

## CHAPTER 2 – METHODOLOGY AND COORDINATION

### 2.1 Vegetative Communities and Wildlife Habitat

#### 2.1.1 Vegetative Communities

A variety of vegetative communities and wildlife habitat types are present in the project area, including deciduous, evergreen and mixed forest, emergent wetland, shrubland, old field, mowed turf, farmland, open water, ledge and residential/commercial areas.

#### 2.1.2 Wildlife Habitat

Forests provide habitat for many types of wildlife including game animals, game birds, song birds, raptors, and many small mammals. The forests in the project area are highly fragmented by village and suburban development. Large tracts of 1,000 acres or more of contiguous forest which would provide high quality forest habitat at an ecosystem scale do not exist in the project area. Smaller forest tracts provide habitat for forest species that are able to meet their lifecycle needs in smaller areas and may also provide travel corridors for wider ranging wildlife.

Other habitat types present in the project area include wetlands, riparian corridor, small areas of forest/hedgerow, old field, and urban/suburban green space. Old fields are areas that are no longer cropped and are dominated by grasses, forbs, shrubs, and some small trees. This transitional environment provides habitat for woodchuck (*Marmota monax*), small mammals and song birds, hunting areas for raptors, fox (*Vulpes* sp.) and coyote (*Canis latrans*), and browse for deer (*Odocoileus virginianus*). Urban and suburban open space provide similar habitat, but are often more fragmented and disturbed than old field environments. Some wildlife species have become well adapted to urban and suburban environments. These include raccoon (*Procyon lotor*), skunk (*Mephitis* sp.), woodchuck, chipmunk (*Tamias* sp.), gray squirrel (*Sciurus carolinensis*) and red fox (*Vulpes vulpes*).

#### 2.1.3 Wildlife Travel Corridors

Wildlife travel corridors are linear habitat features where wildlife travel is concentrated. The corridors may connect areas of valuable habitat, or may constitute valuable habitat such as riparian habitat along rivers and streams. A variety of small travel corridors are present in the project area.

#### 2.1.4 Critical Habitat

At the federal level, Critical Habitat areas are set aside for recovering populations of federally protected species. There is no federally designated critical habitat in the project area.

In Vermont, State Critical Habitat is habitat designated as “necessary wildlife habitat decisive to the survival of the species that depends upon that habitat.” Deer wintering range, which is present in the project area, is a Critical Habitat in Vermont.

### 2.1.5 Regulatory Framework

At the federal level, the Endangered Species Act (ESA) mandates designation of Critical Habitat. There is no federally designated critical habitat in the project area.

In Vermont, “necessary wildlife habitat” or “critical habitat” is regulated under Act 250 Criterion 8(A) and is defined in the statute as “...concentrated habitat that is identifiable and is demonstrated as being decisive to the survival of a species of wildlife at any period in its life including breeding and migratory periods.” The review standard is that a proposed project will not have an undue adverse effect. Deer wintering range, which is present in the project area, is a Critical Habitat in Vermont.

As noted above, forests provide habitat for game animals, which are managed by the Vermont Agency of Natural Resources (VANR), Department of Fish and Wildlife (VDFW). Vermont hunting and trapping regulations apply to the taking of large game animals, including white-tailed deer, moose (*Alces alces*), black bear (*Ursus americanus*), and wild turkey (*Meleagris gallopavo*). Regulated small game animals include rabbit (*Sylvilagus* spp.), hare (*Lepus* spp.), gray squirrel, ruffed grouse (*Bonasa umbellus*), and woodcock (*Scolopax minor*). Regulated furbearers include bobcat (*Lynx rufus*), red fox, gray fox (*Urocyon cinereoagenteus*), raccoon, coyote, skunk, mink (*Mustela vison*), fisher (*Martes pennanti*), otter (*Lutra canadensis*), muskrat (*Ondatra zibethicus*), and beaver (*Castor canadensis*). All of these species may occur in the project area. Migratory waterfowl are also regulated by the United States Fish and Wildlife Service (USFWS) under the Migratory Bird Treaty Act. Hunting for ducks and geese is also regulated at the federal level; hunters are required to have a Vermont hunting license and a federal Duck Stamp.

In Vermont, species designated as ‘rare’ are not legally protected and do not have regulatory status but are tracked and ranked on the basis of rarity by an international network of Natural Heritage Data Centers. The Nongame and Natural Heritage Program (VNNHP), a division within the VDFW, participates in this network. This network provides an informational listing of the global and State status of species populations. For large State projects, VNNHP makes recommendations regarding avoidance and protection of rare species and their habitats through the Vermont Act 250 process.

The U.S. Army Corps of Engineers (Corps) Section 404 General Permit and Individual Permit program and the Vermont Wetlands Conditional Use Determination consider habitat as one of the wetland functions and values subject to regulation.

### 2.1.6 Data Collection

Review of 2003 and 2005 orthophotos and detailed field reconnaissance of the two project corridors accomplished during the autumn of 2005 provided the bases for mapping of vegetative communities and assessment of wildlife habitat. The study areas for data collection were determined based upon expectations of reasonable areas in which impacts might occur.

The VDFW 1997 Town of Williston Significant Habitat Map was used as the basis for further study of deer winter range, a Vermont Critical Habitat. A field review accomplished by VDFW and VTrans in January 2006 provided updated mapping of the current boundaries of the deer winter range within the Circ A/B corridor (Appendix A). Field studies accomplished by an aquatic biologist (Aquatec Biological Services) in the autumn of 2005 and 2006 provided information on the fish and invertebrate populations in Allen Brook (Appendix C) and on

mussels in the Winooski River in the vicinity of the Circ A/B corridor (Appendix D). Field studies accomplished by an aquatic biologist (Aquatec Biological Services) in the autumn of 2006 provided information on the fish in the Winooski River in the vicinity of the VT 2A corridor (Appendix L).

### **2.1.7 Agency Consultation and Coordination**

Since inception of the technical studies, regularly scheduled Interagency meetings have been held approximately monthly with various Federal and State agencies, including the Corps, United States Environmental Protection Agency (US EPA), USFWS, FHWA, VANR and VTrans. The purpose of these meetings is to coordinate and discuss ongoing environmental studies with the agencies. In addition to these meetings, individual, resource-specific consultations were completed, as described below.

The USFWS was contacted in February 2006 to solicit comments on wildlife habitat and wildlife travel corridors within the two project corridors. (Neidermyer, B., pers. comm., 21 February 2006).

In October 2005, field reconnaissance was accomplished along the VT 2A and Circ A/B corridors for rare species and Significant Natural Communities by VNNHP and DuBois & King, Inc. Further coordination with VNNHP in relation to species and natural communities was accomplished during the period of March through August, 2006 (Popp, B., pers. comm., March through August 2006).

The VDFW was contacted in February and March 2006 to solicit comments on wildlife habitat and wildlife travel corridors within the project corridors (Austin, J., pers. comm., 24 February 2006, and Austin, J., pers. comm., 23 March 2006). The VDFW expressed no concerns regarding the VT 2A corridor. Field reconnaissance of the wildlife value of wetlands along the Circ A/B corridor was accomplished by VDFW and DuBois & King, Inc. on May 4, 2006. Field reconnaissance of the reptile and amphibian habitat value of the Circ A/B corridor (particularly in the area of Redmond Creek) was accomplished by VNNHP and DuBois & King, Inc. on April 12, 2006 (Ferguson, M., pers. comm., 4 May 2006). Field reconnaissance of potential forest communities of local concern in the vicinity of the Circ A/B ramps south of I-89 was accomplished by DuBois & King, Inc. in June 2006.

The VDFW and Water Quality Division of VANR were contacted in February and March 2006 to solicit comments on fish habitat within the two project corridors (Pientke, B., pers. comm., 22 February 2006; Langdon, R., pers. comm., 22 February 2006; and Langdon, R., pers. comm., 8 March 2006).

Coordination with the VDFW and VTrans regarding deer winter range, a State Critical Habitat, was accomplished in February and March 2006 (Austin, J., pers. comm. 24 February 2006; and Gingras, G., pers. comm., 17 March 2006).

Both corridors were field-reviewed for wildlife habitat and travel corridors by VDFW and DuBois & King, Inc. in March 2006. The Circ A/B corridor was field-reviewed by VDFW and VTrans to verify deer winter range boundaries in January 2006. The VDFW and DuBois & King, Inc. conducted an additional examination of the Winooski River, in the vicinity of the VT 2A crossing, for the presence of rare species.

The results of all consultation, coordination and field reconnaissance are provided in Chapter 3.

## 2.2 Wetlands

### 2.2.1 Regulatory Framework

Wetlands in Vermont are protected under Sections 401 and 404 of the Federal Clean Water Act, Vermont Act 250, and the Vermont Wetland Rules. Additionally, activities that can be expected to create or cause discharge into waters are regulated under 10 V.S.A. § 1272 and may be issued a Section 1272 Order. With respect to Federal actions in which impacts to wetlands are unavoidable, a NEPA document must contain a finding under Executive Order 11990 that there were no practicable alternatives to the wetland impacts.

The U.S. EPA developed criteria to be used in the evaluation of discharges of dredged or fill material into waters of the United States under Section 404 of the Clean Water Act. The Guidelines for Specification of Disposal Sites for Dredged or Fill Material (40 C.F.R. Part 230, December 24, 1980) are commonly known as the 404 (b)(1) Guidelines. These guidelines indicate that dredged or fill material should not be discharged into the aquatic system unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact. Compliance with the guidelines requires an analysis of alternatives. Specifically, the guidelines state that no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences. An alternative is defined as practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

The Corps regulates the issuance of permits to fill waters of the United States, including wetlands pursuant to Section 404 of the Clean Water Act. Waters of the United States includes navigable waters and all their tributaries, adjacent wetlands and other waters or wetlands where degradation or destruction could affect interstate or foreign commerce. Wetlands, as defined in the *Corps of Engineers Wetland Delineation Manual, Technical Report Y-87-1*, (January, 1987) manual, are: "Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal conditions do support, a prevalence of vegetation typically adapted to life in saturated soil conditions." All wetlands which meet the criteria established in the above mentioned manual are subjected to Section 404 regulations. The issuance of a Section 404 permit must comply with the EPA guidelines described above, pursuant to Section 404(b)(1) of the Clean Water Act, unless the Corps concludes that the economics of navigation and anchorage warrant permit issuance.

Further elaboration and clarification of the application of the 404(b)(1) Guidelines was provided in the Memorandum of Agreement (MOA) between the EPA and the Corps on Clean Water Act Section 404(b)(1) Guidelines (55 FR 9211, March 12, 1990). This MOA indicates that the EPA and Corps will strive to achieve a goal of no overall net loss of values and functions for wetlands. To achieve this goal the Corps and EPA have established a sequence by which proposed projects in wetlands are to be evaluated. First, it must be determined that potential impacts to waters of the United States have been avoided to the maximum extent practicable. Remaining impacts are to be minimized through appropriate and practicable steps including project modifications. Finally, compensatory mitigation is required for unavoidable adverse impacts which remain after all appropriate and practicable minimization has been incorporated.

The Vermont Wetland Rules distinguish between three wetland classes. Class One wetlands are characterized as “exceptional or irreplaceable.” There are no Class One designated wetlands in the project area. Class Two wetlands include those shown on the Vermont Significant Wetlands Inventory (VSWI) mapping or those contiguous to such mapped wetlands. Under the Vermont Wetland Rules, any impacts to Class Two wetlands or their 50-foot buffers which are not “allowed uses,” as defined by the Rules, must be reviewed and approved under a Conditional Use Determination issued by the Wetlands Section of the Vermont Department of Environmental Conservation (DEC). However, Section 1.1 of the Vermont Wetland Rules states that, “All public highway projects which have filed an Act 250 application prior to the date on which these rules were proposed (April 24, 1989) or which have received an Act 250 permit prior to the effective date of these rules (February 23, 1990) shall be exempt from the Vermont Wetland Rules.” The Act 250 Master Land Use Permit (“LUP”) for the Chittenden County Circumferential Highway (#4C0718) was issued on December 6, 1988. While the project is currently receiving additional review through the NEPA process under the designation of “Circ Williston,” for purposes of distinguishing this review from the previous NEPA review, the project itself remains the same highway project permitted by the 1988 LUP #4C0718. A Memorandum of Decision issued by the Secretary of the Agency of Natural Resources confirming the VANR interpretation that the Vermont Wetland Rules do not apply to this project is provided in Appendix A. There are no Class Two wetlands along the VT 2A alignment; therefore, the Vermont Wetland Rules are not applicable to that alignment, should it be chosen as the Preferred Alternative. Three Class Two wetlands are present along the Circ A/B alignment. Class Three wetlands include all wetlands which are not classified as Class One or Class Two. They are not regulated under the Vermont Wetland Rules. All wetlands within the study area are regulated by the Corps pursuant to Section 404 of the Clean Water Act.

## 2.2.2 Data Collection

Wetlands within both project corridors were delineated in accordance with the procedures outlined in the *Corps of Engineers Wetland Delineation Manual, Technical Report Y-87-1*, (January, 1987). Hydric soils were determined in accordance with the manual *Field Indicators for Identifying Hydric Soils in New England* (Version 3, April 2004), published by the New England Interstate Water Pollution Control Commission. The USFWS 1988 edition of *The Wetland Plant List of the State of Vermont* (P.B. Reed, 1998) was used to determine the frequency of wetland vegetation. Data sheets documenting the vegetation, soils and hydrology of each wetland (and the adjacent upland) were completed. Sequentially numbered flags were placed along each wetland boundary. The wetland boundaries were surveyed using a Trimble TDC1 Asset Surveyor Global Positioning System (GPS). The study areas for data collection were determined based upon expectations of reasonable areas in which impacts might occur.

The principle functions/values of each wetland were identified using the professional judgment of the evaluator in conjunction with the guidelines presented in the *Highway Methodology Workbook Supplement; Wetlands Functions and Values, A Descriptive Approach*. (USACE, 1995). Wetland Function-Value Evaluation Forms were completed for each wetland.

The wetlands in the corridors were field-checked for contiguity to VSWI-mapped (Class Two) wetlands to determine their Class, in accordance with the Vermont Wetland Rules. Class assignments have been verified by the Vermont Wetlands Office (See Appendix A).

### **VT 2A Corridor**

Wetlands within the VT 2A corridor were formally delineated in the autumn of 2005. The VT 2A corridor wetlands study area extends to 75 feet from the edges of pavement on both sides of the existing VT 2A roadway, from Hurricane Lane north to the Five Corners intersection in Essex Junction. For each leg of the Five Corners intersection except for VT 2A south, the corridor extends 275 feet out from the center of the intersection, and to 75 feet from the edges of pavement on both sides of each road.

### **Circ A/B Corridor**

For the CCCH 1986 FEIS, wetlands were visually identified in the Circ A/B corridor in 1985. The wetlands were formally delineated using the three parameter approach in 1987 as part of the application to the Corps for the CCCH project. A 2005 field reconnaissance revealed an increase in wetlands within the corridor since the 1987 delineation. The increase is attributed to the fact that large areas of well-maintained agricultural fields had been abandoned since 1987, allowing wetland vegetation to establish itself on the hydric soils. Also, some additional areas previously designated as upland required reclassification as wetland to reflect the change in criteria in the most recent version of the currently accepted soils key (*Field Indicators of Hydric Soils, Version 3*, April 2004). Because of the observed increases in wetland acreage, the entire corridor was re-delineated in the autumn of 2005.

The Circ A/B corridor wetlands study area extends to 150 feet on either side of the proposed alignment centerline, from I-89 in Williston north to VT 289 in Essex. In addition, it includes areas where intersections or interchanges may be considered at US 2 and Mountain View Road, and where widening of Mountain View Road or Redmond Road may be accomplished.

## **2.2.3 Agency Consultation and Coordination**

Since inception of the technical studies, regularly scheduled Interagency meetings have been held approximately monthly with various Federal and State agencies, including the Corps, US EPA, USFWS, FHWA, VANR and VTrans. The purpose of these meetings is to coordinate and discuss ongoing environmental studies with the agencies. A progress report on the 2005 wetlands investigations was provided to the Federal and State agencies at the December 14, 2005 Interagency informational meeting held in Montpelier, Vermont.

The *Circ-Williston Environmental Impact Study Wetlands Report, CCCH A/B and VT 2A Corridors*, was completed in January 2006 and circulated to the above-referenced agencies. Information from the January 2006 report provides the basis for the wetlands portion of this technical report. Details of the wetlands report were discussed with the Federal and State agencies at a February 8, 2006 Interagency meeting held in Montpelier, Vermont. At the May 23, 2006 Interagency meeting, a field tour of the wetlands along both the VT 2A and Circ A/B corridors was conducted. During the tour, the ecology of the existing wetlands was discussed and approximate cross-sections and footprints of the alternatives were provided.

## **2.3 Threatened and Endangered Species**

Federal and State-listed threatened and endangered species are protected by Federal and State laws, due to their low or declining numbers. No federal or state-listed threatened or endangered species are present in the project area.

### 2.3.1 Regulatory Framework

The USFWS has been charged with responsibility for the listing and management of threatened and endangered species native to the United States by the federal Endangered Species Act, which was enacted in 1973. Federally-listed threatened and endangered species are included on the Vermont State list of Threatened or Endangered Species and accorded the same treatment in Vermont Act 250 as state-listed species.

The State of Vermont protects state-listed threatened or endangered species under the authority of 10 V.S.A. § 5402. The law does not require recovery plans. Actions that would result in a “taking” of these species require a permit issued by the VNNHP. A “taking” would include adverse impacts to these species and their habitat from a development project. The Conservation Program authorized in 10 V.S.A. § 5405 addresses the prohibition on takings of threatened and endangered species and the establishment of programs for the conservation of endangered species. Two scientific advisory groups, one for plants and one for animals, make recommendations to the Vermont Endangered Species Committee regarding the conservation status of species. The Vermont Endangered Species Committee then assigns the State Threatened or Endangered status which provides legal protection for species.

### 2.3.2 Data Collection

The study area for each corridor was determined based upon expectations of reasonable areas in which impacts might occur. The VDFW Town of Williston Significant Habitat Map was used as the basis for further study in the two project corridors. The map, which is incorporated in the figures in Chapter 3, illustrates the potential locations of threatened and endangered species in the vicinity of the project area.

### 2.3.3 Agency Consultation and Coordination

During the process of alternatives screening, the USFWS was contacted to request information on federally-listed or proposed threatened or endangered species in the project area. USFWS indicated that occurrences of the federally endangered Indiana bat (*Myotis sodalis*) have been noted during the summer months within 13 miles of the project area. USFWS requested an assessment of the project area to determine the presence of suitable forested habitat that could support this species. USFWS confirmed that no other federally-listed threatened or endangered species are known to occur in the project area, with the exception of the occasional transient bald eagle.

Coordination with USFWS and VDFW in relation to potential habitat for the Indiana bat continued through June 2006 (see Chapter 3 and Appendix A). Field reconnaissance of the potential habitat was accomplished by USFWS, VDFW, VTrans and DuBois & King, Inc. in March 2006. Based upon that reconnaissance, USFWS and VDFW requested a net survey for bats, to be accomplished in the summer of 2006. The June 2006 net survey did not identify any Indiana bats in the project vicinity (Appendix B).

Coordination with VNNHP was accomplished between October 2005 and August 2006 (Appendix A), (Popp, B., pers. comm. October 2005 through August 2006). In October 2005, field reconnaissance was accomplished along the VT 2A and Circ A/B corridors for potential threatened and endangered species by VNNHP and DuBois & King, Inc. The results of all coordination and field reconnaissance are provided in Chapter 3.