

STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

CENTRAL REGION DESIGN AND CONSTRUCTION
PRELIMINARY DESIGN AND ENVIRONMENTAL SECTION

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February 16, 2007

Re: West Dowling Road
Connection Project
Project No.: STP-0532(5)/55012

Campbell Creek Bridge

Ed Weiss
Department of Natural Resources - OHMP
550 W. 7th Avenue, Suite 1420
Anchorage, AK 99501

Dear Ed:

As discussed at the meeting held on February 1st, 2007, the West Dowling Road Connection Project Environmental Assessment and Programmatic Section 4(f)/6(f) evaluation contained the incorrect clearance height of the Campbell Creek Bridge. The height listed, and the correct height, are both below the minimum clearance requested in your EA comments dated January 15, 2007.

At the meeting, it was decided that the project team would look at ways to increase the clearance under the bridge that did not increase impacts to the Campbell Creek Greenbelt (a property protected by Section 4(f) of the Department of Transportation Act and Section 6(f) of the Land and Water Conservation Fund Act.

The project team identified two ways of increasing the clearance; lowering the ground elevation on the west side of the creek or reducing the depth of the bridge girders.

To achieve the requested clearance of 14 feet, the ground elevation would have to be lowered below the water level of Campbell Creek. Consequently, the new channel will probably contain standing or flowing water at all times. In the January 11th agency coordination meeting, you indicated that moose would prefer not to walk through water, so this option alone does not appear to satisfy the ADNR/OHMP request to accommodate moose passage.

The bridge described in the EA is the most economical standard sized pre-stressed bulb-tee girder for this particular application. That girder has a depth of 65 inches and is designed to accommodate 4 inches of asphalt for a total depth of 69 inches. Using the

openness ratio formula provided by DNR/OHMP, this bridge has an openness ratio of 3.2 (using on the 10.2 feet of clearance on the Campbell Creek trail).

Switching to a steel structure would reduce the bridge depth allowing approximately 12.2 feet of clearance on the bike trail and 14.9 feet in Campbell Creek. However, a steel bridge would require piers beneath the bridge. The piers could be placed outside the normal creek channel, but inside the 100-year floodplain. Using a steel structure would require increasing the length of the bridge by approximately 25 feet (to approximately 114 feet). Using the openness ratio formula provided by DNR/OHMP, this bridge has an openness ratio of 3.0 (using the height on the Campbell Creek Trail). This openness ratio is less than the bridge currently included in the Proposed Action. In general, DOT&PF prefers not to use steel bridges because of increased operations and maintenance (O&M) costs. This combined with the addition of piers in the floodplain and the less favorable openness ratio results in DOT&PF concluding that steel bridges are not preferred for this project.

Reducing the bridge depth may be possible by using a 53 inch girder instead of a 65 inch girder. A bridge using a 53 inch girder has an openness ratio of 3.6 (using a clearance of 11.5 feet at the Campbell Creek Trail). However, at approximately 100 feet in length, the bridge is reaching the maximum practical length of the 54 inch girder.

Based on the analysis, the 65 inch girder remains the preferred option by DOT&PF and will be used in the Environmental Assessment.

Please provide your comments on the revised bridge over Campbell Creek by March 3rd, 2007.

Sincerely,

A handwritten signature in black ink, appearing to read "Miriam McCulloch", with a long horizontal line extending to the right.

Miriam McCulloch, PE
Project Manager

Attachments: Revised Campbell Creek Bridge Figure

