Drummond Road Bridge (BR 5784) over Interstate 95 Wetland and Watercourse Delineation and Monarch Butterfly Habitat Assessment Report

Sidney, Maine
WIN 25469.00

Prepared for:
Maine Department of Transportation

Prepared by:
Stantec Consulting Services Inc.

January 15, 2025

Project/File:
195603436

Stantec Consulting Services Inc.

Table of Contents

List of Tables

List of Figures

List of Appendices

1 Introduction

The Maine Department of Transportation (MaineDOT) is proposing replacement of the Drummond Road Bridge over Interstate 95 (I-95) in Sidney, Maine (BR 5784; hereafter, Project). Wetland and watercourse delineations as well as a habitat assessment for monarch (*Danaus plexippus*) was conducted by Stantec Consulting Services Inc. on January 10, 2025, in support of design planning as well as state and federal permitting requirements. This report summarizes the methodology and results of the field investigations.

2 Methodology

The delineations and habitat assessments were conducted within approximately 100 feet of the existing bridge locations, including the bridge superstructure and approaches that were safely accessible at the time of the field work (Figure 1).

2.1 Wetland and Watercourse Delineation

Wetland boundaries under potential federal and state jurisdiction were determined using the technical criteria described in the U.S. Army Corps of Engineers (USACE) *Wetlands Delineation Manual*[1] and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Regional Supplement (Version 2.0).*[2] Wetland boundaries were flagged with pink "WETLAND DELINEATION" flagging and labeled with a unique alpha-numeric code in accordance with MaineDOT nomenclatural conventions. Wetland flags were located using a Global Positioning System (GPS) receiver capable of achieving submeter horizontal accuracy. The GPS data were attributed in accordance with MaineDOT spatial data requirements. Field data were collected on dominant vegetation, evidence of wetland hydrology, hydric soil criteria (where possible), and wetland functions using MaineDOT's "Standard MaineDOT Information / F&V Form." The observed wetland functions and values were based on the USACE *Highway Methodology Workbook Supplement: Wetland Functions and Values - A Descriptive Approach*.[3] Wetland classification was assigned based on the *Classification of Wetlands and Deepwater Habitats of the United States*.[4] Wetlands of Special Significance (WoSS) were identified based on criteria in

[1] Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS.
[2] U.S. Army Corps of Engineers. 2012. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0)*, ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
[3] US Army Corps of Engineers. 1999. *Highway Methodology Workbook Supplement: Wetland Functions and Values - A Descriptive Approach*. New England Division. Publication no. NAEEP-360-1-30a. November 1995. 32 pp
[3] Federal Geographic Data Committee. 2013. Classification of Wetlands and Deepwater Habitats of the United States. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, DC.

Chapter 310 of the Natural Resources Protection Act[5] and Chapter 335 Significant Wildlife Habitat.[6] Identification of WoSS was limited to observable conditions within the Project site. Representative photographs were taken as appropriate.

Concurrent with the wetland delineation, streams and other potential Waters of the United States were delineated, if observed. These resources were identified using the regulatory criteria established by the Maine Department of Environmental Protection[7] and the USACE.[8] For streams less than approximately 5 feet wide (from the top of the bank) were flagged with blue flagging along their approximate centerline; streams over approximately 5 feet wide were flagged at the observed top of bank or ordinary high water mark, whichever was more conservative. Each flag was labeled with a unique alpha-numeric code in accordance with MaineDOT's nomenclatural convention and located with the GPS receiver. Data were recorded on apparent flow regime, substrate, bankfull widths, ordinary high water mark widths, water depths, and presence of aquatic organisms and vegetation. Delineated streams were assessed using the "MaineDOT Stream Assessment Form." Representative photographs were taken as appropriate.

Stantec identified potential vernal pools (PVP) within the Project area. As the delineation was conducted outside of the appropriate vernal pool survey season, PVPs were identified based on physical characteristics such as the presence of standing water or water marks within a confined basin. If identified, PVPs were located as an approximate center point with the GPS receiver and general data on their approximate size, origin, hydroperiod, and physical characteristics were collected.

2.2 Monarch Habitat Assessment

During the delineation, Stantec assessed the existing habitats within the Project area relative to their potential to support monarch butterfly. The habitat assessment consisted primarily of a survey for milkweed (*Asclepias* spp.), the host plants for monarch larvae (caterpillars). Because the assessment was conducted outside of the growing season, observations of milkweed was limited to persistent remnants that remained identifiable at the time of the field assessment. Data were collected on approximate abundance and the spatial extent of the observed milkweed specimens was located with the GPS receiver. In addition, habitats within the Project area were characterized relative to their potential to support milkweed during normal growing season conditions based on observable associated vegetation, canopy cover, hydrology, and the type and approximate frequency of habitat disturbances (e.g., mowing). Representative photographs were taken to document existing conditions.

[5] Maine Department of Environmental Protection. 26 January 2009. Natural Resources Protection Act Chapter 310: Wetlands and Waterbodies Protection Rules. Bureau of Land and Water Quality, DEPLW0297-D2009.
[6] Maine Department of Environmental Protection. 7 January 2014. Natural Resources Protection Act Chapter 335: Significant Wildlife Habitat.
[7] Danielson, T. J. 2018. *Natural Resource Protection Act (NRPA) Streams, Rivers, and Brooks*. Maine Department of Environmental Protection, Augusta, ME.
[8] U.S. Army Corps of Engineers. 2025. National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams: Final Version. ERDC/CRREL TR-25-1, Vicksburg, MS: U.S. Army Corps of Engineers Engineer Research and Development Center.

3 Results

3.1 Wetland and Watercourse Delineation

The wetland and watercourse delineation was conducted on January 10, 2025. The ground was free of snow; however, the soil was frozen throughout most of the Project area. Accordingly, a verification of the wetland boundaries identified during this effort is recommended to be conducted during appropriate seasonal conditions in order to assess hydric soil characteristics in accordance with USACE wetland delineation methodology.

A total of 3 wetlands were delineated within the Project area (Figure 1). No streams, other potential Waters of the United States, or PVPs were observed. Representative photographs are provided in Appendix A and Standard MaineDOT Information / F&V Forms are provided in Appendix B. Table 1 summarizes the delineated wetlands.

Table 1. Summary of Delineated Wetlands

Wetland Identifier	Wetland Classification[1]	Dominant and Characteristic Vegetation Type	Hydric Soil Criteria	WoSS Notes	Evidence of Hydrology	Comments
VE-01F	PEM	**Herbs**: sensitive fern (*Onoclea sensibilis*), purple loosestrife (*Lythrum salicaria*), lamp rush (*Juncus effusus*), wrinkle-leaf goldenrod (*Solidago rugosa*), broad-leaf cat-tail (*Typha latifolia*)	Frozen – not assessed	No	Surface Water, Geomorphic Position	Depressional wetland on edge of mowed field
VE-01G	PEM	**Herbs:** reed canary grass (*Phalaris arundinacea*)	Frozen – not assessed	No	Geomorphic Position, FAC-Neutral Test	Herbaceous depression along edge of I-95
VK-01H	PFO	**Trees**: red maple (*Acer rubrum*) **Herbs**: purple loosestrife, sensitive fern, wrinkle-leaf goldenrod	Frozen – not assessed	No	Water Stained Leaves, Drainage Patterns, Surface Water	Depressional wetland at base of road embankments; abuts mowed field

[1] Wetland classification follows Federal Geographic Data Committee (2013): PEM = Palustrine Emergent, PFO = Palustrine Forested

3.2 Monarch Habitat Assessment

The Project area includes potentially suitable monarch habitat along the open roadway embankments and I-95 median. A single plant of common milkweed (*Asclepias syriaca*) was observed within the open upland habitats of the I-95 median to the north of the bridge. The associated habitat consists of a narrow concave graminoid-dominated area with a stormwater drainage swale parallelling the roadway. The area is periodically mowed. No other milkweed observations were made.

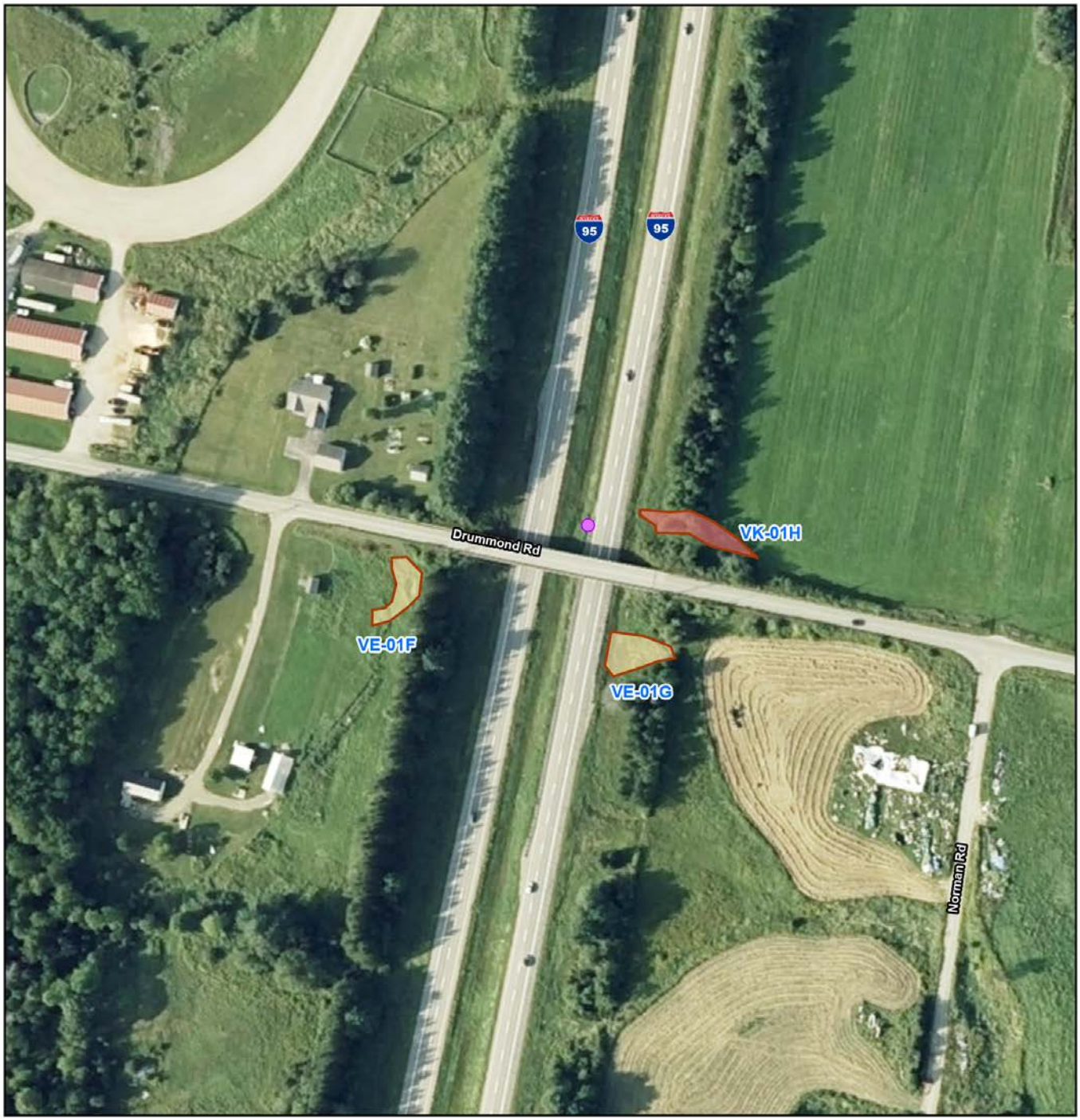
The road embankments of Drummond Road are dominated by non-native invasive shrubs such as Morrow's honeysuckle (*Lonicera morrowii*), European buckthorn (*Rhamnus cathartica*), rambler rose (*Rosa multiflora*), and autumn-olive (*Elaeagnus umbellata*). Aggressive herbaceous plants including common wormwood (*Artemisia vulgaris*), Canadian goldenrod (*Solidago canadensis*), and wrinkle-leaf goldenrod (*Solidago rugosa*) are common associates. The road embankments provide limited opportunity for milkweed species due to the current shrub density although small gaps and openings amongst the shrub growth could provide opportunity for milkweed plants. However, no remnant specimens were observed in these areas at the time of the survey.

Open field and meadow habitat areas beyond the edge of the I-95 and Drummond Road pavement are maintained periodically through mowing by MaineDOT and adjacent landowners. Frequent mowing largely limits the potential for common milkweed establishment and for monarch larvae to complete their life cycle.

Small forest fragments are located in the Project area, largely as a linear visual and noise screen between I-95 and abutting properties. These areas have overstory vegetation including Norway spruce (*Picea abies*) and eastern white pine (*Pinus strobus*). The edges of these tree rows may provide habitat for milkweed, but no remnant specimens were observed.

Representative habitat photographs are provided in Appendix A and the locations of observed milkweed are indicated on Figure 1.

Figures



Legend

- Wetland Boundary Line
- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Approximate Delineation Limit
- Common milkweed *(Asclepias syriaca)* Observation

0 2,000 4,000 Feet
(At original document size of 8.5x11)
1:2,400

N

Stantec

Project Location
Sidney, Maine

Prepared by PWB on 2025-01-23
TR Review by KWH on 2025-01-23
IR Review by MPA on 2025-01-23

Client/Project
MEDOT
Drummond Road Bridge (BR 5784) over I-95
(WIN 25469.00)

195603436

Figure No.
1

Title
Wetland and Watercourse Delineation and Milkweed Survey Map

Notes

1. Wetland boundaries delineated (Date) in accordance with the USACE Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Regional Supplement (Version 2.0).
2 Wetland boundaries and streams were located utilizing an EOS Arrow GNSS/GPS Receiver. Expected accuracy of GPS data is within 1-2 meters of actual position.
3 Wetland delineation conducted during frozen ground conditions and verification of hydric soil criteria during growing appropriate seasonal conditions is recommended.
4 Milkweed survey conducted during non-growing season conditions and was limited to observations of persistent remnant specimens.
5. Coordinate System: NAD 1983 UTM Zone 19N
6. Data Sources: MEGIS, Stantec
7. Background: Background: Aerial imagery provided by National Agriculture Imagery Program (NAIP). Maine, 2022.

Appendices

Appendix A Representative Photographs

Photo 1. Wetland VE-01F. Stantec. January 10, 2025.

Photo 2. Wetland VE-01G. Stantec. January 10, 2025.

Photo 3. Wetland VK-01H. Stantec. January 10, 2025.

Photo 4. Drummond Road shoulder and adjacent mowed field habitat along eastern approach. Stantec. January 10, 2025.

Photo 5. Drummond Road shoulder along western bridge approach. Stantec. January 10, 2025.

Photo 6. Common milkweed habitat in I-95 median north of bridge. Stantec. January 10, 2025.

Photo 7. Drummond Road bridge meadow habitat along I-95, view to the north. Stantec. January 10, 2025.

Photo 8. Drummond Road bridge meadow habitat along I-95, view to the south. Stantec. January 10, 2025.

Photo 9. Drummond Road bridge meadow habitat along I-95, view to the south. Stantec. January 10, 2025.

Photo 10. Drummond Road bridge, view to the north (wetland VE-01G is in foreground). Stantec. January 10, 2025.

Appendix B MaineDOT Wetland Data Forms

Standard MaineDOT Information/F&V Form

MaineDOT Functional Assessment:

1. Town: Sidney	**2. Drummond Road BR 5784**	**3. WIN:** 25469.00
4. Wetland ID/ Line ID: VE-01F	**5. Cowardin Class:** PEM	**6. Stationing/Location**
7. Dominant Vegetation: *Onoclea sensibilis, Lythrum salicaria, Juncus effusus, Solidago rugosa, Typha latifolia*		**8. Wetland Morphology HGM Type:** Depressional wetland, no stream association
9. Wetland description including a soil description: Mowed wetland field at toe of road embankment and edge of mowed field. Surface water present Soil: Frozen along edges – not assessed at time of delineation. USDA NRCS soil mapped as Scio very fine sandy loam		
10. FVA Table:		

Whole Wetland:

F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs				X									
Principal					X								

Impacted area: TBD

11. Is this wetland part of larger complex?

No.

12. Impact Notes/Photos:

Impacts TBD, see report photos

Attach applicable ACOE Form

Directions and Guidance

1. Town where project is located.
2. Route.
3. Work Identification Number (WIN).
4. Unique Identifier code for each wetland area.
5. Cowardin Classification Codes.
6. Approximated stationing location.
7. List the typical vegetation found within this wetland type. List any vegetation that may support a function of that wetland.
8. This should describe the morphology of the wetland. Need to describe if the wetland is in a basin or on a sloped area, whether it has a definite inlet or outlet and whether a stream is present in the wetland.
9. Notes any soils information, stream descriptions, habitat descriptions such as vernal pools or open aquatic areas.
10. This is the wetland function discussion block.
11. Is this wetland in a complex associated with other streams or wetlands?
12. Also any include more detailed description of area to be affected by the project as opposed to notes of the entire wetland, if known. Photos if applicable.

Standard MaineDOT Information/F&V Form

MaineDOT Functional Assessment:

1. Town: Sidney	**2. Drummond Road BR 5784**	**3. WIN:** 25469.00
4. Wetland ID/ Line ID: VE-01G	**5. Cowardin Class:** PEM	**6. Stationing/Location**
7. Dominant Vegetation: *Phalaris arundinacea*		**8. Wetland Morphology HGM Type:** Depressional wetland, no stream association
9. Wetland description including a soil description: Depressional wetland at base of road embankment. Soil: Frozen along edges – not assessed at time of delineation. USDA NRCS soil mapped as Scio very fine sandy loam and Lamoine silt loam		
10. FVA Table:		

Whole Wetland:

F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs				X									
Principal					X								

Impacted area: TBD

11. Is this wetland part of larger complex?

No.

12. Impact Notes/Photos:

Impacts TBD, see report photos

Attach applicable ACOE Form

Directions and Guidance

1. Town where project is located.
2. Route.
3. Work Identification Number (WIN).
4. Unique Identifier code for each wetland area.
5. Cowardin Classification Codes.
6. Approximated stationing location.
7. List the typical vegetation found within this wetland type. List any vegetation that may support a function of that wetland.
8. This should describe the morphology of the wetland. Need to describe if the wetland is in a basin or on a sloped area, whether it has a definite inlet or outlet and whether a stream is present in the wetland.
9. Notes any soils information, stream descriptions, habitat descriptions such as vernal pools or open aquatic areas.
10. This is the wetland function discussion block.
11. Is this wetland in a complex associated with other streams or wetlands?
12. Also any include more detailed description of area to be affected by the project as opposed to notes of the entire wetland, if known. Photos if applicable.

Standard MaineDOT Information/F&V Form

MaineDOT Functional Assessment:

1. Town: Sidney	**2. Drummond Road BR 5784**	**3. WIN:** 25469.00
4. Wetland ID/ Line ID: VK-01H	**5. Cowardin Class:** PFO	**6. Stationing/Location**
7. Dominant Vegetation: *Acer rubrum, Lythrum salicaria, Onoclea sensibilis, Solidago rugosa*		**8. Wetland Morphology HGM Type:** Depressional wetland, no stream association
9. Wetland description including a soil description: Depressional wetland at base of road embankment and edge of mowed field; edges of PFO mowed wet meadow Soil: Frozen along edges – not assessed at time of delineation. USDA NRCS soil mapped as Lamoine silt loam		
10. FVA Table:		

Whole Wetland:

F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs					X								
Principal				X									

Impacted area: TBD

11. Is this wetland part of larger complex?

No.

12. Impact Notes/Photos:

Impacts TBD, see report photos

Attach applicable ACOE Form

Directions and Guidance

1. Town where project is located.
2. Route.
3. Work Identification Number (WIN).
4. Unique Identifier code for each wetland area.
5. Cowardin Classification Codes.
6. Approximated stationing location.
7. List the typical vegetation found within this wetland type. List any vegetation that may support a function of that wetland.
8. This should describe the morphology of the wetland. Need to describe if the wetland is in a basin or on a sloped area, whether it has a definite inlet or outlet and whether a stream is present in the wetland.
9. Notes any soils information, stream descriptions, habitat descriptions such as vernal pools or open aquatic areas.
10. This is the wetland function discussion block.
11. Is this wetland in a complex associated with other streams or wetlands?
12. Also any include more detailed description of area to be affected by the project as opposed to notes of the entire wetland, if known. Photos if applicable.