

**DRAFT - APRIL 13, 2007**  
**ROUTING STUDY FOR TRAIL CONNECTIONS BETWEEN CALAIS AND AYERS JUNCTION**

**Abstract** *The vision for the East Coast Greenway is an off-road urban trail system running from Calais, Maine to Key West, Florida. This routing study examines alternatives for development of off-road trails between Calais and Ayers Junction – the northern terminus of the Down East Sunrise Trail. Improved, interim, on-road connections are also recommended. The preferred alternative follows the existing East Coast Greenway route from the International Bridge to a site on South Street then along a proposed new trail to the Moosehorn NWR, then through the Moosehorn along existing trails, then south from the Moosehorn NWR's South Trail to Ayers along a state-owned rail right of way to Ayers Junction.*

**Introduction** “The East Coast Greenway is the nation's first long-distance urban trail system; a city-to-city transportation corridor for cyclists, hikers, and other non-motorized users. By connecting existing and planned trails, a continuous, safe, green route 3,000 miles long is being formed linking Calais, Maine at the Canadian border with Key West, Florida. It incorporates waterfront esplanades, park paths, abandoned railroad corridors, canal towpaths, and highway corridors, and in many areas it temporarily follows streets and roads to link these completed trail sections together.” (www.greenway.org)

Currently approximately 21% of the East Coast Greenway (ECG) route is along off-road trails with the aim for the ECG to ultimately be an entirely off-road trail system. Inauguration of the 87-mile Down East Sunrise Trail from Washington Junction in Ellsworth to Ayers Junction in Pembroke will complete the longest single off-road section of the East Coast Greenway thus far in Maine. However, two significant “gaps” exist between Calais and Ayers Junction.

From Calais to Ayers Junction, the trail currently follows an approximately 4-mile on-road route to the Moosehorn National Wildlife Refuge (NWR); it then continues 10.7 miles off-road through the Moosehorn NWR to Route 191; the route is then on-road again for 7.8 miles following Route 191 and Route 214 to the Down East Sunrise Trail at Ayers Junction.

The currently designated route for the East Coast Greenway is sub-optimal for several reasons:

- 1). There is insufficient shoulder space along Route 214 and Route 191 for safe bicycle and vehicle traffic;
- 2). Steep grades along Route 214 are challenging to navigate for most bicyclists;
- 3). The on-road connection between downtown Calais and the Moosehorn NWR follows heavily trafficked commuter and freight routes. It also inadequately frames the “downtown-to-wilderness” experience in Calais; and is an impediment to fully developing the Down East Sunrise Trail Corridor as a regional venue for recreational tourism.

The rationale for development of a fully off-road trail corridor linking the East Coast Greenway's northern terminus at the International Bridge in Calais with the Down East Sunrise Trail's eastern terminus at Ayers junction is four fold:

First, it would address safety issues associated with routing multi-use pedestrian, non-motorised, and recreational traffic along Route 214 and Route 191.

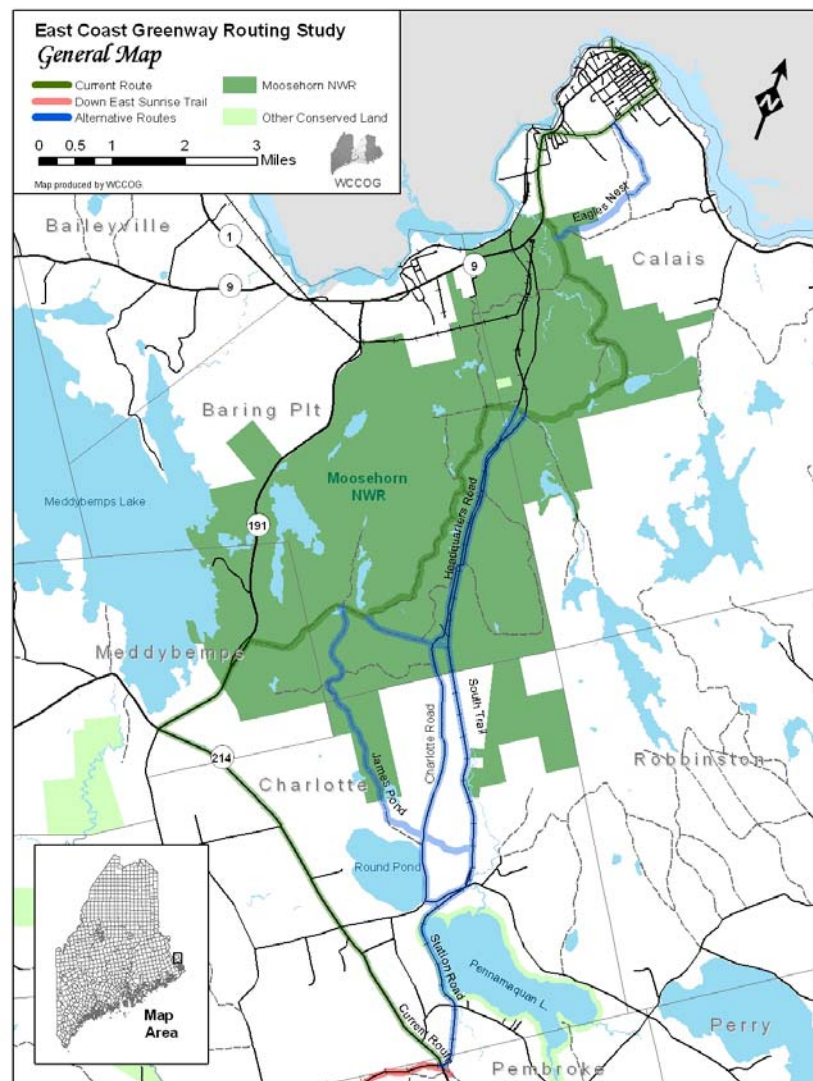
Second, by linking downtown Calais with the Down East Sunrise Trail, it would enhance both safety and recreational tourism opportunities by better directing trail users to existing services (lodging, food, gas, emergency response) in downtown Calais.

Third, off-road linkage of downtown Calais as the start of the East Coast Greenway to both the Moosehorn NWR and the 87-mile Down East Sunrise Trail would establish in the Calais area a recreational tourism attraction of national significance.

Fourth, it furthers the goal of moving the East Coast Greenway to a fully off-road route.

This routing study present several alternatives for the development of an off-road trail corridor linking the East Coast Greenway's designated terminus at the International Bridge in Calais with the terminus of the Down East Sunrise Trail at Ayers Junction; as well as interim on-road routes that could enhance the safety and use-ability of the trail while off-road development is being pursued.

The routing study is presented in three parts. Part One is an analysis trail improvements and alternative off-road trail development options associated with the East Coast Greenway in downtown Calais. Part Two is an analysis of alternative off-road trail connections between Calais and the Moosehorn NWR. Part Three is an analysis of alternative off-road and interim on-road connections between the Moosehorn NWR and Ayers Junction.



## Part One: Downtown Calais

**Intro** In the short to medium term, the currently designated ECG route through downtown Calais provides an adequate level of access for trail users. Improved signage and newly constructed sidewalks along South Street will significantly improve both access and the trail experience for pedestrian users. In the medium to long term, designated bike lanes and/or a fully off-road trail, possible following existing snowmobile trails should be explored.

**Current Route (Preferred)** The current, designated route for the East Coast Greenway in downtown Calais begins at the International Bridge in Calais, ME. The route then crosses a lawn, which is presumed to be in the public domain, and connects with the Calais Waterfront Walkway for 0.8 mile. The route then goes off-road, following Barker Street to South Street (0.2 mile); and South Street to US Route 1 (1.4 miles); and Route 1 to Magurrewock Road (1.2 miles) where it enters the Moosehorn NWR, returning to an off-road route.

The current route highlights scenic and cultural attractions in Calais's downtown including the Calais Waterfront Walkway and the Downeast Heritage Center. It also provides trail users with easy access to food, lodging, and other services available in downtown Calais.

The City of Calais is in the process of building a sidewalk along South Street. The sidewalk will provide for an improved level of safety for pedestrian trail users. It is anticipated that an off-road trail between Calais and the Moosehorn NWR will be connected to the Waterfront by the South Street corridor. Designated bicycle lanes or an urban trail (~15' corridor as opposed to 5-10' sidewalk) would better serve mixed pedestrian and non-motorized users of this trail segment.

**Alternative One** The Sunrise Snowmobilers currently maintain off-road snowmobile trails in downtown Calais connecting the cemetery on South Street with the Calais Waterfront Walkway and with North Street. These trails – both of which are designated as ITS 84 – are part of Maine's Interconnected Trail System for snowmobile users. We explored the option of designating ITS 84 as a segment of the East Coast Greenway in order to create a fully-off road option connecting the ECG terminus through downtown Calais.

Co-designation of the East Coast Greenway route along both South Street and ITS 84 would also create a "Loop Trail" in downtown Calais. Given Calais's position at the start of the East Coast Greenway, a downtown Loop Trail could function as an anchoring experience for long-distance trail users; it would also improve recreational trail access for local residents, linking residential neighborhoods with downtown shopping, existing trails and the elementary school.

In exploring this option, we identified three significant issues that would need to be addressed in order to convert ITS 84 to a trail suitable for year-round use. First is the issue of a suitable trail surface. Wet and spongy ground along ITS 84 is passable on snowmobile; however, it would be an issue for year-round trail use and maintenance. A second issue is that ITS 84 connects in with the existing rail bed approximately 0.3 mile beyond the western end of the Calais Waterfront Walkway. This connection along the disused rail right of way is similarly passable by snowmobile, but ill-suited in its present condition for summertime trail use.<sup>1</sup> Finally, an overarching issue is one of land ownership. Any off-road trail connection through downtown Calais would cross numerous parcels that are in private ownership; extensive land-owner outreach would be needed even to make year-round use of existing snowmobile trails possible.

For all of these reasons, a year-round, off-road trail connection through downtown Calais is most reasonably a medium- to long-range goal for the East Coast Greenway. Siting an off-road trail connection should build on existing snowmobile trails; however, additional siting analysis and planning work will be needed in order to address the issue of connectivity with the Calais Waterfront Walkway.

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<sup>1</sup> Additionally, this section of rail corridor is believed to be private ownership.



## **Part Two: Calais to Moosehorn NWR**

### **Intro**

**Current Route** As described above, the current designated route for the East Coast Greenway from Calais to the Moosehorn NWR follows South Street to US Route 1; and Route 1 to Magurrewock Road (1.2 miles) where it enters the Moosehorn NWR, returning to an off-road route along graded trails through the wildlife refuge.

**Alternative One (Preferred)** In 2004, the Maine Department of Transportation conducted preliminary design and cost analysis for an off-road trail connection – referred as the “Eagle Nest Trail.” This trail would link downtown Calais with the Moosehorn NWR. The MDOT study analyzed three options for an off-road trail. The different alternatives began at the end of Cedar Lane, at the end of the Cemetery Road, and at a location on South Street near the Walmart. With the exception of their starting point, all three options follow same route for most of their length.

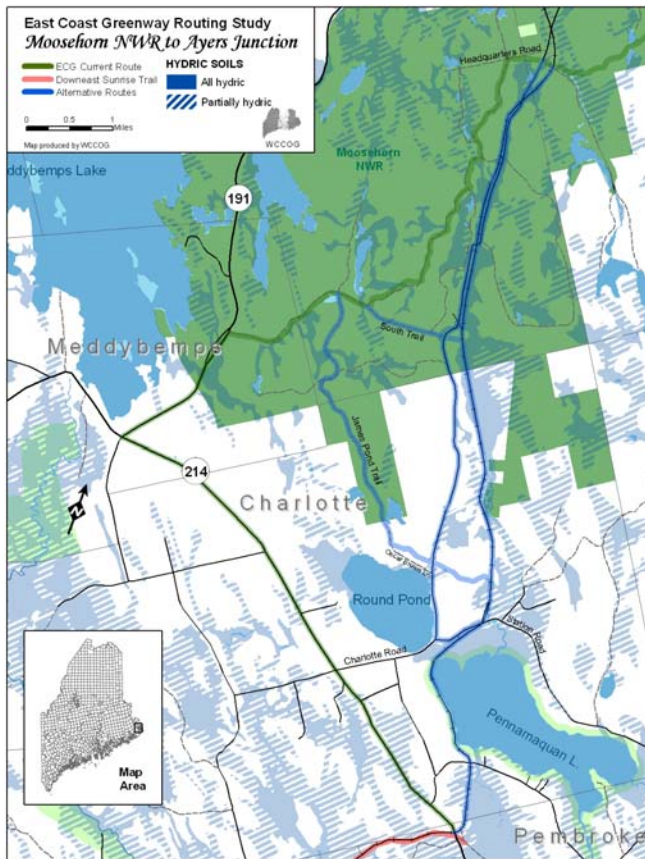
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**Part Three: Moosehorn NWR to Ayers Junction**

**Intro** The current on-road route between the Moosehorn and Ayers Junction is insufficient in as much as there are significant safety issues for pedestrian and bicycle traffic on Route 214 and Route 191; and snowmobile traffic traveling northbound on the Down East Sunrise Trail would not be able to connect through to Calais or existing snowmobile trails.

We explored six alternatives for improved trail connections between Ayers Junction and the Moosehorn NWR. Based a GIS analysis of nationally designated wetlands, hydric and partial hydric soils, and slope in the area between Ayers Junction and the Moosehorn NWR, and conversations with local organizations that would potentially be involved in trail management, we focused on seeking an off-road trail connection along existing, public rights of way.

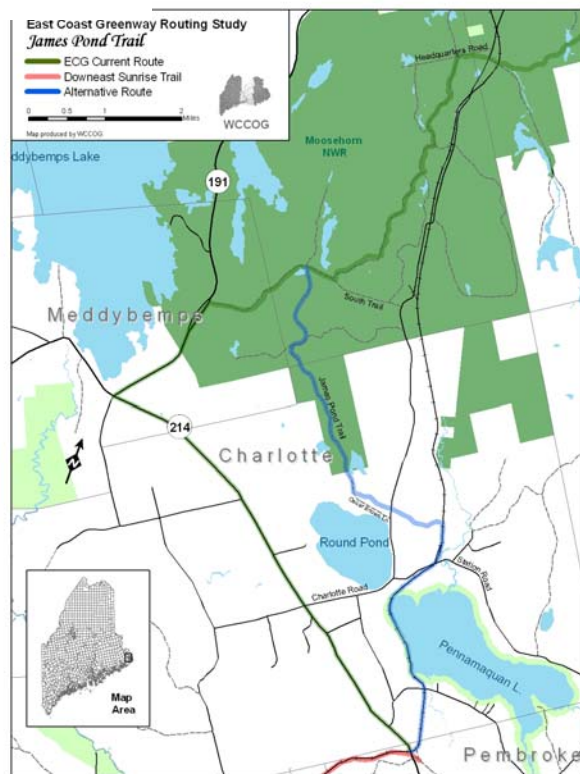
Based on input from local organizations and our own analysis, we recommend Alternative 3 – which runs along the existing rail corridor from the Moosehorn NWR South Trail to Ayers Junction – as the preferred alternative. Alternative 4 and Alternative 5 both provide improved interim access; and we recommended that they be pursued while the fully off-road route is in development.

**Current Route** The current route for the East Coast Greenway exists the Moosehorn NWR's South Trail and follow Route 191 for 1.7 miles; it the follow Route 214 to Ayer Junction (6 miles). Route 191 and Route 214 both have inadequate shoulder width to safely accommodate bicycle or pedestrian traffic; in addition, steep grades on Route 214 are difficult to navigate on bicycle. For snowmobilers, there is also a 4-mile gap between Ayers Junction and the Sunrise Snowmobilers Trail # 2 in Charlotte.



**Alternative One: James Pond Trail** The first alternative that we explored follows the Sunrise Snowmobilers Trail #2 to the Station Road in Charlotte and the existing rail corridor to Ayers Junction. This route would branch off the designated ECG Route through the Moosehorn at South Ridge Road. It would follow South Ridge Road for 3 miles to James Pond; the snowmobile trail for approximately 1 mile, crossing Charlotte Road 0.2 mile north of Oscar Brown Lane; and finally it would follow the rail corridor for 3.4 miles to Ayers Junction.

The benefit of this route is that it would provide a full off-road trail connection between Ayers Junction and the Moosehorn NWR by means of existing rights of way. However, there are two major impediments that we believe make Alternative One impractical at this time. First, staff at the Moosehorn NWR expressed concern that the area of the South Ridge Road goes through one of the more remote areas of the refuge. That portion of the refuge is not



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currently patrolled; and road conditions make emergency response more difficult (except during the winter).

Secondly, the Sunrise Snowmobiler's did not believe that landowners would be willing to allow summer use along the current snowmobile trail from James Pond to the rail corridor. The snowmobile trail crosses pasture land that is actively farmed in season; additionally, there are significant wetlands between the Charlotte Road and the rail corridor that would impede summertime use of the trail.

**Recommendation** *We recommend not pursuing Alternative One at this time.*

**Alternative Two: Headquarters Road** The second alternative that we explored involved bypassing existing snowmobile trails and following the existing rail corridor from the Headquarters Road in the Moosehorn NWR directly to Ayers Junction.

This alternative also has the advantage of providing a fully off-road trail connection between Ayers Junction and the Moosehorn NWR by means of existing rights of way. However, staff at the Moosehorn NWR believe that Alternative Two is impractical for development.

This opinion is based on their assessment the existing rail bed – which is significantly degraded – between Headquarter Road and the southern limit of the NWR. The rail bed, Charlotte Road and Moosehorn Stream all occupy a very narrow corridor within the Moosehorn NWR. Given the poor condition of the rail bed within the Moosehorn NWR extensive grading work would be required to make the corridor safe for use as multi-purpose trail. In the opinion of staff at the Moosehorn NWR, the equipment and utilities needed to do upgrade the rail bed would significantly and negatively impact habitat in and along Moosehorn Stream. Concern was also expressed over management issues with a multi-use trail corridor on this segment of rail bed including: unauthorized vehicular and pedestrian crossings of sensitive wetland habitat; and poor sight lines for the at-grade crossing ½ mile south of Headquarters Road.



**Recommendation:** *We recommend not pursuing Alternative Two at this time.*

**Conversion of the Existing Rail Bed** There are two major issues associated with conversion of the existing rail corridor to a multi-use trail between Ayers Junction and the Moosehorn NWR: 1) perceived impact of converting of the existing rail bed on the return of freight rail traffic to the port of Eastport and 2) the potential impact of trail development on abutters.

MDOT maintains ownership of the existing rail bed between Ayers Junction and the Moosehorn NWR. One reason behind the decision not to continue the Down East Sunrise Trail along the existing rail corridor between Ayers Junction and Calais is that not converting this segment of rail is perceived to hold open the option of a future rail connection between Calais and the port of Eastport. However, there is currently no public owned right of way for rail between Ayers Junction and Eastport. At the same time, input from the City of Calais staff, management at the Moosehorn NWR and MDOT staff indicate that significant upgrades – include regarding and replacement of most, if not all, existing rails and railway ties – would be needed to make rail traffic possible along the existing rail corridor between the Moosehorn NWR and Ayers Junction again.

A second potential issue associated with conversion of the existing rail bed to a multi-use trail is that the trail corridor would be the impact on abutting property owners. The proposed extension of the multi-use trail corridor would cross the Pennamaquan Wildlife Management Area (WMA) owned by the Maine Department of Inland Fisheries and Wildlife (IFW). IFW manages the Pennamaquan WMA primarily for the purposes of wildlife management; with public, recreational access as a secondary goal. Based on initial conversations with the staff at the IFW District office in Jonesboro, conversion of the existing rail bed to a multi-use trail appears to be consistent with IFW goals for the Pennamaquan WMA; however, additional conversations will be needed to address management issues that might arise as a result of trail development and use.

Our initial research also identified 12 private property owners abutting the rail corridor on or near Pennamaquan Lake. Based on their experience working with local property owners on right of way agreements, the Sunrise Snowmobilers identified most as of the effected property owners as being generally supportive of multi-use trail development in the area. Landowner outreach to address concerns about trail construction, management and use is recommended as a first step to exploring the concept further.

We also presented the concept of extending the trail corridor along the existing rail bed as far as South Trail in Moosehorn NWR to a number of key stakeholders. The Sunrise Trail Coalition voted unanimously to endorse the concept. The concept is also supported by the Sunrise Snowmobilers. Both groups also expressed willingness to participate in trail management, should the project moved forward.

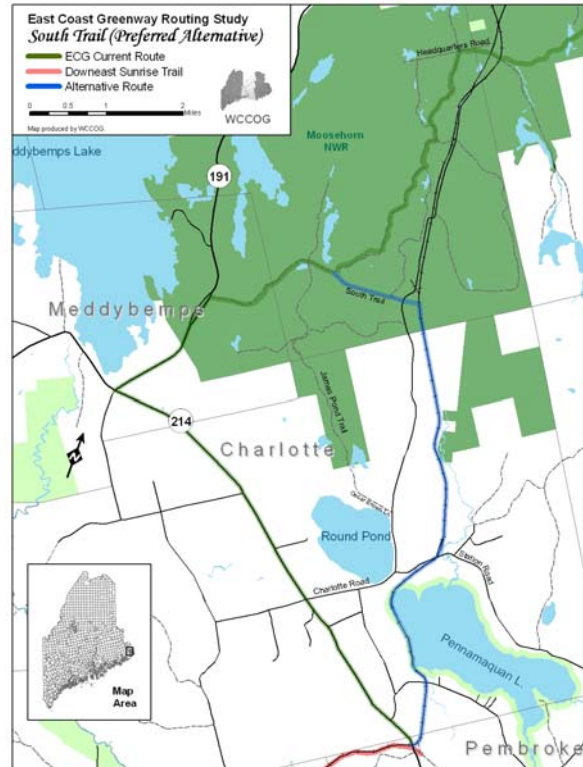
In light of these facts, we recommend that MDOT consider extending the multi-use trail corridor along the existing rail bed at least as far as the Station Road in Charlotte and preferably as far as the South Trail in the Moosehorn NWR.<sup>1</sup> This should be done with the same commitment to “preserve and protect the corridor for future rail use. If conditions develop that enable the return of rail, then the corridor can be readily upgraded to accept new rail.”

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<sup>1</sup> For reasons that are discussed below, we do not recommend extending a multi-use trail along the rail corridor past the South Trail.

**Alternative Three: South Trail (Preferred)** The third alternative that we explored would be to extend the multi-use trail corridor along the existing rail bed from Ayers Junction to just north of the Baring municipal boundary, at which point the ECG route would connect up with existing off-road trails in the Moosehorn NWR via South Trail. Though footpaths exist, there is currently no designated trail connection between the rail bed and South Trail – a distance of approximately 300 yards. Construction of a year-round trail connection between the rail bed and South Trail may require some grading or decking.

This alternative has the advantage of providing a fully off-road trail connection between Ayers Junction and the Moosehorn NWR, largely by means of existing rights of way. This trail would also connect the Down East Sunrise Trail with existing snowmobile trails to downtown Calais. At the same, this routing alternative would avoid most of the wetland impacts and additional construction expenses associated with extending the trail corridor along the rail bed as far as Headquarters Road. There is also a possibility of developing an additional trailhead at Station Road in order to limit roadside parking overflow along the Charlotte Road at the South Trail trailhead; and provide improved pedestrian access along the proposed trail corridor to Pennamaquan Lake.



One concern with development of this route is that the fully off-road connection may encourage ATV traffic from the Down East Sunrise Trail where it would be allowed to continue on through the Moosehorn NWR, where ATV use is prohibited. Peak season ATV use along the proposed trail segment next to Pennamaquan Lake may also be an issue for seasonal home owners abutting the rail corridor. For these reasons, we would recommend that the proposed trail corridor be limited to pedestrian, snowmobile and bicycle users between the Moosehorn NWR and Ayers Junction.

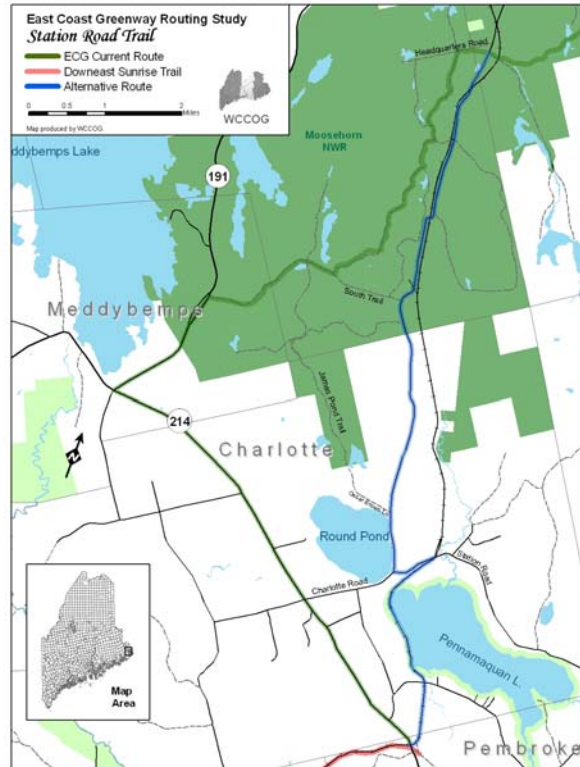
**Recommendations:** We recommend that MDOT – in cooperation with the Department of Conservation, the Sunrise Trail Coalition and the Down East Snowmobilers Association – explore the option of extending conversion of the existing rail bed to a multi-use trail approximately 5 ½ miles beyond the current eastern terminus of the Down East Sunrise Trail at Ayers Junction to the South Trail in the Moosehorn NWR. We recommend that extension of the rail bed conversion be undertaken with the provisos that a) it be done in such a way as to preserve and protect the corridor for future rail use; and b) that the section of trail between Ayers Junction and the Moosehorn NWR be limited to pedestrian, snowmobile and bicycle users.

We also recommend development of a trailhead facility at the Station Road crossing in Charlotte.

**Alternative Four: Station Road** The fourth alternative that we explored would be to extend the multi-use trail corridor along the existing rail bed from Ayers Junction to the Station Road in Charlotte (2.8 miles). The designated ECG route would then follow the Station Road to the Charlotte Road (0.6 mile); and then follow the Charlotte Road to either South Trail (3.5 miles) or Headquarters Road (7.1 miles).

Although this alternative does not provide a fully off-road trail connection between Ayers Junction and the Moosehorn NWR, it does have the advantage of redirecting pedestrian and bicycle traffic off of the more heavily traveled Route 214 and Route 191 corridors; and of providing a connection for northbound snowmobile users of the Down East Sunrise Trail to existing snowmobile trails maintained by the Sunrise Snowmobilers.

**Recommendations:** As an interim improvement, we recommend that MDOT – in cooperation with the Department of Conservation, the Sunrise Trail Coalition and the Down East Snowmobilers Association – explore the option of extending rail-trail conversion at least as far as the Station Road in Charlotte where the trail would connect with existing snowmobile trails in the ITS system.



**Alternative Five: Charlotte Road** The fifth alternative would be to follow Route 214 east from Ayers Junction to the Charlotte Road (2.3); and then follow the Charlotte Road to either South Trail (3.5 miles).

This alternative routing for the East Coast Greenway would reduce the length designated on-road trail by 0.9 mile; and address the safety issues associated with the steep grade on Route 214. However, it would add no new off-road trail; and does not address the issue of trail connectivity between Ayers Junction and existing snowmobile trails. At best, Alternative Five is an interim option to improve trail safety for bicycle and pedestrian users while alternative off-road trail development is being pursued.

**Recommendation:** To provide a short-term, improved level of trail safety of non-vehicular trail uses, we recommend MDOT and the East Coast Greenway coalition revise the interim trail designation to follow Route 214 to the Charlotte Road, thence to the South Trail in the Moosehorn NWR.