

4.6.6 Impact, Cost, and Reliability Conclusions on 345-kV Line-Route Selection

The Northern Route and Southern Route were further compared as presented in Table 4-7. Check marks (✓) in each table identify the route which is superior for each of the evaluation criteria employed by WMECO. In comparing the Northern and Southern Routes between the Agawam and Ludlow Substations, WMECO had to consider that the ROWs along the Northern Route would be affected in any case by the required reconstruction of the existing 115-kV lines between the Agawam, Piper, Chicopee, Orchard, and Ludlow Substations and the Shawinigan Switching Station. If the Northern Route is selected, the new 345-kV line can be constructed on the 115-kV ROWs as part of the same overall construction effort, and it can share structures with one of the 115-kV circuits.

Table 4-7: Comparative Summary of Northern and Southern 345-kV Overhead Line Routes Including 115-kV Improvements

Decision Criteria	Northern Route w/115-kV Improvements		Southern Route w/ 115-kV Improvements along the Northern Route Corridor	
Construction Schedule	36 months		36 months ¹	
Cost Estimate ²	\$714 Million	✓	\$766 Million	
Easement & Potential Home Impacts	Fewer homes adjacent	✓	More homes adjacent	
Route Length ³	39.0 miles	✓	61.3 miles	
Tree Clearing	Less tree clearing	✓	More tree clearing	
Streams/wetlands crossed	Approximately 6.8 miles	✓	Approximately 13.4 miles	
Threatened & Endangered Species Habitat crossed	Approximately 7.8 miles	✓	Approximately 20.5 miles	
Additional ROW width	Approximately 11.1 acres	✓	Approximately 15.6 acres	
Potential Cultural Resources	Less disturbance	✓	More disturbance	

1: The 115-kV re-construction along the South Agawam-East Springfield Junction-Ludlow transmission corridor occurs whether the Northern or Southern Route is chosen. Except for the sequential construction described below, construction along the Northern Route and construction along the Southern Route will generally require an equal number and duration of outages. The Southern Route has a limited performance advantage during the construction period due to the ability to construct the 345-kV transmission line prior to re-building the 115-kV lines, thus providing a stronger system and eliminating contingencies during the construction period for the 115-kV lines. To implement this Southern Route advantage, however, the total construction duration would be extended to account for constructing the 345-kV lines and 115-kV line in series rather than in parallel. The extension of the total construction duration will add significant costs to the Project, thus nullifying the performance advantage.

2: This cost estimate includes construction costs, overhead costs, carrying costs and expected escalation to the in-service date.

3: Inclusive of the 3 miles of 115-kV upgrades on the “spurs”. See Section 4.6.2.2 above.

Table 4-8 compares the Northern and Southern Routes on a generalized basis which supplements the quantitative scoring set forth above, illustrating miles of 345-kV and 115-kV affected ROW in both Massachusetts and Connecticut:

Table 4-8: General Comparison of Reconstructed 115-kV and New 345-kV Line on Northern and Southern Routes and Spurs

ROW Segment	Northern Route: Affected ROW (Construction of New 345-kV Lines & Reconstruction of 115- kV Lines) (miles/location by state)	Southern Route: Affected ROW (Reconstruction of 115-kV Lines on Northern Route & Construction of New 345-kV Line on Southern Route) (miles/location by state)
N. Bloomfield/ Agawam	18 (345-kV) (12 miles in CT and 6 miles in MA)	18 (345-kV) (12 miles in CT and 6 miles in MA) ¹
Agawam/Piper- Chicopee/Ludlow	16.8 (345-kV + 115-kV) (MA)	16.8 (115-kV) (MA)
S. Agawam/ Hampden/Ludlow	N/A	22.3 (5.5 miles in CT and 16.8 miles in MA)
115-kV Spurs	4.2 (MA)	4.2 (MA)
Total Affected ROW	39 (12 miles in CT and 27 miles in MA)	61.3 (12 miles in CT and 49.3 miles in MA) (38.0 miles for 345-kV and 23.3 miles for 115-kV)

1: With the 345-kV line on the Southern Route, more ROW widening is required on the miles in Massachusetts

Accordingly, if the Southern Route were selected for the 345-kV connection between Agawam and Ludlow, a total of approximately 61 miles of existing overhead transmission line ROW would have to be disturbed for activities such as vegetation clearing, access roads for use during construction, excavation for structure foundations, construction support and staging areas, and other construction tasks. On the other hand, use of the Northern Route would involve only 39 miles of transmission line ROW disturbance, avoiding the disturbance of approximately 22 linear miles of ROW.

Based on a balancing of impacts, costs and reliability, the Northern Route is clearly superior to the Southern Route and has been selected by WMECO as the Preferred Northern Route. The Southern Route will be designated the Noticed-Alternative Southern Route.