

**“Project Management Using Earned Value”
Case Study Solution 24.1**



24.1

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**Estimating
Cost Savings**

SOLUTION

1. Very few line items are likely to experience learning curve. Labor should benefit from it, but the only other area that will surely benefit is engineering. Use of very similar drawings will obviously be a cost savings for the series of installations. While material costs may also experience cost savings because of a large order, there will not be a straight line improvement for the increased pipe quantities, if any savings per foot at all compared with the 10-mile base case.

2. Assume only installation labor and engineering benefit from the stated 90% unit learning curve. Costs will then be calculated as follows:

LABOR

1 st 10 miles:	\$65,000/mile x 10 miles =	\$ 650,000
2 nd 10 miles:	\$58,500/mile x 10 miles =	\$ 585,000
3 rd & 4 th 10 miles:	\$52,650/mile x 20 miles =	\$1,053,000
5 th – 8 th 10 miles:	\$47,385/mile x 40 miles =	<u>\$1,895,400</u>
		<u>\$4,183,400</u>

ENGINEERING

1 st 10 miles:	\$4,000/mile x 10 miles =	\$ 40,000
2 nd 10 miles:	\$3,600/mile x 10 miles =	\$ 36,000
3 rd & 4 th 10 miles:	\$3,240/mile x 20 miles =	\$ 64,800
5 th – 8 th 10 miles:	\$2,916/mile x 40 miles =	<u>\$ 116,640</u>
		<u>\$ 257,440</u>

The cost without any learning curve for these two activities would be:

LABOR: \$65,000/mile x 80 miles = \$5,200,000
 (total savings of \$1,016,600, or 19.55%)

ENGINEERING: \$4,000/mile x 80 miles = \$ 320,000
 (total savings of \$62,560, or 19.55%)

There would be additional savings because the location adjustment (+10%) would be applied to a smaller total base than if learning curve was ignored.