



Stantec Consulting Services Inc.
288 South River Road Building C, Bedford NH 03110-6815

January 19, 2017
File: 195350431

Attention:

Nathan Poore
Town Manager
Town of Falmouth
271 Falmouth Road
Falmouth, ME 04105

Theo Holtwijk
Director of Long-Range Planning / Economic Development
Town of Falmouth
271 Falmouth Road
Falmouth, ME 04105

Dear Mr. Poore and Mr. Holtwijk,

Reference: Feasibility Study for Road Connecting Clearwater Drive and US Route 1

As outlined in the executed contract, Stantec has performed a feasibility study for a proposed road to connect Clearwater Drive to US Route 1 along the existing Portland Water District easement. Please bear in mind that the plans and estimate included are at a sketch / conceptual level, and many additional details and refinements are necessary to ensure accuracy and constructability.

Two options were investigated:

- Option 1: This option connects Clearwater Drive at Waterview Way to US Route 1, mostly following the Portland Water District easement.
 - The curves in the road alignment at the west end of the proposed access road provide a connection directly across from Waterview Way. The remainder of the road is in the southern portion of the easement to minimize encroachment into the open water near the Foreside Estates access point.
 - Lane widths of 11' and shoulder widths of 2' match the approximate widths of Clearwater Drive. A 5' wide shoulder would provide a bike lane, but this increase in width would increase costs. Additionally, bituminous curb was assumed between the sidewalk and the road. Granite curb would also increase the cost.



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- The plan does not depict, but the estimate includes, changes to US Route 1 including eliminating the raised island and relocating the crosswalk, a pedestrian light pole, a utility pole, and several signs. A traffic signal at US Route 1 is not anticipated, though a formal evaluation of traffic signal warrants was not included in this study.
- As most of this road is proposed to be built through a wet area, material unsuitable for the road foundation will be removed and will be replaced with more stable material. As you might expect, this approach results in a road cost higher than is typical through a dry area.
- Truck turning movements have been checked at the intersections and at Waldo's General Store.
- Access is provided to Falmouth Foreside Estates as well as the front and back portions of the Waldo's property.
- Wetlands have not been mapped and identified, though past flagging was found on the site. The large wetland area behind Foreside Fitness and Tennis is assumed to be a wetland of special significance, though it is possible that it may be classified as a regular wetland. There are a couple of ways to provide wetland impact mitigation, but the currently preferred method is paying an "in lieu" fee. The fee is \$4.30 per square foot for a regular wetland and \$8.60 per square foot for a wetland of special significance. If the project wetlands were found to be all regular wetlands, wetland impact fees would be reduced by approximately \$100,000.
- The total turnkey cost for this option is estimated to be approximately \$1.6 million. The primary driver of cost for this option is the fact that the road would be built mostly in an existing wetland. Excavation, geotechnical investigation, road subbase reinforcement, and wetland mitigation fees are all significant.
- Option 2: This option connects US Route 1 to the Foreside Estates development as a lower cost option.
 - Lane and shoulder widths and curb type match Option 1.
 - The changes necessary to US Route 1 are identical to those needed in Option 1.
 - The same approach is used to build the road through wet areas.



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- Truck turning movements have been checked at the intersection of US Route 1, at Waldo's General Store, and at the access point to Foreside Estates.
- The same wetland type assumptions are made.
- The total turnkey cost for this option is estimated to be approximately \$670,000. The lower cost compared to Option 1 is a direct result of much less of a wetland impact and a shorter road.

As mentioned, the project area contains a large amount of wetland area dominated by a mix of wetland types, and permitting could be complex for the proposed road. It is expected that this project would require an individual permit from the Maine DEP and an Army Corp of Engineers permit. Both agencies would likely allow the project to be built, provided there is no other alternative that avoids wetland impacts and all efforts have been made to minimize impacts.

The dominant wetland type at the east end of the proposed road is an open water/emergent wetland complex. These wetland types can be classified as Wetlands of Special Significance (WSS) by the Maine DEP depending on whether they are naturally occurring or man-made. Road projects are allowed in WSS, but the cost of compensating for those wetland impacts can be substantial.

The project will require a significant permitting effort and some form of wetland compensation. One other unknown is the possible presence of vernal pools. If a Significant Vernal Pool were identified within the project area, this could substantially increase the cost of compensation. This cost estimate was developed with the assumption that there are no Significant Vernal Pools in the project area. No vernal pools are mapped on the "Town of Falmouth Vernal Pools Map" found on the Town website.

Regards,

STANTEC CONSULTING SERVICES INC.

A handwritten signature in black ink that reads "Mark J. Debowski".

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Design with community in mind



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Attachment: Options 1 and 2 Plans and Estimates