

Table 5-30: Balancing Impacts, Costs and Reliability of Underground and Overhead Line Route Variations

Balancing Impacts, Costs and Reliability	Underground 345-kV Line Route Alternative (UG-South 02E)	Noticed-Alternative Southern Route 345-kV Overhead Line
Impacts on Balance		✓
Ability to Meet Project Need		✓
Reliability		✓
Cost		✓

Based on the balancing of impacts, costs and ability to reliably meet need, the Noticed-Alternative Southern Route overhead line alternative for the route section between South Agawam Switching Station and the Agawam Substation on the transmission line corridor is superior to the underground line variation.

5.7 COST OF PREFERRED NORTHERN AND NOTICED-ALTERNATIVE SOUTHERN ROUTES AND SUBSTATIONS

Table 5-31 shows the cost comparison for the Preferred Northern Route versus the Noticed-Southern Route.

Table 5-31: Cost Comparison for Preferred Northern Route vs. Noticed-Alternative Southern Route²³

Description	Opinion of Probable Cost	
	Preferred Northern Route	Noticed-Alternative Southern Route
Build a new 345-kV line from Ludlow Substation to Agawam Substation (MA Only)	\$151,871,000	\$109,483,000
Build a new 345-kV line from Ludlow Substation to Agawam Substation (CT Only)		\$21,363,000
Build a new 345-kV line from Agawam Substation to North Bloomfield Substation (MA Only)	\$57,288,000	\$47,583,000
Build a new 345-kV line from Agawam Substation to North Bloomfield Substation (CT Only)	\$41,290,000	\$41,290,000
Re-build the 1781 line from Agawam Substation to South Agawam Switching Station	\$10,702,000	
Place 1781 line on the Ludlow Substation to Agawam Substation 345/115-kV double circuit structures		\$1,385,000
Place 1782 line on the Agawam Substation to North Bloomfield Substation 345/115-kV double circuit structures	\$1,385,000	\$1,385,000
Reconfigure the existing 115-kV system (1768/1836/1821)	\$2,543,000	\$2,543,000
Break three-terminal circuits 1254/1723 into two-terminal circuits creating a total of four (4) circuits (1601-1604)	\$40,796,000	\$56,387,000
Re-build circuit 1845 from Shawinigan Switching Station to Ludlow Substation	\$3,875,000	\$37,411,000
Re-build lines 1481, 1426, and 1552 from Cadwell 50F Substation to Ludlow 19S Substation	\$49,462,000	\$49,462,000
Re-build lines 1601, 1602, 1314, and 1230 from Agawam 16C Substation to E. Springfield Junction.	\$28,432,000	\$72,282,000
Ludlow 19S Substation	\$67,500,000	\$67,500,000
Agawam 16C Substation	\$77,743,000	\$77,743,000
North Bloomfield 2A Substation	\$92,080,000	\$92,080,000
Fairmont 16H Substation (Greenfield)	\$49,111,000	\$49,111,000
Cadwell 50F Substation	\$21,013,000	\$21,013,000
Miscellaneous Substations	\$19,133,000	\$18,060,000
Total Project Cost	\$714,224,000	\$766,081,000

Notes:

Estimates are based on Burns & McDonnell Estimate dated 4-22-08

²³ Cost estimates are “all-in” costs including direct construction cost, engineering, construction management, AFUDC, NU directs, NU indirects, and contingencies in 2008 dollars, escalated to estimated year of spend.