



Connecticut Department of
**ENERGY &
ENVIRONMENTAL
PROTECTION**

February 22, 2023

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Project: Replacement of Amtrak Connecticut River Bridge along Northeast Corridor (MP106.89) at Old Saybrook and Old Lyme, Connecticut
NDDDB Preliminary Assessment No.: 202102384
Expiration Date: February 22, 2025

Dear Ryan Apanovitch,

I have re-reviewed Natural Diversity Data Base maps and files regarding the area delineated on the map provided for the replacement of Amtrak Connecticut River Bridge along Northeast Corridor (MP106.89) at Old Saybrook and Old Lyme, Connecticut.

According to our records there are known extant populations of many State-Listed Species known that occur within or close to the boundaries of this property. The species include:

Animals

- Shortnose sturgeon (*Acipenser brevirostrum*) – State Endangered
- Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) – State Endangered
- Least bittern (*Ixobrychus exilis*) – State Threatened
- Saltmarsh sharp-tailed sparrow (*Ammodramus caudacutus*) -State Species of Special Concern
- Northern diamondback terrapin (*Malaclemmys terrapin terrapin*) - State Species of Special Concern
- Spotted turtle (*Clemmys guttata*), State Species of special concern

Plants

- Pygmyweed (*Crassula aquaticum*) – State Endangered
- Eaton's beggarticks (*Bidens eatonii*) – State Endangered
- Canada sand spurry (*Spergularia canadensis*) – State Threatened
- Lilaopsis (*Lilaopsis chinensis*) – State Species of Special Concern
- American reed (*Phragmites americanus*) – State Special Concern
- Salt marsh bulrush (*Bolboschoenus novae-angliae*) – State Special Concern
- Bayonet grass (*Bolboschoenus maritimus* ssp. *paludosus*) – State Special Concern

- Mudwort (*Limosella australis*) - State Species of Special Concern
- Eastern prickly pear (*Opuntia humifusa*) – State Species of Special Concern

The following Critical Habitat is known to occur in the project impact areas:

- Brackish Intertidal Marsh.

We received Wildlife Species Protection Plan for Replacement of Amtrak Connecticut River Bridge (MB 106.89) Replacement of Amtrak Connecticut River Bridge (MB 106.89), Old Saybrook and Old Lyme, Connecticut on January 20, 2023 and prepared by Stantec Consulting Services Inc. The wildlife species protection plan listed above is mostly accepted, and I concur with all mitigation actions (with slight modifications included below). The mitigation for state listed animal species, taken directly from the plan with slight modification must include:

General Requirements for State Listed Animal Species Protection

1. Prior to construction and as new contractors are onboarded, staff will be provided a copy of the final Wildlife Protection Plan and required to attend training by an environmental scientist to review the content of the final Wildlife Protection Plan. The training is anticipated to provide photographs, overview of the identification and ecology of the listed species of concern, installation and maintenance of erosion control/wildlife barriers, handling and reporting protocol, and time of year restrictions and other applicable measures.
2. An environmental scientist, or team of scientists, as experts in the ecology of plants, birds and turtles must be on site everyday while work is being conducted on this project. This individual, or team of individuals will be required to provide written reports and monitoring of conditions and report observations of state listed species to the NDDB Program within 24 hours.

Protection for State Listed Fish Species

The proposed protection measures for fisheries resources have been developed with CT DEEP Fisheries Protection measures must avoid and minimize behavioral impacts during the project construction, including the temporary trestle bridge spanning Lieutenant River for construction access. Please continue to coordinate with CTDEEP fisheries biologists and follow all guidelines and requirements.

Protection for State Listed Bird Species

Least Bittern and Saltmarsh Sharp-Tailed Sparrow

- A time of year restriction will apply between May and August (nesting and foraging period) if construction activities have not commenced before May.
- If a significant loud construction activity starts prior to May and continues through the construction to the end of work, then no time of year restriction will apply. The time of year restriction will apply between May and August and construction activities may not resume until September 1.

Bald Eagle

The known bald eagle nests to the north and east are located greater than one mile from the Project area and no time of year restrictions or additional protection measures are required to avoid behavioral impacts to the nests and surrounding breeding territories if nesting continues to be farther than 600 feet from active nests. If, however, bald eagles start nesting within 600 feet from construction activity all construction must stop and wait until all nesting activity has ceased. If nest activity is observed by the on-site environmental scientist/monitor the NDDDB will be notified within 24 hours.

Protection for State Listed Turtle Species

Northern Diamondback Terrapin and Spotted Turtle

Amtrak will develop an erosion control/wildlife barrier system strategy for the installation and maintenance of a system to prevent turtles from entering active work areas including site access locations and haul roads during Project construction.

- The system will consist of properly installed silt fence (toed in and backfilled or other suitable anchoring system along the bottom) and repaired promptly as needed utilizing replacement materials staged on-site.
- An environmental scientist will perform a sweep of the system once installed to inspect and provide any necessary recommendations; and to relocate listed turtles found inside to nearby adjacent suitable habitat.
- The erosion control system will be inspected daily by trained staff or environmental scientist and any listed turtles observed inside the work area will be moved to nearby suitable habitat out of harm's way.
- Construction activities at the two sandy beaches on the south facing side of the existing shoreline railroad bridge structures and adjacent dredging/excavation will be initiated prior to June 1. If work within the sandy beach habitats prior to June 1 is not feasible, the beaches will be covered with a large tarp or other deterrent acceptable to DEEP prior to June 1 and maintained through July 15 to discourage northern diamondback terrapin nesting in these areas.
- Construction activities within tidal creeks or similar channelized wetland habitat will be conducted during the active season (April through October) to avoid potentially overwintering northern diamondback terrapins.
- During the active season (April through October), an environmental scientist will conduct daily sweep of planned work areas and adjacent suitable habitat (e.g., tidal marsh, tidal creek, tidal pool) prior to the initiation of work to relocate turtles from immediate harm during construction.
- Construction activities during the active season (April through October) in areas that flood daily will be conducted during low tide to the greatest extent practical when turtles are less likely to be present.

- Construction vehicle traffic along access roads will be vigilant and vehicle speeds will not exceed 10 mph. Temporary signage will be installed along access roads to alert of potential turtle presence and reduced vehicle speed.
- No refueling or handling of other bio-toxic liquids may be done in the vicinity of low marsh, riverbanks, tidal creeks or ditches.

Protection for State Listed Plant Species

Identified Impacts to State Listed Plants and Critical Habitats

Populations of Lilaopsis and Mudwort will be directly affected by temporary and permanent impacts associated with the Project. Populations of Lilaopsis that occur adjacent to the proposed areas of disturbance will be demarcated with high visibility flagging, stakes, and/or fencing prior to construction to avoid inadvertent impacts. The demarcations will be monitored and maintained during the construction period.

Populations of Lilaopsis and Salt marsh bulrush that occur at proposed off-site wetland mitigation sites will similarly be avoided during potential wetland enhancement and restoration activities. These populations will be demarcated with high visibility flagging, staking, and/or fencing prior to land disturbing wetland mitigation activities.

Based on the 2022 surveys, approximately 19+/- sq. ft. of Mudwort will be impacted, and approximately 1.1 acres of brackish intertidal marsh will be temporarily impacted for the period of the bridge construction. The areas will be used to install temporary access roads for the construction access and trestle platforms. Temporary impacts, including temporary earth retaining systems, fill, construction mats consisting of timber mats, composite mats, or geotextile matting overlain by stone may be utilized for the temporary access roads and trestle platforms.

Approximately 1.6 acres of brackish intertidal tidal marsh will be permanently impacted as a result of filling. Impacts have been avoided and minimized to the extent possible, including the use of temporary construction matting for access where feasible. Erosion and sedimentation controls will be installed and maintained between work areas and downgradient wetland and aquatic resources

The temporary and permanent impacts require formalized mitigation. We received a Revised State-listed Plant Incidental Take and Mitigation Report for Replacement of Amtrak Connecticut River Bridge (MB 106.89) Replacement of Amtrak Connecticut River Bridge (MB 106.89), Old Saybrook and Old Lyme, Connecticut, prepared by Stantec Consulting Services Inc. and dated December 19, 2022. The revised mitigation report provided for mitigation utilizing invasive species control of *Phragmites australis* in Ragged Rock Creek Marsh Wildlife Management Area (200± acres). We accept the report and mitigation strategy of using proven *Phragmites australis* control techniques to eliminate or at least reduce the acreage of brackish intertidal marsh currently dominated by *Phragmites australis* by at least 80% in the Wildlife Management Area by at least 80% after 5 years. We concur with the provisions and will require the following provisions as mitigation for both temporary and permanent impacts to the

state listed plants and critical habitats that will occur from project activities associated with the bridge replacement. The following mitigation actions have been taken from the Revised State-listed Plant Incidental Take and Mitigation Report for Replacement of Amtrak Connecticut River Bridge (MB 106.89) Replacement of Amtrak Connecticut River Bridge (MB 106.89), Old Saybrook and Old Lyme, Connecticut prepared by Stantec Consulting Services Inc. and dated December 19, 2022.

Required Conservation Actions:

1. Transplantation and Relocation: Lilaeopsis and Mudwort

Lilaeopsis

Prior to construction, Amtrak proposes to relocate, through transplantation, approximately 3,935 sq. ft. of affected Lilaeopsis plants from the permanent and temporary impact areas to nearby off-site tidal wetland habitat locations. Approximately 400 sq. ft. of plants will be removed from Disturbance Areas 1 (East) and 3,535 sq. ft. of plants will be removed from Disturbance Area 3. Mitigation Area #2 is the preferred transplant location and is of sufficient size to receive the transplants but Lilaeopsis may be planted at alternative transplant locations in suitable habitat.

Amtrak understands that NDDDB has previously requested that the transplanted Lilaeopsis plants to be transplanted back to the temporary impact areas following construction. However, additional transplanting of approximately 3,495 sq. ft. of Lilaeopsis back to the temporary impact areas following construction will introduce additional stress to the plants and the associated vegetation and further disrupt the stability of the substrates at the transplant location. As such, it is proposed that Lilaeopsis be transplanted permanently from the temporary impact areas. The former Lilaeopsis population areas within the temporary impact areas will be restored to brackish intertidal marsh habitat with planting of native tidal wetland vegetation and common reed control following construction as described below. Furthermore, as only a portion of the existing Lilaeopsis populations will be impacted, it is anticipated that natural recruitment and spread of Lilaeopsis from the adjacent unaffected populations into the temporary impact areas may occur over time following construction.

Transplanting will be conducted in mid to late summer during low-flow periods (e.g., July or August). The 10-day weather forecast will be monitored prior to transplanting for the potential of forecasted flooding or storm surge events; transplanting will not be conducted if significant flooding or storm surge events are part of the short-term forecast. At the time of transplanting, data will first be collected on the estimated number of ramets and the associated areal coverage of Lilaeopsis in the affected populations. These data will be used to evaluate the success of the transplanting efforts. During the transplanting, colonies of Lilaeopsis will be cut into clumps to a sufficient depth as determined by the Project botanist to retain associated roots and rhizomes (estimated at approximately 5–8 inches). The transplanting will occur at low tide when the plants are exposed. The plants will be retained in containers or on tarps for transportation via watercraft to the transplant location(s). Low ground pressure mechanized equipment (e.g., tracked skid-steer) may alternatively be used to lightly excavate larger sod-like clumps of plants from the impacted populations. The use of mechanized equipment is also anticipated to increase the efficiency of transplanting within the low tide transplanting window. Larger excavated clumps of plants are also expected to withstand risks from buoyancy and scour compared with

small clumps during their initial transplant establishment period. Installation of temporary equipment access docks will likely be necessary at the transplant onloading and offloading sites. State and federal permit applications will account for additional temporary impacts to tidal wetlands and other coastal resources as a result of the transplanting efforts.

The Project botanist will determine the specific locations where *Lilaeopsis* will be planted at the selected transplant site(s). The transplant site will be prepared by excavating an area to a sufficient depth to receive a clump of *Lilaeopsis* plants. A combination of hand and mechanized excavation using low ground pressure equipment is anticipated to prepare the transplant area. Transplanting will occur primarily in areas that have been treated for common reed to minimize disruption to native tidal wetland vegetation.

Native tidal wetland vegetation will be retained to the extent feasible during the *Lilaeopsis* transplanting efforts. The excavated mucky peat soil material will be used to backfill around the *Lilaeopsis* plants to remove airspaces and provide protection against buoyancy. Excess soil material may be retained and stockpiled at an off-site Amtrak-owned location for use in post-construction restoration activities.

Additional measures to reduce the potential for buoyancy or scour, including placement of anchoring devices such as biodegradable sod staples will be utilized. The limits of the transplant location will be demarcated with rebar and located with a GPS receiver capable of submeter accuracy. Coir logs may be placed along the waterward edge of the transplant area to provide protection against wave action while the transplants are becoming established. Additional transplanting methods may be considered depending on site specific factors.

Mudwort

Mudwort is an annual plant and is, therefore, reliant on annual seed production and germination to maintain populations. To compensate for unavoidable impacts, Amtrak proposes to transplant the approximately 19-sq.-ft. area of Mudwort plants from the project impact area to nearby off-site tidal wetland habitat locations, as described above. Both potential transplant areas contain similar tidal wetland habitat that is potentially suitable for Mudwort. Mitigation Site #2 is the preferred transplant location. The plants will be transplanted by mid-summer (e.g., July or August) prior to the maturation and release of seed in late summer. The 10-day weather forecast will be monitored prior to transplanting for the potential of forecasted flooding or storm surge events; transplanting will not be conducted if significant flooding or storm surge events are part of the short-term forecast. It is expected that transplanting the affected plants prior to seed maturation will allow the plants to establish a seed bank at the transplant location to allow for continued annual germination and growth at the transplant location.

The proposed methods of transplanting Mudwort to the off-site transplant area will follow those proposed for *Lilaeopsis*, although hand excavating of the affected plants is the preferred method and the use of mechanized equipment to excavate the plants is not anticipated.

At the time of transplanting, data will be collected on the approximate number of Mudwort genets and the associated approximate areal coverage within the affected area as these data will be used to evaluate the success of the transplanting efforts. Clumps of Mudwort will be excavated and placed in buckets or similar containers for transport to the transplant location.

Care will be made to dig the plants to a sufficient depth to maintain integrity of the plant roots and rhizomes as determined by the project botanist (estimated at 4–6 inches). Sufficient substrate material will also be retained around the plants in an attempt to retain portions of an existing seed bank. Coir logs may be placed along the waterward edge of the transplant location to protect the plants from wave action during their initial establishment period. The location of the Mudwort transplants will be demarcated with rebar and located with a GPS receiver. Photographs will be taken of the transplant location.

In addition, Amtrak proposes to collect Mudwort seed from nearby known off-site populations (e.g., Lords Cove Wildlife Management Area) as a contingency to be used for Mudwort reintroduction in the event the transplanted specimens fail to establish a seed bank at the transplant location. Seed will only be collected if follow-up monitoring confirms that the transplanted plants failed to establish a seed bank to support successive generations of plants at the off-site transplant location. Prior to conducting seed collection, a Scientific Collection Permit and permission from the associated landowner will be obtained.

Methods for processing, storing, and germinating seed will be done in consultation with the project botanist, including coordination with the Native Plant Trust. If Mudwort seed propagation is determined to be necessary, Mudwort seed will be distributed into an approximately 40-sq.-ft. area within the temporary impact areas following the completion of construction. Seed will be lightly compacted and covered with a thin layer of organic soil material to minimize potential for dislodgement during tidal fluctuations. Plants will be monitored to evaluate establishment. Reseeding, including implementing different propagation techniques, may be done in consultation with NDDB and the project botanist if Mudwort seeds fail to germinate and become established following the initial seeding treatment.

2. Brackish Intertidal Marsh Restoration:

The portions of the brackish intertidal marsh that will be temporarily impacted by the Project will be restored following construction. The goal of the restoration is to restore the areas temporarily impacted by construction to a brackish intertidal marsh characterized by native tidal wetland vegetation. Baseline elevations of the temporary impact intertidal wetland areas will be established prior to the start of construction and will be used to inform restoration efforts. Elevations will be determined every 8 horizontal feet and surveyed to 0.1 vertical foot.

Baseline soil analyses, including measurements of soil compaction, will also be conducted within each temporary impact area prior to construction to establish baseline soil physical and chemical properties. At the start of construction, the existing mucky peat topsoil from the brackish intertidal marsh permanent impact areas will be removed and stockpiled at an off-site Amtrak property to be identified by the selected contractor and Amtrak for potential use in restoration efforts. The topsoil will be covered for weed control and enclosed by erosion and sedimentation controls to prevent runoff.

Following removal of temporary access roads and structures, a post-construction elevation survey will be conducted to compare the post-construction elevations with those established during baseline conditions. Measurements of soil compaction will also be made following removal of the temporary construction material from the temporary tidal wetland impact areas

and compared with baseline data. The temporary impact areas will be restored to their baseline elevation if the post-construction elevation survey determines that the soil was compressed during construction. Decompaction efforts including soil tilling, subsoiling, and/or soil installations may be used to restore wetland elevations if the soil compaction measurements exceed the baseline measurements.

The stockpiled topsoil will be utilized as needed to achieve the target elevations. Prior to re-application, the stockpiled topsoil will be analyzed consistent with the baseline soil analyses to determine the physical and chemical properties compared to baseline conditions. Amendments will be added as appropriate to achieve soil properties that are similar to the baseline conditions prior to installation. The stockpiled topsoil will also be screened and inspected for potentially viable common reed rhizomes. A custom topsoil mix may be supplied from a commercial vendor if it is determined that the stockpiled topsoil contains viable common reed fragments or does not meet the requisite physical and chemical properties compared with the baseline conditions. The topsoil will be spread mechanically by low ground pressure equipment or equipment operating from light weight construction mats to the extent feasible (e.g., high density polyethylene / composite mats) and lightly compacted by hand.

Plants adapted to brackish tidal wetlands, including, depending upon their availability from commercial sources, such species as *Spartina patens* (Saltmeadow cordgrass), *Spartina alterniflora* (Smooth cordgrass), *Juncus gerardii* (saltmarsh rush), *Bolboschoenus robustus* (Sea-coast tuber-bulrush), *Schoenoplectus americanus* (Chair-maker's club-bulrush), *Schoenoplectus pungens* (Three-square club-rush), *Hibiscus moscheutos* (Swamp rose-mallow), and others will be installed in areas of exposed substrate to restore a native brackish intertidal marsh community within the temporary tidal wetland impact areas. The plants will be sourced from a commercial supplier and will consist of regional genotypes. The final proposed planting list shall be submitted for approval to the NDDB botanist/plant community ecologist. Additional or surrogate species may be used at the approval of the Project botanist and the NDDB botanist/plant community ecologist. The plants are anticipated to be installed as 2-inch plugs and spaced approximately 18 inches on center and will be done during low tide periods and during the spring or early summer months. The Project botanist will determine the placements of the individual specimens based on the existing tidal hydrology and elevations of the temporary impact areas. The selected restoration contractor may implement alternative planting methods, such as sod mats pre-planted with appropriate tidal wetland species, provided such methods achieve a similar diversity and planting density of tidal wetland vegetation. Coir logs (e.g., coconut fiber rolls) may be placed along the waterward edge of the restoration area to provide protection from typical wave action on the planted vegetation during the initial establishment period.

The Revised State-listed Plant Incidental Take and Mitigation Report for Replacement of Amtrak Connecticut River Bridge (MB 106.89) Replacement of Amtrak Connecticut River Bridge (MB 106.89), Old Saybrook and Old Lyme, Connecticut prepared by Stantec Consulting Services Inc. and dated December 19, 2022 summarizes the proposed restoration efforts in the areas of temporary disturbance based on onsite observations and their locations are provided on within the **Temporary Tidal Wetlands Disturbance Limits sheets in the report listed above.**

3. Invasive Common Reed (*Phragmites australis*) Control:

A plan will be developed to eliminate and/or reduce, by at least 80%, within 5 years, the abundance of the invasive Common reed (*Phragmites australis* hereinafter, to distinguish it from the native *Phragmites americanus*) within Ragged Rock Creek Wildlife Management Area (RRCWMA) in conjunction with the NDDB Program and the consultant hired to conduct the invasive plant treatment. The plan shall include but not be limited to these parameters:

1. Amtrak will engage a qualified contractor to conduct 3 years of control of *Phragmites australis* at RRCWMA, using an appropriate combination of mowing and herbicides.
2. All currently existing concentrations of *Phragmites australis* in the RRCWMA shall be accurately mapped using a combination of remote sensing and ground-based methods, including high-accuracy GPS. This map shall be the basis for the proposed *Phragmites australis* control/treatment areas.
3. Prior to treatment of the Common Reed at RRCWMA, a survey for the above-listed State-listed plants shall be conducted in the vicinity of the proposed *Phragmites australis* treatment areas. State-listed plant populations that are potentially at risk of impacts from herbicide application to the *Phragmites australis* shall be marked in the field before any mowing of *Phragmites australis* or herbicide applications to *Phragmites australis* occurs. Surveys for the 9 State-listed plants shall occur at the times of year when each species is most detectable and identifiable. Results of the State-listed plant surveys shall be submitted to the NDDB for approval prior to the commencement of *Phragmites australis* control treatments, together with proposed strategies and measures to prevent adverse impacts to State-listed plant populations during treatment of the *Phragmites australis*. Protection measures for State-listed plant populations shall include appropriate buffers to any high-pressure herbicide spray application methods and application only under low-wind or windless conditions.
4. All *Phragmites australis* control treatments in the vicinity of State-listed plant populations shall be overseen by a qualified botanist.
5. State-listed plant populations in the vicinity of *Phragmites australis* control/treatment areas will be monitored for impacts and a report shall be generated after each treatment year outlining any impacts or changes required in treatments to protect the State-listed plant species. Amtrak and/or their *Phragmites australis* control contractor is responsible for ensuring there are no adverse impacts to State-listed plant populations at RRCWMA, or remediating those adverse impacts if they occur, as a result of inadequate State-listed plant protection measures. If such adverse impacts are documented, NDDB will require that a mitigation/remediation plan be developed by a qualified botanist or plant ecologist, the plan be approved by NDDB and executed by Amtrak and/or their agents.
6. After the 3-year *Phragmites australis* Control Program has been completed, Amtrak will monitor and assess the treatment areas during the fourth year to document the spatial abundance of *Phragmites* through plot sampling and/or meander surveys in order to evaluate if the 80% reduction of spatial abundance has been achieved. If post-treatment monitoring of the RRCWMA indicates that the 80% performance goal has not been met following three years of treatment, Amtrak will perform a final treatment of *Phragmites australis* during the 5th year of the project.

4. Long Term Maintenance and Monitoring:

Transplantation Monitoring for Lilaeopsis and Mudwort

Monitoring will be conducted to evaluate the success of the transplanting efforts. For each monitoring event, data will be collected on estimated survivorship including an approximation of aerial coverage and abundance, overall vigor, associated habitat conditions, and observations of invasive species. Monitoring will be conducted during low tide periods when the transplanted locations are not submerged. Sites may be accessed by boat. Photographs will be taken from representative locations to document the existing conditions. Monitoring of transplanted Lilaeopsis and Mudwort specimens will be conducted as follows:

- First monitoring event will be conducted the day after transplantation.
- Second monitoring event will be conducted within 7 days after transplantation.
- Following the second monitoring event, monitoring events will be conducted once weekly for the next 3 weeks.
- Monitoring will then be conducted annually for the next 3 years at appropriate times to best assess the condition of transplanted populations. Amtrak shall conduct one monitoring event during the species anticipated flowering period (e.g., June–September) and a follow-up monitoring event during the anticipated fruit maturation period (e.g., September–October).
- Brief reports will be submitted via email to NDDDB within 30 calendar days of all transplantation site visits and will include a summary of observations and assessments of the transplants as well as recommended actions (e.g., invasive plant control).
- An annual report that presents and discusses the monitoring data will be submitted prior to December 31 of the monitoring year. The annual report will contain recommendations for follow-up remedial actions or adaptive management measures, as appropriate as well as representative photographs of the monitoring locations.

In the event that Mudwort seed is installed as a component of the mitigation program, the following monitoring schedule will be implemented for the seed installation area:

- First monitoring event will be conducted 2 weeks after seed installation.
- Second monitoring event will be conducted approximately 4 weeks after seed installation.
- Third monitoring event will be conducted approximately 6 weeks after seed installation.
- Monitoring will then be conducted annually for the next 3 years at appropriate times to best assess the condition of the plants. Amtrak shall conduct one monitoring event during the species anticipated flowering period (e.g., June–September) and a follow-up monitoring event during the anticipated fruit maturation period (e.g., September–October).

Restored Brackish Intertidal Marsh Monitoring

The restored temporary disturbance areas will be monitored for three years with two monitoring events conducted each year following the completion of construction. The first monitoring event will be conducted in late spring or early summer and the second monitoring event will be conducted in late summer or early fall. Within each restored tidal wetland area, data will be

collected via meander surveys on species diversity and spatial abundance based on ocular estimation. Estimates of bare ground will also be made based on ocular estimation. Photographs will be taken from fixed locations to allow for annual comparisons.

Brief monitoring reports will be submitted to DEEP via email within 30 business days following each monitoring event and will include a summary of observations and assessments of the restored areas as well as recommended actions (e.g., invasive plant control). An annual report that presents and discusses the monitoring data will be submitted prior to December 31 of the monitoring year.

The annual report will contain recommendations for follow-up remedial actions or adaptive management measures, as appropriate as well as representative photographs of the monitoring locations. The goals for successful wetland restoration of the brackish intertidal tidal marsh temporary impact areas include an 80% areal coverage of the native tidal wetland plant species in the restored wetland areas after 3 years. At the end of the monitoring period, there shall be no more than 10% areal coverage of common reed and no monotypic stands exceeding 500 sq. ft. within each temporary impact area.

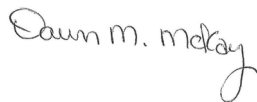
Remedial actions for non-attainment of the 80% survivorship and invasive plant coverage will be discussed in coordination between NDDB Program, the qualified botanist managing the project and Amtrak.

This determination is good for two years. Please re-submit an NDDB Request for Review if the scope of work changes or if work has not begun on this project by February 22, 2025.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substitutes for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as enhance existing data. Such new information is incorporated into the Data Base as it becomes available. The result of this review does not preclude the possibility that listed species may be encountered on site and that additional action may be necessary to remain in compliance with certain state permits.

Please contact me if you have further questions at deep.nddbrequest@ct.gov . Thank you for consulting the Natural Diversity Data Base.

Sincerely,



Dawn M. McKay
Environmental Analyst 3



Connecticut Department of

ENERGY &
ENVIRONMENTAL
PROTECTION

December 31, 2019

Ms. Kati Mercier
Martinez Couch & Associates, LLC
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Rocky Hill, CT 06067
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Project: Preliminary Assessment for Replacement of Amtrak Connecticut River Bridge along Northeast Corridor (MP106.89) at Old Saybrook and Old Lyme, Connecticut
NDDDB Preliminary Assessment No.: 201914264

Dear Kati Mercier,

I have reviewed Natural Diversity Data Base maps and files regarding the area delineated on the map provided for the replacement of Amtrak Connecticut River Bridge along Northeast Corridor (MP106.89) at Old Saybrook and Old Lyme, Connecticut.

According to our records there are known extant populations of State Listed Species known that occur within or close to the boundaries of this property. I have attached a list of these species to this letter. Please be advised that this is a preliminary review and not a final determination. A more detailed review will be necessary to move forward with any subsequent environmental permit applications submitted to DEEP for the proposed project. **This preliminary assessment letter cannot be used or submitted with your permit applications at DEEP.** This letter is valid for one year.

To prevent impacts to State-listed species, field surveys of the site should be performed by a qualified biologist when these target species are identifiable. A report summarizing the results of such surveys should include:

1. Survey date(s) and duration
2. Site descriptions and photographs
3. List of component vascular plant and animal species within the survey area (including scientific binomials). A complete ecological description of the habitats on site.
4. Data regarding population numbers and/or area occupied by State-listed species
5. Detailed maps of the area surveyed including the survey route and locations of State-listed species present on the site.
6. Statement/résumé indicating the biologist's qualifications. Please be sure when you hire a consulting qualified biologist to help conduct this site survey that they have the proper experience with target taxon and have a CT scientific collectors permit to work with state listed species for this specific project.
7. Protection and/or mitigation plans for all state listed species identified in this letter.

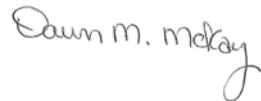
The site surveys report should be sent to our CT DEEP-NDDDB Program (deep.nddbrequest@ct.gov) for further review by our program biologists along with an updated request for another NDDDB review. Incomplete reports may not be accepted.

If you do not intend to do site surveys to determine the presence or absence of state-listed species, assume they are present and please provide a protection plan to let us how you will protect the state-listed species from being impacted by this project. You may submit these protection plans with your new request for an NDDDB review.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substitutes for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available. The result of this review does not preclude the possibility that listed species may be encountered on site and that additional action may be necessary to remain in compliance with certain state permits.

Please contact me if you have further questions at (860) 424-3592, or dawn.mckay@ct.gov . Thank you for consulting the Natural Diversity Data Base.

Sincerely,



Dawn M. McKay
Environmental Analyst 3

Species List for NDDB Request

Scientific Name	Common Name	State Status
Coastal/Marine Community - Other Classification		
Brackish intertidal marsh		
Salt marsh		
Vascular Plant		
<i>Bidens eatonii</i>	Eaton's beggarticks	E
<i>Bolboschoenus maritimus</i> ssp. <i>paludosus</i>	Bayonet grass	SC
<i>Bolboschoenus novae-angliae</i>	Salt marsh bulrush	SC
<i>Crassula aquatica</i>	Pygmyweed	E
<i>Lilaeopsis chinensis</i>	Lilaeopsis	SC
<i>Limosella australis</i>	Mudwort	SC
<i>Opuntia humifusa</i>	Eastern prickly pear	SC
<i>Phragmites americanus</i>	American reed	SC
<i>Spergularia canadensis</i>	Canada sand-spurry	T
Vertebrate Animal		
<i>Acipenser brevirostrum</i>	Shortnose sturgeon	E
<i>Acipenser oxyrinchus oxyrinchus</i>	Atlantic sturgeon	E
<i>Ammodramus caudacutus</i>	Saltmarsh sharp-tailed sparrow	SC
<i>Clemmys guttata</i>	Spotted turtle	SC
<i>Ixobrychus exilis</i>	Least bittern	T
<i>Malaclemys terrapin terrapin</i>	Northern diamondback terrapin	SC

E = Endangered, T = Threatened, SC = Special Concern, * Extirpated