

Watershed Improvement Plan Phase 1: Watershed Inventory Report

TEWKSBURY TOWNSHIP HUNTERDON COUNTY, NEW JERSEY

NJPDES: 0154890 / PI ID #: 167043

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LIST OF ABBREVIATIONS

BMP	Best Management Practice
DEM	Digital Elevation Model
DO	Dissolved Oxygen
DPW	Department of Public Works
EDPA	Effective Date of Permit Authorization
EPA	U.S. Environmental Protection Agency
GIS	Geographic Information System
HDPE	High Density Polyethylene
HOA	Homeowners' Association
HUC	Hydrologic Unit Code
LULC	Land Use / Land Cover
MS4	Municipal Separate Storm Sewer System
MTD	Manufactured Treatment Device
NHD	National Hydrography Dataset
NJDEP	New Jersey Department of Environmental Protection
NJAC	New Jersey Administrative Code
NJGIN	New Jersey Geographic Information Network
NJPDES	New Jersey Pollutant Discharge Elimination System
N.J.S.A.	New Jersey Statutes Annotated
NJ-WET	New Jersey Watershed Evaluation Tool
OBC	Overburdened Community
RCP	Reinforced Concrete Pipe
PCBs	Polychlorinated Biphenyls
SPC	Stormwater Program Coordinator
SWM	Stormwater Management
TDS	Total Dissolved Solids
TMDL	Total Maximum Daily Load
TSS	Total Suspended Solids
UNT	Unnamed Tributary
USGS	U.S. Geological Survey
VOCs	Volatile Organic Compounds
WIP	Watershed Improvement Plan
WMA	Watershed Management Area

LIST OF DEFINITIONS

“HUC 14” or “hydrologic unit code 14” means an area within which water drains to a particular receiving surface water body, also known as a subwatershed, which is identified by a 14-digit hydrologic unit boundary designation, delineated within New Jersey by the United States Geological Survey. (N.J.A.C. 7:9B)

“Municipal separate storm sewer” (or MS4 conveyance) means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains) as defined in more detail at N.J.A.C. 7:14A-1.2.

“Outfall” means any point source which discharges directly to waters of the United States and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels or other conveyances which connect segments of the same stream or other waters of the United States and are used to convey waters of the United States.

“Storm drain inlet” means the point of entry into the storm sewer system.

“Stormwater” means water resulting from precipitation (including rain and snow) that runs off the land's surface, is transmitted to the subsurface, is captured by separate storm sewers or other sewage or drainage facilities or is conveyed by snow removal equipment.

“Stormwater facility” means stormwater infrastructure including, but not limited to, catch basins, infiltration basins, detention basins, green infrastructure (GI), filter strips, riparian buffers, infiltration trenches, sand filters, constructed wetlands, wet basins, bioretention systems, low flow bypasses, Manufactured Treatment Devices (MTDs), and stormwater conveyances.

“Stormwater management basin” means a stormwater management basin as defined in N.J.A.C. 7:8.

“Stormwater management measure” means a stormwater management measure as defined in N.J.A.C. 7:8.

“Stormwater runoff” means water flow on the surface of the ground or in storm sewers, resulting from precipitation.

“Total maximum daily load” or “TMDL” means a total maximum daily load formally established pursuant to Section 7 of the Water Quality Planning Act (N.J.S.A. 58:11A-7) and Section 303(d) of the Clean Water Act, 33 U.S.C. §§12512 et seq. A TMDL is the sum of individual waste load allocations for point sources, load allocations for nonpoint sources of pollution, other sources such as tributaries or adjacent segments, and allocations to a reserve or margin of safety for an individual pollutant.

“Waters of the State” means the ocean and its estuaries, all springs, streams and bodies of surface or ground water, whether natural or artificial, within the boundaries of the State of New Jersey or subject to its jurisdiction” (see N.J.A.C. 7:9B-1.4).

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The Tewksbury Township Watershed Improvement Plan Phase 1 Watershed Inventory Report has been prepared by Van Cleef Engineering Associates. The following individuals and organizations contributed to its preparation.

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Funding for development of this report was provided in part by NJ Highlands Stormwater Assistance grant funding. Tewksbury Township is deeply appreciative of this support.

REGIONAL COLLABORATION

No regional collaboration was required for Phase 1 of this Watershed Improvement Plan.

1 INTRODUCTION

The Watershed Improvement Plan (WIP) is a forward-looking program to address water quality improvement and stormwater flooding reduction goals at the municipal level. The WIP will utilize data and analytics regarding Tewksbury Township’s existing MS4 to generate specific programs and actions the Township will implement to meet the following goals: [1]

1. Improve water quality by reducing the contribution of pollutant parameters for all receiving waters within and bordering the town that have percent reductions listed for stormwater in the Total Maximum Daily Loads.
2. Improve water quality by reducing the contribution of pollutant parameters for all receiving waters within and bordering the town that have water quality impairments as per the Department’s Integrated Report.
3. Reduce and/or eliminate stormwater flooding in the municipality, prioritizing the areas of flooding for corrective actions based on threat to human health and safety, environmental impacts, and frequency of occurrence.

Preparation of the WIP is a new requirement under the NJPDES Tier A MS4 Stormwater Discharge General Permit renewal, which became effective January 1, 2023. Requirements of the WIP are divided into three phases, each due at intervals throughout the five-year permit cycle as shown in Table 1.

Table 1. Watershed Improvement Plan Phase Requirements and Due Dates

Phase	Requirement	Due Date
1	Watershed Inventory Report	EDPA + 36 months <i>January 1, 2026</i>
2	Watershed Assessment Report	EDPA + 48 months <i>January 1, 2027</i>
3	Watershed Improvement Plan Report	EDPA + 59 months <i>December 1, 2027</i>

This Watershed Inventory Report is the first step, Phase 1, of the Watershed Improvement Plan. It is developed in conjunction with the municipal MS4 Inventory Map, a database of all stormwater management features (inlets, outfalls, conveyance pipes, etc.). In accordance with Part H.1.d of the Tier A MS4 permit, the Watershed Inventory Report must locate and summarize components of the MS4 Inventory Map along with the following: [1]

- i. All stormwater outfalls owned/operated by the permittee;
- ii. The drainage area for each outfall(s);
- iii. The receiving waterbodies of those outfalls;
- iv. The water quality classification of all receiving waterbody segments;

- v. All stormwater interconnections from the municipality into another entities' storm or sanitary sewer system;
- vi. The drainage area for each interconnection into another entities' storm or sanitary sewer system;
- vii. All stormwater connection points into the municipality from another entities' storm sewer system;
- viii. All storm drain inlets owned/operated by the permittee;
- ix. Area associated with each TMDL for waters that lie within or bordering the municipality;
- x. Area associated with each water quality impairment for waters that lie within or bordering the municipality;
- xi. Overburdened communities;
- xii. Impervious areas; and
- xiii. The location and ownership of all stormwater outfalls and basins/infrastructure not owned/operated by the permittee.

The data and analytics presented in this Watershed Inventory Report will form the basis for Phases 2 and 3 of Tewksbury Township's Watershed Improvement Plan. The information presented herein will allow the Township to develop a rational, data-based action plan for municipal water quality improvement and stormwater flooding reduction.

1.1 Location

Tewksbury Township is situated within Hunterdon County, in the western section of New Jersey. The total land area within the municipal boundary is approximately 31.8 square miles. [2]

The Township is located within the NJ Highlands Region, which is governed by the NJ Highlands Water Protection and Planning Act. The western section of the Township is within the Highlands Preservation Area, and the remainder of the municipality is within the Highlands Planning Area. A map showing Tewksbury Township is provided in Appendix E, Map 1.

The Township Municipal Office is located at 169 Old Turnpike Road. Contact information for the Municipal Office is as follows:

Tewksbury Township
169 Old Turnpike Road
Califon, New Jersey 07830
908-439-0022
<https://www.tewksburytp.net/>

1.2 Population and Demographics

The population in Tewksbury Township according to the 2020 U.S. Census is 4,809. [2] The Township's population grew steadily from the 1970s until plateauing around 2020. A graphic representation of the Tewksbury Township population is provided in Appendix E, Map 2.

Additional demographic information for the municipality is provided in Table 2. A full report of demographic information, as available from the U.S. Census Bureau, is provided in the Appendix.

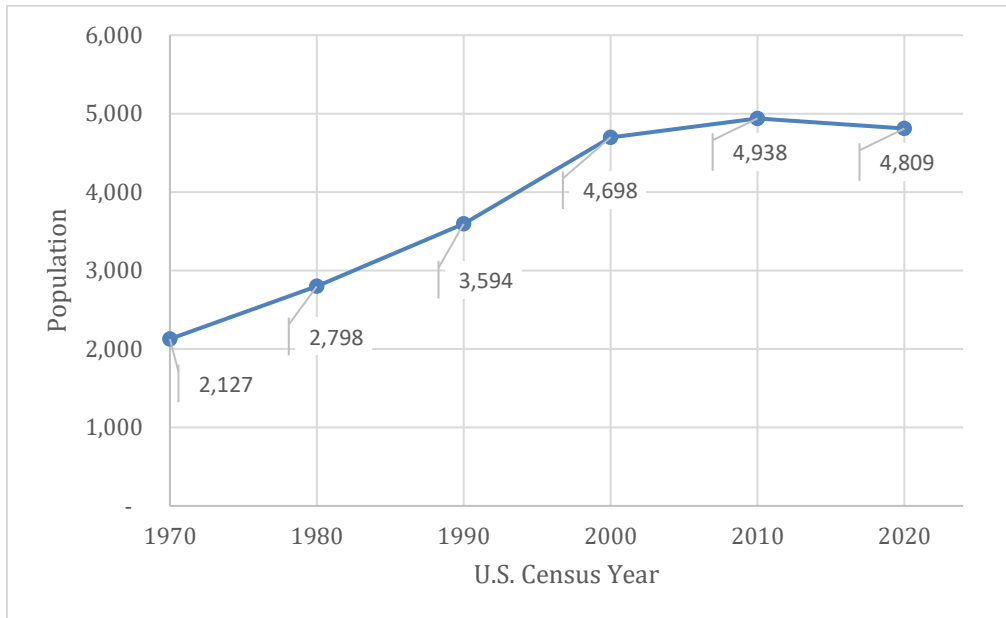


Figure 1. Tewksbury Township Population Data by Census Year [2] [4]

Table 2. Tewksbury Township Demographic Information, 2020 Census Data [2]

Category	Tewksbury Township	Hunterdon County
Total Population	5,870	128,947
Median Age	56.9	46.2
Median Household Income	\$188,500	\$137,275
Poverty Rate	2.0%	4.9%
Education / Bachelor's Degree or Higher	63.6%	58.7%
Employment Rate	56.2%	63.6%
Total Households	2,278	51,186
Total Housing Units	2,386	51,687

1.3 Land Use Data

The Land Use/Land Cover of New Jersey 2020 data set from the NJ Geographic Information Network (NJGIN) open data resources was utilized to map and analyze land use categories in Tewksbury Township. [3] Land use categories are presented in Table 3 and Appendix E, Map 3.

According to the 2020 version of the NJ Land Use/Land Cover (LULC) data, Tewksbury Township consists primarily of land classified as agriculture and forest uses (71% total). The urban use designation comprises just over 23% of land cover. Wetlands, water and barren land comprise less than 6% of land cover.

The 2020 LULC dataset includes previous land cover designations (2015), which allows for analysis of land use changes over time. Tewksbury Township land use classifications remained steady between the 2015 and 2020 data points, with the most characteristic change being a small increase in agricultural land use at the expense of barren land.

Table 3. Land Use in Tewksbury Township

Land Use Category	2020 LULC		2015 LULC	
	Area (acres)	Percent of Total Land Area	Area (acres)	Percent of Total Land Area
Agriculture	5,736.3	28.2%	5,702.9	28.0%
Forest	8,747.7	43.0%	8,745.2	43.0%
Urban	4,701.7	23.1%	4,687.1	23.1%
Barren Land	105.8	0.5%	156.1	0.8%
Wetlands	890.6	4.4%	890.6	4.4%
Water	151.6	0.7%	151.8	0.7%

1.4 Subwatersheds within or bordering Tewksbury Township

1.4.1 Water Regions and Watershed Management Areas

There are five (5) major water regions in New Jersey; Tewksbury Township is situated entirely within the Raritan water region and drains to the Raritan River. Similarly, the township is entirely within Watershed Management Area (WMA) 08 – North and South Branch Raritan

1.4.2 HUC-14 Subwatersheds

Watershed boundary data from the NJDEP Bureau of GIS “14 Digit Hydrologic Unit Code Delineations for New Jersey” open data file was utilized in this analysis. [3] There are ten (10) HUC-14 subwatersheds within or bordering Tewksbury Township. The information provided in Table 4 includes HUC-14 identification codes, common names for each subwatershed, and land area within Tewksbury Township. A map showing the HUC-14 subwatersheds within and bordering the municipality is provided in Appendix E, Map 4.

Major waterways in Tewksbury Township include:

- Draining to Raritan River: Frog Hollow Brook, Rockaway Creek, Hollow Brook, Cold Brook, Lamington River

Table 4. Tewksbury Township HUC-14 Subwatersheds

HUC-14 Subwatershed	Land Area Within Municipality (acres)	Water Region	Watershed Management Area
02030105010060 <i>Raritan R SB(Califon br to Long Valley)</i>	1,057.4	2 – Raritan	08 – North and South Branch Raritan
02030105050080 <i>Rockaway Ck (above McCrea Mills)</i>	9,631.1	2 – Raritan	08 – North and South Branch Raritan
02030105050130 <i>Lamington R(Herzog Brk-Ptrsvle gage)</i>	2,058.1	2 – Raritan	08 – North and South Branch Raritan
02030105050040 Lamington R (Pottersville gage-FurnaceRd)	8.3	2 – Raritan	08 – North and South Branch Raritan
02030105050060 <i>Cold Brook</i>	3,989.4	2 – Raritan	08 – North and South Branch Raritan
02030105050070 <i>Lamington R(HallsBrRd-Herzog Brk)</i>	2,082.6	2 – Raritan	08 – North and South Branch Raritan
02030105050090 <i>Rockaway Ck (below McCrea Mills)</i>	1,188.2	2 – Raritan	08 – North and South Branch Raritan
02030105050100 Rockaway Ck SB	309.1	2 – Raritan	08 – North and South Branch Raritan
02030105020050 <i>Beaver Brook (Clinton)</i>	0.8	2 – Raritan	08 – North and South Branch Raritan
02030105010070 Raritan R SB(StoneMill gage to Califon)	8.6	2 – Raritan	08 – North and South Branch Raritan

1.5 Areas prone to flooding

At the time of this report, FEMA base flood elevations have been established for portions of Rockaway Creek and its tributaries within Tewksbury Township. Flood elevation ingress is greatest for those portions of the Township along Sawmill Road and Rockaway Road.

1.6 Goals for the Watershed Improvement Plan

The overall goal of the Tewksbury Township WIP is to identify specific implementable strategies to improve water quality and reduce stormwater flooding in the municipality. These strategies will be based on specific pollutant reduction parameters for known impairments in municipal waterbodies. Point and non-point source load reductions will be considered. To address alleviation of stormwater flooding, strategies will consider impervious cover and potential for stormwater volumetric reduction. Specific improvement projects, best management practices and action items will be identified in subsequent phases of the WIP. Public engagement throughout Phases 2 and 3 will ensure broad understanding and awareness of pollution prevention and stormwater management in Tewksbury Township.

The goal for this Phase 1 Watershed Inventory Report is to document all relevant information and data pertaining to MS4 infrastructure and water quality. This record will inform subsequent phases of the Watershed Improvement Plan.

2 PUBLIC PARTICIPATION

Engaging with stakeholders opens a channel of communication and collaboration. Connecting with stakeholders early and often will lead to the identification of diverse perspectives, build trust and credibility within the community, and allow communities to make informed decisions.

2.1 List of stakeholders

Tewksbury Township will engage with a variety of stakeholders to provide input for development of the WIP. Initial public information sessions regarding this Phase 1 Watershed Inventory Report will be held in conjunction with regularly scheduled Township Committee meetings. Notice for Township Committee meetings is provided in accordance with the Open Public Meetings Act (N.J.S.A. 10:4-6 et seq.) and the Municipal Land Use Law (N.J.S.A. 40:55D-1 et seq.). Information regarding the WIP will be presented as a regular Committee Meeting agenda item, and a public comment session will be scheduled to hear stakeholder feedback. Additional Special Committee Meetings or Town Hall style meetings may be scheduled as needed.

A list of relevant stakeholders is provided in Table 5.

Table 5. Watershed Improvement Plan Stakeholders

Stakeholder	Engagement Details
Residents	Residents are invited to provide feedback on topics related to water quality, stormwater management, and other WIP subjects during public comment sessions at regularly scheduled Township Committee meetings.
Business Owners	To be updated in Phase 2 and Phase 3
Owners of Private Stormwater Facilities	Most private stormwater management (SWM) facilities are located in residential subdivision developments and are managed by homeowners associations (HOAs). The Township maintains a database of owner information and will utilize this database to distribute information regarding public information sessions.
Neighboring Municipalities	The Stormwater Program Coordinators (SPCs) in neighboring municipalities will be notified of public WIP information sessions hosted by Tewksbury Township. Neighboring municipalities include Califon Borough, Washington Township, Bedminster Township, Readington Township, Clinton Township, and Lebanon Township.
Hunterdon County	The Hunterdon County SPC will be notified of public WIP information sessions hosted by Tewksbury Township.

Stakeholder	Engagement Details
Regional Watershed Associations	Tewksbury Township received Sustainable Jersey Bronze certification in 2024. Sustainable Jersey will be notified of WIP information sessions hosted by Tewksbury Township.
Others	To be updated in Phase 2 and Phase 3

2.2 Future scheduled meetings

Notice of public information sessions regarding the municipal WIP are posted on the Township's webpage: <https://www.tewksburytwp.net/>

The Township posts information relating to stormwater management at its dedicated municipal stormwater webpage: <https://www.tewksburytwp.net/stormwater/index.php>

3 STORMWATER OUTFALLS

3.1 Stormwater outfalls owned/operated by Tewksbury Township

Historically, municipally-operated outfall inventory was conducted by the Tewksbury Township Department of Public Works (DPW) using paper- and computer-based documentation. Electronic map-based location identification of municipally-operated outfalls began in 2020, using the NJDEP-sponsored ArcGIS Online Mapping Tool. DPW representatives utilized handheld cellular devices to inventory outfall attribute data, which was automatically uploaded to New Jersey’s GIS database. Outfall inventory attributes collected using the NJDEP ArcGIS Online Mapping Tool are listed in Table 6.

Following DPW outfall data collection utilizing the NJDEP ArcGIS Online Mapping Tool, Van Cleef imported outfall inventory features into a municipal stormwater GIS database. Each outfall feature was reviewed for location and attribute description accuracy. Revisions and additions were made as needed. Tools utilized for the accuracy review included survey data, as-built plans, construction plans, development plans, historic and current aerial imagery, NJ GeoWeb, and field confirmation studies. To create a complete and useful inventory, additional outfall attributes were collected as listed in Table 6.

Table 6. Outfall Inventory Attributes

NJDEP Required Attributes	Notes	Additional Attributes
Local ID		Elevation Data, Invert
Road Name		HUC-14
Owner Type	<i>Municipality, Private, etc.</i>	Construction Date
Outfall Type	<i>Pipe, Open Channel</i>	Inspection Date
Pipe Material	<i>RCP, HDPE, etc.</i>	Inspector Name
Pipe Shape	<i>Circular, Elliptical, etc.</i>	
Pipe Size	<i>Height, Width (inches)</i>	
Headwall Structure	<i>Abutment, Concrete, etc.</i>	
BMP Structure	<i>Rip-rap, Gabion Basket, etc.</i>	
Contributing Drainage Area	<i>Residential, Agricultural, etc.</i>	
Type Area Receiving	<i>Swale, Stream, Wetland, etc.</i>	
Data Collection Method	<i>Desktop, Mobile Device, GPS, etc.</i>	

Tewksbury Township operates approximately 319 outfalls. A summary of municipally-operated outfalls in Tewksbury Township discharging within each HUC-14 sub-watershed is provided in Table 7. A map showing municipally-operated outfall locations is provided in Appendix E, Map 5.

Table 7. Tewksbury Township Municipally-Operated Outfalls Listed by Sub-Watershed

HUC-14 Sub-Watershed	Municipal Outfalls	
02030105010060 <i>Raritan R SB(Califon br to Long Valley)</i>	36	11.1%
02030105050080 <i>Rockaway Ck (above McCreas Mills)</i>	166	52.0%
02030105050130 <i>Lamington R(Herzog Brk-Ptrsvle gage)</i>	24	7.5%
02030105050040 <i>Lamington R (Pottersville gage-FurnaceRd)</i>	0	0%
02030105050060 <i>Cold Brook</i>	55	17.2%
02030105050070 <i>Lamington R(HallsBrRd-Herzog Brk)</i>	15	4.7%
02030105050090 <i>Rockaway Ck (below McCreas Mills)</i>	14	4.4%
02030105050100 <i>Rockaway Ck SB</i>	8	2.5%
02030105020050 <i>Beaver Brook (Clinton)</i>	1	0.3%
02030105010070 <i>Raritan R SB(StoneMill gage to Califon)</i>	0	0%
TOTAL, MUNICIPALLY-OPERATED OUTFALLS	319	100%

An outfall may discharge to a variety of locations, including a field, stream, ditch, or directly to a stream or waterbody. The outfall's discharge area impacts the potential pollutant load and runoff quantity received by a waterbody. Receiving discharge areas for Tewksbury Township's municipally operated outfalls are listed in Table 8. Approximately 39% of outfalls discharge directly to a stream or wetland area.

Table 8. Tewksbury Township Municipally-Operated Outfalls Listed by Receiving Discharge Area

Receiving Discharge Area	Municipal Outfalls	
Stream/River	126	38.5%
Wetlands	9	2.8%
Woodlands	75	23.5%
Ditch	63	19.7%
Swale	2	0.6%
Field	9	2.8%
Other	35	11.0%
TOTAL, MUNICIPALLY-OPERATED OUTFALLS	319	100%

3.2 Receiving Surface Waters and Water Quality Classifications

NJ Geographic Information Network (NJGIN) open data resources were utilized to map and analyze receiving surface waters in Tewksbury Township. Datasets accessed include the National Hydrography Dataset (NHD) Streams and Waterbodies 2015 for NJ, and the Surface Water Quality Classification of NJ. The latter resource is also available by accessing the NJ-WET tool provided by the Department. [6, 7, 8]

Major surface waters in or bordering Tewksbury Township include the Frog Hollow Brook, Rockaway Creek, Hollow Brook, Cold Brook, Lamington River and their tributaries. The ultimate receiving waterbody was identified for each municipally-operated outfall based on each outfall's location within its drainage area. It is important to note that only a certain number of outfalls discharge directly to a surface water, as listed in Table 8.

The number and percentage of municipally-operated outfalls categorized by receiving surface water is presented in Table 9. Water quality classifications are also provided in this table. Full details for municipally-operated outfalls are provided in the Appendix. A map depicting this information is presented in Appendix E, Map 5.

Abbreviations used in the water quality classifications are as follows: [9]

- C1 – Category One waters. These waterways have the highest resource value classification in NJ. A C1 water has additional antidegradation policies at NJAC 7:9b based on exceptional ecological, recreational, water supply and/or fisheries resource(s). The majority of surface waters in Tewksbury Township are classified as C1 waters.
- FW2 – Fresh waters not classified as FW1 or Pinelands Waters. The majority of surface waters in Tewksbury Township fall into the FW2 category.
- TM – Trout maintenance waters, designated for the support of trout throughout the year. No outfalls in Tewksbury discharge to TM waters.
- TP – Trout production waters, designated for use by trout for spawning or nursery purposes during their first summer. Approximately forty nine percent (49%) of outfalls in Tewksbury discharge to TP waters.

Table 9. Tewksbury Township Municipally-Operated Outfalls Listed by Receiving Surface Water and Water Quality Classification

HUC-14 Subwatershed	Receiving Surface Water	Water Quality Classification	All Outfalls		Outfalls Discharging Directly to Stream	
02030105010060	Frog Hollow Brook South Branch Raritan River UNT	FW2-TPC1	29	9.1%	22	6.9%
		FW2-TPC1	7	2.2%	4	1.3%
02030105050080	Guinea Hollow Brook North Branch Rockaway Creek	FW2-TPC1	16	5.0%	15	4.7%
		FW2-TPC1	145	45.5%	58	18.2%
	Boulder Hill Brook	FW2-TPC1	6	1.9%	3	0.9%
02030105050130	Hollow Brook	FW2-TPC1	24	7.5%	12	3.8%
02030105050040	Lamington River UNT	FW2-TPC1	0	0%	0	0.0%
02030105050060	Cold Brook	FW2-TPC1	55	17.2%	28	8.8%
02030105050070	Lamington River UNT	FW2-TPC1	15	4.7%	8	2.5%
02030105050090	North Branch Rockaway Creek UNT	FW2-TPC1	12	3.8%	3	0.9%
	North Branch Rockaway Creek UNT	FW2-TM	2	0.6%	0	0.0%
02030105050100	South Branch Rockaway Creek UNT	FW2-TPC1	8	2.5%	2	0.6%
02030105010070	South Branch Raritan River	FTW-TPC1	0	0%	0	0.0%
	TOTAL, MUNICIPALLY-OPERATED OUTFALLS		319	100%	155	48.6%

4 MUNICIPAL CONVEYANCE NETWORK

The structural conveyance system in the Tewksbury Township MS4 consists of a network of inlets, manholes, stormwater pipes, and culverts. This network conveys stormwater and ultimately discharges via outfalls. In addition to these structural components, roadside ditches and grass swales direct stormwater overland or into the structural conveyance network.

Historically, municipal inlet inventory was conducted by the Tewksbury Township Department of Public Works (DPW) using paper- and computer-based documentation. Electronic map-based location identification of municipally-operated inlets began in 2020, using the NJDEP-sponsored ArcGIS Online Mapping Tool. DPW representatives utilized handheld cellular devices to inventory inlet attribute data, which was automatically uploaded to New Jersey's GIS database. Inlet inventory attributes collected using the NJDEP ArcGIS Online Mapping Tool are listed in Table 10.

Following DPW inlet data collection utilizing the NJDEP ArcGIS Online Mapping Tool, Van Cleef imported inlet inventory attributes into a municipal stormwater GIS database. Each inlet feature was reviewed for location and attribute description accuracy. Revisions and additions were made as necessary. Additional stormwater conveyance network information (manholes, pipes, swales, etc.)

was added to the municipal stormwater GIS database. Location of privately-operated features were mapped if known, and where it was critical for depiction of a complete municipal system. Tools utilized for the accuracy review and conveyance network delineation included survey data, as-built plans, construction plans, development plans, historic and current aerial imagery, NJ GeoWeb, and field confirmation studies. To create a complete and useful inventory, additional attributes were collected as listed in Table 10.

Tewksbury Township operates approximately 1,542 inlets and 49 manholes. These assets are shown on the map provided in Appendix E, Map 6. The pipe conveyance network consists of 591 pipe segments, totaling approximately 14.7 miles of pipe.

Table 10. MS4 Conveyance Network Inventory Features and Attributes

NJDEP Required Attributes	Notes	Additional Attributes
<i>Inlets and Manholes</i>		
Local ID		Elevation Data, Invert
Road Name		Receiving Outfall ID
Owner Type	<i>Municipality, Private, etc.</i>	
Inlet Type	<i>Grate, combination, etc.</i>	
Curb Opening Retrofitted	<i>To meet WQ design standards</i>	
Bicycle Safe Grate	<i>To meet safety standards</i>	
Inlet Labeled	<i>"Drains to waterway" label</i>	
BMP Type	<i>Berm, trash rack, etc.</i>	
Contributing Drainage Area	<i>Residential, Agricultural, etc.</i>	
Data Collection Method	<i>Desktop, Mobile Device, GPS, etc.</i>	
<i>Stormwater Pipes, Swales</i>		
Local ID		Pipe Material
Road Name		Pipe Size
Owner Type	<i>Municipality, Private, etc.</i>	Receiving Outfall ID
Conveyance Type		
Direction of Flow		

5 STORMWATER INTERCONNECTIONS

The NJDEP Tier A Stormwater Discharge General Permit defines an “MS4 Interconnection” as follows:
[1]

Any point at which an MS4 flows into or from another MS4.

In accordance with Part G.1.a.iii of the Tier A MS4 Permit, interconnections between the Tewksbury Township MS4 and other MS4 entities were mapped. Other MS4 entities include the Hunterdon County MS4 and neighboring municipalities including Califon Borough, Clinton Township, Washington Township (Morris County), Bedminster Township, Lebanon Township, and Readington Township.

Requirements of the Watershed Inventory Report include mapping of additional stormwater interconnections, including to and from other jurisdictions’ conveyance networks such as sanitary sewers, other combined sewers, and private stormwater management facilities.

Location of all interconnection points between the Tewksbury Township MS4 and other entities’ conveyance networks are shown in Appendix E, Map 7.

5.1 Interconnections from Tewksbury Township’s MS4 into another entity

A summary of stormwater interconnections from the Tewksbury Township MS4 into other entities’ drainage networks is provided in Table 11.

- The Tewksbury Township MS4 flows into other MS4s (municipal and Hunterdon County) at thirteen (13) locations.
- Two (2) points were identified where the Tewksbury Township MS4 flows into a private stormwater management facility. These are locations where municipal stormwater conveyance pipes within the Township right-of-way flow into privately operated stormwater management (SWM) facilities such as detention basins. These points typically provide roadway drainage for local residential developments, which manage stormwater via SWM facilities that are privately operated (for example, through a residential homeowner’s association). This drainage is typically routed through extended detention or infiltration basins and discharged overland or directly to State open waters.
- The Tewksbury Township MS4 does not connect to any sanitary sewer systems or combined sewer (sanitary and stormwater) networks.

Table 11. Stormwater Interconnections from Tewksbury Township’s MS4 To Another Entity

Connecting To	Number of Interconnections
Other Municipal MS4	7
Hunterdon County MS4	6
Private Stormwater Management Facility	2

<i>Total Interconnections</i>	15
--------------------------------------	-----------

5.2 Interconnections into Tewksbury Township’s MS4 from another entity

A summary of stormwater interconnections into the Tewksbury Township MS4 from other entities’ drainage networks is provided in Table 12.

- Other MS4s (municipal and Hunterdon County) flow into the Tewksbury Township MS4 at thirty-three (33) locations.
- There is one (1) location where a privately operated SWM facility discharges directly to the Tewksbury Township MS4. At such locations, private stormwater conveyance networks flow through detention basins and discharge to the municipal stormwater network at a road inlet.
- No points were identified where sanitary sewer systems or combined sewer (sanitary and stormwater) networks connect to the Tewksbury Township MS4.

Table 12. Stormwater Interconnections to Tewksbury Township’s MS4 From Another Entity

Connecting From	Number of Interconnections
Other Municipal MS4	13
Hunterdon County MS4	20
Private Stormwater Management Facility	1
<i>Total Interconnections</i>	34

6 DRAINAGE AREAS FOR STORMWATER OUTFALLS AND STORMWATER INTERCONNECTIONS

Outfall and interconnection drainage areas were delineated using ArcHydro, a stormwater specific software extension utilized in ESRI ArcGIS Pro. The drainage area delineations utilized field collected stormwater features as well as the 2018 Northwest New Jersey 2-ft Digital Elevation Model (DEM). The Northwest NJ DEM references USGS Lidar data collected in 2017 and 2018. [12] The resulting data layer results were checked against watershed boundary delineations, (including Watershed Management Areas, HUC-11 boundaries, and HUC-14 boundaries), existing topography, and other local conditions. [11, 3]

6.1 MS4 outfall drainage areas

Tewksbury Township MS4 outfall drainage areas are shown in Appendix E, Map 8. Additional analysis and review shall be conducted during future Phases 2 and 3 of the Watershed Improvement Plan in regards to land cover category impacts on pollutant load.

6.2 Interconnection drainage areas

Drainage areas for interconnections from Tewksbury Township to another entity are shown in Appendix E, Map 8.

7 TMDLS AND WATER QUALITY IMPAIRMENTS

In accordance with the Clean Water Act, the State of New Jersey measures and reports a variety of water quality assessment metrics for streams, lakes and coastal waterbodies. A statewide assessment is conducted every two years, and results are published in the New Jersey Integrated Water Quality Assessment Report (NJ Integrated Report). A detailed evaluation of one of New Jersey's five water regions is conducted during each biennial assessment, such that each water region is analyzed on a rotating basis every ten years.

Information presented in the NJ Integrated Report is organized in a way that “*identifies and prioritizes waters for protection, restoration, and additional monitoring or research,*” with the goal of “*enhancing, maintaining, and restoring water quality in all surface waters of the State to support their use for aquatic life, recreation, water supply, fish consumption, and shellfish harvest for consumption.*” Water quality data is collected from a variety of organizations, including utilities, watershed associations, and state, county and federal agencies. [13]

Waterbodies are monitored for impairments that threaten the waterbody's designated use.

- Impairments may include specific pollutants (such as phosphorus, lead, PCBs, e. coli, total suspended solids, etc.), and other conditions that degrade water quality (such as temperature, dissolved oxygen levels, pH, turbidity, etc.).
- Designated uses in NJ include public water supply, aquatic life, fish consumption, shellfish, and recreation.

If an impairment is measured at a level that threatens (i.e., does not support) the waterbody's designated use, the impairment is reported. The resulting statewide “303(d)” list, so named for the corresponding section of the Clean Water Act which requires it, details the waterbodies where designated uses are not supported and require development of a Total Maximum Daily Load (TMDL). TMDLs are developed for priority impairments on the 303(d) list. [14]

Water Quality Impairment and TMDL information for Tewksbury Township is provided in Sections 7.1 and 7.2. Information is reported by HUC-14 subwatershed in Table 13 and Table 14, and is shown visually in the map provided in Appendix E, Map 9. This information was compiled using data published in the 2022 NJ Integrated Report, and data posted in the NJ-WET database.

7.1 Water Quality Impairments

Water quality impairments reported for Tewksbury Township waterbodies in the 2022 NJ Integrated Report are listed in Table 13. The designated use threatened by the impairment is noted, as well as the year in which the impairment was first listed. The final column indicates the State priority ranking for TMDL development for that waterbody and associated impairment.

Table 13. Water Quality Impairments in Tewksbury Township [8, 14]

HUC-14	Impairments	Year First Listed on 303(d)	Designated Use	Priority Ranking for TMDL
02030105010060 <i>Raritan R SB(Califon br to Long Valley)</i>	Arsenic	2016	Public Water Supply	Low
	Temperature	2006	Aquatic Life Trout	Medium
02030105050080 <i>Rockaway Ck (above McCrea Mills)</i>	Arsenic	2012	Public Water Supply	Low
	Temperature	2014	Aquatic Life Trout	Medium
02030105050130 <i>Lamington R(Herzog Brk-Ptrsvle gage)</i>	Temperature	2010	Aquatic Life Trout	Medium
02030105050040 <i>Lamington R (Pottersville gage-FurnaceRd)</i>	Arsenic	2012	Public Water Supply	Low
	Temperature	2020	Aquatic Life Trout	Medium
02030105050060 <i>Cold Brook</i>	Biological – Cause Unknown	2016	Aquatic Life (Inc. Trout)	Low
02030105050070 <i>Lamington R(HallsBrRd-Herzog Brk)</i>	Temperature	2004	Aquatic Life Trout	Medium
02030105050090 <i>Rockaway Ck (below McCrea Mills)</i>	Arsenic	2012	Public Water Supply	Low
	pH	2010	Aquatic Life (Inc. Trout)	Medium
02030105050100 <i>Rockaway Ck SB</i>	E. Coli	2012	Recreation, Primary	Medium
	Biological – Cause Unknown	2016	Aquatic Life (Inc. Trout)	Low
	Temperature	2012	Aquatic Life Trout	Medium
02030105010070 <i>Raritan R SB(StoneMill gage to Califon)</i>	Arsenic	2012	Public Water Supply	Low
	Temperature	2022	Aquatic Life Trout	*

*Priority ranking not listed.

7.2 Total Maximum Daily Load (TMDL)

TMDLs developed for waterbodies in Tewksbury Township are listed for each HUC-14 subwatershed in Table 14. This information was gathered using the “NJDEP TMDL Look-Up Tool” [15] and verified using the NJ-WET database.

All TMDLs in Tewksbury Township are for Streamsheds; there are no applicable Lake or Shellfish TMDLs in Tewksbury Township.

Table 14. Stream TMDLs in Tewksbury Township [8, 15, 16]

HUC-14	Streamshed TMDL	TMDL Report Date
02030105010060 <i>Raritan R SB(Califon br to Long Valley)</i>	Fecal Coliform	2003
	Mercury	2010
	Total Phosphorous	2016
	Total Suspended Solids	2016
02030105050080 <i>Rockaway Ck (above McCreas Mills)</i>	Total Phosphorous	2016
	Total Suspended Solids	2016
02030105050130 <i>Lamington R(Herzog Brk-Ptrsvle gage)</i>	Fecal Coliform	2003
	Total Phosphorous	2016
	Total Suspended Solids	2016
02030105050040 <i>Lamington R (Pottersville gage-FurnaceRd)</i>	Fecal Coliform	2003
	Total Phosphorous	2016
	Total Suspended Solids	2016
02030105050060 <i>Cold Brook</i>	Fecal Coliform	2003
	Total Phosphorous	2016
	Total Suspended Solids	2016
02030105050070 <i>Lamington R(HallsBrRd-Herzog Brk)</i>	Fecal Coliform	2003
	Total Phosphorous	2016
	Total Suspended Solids	2016
02030105050090 <i>Rockaway Ck (below McCreas Mills)</i>	Total Phosphorous	2016
	Total Suspended Solids	2016
02030105050100 <i>Rockaway Ck SB</i>	Total Phosphorous	2016
	Total Suspended Solids	2016
02030105010070 <i>Raritan R SB(StoneMill gage to Califon)</i>	Fecal Coliform	2003
	Total Phosphorous	2016
	Total Suspended Solids	2016

7.3 Pollutants of Concern

NJDEP published a “[Pollutants of Concern](#)” document, which is posted on the NJDEP website as a Watershed Improvement Plan resource. [17] The document is undated, and lists the following pollutants of concern: benzo(a)pyrene, cadmium, chloride, chromium, copper, dissolved oxygen, lead, nickel, nitrate, pathogens (enterococcus, E. coli, fecal coliform, total coliform), pH, phosphorous/total phosphorus, PCBs, temperature, total dissolved solids, total suspended solids, turbidity, and VOCs.

Several of the preceding listed pollutants/impairments are found in Tewksbury Township waterbodies; these pollutants/impairments are summarized in Table 15. The environmental impacts of the pollutants/impairments are summarized in the following sections.

Table 15. Pollutants/Impairments of Concern in Tewksbury Township

HUC-14 Subwatershed	Water Region, WMA	Benzo(a)pyrene	Heavy Metals	Dissolved O²	Pathogens	pH	Phosphorous	PCBs	Temperature	TSS/TDS	Turbidity	VOCs
02030105010060 <i>Raritan R SB(Califon br to Long Valley)</i>	2 – Raritan 08 – North & South Branch Raritan				TMDL		TMDL		X	TMDL		
02030105050080 <i>Rockaway Ck (above McCre Mills)</i>	2 – Raritan 08 – North & South Branch Raritan						TMDL		X	TMDL		
02030105050130 <i>Lamington R(Herzog Brk- Ptrsvle gage)</i>	2 – Raritan 08 – North & South Branch Raritan				TMDL		TMDL		X	TMDL		
02030105050060 <i>Cold Brook</i>	2 – Raritan 08 – North & South Branch Raritan				TMDL		TMDL			TMDL		
02030105050070 <i>Lamington R(HallsBrRd- Herzog Brk)</i>	2 – Raritan 08 – North & South Branch Raritan				TMDL		TMDL		X	TMDL		
02030105050090 <i>Rockaway Ck (below McCre Mills)</i>	2 – Raritan 08 – North & South Branch Raritan					X	TMDL			TMDL		
02030105050100 <i>Rockaway Ck SB</i>	2 – Raritan 08 – North & South Branch Raritan						TMDL		X	TMDL		
02030105010070 <i>Raritan R SB(StoneMill gage to Califon)</i>	2 – Raritan 08 – North and South Branch Raritan				TMDL		TMDL		X	TMDL		

X – Pollutant/Impairment appears on 2022 303(d) list

TMDL – TMDL established for pollutant/impairment

7.3.1 Pathogens

Cause: Bacterial pathogens may be present in surface water due to contaminated stormwater runoff. Contamination occurs when runoff comes into contact with pathogen sources, which include pet and wildlife waste, certain farming activities, illicit discharges, and failing septic systems.

General Impact: Certain strains of pathogens such as E. Coli and fecal coliform cause intestinal disease when ingested by humans.

Tewksbury Township Impact: TMDLs are in place in five (5) subwatersheds for fecal coliform. One (1) subwatershed includes E. Coli as a listed impairment. Refer to Table 15.

7.3.2 pH

Cause: pH is a measure of a substance's acidity or alkalinity. Pure water is neutral, with a pH equal to 7.0. A waterbody's pH value fluctuates if chemicals or pollutants are present in the water. Contamination can occur if pollutants are discharged directly into a waterbody, when air pollutants precipitate with rain, or when stormwater runoff comes into contact with pollutant sources. Runoff sources may include battery acids, cement, fertilizers, compost, and other pollutants.

General Impact: Fluctuations of pH, and acidic or basic conditions outside certain pH thresholds, negatively impact aquatic life and habitat.

Tewksbury Township Impact: One (1) subwatershed includes pH as a listed impairment. There are currently no TMDLs in place for pH. Refer to Table 15.

7.3.3 Phosphorous/Total Phosphorous

Cause: Excessive phosphorous levels in waterbodies is caused primarily by contaminated stormwater runoff. Runoff sources of phosphorous include residential lawn fertilizers, poor agricultural practices, leaking septic systems, and pet and animal waste.

General Impact: High phosphorous levels disrupt a waterbody's natural nutrient balance, contributing to eutrophic conditions. Eutrophication causes increased growth of algae (resulting in harmful algal blooms) and increased growth of aquatic plant life (resulting in decreased recreational value). Eutrophication also causes fluctuations in pH and dissolved oxygen levels. If an impacted surface waterbody is a public water supply source, additional disinfectants and oxidants may be required to treat for high algae levels.

Tewksbury Township Impact: TMDLs are in place in eight (8) subwatersheds for total phosphorous. Refer to Table 15.

7.3.4 Temperature

Cause: Elevated waterbody temperatures can result from heated stormwater runoff that has traveled over hot paved areas, heated stormwater discharging from detention basins, shallow areas caused by erosion or sedimentation, and increased solar radiation in areas of decreased vegetation.

General Impact: Elevated waterbody temperatures are directly detrimental to cold water fish such as trout. Elevated temperatures also result in reduced dissolved oxygen concentration, which negatively impacts aquatic life.

Tewksbury Township Impact: Six (6) subwatersheds include temperature as a listed impairment. Refer to Table 15.

7.3.5 Total Suspended Solids (TSS)

Cause: Stormwater runoff picks up particulate matter as it travels overland and carries the suspended particulates to waterbodies.

General Impact: High total suspended solids (TSS) levels inhibit the ability of aquatic life to thrive. Organic TSS contributes to elevated levels of pathogenetic microorganisms and the potential for waterborne disease.

Tewksbury Township Impact: TMDLs are in place in eight (8) subwatersheds for TSS. Refer to Table 15.

7.3.6 Mitigation

As part of its Tier A MS4 permit, Tewksbury Township has several regulations to reduce the potential impact of degradation due to the pollutants and impairments described above. These regulations and measures include:

- Community-Wide Measures:
 1. Herbicide application management
 2. Roadside vegetative waste management
 3. Roadside erosion control
 4. Inspection and maintenance of stormwater management facilities
 5. BMPs at the municipal maintenance yard
 6. Stream scouring program
 7. Illicit discharge Detection and elimination program
 8. Street sweeping program
- Community-Wide Ordinances:
 1. Pet Waste Ordinance
 2. Wildlife Feeding Ordinance
 3. Litter Control Ordinance
 4. Improper Disposal of Waste Ordinance

5. Yard Waste Ordinance
6. Illicit Connections Ordinance
7. Green infrastructure requirements of stormwater control ordinance

8 OVERBURDENED COMMUNITIES

The NJ Environmental Justice Law (N.J.S.A. 13:1D-157 et seq.) requires NJDEP to assess the impact of development on environmental and public health stressors in overburdened communities. [18]

As defined in the law, overburdened community (OBC) means:

Any census block group, as determined in accordance with the most recent United States Census, in which:

1. At least 35 percent of the households qualify as low-income households;
2. At least 40 percent of the residents identify as minority or as members of a State recognized tribal community; or
3. At least 40 percent of the households have limited English proficiency (according to the U.S. census bureau, without an adult that speaks English “very well”).

According to the NJ list of overburdened communities, and as represented in the NJ-WET database, there are no census blocks in Tewksbury Township that meet the overburdened community criteria as of the date of this report. [8, 19]

9 IMPERVIOUS AREA

Impervious surfaces impede the infiltration of stormwater into the ground. Impervious areas are associated with nearly all types of development, and include paved surfaces such as roadways, parking lots and driveways; rooftops; gravel drives; sidewalks; and swimming pools. Impervious areas impede the natural drainage patterns that occur in undisturbed areas, which can significantly impact the quantity and quality of stormwater runoff. Groundwater recharge is also reduced when impervious areas are created, impacting aquifer replenishment and local soil conditions.

Impervious cover data for Tewksbury Township was obtained from the NJDEP NJ-WET tool provided by the Department, accessed September 10, 2024. The data is referenced from the NJDEP Bureau of GIS Impervious Surface of New Jersey (2015) open data file. This data was developed for NJ using geographic object-oriented image analysis of source datasets including digital imagery, LiDAR information, and additional NJDEP GIS datasets (land use/land cover, road centerlines, hydrographic features, etc.). [20] The data allows for regional analysis such as that presented below but does not represent precise delineations of impervious surface.

The Impervious Surface of New Jersey (2015) dataset provides area and surface classification information for 10,977 individual impervious surface records in Tewksbury Township. Surface classifications are as follows:

- Road – federal, state and local roadway surfaces
- Building – rooftops
- Other – paved surfaces such as private drives, patios, swimming pools, parking lots, airport runways, etc.

A map depicting impervious area in Tewksbury Township is provided in Appendix E, Map 14. Impervious cover areas and percentages, separated by subwatershed area and surface classifications, are provided in Table 16. Graphical representations for surface classification and subwatershed impervious area are provided in Figure 2 and Figure 3, respectively.

There are approximately 1,286.6 acres of total impervious surface in Tewksbury Township, which accounts for 6.3% of the total area within the municipal boundary. Impervious cover follows a typical rural development pattern. Coverage is relatively evenly distributed across the municipality. The western two-thirds of the town is within the Highlands Preservation Area, and the eastern third is within the Highlands Planning Area.

As shown in Figure 2, public road surfaces account for approximately 450 acres, or 35%, of total impervious area in the municipality. It is important to note that County, State and Federal road surfaces account for a large portion of the total road surface in Tewksbury Township. Public and private development sites account for the remaining impervious areas: rooftops, private drives and parking lots, etc. Development contributing to these impervious areas is primarily for agricultural and residential uses.

The impervious area values presented above differ from an Impervious Cover Assessment prepared in 2020 by the Rutgers Cooperative Extension Water Resources Program for the NJ Highlands Council. [21] The 2020 assessment utilized Land Use / Land Cover 2015 data, with estimated percent impervious assignments for each land cover category. The assessment calculated that impervious surfaces account for approximately 3.2% of the area within the Tewksbury Township municipal boundary, considerably lower than as calculated for this report's analysis.

Table 16. Impervious Area in Tewksbury Township Listed by Sub-Watershed

HUC-14 Sub-Watershed	Sub-watershed Area* (acres)	Impervious Area				Imp. Cover in Subwatershed Area*	Proportion of Total Impervious Area
		Roads (acres)	Buildings (acres)	Other (acres)	Total (acres)		
02030105010060 <i>Raritan R SB(Califon br to Long Valley)</i>	1,057.4	30.2	10.8	30.5	71.5	6.8%	5.6%
02030105050080 <i>Rockaway Ck (above McCrea Mills)</i>	9,631.1	203.7	122.2	314.6	640.5	6.7%	49.8%
02030105050130 <i>Lamington R(Herzog Brk-Ptrsvle gage)</i>	2,058.1	52.0	24.1	71.0	147.1	7.1%	11.4%
02030105050040 <i>Lamington R (Pottersville gage-FurnaceRd)</i>	8.3	0.3	0.3	0.4	1.0	12.0%	0.1%
02030105050060 <i>Cold Brook</i>	3,989.4	81.1	37.4	109.1	227.6	5.7%	17.7%
02030105050070 <i>Lamington R(HallsBrRd-Herzog Brk)</i>	2,082.6	36.7	15.0	41.9	93.6	4.5%	7.3%
0203010505009 <i>Rockaway Ck (below McCrea Mills)</i>	1,188.2	36.1	11.9	31.7	79.7	6.7%	6.2%
02030105050100 <i>Rockaway Ck SB</i>	309.1	9.0	4.9	11.3	25.2	8.2%	2.0%
02030105020050 <i>Beaver Brook (Clinton)</i>	0.8	0.2	0	0.0	0.2	25.0%^	0.0%
02030105010070 <i>Raritan R SB(StoneMill gage to Califon)</i>	8.6	0.1	0.0	0.1	0.2	2.3%	0.0%
MUNICIPAL TOTALS	20,333.6	449.4	226.6	610.6	1,286.6	6.3%	

*Area within the Tewksbury Township municipal boundary, including areas of land and water

^ Outlier: disproportionately small subwatershed area

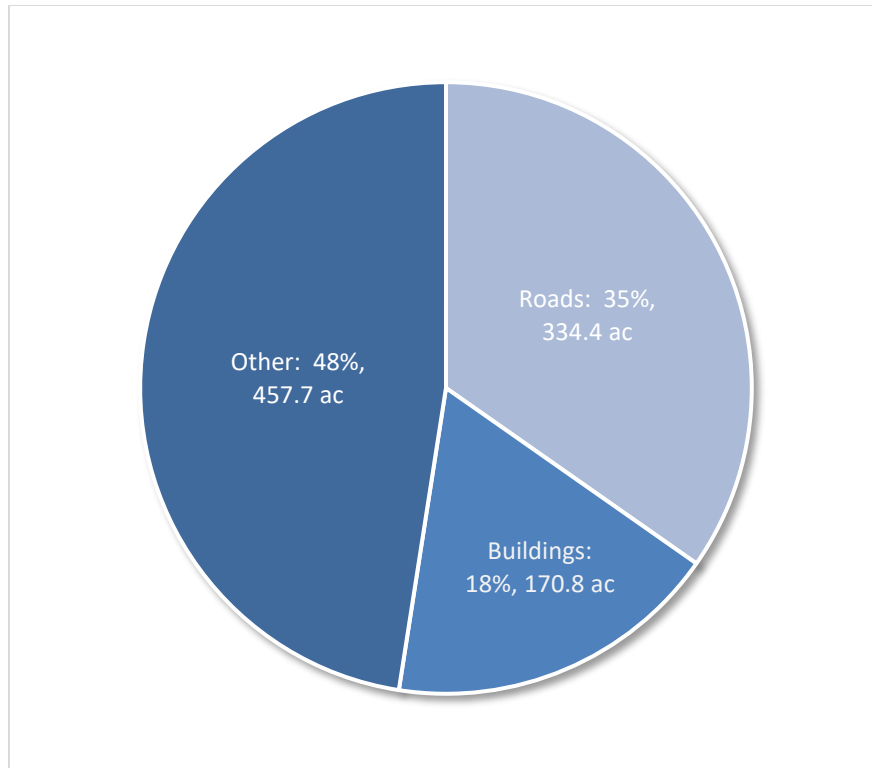


Figure 2. Impervious Surface Classifications

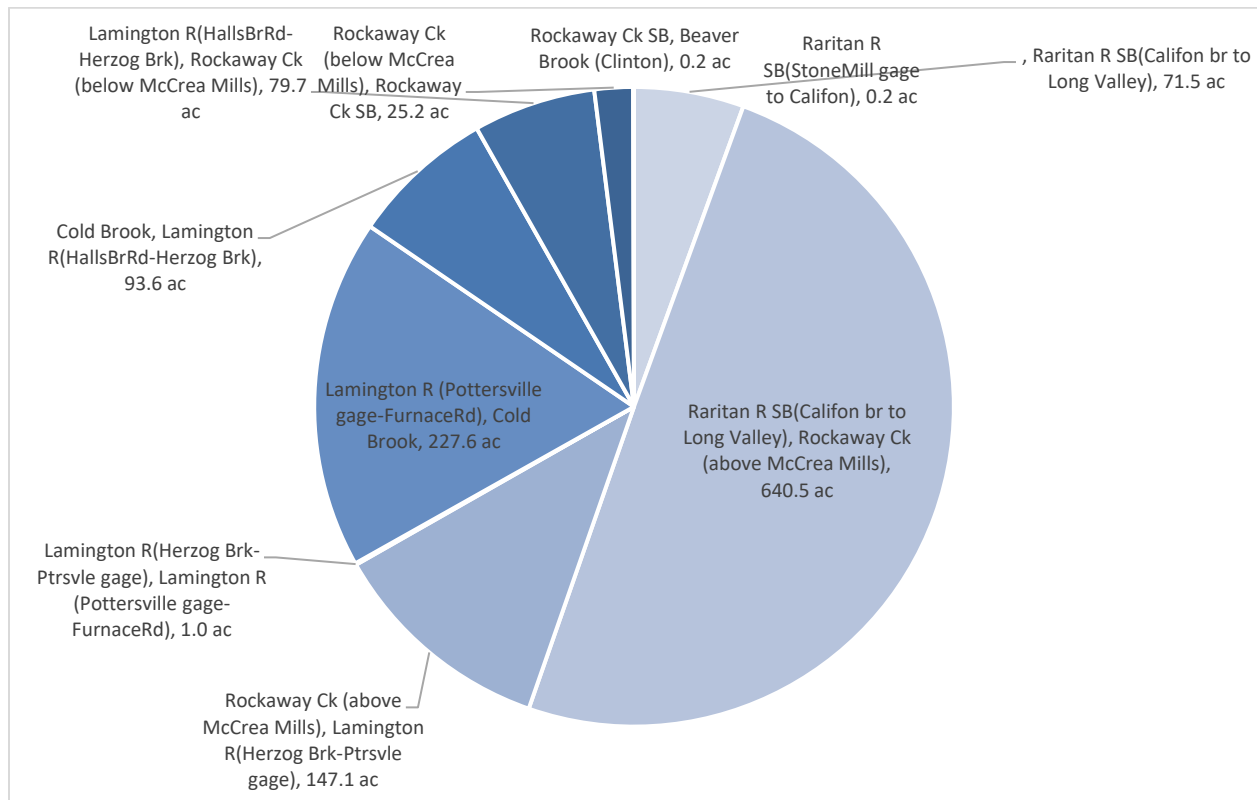


Figure 3. Impervious Area in Each Subwatershed

10 NON-MUNICIPALLY OWNED OR OPERATED STORMWATER FACILITIES

Non-municipally owned stormwater management (SWM) facilities in Tewksbury Township typically serve residential housing developments and are operated by private property owners or homeowners' associations (HOAs). Types of privately owned SWM facilities in the municipality include:

- Basins: detention, wet pond (retention), infiltration, bioretention
- Green Infrastructure: Grass swales, Manufactured treatment devices (MTDs)
- Culverts

Table 17. Types of Non-Municipally Operated SWM Facilities in Tewksbury Township

Development Category	Owner Type	SWM Facility Types
Residential	Private property owner or homeowners' association (HOA)	Small- to Medium-Scale SWM <ul style="list-style-type: none"> • Extended detention and infiltration basins • Bioretention (rain gardens) • Grass swales • MTDs
Small Commercial	Private property owner	Small- to Medium-Scale SWM <ul style="list-style-type: none"> • Extended detention and infiltration basins • Sub-surface detention systems • MTDs • Drywells • Vegetative filter strips • Pervious paving systems
Large Commercial / Light Industrial	Private property owner	Large-Scale SWM <ul style="list-style-type: none"> • Extended detention and infiltration basins • Retention basins (wet ponds) • Sub-surface detention systems • MTDs • Stormwater cisterns • Constructed wetlands • Culverts

A summary of the type and number of privately owned SWM facilities located in each subwatershed is provided in Table 18 and in Appendix E, Map 11. This information was collected from municipal records including development plans, stormwater facility maintenance plans, Planning Board records, and DPW inventory lists. The data reflects information available at the time of this report. As additional privately owned SWM facilities are identified in Tewksbury Township, they are added to the municipal inventory.

Additional details for each non-municipally operated SWM facility are provided in the Appendix.

Table 18. Non-Municipally Operated SWM Facilities in Tewksbury Township by HUC-14

HUC-14 Subwatershed	Detention Basin	Wet Pond (Retention)	Infiltration Basin	Bioretention Basin	Culvert	Grass Swale	MTD
02030105010060 <i>Raritan R SB(Califon br to Long Valley)</i>	0	0	0	0	0	0	0
02030105050080 <i>Rockaway Ck (above McCrea Mills)</i>	0	0	0	0	0	0	0
02030105050130 <i>Lamington R(Herzog Brk-Ptrsvle gage)</i>	0	0	0	0	0	0	0
02030105050060 <i>Cold Brook</i>	0	0	0	0	0	0	0
02030105050070 <i>Lamington R(HallsBrRd- Herzog Brk)</i>	0	0	0	0	0	0	0
02030105050090 <i>Rockaway Ck (below McCrea Mills)</i>	1	0	0	0	0	0	0
02030105050100 <i>Rockaway Ck SB</i>	0	0	0	0	0	0	0
02030105010070 <i>Raritan R SB(StoneMill gage to Califon)</i>	0	0	0	0	0	0	0
TOTAL	1	0	0	0	0	0	0

11 CONCLUSIONS

This Watershed Inventory Report represents Phase 1 of the Tewksbury Township Watershed Improvement Plan. The purpose of this report is to identify:

- Municipally-operated stormwater infrastructure components, inventoried in accordance with the Tier A MS4 General Stormwater Permit.
- Interconnections to and from other stormwater networks.
- Drainage areas for municipally-operated outfalls and stormwater interconnections.
- Relevant water quality data, including stream classifications, TMDLs, and water quality impairments.
- Overburdened communities (not applicable in Tewksbury Township).
- Impervious areas.
- Non-municipally operated stormwater management facilities.

The municipal data that accompanies this inventory report has been compiled as an electronic map and submitted to the NJDEP through the NJDEP Online Portal via the Document Submittal Service.

The information from this Watershed Inventory Report will be used to make informed decisions during the creation of the Watershed Assessment Report, which represents Phase 2 of the Tewksbury Township Watershed Improvement Plan. Phase 2 assessment efforts will identify areas of concern and will propose potential improvement projects to improve water quality and quantity issues in Tewksbury Township.

12 REFERENCES

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Appendix A

U.S. Census Bureau Demographic Information

Tewksbury township, Hunterdon County, New Jersey

Tewksbury township, Hunterdon County, New Jersey is a city, town, place equivalent, or township located in [Hunterdon County, New Jersey](#). Tewksbury township, Hunterdon County, New Jersey has a land area of 31.6 square miles.

Populations and People

Total Population
5,870
[P1](#) | [2020 Decennial Census](#)

Education

Bachelor's Degree or Higher
63.6%
[S1501](#) | [2023 American Community Survey 5-Year Estimates](#)

Housing

Total Housing Units
2,370
[B25002](#) | [2023 American Community Survey 5-Year Estimates](#)

Families and Living Arrangements

Total Households
2,278
[DP02](#) | [2023 American Community Survey 5-Year Estimates](#)

Income and Poverty

Median Household Income
\$188,500
[S1901](#) | [2023 American Community Survey 5-Year Estimates](#)

Employment

Employment Rate
56.2%
[DP03](#) | [2023 American Community Survey 5-Year Estimates](#)

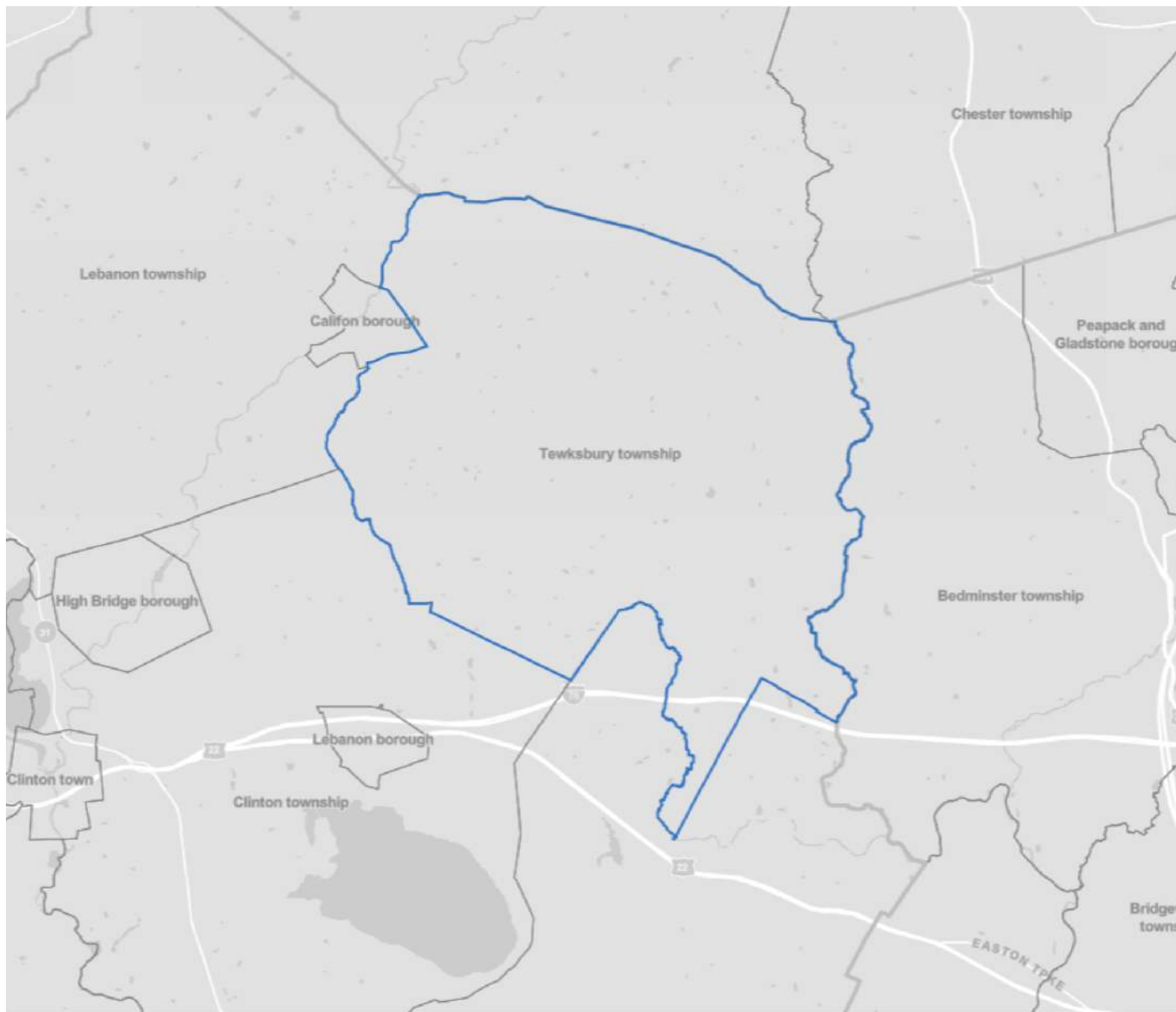
Health

Without Health Care Coverage
1.3%
[S2701](#) | [2023 American Community Survey 5-Year Estimates](#)

Race and Ethnicity

Hispanic or Latino (of any race)
332
[P9](#) | [2020 Decennial Census](#)

Tewksbury township, Hunterdon County, New Jersey Reference Map



Source: U.S. Census Bureau

Populations and People

Age and Sex

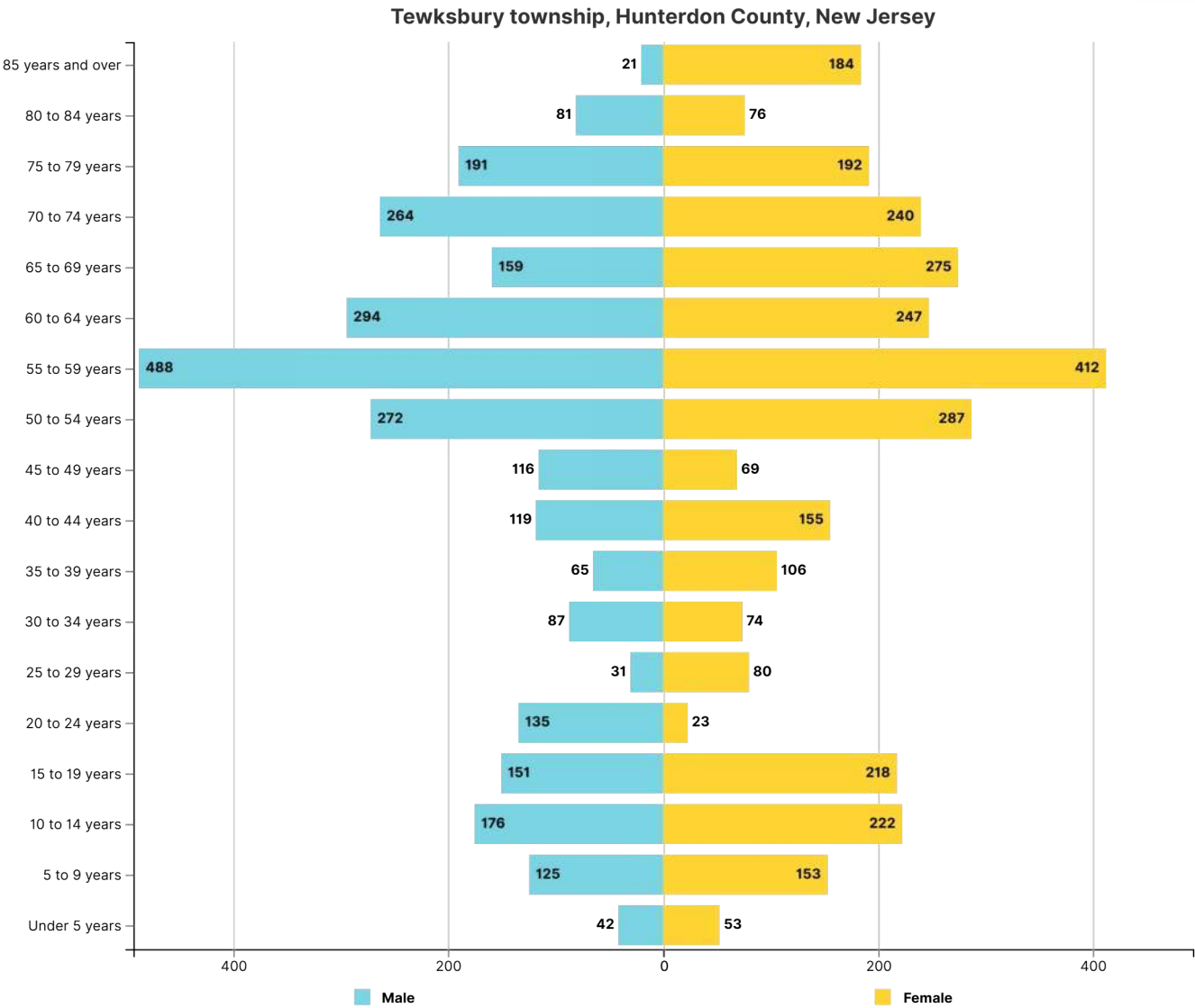
56.9 ± 3.3

Median Age in Tewksbury township, Hunterdon County, New Jersey

46.3 ± 0.7

Median Age in Hunterdon County, New Jersey

[S0101](#) | 2023 American Community Survey 5-Year Estimates



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S0101 | 2023 ACS 5-Year Estimates Subject Tables

Language Spoken at Home

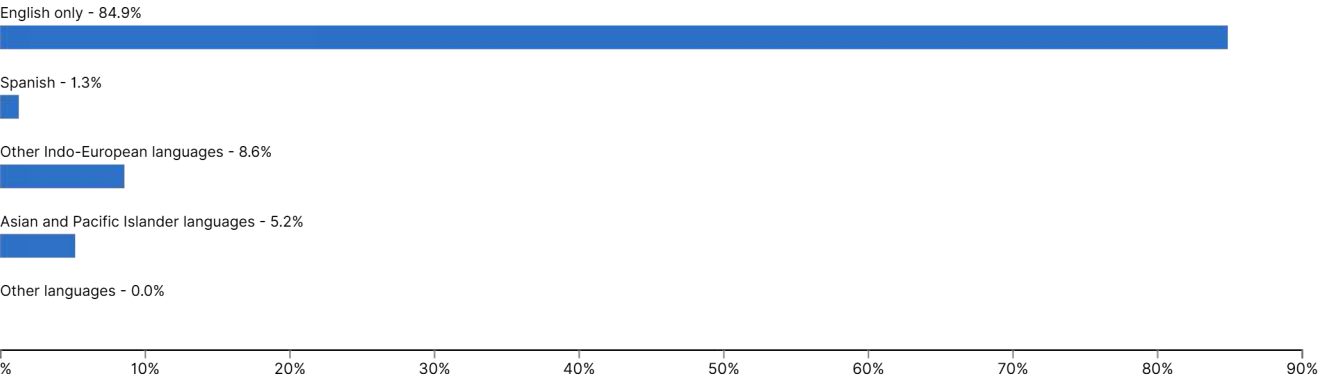
15.1% ± 5.5%
Language Other Than English Spoken at Home in Tewksbury township, Hunterdon County, New Jersey

13.7% ± 2.1%
Language Other Than English Spoken at Home in Hunterdon County, New Jersey

S1601 | 2023 American Community Survey 5-Year Estimates

Types of Language Spoken at Home
in Tewksbury township, Hunterdon County, New Jersey

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S1601 | 2023 American Community Survey 5-Year Estimates

Native and Foreign-Born

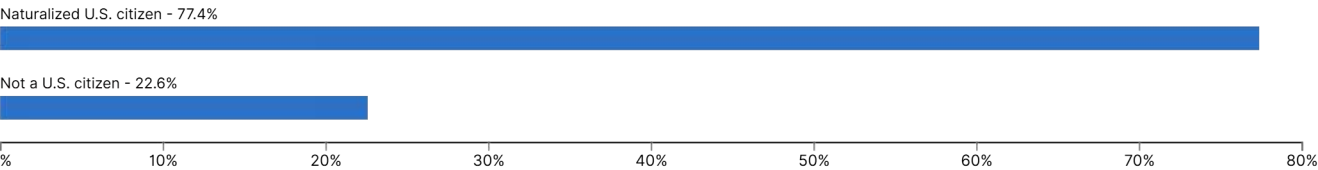
9.6% ± 3.6%
Foreign-Born population in Tewksbury township, Hunterdon County, New Jersey

10.0% ± 1.6%
Foreign-Born population in Hunterdon County, New Jersey

DP02 | 2023 American Community Survey 5-Year Estimates

Foreign-Born Population
in Tewksbury township, Hunterdon County, New Jersey

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DP02 | 2023 American Community Survey 5-Year Estimates

Older Population

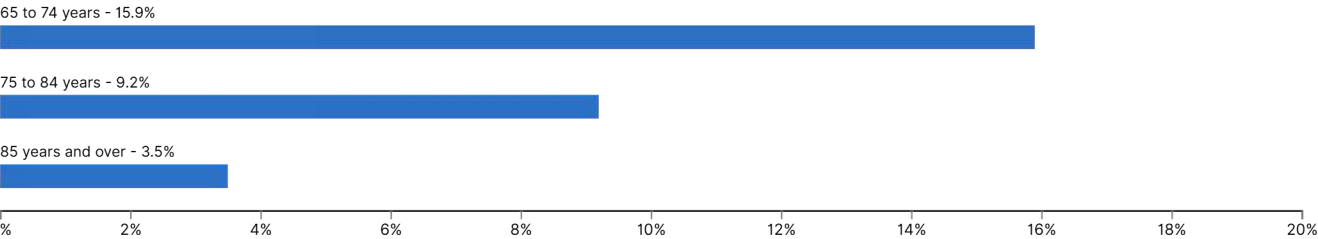
28.6% ± 5.1%
65 Years and Older in Tewksbury township, Hunterdon County, New Jersey

21.8% ± 0.4%
65 Years and Older in Hunterdon County, New Jersey

DP05 | 2023 American Community Survey 5-Year Estimates

Older Population by Age
in Tewksbury township, Hunterdon County, New Jersey

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DP05 | 2023 American Community Survey 5-Year Estimates

Residential Mobility

1.7% ± 1.7%

Moved From a Different State in the Last Year in Tewksbury township, Hunterdon County, New Jersey

N ± N

Moved From a Different State in the Last Year in Hunterdon County, New Jersey

S0701 | 2023 American Community Survey 5-Year Estimates

Residential Mobility in the Last Year

in Tewksbury township, Hunterdon County, New Jersey

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Moved within the same county - 2.6%

Moved from different county, same state - 5.2%

Moved from a different state - 1.7%

Moved from abroad - 0.0%



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S0701 | 2023 American Community Survey 5-Year Estimates

Veterans

8.9% ± 5.8%

Veterans in Tewksbury township, Hunterdon County, New Jersey

4.8% ± 0.9%

Veterans in Hunterdon County, New Jersey

S2101 | 2023 American Community Survey 5-Year Estimates

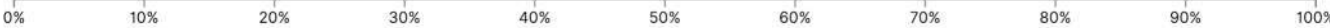
Veterans by Sex

in Tewksbury township, Hunterdon County, New Jersey

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Male - 96.0%

Female - 4.0%



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S2101 | 2023 American Community Survey 5-Year Estimates

Tewksbury township, Hunterdon County, New Jersey

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Populations and People

Total Population

5,870

[P1](#) | [2020 Decennial Census](#)

Education

Bachelor's Degree or Higher

63.6%

[S1501](#) | [2023 American Community Survey 5-Year Estimates](#)

Housing

Total Housing Units

2,370

[B25002](#) | [2023 American Community Survey 5-Year Estimates](#)

Families and Living Arrangements

Total Households

2,278

[DP02](#) | [2023 American Community Survey 5-Year Estimates](#)

Income and Poverty

Median Household Income

\$188,500

[S1901](#) | [2023 American Community Survey 5-Year Estimates](#)

Employment

Employment Rate

56.2%

[DP03](#) | [2023 American Community Survey 5-Year Estimates](#)

Health

Without Health Care Coverage

1.3%

[S2701](#) | [2023 American Community Survey 5-Year Estimates](#)

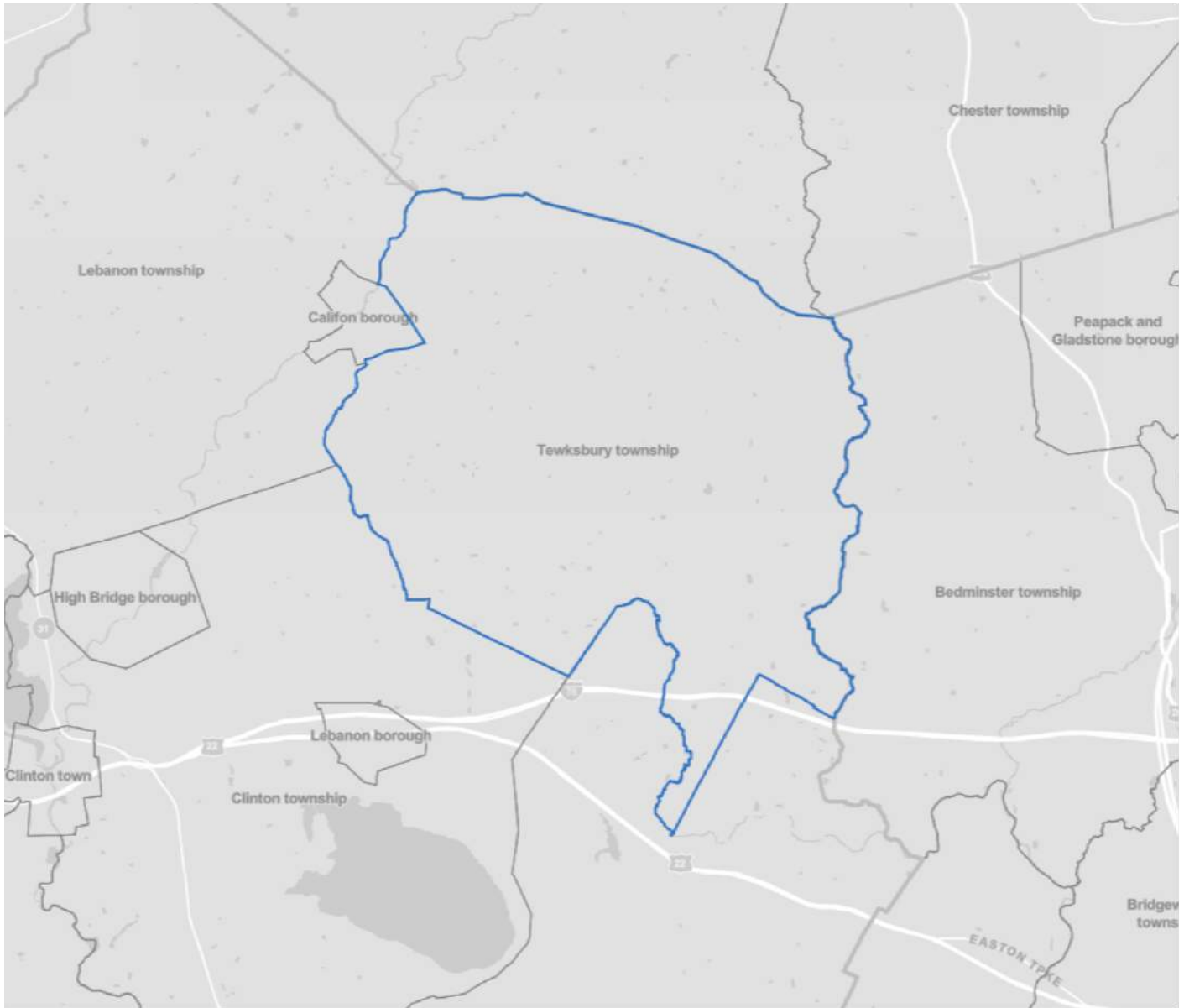
Race and Ethnicity

Hispanic or Latino (of any race)

332

[P9](#) | [2020 Decennial Census](#)

Tewksbury township, Hunterdon County, New Jersey Reference Map



Source: U.S. Census Bureau

Income and Poverty

Income and Earnings

\$188,500 ± \$30,599

Median Household Income in Tewksbury township, Hunterdon County, New Jersey

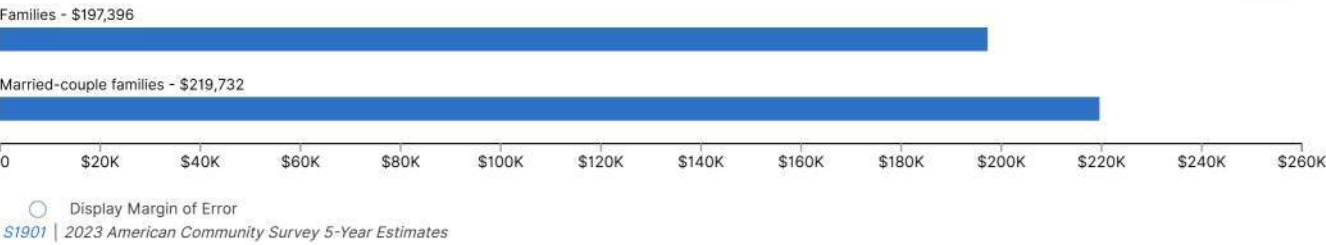
\$136,901 ± \$9,711

Median Household Income in Hunterdon County, New Jersey

[S1901](#) | 2023 American Community Survey 5-Year Estimates

Median Income by Types of Families
in Tewksbury township, Hunterdon County, New Jersey

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Poverty

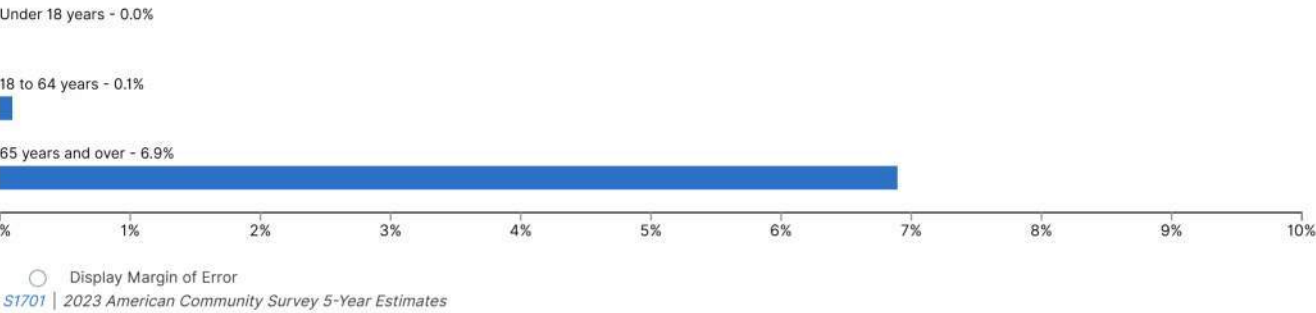
2.0% ± 3.1%
Poverty, All people in Tewksbury township, Hunterdon County, New Jersey

4.2% ± 1.2%
Poverty, All people in Hunterdon County, New Jersey

S1701 | 2023 American Community Survey 5-Year Estimates

Poverty by Age
in Tewksbury township, Hunterdon County, New Jersey

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Tewksbury township, Hunterdon County, New Jersey

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Populations and People

Total Population

5,870

[P1](#) | [2020 Decennial Census](#)

Education

Bachelor's Degree or Higher

63.6%

[S1501](#) | [2023 American Community Survey 5-Year Estimates](#)

Housing

Total Housing Units

2,370

[B25002](#) | [2023 American Community Survey 5-Year Estimates](#)

Families and Living Arrangements

Total Households

2,278

[DP02](#) | [2023 American Community Survey 5-Year Estimates](#)

Income and Poverty

Median Household Income

\$188,500

[S1901](#) | [2023 American Community Survey 5-Year Estimates](#)

Employment

Employment Rate

56.2%

[DP03](#) | [2023 American Community Survey 5-Year Estimates](#)

Health

Without Health Care Coverage

1.3%

[S2701](#) | [2023 American Community Survey 5-Year Estimates](#)

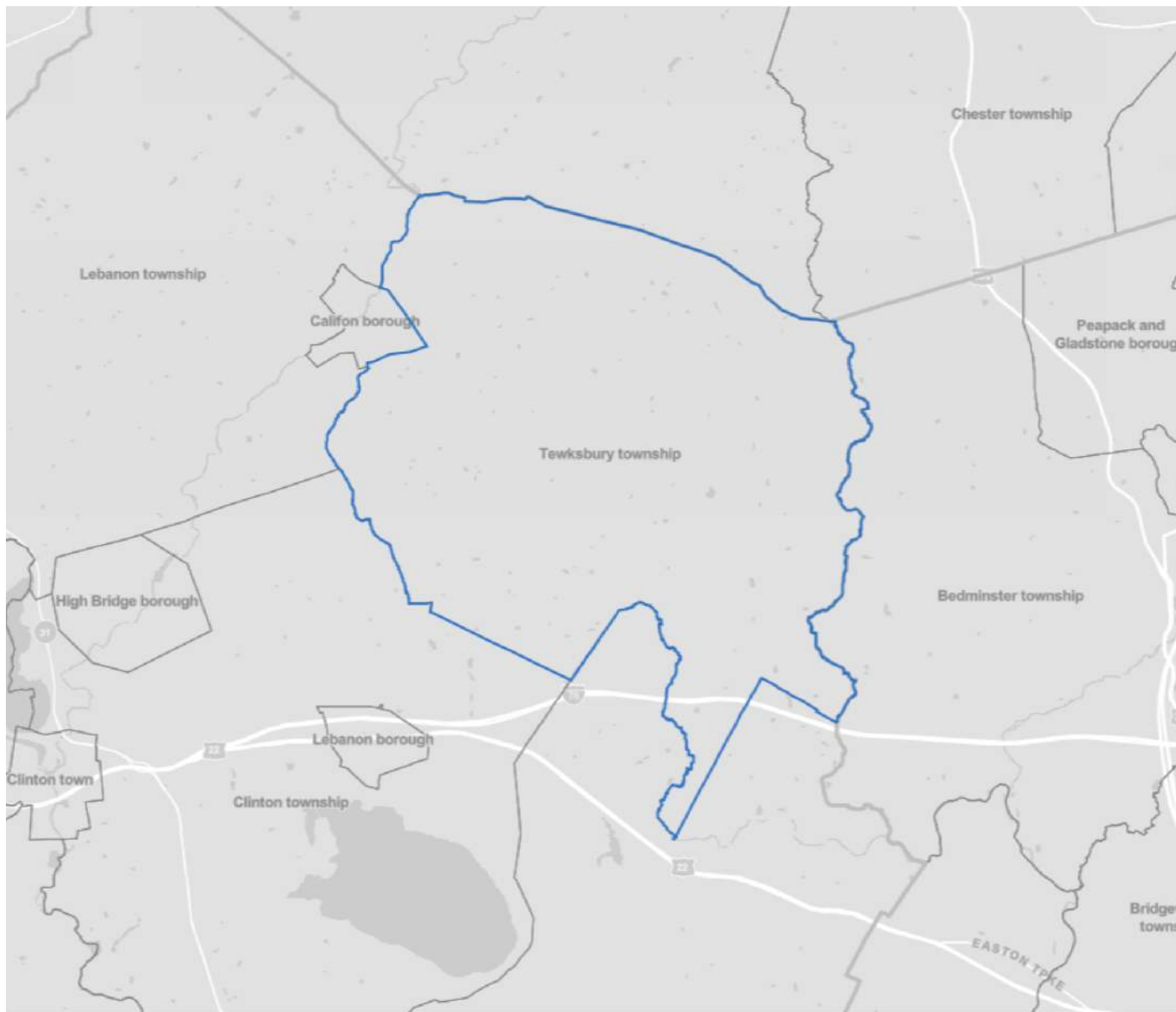
Race and Ethnicity

Hispanic or Latino (of any race)

332

[P9](#) | [2020 Decennial Census](#)

Tewksbury township, Hunterdon County, New Jersey Reference Map



Source: U.S. Census Bureau

Education

Educational Attainment

63.6% \pm 9.5%

Bachelor's Degree or Higher in Tewksbury township, Hunterdon County, New Jersey

57.7% \pm 2.7%

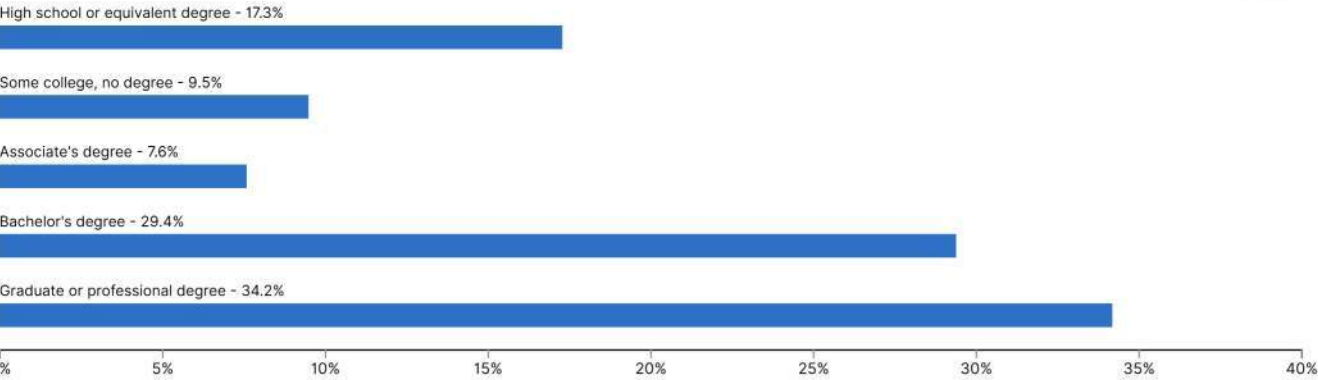
Bachelor's Degree or Higher in Hunterdon County, New Jersey

S1501 | 2023 American Community Survey 5-Year Estimates

Education Attainment (Population 25 Years and Older)

in Tewksbury township, Hunterdon County, New Jersey

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S1501 | 2023 American Community Survey 5-Year Estimates

School Enrollment

78.6% ± 10.7%

School Enrolled Population Enrolled in Kindergarten to 12th Grade in Tewksbury township, Hunterdon County, New Jersey

62.9% ± 3.4%

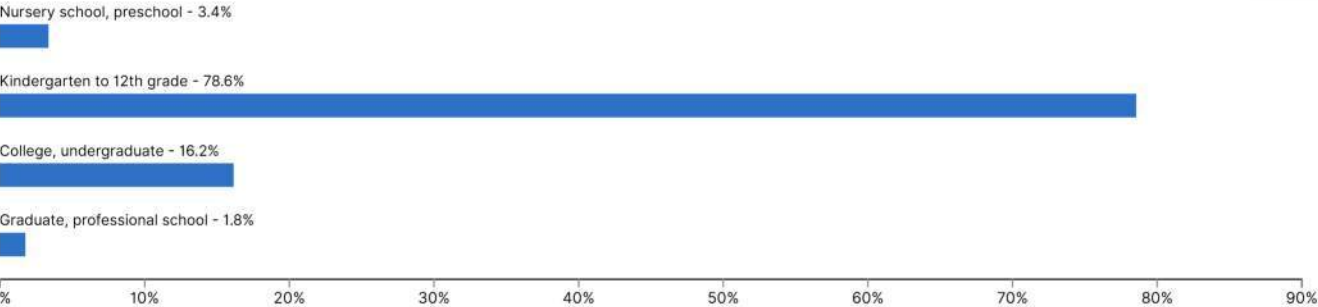
School Enrolled Population Enrolled in Kindergarten to 12th Grade in Hunterdon County, New Jersey

S1401 | 2023 American Community Survey 5-Year Estimates

School Enrollment (Population 3 Years and Over Enrolled in School)

in Tewksbury township, Hunterdon County, New Jersey

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S1401 | 2023 American Community Survey 5-Year Estimates

Tewksbury township, Hunterdon County, New Jersey

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Populations and People

Total Population

5,870

[P1](#) | [2020 Decennial Census](#)

Education

Bachelor's Degree or Higher

63.6%

[S1501](#) | [2023 American Community Survey 5-Year Estimates](#)

Housing

Total Housing Units

2,370

[B25002](#) | [2023 American Community Survey 5-Year Estimates](#)

Families and Living Arrangements

Total Households

2,278

[DP02](#) | [2023 American Community Survey 5-Year Estimates](#)

Income and Poverty

Median Household Income

\$188,500

[S1901](#) | [2023 American Community Survey 5-Year Estimates](#)

Employment

Employment Rate

56.2%

[DP03](#) | [2023 American Community Survey 5-Year Estimates](#)

Health

Without Health Care Coverage

1.3%

[S2701](#) | [2023 American Community Survey 5-Year Estimates](#)

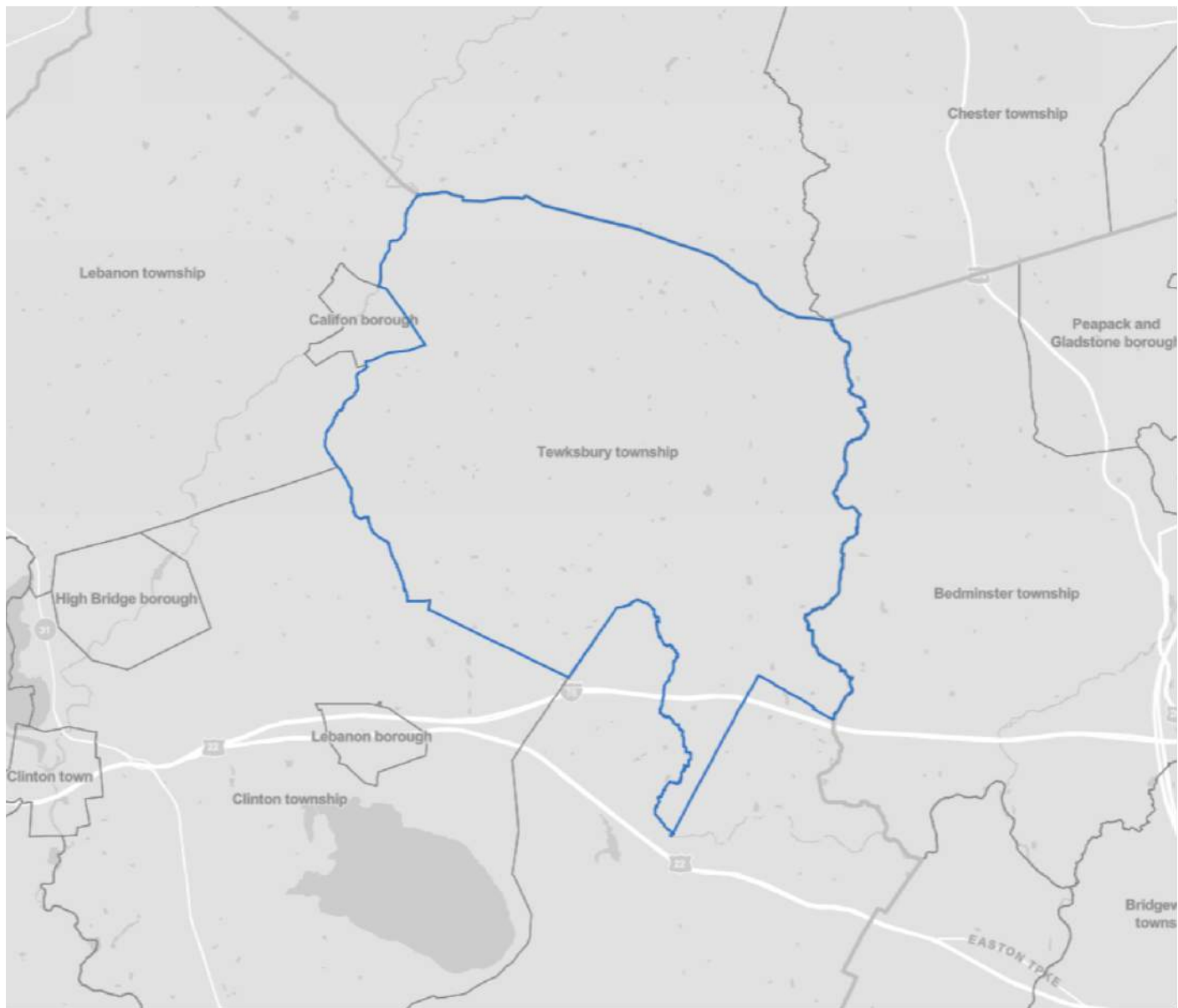
Race and Ethnicity

Hispanic or Latino (of any race)

332

[P9](#) | [2020 Decennial Census](#)

Tewksbury township, Hunterdon County, New Jersey Reference Map



Source: U.S. Census Bureau

Employment

Class of Worker

12.8% ± 4.6%

Local, state, and federal government workers in Tewksbury township, Hunterdon County, New Jersey

14.9% ± 2.3%

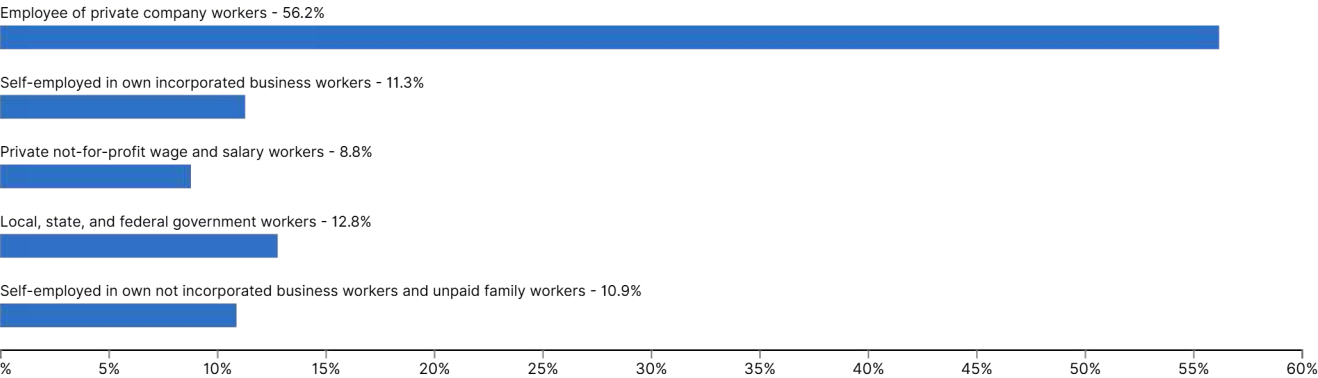
Local, state, and federal government workers in Hunterdon County, New Jersey

[S2406](#) | 2023 American Community Survey 5-Year Estimates

Class of Worker

in Tewksbury township, Hunterdon County, New Jersey

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S2406 | 2023 American Community Survey 5-Year Estimates

Commuting

39.6 ± 3.7
Average travel time to work (in minutes) in Tewksbury township, Hunterdon County, New Jersey

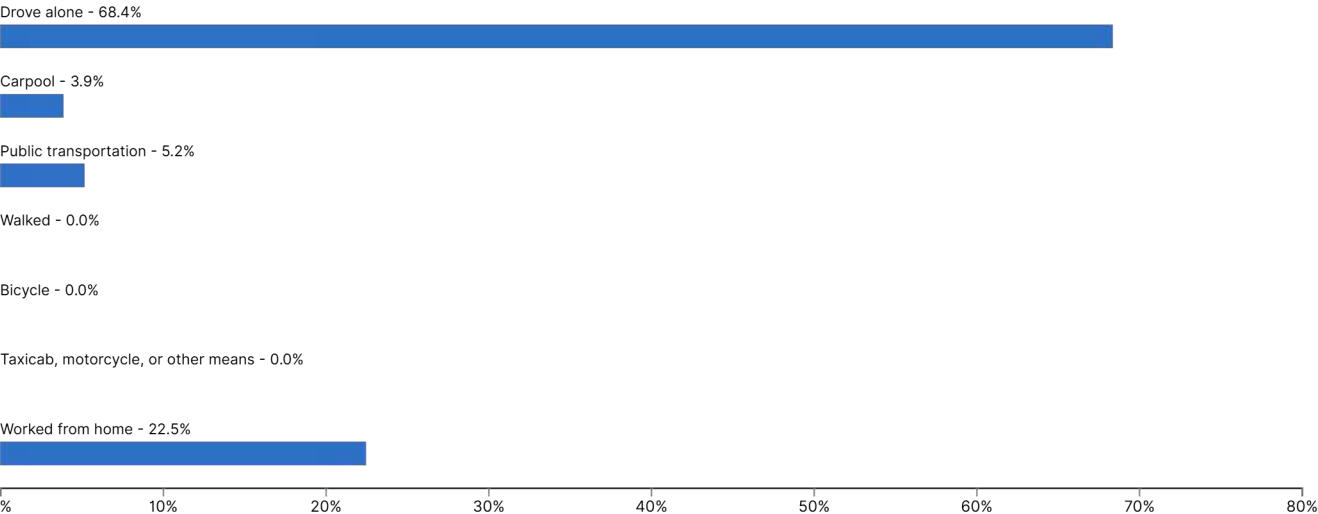
33.7 ± 1.9
Average travel time to work (in minutes) in Hunterdon County, New Jersey

S0801 | 2023 American Community Survey 5-Year Estimates

Means of Transportation to Work (Workers 16 Years and Over)

in Tewksbury township, Hunterdon County, New Jersey

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S0801 | 2023 American Community Survey 5-Year Estimates

Employment and Labor Force Status

56.2% ± 6.7%
Employment Rate in Tewksbury township, Hunterdon County, New Jersey

63.0% ± 2.0%
Employment Rate in Hunterdon County, New Jersey

DP03 | 2023 American Community Survey 5-Year Estimates

Industry

Industry for the Civilian Employed Population 16 Years and Over
in Tewksbury township, Hunterdon County, New Jersey

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Educational services, and health care and social assistance - 27.4%



Professional, scientific, and management, and administrative and waste management services - 21.9%



Manufacturing - 10.5%



Finance and insurance, and real estate and rental and leasing - 8.8%



Construction - 8.3%



Retail trade - 6.1%



Information - 4.2%



Agriculture, forestry, fishing and hunting, and mining - 3.0%



Transportation and warehousing, and utilities - 3.0%



Wholesale trade - 2.3%



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DP03 | 2023 American Community Survey 5-Year Estimates

Occupation

Occupation for the Civilian Employed Population 16 Years and Over
in Tewksbury township, Hunterdon County, New Jersey

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Management, business, science and arts occupations - 1,958



Sales and office occupations - 606



Service occupations - 154



Natural resources, construction, and maintenance occupations - 93



Production, transportation, and material moving occupations - 30



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S2401 | 2023 American Community Survey 5-Year Estimates

Work Experience

44.8 ± 2.3

Mean Usual Hours Worked for Workers in Tewksbury township, Hunterdon County, New Jersey

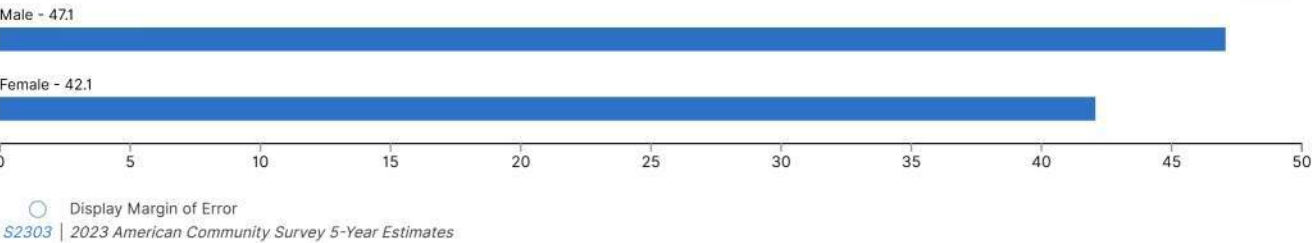
38.1 ± 0.8

Mean Usual Hours Worked for Workers in Hunterdon County, New Jersey

S2303 | 2023 American Community Survey 5-Year Estimates

Mean Usual Hours Worked for Workers by Sex
in Tewksbury township, Hunterdon County, New Jersey

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Tewksbury township, Hunterdon County, New Jersey

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Populations and People

Total Population

5,870

[P1](#) | [2020 Decennial Census](#)

Education

Bachelor's Degree or Higher

63.6%

[S1501](#) | [2023 American Community Survey 5-Year Estimates](#)

Housing

Total Housing Units

2,370

[B25002](#) | [2023 American Community Survey 5-Year Estimates](#)

Families and Living Arrangements

Total Households

2,278

[DP02](#) | [2023 American Community Survey 5-Year Estimates](#)

Income and Poverty

Median Household Income

\$188,500

[S1901](#) | [2023 American Community Survey 5-Year Estimates](#)

Employment

Employment Rate

56.2%

[DP03](#) | [2023 American Community Survey 5-Year Estimates](#)

Health

Without Health Care Coverage

1.3%

[S2701](#) | [2023 American Community Survey 5-Year Estimates](#)

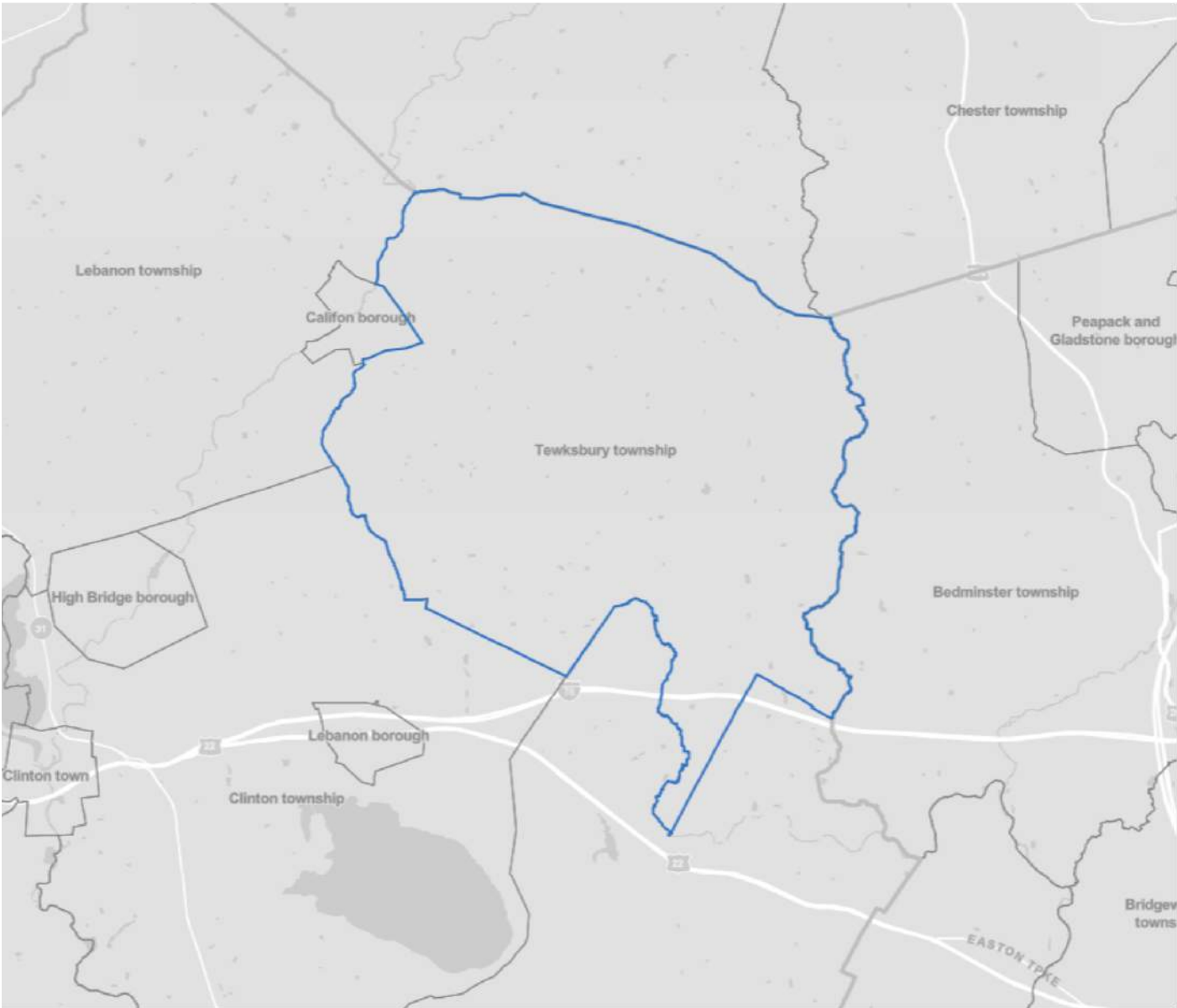
Race and Ethnicity

Hispanic or Latino (of any race)

332

[P9](#) | [2020 Decennial Census](#)

Tewksbury township, Hunterdon County, New Jersey Reference Map



Source: U.S. Census Bureau

Housing

Financial Characteristics

± **

Median Gross Rent in Tewksbury township, Hunterdon County, New Jersey

\$1,780 ± \$116

Median Gross Rent in Hunterdon County, New Jersey

DP04 | 2023 American Community Survey 5-Year Estimates

Occupied Units Paying Rent

in Tewksbury township, Hunterdon County, New Jersey

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Less than \$500 - 62.2%

\$500 to \$999 - 37.8%

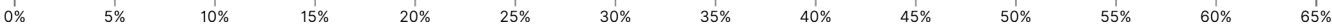
\$1,000 to \$1,499 - 0.0%

\$1,500 to \$1,999 - 0.0%

\$2,000 to \$2,499 - 0.0%

\$2,500 to \$2,999 - 0.0%

\$3,000 or more - 0.0%



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DP04 | 2023 American Community Survey 5-Year Estimates

Homeownership Rate

95.7% \pm 3.1%

Homeownership Rate in Tewksbury township, Hunterdon County, New Jersey

82.2% \pm 2.9%

Homeownership Rate in Hunterdon County, New Jersey

DP04 | 2023 American Community Survey 5-Year Estimates

Housing Value

in Tewksbury township, Hunterdon County, New Jersey

[Share / Embed](#)

Less than \$50,000 - 0.6%

\$50,000 to \$99,999 - 0.0%

\$100,000 to \$149,999 - 0.0%

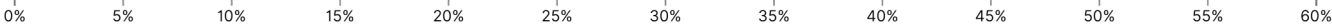
\$150,000 to \$199,999 - 2.7%

\$200,000 to \$299,999 - 1.5%

\$300,000 to \$499,999 - 12.5%

\$500,000 to \$999,999 - 56.9%

\$1,000,000 or more - 25.8%



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DP04 | 2023 American Community Survey 5-Year Estimates

Housing Units

2,370 ± 156

Total Housing Units in Tewksbury township, Hunterdon County, New Jersey

52,633 ± 46

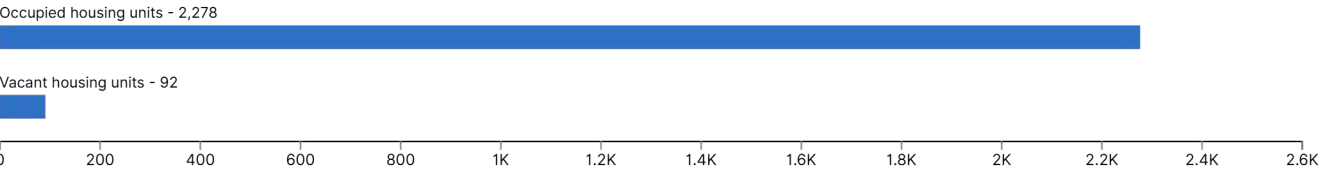
Total Housing Units in Hunterdon County, New Jersey

B25002 | 2023 American Community Survey 5-Year Estimates

Housing Occupancy

in Tewksbury township, Hunterdon County, New Jersey

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B25002 | 2023 American Community Survey 5-Year Estimates

Occupancy Characteristics

2,278 ± 126

Occupied Housing Units in Tewksbury township, Hunterdon County, New Jersey

51,645 ± 577

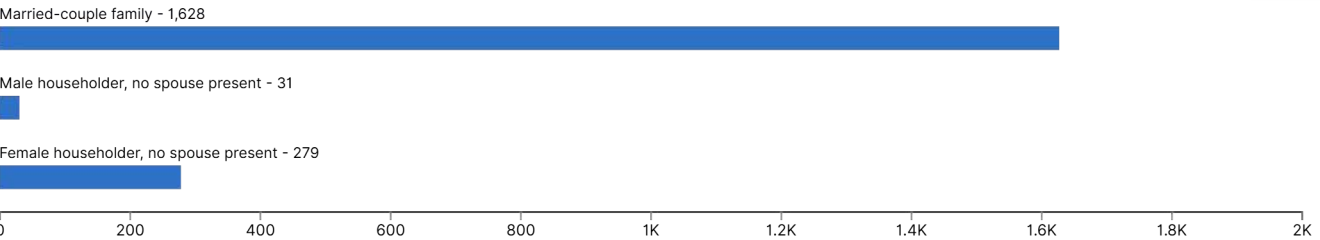
Occupied Housing Units in Hunterdon County, New Jersey

B25002 | 2023 American Community Survey 5-Year Estimates

Owner Occupied Housing Units by Types of Households

in Tewksbury township, Hunterdon County, New Jersey

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S2501 | 2023 American Community Survey 5-Year Estimates

Physical Characteristics

65.2% ± 8.1%

Occupied Housing Units with Four or More Bedrooms in Tewksbury township, Hunterdon County, New Jersey

35.9% ± 2.8%

Occupied Housing Units with Four or More Bedrooms in Hunterdon County, New Jersey

S2504 | 2023 American Community Survey 5-Year Estimates

Bedrooms in Occupied Housing Units
in Tewksbury township, Hunterdon County, New Jersey

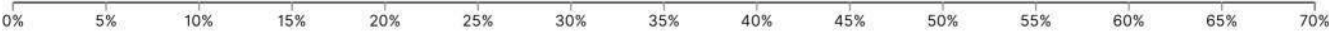
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No bedroom - 1.2%

One bedroom - 2.0%

2 or 3 bedrooms - 31.6%

4 or more bedrooms - 65.2%



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[S2504](#) | 2023 American Community Survey 5-Year Estimates

Vacancy

92 ± 99
Vacant Housing Units in Tewksbury township, Hunterdon County, New Jersey

988 ± 584
Vacant Housing Units in Hunterdon County, New Jersey

[B25002](#) | 2023 American Community Survey 5-Year Estimates

Tewksbury township, Hunterdon County, New Jersey

Tewksbury township, Hunterdon County, New Jersey is a city, town, place equivalent, or township located in [Hunterdon County, New Jersey](#). Tewksbury township, Hunterdon County, New Jersey has a land area of 31.6 square miles.

Populations and People

Total Population
5,870
[P1](#) | [2020 Decennial Census](#)

Education

Bachelor's Degree or Higher
63.6%
[S1501](#) | [2023 American Community Survey 5-Year Estimates](#)

Housing

Total Housing Units
2,370
[B25002](#) | [2023 American Community Survey 5-Year Estimates](#)

Families and Living Arrangements

Total Households
2,278
[DP02](#) | [2023 American Community Survey 5-Year Estimates](#)

Income and Poverty

Median Household Income
\$188,500
[S1901](#) | [2023 American Community Survey 5-Year Estimates](#)

Employment

Employment Rate
56.2%
[DP03](#) | [2023 American Community Survey 5-Year Estimates](#)

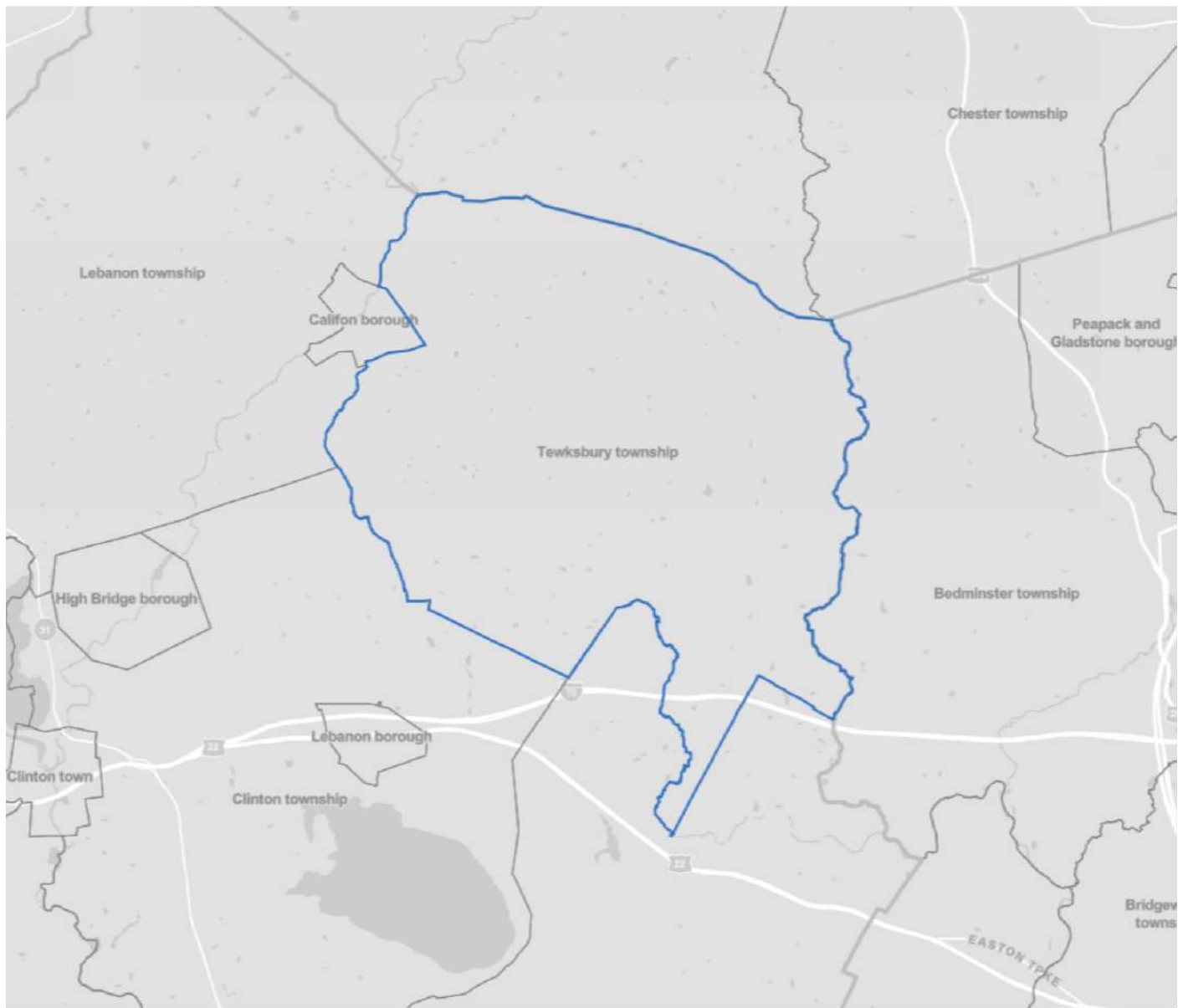
Health

Without Health Care Coverage
1.3%
[S2701](#) | [2023 American Community Survey 5-Year Estimates](#)

Race and Ethnicity

Hispanic or Latino (of any race)
332
[P9](#) | [2020 Decennial Census](#)

Tewksbury township, Hunterdon County, New Jersey Reference Map



Source: U.S. Census Bureau

Health

Disability

8.9% ± 4.0%

Disabled Population in Tewksbury township, Hunterdon County, New Jersey

9.4% ± 1.3%

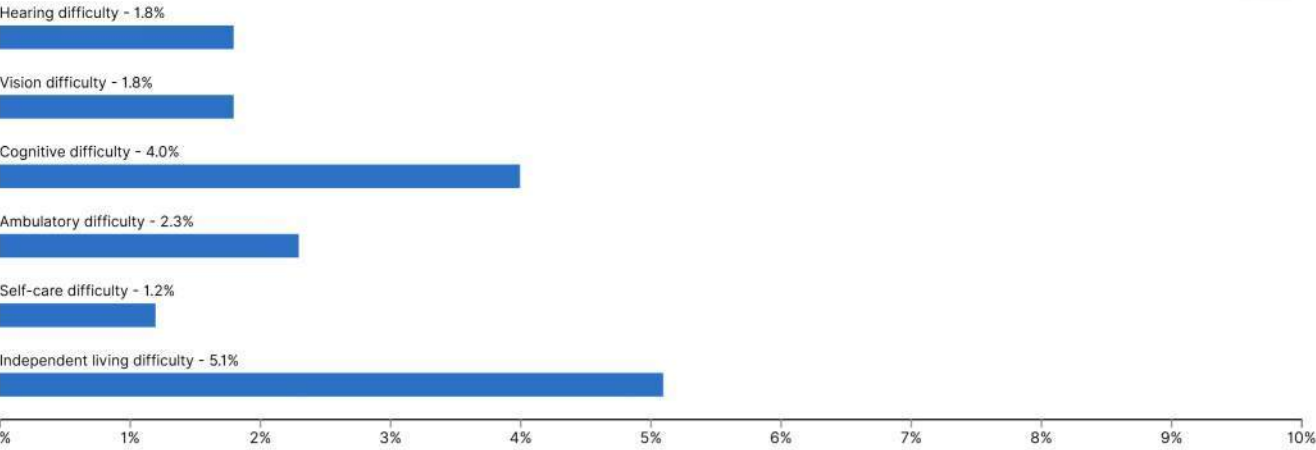
Disabled Population in Hunterdon County, New Jersey

S1810 | 2023 American Community Survey 5-Year Estimates

Types of Disabilities

in Tewksbury township, Hunterdon County, New Jersey

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S1810 | 2023 American Community Survey 5-Year Estimates

Fertility

775 ± 172
Women 15 to 50 years old in Tewksbury township, Hunterdon County, New Jersey

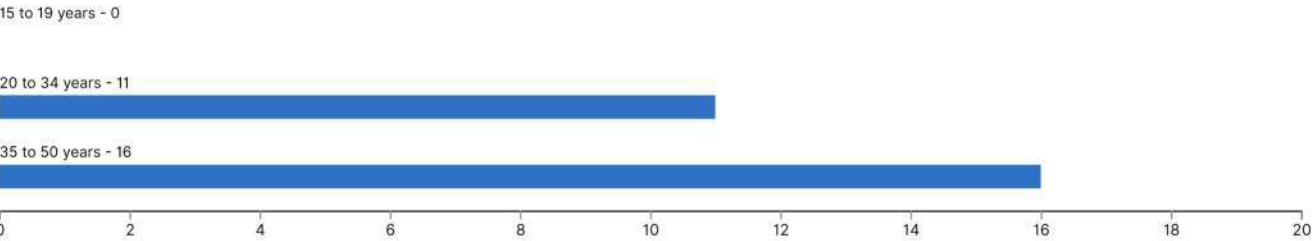
25,757 ± 470
Women 15 to 50 years old in Hunterdon County, New Jersey

S1301 | 2023 American Community Survey 5-Year Estimates

Women with Births in the Past 12 Months

in Tewksbury township, Hunterdon County, New Jersey

Share / Embed



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S1301 | 2023 American Community Survey 5-Year Estimates

Health Insurance

1.3% ± 1.6%
Without Health Care Coverage in Tewksbury township, Hunterdon County, New Jersey

2.3% ± 0.9%
Without Health Care Coverage in Hunterdon County, New Jersey

S2701 | 2023 American Community Survey 5-Year Estimates

Tewksbury township, Hunterdon County, New Jersey

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Populations and People

Total Population
5,870
[P1](#) | [2020 Decennial Census](#)

Education

Bachelor's Degree or Higher
63.6%
[S1501](#) | [2023 American Community Survey 5-Year Estimates](#)

Housing

Total Housing Units
2,370
[B25002](#) | [2023 American Community Survey 5-Year Estimates](#)

Families and Living Arrangements

Total Households
2,278
[DP02](#) | [2023 American Community Survey 5-Year Estimates](#)

Income and Poverty

Median Household Income
\$188,500
[S1901](#) | [2023 American Community Survey 5-Year Estimates](#)

Employment

Employment Rate
56.2%
[DP03](#) | [2023 American Community Survey 5-Year Estimates](#)

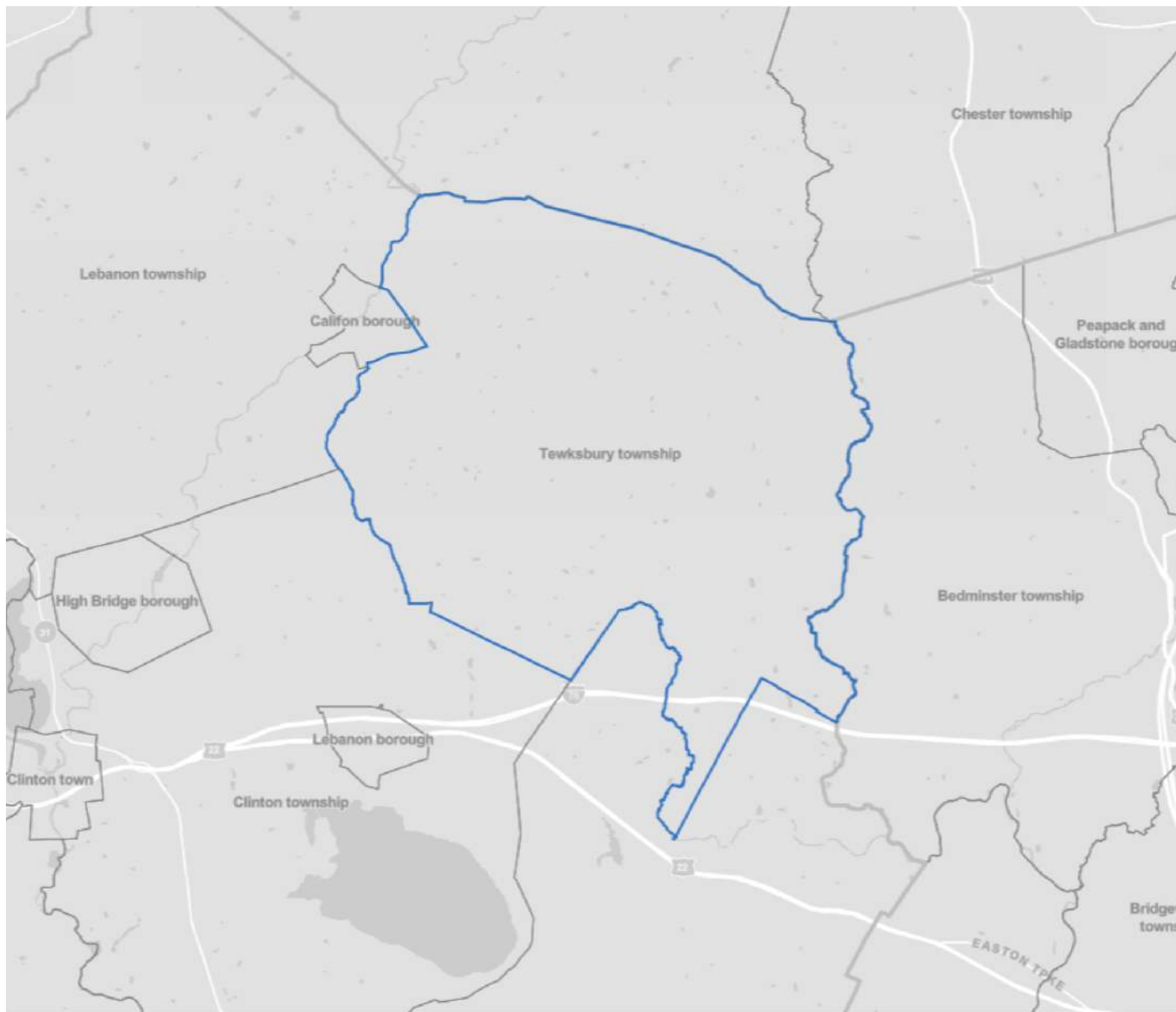
Health

Without Health Care Coverage
1.3%
[S2701](#) | [2023 American Community Survey 5-Year Estimates](#)

Race and Ethnicity

Hispanic or Latino (of any race)
332
[P9](#) | [2020 Decennial Census](#)

Tewksbury township, Hunterdon County, New Jersey Reference Map



Source: U.S. Census Bureau

Families and Living Arrangements

Children

18.3% \pm 3.5%

Under 18 years old in Tewksbury township, Hunterdon County, New Jersey

18.6% \pm 0.3%

Under 18 years old in Hunterdon County, New Jersey

S0101 | 2023 American Community Survey 5-Year Estimates

Children Under 18 by Age Range

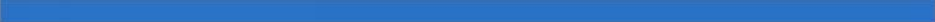
in Tewksbury township, Hunterdon County, New Jersey

Share / Embed

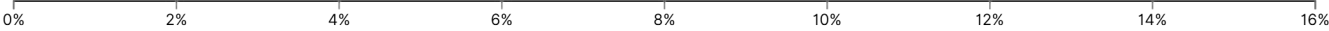
Under 5 years - 1.6%



5 to 14 years - 11.5%



15 to 17 years - 5.2%



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S0101 | 2023 American Community Survey 5-Year Estimates

Families and Household Characteristics

2.80 ± 0.19

Average Family Size in Tewksbury township, Hunterdon County, New Jersey

3.00 ± 0.10

Average Family Size in Hunterdon County, New Jersey

DP02 | 2023 American Community Survey 5-Year Estimates

Total Households by Type of Households

in Tewksbury township, Hunterdon County, New Jersey

Share / Embed

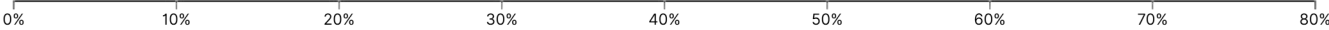
Married-couple family household - 71.5%



Male householder, no spouse/partner present, family household - 5.9%



Female householder, no spouse/partner present, family household - 18.7%



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DP02 | 2023 American Community Survey 5-Year Estimates

Marital Status and Marital History

18.4% ± 5.5%

Never Married in Tewksbury township, Hunterdon County, New Jersey

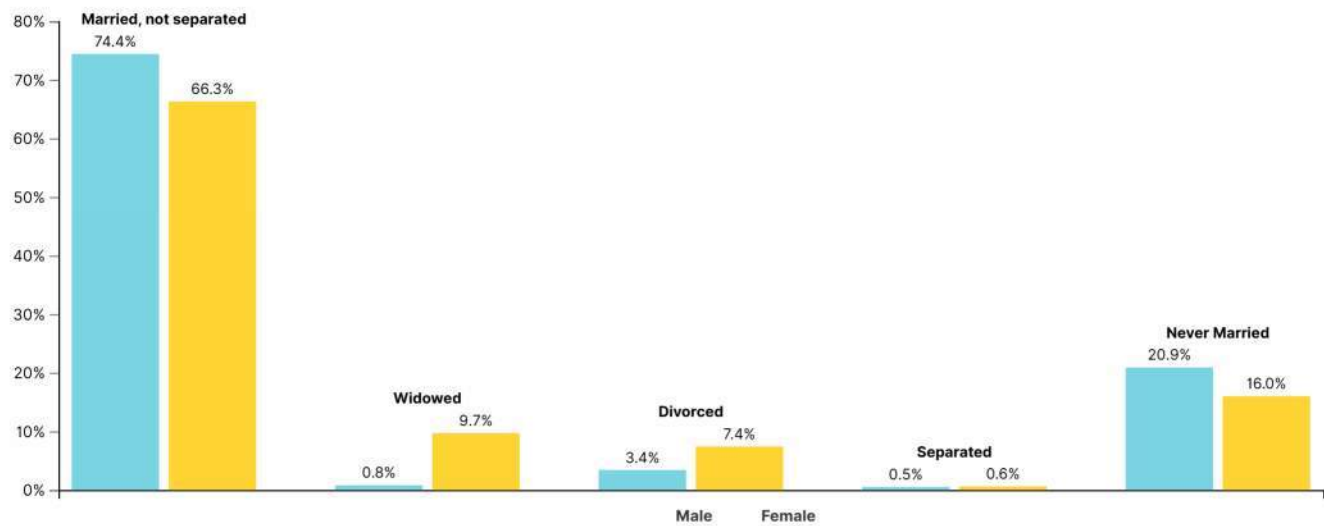
N ± N

Never Married in Hunterdon County, New Jersey

S1201 | 2023 American Community Survey 5-Year Estimates

Marital Status by Sex
in Tewksbury township, Hunterdon County, New Jersey

Share / Embed



○ Display Margin of Error
S1201 | 2023 ACS 5-Year Estimates Subject Tables

Tewksbury township, Hunterdon County, New Jersey

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Populations and People

Total Population

5,870

[P1](#) | [2020 Decennial Census](#)

Education

Bachelor's Degree or Higher

63.6%

[S1501](#) | [2023 American Community Survey 5-Year Estimates](#)

Housing

Total Housing Units

2,370

[B25002](#) | [2023 American Community Survey 5-Year Estimates](#)

Families and Living Arrangements

Total Households

2,278

[DP02](#) | [2023 American Community Survey 5-Year Estimates](#)

Income and Poverty

Median Household Income

\$188,500

[S1901](#) | [2023 American Community Survey 5-Year Estimates](#)

Employment

Employment Rate

56.2%

[DP03](#) | [2023 American Community Survey 5-Year Estimates](#)

Health

Without Health Care Coverage

1.3%

[S2701](#) | [2023 American Community Survey 5-Year Estimates](#)

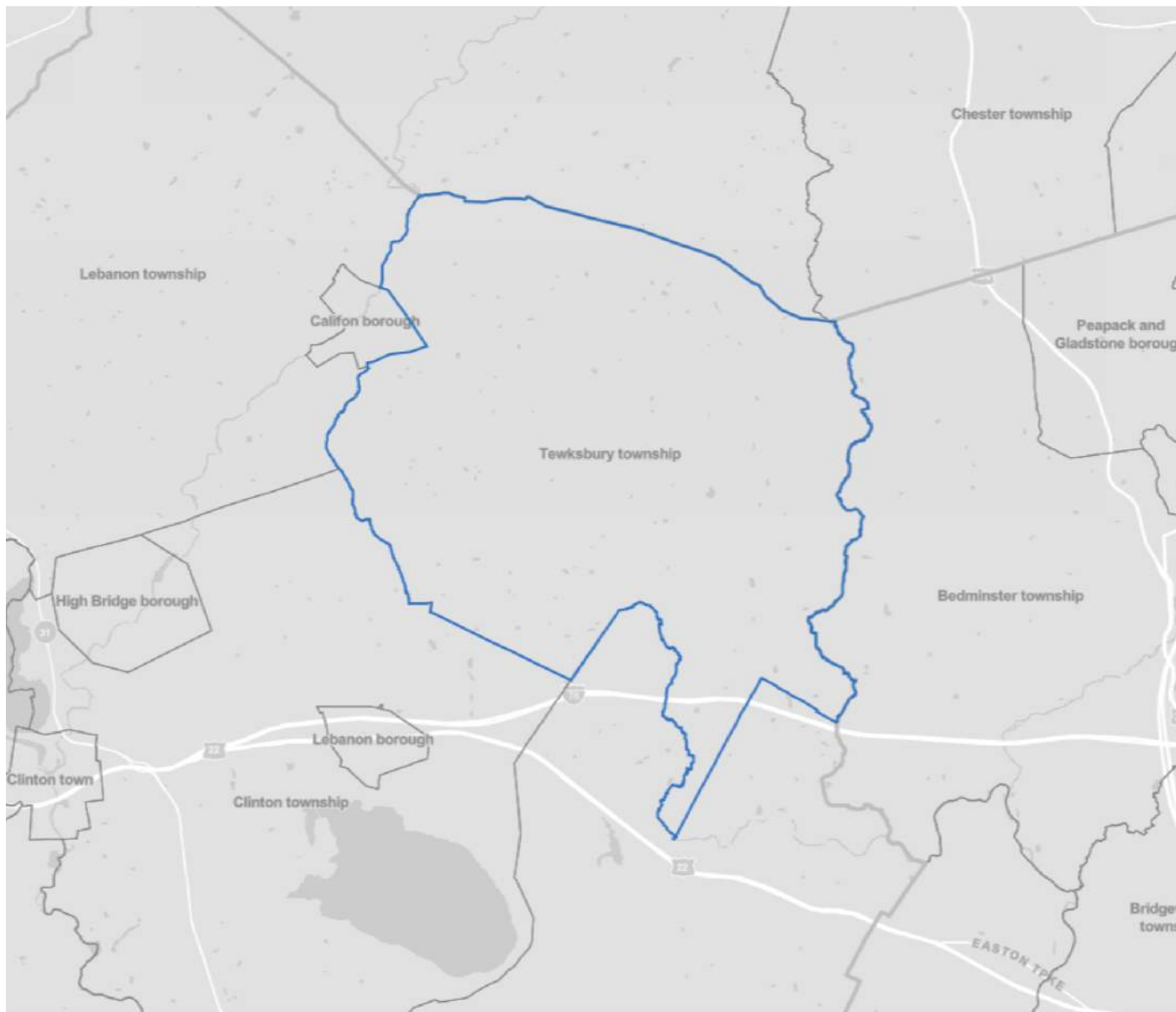
Race and Ethnicity

Hispanic or Latino (of any race)

332

[P9](#) | [2020 Decennial Census](#)

Tewksbury township, Hunterdon County, New Jersey Reference Map



Source: U.S. Census Bureau

Race and Ethnicity

American Indian and Alaska Native

1

American Indian and Alaska Native alone in Tewksbury township, Hunterdon County, New Jersey

282

American Indian and Alaska Native alone in Hunterdon County, New Jersey

P8 | 2020 Decennial Census

Asian

233

Asian alone in Tewksbury township, Hunterdon County, New Jersey

5,714

Asian alone in Hunterdon County, New Jersey

[P8](#) | 2020 Decennial Census

Black or African American

55

Black or African American alone in Tewksbury township, Hunterdon County, New Jersey

3,174

Black or African American alone in Hunterdon County, New Jersey

[P8](#) | 2020 Decennial Census

Hispanic or Latino

332

Hispanic or Latino (of any race) in Tewksbury township, Hunterdon County, New Jersey

10,929

Hispanic or Latino (of any race) in Hunterdon County, New Jersey

[P9](#) | 2020 Decennial Census

Native Hawaiian and Other Pacific Islander

0

Native Hawaiian and Other Pacific Islander alone in Tewksbury township, Hunterdon County, New Jersey

23

Native Hawaiian and Other Pacific Islander alone in Hunterdon County, New Jersey

[P8](#) | 2020 Decennial Census

Not Hispanic or Latino

5,019

White alone, not Hispanic or Latino in Tewksbury township, Hunterdon County, New Jersey

104,667

White alone, not Hispanic or Latino in Hunterdon County, New Jersey

[P9](#) | 2020 Decennial Census

Some Other Race

89

Some Other Race alone in Tewksbury township, Hunterdon County, New Jersey

4,105

Some Other Race alone in Hunterdon County, New Jersey

[P8](#) | 2020 Decennial Census

Two or More Races

404

Two or More Races in Tewksbury township, Hunterdon County, New Jersey

8,859

Two or More Races in Hunterdon County, New Jersey

[P8](#) | 2020 Decennial Census

White

5,088

White alone in Tewksbury township, Hunterdon County, New Jersey

106,790

White alone in Hunterdon County, New Jersey

P8 | 2020 Decennial Census

Appendix B

Municipally-Operated Outfall Database

**AVAILABLE
UPON
REQUEST**

Appendix C

Municipal Conveyance Network Database

**AVAILABLE
UPON
REQUEST**

Appendix D

Non-Municipally Operated Stormwater Management Facility Database

**AVAILABLE
UPON
REQUEST**

Appendix E

Mapping Figures

Appendix E - Map 1

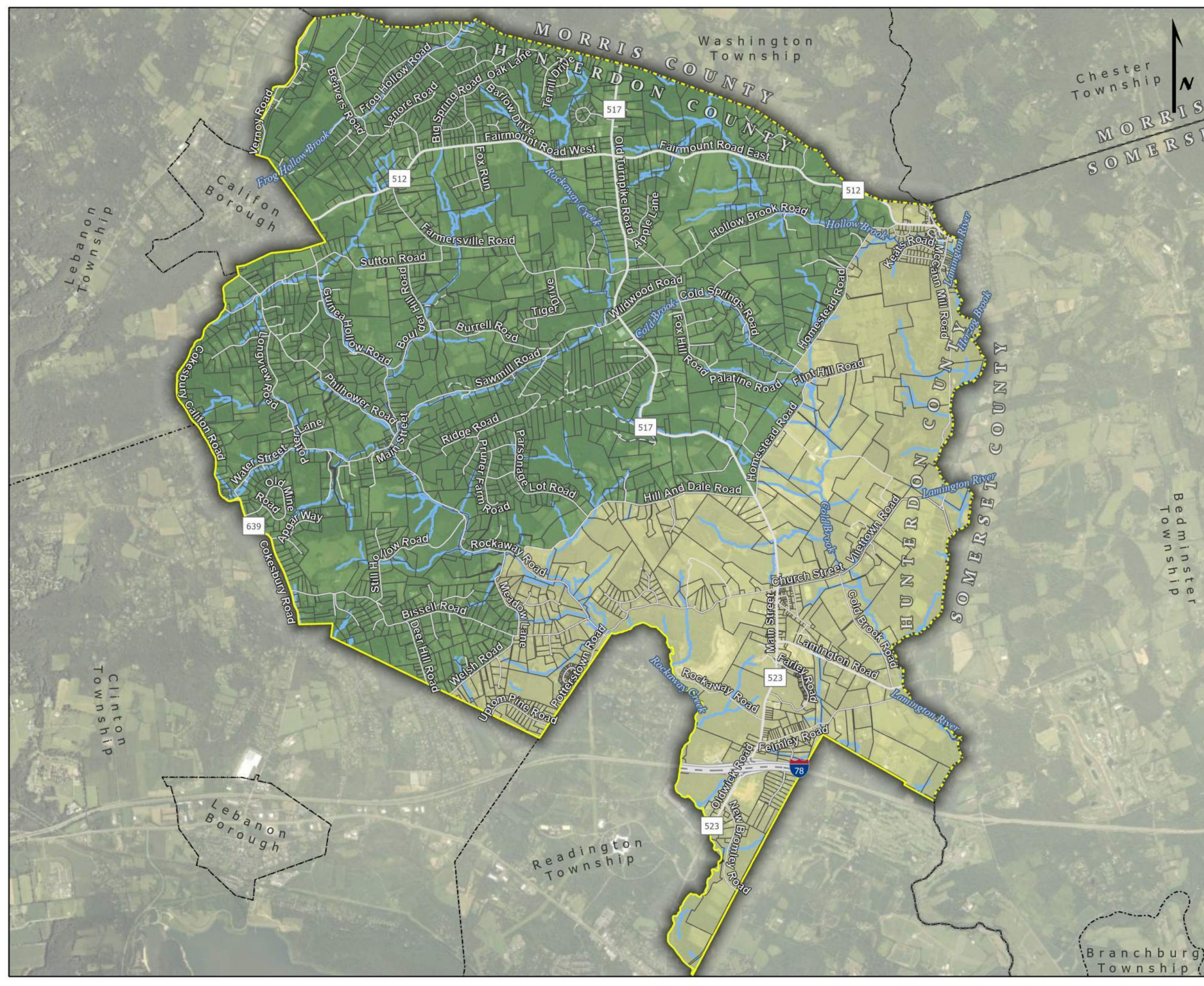
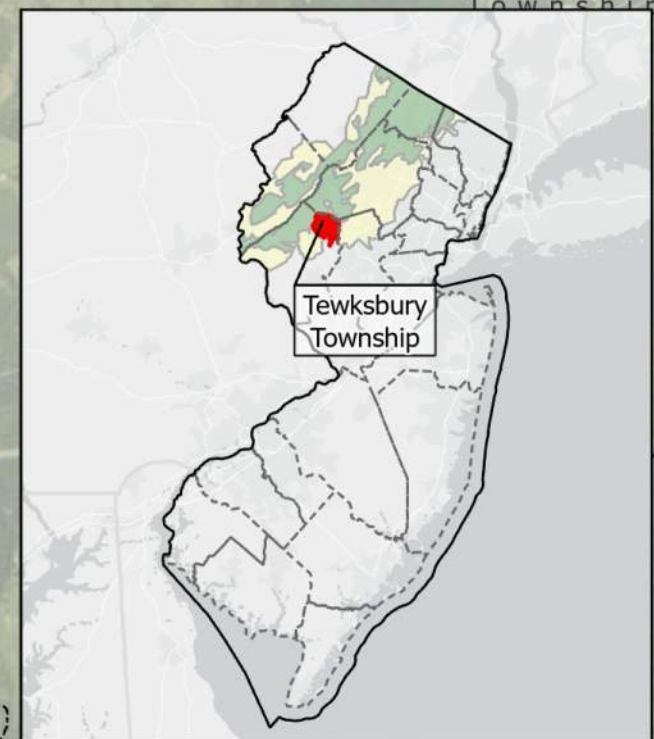
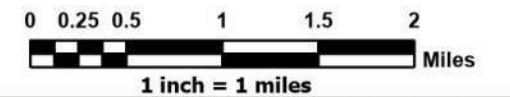
**Tewksbury Township
Hunterdon County, New Jersey**

Sources: NJGIN, ModIV Data,
NJDOT, U.S.G.S., NJ Highlands Council

2025



- Counties
- Municipalities
- Tewksbury Township
- Parcels
- NJ Highlands Council
- Highlands Planning Area
- Highlands Preservation Area
- Streams
- Road Jurisdiction
 - Private
 - Municipal
 - County
 - State



Appendix E - Map 2

2020 Census Data
Tewksbury Township
Hunterdon County, New Jersey

Sources: NJGIN, ModIV Data,
NJDOT, U.S.G.S.

2025



Counties

Municipalities

Tewksbury Township

Sub-watershed (HUC14)

Census Block Bar Chart

Population

Selected fields

2,000

1,000

0

0

0.25

0.5

1

1.5

2

Miles

1 inch = 1 miles

Census Blocks Population

869

1468

1713

1820

Streams

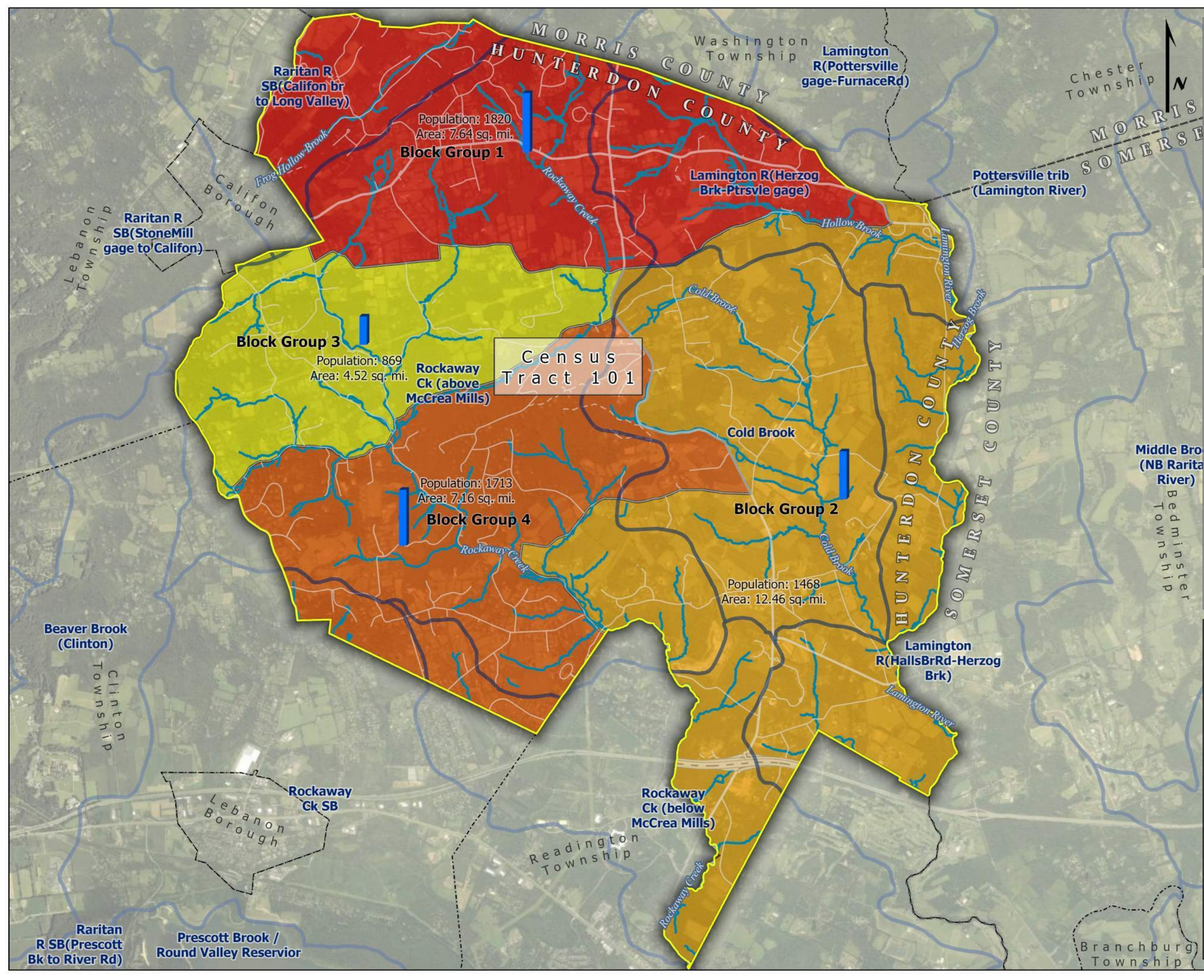
Road Jurisdiction

Private

Municipal

County

State



Appendix E - Map 3

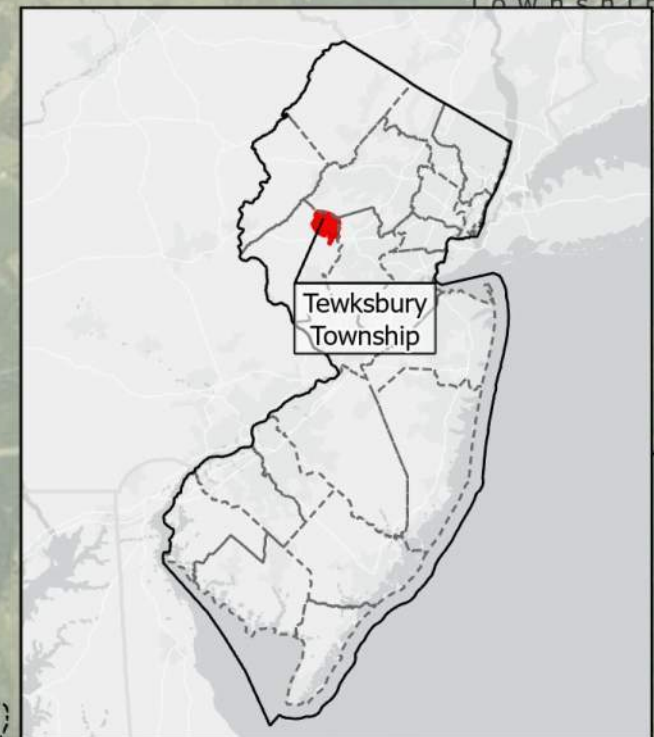
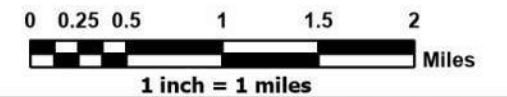
Land Use
Tewksbury Township
Hunterdon County, New Jersey

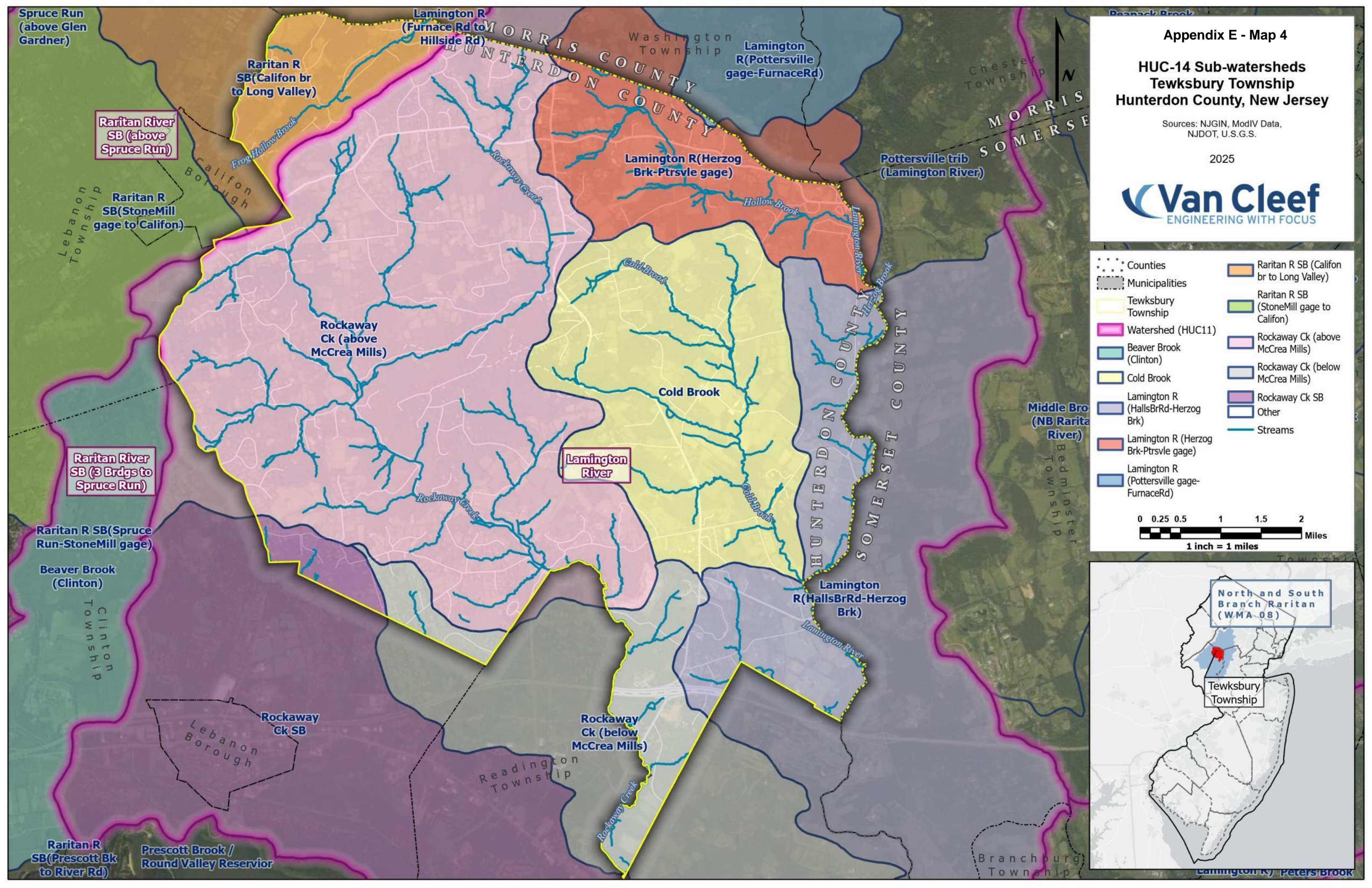
Sources: NJGIN, ModIV Data,
NJDOT, U.S.G.S.

2025



- Counties
- Municipalities
- Tewksbury Township
- Parcels
- Land Use / Land Cover 2020
 - AGRICULTURE
 - BARREN LAND
 - FOREST
 - URBAN
 - WATER
 - WETLANDS
- Streams
- Road Jurisdiction
 - Private
 - Municipal
 - County
 - State





Appendix E - Map 5

Municipally-Operated Stormwater Outfalls Tewksbury Township Hunterdon County, New Jersey

Sources: NJGIN, ModIV Data,
NJDOT, U.S.G.S.

2025



Counties

Municipalities

Tewksbury Township

Sub-watershed (HUC14)

Outfalls

FW2-NT

FW2-NTC1

FW2-TM

FW2-TPC1

Streams (Unclassified)

Private

Municipal

County

State

0

0.25

0.5

1

1.5

2

Miles

1 inch = 1 miles



Appendix E - Map 6

Municipal Stormwater Conveyance Network
Tewksbury Township
Hunterdon County, New Jersey

Sources: NJGIN, ModIV Data,
NJDOT, U.S.G.S.

2025



Counties

Municipalities

Tewksbury Township

Parcels

Sub-watershed (HUC14)

Streams

Road Jurisdiction

Private

Municipal

County

State

Inlets

Outfalls

Stormwater Manholes

Culverts

Stormwater Management Basin

00.250.511.52

Miles

1 inch = 1 miles

Counties

Municipalities

Tewksbury Township

Parcels

Sub-watershed (HUC14)

Streams

Road Jurisdiction

Private

Municipal

County

State

Inlets

Outfalls

Stormwater Manholes

Culverts

Stormwater Management Basin

00.250.511.52

Miles

1 inch = 1 miles



Appendix E - Map 7

Stormwater Interconnections Tewksbury Township Hunterdon County, New Jersey

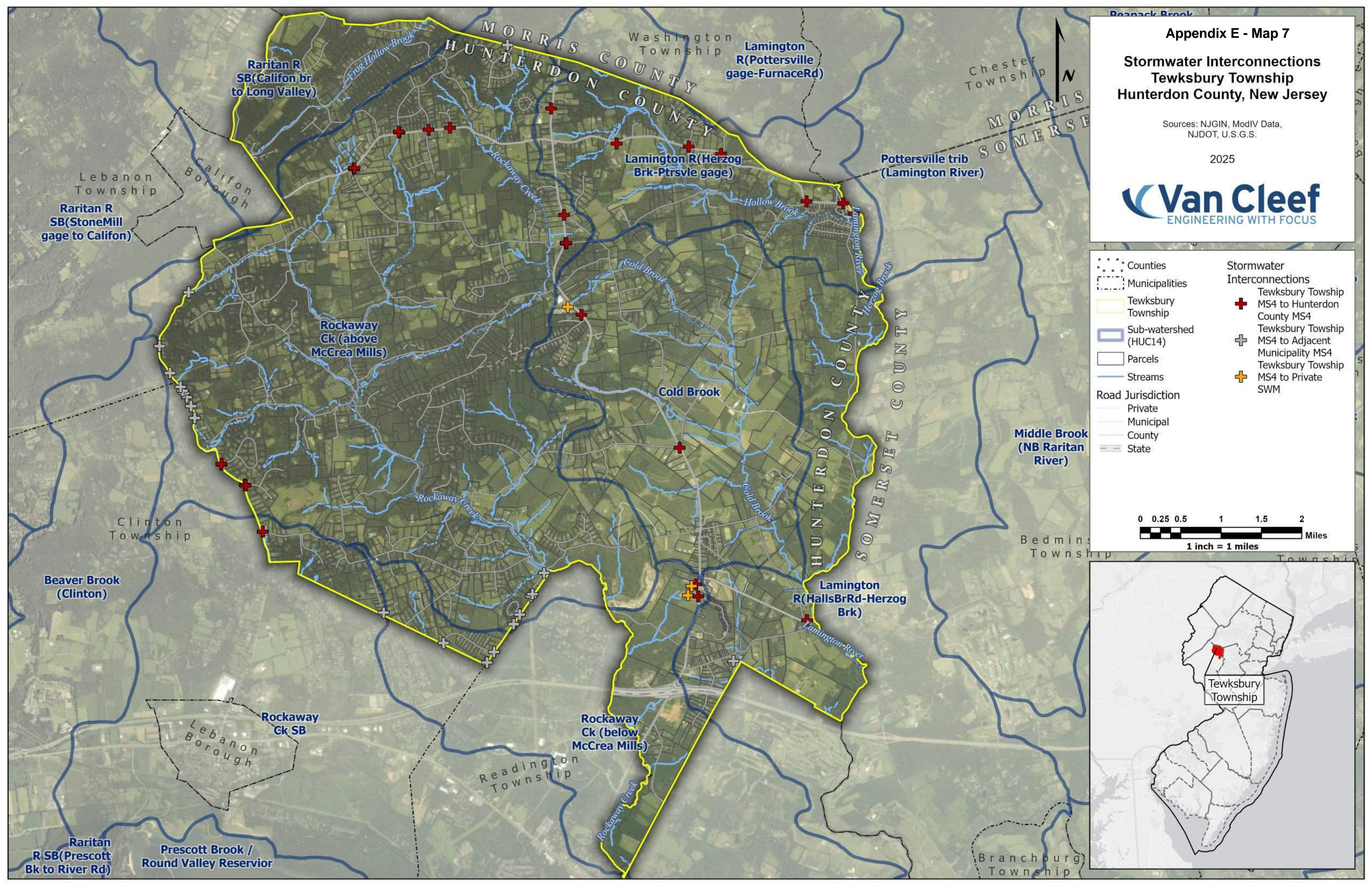
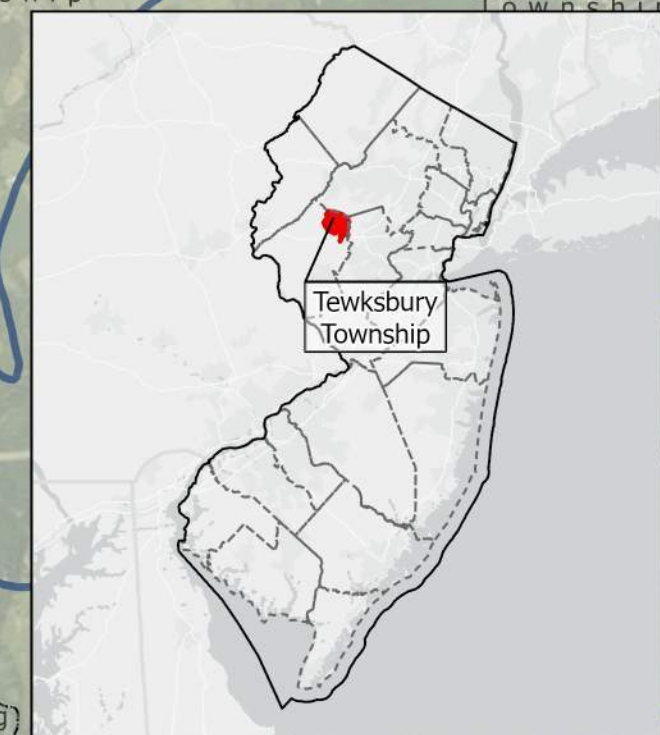
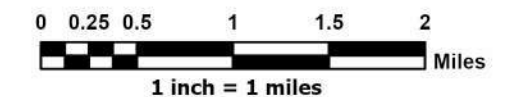
Sources: NJGIN, ModIV Data,
NJDOT, U.S.G.S.

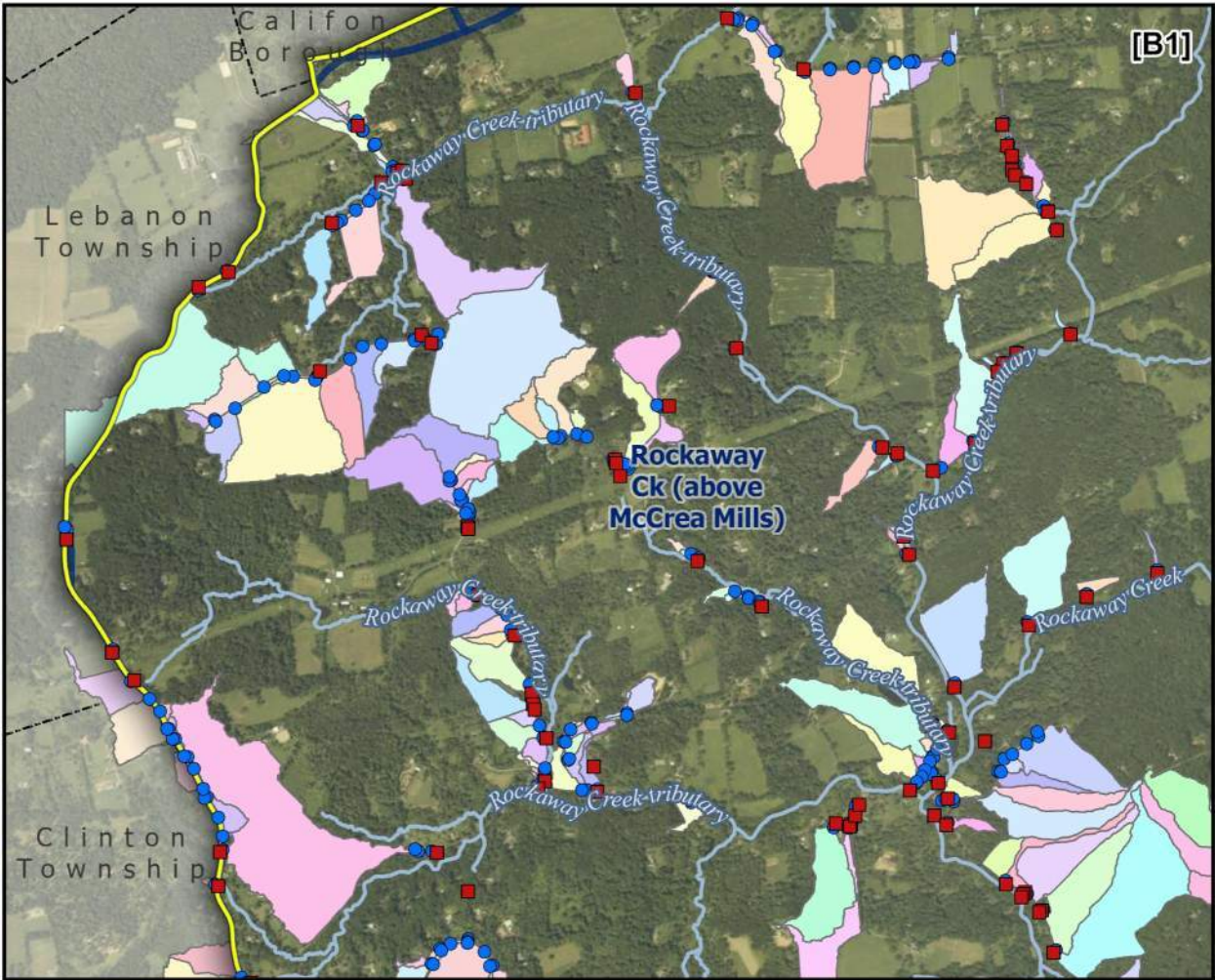
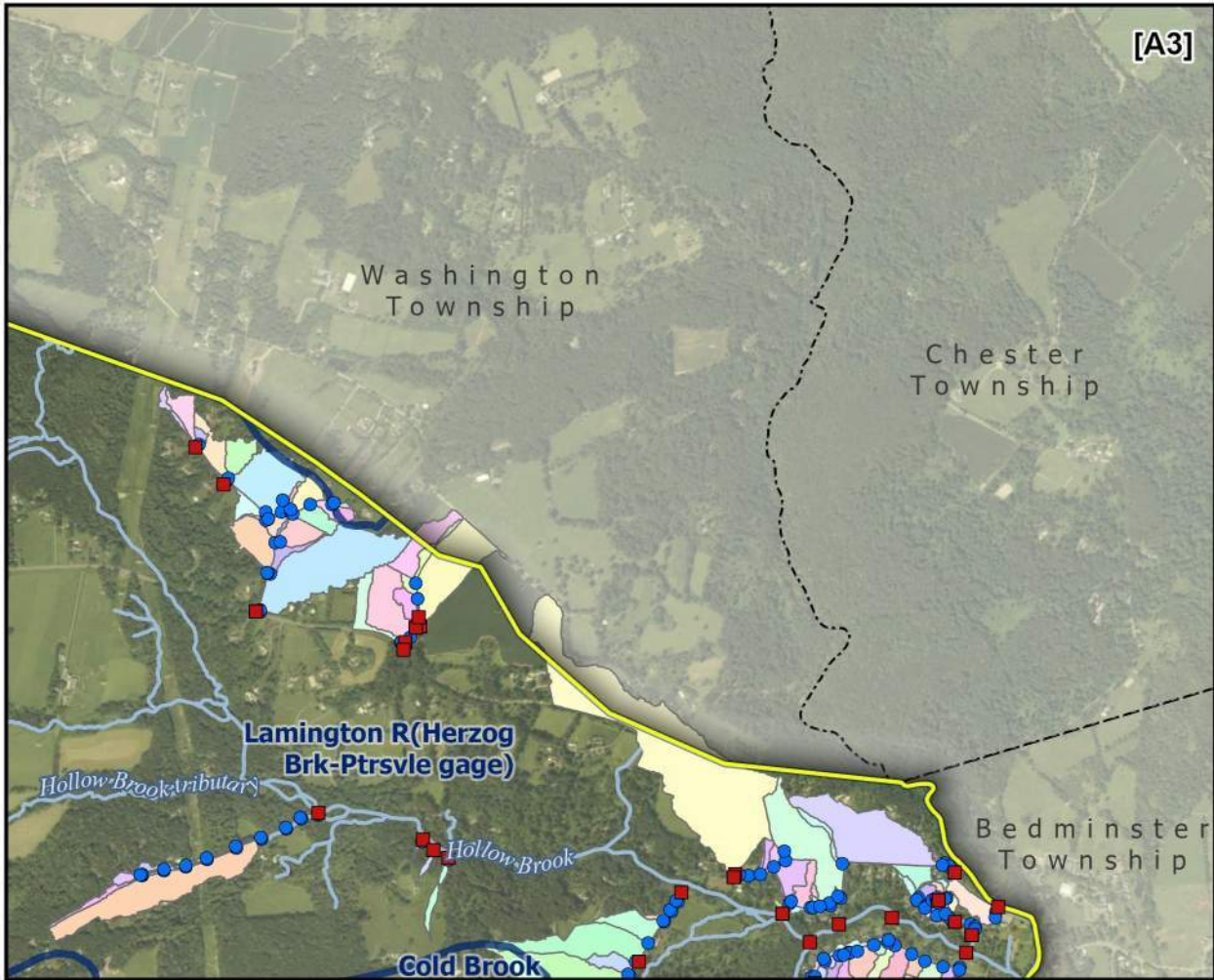
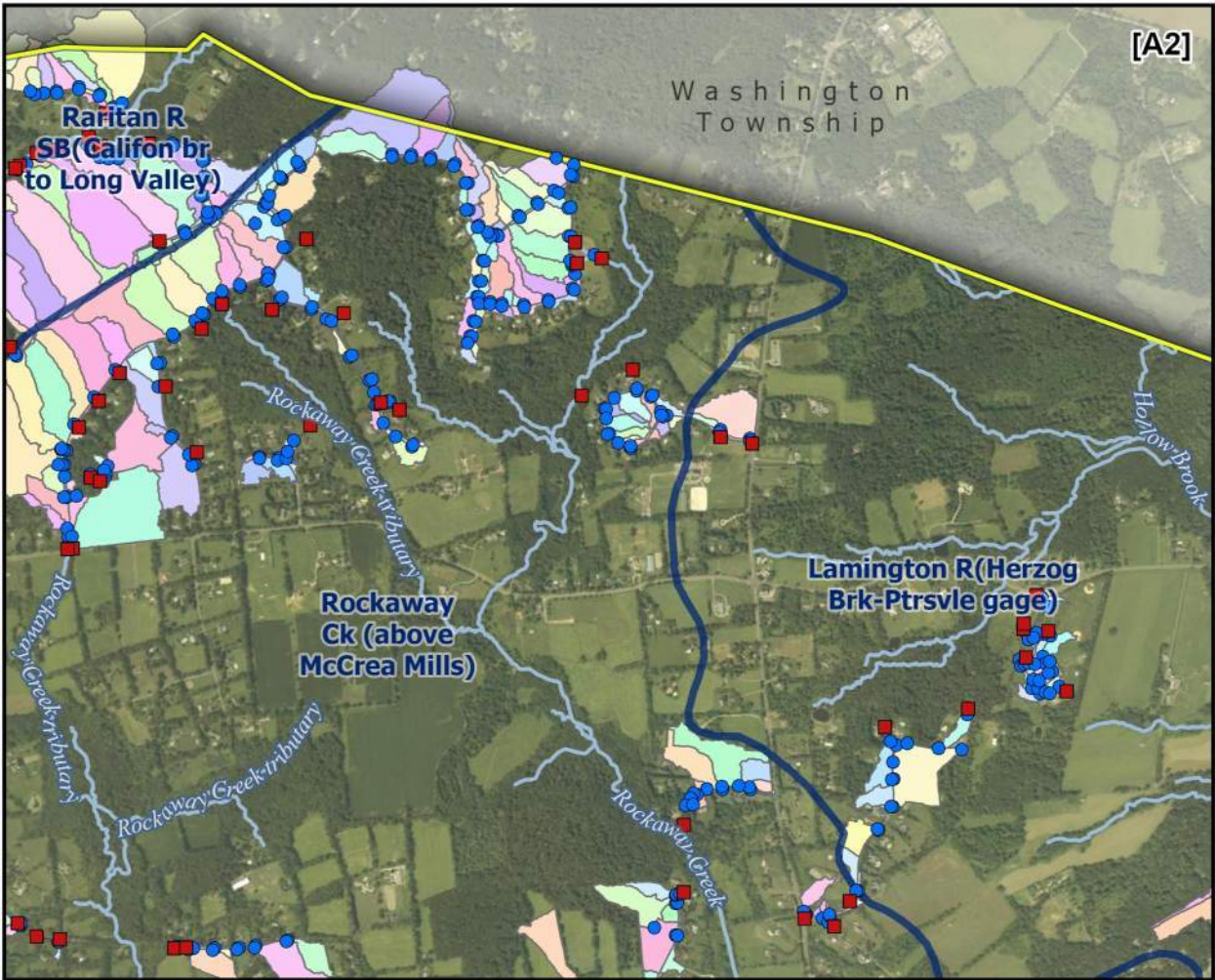
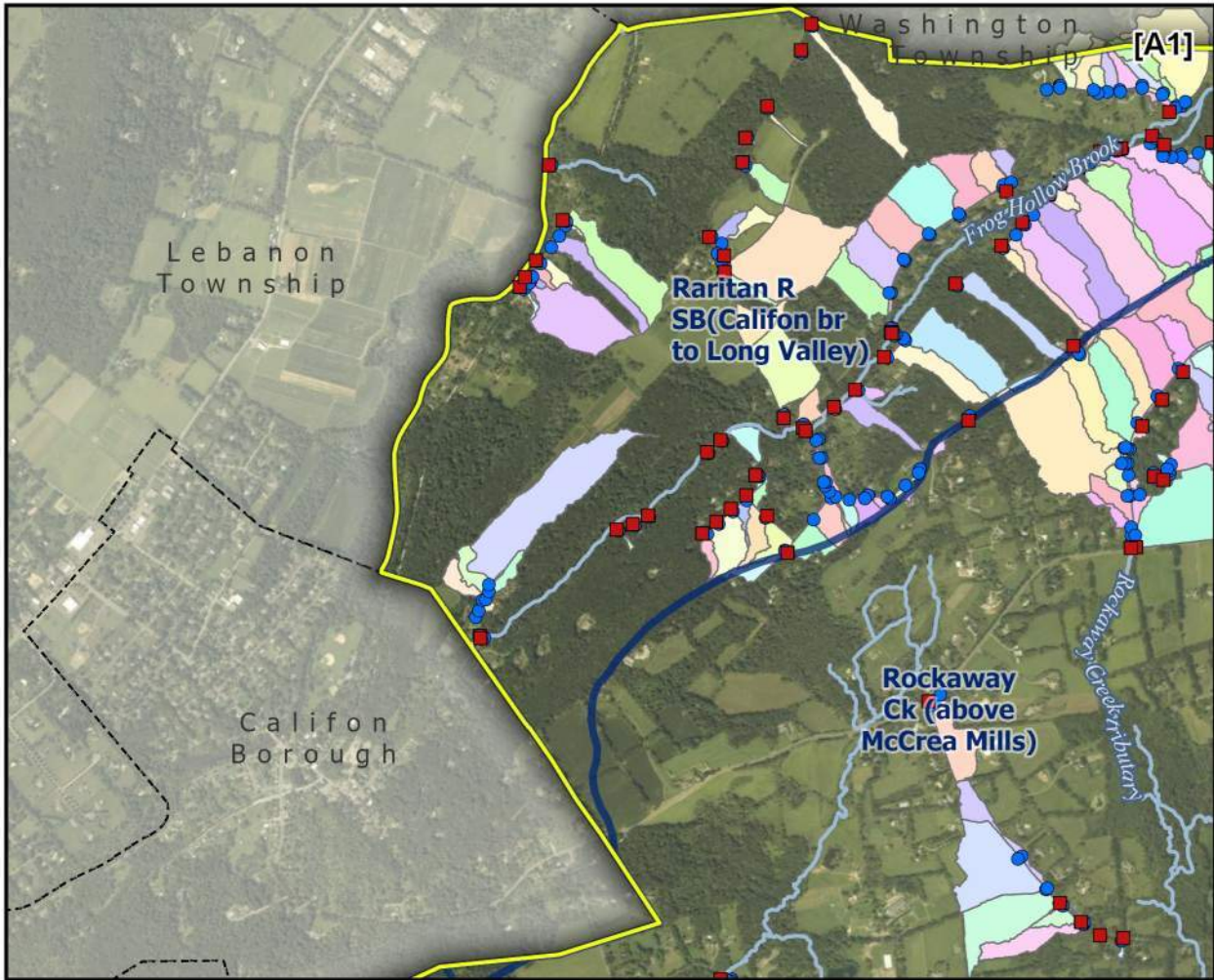
2025



- Stormwater Interconnections**
- Tewksbury Township MS4 to Hunterdon County MS4
 - Tewksbury Township MS4 to Adjacent Municipality MS4
 - Tewksbury Township MS4 to Private SWM

- Legend**
- Counties
 - Municipalities
 - Tewksbury Township
 - Sub-watershed (HUC14)
 - Parcels
 - Streams
 - Road Jurisdiction
 - Private
 - Municipal
 - County
 - State





Appendix E - Map 8A

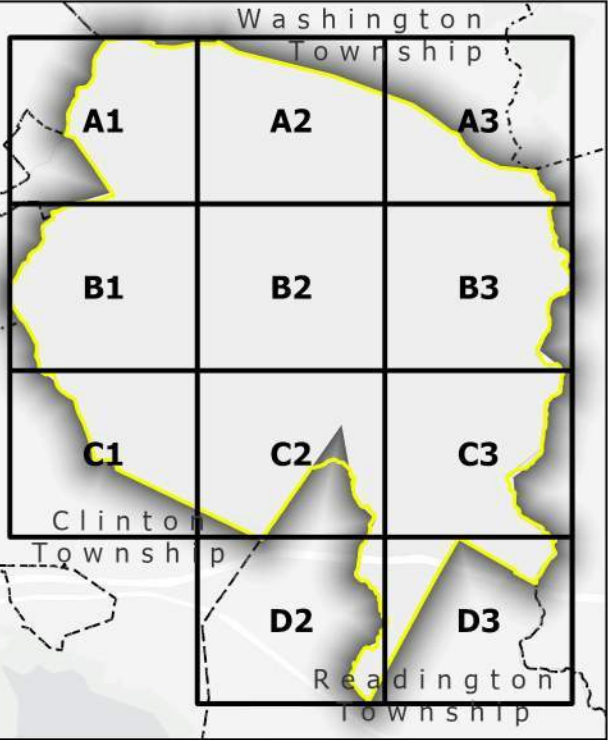
Inlet Drainage Area Tewksbury Township Hunterdon County, New Jersey

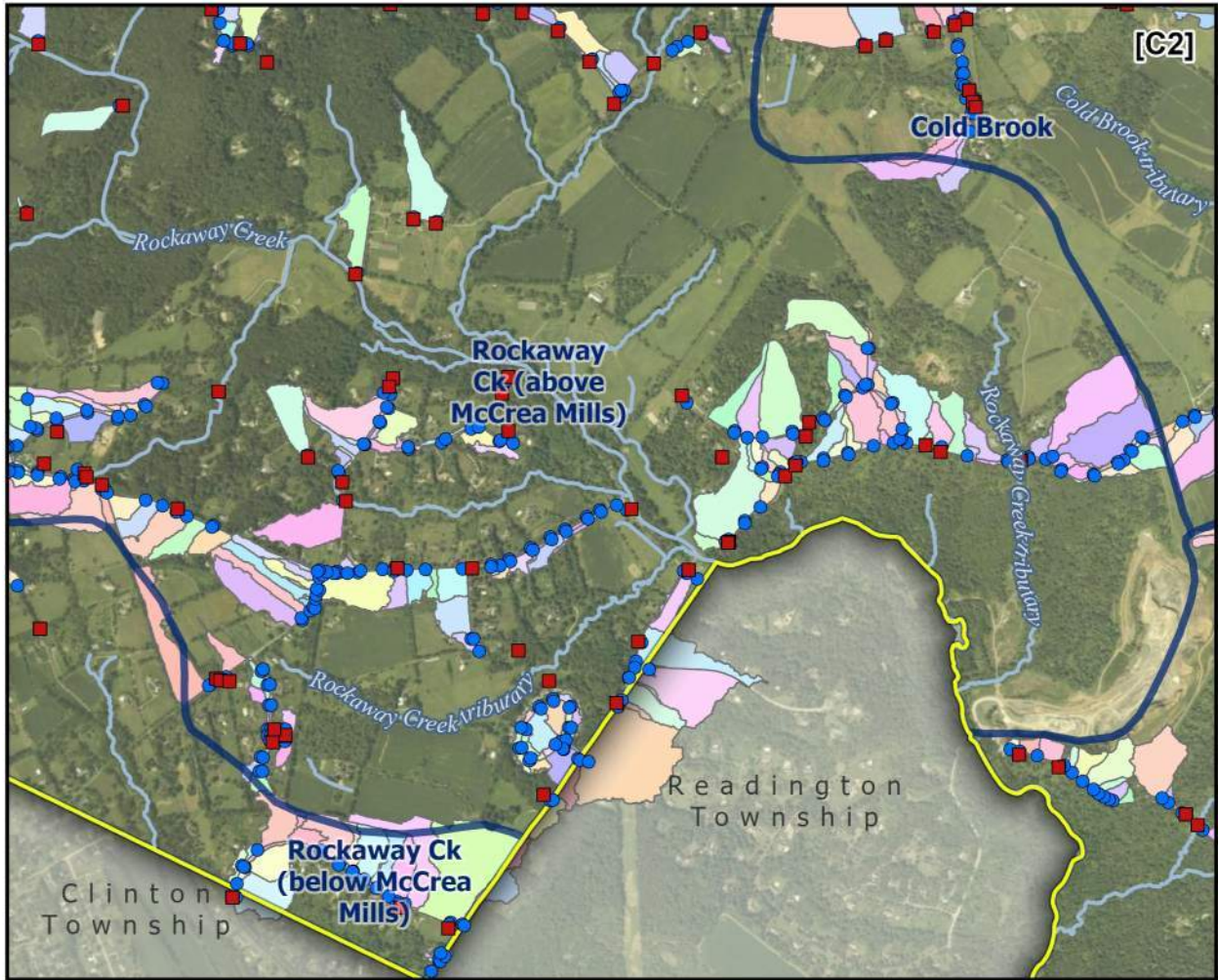
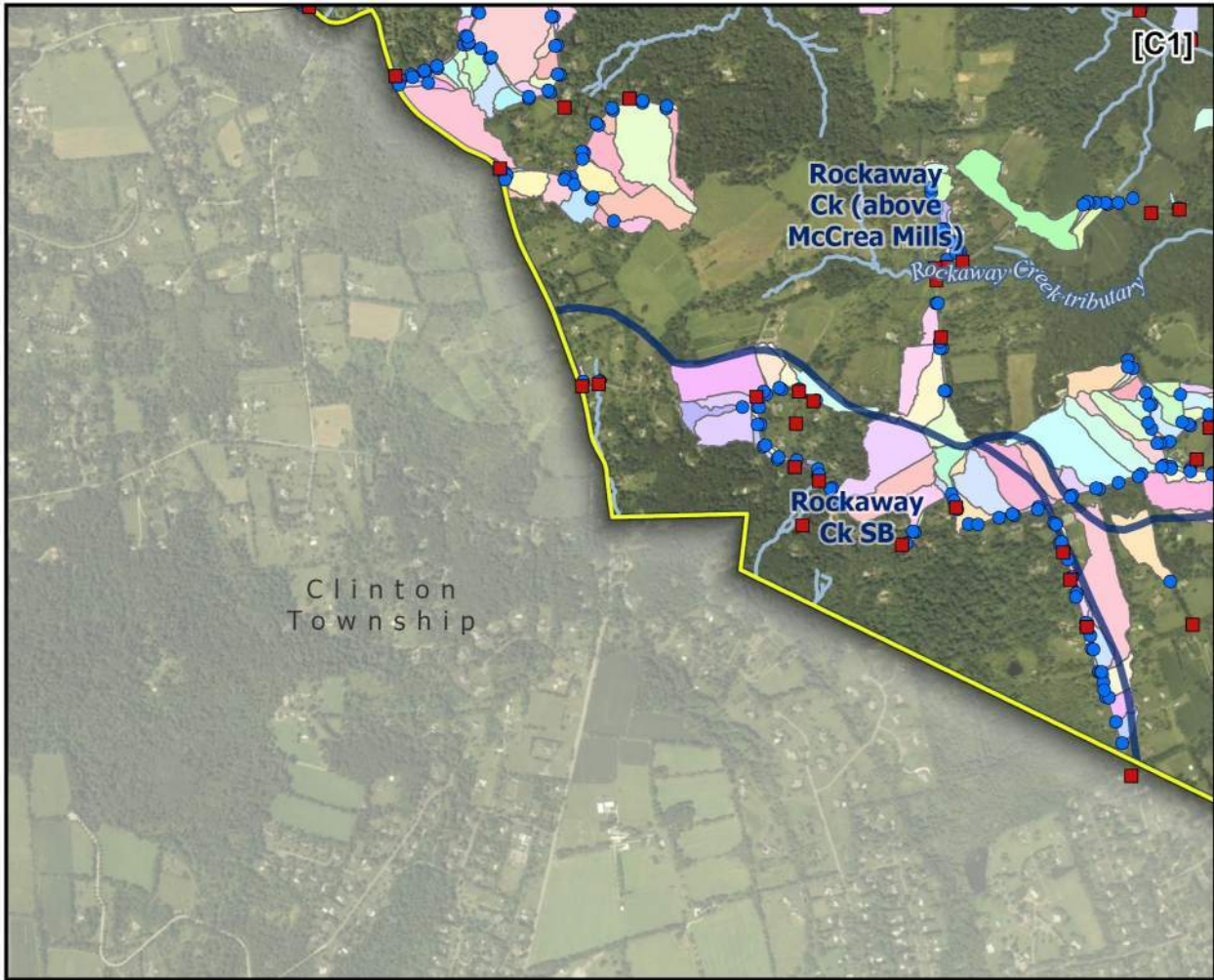
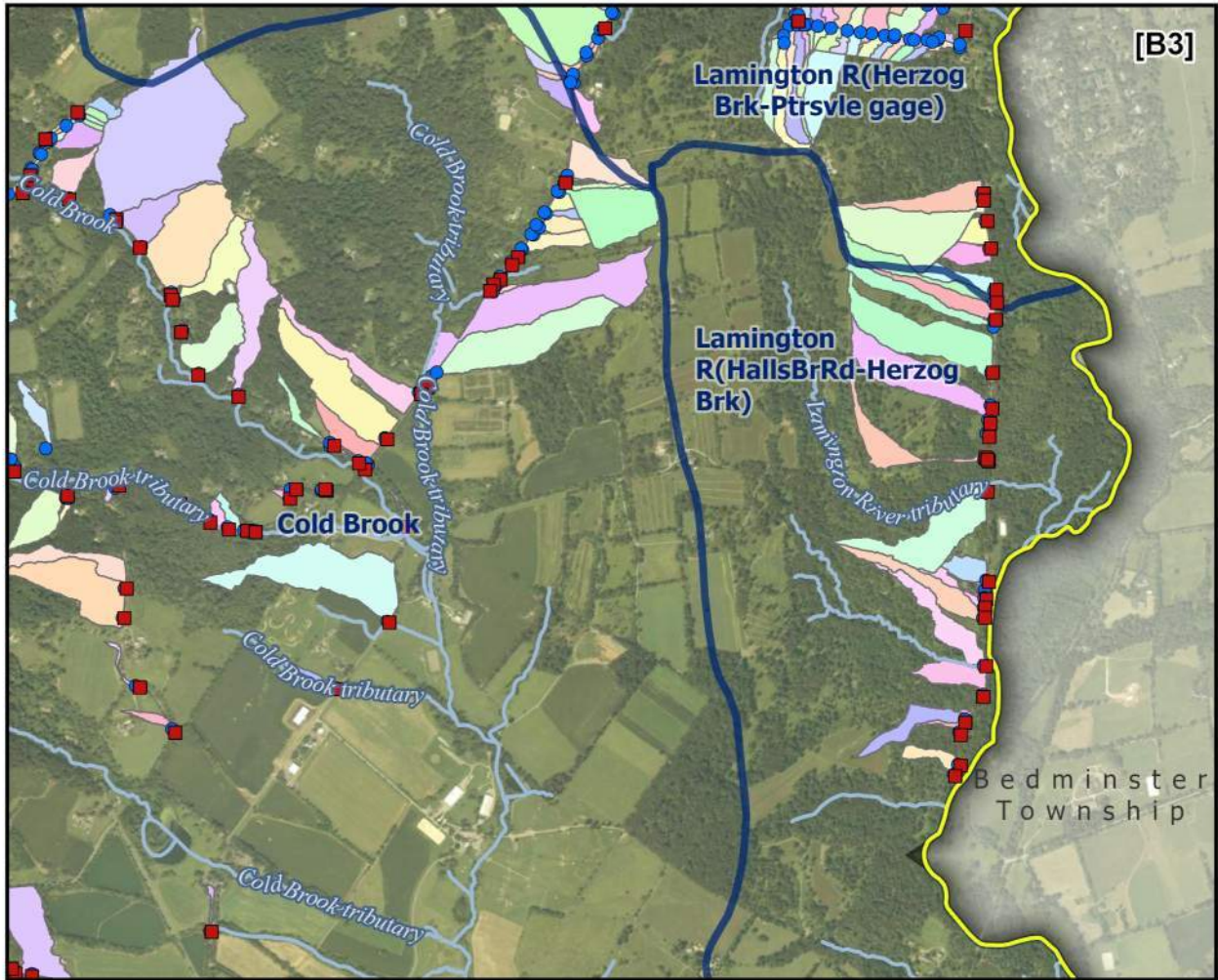
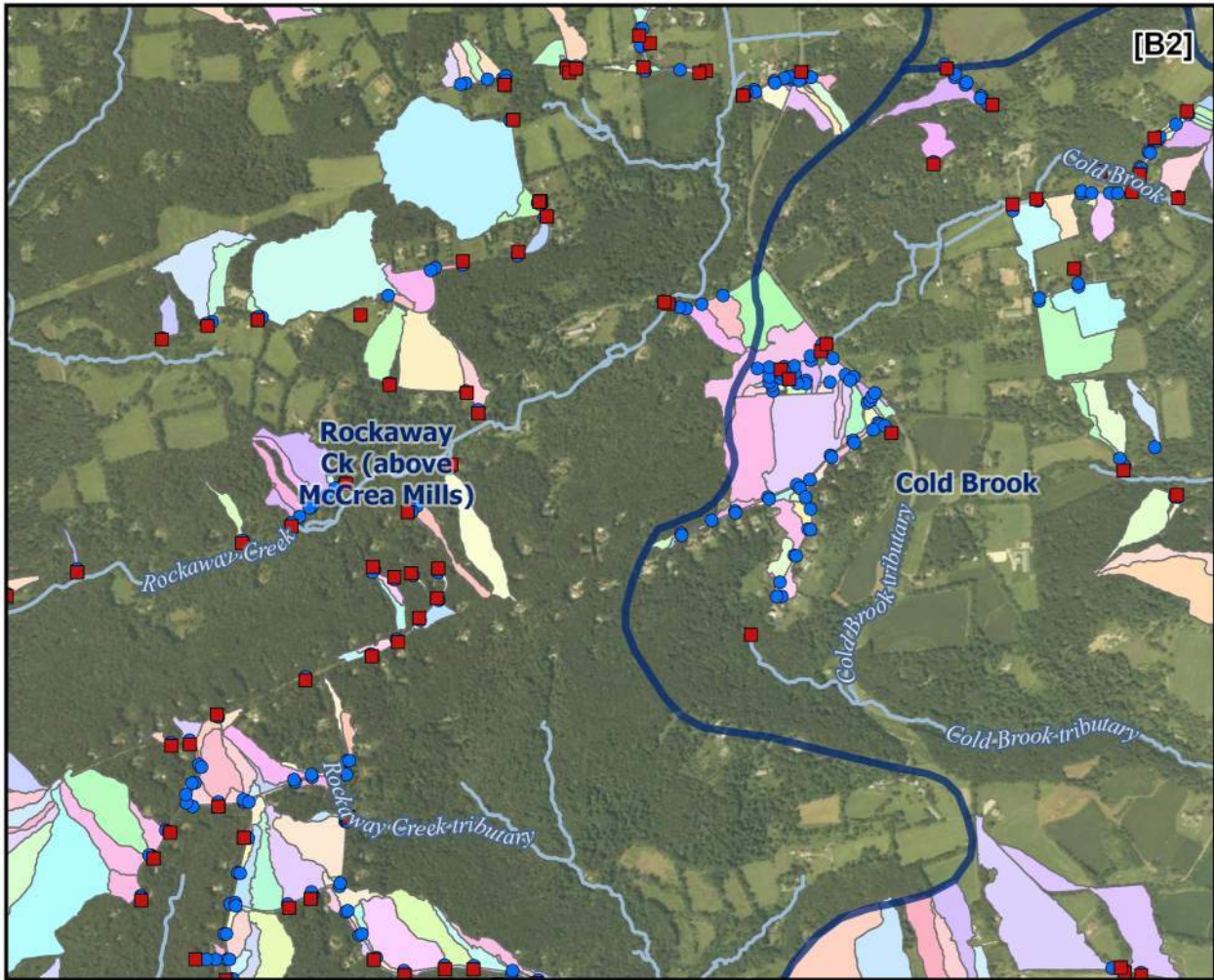
Sources: NJGIN, ModIV Data,
NJDOT, U.S.G.S.

2025



- Tewksbury Township
- Streams
- Sub-watershed (HUC 14)
- Inlets
- Outfalls
- Inlet Drainage Areas





Appendix E - Map 8B

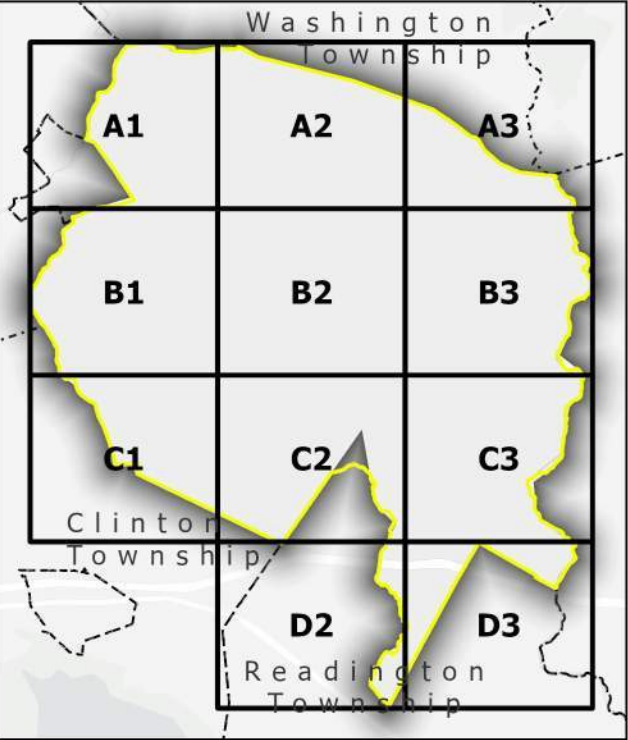
Inlet Drainage Area Tewksbury Township Hunterdon County, New Jersey

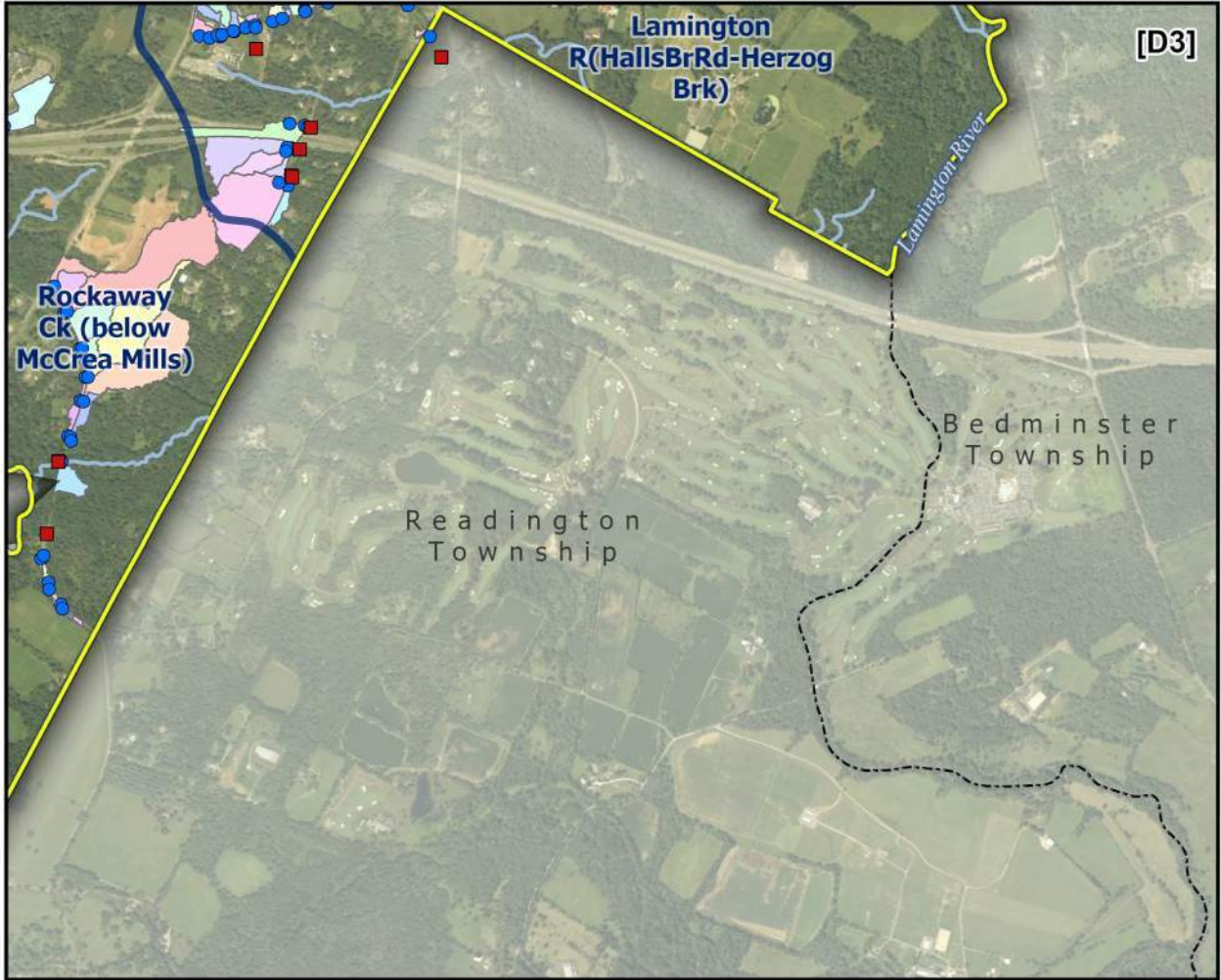
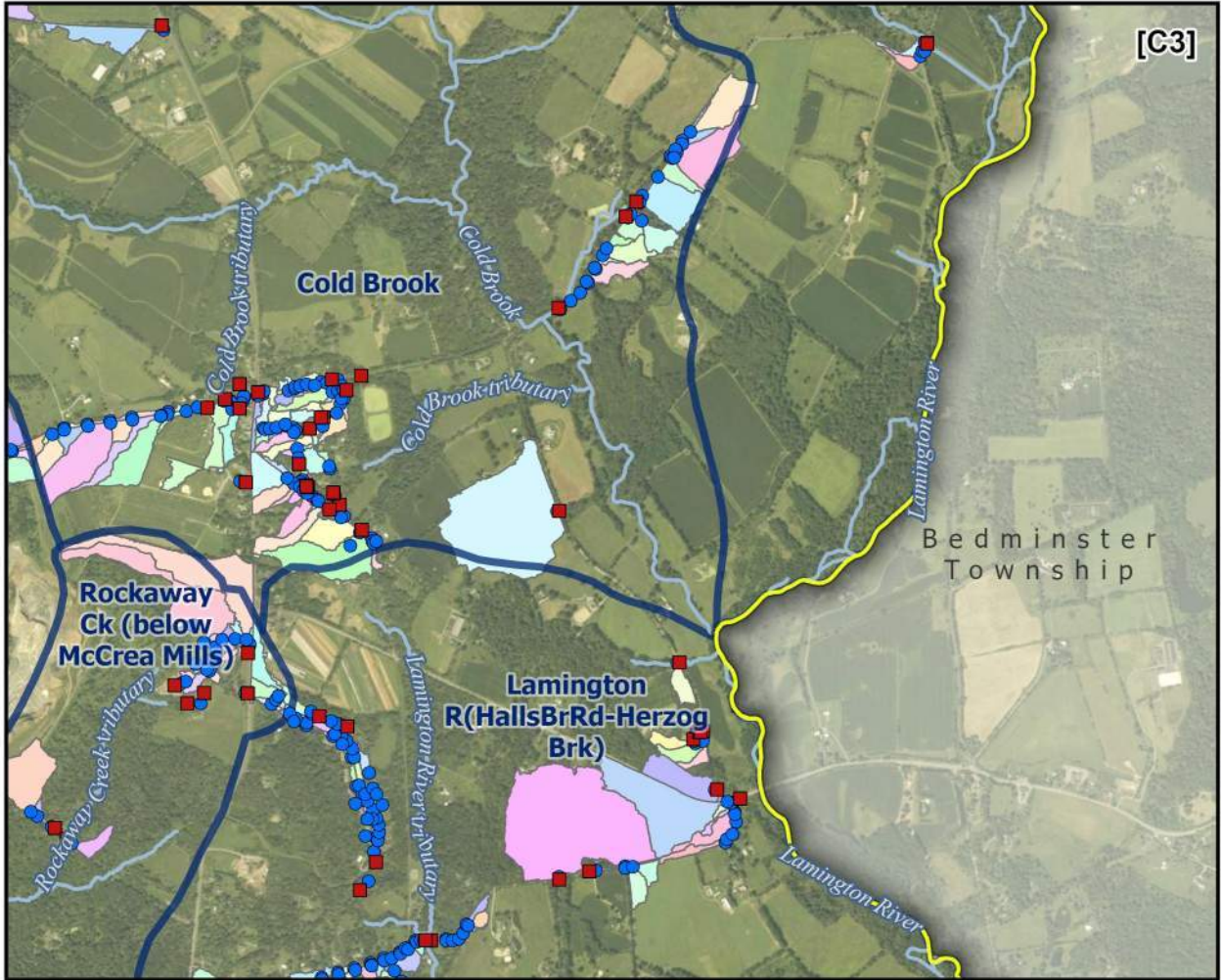
Sources: NJGIN, ModIV Data,
NJDOT, U.S.G.S.

2025



- Tewksbury Township
- Streams
- Sub-watershed (HUC 14)
- Inlets
- Outfalls
- Inlet Drainage Areas





Appendix E - Map 8C

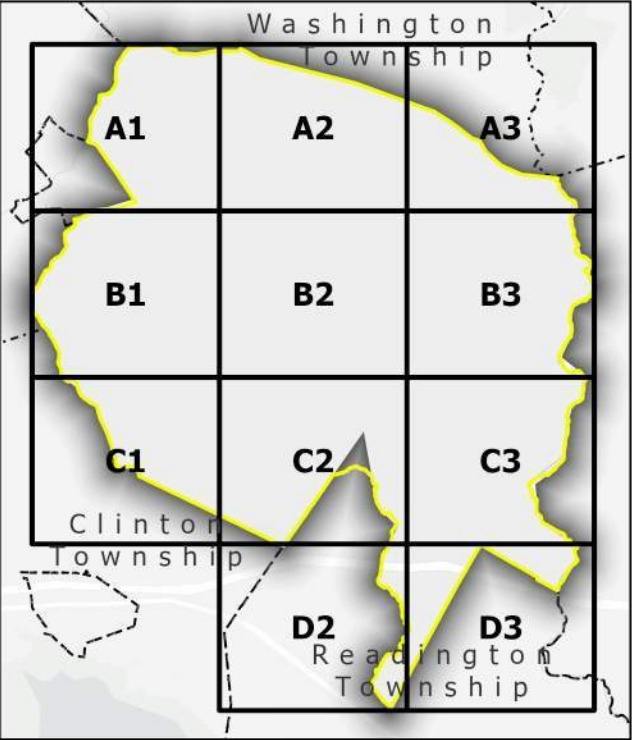
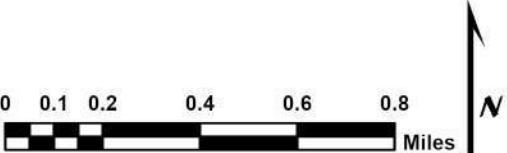
Inlet Drainage Area
Tewksbury Township
Hunterdon County, New Jersey

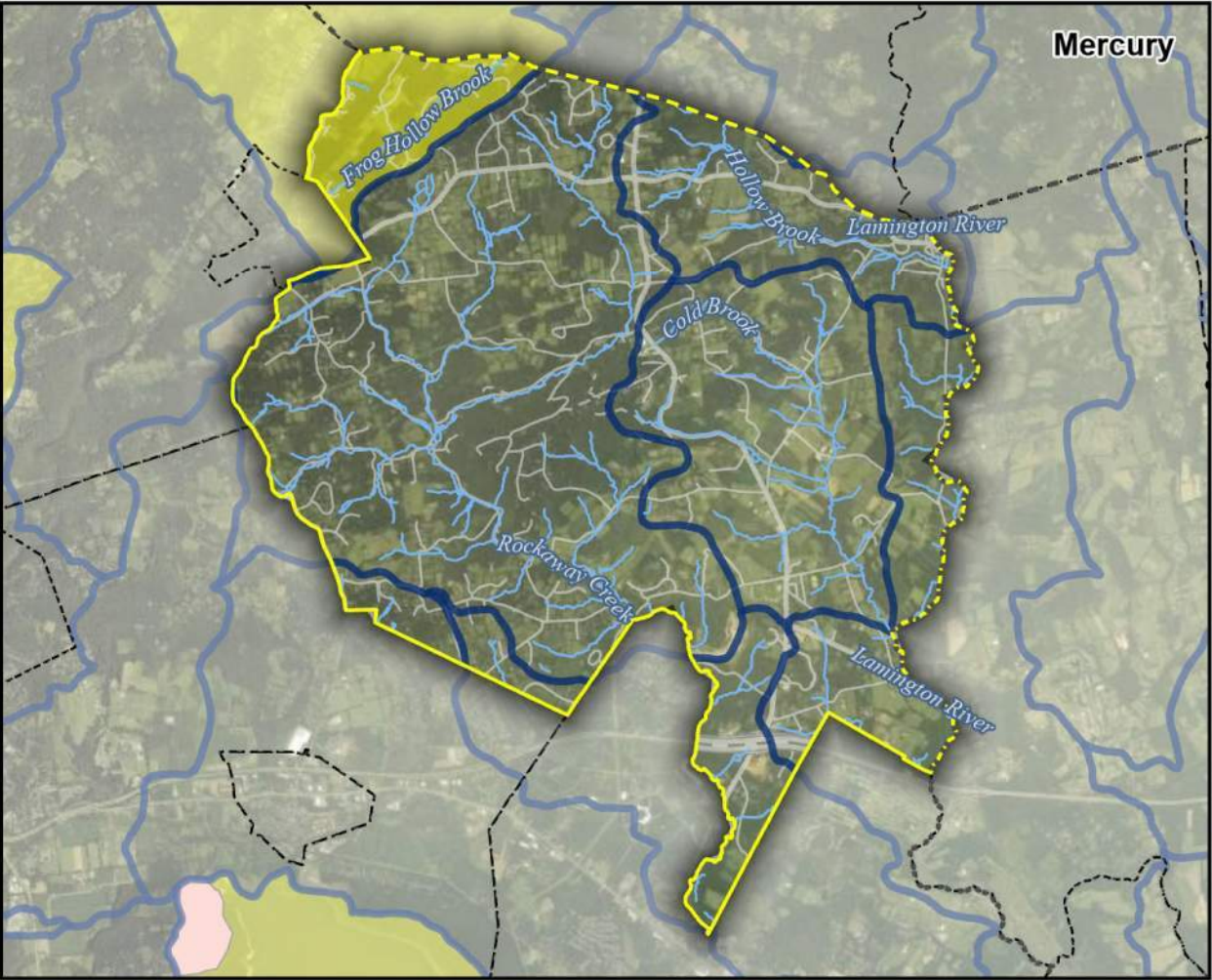
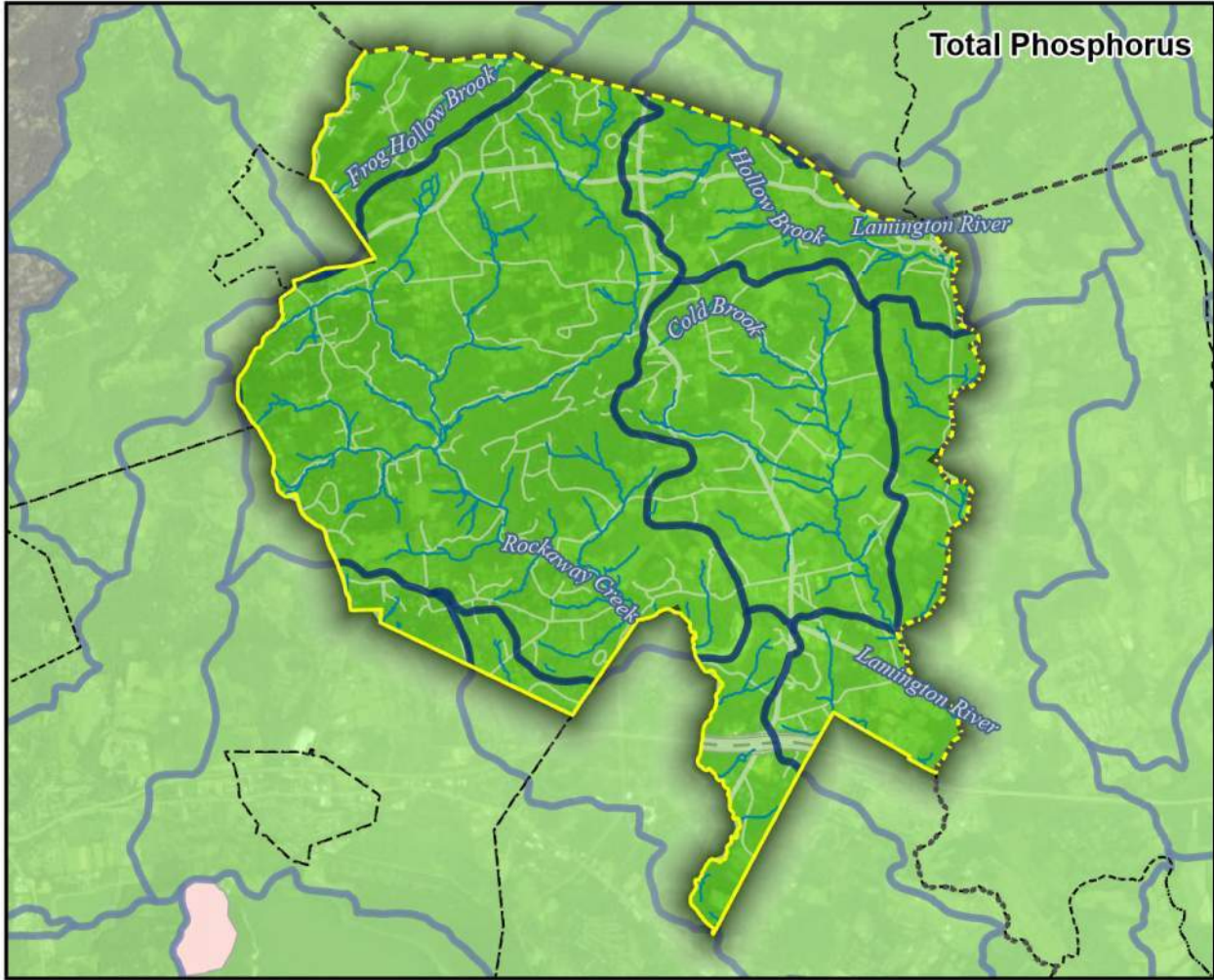
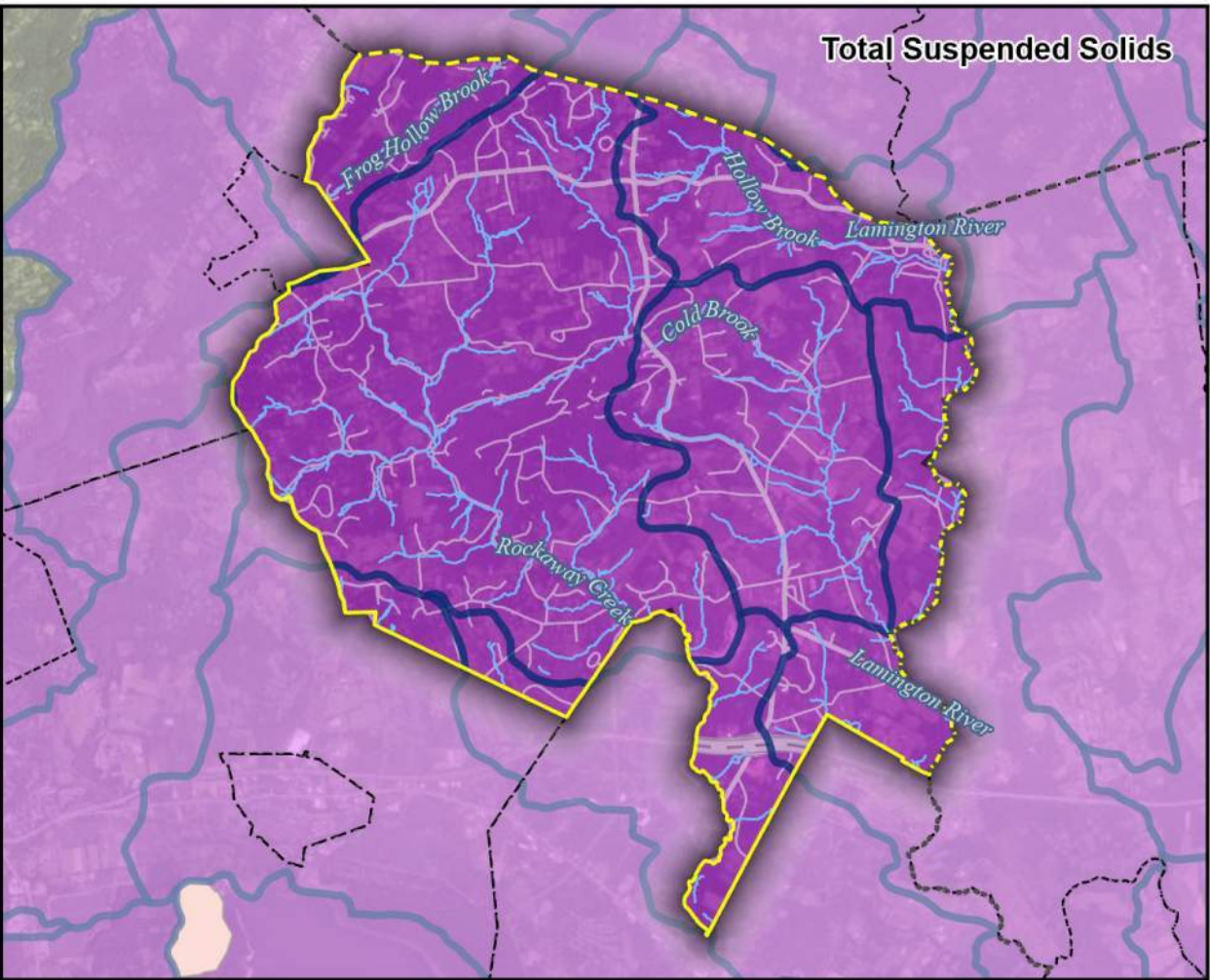
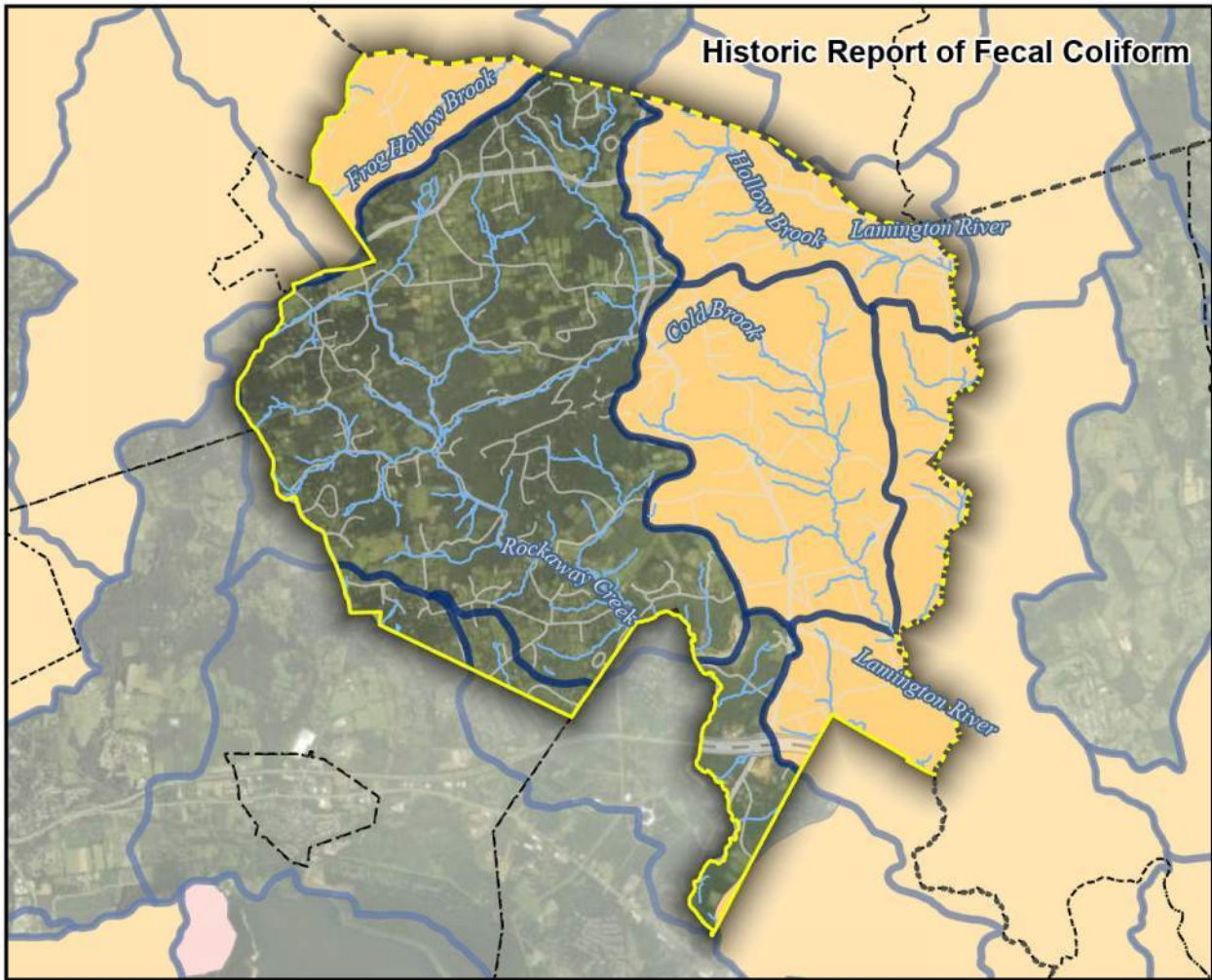
Sources: NJGIN, ModIV Data,
NJDOT, U.S.G.S.

2025



- Tewksbury Township
- Streams
- Sub-watershed (HUC 14)
- Inlets
- Outfalls
- Inlet Drainage Areas





Appendix E - Map 9

Total Maximum Daily Load Report Tewksbury Township Hunterdon County, New Jersey

Sources: NJGIN, ModIV Data,
NJDOT, U.S.G.S.

2025

Counties	Streams
Municipalities	Road Jurisdiction
Tewksbury Township	Jurisdiction
Sub-watershed (HUC14)	Private
	Municipal
	County
	State

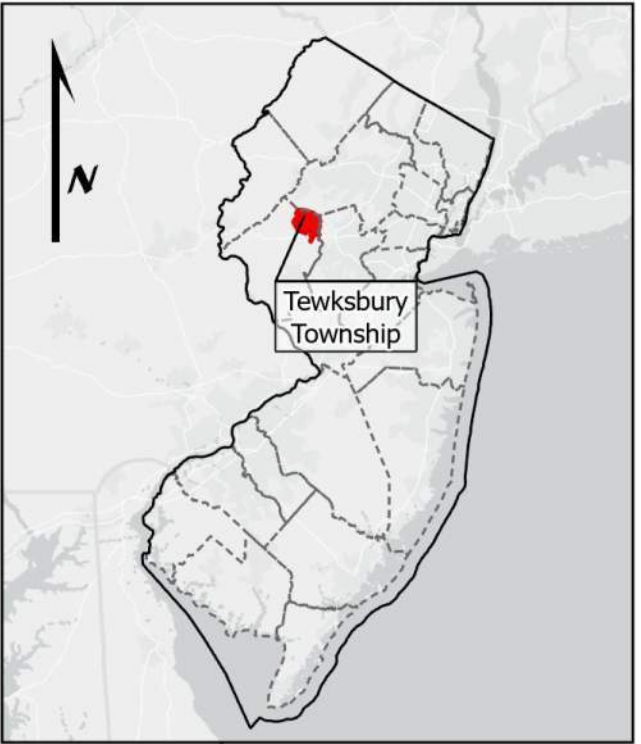
Historic (Pre-2008)
TMDL for Streamsheds

Fecal Coliform

TMDL for Streamsheds

Mercury
Total Phosphorus
Total Suspended Solids
TMDL for Lakesheds

0 0.5 1 2 3 4 Miles



Appendix E - Map 10

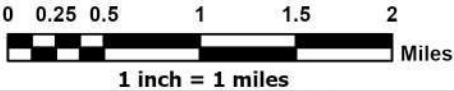
Impervious Surfaces
Tewksbury Township
Hunterdon County, New Jersey

Sources: NJGIN, ModIV Data,
NJDOT, U.S.G.S.

2025



- Counties
- Municipalities
- Tewksbury Township
- Sub-watershed (HUC14)
- Impervious Surface (2015)
- Streams
- Road Jurisdiction
 - Private
 - Municipal
 - County
 - State



Impervious Coverage (%) by Sub-watershed

HUC14 Name	Building	Road	Other	HUC14 Total
Beaver Brook (Clinton)		25.00%		25.00%
Cold Brook	0.93%	2.03%	2.73%	5.69%
Lamington R(HallsBrRd-Herzog Brk)	0.72%	1.76%	2.01%	4.49%
Lamington R(Herzog Brk-Ptrsvle gage)	1.17%	2.52%	3.45%	7.14%
Lamington R(Pottersville gage-FurnaceRd)	3.01%	3.51%	5.07%	11.59%
Raritan R SB(Califon br to Long Valley)	1.01%	2.86%	2.88%	6.75%
Raritan R SB(StoneMill gage to Califon)		1.10%	1.20%	2.30%
Rockaway Ck (above McCrea Mills)	1.27%	2.12%	3.27%	6.66%
Rockaway Ck (below McCrea Mills)	1.00%	3.04%	2.67%	6.71%
Rockaway Ck SB	1.57%	2.91%	3.65%	8.13%
Township Total	11.06%	53.45%	28.85%	

Note: Impervious coverage (%) is inclusive of all jurisdiction types (Private, County, State, etc.) within the bounds of the municipalities

Appendix E - Map 11

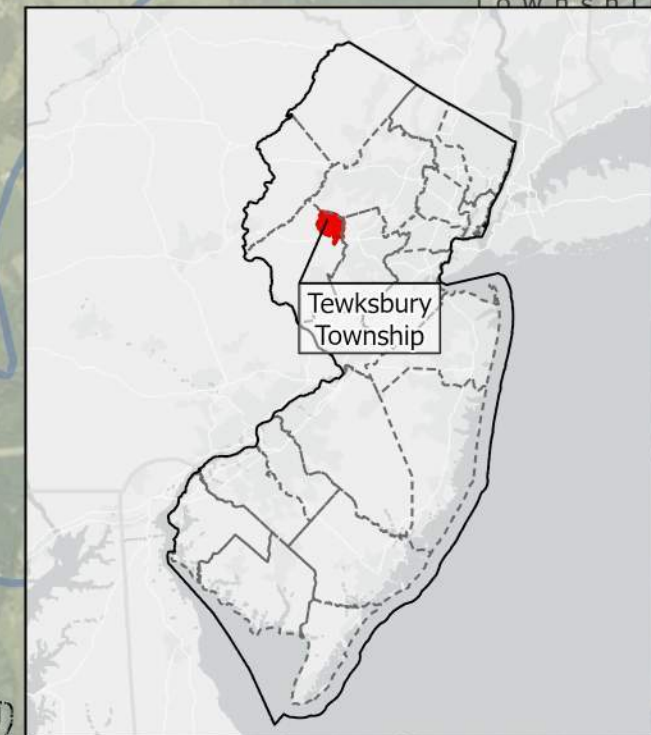
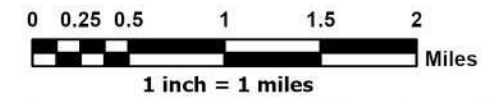
Non-Municipally Operated Stormwater Management Facilities Tewksbury Township Hunterdon County, New Jersey

Sources: NJGIN, ModIV Data,
NJDOT, U.S.G.S., FEMA

2025



- | | |
|--|--------------------------|
| Counties | Streams |
| Municipalities | Road Jurisdiction |
| Tewksbury Township | Private |
| Parcels | Municipal |
| Sub-watershed (HUC14) | County |
| Non-Municipal Stormwater Infrastructure | |
| County | |
| Municipality | |
| Private | |
| School District | |



Appendix E - Map 12

FEMA Flood Hazard Areas
Tewksbury Township
Hunterdon County, New Jersey

Sources: NJGIN, ModIV Data,
NJDOT, U.S.G.S.

2025



- Counties
- Municipalities
- Tewksbury Township
- Parcels
- Sub-watershed (HUC14)
- Streams
- Road Jurisdiction
 - Private
 - Municipal
 - County
 - State

FEMA Flood Hazard Areas

- Regulatory Floodway
- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard

