

### **5.3.12.2.3 Comparison of Impacts on Historic and Archaeological Resources**

Both the Preferred and Noticed Alternative Routes possess water features that are generally associated with moderate to high sensitivity for archaeological resources. Potential impacts to archaeological resources will be formulated once the current field studies have been completed. In terms of historic resources, the Preferred Northern Route has one historically significant area within approximately 500 feet of the ROW (Ludlow Center), while the Noticed-Alternative Southern Route possesses none. Since work on both routes is required if the Noticed-Alternative Southern Route were chosen, this route scored less favorably in Table 4-3, above, than the Preferred Northern Route from the point of view of potential impacts on culturally sensitive resources and the Preferred Northern Route is considered superior on this basis.

### **5.3.12.2.4 Mitigation Measures**

In sections of overhead line ROW that have been classified as Moderate or High Sensitivity, additional archaeological investigation is recommended once the decision has been made to use those ROW for construction purposes, and once work locations, Area of Potential Effect (APEs) and technical designs have been more fully developed for the GSRP. For each ROW, an archaeological Phase 1A reconnaissance survey is recommended, to include 100 percent walkover survey and additional archival research. The purpose of the Phase 1A reconnaissance will be to confirm that locations within the ROW actually merit subsurface testing, and to determine the amount of testing that is appropriate. If warranted on the basis of the Phase 1A study, archaeological Phase 1B intensive (locational) subsurface testing should be conducted in order to locate and identify any Native American and/or historical archaeological resources located within the GSRP area. Phase 2 surveys are performed to determine the eligibility of a site to be included on the National Register of Historic Places. Sites that do not meet the standards for inclusion on the National Register of Historic Places require no further work. Avoidance is recommended for sites that do meet the National Register standards (eligible sites). If eligible sites can not be avoided, then preservation or data removal must be performed during Phase 3 survey work to protect the data included in these sites.

WMECO will continue to coordinate with the MHC regarding cultural resources and will perform further archaeological studies as necessary.

## **5.4 SUBSTATIONS**

WMECO proposes to modify two of its existing substations as ancillary facilities in connection with the construction of its 345-kV transmission facilities (Agawam and Ludlow). The proposed modifications to

the two existing substations will be accomplished within either the developed substation footprint or otherwise within the boundaries of WMECO's property. The following summarizes the prominent environmental features in the immediate vicinity of each substation site.

#### **5.4.1 Ludlow Substation**

Ludlow is an existing substation with 115- and 345-kV switchyards, as well as 23-kV facilities. The proposed modifications to this substation will include the removal and replacement of each of two existing three-phase autotransformers using single-phase units, the addition of a new bay of 345-kV circuit breakers to interconnect the Agawam-Ludlow transmission circuit, and the replacement of several 115-kV circuit breakers.

The construction of these modifications will take place within WMECO property, and within the existing substation fence line, in an area which is un-vegetated and presently covered with gravel. While some wetlands are proximate to the substation, there are no wetlands, watercourses, vernal pools, or Protected Species habitats in the immediate vicinity of the proposed work. Existing access to the Ludlow Substation is via Center Street. Facing Rock Wildlife Management Area is located to the north of and adjacent to the parcel of land owned by WMECO. The construction activities proposed for the Ludlow Substation are expected to occur well within the border of WMECO's property and away from the wildlife management area.

The modifications proposed at the existing Ludlow Station to accommodate the 345-kV project facilities would be minor, and would be accomplished within the existing WMECO property line, but outside of the existing substation fence line. Aerial diagrams of the modifications to the Ludlow Substation are set forth in Exhibit 5.7. These modifications would have generally minor and highly localized environmental effects.

#### **Impacts and Mitigation**

The addition of new facilities to the Ludlow Substation would require some site preparation work that may involve grading and soil disturbance to install the foundations and erect new transmission line facilities. Mechanical methods would be used to install foundations into bedrock, if encountered.

The existing Ludlow Substation is equipped with secondary containment structures to contain transformer oil in the event of a spill or inadvertent release of oil. Modifications to the Ludlow Substation would include maintaining the existing secondary containment structures, as well as the construction of new

secondary containment systems for the two new autotransformers, in accordance with Northeast Utilities Substation Standards, *Secondary Oil Containment for Electrical Equipment*. The new autotransformers will have an insulating fluid that will require a secondary containment system. The containment will be sized to accommodate 110 percent of the volume of fluid contained in the autotransformer.

Appropriate spill prevention, control and countermeasure procedures would be implemented during construction to minimize the potential for inadvertent spills or leaks from construction equipment and during operation of the facility to avoid or minimize the potential for spills or leaks from fuel stored on site to power an emergency generator.

The proposed modifications to the substation would be consistent with the existing and planned use of the property for utility purposes. WMECO owns the existing substation site and no additional land would have to be acquired for the proposed station modifications.

The modifications proposed to the Ludlow Substation would have a minor, incremental effect on visual resources. The substation has been in operation for over 30 years, and the new 345-kV facilities would not appreciably alter the existing appearance of the station. The new 345-kV line-terminal structures would be approximately 90 feet tall, which is similar in height to the existing 345-kV line-terminal structures at the station.

The construction of the proposed substation modifications would have a minor and short-term effect on vehicular traffic on the local roads leading to the site. At times, localized traffic congestion may occur when heavy construction equipment or electric components are transported to the site. The movement of construction workers and equipment in general also would temporarily cause increased traffic on local roads leading to the site. Construction is expected to occur during normal work hours, but is also dependent on the scheduling of allowable line outages.

However, such impacts would be minor and localized. Post-construction site conditions would not significantly affect existing traffic patterns.

The *Cultural Resources Assessment* by UMass Archaeological Services did not identify any known significant historic or archaeological sites in the vicinity of the substation.

Noise is generated primarily from three sources within a substation: the transformers; the transformer cooling fans; and the control house air conditioning units. An “Environmental Sound Assessment Study” (“Noise Study”), which is attached to this Section 5 as Exhibit 5.6, was conducted by WMECO for the modifications to the Agawam and Ludlow Substations, among others. The Noise Study at Table 5-5 shows little, if any, increase in ambient noise levels due to the modifications at the Ludlow Substation.

#### **5.4.2 Agawam Substation**

Agawam is an existing substation with a 115-kV switchyard. The proposed modifications at this substation will include constructing a new 345-kV switchyard to interconnect two 345-kV lines, two 345/115-kV autotransformers, space provisions for future 345-kV connections, a new 115-kV circuit-breaker bay, and a new control house. The existing fencing at the substation will be relocated approximately 65 feet to the north and 45 feet to the west for a total expansion of 45,000 square feet.

All of the proposed modifications will be located on WMECO property. The substation expansion (i.e., outside of the existing fenceline) will occur in an area that currently consists of developed and landscaped areas. There are no wetlands, watercourses, vernal pools, or Protected Species habitats in the vicinity of the proposed modifications.

The impacts and mitigation for the Agawam Substation are expected to be comparable to those described for the Ludlow Substation. Aerial diagrams of the modifications to the Agawam Substation are set forth in Exhibit 5.8. These modifications would have generally minor and highly localized environmental effects.

The modifications proposed to the Agawam Substation would have a minor, incremental effect on visual resources. The new 345-kV facilities would not appreciably alter the existing appearance of the station. The new 345-kV line terminal structures would be approximately 120 feet tall, which is taller in height than the existing structures at the station.

The Noise Study (Exhibit 5.6) at Table 5-3 shows little, if any, increase in ambient noise levels due to the modifications at the Agawam Substation.

### **5.5 OVERHEAD CONSTRUCTION METHODS AND SCHEDULE**

The proposed Project facilities will be constructed in accordance with established electric utility practices, best management practices, final engineering plans, WMECO’s specifications, and the conditions