Blvd. and Lindisfarne Ave.	50	Benzene, MTBE, TBA, Lead, Ethylbenzene, Toluene, Xylenes	5.01*
Service Station #05189	580 Route 130 N	CEA is for Benzene, MTBE, TBA + VOTICS. It is onsite and extends off-site	60	Benzene, MTBE, TBA, VOTICS	0.46
Collingswood Service Station	Route 130 & Harrison Ave	This area is presently designated as Class II-A, the primary designated use is potable water; secondary uses include agricultural and industrial water.	20	Benzene	0.02
Mohrfeld, Inc	24 Lees Ave	Benzene Plume	50	Benzene	1.08
606 - 610 Haddon Avenue - Historic Fill	606-610 Haddon Ave	The presence of heavy metals in groundwater at the site is attributed to historic fill		Arsenic, aluminum, beryllium, iron, manganese	0.59
<b>Source: NJDEP</b>					

\*The site of the contamination is located in Haddon Township. Total acreage of the CEA is 5.01, but a 1.13 portion lies within Collingswood.

## Lead and Asbestos

Given the age of Collingswood's housing stock, many residents must deal with the presence of lead and asbestos in their homes. Lead can be found primarily in paints and older plumbing fixtures. Asbestos was a common building material used in insulation, fireproofing, and other products. Residents should take necessary precautions when engaging in renovations or encountering deteriorating paint surfaces or building materials

# Map 15 - Known Contaminated Sites and CEAs



- Classification Exception Areas
- Known Contaminated Sites

Source: NJ DEP



that may contain asbestos.

## *Surface Water Pollution*

See the **Hydrology** section for information about pollutants in Collingswood's surface water.

# ACKNOWLEDGMENTS

Thanks to everyone from Sustainable Collingswood (the Green Team) who works to make this town a better place.

Thanks also to everyone from the Borough of Collingswood for their cooperation and assistance.

This report wouldn't be possible without the reams and reams of data and GIS map features that the New Jersey Department of Environmental Protection makes publicly accessible in order to help New Jersey residents better understand the world and environment around them.

A final acknowledgment goes to the Rutgers Environmental Stewards program. Their training gives participants the tools to build a more sustainable future. This report was created by Tim Ifill as his capstone project for participation in the training.

# APPENDIX A

## INFORMATION AND DATA

### SOURCES

The following maps, publications, and datasets were used in the creation of this report. Most of the maps and tables throughout this report were created with publicly available data tables and GIS resources from the New Jersey Department of Environmental Protection.

#### A BRIEF HISTORY OF COLLINGSWOOD

Association of Practical Surveyors of West Jersey *Proceedings, Constitution, By-laws, List of Members, &c., of the Surveyors Association.* 1880

Collingswood Commercial Historic District "National Register of Historic Places Registration Form" 1990

Collingswood Residential Historic District "National Register of Historic Places Registration Form" 1990

Cooper River Park Historic District "National Register of Historic Places Registration Form" 2016

Fansler, Jordan AP "Hinterlands," *The Encyclopedia of Greater Philadelphia* 2016

Gillette, Howard "Camden County, New Jersey" *The Encyclopedia of Greater Philadelphia* 2019

Gordon, Thomas F. *The History of New Jersey, From its Discovery by Europeans to the Adoption of the Federal Constitution* 1834

Hepp, John "Patco" *The Encyclopedia of Greater Philadelphia* 2019

Historical Society of Riverton (Images)

Lattanzi, Gregory D. "Prehistoric Native Americans and Archaeology" The Encyclopedia of Greater Philadelphia 2017

Library of Congress (Image Credits)

Library of Congress (Maps)

Llewellyn, Louisa *First Settlement on the Delaware River, A History of Gloucester City, New Jersey* 1976

Mires, Charles and Hepp, John "Railroad Suburbs" The Encyclopedia of Greater Philadelphia 2019

NJ DEP (Maps)

Rutgers Cartography Lab (Maps)

Soderlund, Jean R. "Native Peoples to 1680" The Encyclopedia of Greater Philadelphia 2018

Spavlik, Janet M. *Images of America: Collingswood* 2007

## LOCATION AND POPULATION

US Census Bureau 2010 Census Data

US Census Bureau American Community Survey (ACS) 5-Year Estimates, 2013-2017

## PHYSIOGRAPHY, TOPOGRAPHY, AND CLIMATE

Environmental Protection Agency

Federal Emergency Management Agency, Flood Map Service Center

Natural Resources and Conservation Service, Agricultural Applied Climate Information System

Natural Resources and Conservation Service, Soil Survey Geographic Database

New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring

New Jersey Department of Environmental Protection, Bureau of Nonpoint Pollution Control

New Jersey Department of Environmental Protection, Bureau of Water Quality Standards and Assessment

New Jersey Department of Environmental Protection, Division of Water Supply and Geoscience

NJ Geological Survey

Office of the NJ State Climatologist

US Geological Survey

## BIOLOGICAL RESOURCES

Collingswood Tree Survey      2009

Cornell Lab of Ornithology - eBird

New Jersey Department of Environmental Protection, Division of Fish and Wildlife

New Jersey Department of Environmental Protection, Landscape Project

Newton Lake Individual Flood Hazard Permit      2018

Newton Lake Management Plan: Framework for the Future      CCMUA      2016

## LAND USE

Collingswood Zoning and Planning Department

Delaware Valley Regional Planning Commission

New Jersey Department of Environmental Protection

## THE BUILT ENVIRONMENT

Camden County Municipal Utilities Authority

Collingswood Commercial Historic District "National Register of Historic Places  
Registration Form" 1990

Collingswood Residential Historic District "National Register of Historic Places  
Registration Form" 1990

Collingswood Water Department

Cooper River Park Historic District "National Register of Historic Places Registration  
Form" 2016

Delaware Valley Regional Planning Commission

New Jersey Department of Environmental Protection

New Jersey Department of Environmental Protection, Historic Preservation Office

US Census Bureau, American Community Survey (ACS) 5-Year Estimates, 2013-2017

## ENVIRONMENTAL ISSUES

New Jersey Department of Environmental Protection

# APPENDIX B

## DETAILED SOIL CHARACTERISTICS

From the NRCS Soil Survey Geographic Database:

### Description of Freehold

#### Setting

- Landform: Flats, low hills
- Landform position (two-dimensional): Summit
- Landform position (three-dimensional): Interfluve
- Down-slope shape: Linear
- Across-slope shape: Linear
- Parent material: Glauconite bearing loamy eolian deposits and/or glauconite bearing loamy fluviomarine deposits

#### Typical profile

- A - 0 to 9 inches: fine sandy loam
- BE - 9 to 15 inches: fine sandy loam
- Bt1 - 15 to 20 inches: sandy loam
- Bt2 - 20 to 30 inches: sandy loam
- BC - 30 to 42 inches: sandy loam
- C - 42 to 60 inches: stratified loamy sand to sandy loam

#### Properties and qualities

- Slope: 0 to 5 percent
- Depth to restrictive feature: More than 80 inches
- Natural drainage class: Well drained
- Runoff class: Low
- Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Available water storage in profile: Moderate (about 8.6 inches)

#### Interpretive groups

- Land capability classification (irrigated): None specified

- Land capability classification (nonirrigated): 2s
- Hydrologic Soil Group: B
- Hydric soil rating: No

#### Description of Downer

##### Setting

- Landform: Low hills
- Down-slope shape: Linear
- Across-slope shape: Linear
- Parent material: Loamy fluviomarine deposits and/or gravelly fluviomarine deposits

##### Typical profile

- Ap - 0 to 12 inches: sandy loam
- Bt - 12 to 24 inches: sandy loam
- BC - 24 to 30 inches: gravelly loamy sand
- C - 30 to 60 inches: stratified gravelly sand to loamy sand

##### Properties and qualities

- Slope: 0 to 5 percent
- Depth to restrictive feature: More than 80 inches
- Natural drainage class: Well drained
- Runoff class: Very low
- Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
- Depth to water table: About 48 to 118 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Available water storage in profile: Low (about 3.3 inches)

##### Interpretive groups

- Land capability classification (irrigated): None specified
- Land capability classification (nonirrigated): 2e
- Hydrologic Soil Group: A
- Hydric soil rating: No

#### Description of Urban Land

##### Setting

- Landform: Flats, low hills
- Parent material: Surface covered by pavement, concrete, buildings, and other structures underlain by disturbed and natural soil material

##### Typical profile

- C - 0 to 60 inches: variable



## Interpretive groups

- Land capability classification (irrigated): None specified
- Land capability classification (nonirrigated): 8s
- Hydric soil rating: Unranked

## Minor Components

### Shrewsbury

- Percent of map unit: 5 percent
- Landform: Depressions
- Landform position (two-dimensional): Toeslope
- Landform position (three-dimensional): Base slope
- Down-slope shape: Concave
- Across-slope shape: Concave
- Hydric soil rating: Yes

### Collington

- Percent of map unit: 5 percent
- Landform: Interfluves, low hills
- Down-slope shape: Convex, linear
- Across-slope shape: Linear
- Hydric soil rating: No

### Holmdel

- Percent of map unit: 5 percent
- Landform: Flats
- Down-slope shape: Linear
- Across-slope shape: Linear
- Hydric soil rating: No

## NEXT

### Description of Freehold, Clayey Substratum

#### Setting

- Landform: Low hills, flats
- Landform position (two-dimensional): Summit
- Landform position (three-dimensional): Interfluve
- Down-slope shape: Linear
- Across-slope shape: Linear
- Parent material: Glauconite bearing loamy eolian deposits and/or glauconite bearing loamy fluviomarine deposits; over clayey estuarine deposits

#### Typical profile

- A - 0 to 9 inches: fine sandy loam
- E - 9 to 15 inches: fine sandy loam
- BE - 15 to 20 inches: sandy loam
- Bt - 20 to 35 inches: sandy loam
- 2C - 35 to 60 inches: stratified sandy loam to sandy clay

#### Properties and qualities

- Slope: 0 to 5 percent
- Depth to restrictive feature: More than 80 inches
- Natural drainage class: Well drained
- Runoff class: Low
- Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Available water storage in profile: Moderate (about 8.3 inches)

#### Interpretive groups

- Land capability classification (irrigated): None specified
- Land capability classification (nonirrigated): 2s
- Hydrologic Soil Group: B
- Hydric soil rating: No

#### Description of Downer, Clayey Substratum

##### Setting

- Landform: Low hills
- Down-slope shape: Linear
- Across-slope shape: Linear
- Parent material: Over clayey estuarine deposits; loamy fluvio-marine deposits and/or gravelly fluvio-marine deposits

##### Typical profile

- A - 0 to 10 inches: sandy loam
- E - 10 to 18 inches: sandy loam
- BE - 18 to 24 inches: sandy loam
- Bt - 24 to 30 inches: sandy loam
- 2C - 30 to 60 inches: stratified sandy loam to sandy clay

#### Properties and qualities

- Slope: 0 to 5 percent
- Depth to restrictive feature: More than 80 inches
- Natural drainage class: Well drained

- Runoff class: Very low
- Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
- Depth to water table: About 48 to 118 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Available water storage in profile: Low (about 6.0 inches)

#### Interpretive groups

- Land capability classification (irrigated): None specified
- Land capability classification (nonirrigated): 2e
- Hydrologic Soil Group: A
- Hydric soil rating: No

#### Description of Urban Land

##### Setting

- Landform: Flats, low hills
- Parent material: Surface covered by pavement, concrete, buildings, and other structures underlain by disturbed and natural soil material

##### Typical profile

- C - 0 to 60 inches: variable

#### Interpretive groups

- Land capability classification (irrigated): None specified
- Land capability classification (nonirrigated): 8s
- Hydric soil rating: Unranked

#### Minor Components

##### Shrewsbury

- Percent of map unit: 5 percent
- Landform: Depressions
- Landform position (two-dimensional): Toeslope
- Landform position (three-dimensional): Base slope
- Down-slope shape: Concave
- Across-slope shape: Concave
- Hydric soil rating: Yes

##### Collington

- Percent of map unit: 5 percent
- Landform: Low hills, interfluves
- Down-slope shape: Linear, convex
- Across-slope shape: Linear
- Hydric soil rating: No

## Holmdel

- Percent of map unit: 5 percent
- Landform: Flats
- Down-slope shape: Linear
- Across-slope shape: Linear
- Hydric soil rating: No

## NEXT

### PssA–Psamments, 0 to 3 percent slopes

#### Map Unit Setting

- National map unit symbol: rvr8
- Mean annual precipitation: 28 to 59 inches
- Mean annual air temperature: 46 to 79 degrees F
- Frost-free period: 161 to 231 days
- Farmland classification: Not prime farmland

#### Map Unit Composition

- Psamments, nearly level, and similar soils: 85 percent
- Minor components (including Atsion, Berryland, and Mullica soils): 15 percent
- Estimates are based on observations, descriptions, and transects of the mapunit.

### Description of Psamments, Nearly Level

#### Setting

- Landform: Depressions
- Landform position (two-dimensional): Toeslope
- Landform position (three-dimensional): Base slope
- Down-slope shape: Concave
- Across-slope shape: Concave
- Parent material: Sandy lateral spread deposits

#### Typical profile

- A - 0 to 6 inches: fine sand
- C1 - 6 to 30 inches: sand
- C2 - 30 to 72 inches: coarse sand

#### Properties and qualities

- Slope: 0 to 3 percent
- Depth to restrictive feature: More than 80 inches
- Natural drainage class: Well drained
- Runoff class: Very low
- Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

- Depth to water table: About 48 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Available water storage in profile: Low (about 3.9 inches)

#### Interpretive groups

- Land capability classification (irrigated): None specified
- Land capability classification (nonirrigated): 7s
- Hydrologic Soil Group: A
- Hydric soil rating: No

#### Minor Components

##### Atsion

- Percent of map unit: 5 percent
- Landform: Depressions
- Landform position (two-dimensional): Toeslope
- Landform position (three-dimensional): Base slope
- Down-slope shape: Concave
- Across-slope shape: Concave
- Hydric soil rating: Yes

##### Berryland, rarely flooded

- Percent of map unit: 5 percent
- Landform: Depressions
- Landform position (two-dimensional): Toeslope
- Landform position (three-dimensional): Base slope
- Down-slope shape: Concave
- Across-slope shape: Concave
- Hydric soil rating: Yes

##### Mullica

- Percent of map unit: 5 percent
- Landform: Depressions
- Landform position (two-dimensional): Toeslope
- Landform position (three-dimensional): Base slope
- Down-slope shape: Concave
- Across-slope shape: Concave
- Hydric soil rating: Yes

#### NEXT

Camden County, New Jersey

URBAN LAND

## UR–Urban land

### Map Unit Setting

- National map unit symbol: rvrf
- Elevation: 0 to 170 feet
- Mean annual precipitation: 30 to 64 inches
- Mean annual air temperature: 46 to 79 degrees F
- Frost-free period: 131 to 178 days
- Farmland classification: Not prime farmland

### Map Unit Composition

- Urban land: 95 percent
- Minor components: 5 percent
- Estimates are based on observations, descriptions, and transects of the mapunit.

### Description of Urban Land

#### Setting

- Parent material: Surface covered by pavement, concrete, buildings, and other structures underlain by disturbed and natural soil material

#### Interpretive groups

- Land capability classification (irrigated): None specified
- Land capability classification (nonirrigated): 8s
- Hydric soil rating: Unranked

#### Minor Components

##### Udorthents

- Percent of map unit: 5 percent
- Landform: Low hills
- Down-slope shape: Linear
- Across-slope shape: Linear
- Hydric soil rating: No

# APPENDIX C

## TREE SURVEY

The borough conducted a tree survey in 2009, cataloging all street trees as well as the interior areas of public borough properties. The full results, grouped by species, and the survey map are below.

Common Name	Species	Native?	Invasive?	Street	Knight Internal	Other Property	Total
London Planetree	Platanus x acerifolia			716	81	20	817
Oak, Pin	Quercus palustris	yes		648	139		787
Pear, Callery	Pyrus calleryana		yes	508	13	6	527
Maple, Red	Acer rubrum	yes		411	58		469
Maple, Norway	Acer platanoides		yes	381	49	13	443
Maple, Sugar	Acer saccharum	yes		153	168	3	324
Maple, Silver	Acer saccharinum	yes		237	8		245
Pine	Pinus spp.	yes		15	190	15	220
Cherry, Kwanzan	Prunus serrulata 'Kwanzan'			141	23		164
Honeylocust	Gleditsia triacanthos f. inermis	yes		123		1	124
Plum, Thundercloud	Prunus cerasifera 'Thundercloud'			95	5	5	105
Ash, Green	Fraxinus pennsylvanica	yes		63	28	9	100
Dogwood, Kousa	Cornus kousa			31	47	13	91
Oak, Willow	Quercus phellos	yes		51	22	1	74
Linden, Littleleaf	Tilia cordata			55	16		71
Shrub, Amalanchier	Amalanchier spp.	yes		13	55		68
Chokecherry	Prunus virginiana	yes		4	57	2	63
Eastern Redbud	Cercis canadensis	yes		53	7	3	63
Maple, Amur	Acer tataricum		potentially	57	2		59

Zelkova	Zelkova serrata			50	4	1	55
Sweetgum	Liquidambar styraciflua	yes		42	12		54
Oak, Northern Red	quercus rubra	yes		36	17		53
Crabapple, Adams	Malus 'Adams'			36	5		41
Ginkgo	Gingko biloba			36	5		41
Scholar Tree	Sophora japonica			31	2		33
Elm, Lacebark	Ulmus parvifolia			26	5		31
Horse Chestnut	Aesculus hippocastanum			23	7		30
Hornbeam, American	Carpinus caroliniana	yes		21	8		29
Catalpa	Catalpa speciosa	yes		5	22		27
Oak, White	Quercus alba	yes			25	2	27
Maple, Hedge	Acer campestre		potentially	22	1		23
Mulberry	Morus spp.	Som e		18	3	2	23
Birch, River	Betula nigra	yes		8	12	1	21
Ash, White	Fraxinus americana	yes		10	10	1	21
Golden Rain Tree	Koelreuteria paniculata		potentially	15	4		19
Chestnut Oak	Quercus montana	yes			18		18
Redwood, Dawn	Metasequoia glyptostroboides			4	13	1	18
Japanese Tree Lilac	Syringa reticulata subsp. Reticulata			11	4	1	16
Tuliptree	Liriodendron tulipifera	yes		7	6	1	14
Crapemyrtle	Lagerstroemia indica			4	4	6	14
Elm, American	Ulmus americana	hybri d		13			13
American Holly	Ilex opaca	yes		3	2	8	13
Poplar, Hybrid	Populus deltoides x nigra			13			13
Copper Beech	Fagus cylvatica purpurea				10	3	13
Magnolia, Star	Magnolia stellata			1	11		12



Linden, Silver	<i>Tilia tomentosa</i>			3	6		9
Maple, Japanese	<i>Acer palmatum</i>			3	2	4	9
Rhododendron	<i>Rhododendron</i> spp.	yes			7		7
Oak, Sawtooth	<i>Quercus acutissima</i>		potentially	6			6
Maple, Trident	<i>Acer buergerianum</i>			2	2		4
Weeping Cherry	<i>Prunus subhirtella</i>			2	1	1	4
Shrub, Miscellaneous					4		4
Oak, Scarlet	<i>Quercus coccinea</i>	yes				3	3
Apple, Common	<i>Malus pumila</i>			3			3
Franklinia	<i>Franklinia alatamaha</i>				3		3
Weeping Beech	<i>Fagus sylvatica</i> 'Pendula'				3		3
Hawthorne	<i>Crataegus</i>	some		1	1		2
Ash, Black	<i>Fraxinus nigra</i>	yes		2			2
Bald Cypress	<i>Taxodium distichum</i>	yes		2			2
Hackberry, Common	<i>Celtis occidentalis</i>	yes		2			2
Willow, Weeping	<i>Salix babylonica</i>			1	1		2
Green Apple	<i>Malus pumila</i>				2		2
Black Walnut	<i>Juglans nigra</i>	yes		1			1
Quaking Aspen	<i>Populus tremuloides</i>	yes		1			1
Smoke Tree	<i>Cotinus coggygria</i>			1			1
Other/Unknown				9			9
<b>TOTALS</b>				<b>4229</b>	<b>1210</b>	<b>126</b>	<b>5565</b>



# APPENDIX D

## KNOWN OR PROBABLE BIRD SPECIES IN COLLINGSWOOD

These species are either known to occur in Collingswood based on observations or are probably residents based on commonality and normal range. Sources include reported observations on the Cornell Lab of Ornithology's eBird platform and personal observations by Tim Ifill.

American Black Duck	Common Grackle	House Finch
American Crow	Common Merganser	House Sparrow
American Goldfinch	Common Nighthawk	House Wren
American Redstart	Common Yellowthroat	Indigo Bunting
American Robin	Cooper's Hawk	Killdeer
American Woodcock	Dark-eyed Junco	Laughing Gull
Bald Eagle	Double-crested	Least Flycatcher
Baltimore Oriole	Cormorant	Magnolia Warbler
Barn Swallow	Downy Woodpecker	Mallard
Barred Owl	Eastern Kingbird	Merlin
Belted Kingfisher	Eastern Phoebe	Mourning Dove
Black-and-white Warbler	Eastern Towhee	Mute Swan
Black-billed Cuckoo	Eastern Wood-Pewee	Northern Cardinal
Black-crowned Night-	European Starling	Northern Flicker
Heron	Fish Crow	Northern Mockingbird
Blackpoll Warbler	Golden-crowned Kinglet	Northern Rough-winged
Blue Jay	Gray Catbird	Swallow
Blue-gray Gnatcatcher	Great Blue Heron	Osprey
Brown-headed Cowbird	Great Egret	Ovenbird
Canada Goose	Great-horned Owl	Peregrine Falcon
Carolina Chickadee	Green Heron	Purple Martin
Carolina Wren	Hairy Woodpecker	Red-bellied Woodpecker
Cedar Waxwing	Hermit Thrush	Red-eyed Vireo
Chimney Swift	Herring Gull	Red-necked Grebe
Chipping Sparrow	Hooded Merganser	Red-tailed Hawk

Red-winged Blackbird  
Ring-necked Duck  
Rock Pigeon  
Rose-breasted Grosbeak  
Ruby-crowned Kinglet  
Ruby-throated  
Hummingbird  
Ruddy Duck  
Scarlet Tanager  
Snow Goose

Snowy Egret  
Solitary Sandpiper  
Song Sparrow  
Spotted Sandpiper  
Swainson's Thrush  
Tree Swallow  
Tufted Titmouse  
Turkey Vulture  
Warbling Vireo  
White-breasted Nuthatch

White-throated Sparrow  
Winter Wren  
Wild Turkey  
Wood Duck  
Wood Thrush  
Yellow-rumped Warbler  
Yellow Warbler  
Yellow-bellied Sapsucker

# APPENDIX E ZONING MAP



# APPENDIX F

## WATER QUALITY REPORT (2017)

Compiled by the Collingswood Water Department:

PWSID# (0412001)

### Annual Drinking Water Quality Report Borough of Collingswood Water Department For the Year 2017- Results from the Years 2014, 2015, & 2016

We are pleased to present to you this year's Annual Drinking Water Quality Report. This report is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the process treatment processes and protect our existing water resources.

Our water is safe to drink and meets all water quality standards set by the State and Federal agencies. For more information or questions, please call Thomas P. McCarthy, Borough of Collingswood Water Department Superintendent, at 856-854-2332 or e-mail at [tmccarthy@collingswood.com](mailto:tmccarthy@collingswood.com). The Borough of Collingswood Commission meetings are held on the first Monday of each month starting at 7pm. We encourage public participation in decisions that affect our drinking water quality.

#### History:

The Borough of Collingswood supplies drinking water to all of Collingswood, Woodlynne and a portion of Haddon Township. Our water system service area covers approximately 50 linear miles of water mains ranging from 4" to 16" with over 6,000 active service connections serving approximately 21,000 people. All service connections for business and residents are metered.

#### Water Source:

The Borough of Collingswood currently obtains its entire water supply from five (5) underground confined wells located in the Potomac Raritan Magothy Aquifer geological

formation. The wells range from 250 to 320 feet deep. All of our potable well sources are located throughout the Borough of Collingswood.

Four (4) of our wells are currently located in the vicinity of the Highland & Hillcrest Ave Water Treatment Plant which is located at 215 Hillcrest Ave. The remaining well is located at Comly & Cattell Avenue Water Treatment Plant.

The ground water wells pump untreated water to our primary treatment plant through a network of underground pipes. The water is processed and purified before being pumped to our customers.

Our Treatment Facilities Consist of:

**Aeration:** The process of bringing water and air into contact in order to remove dissolved gases which may be corrosive to our water supply.

**Sedimentation:** The process of removing suspended matter such as iron and manganese by gravity settling.

**Filtration:** Removing almost all suspended matter that remains by passing the water through a sand medium.

---

---

**Corrosion Control:** The addition of a zinc phosphate to control scaling and deposits formation on water lines throughout the water system.

**Air Stripping:** A tower aerator consisting of a cylindrical tank filled with a packing material. Water is distributed over the material at the top of the tank while air is forced through the bottom using a blower. The primary purpose of air stripping is to remove all traces of Volatile Organic Compounds.

**Disinfection:** Chlorine is added as the final treatment before entering the water system for disinfection, which is required under state and federal regulations.

The following information is required by the United States Environmental Protection Agency (USEPA) to be placed in all Consumer Confidence Reports.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of land or through the ground, it dissolves naturally occurring minerals and in some cases radioactive material and can pick up substances resulting from animal or from human activity.

In order to ensure tap water is safe to drink, EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. Food and Drug



Administration regulations establish limits for contaminants in bottled water, which provide the same protection for public health.

- \* Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- \* Inorganic Contaminants such as salts and metals which can be naturally occurring or result from storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- \* Pesticides and herbicides, which may occur from a variety of sources such as agriculture, urban storm water runoff, and residential use.
- \* Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production and can also come from gas stations, urban storm water runoff, and septic systems.
- \* Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants in drinking water and the potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 800-426-4791

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as people undergoing chemotherapy, persons who have undergone transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infection. These people should seek advice from their health care providers.

EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791)

#### Water Quality Data Table Explanation:

This portion of the report is based upon testing conducted in the years 2013, 2014 and 2015, by the Borough of Collingswood. In the table that follows, you will find many terms and abbreviations with which you may not be familiar. To help you better understand these terms, we've provided the following definition:

**Maximum Residual Disinfectant Level:** The highest level of a disinfectant allowed in drinking

water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contamination.

**Maximum Residual Disinfectant Goal:** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.

**Maximum Contaminant Level or MCL:** The highest level of contamination that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**Maximum Contaminant Level Goal or MCLG:** The level of a contaminant in drinking water below which there is no known or expected risk to health.

**Picocuries Per Liter or pCi/L:** A measure of radioactivity

**Action Level (AL):** The concentration of a contaminant, which, if exceeded, triggers treatment, or other

requirements that a water system must follow.

**Parts Per Million/ Parts Per Billion:** For example, one part per million is the equivalent of a 1/2 of a dissolved aspirin tablet in a full bathtub of water (approximately 50 gallons). One part per billion is equivalent to a 1/2 of a dissolved aspirin tablet in 1,000 bathtubs of water (approximately 50,000 gallons).

**Non-Detects (ND):** Laboratory analysis indicates that contamination is not present.

**Inorganic Compounds:** The mineral-type compounds, such as metals and salts found in drinking water.

**Secondary Compounds:** compounds, which effect drinking water aesthetics such as taste, odor and color. **Source:** The major origin of the compounds detected in water.

**90<sup>th</sup> percentile:** 90% of samples are equal to or less than the number in the chart. **Water Footnotes:**

The Borough of Collingswood tested over 240 microbiological analyses in the distribution system in 2016 and no presence of coliform bacteria was detected in any of the sample analyses.

Nitrate and Nitrite tests at both water plants were taken in 2016. Nitrite results indicated less than .76 PPM entering the water system. The test results of Nitrate were well in compliance with the maximum level set at 10 PPM.

A set of sample's for Asbestos was taken in the water distribution system in 2011 as part of the Asbestos waiver program. No concentration of Asbestos was detected in any of the samples.

4. The Borough of Collingswood completed two rounds of sampling for Unregulated Contaminates in 2008 and 2009. The sample test results for the sampling were non-detected.

The Borough of Collingswood tested for radionuclides in 2011 at our Hillcrest Water Plant. All test results were well within the EPA and NJDEP guidelines for radionuclides.

6. The Borough of Collingswood tested for lead and copper in 2016 at thirty (30) selected residential homes in our water system. All test results were in compliance at the 90<sup>th</sup> percentile. Our next round of sampling will be in the summer of 2019.
  
7. Secondary and Inorganic compounds were tested at each point of entry in 2014. These set of samples represent water from each treatment plant prior to entering the water distribution system.

The Borough of Collingswood Water Department routinely monitors for contaminants in your drinking water according to Federal and State laws. This table shows the results of our monitoring for the period of years 2014, 2015 & 2016.

### Water Quality Table

<b>Inorganic Compounds</b>							
Substances.	Units	MCL	MCLG	Highest Detection	Range	Source	Violation
Sulfate	Ppm	250	*	55	47.8 to 55	Erosion of Natural Deposits	No
Nitrate	Ppm	10	10.0	.56	.11 to .56	Erosion of Natural Deposits	No
Fluoride	Ppm	4.0	4.0	.06	.05 to .06	Erosion of natural Deposits	No
Sodium	Ppm	50	50	19.8	16.0 to 19.8	Erosion of natural Deposits	No
<b>Secondary Chemical Compounds</b>							
Chloride	ppm	250	50	40.2	35.4 to 40.2	Erosion of natural Deposits	No
Zinc	ppm	5	*	.23	.0 to .23	Erosion of Natural Deposits	No
Total Dissolved	ppm	500	500	236	218 to 236	Erosion of	No

Solids

Natural  
Deposits

<b>Lead &amp; Copper</b>							
Lead	ppb	15	0	6.4	2.0 to 6.4	Corrosion of Household plumbing	No
Copper	ppm	1.3	0	.90	0.01 to .90	Corrosion of Household plumbing	No
THM LRAA Q-3 Drinking Water Locational running annual average Chlorination (Total Trihalomethane)	ppb	80	n/a	65.4	<.50 to 44.6	By-Product of	No
Haloacetic Acids	ppb	40	n/a	ND	ND	By-Product of Drinking Water Chlorination	No
<b>Radioactive Compounds-Based on 1 test at Hillcrest Plant in 2011</b>							
Total Alpha	pCi/l	15	0	7.75	6.45 to 7.75	Erosion of Natural Deposits	No
Radium-226	pCi/l	5	0	1.06	1.06 to 1.06	Erosion of Natural Deposits	No
Radium-228	pCi/l	5	0	.24	.24 to .24	Erosion of Natural Deposits	No
Uranium	PPB	30	0	11	11	Erosion of Natural Deposits	No

### Volatile Organics

Substance	Units	MCL	MCLG	Highest detection	Range	Source	Violation
cis-1,2Dibromochloroethane	PPB	70	70	5.94	0 to 5.94	Discharge from in Industrial chemical factories	No
1,2-Dichloroethane	PPB	2	2	1.38	0 to 1.38	Discharge from industrial chemical factories	No
1,1-Dichloroethane	PPB	50	0	0.620	0 to 0.620	Discharge from Industrial chemical factories	No
MTBE	PPB	70	70	0.934	0 to 0.934	Gasoline	No

						additive	
Vinyl Chloride	PPB	2	0	1.41	0 to 1.41	Leaching from PVC piping or discharge from plastic factories	No

**NOTE:**

We have learned through our monitoring and testing that some contaminants have been detected. As you can see by the table, our system had no MCL violations. We are proud that your drinking water meets or exceeds all Federal and State monitoring requirements.

## Special Consideration Regarding Children, Pregnant Women, Nursing Mothers, and Others.

Children may receive a slightly higher amount of contaminant present in the water than do adults, on a body weight basis, because they may drink a greater amount of water per pound of body weight than adults may. For this reason, reproductive or developmental effects occur at lower levels than other health effects of concern. If there is insufficient toxicity information for a chemical (for example, lack of data on reproductive or developmental effects), an extra uncertainty factor may be incorporated into the calculation of the drinking water standard, thus making the standard more stringent, to account for additional uncertainties regarding these effects. In the case of lead and nitrate, effects on infants and children are the health endpoints upon which the standards are based.

**Nitrate:** Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six month of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider.

**Lead:** Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home plumbing. If you are concerned about elevated lead levels in your home water, you may wish to have your water tested. It is recommended you flush your tap water for 30 seconds to 2 minutes in order to minimize exposure to lead.

Additional information is available from the Safe Drinking water Hotline (1-800-426- 4791).

The following important simple steps can be taken to avoid possible exposure to lead and copper.

1. Allow the water to run until it is cold (about 30-60 seconds) if the water has been standing in the internal plumbing pipes for over six hours.
2. Use only cold water for cooking, drinking, and making baby formula.
3. Use only lead free solders when making plumbing repairs.
4. If you replace faucets, check the label for lead content or lead leaching potential.

#### Source Water Assessment:

The New Jersey Department of Environmental Protection has completed and issued the Source Water assessment and Summary Report for the Borough of Collingswood. The Source Water assessment was performed on all our existing ground water sources wells # 1 thru 7. A susceptibility rating was used for each of the ground water sources that currently deliver water to our residents. These ratings range from low, medium or high for a particular category. The information on the Borough of Collingswood Source Water Protection Plan can be obtained by logging onto NJDEP Source Water Web Site [www.state.nj.us/dep/swap/](http://www.state.nj.us/dep/swap/) or by contacting the NJDEP Bureau of Safe Drinking Water at 609-292- 5550.

The portion of the study, which rated high, does not indicate that the customer is drinking contaminated water. The Borough of Collingswood is required to monitor for all of these regulated compounds

#### Unregulated Contaminants

The Borough of Collingswood is not required by EPA or NJDEP to sample for Cryptosporidium or Radon. However a full scan of unregulated contaminates was performed in 2014.

#### Additional Contaminants Monitored

The Borough of Collingswood tested for Asbestos in 2011 at selected sites and indicated Non Detects (ND) of Asbestos fibers in the drinking water.

The Borough of Collingswood does not add fluoride to the water. Parents of young children may want to consult with their dentist about their need for fluoride treatments.

#### Variances and Exemptions

The New Jersey Bureau of Safe Drinking Water issued the Borough of Collingswood a waiver for the sampling of synthetic organic compounds (SOCs) pesticides based on the vulnerability of the source water to possible contamination by these substances. Samples were collected and analyzed by NJDEP at our # 5 well, which did not indicate any SOC's exceeding their respective trigger values.

## Green Festival

The Borough of Collingswood under the direction of Commissioner Joan Leonard held another successful Green Festival event on 4/08/17. This is now the eighth year of the event which has vastly improved each year. We have continued to promote water conservation and education with our water resources. Water conservation kits, storm water information pamphlets and props were just some of the topics illustrated at our water environmental booth. Many of the water professional organizations in New Jersey volunteered and donated their time and resources to make this such an educational and family fun event.

## Capital Improvements:

We have put together our capital plan in which we will outline priority infrastructure projects. Some of the projects will include continuing commitment to upgrade our existing treatment plants, replace undersized water mains and water service connections from the street to the curb.

The Borough has completed repairs and painting of both our .6 million and 1.2million gallon standpipes. We are currently finishing up repairs and painting of our .25 million gallon elevated tank.

The Water Department is continuing to upgrade our existing water meter system in order to improve meter reading efficiency as well as enhance service to our customers. We believe the primary benefit of this new meter reading system for our customers is the convenience of having the water meter read remotely and timeliness of accurate bills. There will no longer be a need to install remote boxes on the outside of your house or business. All new water meters will be read by radio read signals. If you would like to set up an appointment to replace your existing remote meter, please contact us at 856-854-2332. There is no charge for the installation.

The Borough of Collingswood replaced the water main and all services on the entire length of Colford Avenue. It also replaced the water main and services on Mansion Avenue from Lees Avenue to Cuthbert Blvd.

The Borough of Collingswood has also replaced an existing aerator at the Comly Ave. plant and drilled a new test well to meet current and future demands. The new well will be housed and additional piping will be installed from the new well to the Hillcrest Avenue treatment plant.

Future projects include replacing the aerator at the Hillcrest Avenue plant and replacing the high pressure filters at both the Hillcrest Avenue & the Comly Avenue plants.

## Operations and Security:

The events of September 11 and recent natural disasters have clearly demonstrated the importance of water supply systems throughout the United States and the world. The Borough of Collingswood is making every effort to implement and develop plans to protect all aspects of our water supply infrastructure while working closely with all the respected regulatory and enforcement agencies. The Borough of Collingswood has developed and implemented a vulnerability assessment of our water

system. This assessment was submitted to the US Environmental Protection Agency (EPA) and NJDEP Bureau of Safe Drinking Water in 2004 and has been updated periodically.

The Borough of Collingswood was required to follow up with an Emergency Response Plan that has been developed and submitted to all of the appropriate government agencies. All plans must be updated every (2) years with our existing operations and maintenance emergency manual.

The Borough of Collingswood is committed to providing our customers with the highest quality of water and service.

We believe in education and strongly urge our employees to attend various classes and seminars on water treatment processes and distribution operations. All licensed water operational personnel are mandated to continue with post educational training.

Water Department Superintendent Thomas P McCarthy prepared this report. Should you have any additional questions about our water supply or service, please feel free to contact me at [tmccarthy@collingswood.com](mailto:tmccarthy@collingswood.com) or give us a call at 856-854-2332.

---



# APPENDIX G

## PENDING AND CLOSED SITES

### PENDING CONTAMINATED SITES (AS OF 9/27/19)

Site ID	PI Number	PI Name	Address	Home
				<b>Owner</b>
374478	464035	130 FERN AVENUE	130 FERN AVE	Yes
205705	270583	17 ARDMORE TERRACE	17 ARDMORE TER	Yes
201990	265629	225 EAST MADISON	225 E MADISON AVE	Yes
		AVENUE		
216490	282809	262 HADDON AVENUE	262 HADDON AVE	Yes
75231	G000043076	267 PARK AVE	267 PARK AVE	No
203439	267576	29 CRESTMONT TERRACE	29 CRESTMONT TER	Yes
171083	224823	350 HADDON AVENUE	350 HADDON AVE	Yes
230186	301228	831 STOKES AVENUE	831 STOKES AVE	Yes
74311	G000038562	916 GRANT AVENUE	916 GRANT AVE	No
402159	503160	921 STOKES AVENUE	921 STOKES AVE	Yes
198571	261374	9 EAST NARBERTH	9 NARBERTH TER	Yes
		TERRACE		
Source: DEP				

TABLE 1

Site ID	PI Number	PI Name	Address	Home Owner
94616	133375	1000 PARK AVE	1000 PARK AVE	Yes
226621	295796	1001 MAGILL AVENUE	1001 MAGILL AVE	Yes
74562	G000039904	1013 HADDON AVE	1013 HADDON AVE	No
603167	758528	101 WOODLAWN AVENUE	101 WOODLAWN AVE	Yes
613809	775944	1033 PARK AVENUE	1033 PARK AVE	Yes
198580	261385	104 FERN AVENUE	104 FERN AVE	Yes
203443	267580	107 EAST KNIGHT AVENUE	107 E KNIGHT AVE	Yes
75873	G000060390	108 W COLLINS AVE	108 COLLINGS AVE	No
73019	G000029546	1101 PARK AVENUE	1101 PARK AVE	No
145597	192643	1108 PARK AVENUE	1108 PARK AVE	Yes
181681	237806	110 GARFIELD AVENUE	110 GARFIELD AVE	Yes
400566	501265	112 WESLEY AVE	112 WESLEY AVE	Yes
182223	238517	115 EAST HOMESTEAD AVENUE	115 E HOMESTEAD AVE	Yes
184592	241486	117 EAST HOMESTEAD AVENUE	117 E HOMESTEAD AVE	Yes
174468	228796	118 LAWNSIDE AVENUE	118 LAWNSIDE AVE	Yes
177737	232927	125 HARVARD AVENUE	125 HARVARD AVE	Yes
230468	301553	131 WASHINGTON AVENUE	131 WASHINGTON AVE	Yes
488161	615653	132 EAST PALMER AVENUE	132 E PALMER AVE	Yes
197519	259277	135 WASHINGTON AVENUE	135 WASHINGTON AVE	Yes
127218	168431	147 FRAZER AVENUE	147 FRAZER AVE	Yes
180680	236615	14 WEST KNIGHT AVENUE	14 W KNIGHT AVE	Yes
378150	468783	16 LINCOLN AVENUE	16 LINCOLN AVE	Yes
464501	586201	204 PARK AVENUE	204 PARK AVE	Yes
453871	571033	20 WEST FRANKLIN AVENUE	20 W FRANKLIN AVE	Yes

379435	470599	211 PARK AVENUE	211 PARK AVE	Yes
438515	551292	220 S PARK DRIVE	220 S PARK DR	Yes
448826	564349	222 WOODLAWN AVENUE	222 WOODLAWN AVE	Yes
65434	G000029487	22 EAST LINDEN AVENUE	22 E LINDEN AVE	Yes
380624	474354	22 HARVARD AVENUE	22 HARVARD AVE	Yes
87598	G000061267	24 FRAZER AVE	24 FRAZER AVE	Yes
180402	236275	266 HARVARD AVENUE	266 HARVARD AVE	Yes
144542	191409	27 MADISON AVENUE	27 E MADISON AVE	Yes
435687	547455	29 EAST FRANKLIN AVENUE	29 E FRANKLIN AVE	Yes
466237	588624	301 LEES AVENUE	301 LEES AVE	Yes
488806	616437	311 TAYLOR AVENUE	311 TAYLOR AVE	Yes
572889	717696	324 WEST BROWNING ROAD	324 W BROWNING RD	Yes
75819	G000060181	328 SLOAN AVENUE	328 SLOAN AVE	No
89039	G000063021	331 HADDON AVE	331 HADDON AVE	Yes
608855	767213	346 RICHEY AVENUE	346 RICHEY AVE	Yes
144973	191912	401 COLLINS AVENUE	401 COLLINGS AVE	Yes
429153	538191	409 CATTELL AVENUE	409 CATTELL AVE	Yes
216486	282804	411 PARK AVENUE	411 PARK AVE	Yes
214876	280604	418 HIGHLAND AVENUE	418 HIGHLAND AVE	Yes
186592	245268	419 SLOAN ROAD	419 SLOAN AVE	Yes
182236	238535	42 EAST MADISON AVENUE	42 E MADISON AVE	Yes
362648	447909	430 COLLINGS AVENUE	430 COLLINGS AVE	Yes
216939	283338	434 CONGER AVENUE	434 CONGER AVE	Yes
379094	470110	436 COLLINGS AVENUE	436 COLLINGS AVE	Yes
223100	291346	440 COLLINGS AVENUE	440 COLLINGS AVE	No
147083	194445	451 MAGILL AVENUE	451 MAGILL AVE	Yes
72277	G000024096	455 WHITEHORSE PIKE	455 WHITHORSE PK	Yes

469583	592705	508 WEST BROWNING ROAD	508 W BROWNING RD	Yes
612986	774594	508 WHITE HORSE PIKE	508 WHITE HORSE PK	Yes
216469	282780	530 HADDON AVENUE	530 HADDON AVE	Yes
609023	767438	558 GRANT AVENUE	558 GRANT AVE	Yes
536552	673369	558 HADDON AVENUE	558 HADDON AVE	No
599753	753704	575 COLLINGS AVENUE	575 COLLINGS AVE	Yes
611903	772009	600 SHADY LANE	600 SHADY LN	Yes
630434	805910	601 LEES AVENUE	601 LEES AVE	Yes
583104	730690	628 SOUTH ATLANTIC AVENUE	628 S ATLANTIC AVE	Yes
608541	766751	640 STOKES AVENUE	640 STOKES AVE	Yes
230262	301312	663 PRINCETON AVENUE	663 PRINCETON AVE	Yes
481664	607577	701 LINWOOD AVENUE	701 LINWOOD AVE	Yes
226542	295677	708 COLFORD AVENUE	708 COLFORD AVE	Yes
202032	265683	709 HADDON AVENUE	709 HADDON AVE	Yes
75821	G000060186	711 MERRICK AVENUE	711 MERRICK AVE	Yes
129721	172305	712 COLFORD AVE	712 COLFORD AVE	Yes
644471	828558	716 ATLANTIC AVENUE	716 ATLANTIC AVE	Yes
603246	758636	725 COLLINGS AVENUE	725 COLLINGS AVE	Yes
598518	752111	729 PARK AVENUE	729 PARK AVE	Yes
552974	692915	741 HADDON AVENUE	741 HADDON AVE	Yes
445256	559777	765 HADDON AVENUE	765 HADDON AVE	No
220011	287158	786 HADDON AVENUE	786 788 HADDON AVE	No
367052	454012	800 COLLINGS AVENUE	800 COLLINGS AVE	Yes
75717	G000059727	801 GRANT AVENUE	801 GRANT AVE	No
355137	438449	811 COLLINGS AVENUE	811 COLLINGS AVE	Yes
215321	281249	828 PARK AVENUE	828 PARK AVE	Yes
396389	495942	848 MAPLE AVENUE	848 MAPLE AVE	Yes

576374	722210	901 COLLINGS AVENUE	901 COLLINGS AVE	Yes
73107	G000030444	919 COLLINGS AVENUE	919 COLLINGS AVE	No
456967	576081	930 STOKES AVENUE	930 STOKES AVE	Yes
356783	440564	9 BROWNING ROAD	9 BROWNING RD	Yes
177112	232121	9 REEVES AVENUE	9 REEVES AVE	Yes
50183	32002	ALDI FOOD STORE	WHITEHORSE PK	No
529005	664161	ATLANTIC & CONARD AVENUE GW CONTAMINATION	ATLANTIC AVE & CONARD AVE	No
54028	22799	CEREBRAL PALSY ADULT ACTIVITY CENTER	431 S COOPER PARK DR	No
619444	784999	COLLINGSWOOD FIRE COMPANY 1	20 W COLLINGS AVE	Yes
10144	7737	COLLINGSWOOD PUMPING STATION	NEWTON AVE & COMLY AVE	No
10146	19740	COOPER RIVER MANOR	215 GARFIELD AVE	No
47901	15910	CRESTWOOD MOTORS	CRESCENT BLVD & HADDON AVE	No
70951	G000001785	FINNESSY BODY WORKS	100 CRESCENT BLVD	No
49407	24447	GETTLEMAN	WHITEHORSE PK & CRESCENT BLVD	No
10153	1605	K AND SONS FUEL INC	580 CRESCENT BLVD	No
46347	7876	KIRSCH EXXON	HADDON AVE & BRYANT AVE	No
297829	21429	KRAFLOW MANUFACTURING CO	715 TAYLOR AVE	No
173495	227621	LEWETT APARTMENTS	1025 COLLINGS AVE	Yes
224183	292631	LUMBERYARD CONDOMINIUMS	640 HADDON AVE	No
70980	G000004851	NJ BELL TELEPHONE COLLINGSWOOD BOROUGH	50 FERRY AVE	No
48262	17928	PETER LUMBER CO	616 HADDON AVE	No
450324	566283	PRINCESS ANNE APARTMENTS	198 WHITEHORSE PK	Yes
470573	593966	STOKES AVE & LEES AVE	STOKES AVE & LEES LN	No
360095	498551	ST PAULS LUTHERAN CHURCH	832 PARK AVE	No
14382	17533	SUTTON TOWERS	WHITEHORSE PK & COLLINGS AVE	No

589803	740337	TATEM-SHIELDS POST 17, THE AMERICAN LEGION	620 622 ATLANTIC AVE	Yes
17196	22997	TRANSFIGURATION CHURCH & SCHOOL	445 WHITEHORSE PK	No
518094	650837	VACANT WAREHOUSE/ OFFICE BUILDING	604 BETTLEWOOD AVE	Yes
53659	22052	WARREN LIGHTNING ROD CO	2 RICHEY AVE	No
10142	12908	ZANE-NORTH SCHOOL	801 STOKES AVE	No

**Source: NJ DEP**

# APPENDIX H

## SUSTAINABILITY ACTIONS

As of this writing, Collingswood has achieved Bronze status through the Sustainable Jersey program. The borough has undertaken the following sustainability actions that are recognized by Sustainable Jersey as part of its commitment to the environment. These actions date to 2016. As of this writing, many more have been completed and are pending certification by Sustainable Jersey.

### Create a Green Team

The Borough established a Green Team in 2009. Their primary function was to assist in the development and logistics of Collingswood's annual Green Festival. The Green Team continues to work on that event, as well as on the development and maintenance of Collingswood's green web pages, articles for the town newspaper and Sustainable Jersey. Councilwoman Joan Leonard has been the force behind the sustainable initiatives of Collingswood in recent years, and even ran on the platform of sustainability during the last election.

### Green your Green Fair

Collingswood's eighth annual Green Fair was held on April 16th. The fact that the event itself was 'green' was highlighted on Collingswood's website (see attachment). The fair was held on Irvin Avenue in Collingswood, which is less than two blocks from the PATCO train station in Collingswood and less than a mile from two NJ Transit bus route stops. The fair took place during the day (9am to 2pm) which eliminated the need for lighting, so minimal electricity was used for the event overall. Cloth bags were given out to guests to use for all of the items they picked up at the fair, such as flyers. However, a point was made to make sure there was very little waste generated from fair activities. Banners that are purchased to advertise the Fair are reused. Not only are containers available for recycling and composting of food waste, but there are several vendors set up to explain how much can really be recycled. They collect sneakers, vegetable oil to be converted into usable fuel, corks, any type of plastic, and even have a paper shredder for getting rid of sensitive documents. That paper is ultimately recycled as well. In addition, Camden County holds one of its household hazardous waste events each year to coincide with the Collingswood Green Fair and the drop off location is within walking distance to the Fair (at the PATCO train station).

### Hold a Green Fair

Collingswood has been hosting a Green Festival each spring since 2009. The 2016 festival, held on April 16th, had over 80 vendors. The event is an opportunity to check out local vendors selling sustainable products, attend workshops on all things green and bring items from home to be donated for reuse or even dispose of household waste products in an environmentally responsible way. Collingswood partners with Camden County to host an electronics recycling event the same day and time as the fair in the public works facility adjacent to the site of the festival.

### Municipal Energy Audit - Inventory and Upgrade All Buildings

The Borough of Collingswood chose Concord Engineering to conduct an energy audit on all six of its municipal buildings - Borough Hall, Library, Zane School Office Building, Fire Department, Water Treatment Plant and Scottish Rite Auditorium. Collingswood chose to take advantage of the Direct Install program for all buildings. The vendor was chosen based on the NJ Clean Energy company that was awarded the contract - Hutchinson Mechanical Services.

### Establish A Community Garden

In 2009, the Borough acquired a vacant lot in a residential neighborhood. Rather than develop this parcel, we opted to create an organic "Community Garden". Only organic gardening methods may be used, there is no use of any synthetic chemical fertilizers, pesticides, herbicides or rodenticides. The development of this parcel corresponded to the establishment of Collingswood Community Gardens, an organization driven by resident volunteers and the Borough of Collingswood. The organization's goal is to develop borough-owned open spaces into community gardens and to provide a community forum for gardening and horticultural interests. In 2015, the Borough purchased another parcel of land, doubling the capacity for the community garden, due to the overwhelming demand from Borough residents to have a plot.

### Implement a Bike Share Program

Collingswood is the first municipality in Camden County to develop and implement its own bike share program. Bike share is a concept that allows people in cities to borrow bikes at central locations and replace the bike at another location for a small fee. It helps reduce reliance on cars makes it easier to reach public transportations and local destinations. It reduces congestion, emissions and transportation costs. Collingswood's bike share is tailored for the need and budget of the Borough. The bike share will recycle bikes - instead of purchasing new bikes for the programs, it uses repurposed bikes that have stayed



unclaimed in the police station and also accepts donated bikes. Each bike - or green machine - is painted bright green so they are easy to identify.

#### Sustainable Land Use Pledge

On Monday, May 3, 2013, the Borough Council of Collingswood adopted a Sustainable Land Use Pledge by resolution. The adopted pledge reflects all of the elements required by Sustainable Jersey. Subsequent to its adoption, the pledge was disseminated to Collingswood's Planning and Zoning Boards.

#### Buy Local Campaign

Collingswood has rolled out several programs in the last few years to promote the 'Buy it Here, Spend it Here' campaign. Each resident receives a Blue and Gold card in the early May issue of the Collingswood Patch newspaper, which is intended to support local businesses by giving discounts if you shop in participating locations. In addition, each holiday season over the past few years, people can purchase Collingswood Cash (equivalent to a gift card) as gifts to be used in local shops and restaurants. We recently unveiled a new program called \$22 on 22, which encourages residents to spend \$22 in Collingswood on September 22nd.

#### Tree Hazard Inventory

The Borough received a \$25,000 grant from the State to conduct a tree inventory. The survey was just completed and our Borough engineer has provided GIS mapping of curbside trees for the entire Borough. This program will enable us to not only locate areas that needs trees, it identifies the species, size, condition of all curbside trees. It has also been incorporated into our maintenance program.

#### Community Asset Mapping

Collingswood has several forms of community asset maps on their website. One is an acutal map of amenities in the community, including parks, schools, and public facilities. They also have a map of downtown parking and public transit access locations. In addition, Collingswood's website lists all the restaurants and shops in town and has a Mapquest map link to make each one easy to find.

#### Prescription Drug Safety and Disposal

In 2015, the Collingswood Police Department announced that it joined the New Jersey

Attorney General's "Project Medicine Drop" initiative, and installed a Project Medicine Drop box at the Collingswood Police Headquarters. The Collingswood PD now makes it easier and more convenient than ever for Collingswood residents to take an active role in the fight against the nationwide epidemic of opiate and heroin abuse, which often is fueled by the abuse of prescription painkillers. "Project Medicine Drop is a natural addition to our commitment to help improve the public safety and quality of life in Collingswood. It will encourage our residents to be fully aware of the potential for abuse presented by otherwise beneficial medications," Collingswood Police Chief Kevin Carey said. The Borough's new Project Medicine Drop Box is located in the lobby of the Collingswood Police Department, 735 N. Atlantic Avenue, Collingswood, NJ 08108. Residents may visit the Police Department at any time, 24 hours a day, seven days a week, 365 days a year, to dispose of their unused or excess medications. The attachment below, which is an article from Collingswood's website, has a photo of the box, as well as a link to the national prescription drug drop-off database. Although we don't have documentation on the total amount of prescription drugs collected to date, in conversations with our police department, they estimate a total of 200 pounds was collected just in 2015 alone.