3.3.2 Comparison to the Preferred Northern Route

A detailed siting study was performed on the Noticed-Alternative Southern Route for comparison with the Preferred Northern Route. The metrics used for the comparison are found in Table 3-1. These metrics measured impacts to water resources, housing and commercial properties and socio-economic factors.

Table 3-1: Study Metrics Used for the Detailed Siting Study for the Noticed-Alternative Southern Route

Evaluation Criteria Metrics	Preferred Northern Route	Noticed-Alternative Southern Route
Total Length (Miles)	35 miles	57 miles
Railroad Crossings (Number)	2	4
Stream Crossings (Number)	41	61
Length NOT paralleling existing linear facilities	0 feet	0 feet
Length through private easement	0 feet	0 feet
Length of ROW expansion	4.1 miles	5.7 miles
Area of ROW expansion	11.1 acres	15.6 acres
Residences within ROW (Number) [1]	11	12
Residences within 100 feet of edge of ROW (Number)	316	428
Residences within 101 to 300 feet of edge of ROW (Number)	754	1,116
Businesses within ROW (Number)	0	2
Businesses within 100 feet of edge of ROW or centerline (Number)	46	54
Businesses within 101 to 300 feet of edge of ROW (Number)	42	58
Public Facilities within 300 feet of edge of ROW (Number)	2	3
Public Facilities within 301 to 1,200 feet of edge of ROW (Number)	9	18
Length by land use (Commercial/Industrial)	6.8 miles	10.4 miles
Length by land use (Residential)	13.1 miles	18.7 miles
Length by land use (Undeveloped Land)	11.3 miles	23.8 miles

Evaluation Criteria Metrics	Preferred Northern Route	Noticed-Alternative Southern Route
Length by land use (Park/School/Open Space)	3.3 miles	3.9 miles
Visibility (Rating) [2]	50.7	67.5
Length through stream or wetland	6.2 miles	12.8 miles
Length through environmentally sensitive area [3]	7.8 miles	20.5 miles
Potential impact on cultural resources (Rating)[4]	39.2	68.3

Notes:

1. Residences or businesses considered to be located within the ROW do not necessarily mean they would need to be relocated.

2. The visibility rating is a subjective rating and was assigned to portions of the segment based on the length of the line that was considered to have a high (5), medium-high (4), medium (3), medium-low (2), or low (1) impact These ratings were determined by the presence of residences, businesses, and roads within a 1/4-mile of the line and described further below. Portions of the segment where the 345-kV structures would be significantly taller than the existing structures in the corridor were multiplied 1.5 times the visibility rating.

3. Environmentally sensitive areas are locations identified in Massachusetts by the Natural Heritage and Endangered Species Program as Priority Habitats of Protected Species and in Connecticut as the Natural Diversity Database Endangered Species locations.

4. The cultural resources rating is a rating that was assigned to portions of the segment based on the length of the line that was considered to have a High (3), Medium (2), No /Low (1) predicted sensitivity for archaeological resources and described further below.

A comparative summary highlighting key differences is provided in Table 3-2. As shown in Table 3-2, the Noticed-Alternative Southern Route is much longer than the Preferred Northern Route. The increased length increases the potential for increased environmental and socioeconomic impacts. Environmental negatives along the Noticed-Alternative Southern Route include more tree clearing, twice as many miles of wetland/stream crossings and almost three times the length through Rare Species habitat. Additionally, the costs for the Noticed-Alternative Southern Route are more than 7% over those for the Preferred Northern Route. For these reasons, the Preferred Northern Route was selected as the preferred route. The conclusion of the EOEEA concurred with this assessment as it directed in the EENF Certificate that the SEIR direct its attention to reducing adverse impacts associated with construction of the Preferred Northern Route.

Table 3-2: Comparative Summary of the Preferred Northern Route and the Noticed-Alternative Southern Route

Decision Criteria	Preferred Northern Route w/115-kV Improvements		Noticed-Alternative 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".

3.4 CONSIDERATION OF THE NOTICED 115-kV ALTERNATIVES

All of the 115-kV upgrades affect existing overhead lines on existing ROWs. The initial engineering alternative for this 115-kV work was in all cases to re-build and re-conductor the lines as overhead lines on the same existing ROWs. The selection process for the 345-kV overhead lines, however, chose many of the same rights-of way as the Preferred Northern Route and WMECO then planned the new 345-kV and upgraded 115-kV facilities as overhead lines sharing the Preferred Northern Route.

To address whether there were alternatives to a full sharing of the chosen ROWs which might be superior from the point of view of a balancing of costs, impacts and reliability, the initial engineering decision to