

- **Large Scale Generation:** Large scale generation resources of appropriate sizes located close to the load demand centers may also help reduce the overall load on the transmission system.

These resource alternatives to the Project were tested for their effectiveness in either deferring or displacing the upgrades to the existing transmission system while maintaining the same level of reliability i.e., fully complying with the NERC, NPCC and ISO-NE reliability criteria. All resource quantities were considered to be market-based in the initial analysis. Thereafter, additional DSM and generation resources, without regard to their economic feasibility, were included in various scenarios which tested the bounds of the ability of non-transmission alternatives to achieve reliability levels comparable to the Project. In this regard, unlike DSM and large scale generation, the CHPR included in these subsequent scenarios did not exceed the CHPR amounts which were considered economically feasible.

ICF concluded in its study report that “Non-transmission alternatives to the Greater Springfield Reliability Project were not found to be satisfactory or sufficient in nature to displace or defer the need for the Project”. Non-Transmission Alternatives Study, Executive Summary, at page 14. This conclusion is supported by results of the power-flow analysis, which indicate that despite the addition of the large scale generation, DSM, and CHPR previously described, numerous transmission facility overloads occur under contingency conditions and hence, the system fails to fully comply with the mandated national and regional system reliability performance standards. Furthermore, ICF in its study report concludes that the Project was determined to be critical to the reliable operation of the New England transmission grid, and in particular, the Greater Springfield and the north-central Connecticut transmission systems. The results of the additional analyses performed with the Project in operation (in contrast with the Non-Transmission Alternatives Assessment) confirm and validate these conclusions.

3.3 CONSIDERATION OF THE NOTICED-ALTERNATIVE SOUTHERN ROUTE

3.3.1 Description of the Noticed-Alternative Southern Route

The Noticed-Alternative Southern Route for the Massachusetts portion of the 345-kV transmission line between Agawam and Ludlow Substations would begin and end at the same Massachusetts substation locations as the Preferred Northern Route and would have a common segment between the Connecticut/Massachusetts border and the Agawam Substation. However, the Noticed-Alternative Southern Route would traverse due south from the Agawam Substation, following an existing transmission corridor currently occupied by one overhead 115-kV transmission line, and passing by the South Agawam Switching Station, then easterly into Connecticut through Suffield, back into

Massachusetts through Longmeadow then into Connecticut again through Enfield. The Noticed-Alternative Southern Route would continue easterly through the towns of East Longmeadow and Hampden to Hampden Junction where it would progress north following an existing transmission line corridor currently occupied by one 345-kV transmission line and one 115-kV transmission line through the towns of Wilbraham and Ludlow to Ludlow Substation.

Figure 3-1 depicts the Noticed-Alternative Southern Route.

Figure 3-1: Noticed-Alternative Southern Route

