

**APPENDIX I**

**Aesthetic Improvements, Connectivity & Signage**

## APPENDIX I – AESTHETIC IMPROVEMENTS, CONNECTIVITY & SIGNAGE

### OVERVIEW OF LANDSCAPE ENHANCEMENTS/AESTHETICS:

The following descriptions suggest provisions, by Segment, for public facilities, modifications to the typical vertical or horizontal trail alignment, barriers or protective fencing, and landscape enhancements. The following general recommendations should be considered for use along the entire length of the subject trail as well as other planned or constructed Eastern Trail segments (see Figure 2 – Photo Map for photo locations):

- Motor vehicles are prohibited on the trail. Access should be obstructed.



*Example of typical ATV access*

- Large boulders should be placed at each ATV trail connection, spaced about 3 to 3.5 feet apart to prevent passage by the vehicle but allow bicyclists, skiers, and other non-motorized uses.
  - Fencing, concrete-filled pipe bollards, or boulders should be used to limit access from adjoining properties
- At each street and ramp crossing, provide the following:
    - Collapsible bollards to prevent motorized vehicles and allow emergency vehicle access.



*Example of collapsible bollards used  
on Scarborough trail section*

- Cast iron detectable warning plates



*Example of cast iron detectable warning plates used on Scarborough trail section.*

- Colored pavement street crossing treatments
- Cedar rail fencing is recommended along the top of steep drop-offs.



*Example of cedar rail fencing used on Scarborough trail section.*

- Consider a low barrier (boulders) or a timber guardrail on the outside edge of proposed 90-degree turns.
- As most of the trail follows undeveloped woodlands, the existing vegetation should be selectively cut and pruned to favor desirable species, remove invasive plant species, and eliminate hazards; additional plantings should be minimal, except to re-establish native plants in areas previously occupied by invasives.
- Screen residential and commercial properties and undesirable views along forested sections with native evergreens and dense understory shrubs.
- Additional plantings of native understory trees and shrubs in sparsely vegetated areas will improve the forest ecosystem and habitat for wildlife, and add visual interest.

## Clark Street (Project Beginning) to I-195 Corridor

### **Segment A**

#### Thornton Academy Parking, Clark Street Trailhead and Trail Areas Adjacent to Athletic Fields Section:

- Facilities:
  - Consider locating a restroom facility at the trailhead to minimize potential conflicts with Thornton Academy sport activities and community.
  - Seating or small picnic area should be considered to accommodate potential heavy trail use.



*A1: Trailhead: Clark Street & existing parking area*

- Layout: The layout of the trail in this section begins at Clark Street next to residential abutters, along two parking areas, then along the edge of the wooded area at the outer edge of the athletic fields. The route minimizes disturbances to the athletic fields and forested areas, but disturbs the natural and planted buffer between the residences and parking areas. The trail also directly abuts the head of the parking stalls, so visual and physical barriers are recommended. Where possible, slight meanders in the trail may be used to provide variety and interest. Extreme care should be taken to avoid damage to large canopy trees.



*A2: Trail section, looking north, between residential abutters and Thornton Academy parking*



*A3: Trail section, looking west, between residential abutters and Thornton Academy parking*

- Barriers:

- The beginning section is very close to residential abutters, effectively clearing existing stands of hardwoods and planted conifers that provide buffering for recently constructed parking areas at Thornton Academy. This section also directly abuts the parking stalls. A screen fence near the property boundary, guardrails to separate the trail and parked vehicles, and supplemental vegetative buffering where there is planting space are highly recommended throughout this beginning section.



*A4: Trail section, entering Thornton Academy athletic fields*



*A5: Trail section, looking west, along Thornton Academy athletic fields*

- Certain areas of the trail run along a slightly elevated area, bordering slopes which may pose a hazard to users. Other areas run close to athletic fields. The installation of guardrails or other barriers, such as fencing or boulders, should be considered, to clearly delineate the trail and minimize conflicts. Because this is a multi-use area with open, park-like character, the users will benefit from these visual markers that delineate the trail. These markers could also provide seating or resting areas for viewing athletic events.



***A6: Trail section, looking south, along elevated edge of Thornton Academy athletic fields***

Undeveloped Thornton Academy Property:

- Layout: Final design layout of the trail through the wooded area and along the cleared railroad ROW should feature and preserve topographic features, avoid wetlands to the extent practicable and preserve significant native tree groupings and understory plantings. Where possible, slight meanders in the trail should be used to provide variety and interest.



***A7: Trail junction entering forested section along Thornton Academy property line***

- Barriers: A chainlink or wire fence is required along the property boundary abutting the active railroad ROW.



*A8: Trail section along active railroad ROW*



*A10: Trail section, looking south, at junction where trail enters railroad ROW*

## I-195 Corridor

### State of Maine Property:

- Layout: The trail follows along the top of slope parallel to the abandoned railroad ROW and then turns east to follow the base of slope from the I-195 eastbound off-ramp along wetlands (adjacent to the Hannaford shopping center) to U.S. Route 1. Due to the extent of wetlands and topography, there is little opportunity to vary the alignment.



*A11: Trail section along top of slope parallel to abandoned railroad ROW*

- Barriers:
  - Cedar rail fencelines should parallel the trail along the top of slope above the railroad ROW.
  - A chainlink fence must be placed along the north side of the trail within the I-195 ROW.

## Segment B

### U.S. Route 1 to I-195 Ramp Crossings:

- Layout: Because this section of the trail is located near busy Main Street and has several ramp crossings, and runs under the I-195 overpass, visibility must be maximized for safety. See section on wayfinding improvements for this area.



*B1: Trail section, looking north, U. S. Route 1 ramp crossings*



*B2: Trail section, looking south, Passing under I-195 overpass*

- Landscape Enhancements:

- Trim up low hanging tree limbs
- Remove or relocate trees in conflict with the trail alignment; if relocations are not possible, consider adding shade trees on the westward side of the trail where there is adequate space.



*B3: Trail section, looking north, along U.S. Route 1, considerations for tree removal or pruning of lower branches for visibility*



## I-195 to U.S. Route 1

### MDOT Parcel Connection to U.S. Route 1 and Moody Street (north side of I-195 Ramp Crossings):

- Facilities: Consider a small picnic area near the bend in the trail or parking area.
- Layout:
  - After the trail crosses the ramps the proposed trail turns west and runs along the I-195 ROW between the highway embankment and the residential lots bordering the south side of Moody Street. Supplemental parking for 6-10 vehicles should be considered for ET users, adjacent to and accessed from the corner of Moody Street. Trail access and parking are not currently included in the Preliminary opinion of costs.



***B4: Potential secondary trailhead parking area at Route 1/Moody Street intersection on MDOT property***

- Final design layout of the trail through the wooded MDOT parcel should feature and preserve topographic features and significant native and planted tree groupings and understory plantings. Where possible, wider meanders in the trail can be used to provide variety and interest.
- Landscape Enhancement:
  - If parking area is considered, provide 40' landscape buffer in conformance with City of Saco Zoning Ordinance Main Street Design Standards.
  - Provide landscape buffering, or screen fence, along abutting residential properties if parking area is considered and where trail alignment passes near.
  - Consider small ornamental trees or shade trees for shading the parking and/or picnic area.

MDOT property south of Moody Street:



*B5: Trail section, looking west, along I-195 connector embankment*

- Layout: A short section of the trail runs along the base of the existing steep slope that descends from the I-195 westbound on-ramp, passes through an undeveloped wooded parcel, emerging into the railroad corridor south of a culvert stream crossing.
  - The first short section will require retaining walls to minimize disturbance to the wetland areas along the edge of the residential properties to the north.
  - More opportunity may exist during the final design to meander the trail between existing tree groupings within the wooded parcel.
  - Once it emerges in the railroad corridor, the alignment must return to straight and level due to the extent of wetlands found within the corridor



*B6: Trail section, looking south, at Moody Street crossing*

- Barriers:
  - A chain link fence delineating the ROW should be located along the north side of the trail within the I-195 ROW.
  - A railing should be placed along the downslope edge of the trail for safety.

## Segment C

### Trail North:



*C1: Trail section, looking north, at Moody Street crossing, potential location for parking and wayfinding signage*



*C3: Trail section, looking north, along border of Sweetser School fields*

- **Layout:** The trail shall be located within the cleared ROW. Opportunities for meanders, while limited might be considered in the final layout, especially around the Unitil gas regulator station, although clear access should be maintained to it. In the elevated section overlooking Goosefare Pond a scenic overlook or trail widening might also be considered. This will also provide visual cues to the Sanctuary trail connection for users approaching from the south.



*C5: View of Goosefare Pond from Saco Valley Land Trust property adjacent to trail*

- **Barriers:** Where the trail becomes elevated approaching Goosefare Pond, safety barriers, such as boulders and/or cedar rail fence will be required due to very steep slopes.



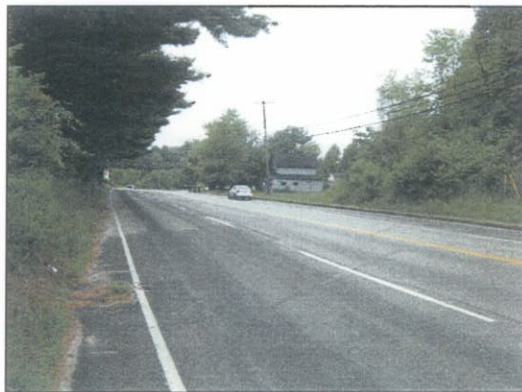
*C6: Trail section, looking south, along elevated section above Goosefare Pond*

- Landscape Enhancements: In the area of the proposed Goosefare Pond overlook, selectively prune and remove trees (allowing roots to remain for stabilization) along the downhill slope to open views to the Pond.



*C4: Looking west, view of Goosefare Pond from elevated section of trail*

#### **Segment D** (U.S. Route 1 Crossing)



*D1: Route 1, looking south. Location of potential pedestrian bridge overpass*

- Layout: An elevated pedestrian bridge crossing is the safest route to cross U.S. Route 1 due to the high traffic volumes and limited visibility at this location. The trail and ramped access will be fully accessible, turning 90° to cross over and underneath utility lines and rising a few feet to cross the bridge, again ramping down and turning to realign with the cleared railroad ROW on the northeast side of U.S. Route 1.
- Barriers:
  - Railings are required on any ramped sections sloped steeper than 1:20.
  - For the pedestrian bridge, provide railings and/or protective coverings as may be required by MDOT.
  - Provide guardrails or cedar rail fencing above steep slopes
- Landscape Enhancements:
  - Provide revegetation and/or grassing for disturbed areas
  - Preserve to the extent possible the large White Pines on the southeast side of the crossing as they provide visual and sound buffering for Silver Springs Campground.



***D2: Vegetated buffer to be retained along southeast side of potential pedestrian bridge overpass***

- Consider additional vegetative buffer between trail and campground property

## U.S. Route 1 to Cascade Road

### Segment E



*E1: Trail section, looking north, along forested section adjacent to the Silver Springs Campground abutting property*



*E9: Potential location for bike trail parking and facilities at Mill Brook Business Park*

- Facilities: Sanitary facilities should be considered for near the Mill Brook Business Park parking area or trail intersection. A 12" water main extends from the Business Park to the south boundary. There is no sanitary sewer service closer than the manhole in the cul-de-sac within the development.
- Layout:
  - The trail shall be located within the cleared ROW. Opportunities for meanders should be considered in the final layout, especially in areas requiring screening, such as commercial and residential parcels that have been cleared up to the ROW.
  - Overlooks or widening of the trail should be considered for the bog on the west side and at ravine areas on the east side that are also opportunities for viewing and interpretive signage.



*E5: View of bog adjacent to trail on west side*

- Barriers:

- Barriers (boulders or bollards) should be located to limit ATV access from multiple ATV trails near the Mill Brook Business Park connection. Additional measures for to discourage ATV's may be considered, such as providing interim barriers across the trail at key locations (near ATV crossings).



*E4: Example of ATV and private property access trail connection*

- Consider “fallen tree barriers” in the wooded areas to discourage the cutting of new trails around on-trail barriers. “Tree barriers” can be longer sections of large cut trees (depending on area to be covered) with stubs of branches left intact that are laid onto the forest floor across the undesired trail. The advantage of tree barriers is that they are relatively inexpensive, use available forest resources, and look like natural fallen trees.
  - Barriers or cedar rail fences should be located at proposed trail overlooks for safety and to discourage access to these sensitive natural area features (see next section).
- Landscape Enhancements:
    - Natural Area Features - The southern section of **Segment E** borders a deep ravine with older growth pines and oaks. The trail also abuts a bog area on the west side with 2 locations for viewing the bog. These natural trail features will benefit from strategic selective thinning and pruning to open views and encourage healthy forest growth.



***E2: Deep ravine with older growth pines and oaks with stream on east side of trail***

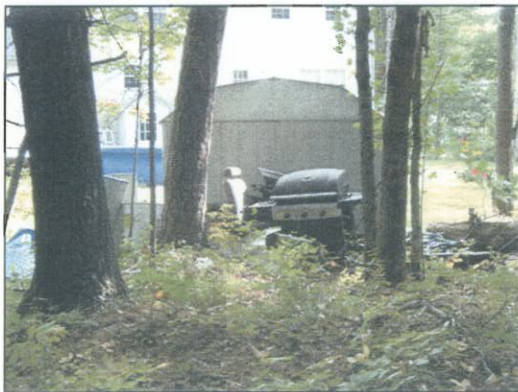
- Landscape Screening: Backyards, parking areas and utility structures should be heavily screened with plantings and/or screen fencing to improve the visual character of the natural wooded corridor. Screening measures have not been included in the Preliminary opinion of costs.



***E3: Land use adjacent to trail, on east side, which will require screening***



***E6: Land use adjacent to trail, on east side, which will require screening***



***E11: Land use adjacent to trail, on east side, which will require screening***



***E12: Land use adjacent to trail, on east side, which will require screening***



## Cascade Road to Milliken Mills Road (End of Project)

### Segment F

#### Wooded Trail Section Between Cascade and Old Cascade Roads and Stream Crossing:



*F1: Trail section, looking north, at Cascade Road crossing*

- Layout: The trail begins in the cleared ROW and ramps down to cross Old Cascade Road. The existing bridge abutments are not contemplated for reuse as part of the Preliminary Design Report. Removal of the abutments should be reviewed during final design. Retaining walls may be required as well. The trail has significant vertical and horizontal variation in this section to the top of slope north of the Mill Brook stream crossing.



*F2: Elevated portion of trail between Cascade Road and Old Cascade Road crossings*



*F4: Old Cascade Road crossing bridge abutments*

- Barriers:
  - Barriers (such as bollards or boulders) should be located across any evident ATV trails and private accessways. Tree barriers may be included to augment trail barriers to further discourage ATVs.



***F3: Example of ATV access trail (west side) adjacent to Old Cascade Road crossing***

- Railings are required on any ramped sections sloped steeper than 1:20.



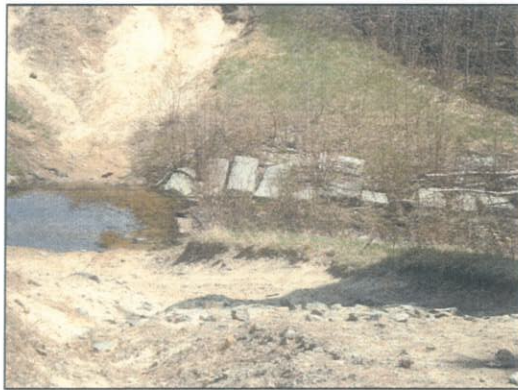
***F5: Example of steep sections of trail that may require regrading, ramps and railings***

- Provide railings for the culvert stream crossing.
- Landscape Enhancements:
  - Consider removal of understory vegetation to open views of the trail crossing on both sides of Cascade Road.
  - Old Cascade Road and stream crossing: Soils in these areas are very sandy and highly prone to erosion. The character of the area in the vicinity of Old Cascade Road is more open with shrub species being the dominant cover.



***F6: Trail section, looking south, at Mill Brook stream crossing***

- Plantings of native tree and shrub species should be considered to enhance and stabilize slopes around the crossings to stabilize slopes and discourage off-trail use.
- Plantings of stream tree and shrub species should be considered to enhance and stabilize the stream bank.



***F7: Mill Brook Stream crossing streambanks to be revegetated***

Trail North to Milliken Mills Road (terminus of [Segment F](#)):

- Layout:
  - The trail shall be located within the cleared ROW, with consideration given to increase the width of the buffer adjacent to the existing residential lots on the west side. There is evidence of individual private trail connections and dumping of debris along various sections of the trail.



***F8: Evidence of dumping from adjacent residential properties on the west side of trail***

- Meanders may be considered during final design but should be planned in conjunction with potential installation of trees and berms to screen undesirable views.
- Barriers: Barriers (boulders or bollards) should be located at any ATV trail or private access points to abutting parcels. Consider additional measures to discourage ATVs, such as providing interim barriers across the trail at key locations and “tree barriers” in the wooded areas (see description of tree barriers in **Segment E**).
- Landscape Enhancements:
  - West side of trail – the trail should be configured to maximize additional areas for buffering with berms and plantings of native tree and shrub species for additional screening.



***F9: Land use adjacent to trail, on west side, which will require screening***



***F12: View of trail section, looking south, that will benefit from additional screening measures along west side***

- East side of trail – see description under Landscape Enhancements in the Milliken Mills Basin section (below).
- Consider removal of several large pine trees and understory vegetation to open views of the trail crossing on Milliken Mills Road.

- Suggest to the neighboring homeowner to the north on Milliken Mills Road to limb up the lower branches of the street trees to increase visibility of the trail crossing.

Milliken Mills Basin Area (private property) – parcel abutting the trail near Milliken Mills Road:

- Description: Several trails lead to the Milliken Mills Basin that is located on private property. A conservation easement should be considered to allow access and viewing of the Basin – a very picturesque pond, surrounded by older growth trees. If a conservation easement is not acquired, consideration should be given to discouraging views and access to the Basin (using plantings, berms and natural boulders) to minimize conflicts with the property owner.



*F10: Potential trail connection, on east side of trail, to Milliken Mills Road*



*F11: View of Milliken Mills Basin looking north*

- Barriers: Barriers (natural boulders) should be considered if access to Milliken Basin is allowed. Additional measures to discourage ATVs may be considered, such as providing “tree barriers” in the wooded areas (see description of tree barriers in **Segment E**).
- Landscape Enhancements: If a conservation easement is acquired to allow access and viewing to the Basin, then trail widening and selective thinning should be considered to improve visual access to this feature. If a conservation easement is not acquired, screening with berms and/or plantings should be located to discourage views and access to the Basin.

## OVERVIEW OF CONNECTIVITY, WAYFINDING AND INTERPRETIVE SIGNAGE:

The following descriptions, for specific instances by Segment, suggest the use of wayfinding, distance, place name and interpretative signage to provide information to the trail user of on- and off-trail features and connections. The following general recommendations should be considered for use along the entire length of the subject trail as well as other planned or constructed Eastern Trail segments:

- Provide ET directional signage several yards prior to a street crossing or significant change in direction.



*Example of typical Eastern Trail (ET) directional signage*

- On opposite side of a street crossing, provide another ET directional sign with distance marker to next street crossing and/or significant junction.
  - Include distance markers for points of interest found along the way
- Street and Ramp Pedestrian Crossings:
  - Provide “pedestrian crossing” signage on streets and ramps in each direction as the trail crossing is approached.



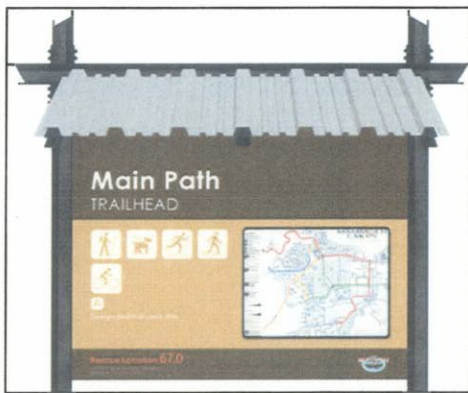
*Examples of signage highlighting pedestrian crossings*

- Colored pavement treatment is recommended; textured pavement is not recommended due to extreme wear caused by heavy vehicular traffic.
- Provide street name plaque on trail bollard



*Example of street plaque on trail bollard  
(from South Portland Greenway)*

- Trailheads and significant trail junctions – provide wayfinding kiosk with a map, trail use rules, distance measurements, street names, etc.). Kiosks should be made from low maintenance, green and sustainable materials, such as treated wood or recycled plastic lumber, high density polyurethane signage, core ten steel, etc.



*Example of kiosk using low maintenance, sustainable materials.  
Photo courtesy of American Trails*



*Example of wayfinding signage.  
Photo courtesy of American Trails*

- At connection points, provide directional signage with distance markers to points of interest, next junction, and/or street crossings in each direction.

## Clark Street (Project Beginning) to I-195 Corridor

### **Segment A**

#### Thornton Academy Parking and Trailhead (south terminus):

- Provide ET directional signage on Route 1 both directions to in proximity to Clark Street. Provide additional ET signage along residential side roads (Fairfield, Clark and Nott Streets) and within the high school parking lot to direct users toward the trailhead.
- Consider colored/textured asphalt pavement and individual signage in designated parking spaces to distinguish ET parking spaces from Thornton Academy parking. (see Photo A1).
- Provide wayfinding kiosk at Thornton trail entrance with map, trail information (distance to crossings and significant features), historic, natural and land use trail features, Thornton Academy information, trail use rules, etc. (see Photo A1).

#### Forested Trail Section:

- Add cautionary signs to barrier fencing (see previous topic, Aesthetic Improvements) regarding active railroad ROW (see Photo A8).
- Consider installation of interpretive signage at vernal pool (a significant wetland feature)



*A9: Vernal pool, potential location for interpretive signage*



## I-195 Corridor

### Segment B

#### I-195 Ramp Crossings:

- Continue the use of ET directional signage across ramps and under bridge (see Photo B1)
- Provide a “pedestrian crossing” sign on I-195 eastbound and westbound ramps for motorists exiting and entering I-195.

#### MDOT Property, North Side of I-195 Corridor:

- Provide ET directional signage where trail turns west to cross through forested areas adjacent to I-195 (north side)
- Provide signage directing trail users toward public parking area near the intersection of Moody Street and U.S. Route 1 (see Photo B4).

#### Supplemental Parking:

Supplemental parking for 6 to 10 vehicles for ET users is possible on property owned by the State of Maine, with the driveway location approximately 100 feet west of the Moody Street/U.S. Route 1 intersection (see Photo B-6). Given the safety concerns with crossing the I-195 ramps, families with small children may prefer to park in the vicinity of Moody Street to access the trail and head westward on the trail to avoid U.S. Route 1 traffic. Locating this parking area in a very visible location would increase ET exposure to the public and decrease the potential for vandalism and other non-desirable uses. The costs for the parking area and a connection to it have not been included in the Preliminary Opinion of costs.

- Provide signage for vehicular traffic on both sides of U.S. Route 1 noting ET public parking.
- Provide parking driveway entrance signage designating public parking for ET users only.
  - Include signage for one van-accessible parking space.
  - Include ET signage at trailhead with distance markers to ramp crossing, points of interest southward on U.S. Route 1/Main Street, and to western Moody Street trail crossing
- If the parking area is not paved, include a pair of signs “no parking between signs” to avoid obstruction of the required access aisle next to the accessible parking space. (Note: if the parking area is paved, the aisle and spaces would be painted; the van-accessible sign still required.)
- As use of the trail is prohibited at night, include signage indicating closure at dusk. Since it is closed at night, the parking area would not need to be lit.

- Install smaller scale kiosk with map, trail information (distance to crossings and significant features), historic, natural and land use trail features, rules, etc.

## I-195 to U.S. Route 1

### Segment C

#### Moody Street Crossing (south side):

- Consider colored or striped pavement at Moody Street Crossing.



***B7: Moody Street crossing***

- Consider wayfinding signage post on north side of street (easily visible from other side) with distance markers for significant trail features (Sweetser School, Moody Street Parking Area, Goosefare Pond, U.S. Route 1)



***C1: Trail section, looking north, at Moody Street crossing, potential location for parking and wayfinding signage***

- Connect street crossings with painted sidewalk leading into Sweetser School campus.
- Provide additional cautionary signs near Unitil regulator station. (see Photo C2).
- Include wayfinding signage with distance marker to Saco Valley Land Trust sanctuary and signage at trailhead for Goosefare Pond.

- Include interpretive signage at a vantage point overlooking Goosefare Pond.

### Segment D

#### Route 1 Crossing:

- On southeast side, refurbish the existing kiosk or provide a new kiosk with trail map and distances, historic, natural and land use features (e.g., Saco Valley Land Trust), trail use rules, etc.



*D3: Location of existing kiosk on southeast side of Route 1 crossing*

- Provide wayfinding signage for proximate U.S. Route 1 businesses and attractions (e.g., Funtown/Splashtown USA, restaurants, theatres, etc.), Silver Springs Campground and Goosefare Pond.
- Provide cautionary and prohibitive signage on bridge structure.

#### U.S. Route 1 to Cascade Road

### Segment E

#### Trail North:

- Consider interpretive signage at bog area on west side of trail (See photo E5)
- Provide directional signage at all neighborhood connections (linkages to Pond View Road and Trotter Lane). Consider “Respect Private Property” signage or low key barrier boulders along connecting trails to neighborhoods.
- Provide signage to Mill Brook Business Park parking area and to more distant U.S. Route 1 destinations, including Vacationland Bowling and Spring Street in the Saco Industrial Park directly opposite the entrance to the Business Park on U.S. Route 1. (Spring Street provides connectivity to area attractions and Route 112, a broader circulation route.)



***E7: Looking west to potential connection trail section to Mill Brook Business Park***

- Provide signage for Rest Area facilities near Mill Brook Business Park connection.
- Provide signage at neighborhood connections.



***E10: Example of potential neighborhood connection linkage on east side of trail***

- Provide additional cautionary signs near Unitil regulator station.



***E13: Unitil regulator station near Cascade Road crossing***

Cascade Road Crossing:

- Consider providing signage for parallel parking on south side of Cascade Road and demarcating a “Keep Clear” area near trailhead for improved visibility at the crossing.

**Cascade Road to Milliken Mills Road (End of Project)**

**Segment F**

Cascade Road Crossing:

- Consider providing signage for parallel parking on south side of Cascade Road and demarcating a “Keep Clear” area near trailhead for improved visibility at the crossing.
- Highly recommend general crossing pavement treatments and pedestrian crossing signage be utilized for 45 mph road. (see Photo F1).
- Provide wayfinding signage with distance marker for Cascade Falls Recreational Area.

Old Cascade Road Crossing:

- Provide distance marker to Mill Brook
- Provide “Mill Brook” name signage or interpretative signage at brook crossing

Trailhead North:

- Provide “Private Property” signage at intervals along west side, near existing private accessways



*F13: Trail head and trail, looking south from Milliken Mills Road*

Milliken Mills Basin Area (private property):

Consider a conservation easement for access to Basin area. If access is allowed, provide ‘Milliken Mills Basin’ and small kiosk regarding rules for use, etc. If access is not allowed, consider barriers, fencing and signage designating private property. (see Photo F10).

References:

Photos of typical wayfinding signage: [www.americantrails.org](http://www.americantrails.org)