Appendix G: Wetland Delineation Report
WETLAND DELINEATION REPORT
NORTHERN BRANCH CORRIDOR

Prepared for:
NJ TRANSIT

Prepared by:
Jacobs Engineering
299 Madison Avenue
Morristown, New Jersey 07962-1936

September 2009
TABLE OF CONTENTS

1.0 INTRODUCTION 1

2.0 METHODOLOGY 3

2.1 Surface Waters 3
2.2 Existing Soils 3

3.0 WETLAND DELINEATION 4

4.0 SUMMARY 9
1.0 INTRODUCTION

NJ TRANSIT is currently investigating network-oriented transportation solutions to improve mobility within Bergen and Hudson County, New Jersey. Several alternatives are being developed including a light rail and diesel multiple unit system along the existing Conrail right-of-way from the Hudson Bergen Light Rail Transit System north to the Town of Tenafly.

The Northern Branch Corridor is a densely settled suburban environment in northeastern Hudson and eastern Bergen County, New Jersey. The study area has a growing population and a high proportion of residents who work in business districts outside of the area, notably in Hudson and Essex Counties, to the south, and in New York City, to the east across the Hudson River. These two areas have historically been the primary destinations of workers commuting from the corridor. Rail transit, once a fundamental travel option for corridor residents, is now only available to the west and south of the corridor but is not present within it.

Conrail currently operates a freight line in this existing right-of-way. Four alternatives have been considered for the project, all beginning in North Bergen, Hudson County and extending north through Bergen County. The longest alternative is approximately 12 miles from North Bergen Hudson County to the Tenafly/Cresskill border in Bergen County.

All four Alternatives would provide service to the following proposed station stops: 91st Street in North Bergen, Ridgefield, Palisades Park, Leonia, and Englewood Route 4. Alternatives 1 and 2 would also provide service to proposed stations north of Englewood Route 4, including Englewood Town Center, Englewood Hospital, Tenafly Town Center and Tenafly North. Station locations will generally consist of a platform and parking garages/surface parking areas adjacent to the right-of-way. Alternatives 1 and 1A would have an additional station in North Bergen to transfer to the Hudson-Bergen Light Rail, as well as a yard. Alternatives 2 and 2A would have a vehicle base facility in North Bergen or in Englewood at Route 4.
2.0 METHODOLOGY

In November 2008, environmental professionals from Jacobs Engineering performed a wetland investigation/delineation of the approximate 12-mile active Northern Branch project corridor. Our objective was to identify, delineate, and evaluate the wetlands on or adjacent to the proposed right-of-way that may have the potential to be impacted by project implementation. The investigation included a field survey of the freshwater wetlands within the right-of-way in accordance with the methodology set forth in the 1989 interagency Federal Manual for Identifying and Delineating Jurisdictional Wetlands and the 1987 Corps of Engineers Wetland Delineation Manual. The resultant wetland boundaries have been located by survey for inclusion on the right-of-way project plan mapping.

Existing natural resource mapping and aerial photography of the Northern Branch project corridor was reviewed prior to conducting field investigations in November 2008. Sources included the relevant United States Geological Survey (USGS), 7.5 Minute Topographic quadrangles, which included the Weehawken, Yonkers, Central Park and Hackensack quadrangles. The New Jersey Department of Environmental Protection (NJDEP) Bergen and Hudson County’s freshwater and linear wetland mapping, Natural Resource Conservation Service (NRCS) soils information and United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps were also assessed for potential identified areas.

2.1 Surface Waters

The Northern Branch project corridor currently crosses several waterways including tributaries of Overpeck Creek, Bellmans Creek, Wolf Creek, Tenakill Brook, and Flat Rock Brook. The New Jersey Department of Environmental Protection has developed Surface Water Quality standards to protect and enhance surface water quality resources. Surrounding surface waters and tributaries in the vicinity of the project station locations and right-of-way include:

- Overpeck Creek and its tributaries – FW2-NT, C2
- Bellmans Creek - FW2-NT, C2
- Wolf Creek – FW2-NT, C2
- Tenakill Brook - FW2-NT, C1
- Flat Rock Brook – FW2-NT-SE2, C2

FW2 = Freshwater 2; NT = Non-Trout Producing; C1 = Category 1; C2 = Category 2; SE2 = Saline Estuarine.

2.2 Existing Soils

General Soils

Soil sampling points were taken during field investigations in order to determine the presence or absence of hydric soils throughout the project study area and to determine
their limits. Large amounts of railroad ballast are present along and adjacent to the right- of-way. In some instances this prohibited reliable soil examination. Soil samples also contained railroad ballast/cinder/ash particulate from current and past railroad operations.

Review of the Bergen County Soil Survey and Natural Resources Conservation Service (NRCS) digital data soils information identified most of the project corridor was identified as Dunellen-Urban land complex, 3 to 8 percent slopes, UR Urban land, Udorthents, wet substratum, Udorthents, wet substratum-Urban land complex, Udorthents, organic substratum and Udorthents, refuse substratum. A detailed Hudson County soil survey does not exist at this time.

3.0 WETLAND DELINEATION

Wetland delineations were performed on November 6, 12, 17 and 24th, 2008. The following are descriptions of the delineated linear freshwater wetland drainage swales/state open waters complexes identified within the Northern Branch right-of-way study area. Corridor mapping showing the delineated wetlands and wetland photos are included at the end of the report.

**Wetlands Delineated on November 6th**

**Wetland Areas A/B:**
Drainage swale adjacent to project right-of-way; standing water depth 2-4” to 6-12”; Dominant vegetation: *Phragmites australis* (common reed) FACW, *Solidago Canadensis* (Canadian golden rod). 
Soils: 10 YR 2/1 saturated soils were observed.
Photos: 1, 2

**Wetland Areas C/D:**
Drainage swale adjacent to project right-of-way; standing water depth 2-4” to 6-12”. 
Dominant vegetation: *Phragmites australis* (common reed) FACW. 
Soils: 10 YR 2/1, gleying, saturated soils were observed. 
Photos: 3, 4

**Wetland Areas E:**
Drainage swale adjacent to project right-of-way; standing water depth to 6-12”. Connected through pipe to C/D. 
Dominant vegetation: *Phragmites australis* (common reed) FACW. 
Soils: 10 YR 2/1 saturated soils were observed.
Photos: 5, 6

**Wetlands F/G:**
Drainage swale adjacent to project right-of-way; standing water depth 2-4” to 6-8”. 
Dominant vegetation: *Phragmites australis* (common reed) FACW. 
Soils: 10 YR 2/1 saturated soils were observed. 
Photos: 7, 8
Wetland Areas H/I:
Drainage swale adjacent to project right-of-way; standing water depth 12-24”; Wolf Creek, state mapped linear wetlands, NJ state open water.
Soils: Inundated
Photos: 9, 10

Wetland Areas J/K:
Drainage swale adjacent to project right-of-way; standing water depth 6-12”.
Dominant vegetation: *Phragmites australis* (common reed), *Leerzsia oryzoides* (rice cutgrass), *Solidago canadensis* (Canadian golden rod).
Soils: 10 YR 2/1 saturated soils were observed.
Photos: 11, 12

**Wetlands Delineated on November 12th**

Wetland L:
Drainage swale adjacent to the project right-of-way. Standing water depth 6-12”.
Dominant vegetation: *Phragmites australis* (common reed) FACW. *Typha latifolia* (cattail) OBL
Soils: Saturated, inundated
Picture: 13

Wetland Areas M:
Drainage swale adjacent to project right-of-way. Standing water depth 12-24”.
Dominant vegetation: *Typha latifolia* (cattail) OBL, *Phragmites australis* (common reed) FACW.
Soils: Saturated, inundated
Picture: 14

Wetland Areas N/O:
Drainage swale adjacent to project right-of-way. Standing water 6-12” in areas 12” to 24” in others.
Dominant vegetation: *Typha latifolia* (cattail) OBL and *Phragmites australis* (common reed) FACW.
Soils: Saturated, inundated
Photos: 15, 16

Wetland Areas P/Q:
Drainage swale adjacent to project right-of-way. Standing water 6” to 12” in areas.
Dominant vegetation: *Typha latifolia* (cattail) OBL and *Phragmites australis* (common reed) FACW. *Salix* (willow), *Solidago canadensis* (Canadian golden rod).
Soils: 10 YR 2/1, Saturated soils, inundated.
Photos: 17, 18
Wetland Areas R:
Wetland complex adjacent to project right-of-way classified as PEM1B herbaceous wetland complex by NJDEP. Dominant vegetation: *Phragmites australis* (common reed) FACW. Soils: Saturated, low chroma soils 10 YR 2/2. Photos: 19, 20

Wetland Areas S/T:

**Wetlands Delineated on November 17th**

Wetland Area U

Wetland Area V/W
Linear wetland drainage swale adjacent to project right-of-way. Standing water 2-4’ in areas. Dominant vegetation: *Phragmites australis* (common reed) FACW, *Salix* (willow), *Solidago canadensis* (Canadian golden rod). Soils: Saturated soils, inundated Picture: 25

Wetland Area X
Drainage swale adjacent to right-of-way. Standing water 3-6” and 6-12” in areas. Dominant vegetation: *Typha latifolia* (cattail) OBL, *Phragmites australis* (common reed) FACW. Soils: 10 YR 2/1, Saturated soils, inundated Picture: 26

Wetland Area Y
Drainage swale adjacent to project right-of-way. Disturbed area, Standing water. 6-12” Dominant vegetation: *Phragmites australis* (common reed) FACW. Soils: saturated soils at surface 10 YR 3/2. Picture: 27
Wetland Area Z/AA
Linear wetland area/ state open water, unmapped tributary to Overpeck Creek adjacent to project right-of-way. Water flowing, 1-3’ depth, adjacent embankment was maintained.
Soils: Saturated soils, inundated
Photos: 28

Wetland Area BB
Identified as Overpeck Creek on NJDEP mapping adjacent to project right-of-way, standing and flowing water in areas.
Soils:
Picture: 29

Wetland Area CC
Drainage swale form stormwater outfall most likely from adjacent surface area parking. Standing water.
Dominant vegetation: Phragmites australis (common reed) FACW.
Soils: Inundated in areas 10 YR 3/2
Photos: 30, 31

Wetland Area DD
Drainage swale adjacent to project right-of-way. Standing water 6-12” in areas.
Dominant vegetation: Typha latifolia (cattail) OBL, Phragmites australis (common reed) FACW.
Soils: Saturated soils, inundated, 10 YR 2/2
Photos: 32, 33

Wetland Area EE
Drainage swale adjacent to project right-of-way and Railroad Ave. Standing water 6-12” in areas.
Dominant vegetation: Typha latifolia (cattail) OBL, Phragmites australis (common reed) FACW.
Soils: saturated at surface. 10 YR 2/1
Picture: 34

Wetland Area FF
Drainage swale adjacent to project right-of-way and Railroad Ave. Standing 6-12” and 12-24” in areas.
Dominant vegetation: Typha latifolia (cattail) OBL, Phragmites australis (common reed) FACW.
Soils: Saturated 10 YR 2/1
Picture: 35
Wetlands Delineated on November 24th

Wetland Area GG
Isolated wetland area adjacent to project right-of-way and Nordoff Place.
Dominant vegetation: *Liquidambar styraciflua* (sweetgum) FAC, *Quercus palustris* (pin oak) FACW, *Phragmites australis* (common reed) FACW.
Soils: 10 YR 2/2 mottles reddish brown 5 YR 4/4
Picture: 36, 37

Wetland Area HH/II
Drainage swale adjacent to project right-of-way.
Dominant vegetation: *Phragmites australis* (common reed) FACW.
Soils: 10 YR 2/1, Saturated soils, inundated
Photos: 38, 39

Wetland Area JJ/KK
Drainage swale adjacent to project right-of-way. Standing water 3-6”.
Dominant vegetation: *Phragmites australis* (common reed) FACW.
Soils: Saturated soils, inundated
Picture: 40

Wetland Area LL/MM
Drainage swale adjacent to project right of way and Nordoff/Haase Place. Standing water 3-6”. Dominant vegetation: *Phragmites australis* (common reed) FACW.
Soils: Saturated soils, inundated
Photos: 41, 42

Wetland Area NN/OO
Identified as Overpeck Creek on NJDEP mapping adjacent to project right-of-way connected through culverts/pipes under project right-of-way. Standing/flowing water 1-2’.
Dominant vegetation: *Acer rubrum* (Red maple) FAC, *Quercus palustris* (Pin oak) FACW, *Phragmites australis* (common reed) FACW.
Soils: 10 YR 2/2 moist, saturated in some areas
Photos: 43, 44
4.0 SUMMARY

A freshwater wetland assessment of the entire alignment was performed during which time unmapped linear wetland areas were identified parallel to the existing right-of-way. The wetlands that were identified and delineated were generally herbaceous drainage swales or state open water complexes. The swales mostly provide drainage collecting water from the existing rail right-of-way, adjacent properties and roadways. The areas subsequently empty into surrounding surface waters.

The project alignment falls under the regulatory jurisdiction of both the NJDEP and U.S. Army Corps of Engineers (USACE). The Hackensack Meadowlands District (HMD) boundary follows the proposed Northern Branch right-of-way from Hendricks Causeway in Ridgefield Borough, south along the existing right-of-way continuing past the proposed North Bergen Junction site in North Bergen Township. Wetlands which are located within the HMD boundary fall under the regulatory jurisdiction of the USACE New York district, requiring a Jurisdictional Determination (JD).

Wetlands under NJDEP jurisdiction have an associated transition area buffer determined by their resource value classification designated by NJDEP. A wetland complex designated as “exceptional” in resource value has an associated 150-foot transition area, “intermediate” resource value wetlands receive a 50-foot transition area and complexes deemed “ordinary” in resource value do not have a transition area. The USACE does not apply transition area buffers to regulated wetland complexes under their jurisdiction.

It is assumed that NJDEP will classify most of the delineated areas as either “intermediate” or “ordinary” resource value complexes due to the function and value they demonstrate as a wetland resource. These complexes are located in highly urbanized areas with industrial and transportation related land uses adjacent to them. The resource value classification will determine the amount of transition area being disturbed by the proposed project.

The first step in the regulatory process is to submit a Letter of Interpretation (LOI) package to the NJDEP Land Use Regulation department and a Jurisdictional Determination (JD) to the USACE New York district. The LOI will provide approved wetland limits. The LOI, once issued, will serve as the regulatory document verifying the wetland boundaries, and is valid for a period of five (5) years. Future project design phases will determine the amount of potential freshwater wetland disturbance once an LOI is issued. The JD, once approved determines the wetland limits are accurate and is valid for (5) years from the date it is issued.

Disturbances to freshwater wetland/state open water complexes will be minimized to the greatest extent possible throughout the design process and during project implementation. If necessary, the proposed service will implement mitigation techniques determined by NJDEP and the USACE.
1. Surface Water Quality Standards (SWQS) provided by the New Jersey Department of Environmental Protection (NJDEP), Water Monitoring & Standards (WMS), Bureau of Freshwater and Biological Monitoring (BFBM): These plans were developed using New Jersey Department of Environmental Protection’s (NJDEP) Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not state-authorized.


1. A/B Wetland looking south along project right-of-way

2. A/B Wetland looking north along project right-of-way
3. C/D Wetland looking north along project right-of-way

4. C/D Wetland looking south along project right-of-way
5. E Wetland looking north toward 91st Street

6. E Wetland looking south along project right-of-way
7. F/G Wetland looking south along project right-of-way

8. F/G Wetland looking north along project right-of-way
9. H/I Wetland looking north along project right-of-way

10. H/I Wetland looking north along project right-of-way
11. J/K Wetland looking west

12. J/K Wetland looking north along project right-of-way
13. L Wetland looking north along project right-of-way

15. N/O Wetland pipe connecting to wetland P

16. N/O Wetland looking north adjacent to project right-of-way
17. P/Q Wetland looking south along project right-of-way

18. P/Q Wetland looking east
19. R Wetland looking east at NJDEP identified herbaceous wetland

20. R Wetland looking north at along project right-of-way
21. S/T Wetland looking south along project right-of-way

22. S/T Wetland looking north along project right-of-way
23. U Wetland looking east located adjacent to project right-of-way.

24. V/W Wetland looking south along project right-of-way
25. V/W Wetland looking north along project right-of-way

26. X Wetland looking south along project right-of-way
27. Y Wetland looking west

28. Z/AA Wetland tributary to Overpeck Creek
29. BB Wetland Overpeck Creek adjacent to project right-of-way

30. CC Wetland looking north
31. CC Wetland looking northeast at stormwater outfall

32. DD Wetland looking south along project right-of-way.
33. DD Wetland looking north along project right-of-way.

34. EE Wetland looking south along project right-of-way
35. FF Wetland looking south along project right-of-way

36. GG Wetland, isolated wetland area adjacent to right-of-way
37. GG Wetland, isolated wetland area looking north

38. HH/II Wetland area looking south along project right-of-way
39. HH/II Wetland connection pipe

40. JJ/KK Wetland looking south along project right of way
41. LL/MM Wetland looking south along project right-of-way

42. LL/MM Wetland looking north along project right-of-way
43. NN/ OO identified as Overpeck Creek

44. NN/ OO Wetland culvert looking east, identified as Overpeck Creek