



**U.S. ARMY CORPS OF ENGINEERS  
REGULATORY PROGRAM  
APPROVED JURISDICTIONAL DETERMINATION FORM (INTERIM)  
NAVIGABLE WATERS PROTECTION RULE**

**I. ADMINISTRATIVE INFORMATION**

Completion Date of Approved Jurisdictional Determination (AJD): 3/12/2021

ORM Number: NAE-2019-00514 AJD#1 for Stream/Wetland-3, Stream/Wetland-4, Stream/Wetland-6, Wetland-7, Stream/Wetland-X and W-11

Associated JDs: NAE-2019-00514 Rapanos AJD#2 for W/S-1, W/S-2, W/S-5 and P/PW-1 dated 6/19/2020; PJD#4 for Stream/Wetland-8, Stream/Wetland-9, Stream/Wetland-10 and Stream/Wetland-12 dated 3/12/2021.

Review Area Location<sup>1</sup>: State/Territory: CT City: North Stonington County/Parish/Borough: New London  
Center Coordinates of Review Area: Latitude 41.418730 Longitude -71.835247

**II. FINDINGS**

**A. Summary:** Check all that apply. At least one box from the following list MUST be selected. Complete the corresponding sections/tables and summarize data sources.

- The review area is comprised entirely of dry land (i.e., there are no waters or water features, including wetlands, of any kind in the entire review area). Rationale: N/A
- There are "navigable waters of the United States" within Rivers and Harbors Act jurisdiction within the review area (complete table in Section II.B).
- There are "waters of the United States" within Clean Water Act jurisdiction within the review area (complete appropriate tables in Section II.C).
- There are waters or water features excluded from Clean Water Act jurisdiction within the review area (complete table in Section II.D).

**B. Rivers and Harbors Act of 1899 Section 10 (§ 10)<sup>2</sup>**

§ 10 Name	§ 10 Size		§ 10 Criteria	Rationale for § 10 Determination
N/A.	N/A.	N/A.	N/A.	N/A.

**C. Clean Water Act Section 404**

Territorial Seas and Traditional Navigable Waters ((a)(1) waters): <sup>3</sup>				
(a)(1) Name	(a)(1) Size		(a)(1) Criteria	Rationale for (a)(1) Determination
N/A.	N/A.	N/A.	N/A.	N/A.

Tributaries ((a)(2) waters):				
(a)(2) Name	(a)(2) Size		(a)(2) Criteria	Rationale for (a)(2) Determination
Stream 4	1203	linear feet	(a)(2) Intermittent tributary contributes surface water flow directly or indirectly to an (a)(1) water in a typical year.	Stream 4 is affiliated with a broad hillside seep wetland complex best described as a headwater catchment that, under natural condition, would be forested. Most of the upslope wetland system (refer to Wetland 4 below) has been modified for agricultural use. Analysis of historical sources revealed that the original agricultural conversion predates State of Connecticut aerial photography

<sup>1</sup> Map(s)/figure(s) are attached to the AJD provided to the requestor.

<sup>2</sup> If the navigable water is not subject to the ebb and flow of the tide or included on the District's list of Rivers and Harbors Act Section 10 navigable waters list, do NOT use this document to make the determination. The District must continue to follow the procedure outlined in 33 CFR part 329.14 to make a Rivers and Harbors Act Section 10 navigability determination.

<sup>3</sup> A stand-alone TNW determination is completed independently of a request for an AJD. A stand-alone TNW determination is conducted for a specific segment of river or stream or other type of waterbody, such as a lake, where upstream or downstream limits or lake borders are established. A stand-alone TNW determination should be completed following applicable guidance and should NOT be documented on the AJD Form.



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Tributaries ((a)(2) waters):			
(a)(2) Name	(a)(2) Size	(a)(2) Criteria	Rationale for (a)(2) Determination
			<p>from 1934. Within the project review area, the Upper Reach is reported by the consultant to be 647 linear feet in length. The watercourse that has been defined as Stream 4 by the agent is best characterized (and defied herein) by three-separate reaches of a singular stream that is bisected by two east-west configured farm roads. The combined reaches flow in a southeast direction for a total, remotely estimated, length of 2,293 linear feet. The documentation submitted with the request indicates that the Stream 4 interconnection with presumed jurisdictional waters (Refer to June 19, 2020 NAE-2019-00619 AJD#2 for Pawcatuck River) was remotely sensed. We could not field verify this connection in 2020 due to extreme drought condition at the project location and resource features that are located on separately owned parcels outside of the Review Area. Field verification did however occur in 2021.</p> <p>At its upper origination Stream 4 demonstrates the less defined and unreliable stream character of a headwater feature, though confined and discrete flow is still apparent, and an ordinary high-water mark is distinct. Above the northernmost farm road, the watercourse is flashier and appears heavily precipitation driven as evidenced by soil laden runoff being conveyed into it from the adjacent farm fields.</p> <p>For clarity of analysis, we divided the tributary into 3 sections (Stream 4 Upper Reach, Stream 4 Middle Reach and Stream 4 Lower Reach) to better define the varying flow character and the issue of seasonal connectivity.</p> <p>STREAM 4 UPPER REACH, is a 647 linear foot stretch of the watercourse (based on agent mapping and remote aerial analysis) that develops into a well-defined tributary with predictable character of intermittent flow in the lower portion of Wetland 4 immediately after it passes over the northernmost gravel farm road. Here Stream 4 Upper Reach presents as a naturally occurring surface water channel approximately 3-feet wide with a lateral limit defined by an apparent and mostly continuous ordinary high-water mark. It possesses a broad area of riparian forested adjacent wetland (Wetland 4 below). The formed tributary develops well-defined</p>





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(a)(2) Name	(a)(2) Size	(a)(2) Criteria	Rationale for (a)(2) Determination
			<p>stream banks and has a bed exhibiting substrate sorting and point bars of sand and gravel. Its morphology is meandering, and flow is expressed where ground water from the abutting wetland intersects the waterway. The USGS StreamStats application estimates the watershed for the entirety of Stream 4 at 52 acres though it is difficult to clearly define watershed boundaries on this site due to the level of anthropogenic modification. Due to the small size of the calculated watershed the program may be considered somewhat unreliable in this regard. When combined with the significant modifications that have occurred here, Stream 4's drainage area could be larger or smaller than what is indicated by this application.</p> <p>However, multiple aerial photographs support an inference that Stream 4 Upper Reach will possess intermittent flow originating as water-table fed surface flow during a typical year. Seasonal groundwater contribution is supplemented by precipitation events, but the remote evidence and atypical precipitation analysis indicates that such events are not the main source of hydrology in Stream 4 Upper Reach. USGS hydric soil maps and repeating wetland signatures in abutting areas, which appear in remote aerials year after year, are evidence of this groundwater contribution to the Stream 4 Upper Reach. Remote interpretation of intermittent flow in the upper reach was verified by visual inspection on April 18, 2019 and January 20, 2021. By these observations alone, we can conclude that Stream 4 Upper Reach meets the weight of evidence for reliable intermittent flow at least once in a typical year. However, jurisdiction of the upper reach is intricately tied to flow circumstances that are present in Stream 4 Middle Reach as described below.</p> <p>After passing through a low point in what may be either a natural till ridge or a manmade rock fill berm Stream 4 straightens along the steeper slope face. It is at this break point that we define the waterway as "STREAM 4 MIDDLE REACH". From this location Stream 4 Middle Reach presents as a high-volume incised linear feature (up to 10-feet deep in some locations) with a scoured bottom of large cobble and small boulder in well-drained soils. We remotely</p>





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Tributaries ((a)(2) waters):			
(a)(2) Name	(a)(2) Size	(a)(2) Criteria	Rationale for (a)(2) Determination
			<p>estimate Stream 4 Middle Reach at roughly 556 linear feet with an incised bed of between 4 and 10 feet deep. After transiting through the low point on the ridge, the watercourse appears to lose most evidence of associated riparian wetland. The agent indicates that they were unable to assess flow in Stream 4 Middle Reach because it drains off-property and outside of the project review area. The wetland delineator indicated that they were unable to find evidence of a channelized or discrete stream conveyance where it would be expected to intersect the lower farm road onsite, so the flow character of Stream 4 Middle Reach was originally limited to digital remote analysis, as discussed below.</p> <p>The remote resources included a series of aeriels from Connecticut and Rhode Island, USGS topographic maps and the 2016 Connecticut bare earth digital elevation model (lidar). Terrain and slope maps clearly depict a defined feature on the landscape for Stream 4 Middle Reach that is visually discrete and physically predictable. However, initial analysis of multiple aerial photographs showed that where channelized connectivity would be expected, such was not present. Thus, we initially believed that the feature dissipated as it intersected the well-drained soil of a cut slope that demarcates the final boundary of historical sand and gravel mining at the site. It was not until detailed review of bare earth elevation Lidar data and the 2021 site visit that we were able to discern that flow continues as a discrete channel along the base of the cut slope and that it is visually screened by dense invasive vegetation that obscures evidence of flow early in the growing season.</p> <p>Based on the result of our remote review we sought to answer two questions which would help us to define the jurisdictional status of this watercourse.</p> <p>1) First we sought evidence to determine if Stream 4 Middle Reach is intermittent (surface water predictably flows continuously during certain times of the year and more than in direct response to precipitation) or ephemeral (surface water flowing or pooling only in direct response to precipitation) as defined by the April 21, 2020 rule. To determine whether conditions for specific point-in-time (dated</p>





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			<p>aerial photos and site investigation) were within the normal periodic range of precipitation or other climactic variables, we analyzed climate normal using the Corps Antecedent Precipitation Tool. To conduct the typical year flow analysis, we arrived at over 13 dated ortho-photographic images. Of these images, five photo years provided visual clarity (leaf-off, spring and winter) that potentially allowed observation of possible hydrology indicators on the ground. Dates analyzed for the APT were January 20, 2021, April 12-25, 2020, March 24-April 25, 2019, April 22, 2018, April 7, 2013, and February 10, 2005. The 2019 analysis consisted of both aerial photographic assessment and on-site analysis (April 18, 2019). An additional analysis on January 20, 2021 consisted of on site review and an APT (no aerial imagery analysis).</p> <p>The remote evaluation we conducted revealed that within a normalized 30-year rolling period flowing water was found very predictably, on an annual basis, in Stream 4 Upper Reach and Stream 4 Lower Reach in a typical year. Stream 4 Middle Reach was not as reliable to discern on an annual basis, especially given multiple manmade alterations to the site. However, at least two recent typical year analyses (2020 and 2021) revealed that Stream 4 Middle Reach would be expected to possess intermittent flow in a "typical year". Observations from 2013 and 2018 did not correlate to a typical year and were problematic to interpret. The observation from 2005 was considered reliable, but the site conditions reflective of that dated observation (2/10/2005) are no longer present as the site has since been modified by grading and discharge of fill material. The 2019 observation did not provide an indication that Stream 4 Middle Reach would convey intermittent flow in a typical year, but post-site visit we now know that evidence of flow was likely obscured by early season vegetative cover.</p> <p>Of the 3 stream reaches analyzed, STREAM 4 LOWER REACH (which is outside of the project review area) possessed the most reliable evidence of seasonal intermittent flow in a typical year as it conveyed channelized surface water between March 24 and April 25, 2019 and April 12 through 25, 2020</p>





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Tributaries ((a)(2) waters):			
(a)(2) Name	(a)(2) Size	(a)(2) Criteria	Rationale for (a)(2) Determination
			<p>in a normal year and also possessed reliable indicators of hydrology on April 7, 2013 during a drier than normal (drought) year.</p> <p><b>CONCLUSION:</b>            Stream 4 Upper Reach - Intermittent            Stream 4 Middle Reach – Intermittent            Stream 4 Lower Reach - Intermittent</p> <p><b>ANALYSIS OF CONNECTIVITY</b>            Similar to the analysis above, we used a time-series of remote aerial photography to inform the determination as STREAM 4 LOWER REACH is outside of the project review area. We used a weight of evidence approach informed by best professional judgement in considering the relevant information available. The information evaluated was used to determine whether requisite flow condition is present and the hydrological connections meet weight of evidence for a discrete and confined channelized conveyance of stream flow with connectivity to a downstream jurisdictional water in a typical year.</p> <p>Due to obscuring vegetation during leaf on, remote sources were limited to base earth elevation maps (lidar) and spring photographs from 1990, 1991, 2001, 2003, 2004, 2005, 2012, 2013, 2016, 2019 and 2020. We found that the photos between 1990 and 2005 were not evidential of the current landscape as the tributary has been relocated since these photographs were taken. The sources reviewed provided some suggestion that sometime between 2011 and 2016 the land grade at the site was modified and that Stream 4 Middle Reach no longer conveyed flow via its original channel.</p> <p>More recent grading and filling (2011, 2016 &amp; 2017) along the lower farm road and the utility right-of-way has further modified conditions at the site and altered the pathway of connectivity. These changes were thought to have initially severed the original tributary connection. However, the recently published 2020 aerial photo and result of our January 20, 2021 site visit verified that the confined surface flow from Stream 4 Middle Reach traveled along the lower cut slope to converge with jurisdictional intermittent flow from Stream 5 (AJD #2 dated June 19, 2020). From this point the combined</p>





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Tributaries ((a)(2) waters):				
(a)(2) Name	(a)(2) Size		(a)(2) Criteria	Rationale for (a)(2) Determination
				<p>flow of Stream 4 and Stream 5 is conveyed under the lower access road via a manmade culvert conveyance to discharge into the Pawcatuck River, a perennial (a)(2) water and a Traditional Navigable Water (AJD #2 June 19, 2020).</p> <p>CONCLUSION: Based on the review of site specific on-site and remote resources we conclude that there is verifiable information to demonstrate that Stream 4 Upper Reach and Stream 4 Middle Reach are both intermittent and possess a confined surface water connection with the downstream tributary system (Stream 5) to contribute flow directly, or indirectly, into jurisdictional waters in a typical year. Thus, we concluded that Stream 4 is a jurisdictional water of the United States.</p>
N/A.	N/A.	N/A.	N/A.	N/A.

Lakes and ponds, and impoundments of jurisdictional waters ((a)(3) waters):				
(a)(3) Name	(a)(3) Size		(a)(3) Criteria	Rationale for (a)(3) Determination
N/A.	N/A.	N/A.	N/A.	N/A.

Adjacent wetlands ((a)(4) waters):				
(a)(4) Name	(a)(4) Size		(a)(4) Criteria	Rationale for (a)(4) Determination
Wetland 4	1.95	acre(s)	(a)(4) Wetland abuts an (a)(1)-(a)(3) water.	<p>Wetland 4 originates as a broad hillside seep complex that is predominantly forested, except where vegetation was historically removed, and the land modified for agricultural purposes. The wetland lies within NRCS mapped hydric soils identified as Ridgebury, Leicester and Whitman soils, 0 to 8 percent slope extremely stony. It has been significantly degraded by invasive shrubs and lianas. As it is at a topographically low point in between two agricultural fields it receives a significant amount of topsoil (and presumably fertilizer and/or herbicides) as runoff from the surrounding farm fields. Wetland 4 physically abuts, on both sides and at its origination, a headwater tributary which we identify as Stream 4 Upper Reach in the Stream 4 discussion above.</p> <p>A farm road divides the upper portion of this wetland and its associated drainage channel into two parts. In addition to bisecting the wetland, the unimproved earthen farm road also functions as a low weir to impound water seasonally (or possibly year-round as the presence of filamentous green algae suggest). This feature is functioning as a vernal pool as it</p>





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Adjacent wetlands ((a)(4) waters):			
(a)(4) Name	(a)(4) Size	(a)(4) Criteria	Rationale for (a)(4) Determination
			<p>reportedly possesses obligate amphibian species. The hydrologic regime for the upper portion of this wetland is best described as seasonally inundated with a high level of seasonal variability. The water that collects within the wetland flows over the roadway when it reaches the controlling elevation such that hydrologic connection between the upstream wetland, the downstream wetland and the downstream drainage feature is maintained on, at least, a seasonal basis.</p> <p>Under the NWPR 2020 final rule, multiple obstructions that divide one wetland into multiple parts do not change the jurisdictional status of an "adjacent wetland" so long as a direct hydrologic surface connection is maintained through a culvert or similar feature or over the obstruction which enables a direct hydrologic surface connection in a typical year between the otherwise separated portions of the adjacent wetland. Personal observation in 2019 and 2021 as well as review of remote resources reveal that this is functionally a single wetland modified by manmade partial obstruction and/or anthropogenic conveyance features.</p> <p>Jurisdiction of Wetland 4 as an (a)(4) adjacent wetland is contingent upon its relationship to Stream 4 and a determination as to whether Stream 4 is an intermittent or perennial tributary which contributes surface water flow to an (a)(1) to (a)(3) water in a typical year. As discussed in detail above, we conclude that Stream 4 is an intermittent feature that contributes flow to an (a)(1) through (a)(3) water in a typical year, either directly or indirectly through a natural channelized feature or through a manmade non-jurisdictional conveyance.</p> <p><b>CONCLUSION:</b> Wetland 4 physically abuts on at least two sides, Stream 4 which is an (a)(2) water of the U.S that contributes flow to downstream navigable waters in the typical year. Consequently, we conclude that Wetland 4 is an adjacent wetland because it physically abuts, at least on one side, Stream 4, which is an (a)(2) water that contributes channelized intermittent flow to downstream jurisdictional waters in a typical year.</p>
N/A.	N/A.	acre(s)	N/A.





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**D. Excluded Waters or Features**

Excluded waters ((b)(1) – (b)(12)): <sup>4</sup>			
Exclusion Name	Exclusion Size	Exclusion <sup>5</sup>	Rationale for Exclusion Determination
Stream 6	535 linear feet	(b)(1) Surface water channel that does not contribute surface water flow directly or indirectly to an (a)(1) water in a typical year.	<p>Stream 6 is identified by the agent as a headwater feature between 2 and 3 feet wide that originates as a hillside seep within the interior of a wetland. The stream below the headwater wetland area lacks natural stream sinuosity but possesses a gravel/cobble stream bed with incised banks and is described as “a continuous intermittent drainage that flows south with interconnection to the Pawcatuck River offsite.” The submittal documents also indicate that the connection was remotely sensed as the presumed connection is outside of the project review area.</p> <p>The wetland area affiliated with the watercourse is estimated at a 0.74- acre forested wetland that possesses an abundance of invasive shrubs and liana. It resides in mapped soils of Charlton-Chatfield complex, 15-45% slopes, very rocky. We observed evidence of a cut slope and quarried debris during our site visit which suggests that the wetland and the associated tributary may be a manmade feature incidental to the removal of rock or gravel (mining). Remote aerial photographs verify the presence of a mining access road in this location (at a high point between Wetland 6 and Wetland 5). The wetland depression has areas of shallowly inundated pit and mound topography which quickly taper off downslope to a very narrow, channelized drainage feature with no apparent affiliated riparian wetland.</p> <p>Like the process for the other tributaries above we reviewed existing leaf-off aerial photographs between 1930 and 2020. Only those photos where we could obtain a reliable date or range of dates was used for antecedent precipitation analysis. The remote point-in-time aerial photographs from 2011, 2014, 2018, 2019 and</p>

<sup>4</sup> Some excluded waters, such as (b)(2) and (b)(4), may not be specifically identified on the AJD form unless a requestor specifically asks a Corps district to do so. Corps districts may, in case-by-case instances, choose to identify some or all of these waters within the review area.

<sup>5</sup> Because of the broad nature of the (b)(1) exclusion and in an effort to collect data on specific types of waters that would be covered by the (b)(1) exclusion, four sub-categories of (b)(1) exclusions were administratively created for the purposes of the AJD Form. These four sub-categories are not new exclusions, but are simply administrative distinctions and remain (b)(1) exclusions as defined by the NWPR.





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Excluded waters ((b)(1) – (b)(12)): <sup>4</sup>			
Exclusion Name	Exclusion Size	Exclusion <sup>5</sup>	Rationale for Exclusion Determination
			<p>2020 for Stream 6 that we reviewed did not present reliable or predictable evidence for a channelized surface water connection to a downstream jurisdictional water in a typical year. In all cases the clearly visible tributary disappears on the landscape. The CT 2016 bare earth hill shade elevation map also provides no obvious evidence of a channelized connection though the 2016 gradient, but the slope elevation suggests that some surface flow may be occurring in a southeasterly direction along the profile of a former farm road. Connection with other hillside drainage features through a stone wall may be possible. Our original supposition was that Stream 6 would converge with Stream 5 along the north-south aligned stone wall. However, there is minimal evidence to document a connection between Stream 6 and this tributary or another jurisdictional water downstream.</p> <p>On January 20, 2021 we conducted a site visit to assess the connectivity of this feature to other downstream waters. Our site visit revealed that the tributary infiltrates into the well-drained upland soil and does not continue as a surface water feature downstream to connect with (a)(1) – (a)(3) waters. We found no evidence that the feature resurfaced downslope to redevelop as a channelized or discrete feature with hydrological connectivity to downstream waters.</p> <p><b>CONCLUSION:</b> Based on a preponderance of the evidence, both remote and site-specific observation, we conclude that Stream 6 is excluded from regulation under (b)(1) as it is a surface water channel that does not contribute surface water flow directly or indirectly to an (a)(1) - (a)(3) water in a typical year.</p>
Wetland 11	0.01	acre(s)	(b)(1) Non-adjacent wetland.
			<p>Wetland 11 is identified by the consultant as a small isolated wetland depression at the edge of an open farm field. It is located within the agricultural field just to the northeast of Wetland 4 and just south of the dirt farm road. The aquatic feature is described as hydrologically distinct from Wetland 4 and we confirmed during our site visit that it has formed in a slight depression of soil compacted from what appears</p>





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Excluded waters ((b)(1) – (b)(12)): <sup>4</sup>			
Exclusion Name	Exclusion Size	Exclusion <sup>5</sup>	Rationale for Exclusion Determination
			<p>to be normal farming activity.</p> <p>Although it is possible that at one time the area may have been a component of Wetland 4, that is no longer the case.</p> <p>The feature does not physically abut Wetland 4, does not possess natural vegetation and shallow saturation or inundation is fleeting due to the perched condition. It does not physically touch, or abut, the a boundary of an (a)(1) – (a)(3) water of the U.S. that contributes flow to downstream navigable waters it a typical year.</p> <p><b>CONCLUSION:</b> Wetland 11 is excluded from regulatory jurisdiction as it is not an adjacent wetland as defined under the NWPR.</p>
Stream X	576	linear feet	<p>(b)(1) Surface water channel that does not contribute surface water flow directly or indirectly to an (a)(1) water in a typical year.</p> <p>The consultant identifies this feature as a headwater seep wetland which funnels to a very narrow intermittent watercourse and exhibits highly ephemeral flow in a south to southeastern directly down slope to the utility ROW. The agent indicates that upon leaving the slope flow from Stream X is lost and the hydrology is no longer present. During rain events Stream X may overtop the ROW/access road.</p> <p>Review of the aerial photographic record tracks the presence and persistence of this drainage feature on the landscape, in various configurations, back to 1939. Review of the RI GIS URI aerial photos clearly indicate the feature in photographs from 2008, 1997, 1972 and 1939. CT DEEP Aerials document its presence in 2019 and 2004 and Google Earth aerial photographs document its presence in 2005, 2003, and 2001. Of the photographs listed above date-specific information was available for 1997, 2001, 2003, 2005 and 2013. Review of the remote resources indicated that sometime after 2013 the channel configuration of this surface feature was modified via construction of a manmade earthen berm. The feature fails to present as a discrete or channelized water on later aerial photographs.</p> <p>Our review suggested that the recently constructed berm appears to prevent the movement of flow such that connection between</p>





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Excluded waters ((b)(1) – (b)(12)): <sup>4</sup>			
Exclusion Name	Exclusion Size	Exclusion <sup>5</sup>	Rationale for Exclusion Determination
			<p>the upstream intermittent drainage of Stream X and lower (a)(1) – (a)(3) water (Stream 4 Lower Reach) has been functionally severed.</p> <p>During a site visit on January 20, 2021 we assessed Stream X for surface hydrological connectivity over or through the lower farm/utility access road. We confirmed that flow from the feature does not breach the constructed berm and that connectivity with downstream waters has been severed. Evidence of significant overland flow was present, and indicators suggest that such flow may have pooled behind the berm and subsequently infiltrated into the deep sandy soil.</p> <p><b>CONCLUSION:</b> Based on a preponderance of the evidence, both remote and site-specific observation, we conclude that Stream X is excluded from regulation under (b)(1) as it is a surface water channel that has been anthropogenically modified such that it no longer contributes surface water flow directly or indirectly to an (a)(1) - (a)(3) water in a typical year.</p>
Wetland 7	0.77	acre(s)	<p>(b)(1) Non-adjacent wetland.</p> <p>Wetland 7 is a broad hillside-seep palustrine forested and shrub wetland which is fed by groundwater breakout at the toe of a slope. The lowermost portion of the wetland has developed into a shallow, emergent marsh dominated by Phragmites australis which is interspersed with native rush and sedge. Portions of the feature extend out of the review area and onto an adjacent parcel.</p> <p>The shallow marsh abuts an area historically mined for sand and gravel and the resultant water level within the wetland appears to be controlled by the presence of a gravel fill for a berm and farm/utility access road.</p> <p>Review of aerial photographs indicate that the wetland has existed in its current location and condition without change since at least 1981.</p> <p>The roadway does not sever Wetland 7's connectivity to the larger wetland system on the</p>





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Excluded waters ((b)(1) – (b)(12)): <sup>4</sup>				
Exclusion Name	Exclusion Size		Exclusion <sup>5</sup>	Rationale for Exclusion Determination
				<p>other side of the access road. When seasonal water levels reach the controlling elevation of the roadway, flow from the wetland is discharged into the road where it is conveyed through an ephemeral feature over the unimproved road surface to the north and east. The conveyance feature, which lies outside of the review area, does not possess defined bed or bank, but it is discrete and shallowly channelized. Aerials indicate that the conveyance is visible year after year and intersects with intermittent drainage features (defined as Stream 4 Lower Reach in the discussion above) that are hydrologically connected to the Pawcatuck River.</p> <p>However, per the NWPR a wetland that possesses an attenuated connection (including a connection via an ephemeral surface water feature or overland sheet flow) where the wetland does not physically abut an (a)(1) – (a)(3) water cannot be an (a)(4) adjacent wetland. In this case although Wetland 7 may have a hydrological connection, albeit tenuous to downstream water, the feature is not jurisdictional per adjacency criteria because it does not physically abut, at least on one side, an (a)(1) – (a)(3) jurisdictional water of the U.S.</p> <p><b>CONCLUSION:</b> Wetland 7 is excluded from regulatory jurisdiction as it is not an adjacent wetland as defined under the NWPR.</p>
Wetland X	0.01	acre(s)	(b)(1) Non-adjacent wetland.	<p>As indicated above Wetland X is headwater seep wetland which channelizes to form very narrow intermittent watercourse with highly ephemeral flow.</p> <p>The wetland is very small and quickly dissipates with increasing slope. Based on a review of multiple years of remote aerial photographs we believe that the slope breakout forming Wetland X may be ephemeral re-surface of Stream 3 which infiltrated into the groundwater layer further upslope.</p> <p>The tributary to which Wetland X is affiliated does not possess discrete or channelized surface water connectivity to downstream (a)(1) – (a)(3) waters due to the presence of a</p>





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Excluded waters ((b)(1) – (b)(12)): <sup>4</sup>			
Exclusion Name	Exclusion Size	Exclusion <sup>5</sup>	Rationale for Exclusion Determination
			<p>manmade berm which functionally severs the surface water connection. Consequently, Stream X is not a water of the U.S. Per the NWPR a wetland that does not physically abut an (a)(1) – (a)(3) water cannot be an (a)(4) adjacent wetland.</p> <p>CONCLUSION: Wetland X is excluded from regulatory jurisdiction as it is not adjacent to an (a)(1) – (a)(3) water and it does not meet the definition for an adjacent wetland under the NWPR.</p>
Wetland 6	0.74	acre(s)	<p>(b)(1) Non-adjacent wetland.</p> <p>As indicated above Wetland 6 is a headwater seep wetland that appears to be affiliated with excavation for the removal of rock or gravel (mining). The wetland depression has areas of shallowly inundated pit and mound topography which quickly taper off downslope to a very narrow, channelized drainage feature (Stream 6) with no apparent affiliated riparian wetland in its lowermost drainage.</p> <p>As discussed above, the tributary to which Wetland 6 is affiliated (stream 6) does not possess surface water connectivity to downstream (a)(1) – (a)(3) waters and thus Stream 6 is not a water of the U.S. Per the NWPR a wetland that does not physically abut an (a)(1) – (a)(3) water cannot be an (a)(4) adjacent wetland.</p> <p>CONCLUSION: Wetland 6 is excluded from regulatory jurisdiction as it is not adjacent to an (a)(1) – (a)(3) water and it does not meet the definition for an adjacent wetland under the NWPR.</p>
Stream 3	838	linear feet	<p>(b)(1) Surface water channel that does not contribute surface water flow directly or indirectly to an (a)(1) water in a typical year.</p> <p>Review of the current site’s landscape as well as historical resource configuration indicates that the feature identified as S/W-3 is a narrow and straight (ditched or trenched) man-modified feature that is functioning as a surface drainage to convey water from the adjacent westerly farm field and the farm road to the north. The aquatic resource feature is best described as a field swale or ditch in its upper extent and meets the definition of “ditch” under the 2020 rule in that it is a constructed or excavated channel used to convey water. Vegetation along the margin of</p>





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Excluded waters ((b)(1) – (b)(12)): <sup>4</sup>			
Exclusion Name	Exclusion Size	Exclusion <sup>5</sup>	Rationale for Exclusion Determination
			<p>the feature includes small diameter (less than 8-inches diameter breast height) trees and shrubs represented by <i>Acer rubrum</i> (red maple), (<i>Cornus amomum</i>) Silky dogwood, <i>Ilex verticillata</i> (winterberry), and <i>rosa multiflora</i> (multiflora rose).</p> <p>Review of historical aerial photographs do provide insight into the feature's hydrogeomorphological character and indicate that at least some portion of the feature may have been constructed in hydric soil (wetland). The feature is attributed as flowing, via gravity, in a southerly direction along the margin of the farm field. Both the agent and the remote resources we reviewed indicate that flow within the feature is seasonally intermittent and fed by a combination of precipitation and seasonal groundwater such that it satisfies flow condition under the NWPR. This is particularly evident in the 2020 State of Rhode Island aerial photography and was confirmed during a site visit on January 20, 2021. The agent indicates that the feature is a "losing" drainage feature that infiltrates into the ground and does not connect to other waters.</p> <p>Our 2021 site visit verified that the feature leaves the wooded drainage for approximately 200 linear feet and travels along the edge of the farm field as a discrete conveyance. At a topographical grade change the feature re-enters the delineated drainage, travels through and under a boulder rock wall and into a heavily vegetated gulley possessing a dominance of upland herbaceous plants (<i>Alliaria petiolata</i>, <i>Rubus allegheniensis</i> but also <i>Smilax</i> spp. which has the potential to be facultative and present in both wetland and non-wetland). During our 2021 site visit we were unable to document a discrete or confined drainage feature or indicator of annual ordinary high water connecting Stream 3 to features downslope.</p> <p>A single remote source (April 2020 RI GIS aerial) shows that in a typical year Stream 3 may give way to a surface water feature that will converge with the feature labeled Wetland X on the enclosed Key to Aquatic Resources. However,</p>





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Excluded waters ((b)(1) – (b)(12)): <sup>4</sup>				
Exclusion Name	Exclusion Size		Exclusion <sup>5</sup>	Rationale for Exclusion Determination
				<p>our site visit and the remote resources that we reviewed indicate that the surface water connections, if they do exist, are not discrete or confined and do not appear to be reliably predictable to a typical year.</p> <p><b>CONCLUSION:</b> Stream/Ditch 3 which is appears to be functioning as an intermittent tributary in its upper extent infiltrates into the well-drained soil. It does not possess a discrete channelized surface hydrologic connection to an (a)(1) through (a)(3) water and does not appear to reliably contribute surface water flow in a typical year to traditional navigable waters. Consequently, we conclude that Stream 3 is not a jurisdictional water of the United States.</p>
Wetland 3	0.17	acre(s)	(b)(1) Non-adjacent wetland.	<p>As indicated above Wetland 3 consists of a very narrow wetland along the margin of a man-made or man-modified intermittent drainage feature identified as Stream 3. Vegetation is dominated by small diameter (less than 8-inches diameter breast height) trees and shrubs represented by <i>Acer rubrum</i> (red maple), (<i>Cornus amomum</i>) Silky dogwood, <i>Ilex verticillata</i> (winterberry), and <i>rosa multiflora</i> (multiflora rose). The upland margin possess blackberry (<i>Rubus</i> spp.) and greenbriar (<i>Smilax</i> spp.).</p> <p>As discussed above, the intermittent drainage feature to which Wetland 3 abuts (Stream 3) does not possess surface water connectivity to downstream (a)(1) – (a)(3) waters and thus is not a water of the U.S. Per the NWPR a wetland that does not physically abut an (a)(1) – (a)(3) water, at least on one side, cannot be an (a)(4) adjacent wetland.</p> <p><b>CONCLUSION:</b> Wetland 3 is excluded from regulatory jurisdiction as it is not adjacent to an (a)(1) – (a)(3) water and it does not meet the definition for an adjacent wetland under the NWPR.</p>

**III. SUPPORTING INFORMATION**

**A. Select/enter all resources** that were used to aid in this determination and attach data/maps to this document and/or references/citations in the administrative record, as appropriate.





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Information submitted by, or on behalf of, the applicant/consultant: Request for Approved Jurisdictional Determination for Pawcatuck Solar Center, LLC dated February 22, 2019; Wetland Inspection Field Report dated December 1, 2017 for field dates Oct. 18-17, 23, and 31, 2017, Nov. 1, 4 and 19, 2017; Wetland Inspection Site Delineation Map received Feb. 25, 2018 dated April 2018; Supplemental Jurisdictional Determination Report dated July 24, 2019; NCNE Wetland delineation data forms for wetland transects P/PW (river)-1, W-1 PEM, W-1 ROW, W-1 Ag, W-2 PEM, W-2 PFO, W-3, and W-11. Existing Conditions Map Figure 2 Dated July 2019; Revised Existing Conditions Map dated January 2020; ACOE Sampling Locations Map dated March 2020; May 1, 2020 Email clarification on drainage conveyances for Wetlands 7, 3 and 4; May 5, 2020 Email clarification 2 regarding connectivity of Wetlands 3 & 7. Revised Existing Conditions Map Figure 2 Dated June 2020; June 4, 2020 Email clarification regarding Wetland X; October 22, 2020 Email clarification regarding drainage conditions of Streams 3 and 4.

This information is and is not sufficient for purposes of this AJD.

Rationale: Alone, the information provided by the applicant was not not sufficient to make a determination on the category of jurisdictional waters at the site. Additional information and analysis of connectivity had to be obtained on site.

- Data sheets prepared by the Corps:
- Photographs: Aerial and Other: Site photographs taken by All-Points Technology Corporation on June 27, 2019; See appended list of Aerial Photographs and Lidar bare earth elevation resources reviewed.
- Corps site visit(s) conducted on: April 18, 2019 and January 20, 2021
- Previous Jurisdictional Determinations (AJDs or PJDs): ORM Number(s) and date(s).
- Antecedent Precipitation Tool: *provide detailed discussion in Section III.B.*
- USDA NRCS Soil Survey: Web Soil Survey Report based on RI600 and CT600 at scale of 1:1730; SSURGO accessed from USDA April 17, 2019;
- USFWS NWI maps: Maps accessed from USFWS NWI Mapper on December 17, 2019.
- USGS topographic maps: USGS 7.5 min topo Ashaway RI (1984) at 1:24,000 scale prepared by AllPoints Technology Corporation; 1943 Ashaway RI at 1:31,680; 1953 Ashaway RI at 1:24,000

**Other data sources used to aid in this determination:**

Data Source (select)	Name and/or date and other relevant information
USGS Sources	USGS StreamStats tributaries Accessed on November 2019; USGS NHD layer multiple access dates;
USDA Sources	N/A.
NOAA Sources	N/A.
USACE Sources	Site photographs taken by Cori Rose on April 17, 2019 and January 20, 2021
State/Local/Tribal Sources	N/A.
Other information (specify)	N/A.

**B. Typical year assessment(s):** After reviewing a wide range of aerea photography from multiple sources Corps staff conducted typical year assessments using the USACE Antecedent Precipitation calculation tool for six point-in-time date periods corresponding with aerial photographic documentation. The six periods were selected based on the clarify of the photographs to depict drainage features on the landscape and time of year which they were taken (leaf off). The dates reviewed were February 10, 2005, April 7, 2013, April 22, 2018, March 24-April 25, 2019, April 12 – 25, 2020 and January 20, 2021. Of the six, three could not be relied upon to conclusively determine the presence of flow and connectivity during a typical year. FEBRUARY 10, 2005





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The 2005 analysis positively depicted flow in both the upper and middle reaches of Stream 4 but connectivity through the lower reach of Stream 4 was inconclusive due to snow cover and winter shadow. Additionally, we found that this point-in-time resource could not be relied upon as the landscape and drainage configuration of tributaries at the site had been altered subsequent to this photograph.

APRIL 7, 2013

The April 7, 2013 also provided to be inconclusive as it occurred during a period of severe drought and only one of the 30-day rolling calculations fell within the parameters of "normal." This resource was helpful in that even under drought condition Stream 4 lower reach possessed signatures of wetness, suggesting that hydrology of the lower stream system is not contingent upon precipitation. Similar to 2013, the April 22, 2018 possess conditions that were either above or below the normal condition with two months of incipient wetness followed by a drier than normal period and could not be relied upon to document presence of flow in a typical year.

JANUARY 20, 2021

Review of the January 20, 2021 analysis revealed that two of the three 30-day weighted observations were within condition considered typical. The PDSI was predictive of mild drought. Enough time had passed such that precipitation events outside of normal were not expected to affect what was observed on the ground. We observed flowing water through the upper portion of Wetland 4, including over the farm road and through the mid and lower reach of Stream 4. We also observed seasonal connectivity between the intermittent tributary known as S-5 and Stream 4 during typical year condition. Thus, this observation was considered a reasonably reliable indicator of typical flow condition driven by normal precipitation and seasonal elevated groundwater levels at the site.

APRIL 18, 2019

Similar to 2021 the condition represented by our site visit on April 18, 2019 was reasonably consistent with typical climatic condition although incipient of moderate wetness. Two of the 30-day weighted observations were within normal parameters with the lowest weighted condition for February 17, 2019 just outside (above) of the normal range. Enough time had passed such that this precipitation would not have contributed to abnormal precipitation-driven flow on the ground at the time of the site visit. Thus, this observation was considered a reasonably reliable indicator of typical flow condition driven by normal precipitation and seasonal elevated groundwater levels at the site.

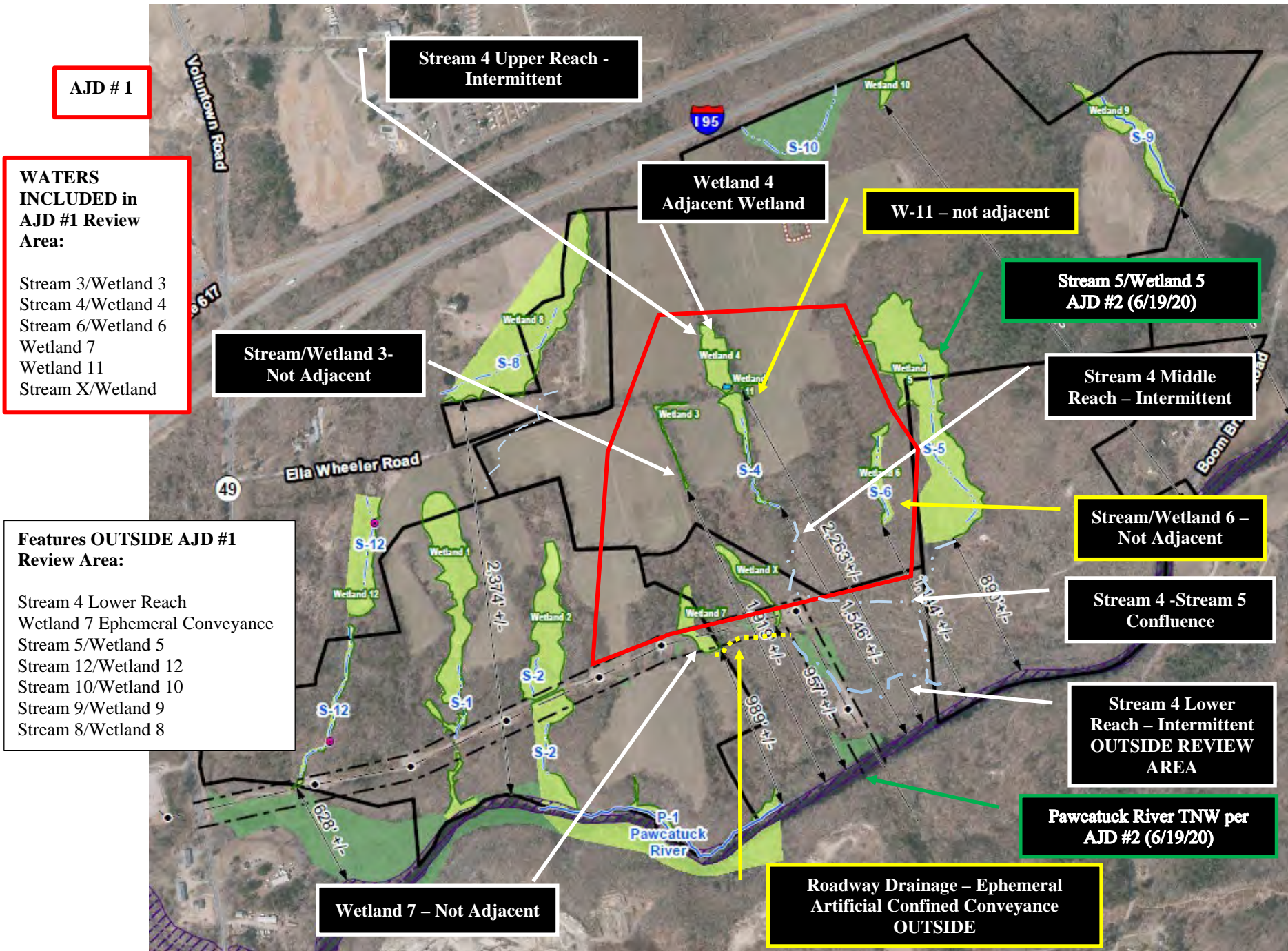
APRIL 25, 2020

Finally, the analysis for the point-in-time observations between April 12 and 25, 2020 indicated that climate conditions were, for the most part, within the 30-year normal range although later dates for the 30-day rolling totals were on the point of transition and are considered drier than normal (above 30% and below 70% -orange shaded area). The precipitation observations document that there were no significant unusual rainfall events in the days leading up to the range of dates for this photograph. The precipitation condition value ranged from a low of 8 to a high of 12 with an average of 10, which can reasonably be considered to be on the lower (drier) end of normal which notably is of interest given the strength of wetness signatures at the site. This observation provides strong evidence of surface water flow via channelized and discrete conveyances, which when combined with those from 2019 and 2021, contributes to the weight of evidence that Stream 4 possesses reasonably reliable and predictable surface water flow which is being conveyed from Stream 4 Upper Reach to Stream 5 and the Pawcatuck River in a typical year.

**C. Additional comments to support AJD: N/A**

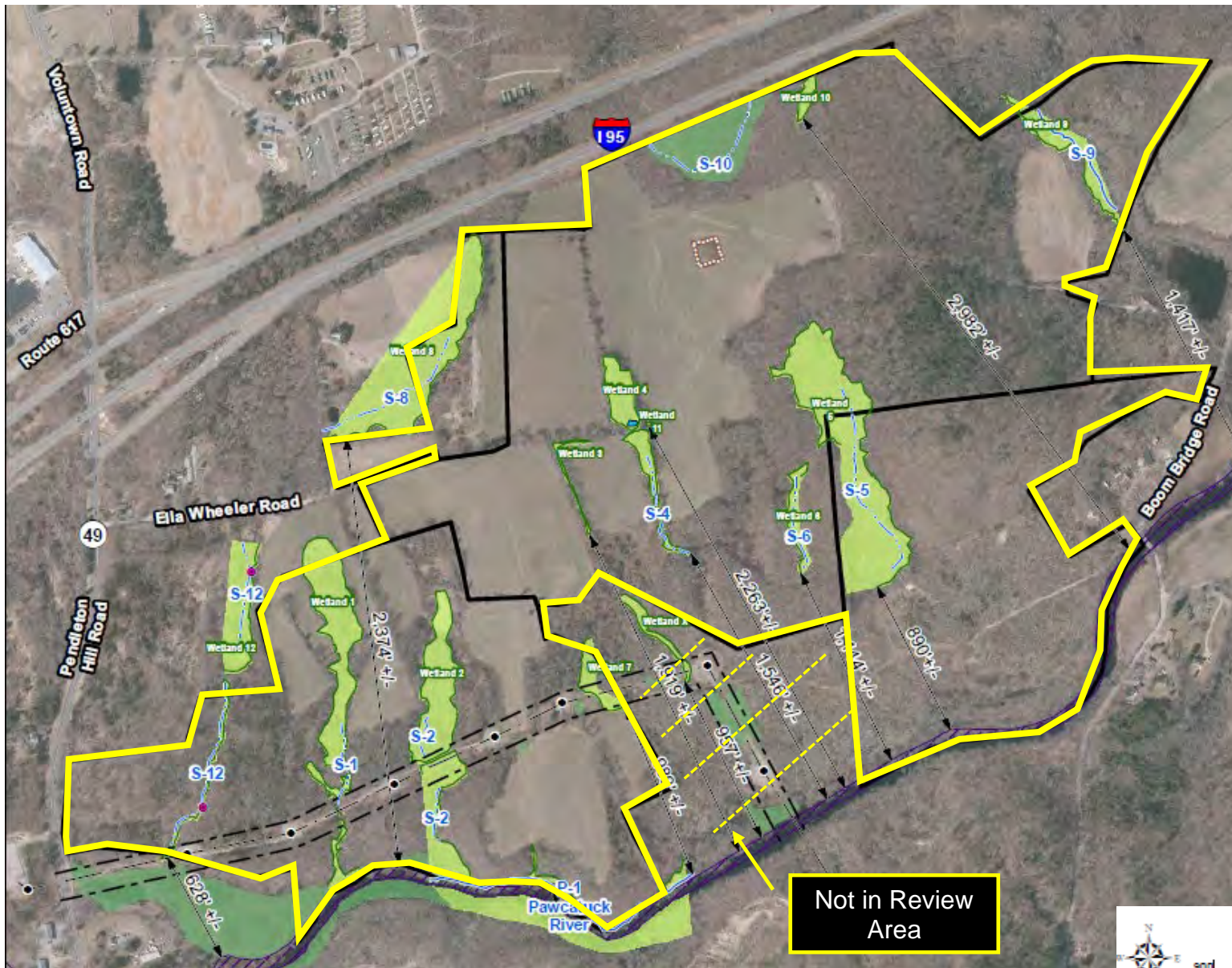


**NORTH STONINGTON SOLAR CENTER NAE-2019-00514**  
**Key to Aquatic Resources for Approved Jurisdictional Determination # 1**





# NAE-2019-00514 APPROVED JURISDICTION REVIEW AREA



Source:  
All-Points Technology  
Existing Conditions Map

Created by: Cori M. Rose,  
USACE

Date: June 8, 2020

### Legend

- Site
- Transmission Line
- Approximate Transmission Right-of-Way
- Transmission Tower
- Culvert
- Perennial Watercourse Bank
- Intermittent Watercourse
- Delineated Wetland Boundary
- Delineated Wetland Area
- Approximate Wetland Area
- Vernal Pool
- Cemetery

### Map Notes:

Base Map Source: CTECO 2019 Aerial Photograph  
Map Scale: 1 Inch = 900 feet  
Map Date: June 2020

Not in Review  
Area

