

CELC 2001 at 327; MMWEC 2001 at 119; ANP 1999 at 213; Berkshire Power at 347, 348; Silver City 1994 at 258; Cabot Power 1994 at 373.

In the following sections, WMECO presents a detailed description of its route selection process, including an overview of the route selection methods; the alternative alignments that were subsequently identified and evaluated; and the process whereby preferred and noticed-alternative routes were selected. Section 5 presents detailed analyses of the environmental impacts and costs of the development of the 345-kV transmission lines along the preferred and the noticed-alternative routes, respectively. Both routes are shown to have comparable reliability. Similarly, Section 6 presents a description of the route selection process for the 115-kV transmission lines, including an overview of the route selection methods; the alternative alignments that were subsequently identified and evaluated; and the process whereby preferred and alternative routes were selected. Section 7 then contains a detailed analysis of the environmental impacts and costs of the 115-kV transmission lines along the preferred overhead line route shared with the 345-kV lines and the underground alternative line routes. Differences in reliability of the 115-kV alternative routes are also assessed. Underground line alternatives were not considered for the “spur” route between the proposed Cadwell Switching Station and Exit 6 Junction and the Shawinigan Switching Station. On this “spur”, no 345-kV line construction occurs and no right-of-way expansion is required to accommodate the replacement of the existing 115-kV overhead lines. Underground line alternatives were not considered for the Orchard Substation to Orchard Junction “spur” section of 115-kV lines either, because the proposed scope is re-conductoring only. In this regard, most, if not all, of the existing line structures between Orchard Substation and Orchard Junction will not be replaced.

## **4.2 OVERVIEW OF SITING METHODOLOGY**

### **4.2.1 The Project**

The GSRP will consist of new 345-kV lines, connecting three substations (Ludlow, Agawam and North Bloomfield) to complete a loop between WMECO’s Ludlow Substation and CL&P’s North Bloomfield Substation, for the purpose of reinforcing the Springfield area transmission system (see Figure 4-1). A 345-kV supply point to the Springfield 115-kV system is provided at the Agawam Substation and upgrades to existing 115-kV lines will be made to handle anticipated flows through the system. Figure 4-1 is a map which shows both sets of improvements and their location in the Greater Springfield area. Modifications affecting the Ludlow, Agawam, Orchard, Chicopee and Piper Substations and the South Agawam, Shawinigan and Fairmont Switching Stations are also required in connection with the transmission line construction. These substations and switching stations are shown in Figure 4-2. A new

switching station, which will be called the Cadwell Switching Station, will be constructed at the WMECO East Springfield Service Center. In addition, the Fairmont Switching Station will be rebuilt in a nearby location to accommodate the planned electrical upgrades. A full description of these modifications is set forth in Section 1.1.2. Impacts at the facilities which are ancillary to the 345-kV lines, i.e., the Ludlow Substation and Agawam Substations, are discussed at the end of Section 5. The impacts for the 115-kV substations/switching stations that will be upgraded, including again the Ludlow and Agawam Substations where 115-kV modifications will occur, are discussed at the end of Section 7.

**Figure 4-1: Proposed Greater Springfield Area Project**

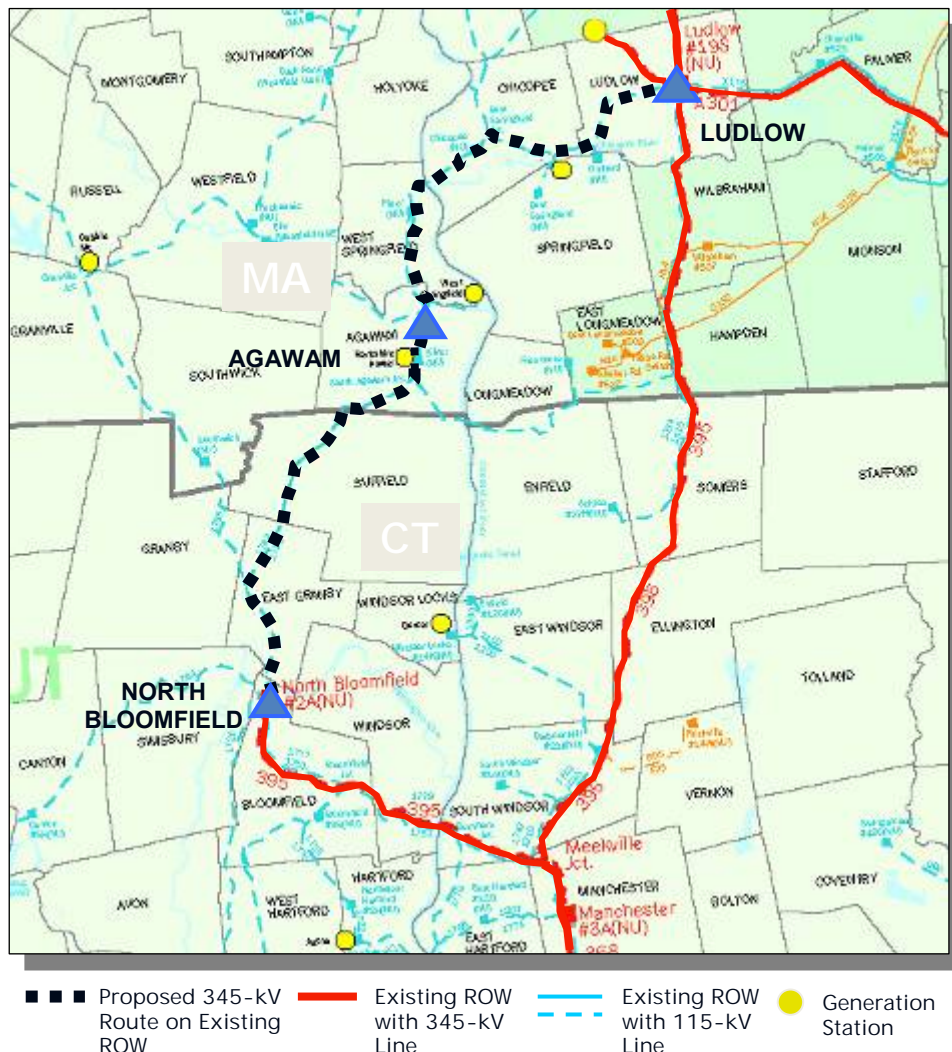
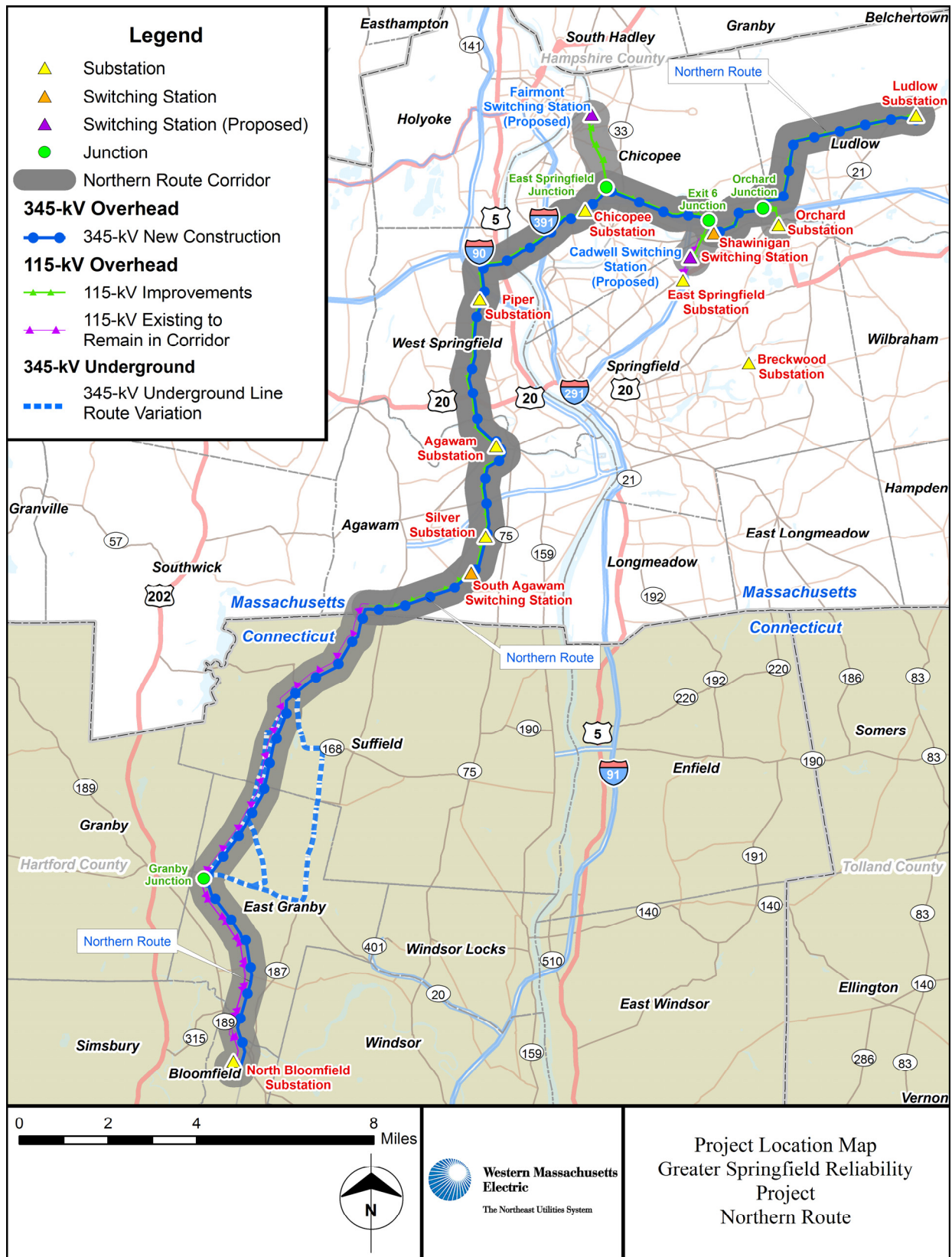


Figure 4-2: Northern Route



#### **4.2.2 Summary of Route and Ancillary Facility Selection Process**

In accordance with requirements of the Siting Board, WMECO followed a systematic and objective route selection process to identify and assess Preferred and Noticed-Alternative Routes for the 345-kV transmission lines based on the Project need described in Section 2 hereof and the alternative transmission approaches to meet that need discussed in Section 3. As a consequence of the proposed new and upgraded transmission lines in the Greater Springfield area, WMECO determined that it will also be necessary to modify, expand, build and upgrade certain interconnecting substations and switching stations. Applying the results of electrical system planning studies, WMECO applied an iterative process to identify and evaluate potential electrical configurations and sites. The evaluation process was conducted by a team consisting of WMECO and CL&P, as well as its consultants, Burns and McDonnell and ENSR. WMECO applied an iterative process to identify potential route alternatives for the Project as well as the related ancillary facilities. The objective of WMECO's process was to select a preferred route, along with a noticed-alternative route with some measure of geographic diversity, each of which was feasible, practical and capable of reliably meeting WMECO's need if approved by the Siting Board. Potential routes were identified and evaluated in accordance with the requirements of the Siting Board, i.e., to demonstrate the examination of a reasonable range of practical alternatives by establishing and applying a reasonable set of criteria for identifying and evaluating alternatives in a manner that ensures that no clearly superior alternative route has been overlooked or eliminated. Criteria used by WMECO include environmental, social, engineering, reliability and economic factors which are of the character and type endorsed by the Siting Board in prior reviews.

The following Sections 4.3 through 4.6 describe the route identification and evaluation process followed by WMECO for the 345-kV lines, including:

- The study area defined to frame the search for potential route options;
- The route selection objectives used to identify potential route options;
- The potential route options;
- The project evaluation criteria used to evaluate the characteristics of the potential route options;
- The segment analysis and unweighted and weighted criteria scoring of the potential route options;
- The selection and description of the candidate routes;
- The circuit cost estimates for the candidate routes;
- The reliability evaluations of the candidate routes;
- The criteria, cost and reliability ranking of the candidate routes; and
- The results - - the Preferred Northern Route and Noticed-Alternative Southern Route.