



State of New Jersey
DELAWARE AND RARITAN CANAL COMMISSION
PRALLSVILLE MILLS | 33 RISLER STREET | P.O. BOX 539
STOCKTON, N.J. 08559-0539
www.nj.gov/dep/drcc



STAFF REPORT

DRCC #: 26-6357

DATE: October 5, 2026

PROJECT NAME: Spruce Street/Arctic Parkway -- Roundabout

Latest Submission Received: August 27, 2026

Applicant:

Mercer County Engineering Division
Basit A. Muzaffar, P.E., County Engineer
640 South Broad Street, Room 302
Trenton, NJ 08650
bmuzaffar@mercercounty.org

Engineer:

Gregory D. Bitsko, P.E.
TPD, Inc.
303 W. Main Street, Suite 330
Freehold, NJ 07728
gbitsko@tpdinc.com
sleidenheimer@tpdinc.com

Project Location:

Road	Municipality	County	Block(s)	Lot(s)
Spruce Street (Mercer County Route No. 613)/ Arctic Parkway (Mercer County Route No. 639)	Ewing Township	Mercer	701	43, 44

Jurisdictional Determination:

Zone B	Major	Nongovernmental

Subject to Review for:

Drainage	Visual	Traffic	Stream Corridors
X			X

Documents Received: Site Plans (54 sheets) dated February 25, 2026, Drainage Plan revised June 1, 2026; Stream Corridor Plan (2 sheets) dated April 29, 2026; Stormwater Management Report dated February 2026, last revised July 2026; prepared by TPD, Inc.

**THIS STAFF REPORT IS ISSUED AS A GUIDE TO APPLICANTS IN
COMPLYING WITH DRCC REGULATIONS. IT IS NOT AN APPROVAL. NO
CONSTRUCTION SHALL BEGIN UNTIL A CERTIFICATE OF APPROVAL
HAS BEEN ISSUED.**

DRCC#: 26-6357

DATE: October 5, 2026

PROJECT NAME: Spruce Street/Arctic Parkway -- Roundabout

The application is complete and shall be presented to the Commission for their action with a staff recommendation of approval at the October 21, 2026, meeting based upon the following analysis:

Existing Conditions: The project site is the intersection of Spruce Street and Arctic Parkway in Ewing Township Mercer County, approximately 1.0 mile northwest of the Delaware and Raritan Canal at North Olden Avenue and within Commission Review Zone B.

The project site totals 2.08 acres and is bounded by commercial and retail buildings located to the north and west, while a former auto dealership lot and sports complex are located to the east. The area to the south is comprised of woods.



Spruce Street is a county road that consists of four lanes of traffic along with small, landscaped areas between the county right-of-way (ROW) and adjacent properties. Spruce Street appears as a two-lane road on historic aerial imagery dating to 1930. Arctic Parkway¹ is also a county road that was originally envisioned in the 1920s as a scenic parkway that would have linked Trenton with Princeton, diverting non-commercial traffic from U.S. Highway Route No. 1. Due to lack of funding and the onset of the Great Depression, only an approximate 0.33-mile segment of Arctic Parkway was constructed, running between North Olden Avenue and Spruce Street.

Proposed Project: The applicant proposes to construct a roundabout at the existing Spruce Street and Arctic Parkway intersection and to undertake improvement to the roadway approaches to address safety and traffic concerns. Specifically, the applicant proposes to

¹Although the origin of the name has been lost to history, Arctic Parkway may have been selected to commemorate the first aerial sightings of the North Pole in 1926. Bergen Street in Lawrence Township, which was constructed in the 1980s, generally follows the alignment surveyed for the parkway. The eponymous ice cream factory, which remains on Arctic Parkway to the present day, was built in 1941.

DRCC#: 26-6357

DATE: October 5, 2026

PROJECT NAME: Spruce Street/Arctic Parkway -- Roundabout

resurface and reconstruction the existing roadway, and to shift the roadway alignment within the existing areas of impervious surface coverage. The proposed roundabout layout also requires the applicant to reconfigure the drainage system along the two roads, which would include new piping, manholes and inlets.

The project would result in a reduction in impervious surface coverage of 0.39 acre in the proposed condition and would result in the disturbance of 2.08 acres of land.

Stream Corridor: The project site is located within the Assunpink Creek watershed area. The West Branch Shabakunk Creek flows north, parallel to the Arctic Parkway and beneath Spruce Street. Neither the Assunpink Creek nor the West Branch Shabakunk Creek flow into the Delaware and Raritan Canal. FEMA has identified the 100-year floodplain elevation and limit associated with the West Branch of the Shabakunk Creek as elevation 67 feet (NAVD 1988). The majority of the project site is located within the floodplain limit. As a result, the project site is located within the stream corridor associated with the West Branch Shabakunk Creek.

The applicant's submission indicates that the area of existing stream corridor on the project site totals 76,714 square feet. Within the existing stream corridor, the county ROW contains 66,792 square feet (1.53 acres) of impervious surface coverage, 1,941 square feet (0.04 acre) of structures, and 4,595 square feet (0.11 acre) of landscaped area.

Impervious surface coverage within the stream corridor in the proposed condition would be reduced to 57,325 square feet (1.32 acres), the area with structures would remain unchanged at 1,941 square feet (0.04 acre), and the landscaped area would increase to 17,448 square feet (0.40 acre).

Commission staff notes that the existing roadway was constructed prior to the establishment of the stream corridor regulations and is, therefore, considered legacy development. Staff further observes that the proposed roadway improvements may be permitted within a stream corridor of a watercourse that does not directly enter the Delaware and Raritan Canal as a conditional use pursuant to N.J.A.C. 7:45-9.4(a)4, since the roadway will cross the stream corridor as directly as practicable.

Stormwater Runoff Quantity: Runoff from the developed portions of the site, totaling approximately 2.08 acres, would discharge to an existing storm sewer system within Spruce Street. The stormwater management measures have been evaluated at one point-of-analysis. As noted above, the project would result in a net reduction of approximately 0.39 acres of impervious surface coverage. As a result, the applicant has provided drainage area maps and hydrologic calculations which demonstrate that for stormwater leaving the site, post-construction runoff hydrographs for the 2-, 10- and 100-year storm events do not exceed, at any point in time, the pre-construction runoff hydrographs for the same storm events. In addition, all existing drainage patterns will be maintained.

The submitted calculations utilized the Natural Resource Conservation Service (NRCS) Technical Release No. 55 (TR-55) hydrologic methodology, standard unit hydrograph rainfall distribution and current New Jersey 24-hour rainfall frequency data for Mercer

DRCC#: 26-6357

DATE: October 5, 2026

PROJECT NAME: Spruce Street/Arctic Parkway -- Roundabout

County to compute peak runoff flow rates and volumes. Therefore, the project has been designed in compliance with the specific runoff quantity standards at N.J.A.C. 7:45-8.6(a).

Water Quality: The Commission requires that all proposed full-depth pavement, including newly constructed and reconstructed parking and access drives that are being renewed, shall comply with water quality standards at N.J.A.C. 7:45-8.7. This includes reduction of the post-construction load of total suspended solids (TSS) in stormwater runoff generated from the water quality design storm by a rate of 80% of the anticipated load from the developed site, expressed as an annual average.

Based upon the submitted application, new and reconstructed motor vehicle surfaces are being proposed onsite, which includes the construction of a new roundabout at the existing Spruce Street and Arctic Parkway intersection, along with new roadway approaches to each street. Commission staff notes that the project would result in an overall reduction of 0.59 acre of motor vehicle surface. However, the applicant proposes to also reconstruct 1.13 acres of impervious surface coverage that is motor vehicle surface (MVS). As a result, the applicant is required to provide 80% TSS removal for 0.54 acre of MVS.

The submitted stormwater design proposes to treat 0.55 acre of motor vehicle surface through the use of four High Capacity Kraken Filter by Bio Clean Environmental Services, Inc. filtration manufactured treatment devices (MTDs) that will achieve a TSS removal rate of 80%. An MTD is a proprietary stormwater treatment system used to address the stormwater quality impacts of land development. MTDs rely upon a variety of mechanisms to remove pollutants from stormwater runoff. A MTD must have a DEP-issued certification letter to be accepted for use and be sized in accordance with its published verification report. There are three types of MTDs currently certified by the DEP: hydrodynamic sedimentation devices, filtration devices, and subsurface settling ponds. When designed in accordance with this chapter, the TSS removal rate is either 50% or 80%. Therefore, based upon the applicant's submission, the applicant has demonstrated compliance with the specific water quality standards at N.J.A.C. 7:45-8.7.

Groundwater Recharge: The Commission regulations require that stormwater management measures maintain 100% of the average annual preconstruction groundwater recharge volume for the site, or that any increase of stormwater runoff volume from pre-construction to post-construction for the 2-year storm is infiltrated. The proposed design will, at a minimum, maintain the existing amount of annual groundwater recharge achieved on the site. Therefore, the proposed design is in compliance with the specific recharge standards at N.J.A.C. 7:45-8.5.

Non-Structural Methods: The applicant has provided sufficient nonstructural stormwater management strategies into the project design, since the project will maintain existing drainage patterns and maintain the volume of stormwater generated from the site by solely reducing the amount of impervious surface coverage within the project site. Therefore, the project is designed in accordance with the specific nonstructural stormwater management strategy standards at N.J.A.C. 7:45-8.4.

DRCC#: 26-6357

DATE: October 5, 2026

PROJECT NAME: Spruce Street/Arctic Parkway -- Roundabout

Stormwater Management Maintenance Plan: The applicant has submitted a stormwater management maintenance plan for the site. The submitted plan has been prepared in accordance with the specific requirements of N.J.A.C. 7:45-8.8.

Staff Recommendation: Staff recommends approval.

Sincerely,

A handwritten signature in black ink, appearing to read "John Hutchison", with a long horizontal flourish extending to the right.

John Hutchison
Executive Director

c. Mercer County Planning Board
Ewing Township Planning Board

Please refer to the Commission project number (DRCC #) when making a submission, a resubmission, or transmitting project correspondence or documents.