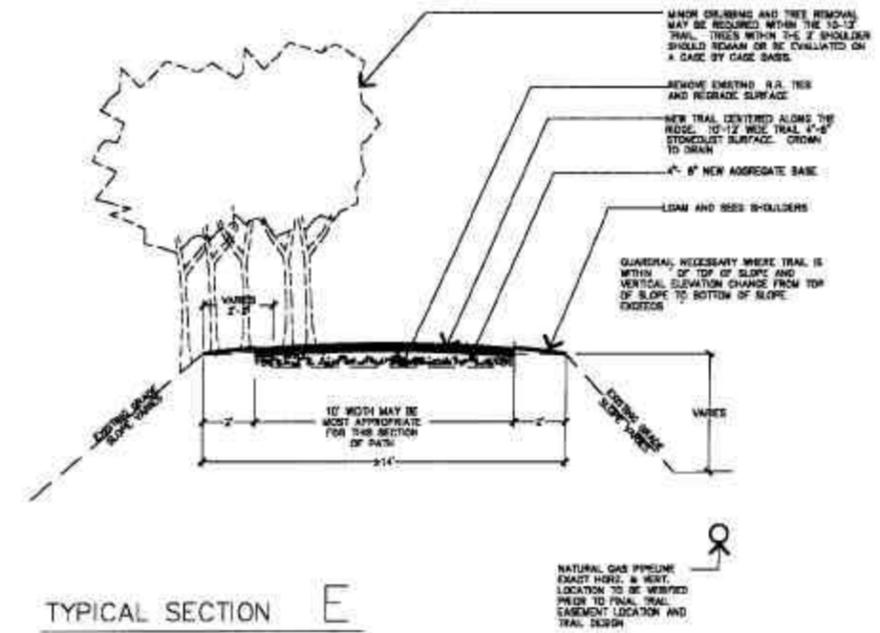


TYPICAL SECTION D

Cross-section E: Cross-section E occurs where there are railroad ties that need to be removed. At some locations ties and rail are recommended to be removed (E1). This occurs for 8% of the corridor, or 3.0 miles. For some areas, it may be necessary to use a 10' path to avoid the use of retaining walls. Cross-section E pertains to the removal of railroad ties; cross-section E1 pertains to removal of both rail ties and track. Refer to Appendix A for more details.



Typical Conditions Along Cross-section E1

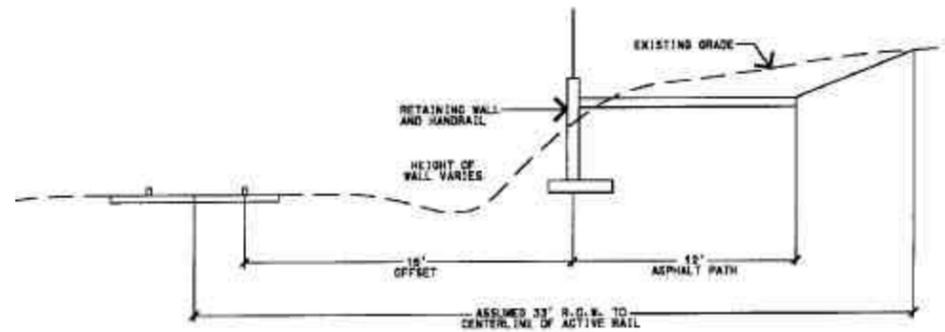


TYPICAL SECTION E

Cross-section F: Cross-section F calls for the use of retaining walls. This occurs for a limited part of the corridor, for approximately 880 feet in Saco. Cross-section F pertains to the use of a low retaining wall; cross-section F1 pertains to areas where a larger retaining wall may be needed. Refer to Appendix A for more details.

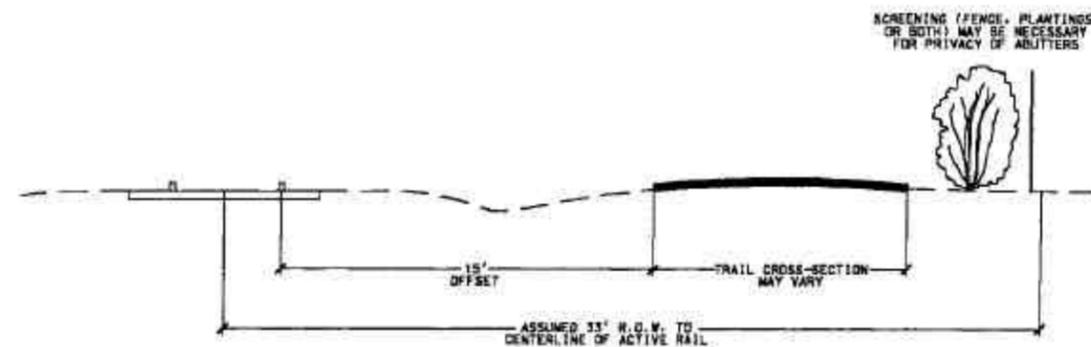


Typical Conditions Along Cross-section F



TYPICAL SECTION F

Rail with Trail Cross-section. For short sections of the corridor, the trail is recommended to be located along an active rail line. This occurs in Biddeford and Saco, where use of the rail line is low. The MDOT has developed the guideline of maintaining a minimum of 15' of side clearance from the rail tracks, where feasible. This is illustrated below.



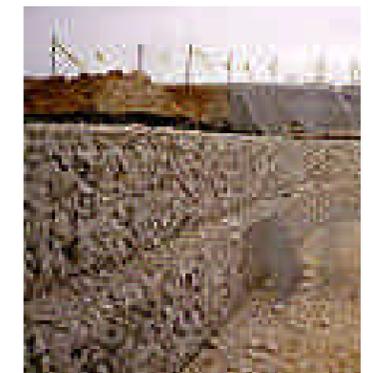
RAIL WITH TRAIL

Other cross-sections considered: Other improvement strategies were considered as well. Boardwalks were one design treatment considered in areas with poor drainage or with ponding. This was deemed undesirable due to the likely frequent maintenance activities along the corridor and a boardwalk's incompatibility with equipment. They would be more difficult and costly for repair.

Road Crossings:

The Eastern Trail travels through a combination of rural, suburban and urban areas. The trail crosses roads in numerous locations from low volume urban streets to rural roadways with high speed traffic. The design of these crossings will be important to ensuring that safety is maintained. Important considerations in providing safe and convenient road crossings include available sight distance, traffic volumes and traffic speeds. Factors that influence sight distance include horizontal and vertical curves and the presence of sight obstructions such as roadside vegetation and fences.

At seven trail-road crossing locations, there are large elevation differences between the trail tread and the roadway. These elevation differences range from 6' to 19'. At five of these locations a gabion-style retaining wall is recommended on one or both sides of the road crossing. The gabion would establish a 5% maximum grade to reach the elevation of the roadway. The trail surface would be located on top of the gabion. The use of gabions as a retaining wall will minimize the amount of the right-of-way required for the trail. Use of side slopes instead of retaining walls would require use of much more of the right-of-way.



Gabion-type retaining wall

Gabions are recommended at the following locations:

- /// Knight's Pond Road South, 9' differential, gabion on north side trail approach
- /// Knight's Pond Road North, 13' differential, gabion on north and south trail approaches
- /// Perry Oliver Road, 18' differential, gabion on north and south trail approaches
- /// Chicks Crossing/Hobbs Crossing, 6' differential, gabion on north and south trail approaches
- /// McGuire Road, 19' differential, gabion on north and south trail approaches.

At the other approaches and at the other locations, alternative designs exist that are much less costly. At many of the crossings, there are established worn paths (likely made by ATV use) that can be used to establish an acceptable grade and trail surface.

At road crossings and other trail locations where there are grades over 3%, it will be desirable to provide a paved trail surface due to the potential of erosion of the stonedust surface.

Other road-trail intersection considerations.

- /// AASHTO guidelines (2000) call for a 10' paved apron on the trail at trail-road intersections which provides adequate space for trail users to safely wait for a gap in traffic, allowing good sight distance for both trail users and vehicle traffic

☞ A pedestrian refuge (a raised median/island in the center of the road with a break, 6' width minimum) should be considered where "one or more of the following apply: high volume of roadway traffic and/or speed create unacceptable conditions; roadway width is excessive given the available crossing time; or, the crossing will be used by a number of people who cross more slowly, such as the elderly, schoolchildren, persons with disabilities, etc. (AASHTO, 2000)"

☞ Signage and pavement markings should be provided on the roadway and signage provided on the trail alerting users to the road crossing. Pavement markings denoting a bicycle crossing should be located 100' prior to the intersection (AASHTO, 2000).

☞ Adequate sight distance must be provided at all crossings or mitigated through design treatments such as pedestrian refuges.

☞ Crossings should be provided as close to 90 degrees as possible.

☞ At the trail approaches to the roadway, it may be desirable to use splitter islands or introducing a curve in the path to force cyclists to slow down.

☞ Transitions from off-road trail to on-road trails must be signed sufficiently to alert the cyclist or pedestrian to the changing conditions.



ON-ROAD ROUTE

On-road route recommendations provide for 1) long term on-road trails 2) interim on-road trails for use until construction of off-road trail segments and 3) detour/maintenance routes when trail or pipeline maintenance activities require closure of the off-road trail. These systems are shown on the following page

Long Term On-Road Routes

The first twelve miles of trail corridor will be provided by using public roadways. These are shown to the right in blue. Recommended improvements are described in the table below.

Two of the more significant new bridges that would need to be constructed to maintain a completely off-road trail are located at the Saco River in Saco/Biddeford and at the Maine Turnpike crossing of the Eastern Trail corridor in Kennebunk. At these locations, several alternatives have been identified to provide interim and possibly longer term on-road alternatives. These are shown in the graphics below. Not constructing these bridges would introduce circuitous routings for trail users. In Saco/Biddeford, the available routes are high volume roads. In Kennebunk the alternative routes would require extensive use of local roads due to the limited access points to the trail corridor.



Long Term On-Road Route: Recommended Improvements

Town	Road	From-To	Length (mi)	Improvement
Kittery	Dennett Rd	Eliot Rd - Old Dennett Rd	0.8	Add 4' shoulders
	Dennett Rd	Dennett Rd Ext. - Eliot TL	0.1	Add 4' shoulders
Eliot	State Rd	Kittery TL - Beech Rd	1.2	Add 4' shoulders
	State Rd/Rt 103	Beech Rd - Old Rd		4' shoulders; funded
	State Rd/Rt 103	Old Rd - Fore Rd	0.8	Add 4' shoulders
	State Rd/Rt 103	Fore Rd - River Rd	1.1	Add 4' shoulders
	State Rd/Rt 103	River Rd - Rt 236	1.6	Add 4' shoulders; widen Sturgeon Creek Bridge
	Rt 101	Rt 236 - Old Fields Rd	0.2	Add 4' shoulders
	Old Fields Rd	Rt 101 - S. Berwick TL	0.2	Add 4' shoulders
S. Berwick	Old Fields Rd	Eliot TL - Old South	2.8	Add 4' shoulders
	Old South Rd	Old Fields Rd - Jewett Trailhead	0.9	Add 4' shoulder
Scarborough	Highland Ave	Black Point Rd - Marcia St	1.5	Add 4' shoulder

Source: Wilbur Smith Associates

LEGEND

- ● ● ● Recommended On-road Route
- Alternative Route



Other potential off-road trail segments have restrictions or constraints to their use. Roads have been identified to fill in the gaps in the network.

**Corridor Restrictions Prompting
Long Term On-road Routes**

Town	Road (s)	Length (mi)	Restrictions/Constraints
North Berwick	Main Street, Portland Street, Route 9 (Sheet 15)	0.5	Active B&M Rail line
Wells	Meetinghouse Rd and Wire Rd area (Sheet 28)	0.4	Potential jurisdictional wetlands
Biddeford	Westmore Avenue (Sheet 50)	0.5	Narrow RR underpass at South Street
Scarborough (Sheet 71)	Highland Avenue from Black Point Rd. to Wainwright Athletic Fields	2.5	Ownership questions; Rigby Yard; Crossing of Pleasant Hill Rd.

Source: Wilbur Smith Associates.

Sheets refer to Trail Concept Plans in App. A.

Photographs of many of the roads comprising the on-road route from Kittery to the proposed Jewett Trailhead.



Route 1 from Portsmouth



Government Road, Kittery



Cook Street, Kittery, newly improved



Dennett Road, Kittery



Dennett Road, Kittery, improved



State Road/Rt 103, Eliot, needs shoulders



State Road/Route 103, Eliot



Old Fields Road, Eliot/S. Berwick TL

Interim On-road Routes

The roads recommended for designation as the interim Eastern Trail are shown on the previous page. They were selected by balancing their current level of accommodation for trail users, the connections they provide and their proximity to the off-road trail corridor.

The interim on-road trails have been selected to be used 'as-is' to provide a continuous Eastern Trail corridor. As more detailed implementation plans are developed by the ETA and the municipalities, it may be desirable to make improvements to those routes that may be used for more than five years. Phasing the construction of off-road trails should take into account the level of accommodation provided by the interim trail. Off-road trail segments that have interim roads that provide poorer conditions for trail users should be considered for higher priority implementation. In the long term, these routes may also serve as feeder routes to the off-road segments of the Eastern Trail and may warrant improvement.

ENVIRONMENTAL SCREENING

The results of our preliminary environmental screening suggest that additional field-based surveys should be conducted in the following areas. More specific information is in Appendix B.

- ☞ Wetlands. Once the overall trail width has been agreed upon, wetland delineations should be performed at all questionable road crossings, potential adjacent wetlands, and stream crossings. The need for permitting can only be determined after this work has been done.
- ☞ Rare, Threatened, and Endangered Species. Further field-based investigations are needed to determine the status of those plant species listed by Maine Natural Areas Program that are thought to occur on, or immediately adjacent to, the proposed corridor. These surveys should be conducted during the growing season based on the species. For example, surveys for the tubercled orchid in the Knights Pond area should be conducted in the middle of July while surveys for white-topped aster may occur later in the season. Additional consultation with MNAP may lead to more site-specific information for listed plant species.
- ☞ Significant Fish and Wildlife Habitats. Areas listed by Maine Department of Inland Fisheries and Wildlife as Significant Fish and Wildlife Habitats may require additional surveys to determine the current status and the potential for negative impacts associated with any construction activities.
- ☞ Historic, Pre-Historic, and Register of Historic Places. Structures associated with the original Eastern Railroad, including granite arch bridges and box-culverts, may need further review and may be eligible for designation on the National Historic Register of Historic Places. Photographs of potentially affected features and project plans need to be submitted prior to any construction activities.

AMENITIES

Trailhead Parking. Trailhead parking provides points of access for trail users. It is anticipated that many trail users will wish to drive to the trail to walk or bike. It is also desirable for each community to identify and provide high quality bicycle and pedestrian connections to the trail. This can be accomplished through local trail systems or by providing high quality connections along public roadways. This will reduce the need for extensive parking areas and reduce vehicle traffic associated with the trail.

Several of the trailheads should provide sufficient functional area for horse trailer maneuvering and parking. Design and use of these areas will need to be done in close consultation with the municipality, property owners and abutters.

Sixteen potential trailhead parking areas have been identified. Several areas are proposed to use shared parking at existing municipal or commercial lots. There may be the need to restrict the time (e.g., weekend use only) and duration (e.g., no overnight parking) of allowed parking.

Identified Potential Trailhead Locations

Town	Location
South Berwick	Jewett Trailhead (start of off-road trail); Route 91 at York Woods Road.
South Berwick	Emery's Bridge Road at Agamenticus Road
North Berwick	Pratt & Whitney at Route 9
Wells	Bald Hill Road
Kennebunk	Off Whitten Road at Route 99
Arundel	Limerick Road
Biddeford	YMCA/Ice Arena
Biddeford	South Street at Westmore Avenue/High School
Saco	Shared use of commercial parking lots along Route 1/Thornton Academy
Saco	Moody Street at Eastern Trail (north side)
Old Orchard Beach	Old Cascade Road
Scarborough	Scarborough Marsh at Pine Point Road
Scarborough	Eastern Avenue
South Portland	Wainwright Farms Athletic Complex
South Portland	Millcreek area (shared use of existing lots)
South Portland	Bug Light Park

Source: Wilbur Smith Associates & TJD&A

Signage

Signage will play an important role in the success of the Eastern Trail and will need to fill many roles. It will necessarily need to fill a basic navigation role. Signs, in conjunction with other tools such as maps, need to make the trail route understandable to the user. They will need to be placed at important junctions to alert users to changes in direction. These signs will be highly visible to the community and will help shape the identity of the trail in the users' and non-users' mind. The sign system must be designed first and foremost with maintenance in mind.

Signs at trailhead parking locations should include information kiosks that explain trail history as well as that of the Eastern Railroad. Along the trail there are countless opportunities for interpretive signage related to historical and natural features along the trail.

Signage for the Eastern Trail, as part of the East Coast Greenway, also needs to acknowledge its role as part of this emerging national trail system through compatible maps and signs.



COST ESTIMATES

TRAIL SURFACE COST ESTIMATES

Costs for the trail surface were developed by applying the unit costs to the measured distance that each cross-section applies. See Appendix A, Corridor Concept Plans, for more detail.

Off-road Trail: Preliminary Cost Estimates								
Trail Surface Costs Only								February-01
Segment & Cross-section	Linear Miles	Linear Ft	Unit Cost (\$/LF)	Estimated Cost	Off-Road Trail Miles	Segment Totals	Town Subtotals	Estimated Trail Surface Cost
Segment 4 - Jewett Trail Head to Emerys Bridge Road					2.3	\$ 143,200	OFF-ROAD TRAIL BEGINS	
A	1.2	6,560	\$9.10	\$ 59,700	miles		S. Berwick	\$ 563,400
B	0.7	3,835	\$12.90	\$ 49,500				
C	0.3	1,770	\$19.20	\$ 34,000			Total Miles	4.9
Segment 5 - Emerys Bridge Road to S. Berwick/N. Berwick TL					2.6	\$ 420,200		Cost/Mi. \$ 115,592
A	0.6	3,190	\$9.10	\$ 29,000	miles			
B	1.5	7,940	\$12.90	\$ 102,400				
C	0.5	2,440	\$19.20	\$ 46,800				
Gabion (3)				\$ 242,000		Knight's Pond S (1), Knight's Pond N (2)		
Segment 6 - S. Berwick/N. Berwick TL to N. Berwick/Wells TL					2.8	\$ 263,500	N. Berwick	\$ 263,500
A	0.8	4,050	\$9.10	\$ 36,900	miles			
B	1.1	5,600	\$12.90	\$ 72,200			Total Miles	2.8
C	0.2	1,290	\$19.20	\$ 24,800				
E1	0.7	3,590	\$36.10	\$ 129,600			Cost/Mi.	\$ 95,752
Segment 7 - North Berwick/Wells TL to Bald Hill Road					2.8	\$ 757,600	Wells	\$ 1,157,000
A	0.3	1,570	\$9.10	\$ 14,300	miles			
B	0.6	3,060	\$12.90	\$ 39,500			Total Miles	7.4
D	0.1	410	\$17.20	\$ 7,100				
E1	1.9	9,880	\$36.10	\$ 356,700			Cost/Mi.	\$ 156,500
Gabion (2)				\$ 340,000		Perry Oliver Road (2)		
Segment 8 - Bald Hill Road to Chicks Crossing Road					2.9	\$ 226,700		
A	1.6	8,250	\$9.10	\$ 75,100	miles			
B	1.1	5,675	\$12.90	\$ 73,200				
C	0.3	1,610	\$19.20	\$ 30,900				
Gabion (1)				\$ 47,500		Chick's Crossing, south side of road		
Segment 9 - Chicks Crossing Road to Wells/Kennebunk TL					1.6	\$ 172,700		
A	0.3	1,460	\$9.10	\$ 13,300	miles			
B	0.5	2,620	\$12.90	\$ 33,800				
C	0.1	310	\$19.20	\$ 6,000				
D	0.8	4,190	\$17.20	\$ 72,100				
Gabion (1)				\$ 47,500		Chick's Crossing, north side of road		
Segment 10 - Wells/Kennebunk TL to Route 99					2.1	\$ 510,800	Kennebunk	\$ 650,300
A	0.8	4,065	\$9.10	\$ 37,000	miles			
B	0.7	3,750	\$12.90	\$ 48,400			Total Miles	4.2
C	0.5	2,500	\$19.20	\$ 48,000				
D	0.2	1,010	\$17.20	\$ 17,400			Cost/Mi.	\$ 153,731
Gabion (2)				\$ 360,000		McGuire Road, both sides of road		
Segment 11 - Route 99 to Arundel/Kennebunk TL					2.1	\$ 139,500		
A	1.0	5,290	\$9.10	\$ 48,100	miles			
B	0.4	2,030	\$12.90	\$ 26,200				
C	0.2	880	\$19.20	\$ 16,900				
D	0.5	2,810	\$17.20	\$ 48,300				

Off-road Trail: Preliminary Cost Estimates								
Trail Surface Costs Only								February-01
Segment & Cross-section	Linear Miles	Linear Ft	Unit Cost (\$/LF)	Estimated Cost	Off-Road Trail Miles	Segment Totals	Town Subtotals	Estimated Trail Surface Cost
Segment 12 - Arundel/Kennebunk TL to Old Limerick Road					0.8	\$ 37,400	Arundel	\$ 172,900
A	0.7	3,900	\$9.10	\$ 35,500	miles			
C	0.0	100	\$19.20	\$ 1,900				
Segment 13 - Old Limerick Road to Arundel/Biddeford TL					2.6	\$ 135,500		
A	2.5	13,170	\$9.10	\$ 119,800	miles			
C	0.2	820	\$19.20	\$ 15,700				
Segment 14 - Arundel/Biddeford TL to Route 111					1.5	\$ 78,400	Biddeford	\$ 202,200
A	1.2	6,410	\$9.10	\$ 58,300	miles			
B	0.3	1,330	\$12.90	\$ 17,200				
C	0.0	150	\$19.20	\$ 2,900			Cost/Mi.	\$ 65,138
Segment 15 - Route 111 to Saco River					1.6	\$ 123,800		
B	1.5	7,890	\$12.90	\$ 101,800	miles			
E1	0.1	610	\$36.10	\$ 22,000				
Segment 16 - Saco River to Route I-195					1.8	\$ 514,500	Saco	\$ 663,200
B	0.7	3,470	\$12.90	\$ 44,800				
C	0.7	3,740	\$19.20	\$ 71,800			Cost/Mi.	\$ 169,738
E1	0.3	1,520	\$36.10	\$ 54,900				
F	0.1	460	\$280.00	\$ 128,800				
F1	0.1	420	\$510.00	\$ 214,200				
Segment 17 - Route I-195 to Saco/Old Orchard Beach TL					2.1	\$ 148,700		
A	0.8	4,130	\$9.10	\$ 37,600	miles			
B	0.7	3,670	\$12.90	\$ 47,300				
C	0.6	3,100	\$19.20	\$ 59,500				
E1	0.0	120	\$36.10	\$ 4,300				
Segment 18 - Saco/Old Orchard Beach TL to O.O.B./Scarborough TL					1.7	\$ 83,600	Old Orchard	\$ 83,600
A	1.6	8,470	\$9.10	\$ 77,100	miles		Cost/Mi.	\$ 49,209
B	0.1	500	\$12.90	\$ 6,500				
Segment 19 - O.O.B./Scarborough TL to Black Point Road/Route 207					3.4	\$ 175,000	Scarborough	\$ 240,200
A	3.0	15,730	\$9.10	\$ 143,100	miles			
B	0.5	2,470	\$12.90	\$ 31,900				
Segment 20 - Black Point Road/Route 207 to Scarborough/S. Portland TL					1.1	\$ 65,200		
A	0.5	2,870	\$9.10	\$ 26,100	miles			
B	0.4	2,320	\$12.90	\$ 29,900				
C	0.1	480	\$19.20	\$ 9,200				** All on-road recommended. Use Highland Avenue **
		Miles	LF	Estimated Costs				
Subtotal Materials		35.9	189,485	\$ 3,996,300	#####			
Mobilization		2%		\$ 79,930				
Engineering		15%		\$ 599,450				
Subtotal				\$ 4,675,680				
Contingencies		15%		\$ 701,350				
TOTAL				\$ 5,377,030				
** Cost per mile				\$ 149,830				
Trail surface only								

BRIDGE AND STRUCTURES COST ESTIMATES

Costs for the bridges and structures for the off-road trail such as railing were developed by applying the unit costs to the identified cost elements at each location. See Appendix C, Structures Report, for more detail.

Total Estimated Structure Cost Summary by Segment

DRAFT

Segment	Cost/Segment	Town	Town Subtotal
Segment 4	\$ 143,000	S. Berwick	\$ 166,400
Segment 5	\$ 23,400		
Segment 6	\$ 227,600	N. Berwick	\$ 227,600
Segment 7	\$ 126,800	Wells	\$ 158,000
Segment 8	\$ 22,900		
Segment 9	\$ 8,300		
Segment 10	\$ 125,000	Kennebunk	\$ 844,900
Segment 11	\$ 719,900		
Segment 12	\$ 69,700	Arundel	\$ 87,400
Segment 13	\$ 17,700		
Segment 14	\$ 22,700	Biddeford	\$ 620,300
Segment 15	\$ 597,600		
Segment 16	\$ 597,600	Saco	\$ 917,700
Segment 17	\$ 320,100		
Segment 18	\$ 314,300	Old Orchard Beach	\$ 314,300
Segment 19	\$ 378,700	Scarborough	\$ 497,100
Segment 20	\$ 118,400		
	\$ 3,833,700		\$ 3,833,700

For structures at town boundaries, costs are divided in half.

Costs do not include Contingencies or Design Fees.

Source: Wilbur Smith Associates

Bridge Needs Summary

Off-road Trail Segments

Segment	Location	Town	Span Length (ft)	Cost
4	Great Works River	South Berwick	75	\$ 143,000
6	South Berwick Road	North Berwick	26	\$ 65,000
6	Great Works River	North Berwick	60	\$ 119,100
7	West Brook	Wells	35	\$ 126,800
11	Maine Turnpike	Kennebunk	180	\$ 626,400
11 & 12	Kennebunk River	Kennebunk/Arundel Town Line	70	\$ 139,300
15 & 16	Saco River	Biddeford/Saco Town Line	500	\$ 1,195,100
17	U.S. Route 1	Saco	125	\$ 320,100
18	Old Cascade Road	Old Orchard Beach	23	\$ 138,700
18	Mill Brook	Old Orchard Beach	54	\$ 175,600
19	Dunstan River	Scarborough	150	\$ 347,300
20	Nonesuch River	Scarborough	60	\$ 118,400
				\$ 3,514,800

Costs do not include Contingencies or Design Fees.

Source: Wilbur Smith Associates

Total Trail Costs by Segment

Segment	Municipality	From-To	Length (miles)	Trail Surface Costs	Structure Costs	Total Segment Costs
4	South Berwick	Jewett Trail Head to Emerys Bridge Road	2.3	\$143,200	\$143,000	\$286,200
5		Emerys Bridge Road to S. Berwick/N. Berwick TL	2.6	\$420,200	\$23,400	\$443,600
6	North Berwick	S. Berwick/N. Berwick TL to N. Berwick/Wells TL	3.2	\$263,500	\$227,600	\$491,100
7	Wells	N. Berwick/Wells TL to Bald Hill Road	2.8	\$757,600	\$126,800	\$884,400
8		Bald Hill Road to Chicks Crossing Road	2.9	\$226,700	\$22,900	\$249,600
9		Chicks Crossing Road to Wells/Kennebunk TL	1.6	\$172,700	\$8,300	\$181,000
10	Kennebunk	Wells/Kennebunk TL to Rt 99	2.1	\$510,800	\$125,000	\$635,800
11		Rt 99 to Arundel/Kennebunk TL	2.1	\$139,500	\$719,900	\$859,400
12	Arundel	Arundel/Kennebunk TL to Old Limerick Road	0.8	\$37,400	\$69,700	\$107,100
13		Old Limerick Road to Arundel/Biddeford TL	2.6	\$135,500	\$17,700	\$153,200
14	Biddeford	Arundel/Biddeford TL to Route 111	1.4	\$78,400	\$22,700	\$101,100
15		Route 111 to Saco River	1.6	\$123,800	\$597,600	\$721,400
16	Saco	Saco River to Route I-195	1.7	\$514,500	\$597,600	\$1,112,100
17		Route I-195 to Saco/Old Orchard Beach TL	2	\$148,700	\$320,100	\$468,800
18	Old Orchard Beach	Saco/Old Orchard Beach TL to Old Orchard Beach/ Scarborough TL	1.8	\$83,600	\$314,300	\$397,900
19	Scarborough	Old Orchard Beach/ Scarborough TL to Black Point Road/Rt 207	3.4	\$175,000	\$378,700	\$553,700
20		Black Point Road/Rt 207 to Scarborough/S. Portland TL	2.2	\$65,200	\$118,400	\$183,600
			37.1	\$3,996,300	\$3,833,700	\$7,830,000

Structure costs do not include contingencies or design fees. Includes bridge and railing costs.
See "Trail Surface Cost Estimates" (p. 14) for estimated Mobilization, Engineering and Contingency costs.
Source: Wilbur Smith Associates

FUNDING AND PHASING

FUNDING

Funding, design and construction of the entire Eastern Trail may take up to 10 to 15 years to complete. Developing partnerships early in the implementation process, as is currently being done, will be the key to timely implementation.

A variety of funding sources will need to be tapped including private and public sources. Likely sources include:

- ✍ Federal Enhancements dollars, allocated by the Maine DOT on a statewide, competitive basis
- ✍ Private donations from companies and individuals raised through the Eastern Trail Alliance and other trails organizations and land trusts
- ✍ Municipalities, through their annual budgeting process
- ✍ State authorizations through the legislature
- ✍ Congressional earmarks through reauthorization of TEA-21, federal transportation legislation that provides a six year spending framework for transportation by Congress.

Roadway Improvements. For roadway classifications of major collector and above the MDOT will pave shoulders according to our MDOT Shoulder Surface Policy and fund using highway project funds. For minor collectors, local municipalities need to initiate any request for improvements by first applying to be part of our Urban-Rural Initiative Program (URIP). Paved shoulders are an eligible expense of URIP funds. The MDOT will also consider augmenting URIP funds by using Enhancement funds (which are 80% Federal/20% local) for the additional costs of adding paved shoulders. For local roads the Towns will have to finance road improvements themselves but the use of Enhancement funds for paving shoulders applies here as well.

Use of the Enhancements funds requires a 20% local match to be raised locally through public and/or private funds.

There may also be opportunities to reduce costs through the use of volunteer labor and/or donated materials. Groups such as the Boy Scouts, National Guard, and schools and trails groups frequently volunteer time for community projects. On portions of the corridor shared by the pipeline, the use of volunteer labor needs to be tempered by recognition of stringent requirements for safe practices along a high pressure pipeline. Lumber, sand and gravel and construction companies may be willing to donate time, materials and equipment to the project. There may also be opportunities to construct portions of the trail while the gas company is doing its continuous upgrade of the pipeline.

PHASING

Several factors, taken together, should drive the phased implementation of the trail.

- ✍ Opportunity for high visibility, high use. Early success will fuel later success. Extra care should be taken with early trail construction projects to ensure that a high quality of design, construction and maintenance are adhered to.
- ✍ Poorest interim off-road connections. Segments with poorer on-road accommodation for cyclists and pedestrians should be targeted for high priority. This will help provide a high quality experience for users traversing the entire trail.
- ✍ Provide continuity and connectivity. There are two methods for accomplishing this. The first would be to start at one end and complete segments sequentially. The second would be to start from town and city centers and work outward. This would enable access to the trail by the highest number of users.

Concurrent with plans to construct early segments of the trail, effort should be made to plan and implement a coherent sign, map and publicity/trail identity program that meets trail needs at the local, southern Maine and East Coast Greenway levels.

MAINTENANCE COSTS AND RESPONSIBILITIES

Maintenance Costs

Maintenance costs will vary depending on trail design such as trail surface and the number and type of bridges constructed. Costs should be planned for on an annual basis for ongoing maintenance activities as well as recurring, longer term maintenance costs (for instance, replacement of trail surface).

Annual maintenance costs are estimated to be approximately \$1,000 - \$2,000 per mile of off-road trail surface. This assumes use of a stonedust trail surface. Annual maintenance requirements include inspection of the trail surface, regrading of the surface, patching asphalt aprons at road crossings and reshaping of drainage structures such as swales adjacent to the trail. Additionally, inspection of signage needs to be done on a continual basis (and replacement as necessary). For the on-road route, sweeping of roadways in the early spring (and as-needed afterward) is required to remove sand from winter maintenance of roadways for safe use of the roads by cyclists.

Long term maintenance costs are estimated for the replacement of the trail surface. For a stonedust surface, the estimated life of the surface is 6 to 7 years. Replacement of the stonedust is estimated to be \$30,000 per mile of trail surface (at approximately \$5.50 per linear foot for a standard 5" depth). The life of an asphalt surface is typically longer, typically 10 years. Bridge structures should be designed and constructed to have a minimum life of 20 years. Bridge maintenance will also be the responsibility of the local trail management entity.

Maintenance Responsibility

Similar to the desire for standard design for the trail, it is desirable to maintain standard maintenance practices along the length of the corridor. The Membership Agreement adopted by the Eastern Trail Alliance's Governmental Subcommittee (November 8, 2000) specifies the creation of the Eastern Trail Management District which would have responsibility for construction and maintenance activities of the trail. The District is to be composed of representatives of the Eastern Trail Alliance and municipalities that adopt the Agreement by vote of their legislative body.