

This report is an environmental inventory for ten abandoned, inactive, and active railways that have been proposed to be converted into public access rail-trail facilities throughout the State of Delaware. The purpose of this inventory is to identify environmental resources that are adjacent to, or encroaching upon, the proposed rail-trail corridors. A review of mapping provided by DNREC was conducted for each proposed rail-trail corridor, which included the National Wetland Inventory (NWI), the Delaware Statewide Wetland Mapping Project (SWMP), State Resource Areas (SRA), the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map, and aerial photography. The information provided by DNREC was also compared to the most recent information available on the previously mentioned agency websites. Below are the findings discussed in order of priority.

(1N) Junction & Breakwater Trail (North Terminus):

The north section of the proposed Junction & Breakwater Trail is located along the western edge of Monroe Avenue, a dead-end residential roadway that was once a railroad bed. Currently, Monroe Avenue separates residential homes from an active agricultural field. Located in close proximity to the proposed trail is the 100-year floodplain of Whites Pond, which is located east of Monroe Avenue. There are no wetlands, forests, or State Resource Areas associated with this trail. If impacts to streams and wetlands are avoided, ACOE and DNREC authorization will not be required for this rail-to-trail corridor.

(1S) Junction & Breakwater Trail (South Terminus):

The south portion of the Junction & Breakwater Trail is located near the town of Rehoboth, on the footprint of an abandoned rail bed. Forestland exists along approximately 1/3 of the length of the trail. The northern terminus of this section passes through agricultural fields while the southern terminus travels through maintained commercial and residential lands. A large majority of the trail, specifically from Holland Glade Road to Church Street, is incorporated into a mapped potential State Resource Area (SRA). Both the NWI and SWMP show

non-tidal wetlands associated with a tributary of the Lewes and Rehoboth Canal located in close proximity to the rail corridor. There are no FEMA identified floodplains or USGS mapped streams within this trail corridor.

Any impact to the identified non-tidal wetlands would require authorization from the ACOE and/or DNREC. Coordination with DNREC may also be required for any project activities within the SRA's.

(2) Brandywine Industrial Track:

The Brandywine Industrial Track is proposed south of the B&O Railroad crossing over Brandywine Creek and travels southeast along Park Drive North to Market Street. Environmental features identified within this corridor include Brandywine Creek and an associated 100-year floodplain. Brandywine Creek is classified as a riverine, upper perennial, open water, permanent body of water (R3OWH), as defined by the National Wetland Inventory (NWI) and as a riverine, upper perennial, unconsolidated bottom, permanent (R3UBH) waterway by the SWMP. The mapping indicates that the tidal limits of Brandywine Creek extend upstream to Walnut Street. There are no other mapped environmental features located along this corridor.

Project activities that affect Brandywine Creek and/or any adjacent wetlands would require authorization from the ACOE and/or DNREC. Authorization for project activities within the 100-year floodplain may be required from the Local permitting agency.

(3) Ellendale – Milton Industrial Track:

The Ellendale to Milton Industrial Track is proposed to travel along an active railway with the railroad bed, rail ties, and railroad tracks intact and visible; therefore, environmental features such as wetlands and forests begin at the edge of the railroad bed. This track crosses three streams. Sowbridge Branch passes under the railbed by way of a culvert, where as the other two streams, Pemberton Branch and Ingram Branch, are crossed by bridges. The railroad track crosses the 100 year floodplain of both Pemberton Branch and Ingram Branch. In addition to the floodplains bordering the railroad, wetlands and State Resource Areas are also identified along the railroad corridor. A total of seven wetlands identified by the NWI are located in close proximity to the railroad bed. Five of these wetlands are classified as Palustrine Forested (PFO), one is classified as a Palustrine Emergent (PEM) wetland, and one is classified as Palustrine Unconsolidated Bottom (PUB). Delaware's SWMP identified 12 PFO wetlands and 1 PEM wetland. More wetlands have been identified by the SWMP as the railway was taken into account during the delineation, causing some wetland areas to be divided in two. It is evident from the aerial mapping that forestlands are prevalent along the Ellendale to Milton Industrial track. The areas not forested along the track are generally lined by hedgerows. One area along the corridor is mapped as a potential State Resource Area. The SRA is located at the western terminus of the track near the town of Ellendale.

If the three culverted stream crossings require the extension and/or replacement of the culverts to accommodate the trail, authorization from the U.S. Army Corps of Engineers and/or DNREC would be required prior to the initiation of construction activities. Any proposed improvements or widening of the bridge crossings may also require authorization from the ACOE and/or DNREC depending on the potential impacts to the stream channel and adjacent wetlands. Coordination with DNREC may also be necessary for any proposed changes to the SRA's. Authorization for project activities within the 100-year floodplain may be required from the Local permitting agency.

(4) Clayton – Easton Line:

The Clayton-Easton Line, which is a total of 14.4 miles long in Delaware, is proposed along an inactive railroad bed. This corridor has been divided into three sections in order to more efficiently discuss the environmental inventory findings. Overall, the railway bed, ties, and tracks are intact and mostly visible among the shrub-scrub vegetation that has developed within the railroad bed.

Clayton to Kenton is the northernmost section of the corridor, extending from the town of Clayton southwest to the town of Kenton. The rail crosses four mapped waterways in this section; they include from north to south: Greens Branch, Mill Creek, and two un-named tributaries of the Leipsic River. All four streams are conveyed across the rail line by culverts. Two of these streams, Greens Branch and one of the un-named tributaries of Leipsic River, have FEMA mapped 100-year floodplains that occur within the railroad corridor. Wheatleys Pond, an impoundment of Greens Branch, is located northeast of the railway. Wheatleys Pond has an associated 100-year floodplain that borders the eastern edge of the railway. The aerial photography also indicates that two additional streams may extend to the rail corridor. An unnamed tributary to Mill creek appears to extend across the rail line north of Alley Corner Road, and an unnamed tributary to Masseys Millpond may also extend to the corridor south of the Mill Creek crossing.

Several wetlands are mapped by both the NWI and the SWMP within the Clayton to Kenton corridor. A total of 8 wetlands are mapped by the National Wetland Inventory. The wetlands include Greens Branch/Wheatleys Pond, which is classified as a Palustrine Open Water permanent (POWH) waterway, a PSS/EM wetland located within the floodplain of Greens Branch, and six PFO wetlands associated with Mill Creek and the unnamed tributaries to Leipsic River. In general, the SWMP maps these same wetlands plus an additional three farmed wetlands (Pf) located in the vicinity of Alley Corner Road. The SWMP also shows the wetland located south of Mill Creek as much larger than the NWI mapping.

The aerial photo shows four forests along the railroad corridor, primarily along the streams. Though forestland is present, it is not the dominant land type from the Clayton to Easton rail corridor, agricultural land is the most prevalent. No SRA's are mapped in this segment of the proposed trail.

Kenton to Hartly is the second section of the corridor that continues in a southwest direction towards the town of Easton along the inactive railway. The aerial photography shows that the land adjacent to the railway corridor is approximately half forested and half agricultural. There are six forest stands bordering the railway corridor. Portions of each forest stand incorporate NWI and SWMP mapped palustrine forested (PFO) wetlands. A total of 13 PFO wetlands are delineated by both the NWI and SWMP mapping. In general, the NWI and SWMP mapping is very similar except that the SWMP maps an additional three farmed wetlands (Pf) south of Muddy Bottom Ditch and a palustrine emergent (PEM) wetland approximately 1,000 feet north of Main Street. The NWI maps a PEM wetland north of Shorts Corner Road that is not mapped by the SWMP and appears to be forested on the aerial photography.

Water features along the Kenton to Hartly corridor include ponds and streams. Three ponds are identified on the mapping. One pond, located north of Hartly Road (SR 44) is delineated by the NWI as a Palustrine Open Water (POW) system; two other ponds, one located north of Hartly Road (SR 44) and one located south of Blackiston Road (SR 42) are delineated by the SWMP as Palustrine Unconsolidated Bottom (PUB) water bodies. A total of eight stream crossings are indicated on both USGS and FEMA mapping. Listed in order of succession from north to south are: Pinks Branch, an un-named tributary of Pinks Branch, two un-named tributaries of Jordan Branch, Muddy Bottom Ditch, and three un-named tributaries of Gravelly Run. Pinks Branch is the only stream that has a corresponding FEMA mapped 100-year floodplain. No SRA's are mapped in this segment of the proposed trail.

Hartly to Marydel is the southern most section of the Clayton to Easton Line. This corridor crosses four tributaries of the Tappahanna Ditch and the Harrington Beaverdam Ditch. The Tappahanna Ditch tributaries cross under the rail line by way of culverts. The Harrington Beaverdam Ditch was previously crossed by a concrete bridge, but has since been washed out, making the trail currently impassable. There are also numerous drainage channels/ditches evident on the aerial photography, which pass underneath the existing railway, particularly in the vicinity of Purchase Road. The only FEMA mapped 100-year floodplain within this section of the trail is associated with the Harrington Beaverdam Ditch.

There are numerous wetlands along this corridor. The NWI identified 7 PFO and 2 PEM wetlands within the corridor. The SWMP identifies several additional wetlands not mapped by the NWI. These additional SWMP mapped wetlands include a palustrine farmed (Pf) wetland located east of Slaughter Station Road; two palustrine forested (PFO) wetlands south of Leager Road; a palustrine forested (PFO) wetland located south of Hourglass Road; a palustrine scrub-shrub (PSS), two palustrine emergent (PEM), and two palustrine forested (PFO) wetlands north of Purchase Road; a palustrine forested (PFO) and five farmed (Pf) wetlands north of Gunter Road; and two palustrine forested (PFO) plus two farmed (Pf) wetlands located north of Harrington Beaverdam Ditch. Forestlands bordering the existing railway bed include 2 extensive forested areas and approximately 11 smaller wooded areas. Hedgerows outline the majority of this section of the railroad bed and separate numerous agricultural fields located along this section of the corridor. No SRA's are mapped in this segment.

If the project requires the replacement or extension of any of the culverted crossing or impacts to the adjacent streams or wetlands, authorization from the ACOE and/or DNREC would be required. Authorization for project activities within the 100-year floodplain may be required from the Local permitting agency.

(5) New Castle Industrial Track:

The New Castle Industrial Track extends north to south from Boulden Boulevard to Delaware Street (SR 9) in the City of New Castle. The rail corridor is currently inactive and exists primarily as a dirt trail. The significant environmental features are concentrated in the southern portion of the corridor and are associated with the Narrow Dyke Canal. The Narrow Dyke Canal and its extensive floodplain and adjacent wetlands transect the corridor approximately 500 feet north of Delaware Street (SR 9). The Narrow Dyke Canal connects to the Delaware River to the east and is classified by the NWI mapping as a estuarine subtidal open water (E1OWL) system. The adjacent wetlands are mapped as estuarine intertidal emergent (E2EM1P) wetlands by both the NWI and SWMP mapping. Areas of palustrine forested (PFO) and palustrine scrub-shrub (PSS) wetlands are mapped along the outer edges of the wetland complex, occurring above the tidal limits. The majority of the rail corridor is within the FEMA mapped 100-year floodplain. No SRA's are mapped within the New Castle industrial Track project area.

The proposed trail currently crosses the Narrow Dyke Canal on a box culvert. If this culvert is sufficient to provide the trail crossing without impacts to waters or wetlands, then a permit from the US Army Corps of Engineers (ACOE) and DNREC may not be necessary for the crossing. However, the construction of the trail may impact other adjacent wetlands, streams or floodplains. Authorization from the ACOE and/or DNREC would be necessary for impacts to wetlands and waterways. Local authorization may be necessary for floodplain impacts.

(6) Rockland Track:

The Rockland Track is located between Montchanin and Adams Dam Road along the west bank of Brandywine Creek. The portion of Brandywine Creek within this segment is classified by the NWI as a riverine, upper perennial, open water, permanent (R3OWH) waterway. The SWMP identified the same section of the creek as riverine, upper perennial, cobble/gravel, unconsolidated bottom, permanent (R3UBH1) waterway. There is one other stream associated with this corridor,

which crosses underneath the railway, an un-named tributary of Brandywine Creek. The Statewide Wetland Mapping Project (SWMP) has identified one Palustrine, unconsolidated bottom, and permanent (PUBH) water body located along the western edge of the rail corridor in the central section. The northern extent of the trail is located within the 100-year floodplain of Brandywine Creek.

Approximately 75% of the trail is located within a potential State Resource Area. The majority of this railway corridor is forested.

The project does not appear to impact Brandywine Creek or adjacent wetlands. However, if the trail construction requires improvements to, or widening of, the bridge over Brandywine Creek, authorization from the ACOE and/or DNREC may be required. Coordination with DNREC may also be required for any project activities within the mapped SRA's. Authorization for project activities within the 100-year floodplain may be required from the Local permitting agency.

(7) Kentmere Track:

The Kentmere Track runs in a general east to west direction from Brandywine Creek to Greenwood Road. The corridor's significant environmental features are concentrated along the eastern half of the proposed trail. The eastern portion of the Kentmere Track passes through the protected state resource area (SRA) of Rockford State Park and crosses over Brandywine Creek into the potentially protected area of Alapocas Run Park. One water feature, Brandywine Creek, is identified by the NWI mapping. Brandywine Creek is classified as a riverine, upper perennial, permanent, open water (R3OWH) body. Delaware's SWMP classifies Brandywine Creek similarly, but as having an unconsolidated bottom (R3UBH). The trail is within the 100-year floodplain of Brandywine Creek at the crossing. There are no wetlands mapped within this corridor. The section of the proposed trail that is on the northern edge of Rockford Park is forested, while hedgerows and small wooded areas line the remainder of the trail.

Unless the construction of the trail requires improvements to or widening of the bridge over Brandywine Creek, it is likely that this project will not impact wetlands or waterways and will not require authorization from the ACOE or DNREC. However, coordination with DNREC may be required for any project activities within the mapped SRA.

(8) Wilmington & Northern Line:

The Wilmington and Northern Line lies along an abandoned railroad corridor located east of Interstate 95, in an industrialized area of Wilmington. Several environmental features are associated with this corridor including streams, floodplains, and wetlands. There is one major waterway crossing, the Christina River, which divides the trail into an eastern and western half. The 100-year floodplain of the Christina River encompasses the majority of the railway corridor. The NWI has classified the Christina River as an Estuarine, subtidal, open water (E1OW) system and the SWMP has categorized the river as an Estuarine, subtidal, unconsolidated bottom (E1UB) waterway. Wetlands are mapped on both halves of the trail, though concentrated more to the western side. The NWI maps two Estuarine, intertidal, emergent wetlands (E2EM), a palustrine emergent (PEM) wetland, and a palustrine emergent/open water (PEM/OW) wetland within the corridor area. The SWMP maps three E2EM wetlands, one PEM wetland and one Palustrine Unconsolidated (PUB) wetland. There are no State Resource Areas along this corridor, nor are there any significant forested areas.

The construction of this trail facility may result in impacts to wetlands and waterways, including a potential new crossing of the Christina River. Impacts to these regulated resources would require authorization from the ACOE and/or DNREC. Authorization for project activities within the 100-year floodplain may be required from the local permitting agency.

(9) Milton – Lewes Line:

The Milton to Lewes Line is proposed along the path of an abandoned railroad corridor. The mapping indicates that the proposed nine-mile trail includes 11 stream crossings. Traveling from west to east the rail corridor crosses the following waterways: Round Pole Branch, three un-named tributaries of Broadkill River, Beaverdam Creek, an un-named tributary of Beaverdam Creek, Old Mill Creek, Black Hog Gut, Canary Creek, and an unnamed tributary to Canary Creek which the trail crosses twice. Previously, bridges carried the railway over Beaverdam Creek, Old Mill Creek, Black Hog Gut, and Canary Creek. These bridges have since been removed, making the railway impassable. The other aforementioned waterways pass underneath the rail bed by way of culverts. All of the streams, with the exception of the western and eastern tributary of Broadkill River and the easternmost crossing of the unnamed tributary to Canary Creek, have associated FEMA mapped 100-year floodplains. There are no SRA's mapped within the Milton-Lewes rail corridor.

Wetlands mapped by both the NWI and SWMP primarily border the waterways along this corridor. A total of 13 wetlands were identified by the NWI and the SWMP. The wetlands adjacent to Round Pole Branch are mapped as palustrine emergent (PEM) wetlands by the NWI and as palustrine scrub-shrub (PSS) wetlands by the SWMP. The three tributaries to Broadkill River support palustrine forested (PFO) wetlands as mapped by both the NWI and SWMP. Beaverdam Creek and its tributary support palustrine forested (PFO) wetlands and palustrine scrub-shrub (PSS) wetlands. The wetlands adjacent to Old Mill Creek are mapped as palustrine forested (PFO) wetlands by the NWI and as estuarine intertidal emergent (E2EM) wetlands by the SWMP. Both the NWI and SWMP mapping shows palustrine forested (PFO) wetlands along Black Hog Gut. The wetlands along Canary Creek are classified as estuarine intertidal emergent (E2EM) wetlands with palustrine forested (PFO) wetlands along the fringe. The wetlands along the tributary to Canary Creek are mapped as palustrine forested (PFO) wetlands and palustrine unconsolidated (PUB) wetlands. Wetlands mapped along the corridor

that are not directly associated with the streams include palustrine emergent (PEM) and palustrine unconsolidated (PUB) wetlands east of Round Pole Branch, a large palustrine forested (PFO) wetland west of Beaverdam Creek, a palustrine forested (PFO) wetland west of Coastal highway (SR 1) and palustrine forested (PFO) and estuarine intertidal emergent (E2EM) wetlands west of Canary Creek. There are approximately 5 small forested areas and 7 large forested areas that the proposed trail will travel through.

This project will likely require the construction of new crossings over Beaverdam Creek, Old Mill Creek, Black Hog Gut, and Canary Creek and potential improvements to the existing culverted crossings. These crossings and any trail improvements that impact other waterways or wetlands would require authorization from the ACOE and/or DNREC. Authorization for project activities within the 100-year floodplain may be required from the Local permitting agency.

(10) Smyrna Track:

The Smyrna Track is proposed along an inactive railroad bed that has since been paved over for roads and driveways or filled in to accommodate landscaping. The railroad bed is located along the north side of Smyrna-Clayton Boulevard. There is one stream associated with this corridor, Greens Branch, which passes under the rail corridor and the existing roadway by way of a culvert. Greens Branch has an associated 100-year floodplain that the railroad corridor crosses as well. The NWI mapping shows palustrine forested (PFO) wetlands along Greens Branch, adjacent to the north side of the proposed trail. There are no forests within this corridor.

If this trail project requires improvements to the crossing of Greens Branch, authorization from the ACOE and/or DNREC may be required. Authorization for project activities within the 100-year floodplain may be required from the Local permitting agency.

The information provided in this report has been based on GIS data, obtained from Delaware Department of Natural Resources and Environmental Control (DNREC). It is therefore recommended that a detailed on-site investigation and delineation be conducted, for any of these rail corridors that advance into a planning study, to determine the extent(s) of the identified environmental features.