

Cost Estimates

Appendix F

| Base Project | | Estimated Cost |
|----------------------|---|-----------------------|
| ROAD | | |
| A | Roadway Improvements (Mile 0.3 to 0.7)¹ | \$ 2,226,900 |
| TRAIL OPTIONS | | |
| B | Trail Improvements (Mile 0.2 to 0.7) - 10' Parallel | \$ 967,900 |
| C | Trail Improvements (Mile 0.2 to 0.7) - 10' Separated | \$ 787,400 |
| D | Trail Improvements (Mile 0.2 to 0.7) - 8' Separated | \$ 685,100 |
| E | Pedestrian Bridge (Mile 0.32) | \$ 256,400 |

1. Includes striping from Mile 0.0 to 1.1

| Trail Extension to Tudor Road (Mile 0.0 to 0.2) | | Estimated Cost |
|--|---|-----------------------|
| F | Trail Improvements - 10' Separated | \$ 194,000 |
| G | Trail Improvements - 10' Parallel ² | \$ 585,400 |
| H | Trail Improvements - 8' Attached² | \$ 605,300 |

2. Includes luminaire pole relocations

| Trail Reconstruction South (Mile 0.7 to 0.9) | | Estimated Cost |
|---|-----------------------------------|-----------------------|
| I | Trail Improvements - 10' Parallel | \$ 119,900 |

| Recommended Improvements | | Estimated Cost |
|--|--|-----------------------|
| Subtotal, Roadway + 10' Separated Trail + 8' attached trail to Tudor Road (in bold above) = | | \$ 3,619,600 |
| Project Admin, Construction Support, Engineering (35%) | | \$ 1,267,000 |
| Total | | \$ 4,886,600 |

| Item | MASS Ref. | Work Description | Units | Estimated Quantity | Unit Price | Total Price |
|---|-----------|---|-------|--------------------|-------------|-----------------------|
| Roadway Improvements (Mile 0.3 to 0.7) | | | | | | Schedule A |
| A-1 | 20.02 | Storm Water Pollution Prevention Plan (Type 3) | LS | 1 | \$21,000.00 | \$21,000.00 |
| A-2 | 20.04 | Clearing and Grubbing | AC | 2 | \$16,800.00 | \$33,600.00 |
| A-3 | 20.09 | Remove Pavement | SY | 6,480 | \$4.20 | \$27,216.00 |
| A-4 | 20.10 | Unusable Excavation | CY | 30,070 | \$12.60 | \$378,882.00 |
| A-5 | 20.12 | Dewatering | LS | 1 | \$21,000.00 | \$21,000.00 |
| A-6 | 20.21 | Classified Fill and Backfill (Type II) | TON | 17,210 | \$14.70 | \$252,987.00 |
| A-7 | 20.21 | Classified Fill and Backfill (Type II-A) | TON | 13,570 | \$14.70 | \$199,479.00 |
| A-8 | 20.22 | Leveling Course | TON | 1,081 | \$31.50 | \$34,051.50 |
| A-9 | 20.24 | Rip Rap (Class 1) | CY | 640 | \$136.50 | \$87,360.00 |
| A-10 | 20.25 | Geotextile (Type A) | SY | 16,250 | \$2.10 | \$34,125.00 |
| A-11 | 20.26 | Roadway Insulation Board (R-10) | SF | 122,470 | \$1.60 | \$195,952.00 |
| A-12 | 30.04 | P.C.C. Curb Ramp (All Types) | SY | 6 | \$73.50 | \$441.00 |
| A-13 | 30.04 | Detectable Warnings | SF | 20 | \$37.00 | \$740.00 |
| A-14 | 40.06 | A.C. Pavement (Class E) | TON | 1,070 | \$115.50 | \$123,585.00 |
| A-15 | 55.20 | Culvert (36", CMP, Circular) | LF | 410 | \$80.00 | \$32,800.00 |
| A-16 | 65.02 | Construction Survey Measurement | LS | 1 | \$16,000.00 | \$16,000.00 |
| A-17 | 70.10 | Traffic Markings (Methyl Methacrylate, 24" White) | LF | 312 | \$21.00 | \$6,552.00 |
| A-18 | 70.10 | Traffic Markings (Painted, 4" Yellow)* | LF | 12,120 | \$2.60 | \$31,512.00 |
| A-19 | 70.10 | Traffic Markings (Painted, 4" White)* | LF | 11,620 | \$2.60 | \$30,212.00 |
| A-20 | 70.10 | Traffic Markings (Painted, Symbols)* | EA | 3 | \$525.00 | \$1,575.00 |
| A-21 | 70.11 | Standard Sign | SF | 80 | \$80.00 | \$6,400.00 |
| A-22 | 70.12 | Traffic Maintenance | LS | 1 | \$49,000.00 | \$49,000.00 |
| A-23 | 70.15 | Guardrail | LF | 70 | \$37.00 | \$2,590.00 |
| A-24 | 70.18 | Snow Fencing | LF | 215 | \$37.00 | \$7,955.00 |
| A-25 | 75.02 | Trees, White Spruce, 10' HT. | EA | 25 | \$735.00 | \$18,375.00 |
| A-26 | 75.02 | Trees, Betula papyrifera, Paper Birch, 2" Cal. | EA | 25 | \$420.00 | \$10,500.00 |
| A-27 | 75.02 | Trees, Betula papyrifera, Paper Birch, 4" Cal. | EA | 11 | \$710.00 | \$7,810.00 |
| A-28 | 75.02 | Shrubs, Highbush Cranberry, 36" HT. | EA | 50 | \$50.00 | \$2,500.00 |
| A-29 | 75.02 | Shrubs, Raspberry, 36" HT. | EA | 50 | \$50.00 | \$2,500.00 |
| A-30 | 75.02 | Shrubs, Current, 24" HT. | EA | 50 | \$50.00 | \$2,500.00 |
| A-31 | 75.02 | Shrubs, (Rosa Rugosa/ Rugosa Rose, 2'-3') | EA | 50 | \$50.00 | \$2,500.00 |
| A-32 | 75.03 | Topsoil (4" Depth) | MSF | 97.0 | \$420.00 | \$40,740.00 |
| A-33 | 75.04 | Seeding (Schedule-D Seed Mix) | MSF | 97.0 | \$315.00 | \$30,555.00 |
| Subtotal | | | | | | \$1,713,000.00 |
| Contingency | | | | | 30% | \$513,900.00 |
| Total Roadway: | | | | | | \$2,226,900.00 |

*Striping costs includes striping from Mile 0.0 to Mile 0.7

| Item | MASS Ref. | Work Description | Units | Estimated Quantity | Unit Price | Total Price |
|--|-----------|---|-------|--------------------|-------------|---------------------|
| Trail Improvements - 10' Parallel (Mile 0.2 to 0.7) | | | | | | Schedule B |
| B-1 | 20.04 | Clearing and Grubbing | AC | 3 | \$17,600.00 | \$52,800.00 |
| B-2 | 20.09 | Remove Pavement | SY | 540 | \$4.40 | \$2,376.00 |
| B-3 | 20.10 | Unusable Excavation | CY | 300 | \$13.20 | \$3,960.00 |
| B-4 | 20.20 | Unclassified Fill and Backfill | CY | 29,610 | \$11.00 | \$325,710.00 |
| B-5 | 20.21 | Classified Fill and Backfill (Type II) | TON | 4,850 | \$15.40 | \$74,690.00 |
| B-6 | 20.21 | Classified Fill and Backfill (Type II-A) | TON | 2,760 | \$15.40 | \$42,504.00 |
| B-7 | 20.22 | Leveling Course | TON | 401 | \$33.00 | \$13,233.00 |
| B-8 | 20.25 | Geotextile (Type A) | SY | 9,580 | \$2.20 | \$21,076.00 |
| B-9 | 40.06 | A.C. Pavement (Class D) | TON | 400 | \$121.00 | \$48,400.00 |
| B-10 | 55.20 | Culvert (36", CMP, Circular) | LF | 175 | \$82.50 | \$14,437.50 |
| B-11 | 55.20 | Extend Dog Mushing Tunnel (144", CMP, Circular) | LF | 35 | \$700.00 | \$24,500.00 |
| B-12 | 65.02 | Construction Survey Measurement | LS | 1 | \$7,000.00 | \$7,000.00 |
| B-13 | 70.11 | Standard Sign | SF | 7.0 | \$82.50 | \$577.50 |
| B-14 | 75.03 | Topsoil (4" Depth) | MSF | 147.0 | \$440.00 | \$64,680.00 |
| B-15 | 75.04 | Seeding (Schedule-D Seed Mix) | MSF | 147.0 | \$330.00 | \$48,510.00 |
| Subtotal | | | | | | \$744,500.00 |
| Contingency | | | | | 30% | \$223,400.00 |
| Total Trail - 10' Parallel: | | | | | | \$967,900.00 |

| Item | MASS Ref. | Work Description | Units | Estimated Quantity | Unit Price | Total Price |
|---|-----------|---|-------|--------------------|-------------|---------------------|
| Trail Improvements - 10' Separated (Mile 0.2 to 0.7) | | | | | | Schedule C |
| C-1 | 20.04 | Clearing and Grubbing | AC | 3 | \$17,600.00 | \$52,800.00 |
| C-2 | 20.09 | Remove Pavement | SY | 540 | \$4.40 | \$2,376.00 |
| C-3 | 20.10 | Unusable Excavation | CY | 20 | \$13.20 | \$264.00 |
| C-4 | 20.20 | Unclassified Fill and Backfill | CY | 18,900 | \$11.00 | \$207,900.00 |
| C-5 | 20.21 | Classified Fill and Backfill (Type II) | TON | 5,010 | \$15.40 | \$77,154.00 |
| C-6 | 20.21 | Classified Fill and Backfill (Type II-A) | TON | 2,850 | \$15.40 | \$43,890.00 |
| C-7 | 20.22 | Leveling Course | TON | 414 | \$33.00 | \$13,662.00 |
| C-8 | 20.25 | Geotextile (Type A) | SY | 9,900 | \$2.20 | \$21,780.00 |
| C-9 | 40.06 | A.C. Pavement (Class D) | TON | 410 | \$121.00 | \$49,610.00 |
| C-10 | 55.20 | Culvert (36", CMP, Circular) | LF | 175 | \$82.50 | \$14,437.50 |
| C-11 | 55.20 | Extend Dog Mushing Tunnel (144", CMP, Circular) | LF | 25 | \$700.00 | \$17,500.00 |
| C-12 | 65.02 | Construction Survey Measurement | LS | 1 | \$6,000.00 | \$6,000.00 |
| C-13 | 70.11 | Standard Sign | SF | 7.0 | \$82.50 | \$577.50 |
| C-14 | 75.03 | Topsoil (4" Depth) | MSF | 127.0 | \$440.00 | \$55,880.00 |
| C-15 | 75.04 | Seeding (Schedule-D Seed Mix) | MSF | 127.0 | \$330.00 | \$41,910.00 |
| Subtotal | | | | | | \$605,700.00 |
| Contingency | | | | | 30% | \$181,700.00 |
| Total Trail - 10' Separated: | | | | | | \$787,400.00 |

| Item | MASS Ref. | Work Description | Units | Estimated Quantity | Unit Price | Total Price |
|--|-----------|---|-------|--------------------|-------------|---------------------|
| Trail Improvements - 8' Separated (Mile 0.2 to 0.7) | | | | | | Schedule D |
| D-1 | 20.04 | Clearing and Grubbing | AC | 3 | \$17,600.00 | \$52,800.00 |
| D-2 | 20.09 | Remove Pavement | SY | 540 | \$4.40 | \$2,376.00 |
| D-3 | 20.10 | Unusable Excavation | CY | 10 | \$13.20 | \$132.00 |
| D-4 | 20.20 | Unclassified Fill and Backfill | CY | 16,260 | \$11.00 | \$178,860.00 |
| D-5 | 20.21 | Classified Fill and Backfill (Type II) | TON | 4,010 | \$15.40 | \$61,754.00 |
| D-6 | 20.21 | Classified Fill and Backfill (Type II-A) | TON | 2,190 | \$15.40 | \$33,726.00 |
| D-7 | 20.22 | Leveling Course | TON | 331 | \$33.00 | \$10,923.00 |
| D-8 | 20.25 | Geotextile (Type A) | SY | 8,380 | \$2.20 | \$18,436.00 |
| D-9 | 40.06 | A.C. Pavement (Class D) | TON | 330 | \$121.00 | \$39,930.00 |
| D-10 | 55.20 | Culvert (36", CMP, Circular) | LF | 150 | \$82.50 | \$12,375.00 |
| D-11 | 55.20 | Extend Dog Mushing Tunnel (144", CMP, Circular) | LF | 33 | \$700.00 | \$23,100.00 |
| D-12 | 65.02 | Construction Survey Measurement | LS | 1 | \$5,000.00 | \$5,000.00 |
| D-13 | 70.11 | Standard Sign | SF | 7.0 | \$82.50 | \$577.50 |
| D-14 | 75.03 | Topsoil (4" Depth) | MSF | 113.0 | \$440.00 | \$49,720.00 |
| D-15 | 75.04 | Seeding (Schedule-D Seed Mix) | MSF | 113.0 | \$330.00 | \$37,290.00 |
| Subtotal | | | | | | \$527,000.00 |
| Contingency | | | | | 30% | \$158,100.00 |
| Total Trail - 8' Separated: | | | | | | \$685,100.00 |

| Item | MASS Ref. | Work Description | Units | Estimated Quantity | Unit Price | Total Price |
|--------------------------------------|-----------|---|-------|--------------------|-------------|---------------------|
| Pedestrian Bridge (Mile 0.32) | | | | | | Schedule E |
| E-1 | 20.04 | Clearing and Grubbing | AC | 1 | \$17,600.00 | \$17,600.00 |
| E-2 | 20.20 | Unclassified Fill and Backfill | CY | 6,750 | \$11.00 | \$74,250.00 |
| E-3 | 20.21 | Classified Fill and Backfill (Type II) | TON | 1,010 | \$15.40 | \$15,554.00 |
| E-4 | 20.21 | Classified Fill and Backfill (Type II-A) | TON | 570 | \$15.40 | \$8,778.00 |
| E-5 | 20.22 | Leveling Course | TON | 84 | \$33.00 | \$2,772.00 |
| E-6 | 20.25 | Geotextile (Type A) | SY | 1,990 | \$2.20 | \$4,378.00 |
| E-7 | 40.06 | A.C. Pavement (Class D) | TON | 80 | \$121.00 | \$9,680.00 |
| E-8 | 55.20 | Extend Dog Mushing Tunnel (144", CMP, Circular) | EA | (25) | \$700.00 | -\$17,500.00 |
| E-9 | 65.02 | Construction Survey Measurement | LS | 1 | \$2,000.00 | \$2,000.00 |
| E-10 | 70.22 | Trail Bridge | LS | 1 | \$55,000.00 | \$55,000.00 |
| E-11 | 75.03 | Topsoil (4" Depth) | MSF | 32.0 | \$440.00 | \$14,080.00 |
| E-12 | 75.04 | Seeding (Schedule-D Seed Mix) | MSF | 32.0 | \$330.00 | \$10,560.00 |
| Subtotal | | | | | | \$197,200.00 |
| Contingency | | | | | 30% | \$59,200.00 |
| Total Trail - Bridge: | | | | | | \$256,400.00 |

| Item | MASS Ref. | Work Description | Units | Estimated Quantity | Unit Price | Total Price |
|--|-----------|--|-------|--------------------|-------------|---------------------|
| Trail Improvements to Tudor - 10' Separated (Mile 0.0 to 0.2) | | | | | | Schedule F |
| F-1 | 20.04 | Clearing and Grubbing | AC | 0.4 | \$17,600.00 | \$7,040.00 |
| F-2 | 20.10 | Unusable Excavation | CY | 600 | \$13.20 | \$7,920.00 |
| F-3 | 20.20 | Unclassified Fill and Backfill | CY | 1,100 | \$11.00 | \$12,100.00 |
| F-4 | 20.21 | Classified Fill and Backfill (Type II) | TON | 1,220 | \$15.40 | \$18,788.00 |
| F-5 | 20.21 | Classified Fill and Backfill (Type II-A) | TON | 680 | \$15.40 | \$10,472.00 |
| F-6 | 20.22 | Leveling Course | TON | 135 | \$33.00 | \$4,455.00 |
| F-7 | 20.25 | Geotextile (Type A) | SY | 2,230 | \$2.20 | \$4,906.00 |
| F-8 | 30.04 | P.C.C. Curb Ramp (All Types) | SY | 40 | \$77.00 | \$3,080.00 |
| F-9 | 30.04 | Detectable Warnings | SF | 20 | \$38.50 | \$770.00 |
| F-10 | 40.06 | A.C. Pavement (Class D) | TON | 130 | \$121.00 | \$15,730.00 |
| F-11 | 65.02 | Construction Survey Measurement | LS | 1 | \$1,000.00 | \$1,000.00 |
| F-12 | 70.11 | Standard Sign | SF | 7.0 | \$82.50 | \$577.50 |
| F-13 | 75.03 | Topsoil (4" Depth) | MSF | 20.0 | \$440.00 | \$8,800.00 |
| F-14 | 75.04 | Seeding (Schedule-D Seed Mix) | MSF | 20.0 | \$330.00 | \$6,600.00 |
| F-15 | 80.28 | Relocate Lighting System | LF | 100 | \$220.00 | \$22,000.00 |
| F-16 | | Traffic Signal Modifications | LS | 1 | \$25,000.00 | \$25,000.00 |
| Subtotal | | | | | | \$149,200.00 |
| Contingency | | | | | 30% | \$44,800.00 |
| Total Trail - North Extension, 10' Separated | | | | | | \$194,000.00 |

| Item | MASS Ref. | Work Description | Units | Estimated Quantity | Unit Price | Total Price |
|---|-----------|--|-------|--------------------|-------------|---------------------|
| Trail Improvements to Tudor - 10' Parallel (Mile 0.0 to 0.2) | | | | | | Schedule G |
| G-1 | 20.04 | Clearing and Grubbing | AC | 0.2 | \$17,600.00 | \$3,520.00 |
| G-2 | 20.10 | Unusable Excavation | CY | 600 | \$13.20 | \$7,920.00 |
| G-3 | 20.20 | Unclassified Fill and Backfill | CY | 1,100 | \$11.00 | \$12,100.00 |
| G-4 | 20.21 | Classified Fill and Backfill (Type II) | TON | 1,250 | \$15.40 | \$19,250.00 |
| G-5 | 20.21 | Classified Fill and Backfill (Type II-A) | TON | 690 | \$15.40 | \$10,626.00 |
| G-6 | 20.22 | Leveling Course | TON | 138 | \$33.00 | \$4,554.00 |
| G-7 | 20.25 | Geotextile (Type A) | SY | 2,280 | \$2.20 | \$5,016.00 |
| G-8 | 30.04 | P.C.C. Curb Ramp (All Types) | SY | 40 | \$77.00 | \$3,080.00 |
| G-9 | 30.04 | Detectable Warnings | SF | 20 | \$38.50 | \$770.00 |
| G-10 | 40.06 | A.C. Pavement (Class D) | TON | 140 | \$121.00 | \$16,940.00 |
| G-11 | 65.02 | Construction Survey Measurement | LS | 1 | \$4,000.00 | \$4,000.00 |
| G-12 | 70.11 | Standard Sign | SF | 7.0 | \$82.50 | \$577.50 |
| G-13 | 75.03 | Topsoil (4" Depth) | MSF | 9.0 | \$440.00 | \$3,960.00 |
| G-14 | 75.04 | Seeding (Schedule-D Seed Mix) | MSF | 9.0 | \$330.00 | \$2,970.00 |
| G-16 | 80.28 | Relocate Lighting System | LF | 1,500 | \$220.00 | \$330,000.00 |
| G-16 | | Traffic Signal Modifications | LS | 1 | \$25,000.00 | \$25,000.00 |
| Subtotal | | | | | | \$450,300.00 |
| Contingency | | | | | 30% | \$135,100.00 |
| Total Trail - North Extension, 10' Parallel | | | | | | \$585,400.00 |

| Item | MASS Ref. | Work Description | Units | Estimated Quantity | Unit Price | Total Price |
|--|-----------|--|-------|--------------------|-------------|---------------------|
| Trail Improvements to Tudor - 8' Attached (Mile 0.0 to 0.2) | | | | | | Schedule H |
| H-1 | 20.04 | Clearing and Grubbing | AC | 0.2 | \$17,600.00 | \$3,520.00 |
| H-2 | 20.10 | Unusable Excavation | CY | 1,370 | \$13.20 | \$18,084.00 |
| H-3 | 20.20 | Unclassified Fill and Backfill | CY | 1,280 | \$11.00 | \$14,080.00 |
| H-4 | 20.21 | Classified Fill and Backfill (Type II) | TON | 1,250 | \$15.40 | \$19,250.00 |
| H-5 | 20.21 | Classified Fill and Backfill (Type II-A) | TON | 780 | \$15.40 | \$12,012.00 |
| H-6 | 20.25 | Geotextile (Type A) | SY | 2,280 | \$2.20 | \$5,016.00 |
| H-7 | 20.22 | Leveling Course | TON | 110 | \$33.00 | \$3,630.00 |
| H-8 | 30.02 | P.C.C. Curb and Gutter (All Types) | LF | 1,150 | \$3.00 | \$3,450.00 |
| H-9 | 30.04 | P.C.C. Curb Ramp (All Types) | SY | 50 | \$77.00 | \$3,850.00 |
| H-10 | 30.04 | Detectable Warnings | SF | 20 | \$38.50 | \$770.00 |
| H-11 | 40.06 | A.C. Pavement (Class D) | TON | 160 | \$121.00 | \$19,360.00 |
| H-12 | 65.02 | Construction Survey Measurement | LS | 1 | \$4,000.00 | \$4,000.00 |
| H-13 | 70.11 | Standard Sign | SF | 7.0 | \$82.50 | \$577.50 |
| H-14 | 75.03 | Topsoil (4" Depth) | MSF | 8.0 | \$40.00 | \$320.00 |
| H-15 | 75.04 | Seeding (Schedule-D Seed Mix) | MSF | 8.0 | \$330.00 | \$2,640.00 |
| H-16 | 80.28 | Relocate Lighting System | LF | 1,500 | \$220.00 | \$330,000.00 |
| H-17 | | Traffic Signal Modifications | LS | 1 | \$25,000.00 | \$25,000.00 |
| Subtotal | | | | | | \$465,600.00 |
| Contingency | | | | | 30% | \$139,700.00 |
| Total Trail - North Extension, 8' Attached: | | | | | | \$605,300.00 |

| Item | MASS Ref. | Work Description | Units | Estimated Quantity | Unit Price | Total Price |
|---|-----------|--|-------|--------------------|-------------|---------------------|
| Trail Improvements to South - 10' Parallel (Mile 0.7 to 0.9) | | | | | | Schedule I |
| I-1 | 20.04 | Clearing and Grubbing | AC | 0.3 | \$17,600.00 | \$5,280.00 |
| I-2 | 20.09 | Remove Pavement | SY | 600 | \$4.40 | \$2,640.00 |
| I-3 | 20.10 | Unusable Excavation | CY | 120 | \$13.20 | \$1,584.00 |
| I-4 | 20.20 | Unclassified Fill and Backfill | CY | 1,740 | \$11.00 | \$19,140.00 |
| I-5 | 20.21 | Classified Fill and Backfill (Type II) | TON | 880 | \$15.40 | \$13,552.00 |
| I-6 | 20.21 | Classified Fill and Backfill (Type II-A) | TON | 500 | \$15.40 | \$7,700.00 |
| I-7 | 20.22 | Leveling Course | TON | 72 | \$33.00 | \$2,376.00 |
| I-8 | 20.25 | Geotextile (Type A) | SY | 1,740 | \$2.20 | \$3,828.00 |
| I-9 | 40.06 | A.C. Pavement (Class D) | TON | 70 | \$121.00 | \$8,470.00 |
| I-10 | 55.20 | Culvert (36", CMP, Circular) | LF | 175 | \$82.50 | \$14,437.50 |
| I-11 | 65.02 | Construction Survey Measurement | LS | 1 | \$900.00 | \$900.00 |
| I-12 | 75.03 | Topsoil (4" Depth) | MSF | 16.0 | \$440.00 | \$7,040.00 |
| I-13 | 75.04 | Seeding (Schedule-D Seed Mix) | MSF | 16.0 | \$330.00 | \$5,280.00 |
| Subtotal | | | | | | \$92,200.00 |
| Contingency | | | | | 30% | \$27,700.00 |
| Total Trail - South Extension (10' trail): | | | | | | \$119,900.00 |