



## 1.4 Breakneck Connector: Breakneck Tunnel/Headlands to Breakneck Ridge Station Pedestrian Bridge

**1.4A - Shoreline:** It is not feasible to continue the shoreline trail concept described earlier beyond the Breakneck Ridge headlands up to the Metro-North footbridge. This is due to the extremely narrow width of the land west of the Metro-North tracks and the sensitivity of submerged aquatic vegetation growing along the river bottom immediately offshore. Therefore, this is not the preferred alignment.

**1.4B - Along Route 9D (separated):** The segment between Breakneck Ridge and Breakneck Ridge Station is currently the most heavily-used area, with thousands of hikers arriving by car, train and bicycle on peak weekends. With limited parking, no pedestrian walkways, and no designated bicycle accommodation, the need for a facility to support the high visitor volume is clear. Parallel to the development of this master plan, an advanced conceptual design was developed for this trail segment, in support of an annual New York State Consolidated Funding Application. The trail is designed as an off-road shared-use facility located between the Metro-North tracks and State Route 9D (see plan on p. 46-47).

At the north and south ends of this segment, the trail alignment sits on steep slopes that require elevated walkway structures to provide a level trail. This elevated walkway (p. 43, 44) design concept does not disrupt existing drainage patterns over the steep slopes of Breakneck Ridge by preserving them in their current state beneath the portions that require a structure. A lengthy central portion of this trail segment can be installed at-grade with minimal site work and grading required.

This concept also seeks to provide as much additional parking as possible to accommodate the high visitor population. The existing parking area would be expanded to create a visitor welcoming area that is paved and marked with parking stalls to maximize the use of the space. Permeable pavers would be used to minimize surface runoff and reduce erosion. Parallel parking would be formalized and there would be an additional parking area located at the entrance to the northbound platform for Breakneck Station. It is proposed that parking along Route 9D be relocated from

the trailhead area on the west side and at the trailhead on the east side, just north of Breakneck Tunnel. There is limited sight distance at the southern end of this segment of Route 9D, just north of the tunnel, and high travel speeds throughout (posted speed limit is 55 mph). People trying to parallel park on the narrow shoulders of the road close to the Breakneck Ridge trailhead sometimes turn around at the bend in the road just north of the tunnel where sight distance is short. These unanticipated vehicular movements create extremely dangerous conditions for pedestrians and drivers.

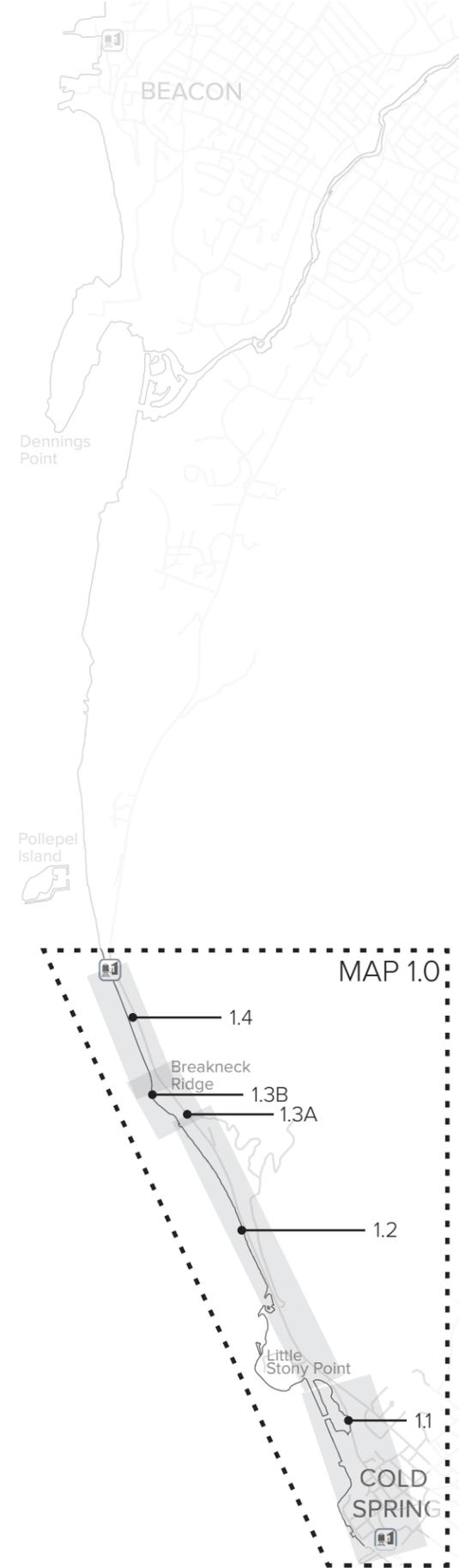
At the south end, five utility poles would need to be relocated down the embankment toward the Metro-North tracks to make room for the trail next to Route 9D so that it can rise up to the Breakneck Ridge trailhead (see Section A-A on p. 46). The design team coordinated with Central Hudson, the local power authority, to determine the feasibility and cost for this work. One of these poles is a 'riser' pole, which brings underground utility lines running under Breakneck Tunnel overhead. The other four poles are standard utility poles and could be rebalanced between the relocated riser pole and the existing utility poles north of the trailhead.

Implementation of this segment of the trail also creates an important opportunity to remove harmful invasive plant species that have colonized areas between the railroad and the water's edge, and to restore a native riparian and upland habitat with native flora that supports wildlife. This work will require Metro-North's review to ensure no impact to operations or buried utilities.

The northern segment of the trail (on structure) meets grade approximately at the southern end of the current (and proposed) parking area. It then continues northward at grade along an existing clearing in the woods. This central segment will have less environmental impact than the northern and southern segments. Approximately halfway between the existing Metro-North northbound Breakneck Ridge train stop and the Metro-North footbridge, the trail begins to climb, again on a raised structure, in order to meet the existing grade at the Metro-North footbridge.



This axonometric rendering depicts the proposed Breakneck Connector trail, as seen looking south towards Breakneck Tunnel and trailhead. The long-term vision includes burying utilities underground. Occasional vaults with manhole access would be required for maintenance, as shown in the foreground.





Existing condition photo taken from atop the Metro-North footbridge looking south



This rendering depicts the proposed multi-use trail on an elevated structure between Route 9D and the railroad, that climbs up to meet the Metro-North Footbridge (view taken looking south from atop the Metro-North footbridge). This concept will be more fully developed in the preliminary design process for this segment of the trail.

# Summary Evaluation

1.4A Shoreline north of Breakneck Ridge

## GOALS

### SAFETY

Completely separated from vehicular and rail traffic, this alignment would provide the maximum safety for trail users.

### RECREATION

This segment of trail would provide a recreational asset that would make the trail as a whole a transformative force in the region.

### HIGHLIGHT & RETAIN NATURAL BEAUTY

The view of the river from the shoreline is spectacular. However, to create a trail here would require significant environmental impacts, such that it has been discounted.

## CONSTRUCTION FEASIBILITY

As stated above, the construction impacts surpass what is considered reasonable and necessary.

1.4B Breakneck Connector (2014 CFA application)

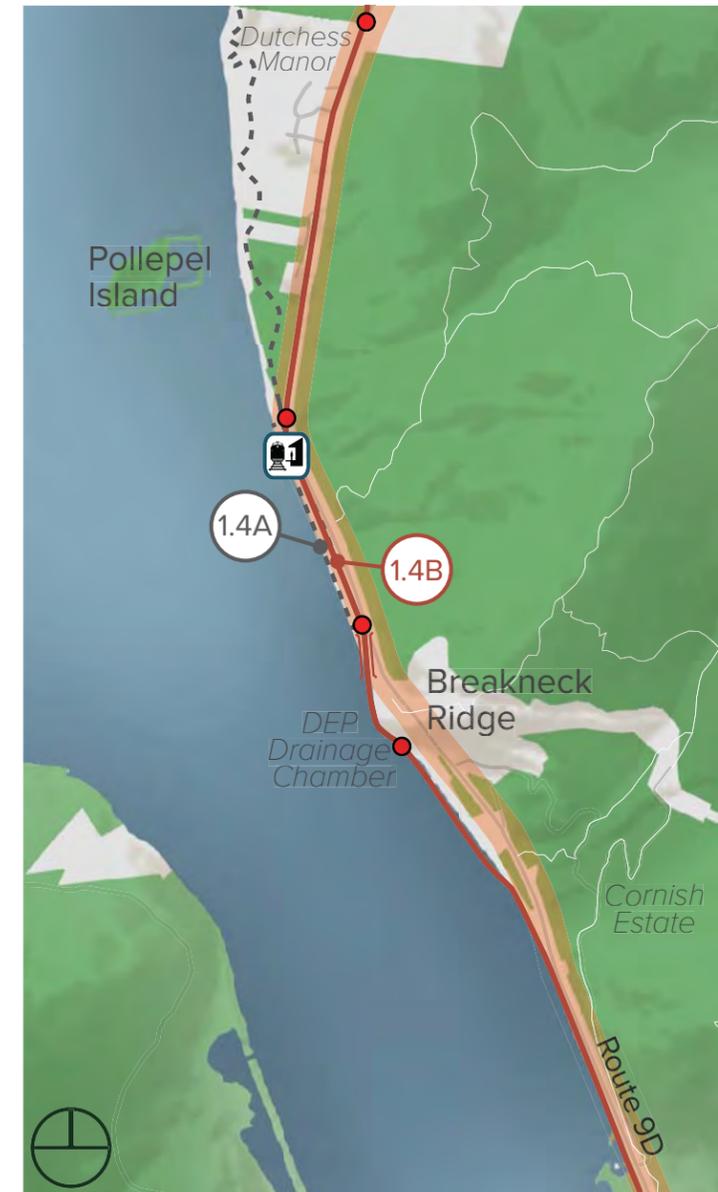
Completely separated from vehicular and rail traffic, this alignment would provide safety for trail users. In this area, the crucial safety improvement would be to the access of the two popular trailheads by motorists and pedestrians.

A 12-foot multi-use path here would provide sufficient space for both users arriving and passing through. As a main entry point for Hudson Highlands State Park, the proposed welcome area would provide much needed trail and stewardship information in addition to more parking.

While the railroad would separate this segment of trail from the river, the trail would rise up on the north and south ends to meet the landing points at higher elevations, providing views above the tracks. These structures were carefully considered to minimize environmental impacts.

This section of trail would require a structure on each end, but care was taken to ensure that the proposed concept was slightly raised off of the ground on the east side, so water can continue to run off the Highlands as it does today. Rather than proposing a trench that would have to be up to 20' deep in some places, a structure on support posts is proposed. Land ownership approvals for the alignment have been given for the concept of this trail, and a portion of the funding applied for has been awarded.

P R E F E R R E D R O U T E



Map 1.4 - Breakneck Connector: Breakneck Tunnel/Headlands to Breakneck Ridge Station Pedestrian Bridge

### Legend

- Preferred Route
- Change in route segment
- - - Alternate Route
- Proposed Route 9D Corridor safety improvements
- State Parks