

New Lake Otis Underpass on Campbell Creek bike path

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03 August 2009

People cross five lanes of traffic (orange on map) to avoid the nearly ½ mile detour along Lake Otis to reach the current Waldron underpass (green on map).

There is room for a “direct” underpass under the north edge of the Campbell Creek traffic bridge. On this side of the creek there is also room for a direct trail extension to replace walking along East 47th Court.

The purpose of this description is to recommend construction of that underpass and its linkage to the existing trails on both the east and west sides of Lake Otis parkway (red on map).

The proposed underpass forms an important connection linking two sections of the Campbell Creek trail.

Once the links under the Seward Highway are also completed this trail will provide a beautiful and continuous trail for many miles along one of Anchorage’s longest greenbelts.

The current bike path that generally follows Campbell Creek is on the south side of the stream when one looks east from Lake Otis and on the north side of the stream where it takes up again near the West end of E. 47th Court.

Campbell Creek passes under Lake Otis Parkway about 1100 feet south of Tudor Road. The bridge carrying the Lake Otis traffic across Campbell Creek has about 5 feet of



clearance above the normal water level. The sloping embankments under this bridge are about 15 feet wide sloping from water level to about 2 feet where they meet the bridge abutments.

The current plan is for bikers and hikers is:

- to go south along Lake Otis for about 1000 feet,
- and use the Waldron underpass to cross Lake Otis,
- return to the trail near Campbell Creek by following the West side of Lake Otis to E. 47th Court, and
- walk along that street to the resumption of the Campbell Creek trail.

With the proposed underpass and trail connection this detour and the walk through the residential neighborhood would be replaced by a short stroll/bike along an attractive stream.



The approximate trail connections are shown in red on the above satellite terrain picture. At a slight angle to Lake Otis is the very long steel pedestrian bridge that spans Campbell Creek. It may be desirable to reorient this bridge to better serve pedestrian traffic. Its length, which is excessive in its current location, could be used a bit further upstream to span the wider part of Campbell Creek.



Steel pedestrian bridge (foreground) and concrete car bridge (background) from the east.

The water depth is about 12 -16 inches at the level shown in these pictures and in the drawings. At flood stage it gets about a foot deeper. Note that the steel bridge, even though it is open lattice, has its base about 20 inches higher than the solidly obstructive car bridge. It seems probable that at the time of relocation it could easily be lowered that 20 inches allowing an easier mate with the underpass walkway incline.

The trail to the West



Car bridge over Campbell Creek from the west.

The north shore contains more than sufficient undeveloped land to permit a gentle ramp down into the underpass and a good trail to connect to the existing Campbell Creek trail beyond the end of E. 47th Place.

The strip of land between the landowners' fences and Campbell Creek is often over 50 feet, but does narrow in one section (after the ascending ramp should be complete) to 10 feet. Some rip-rap may be needed to insure the trail does not wash-out in this area. This land is shared with a power line easement where the poles are set about 7 feet from the landowners' fences.

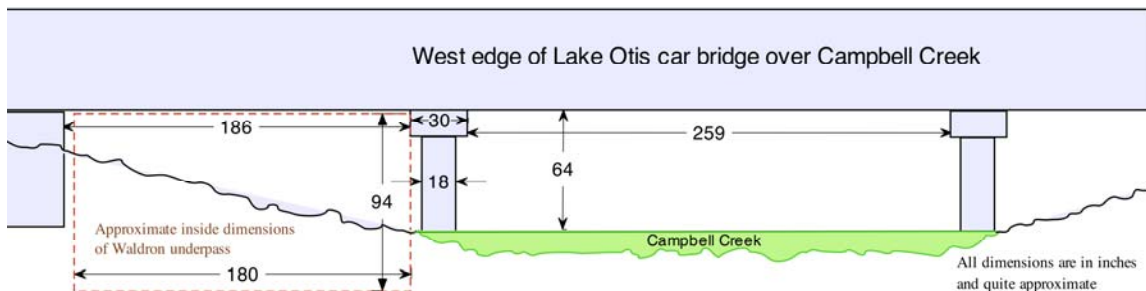
If this section of trail is lighted the fixtures should be chosen with great care. The Campbell Creek trail is lighted to the west and those fixtures, while somewhat collimated, spill significant light into adjoining areas to the disgust of local landowners. More highly collimated fixtures to confine the light exclusively to the trail and not interfere with the neighbors is in order.



View west just north of the Campbell Creek along the power line easement.

Is an underpass feasible?

As seen in the reduced size drawing below, the normal water surface in the creek is a little over 5 feet below the bottom of the bridge. To obtain an 8 foot height the underpass will need to be about 3 feet below the water level. Excavation and a suitable wall must be built to prevent the stream from flooding the walkway.



A larger version of these drawings is available as a separate MS Word document: [Lake Otis bridge drawings.doc](#) or as EazyDraw files: [Lake Otis underpass, East & West](#).

The underpass at Waldron is 15 feet wide and nearly 8 feet from floor to ceiling. Its floor is 7 feet below ground level on the west end where a 60 foot long slope brings one down from street level to the underpass. The east end is about 12 feet below street level where a 170 foot ramp allows bikes to enter from the south.

The underpass at Waldron is quite wide. Other underpasses in Anchorage are narrower and trails are generally an ample 10 feet wide, so if construction of this underpass would be difficult using the entire 15 feet, the width could easily be reduced. This definitely implies the width available at Campbell Creek is sufficient.

Constructing a waterproof wall to exclude the stream could easily provide a full height underpass. Greater depths and the associated drainage have been handled successfully at Waldron.

Underpass Comparison		
Feature	Proposed	Waldron
Height	8 feet	8 feet
Width	13-14 feet	15 feet
Depth below surroundings	5-7 feet	7-12 feet
Minimum length of ramp slope 9:1	45 feet	63 feet

West portal of the underpass



Campbell Cr. flowing from the west portal of Lake Otis bridge between support columns.



View from West along north embankment where proposed underpass would be built.

If the full width between abutment and support columns is utilized there is approximately 15.5 feet as shown on the drawing in the feasibility section. If the wall holding back the stream is built to align with the major beam atop the support columns only 15 feet are available.

A further consideration will be the depth of the northern abutment. Only 2 to 3 feet are visible, so a look at the design drawings will be needed to ascertain whether significant additional work will be needed if an 8 foot high wall is needed.

East portal of the underpass



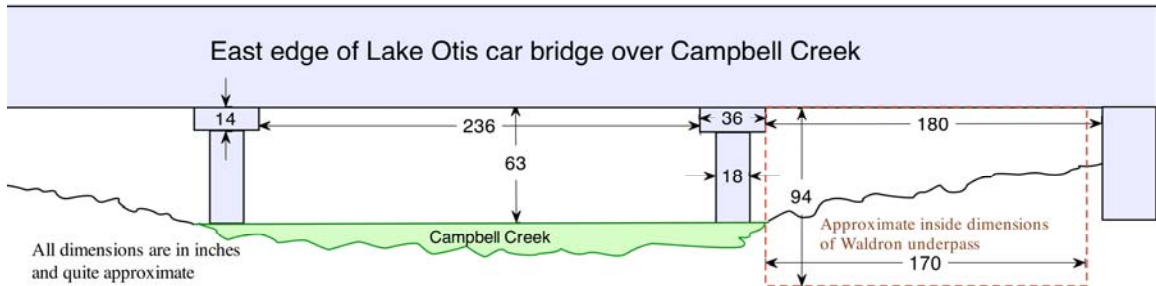
East side of Lake Otis car bridge over Campbell Creek showing northern bridge supports.

Some of the rip-rap on the current northern embankment will be useful in nudging the northern edge of the stream a bit to the south since a minor portion of the creek flows on the north side of a couple support columns.



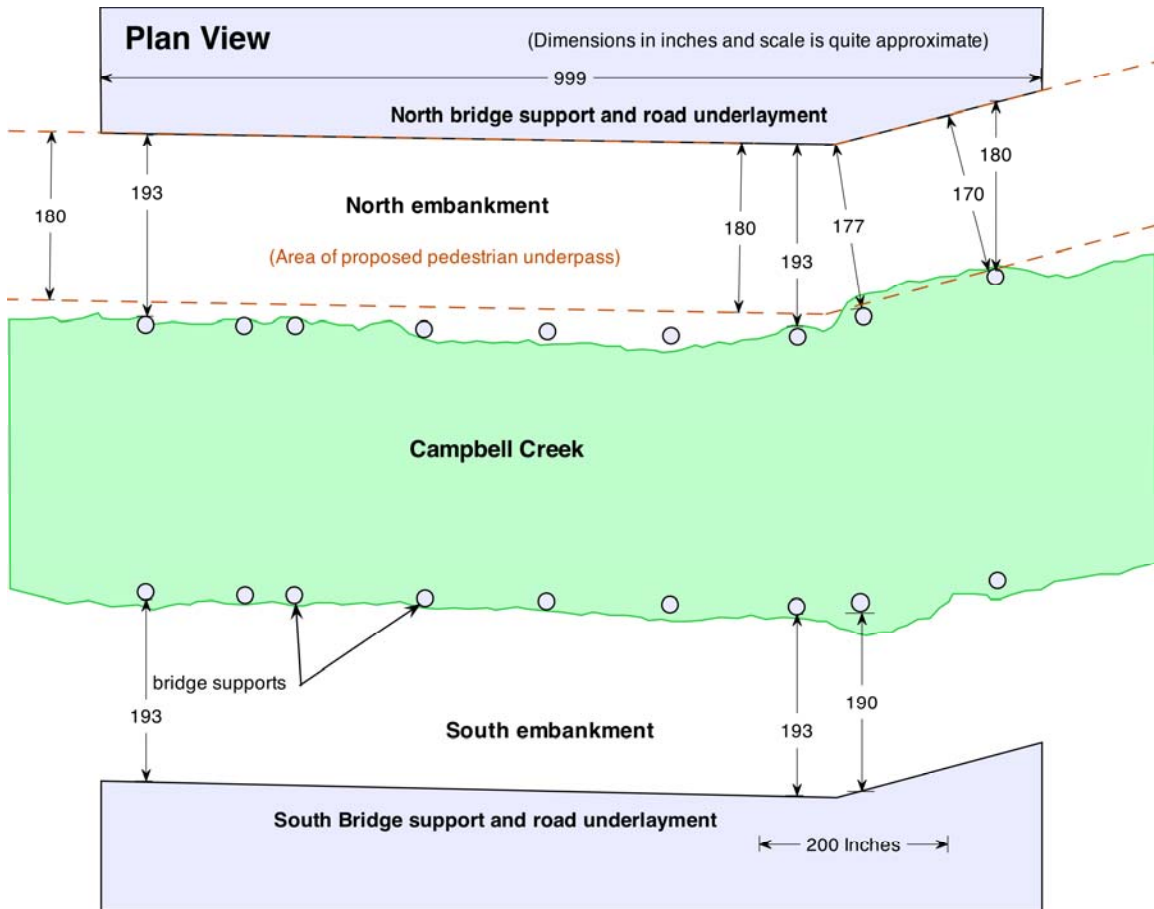
View from East along north embankment where proposed underpass would be built.

The bridge abutments and support columns make an angled dogleg to the north for the easternmost fifth of the proposed underpass. This narrows the potential pedestrian underpass by about 10 inches on the eastern end, permitting about a 14 feet width.



The drawing above is not really correct since at the angle the bridge makes to the walkway the underpass dimension would occupy the full 180 inches. However the actual width of the walkway would be 170 inches. In reality the underpass uses the entire width.

This is shown more clearly on the plan view where the angle between the two dimensions is clearly shown:



Wall construction

To provide better access to the east end of the underpass area it may be desirable to move the steel bridge first. If it is moved further east, access for equipment from the north to the east portal will not be as constrained. If its piers are lowered about 20 inches it will also make it possible to cut the final ramp profile down into the underpass. This will allow a milder incline to the bridge from the underpass.

Several possibilities exist while constructing this wall. It could be built full height to the bottom of the bridge above or stopped at some intermediate height. Local residents do not remember flood levels approaching bridge height; flood levels are usually about 4 feet below the bridge. Actual records may exist that would allow better estimates. If the wall could be stopped at 4.5 or 5 feet height the underpass would be significantly more attractive. Another very unique possibility would be to put a couple of transparent plastic sections in the wall that would permit fish watching both above and below water. It might

even be combined with some low level LED lamps below the opposite shore to add illumination.

Funding this project

This project will undoubtedly require special funding since it is now quite remote from most road or trail improvement projects. I would hope the legislature sees fit to add this as a line in some item of their next budget.

This proposed underpass will add an unusually attractive and safer connection between two sections of the Campbell Creek trail.

Once the links under the Seward Highway are also completed, a beautiful and continuous trail for many miles along one of Anchorage's longest greenbelts will have been achieved.