

# STAFF REPORT

**To:** Mayor and City Council

Agenda Item: **B.3**

Date: 3-7-2007

**Thru:** Charles McNeely, City Manager

## **Subject:**

**Staff Report: Discussion and potential direction to staff regarding the Eco-Channel Concept for the Downtown River Reach.**

**From:** Mahmood Azad, P.E., Senior Civil Engineer

**Summary:** The Carson Truckee Water Conservation District (CTWCD) has authority and responsibility to maintain the flood flow capacity of the Truckee River through the downtown reach. Traditional techniques for maintaining this capacity consisted of excavating this channel after flood flow events. This practice has caused concern amongst agencies responsible for maintaining the aquatic habitat and ecosystem functions through the downtown river reach. City staff started partnering with CTWCD staff to develop an alternate process for providing adequate flood capacity while also incorporating a low flow channel that also addresses protecting the aquatic habitat of the downtown river reach. Thus, the concept of a low-flow channel (eco-channel) that could increase and maintain flow capacity was developed. The eco-channel will lend itself to recreation as a racecourse for kayakers and tubers. It will also serve as a connector between the upper and lower whitewater park, once developed, and as an access point to persons wanting to enjoy some quality time on the River. The proposed conceptual eco-channel is a meandering low-flow channel that can still pass high flood flows but would improve the aesthetics of the river; increase recreation opportunities; increase aquatic habitat; and potentially improve water quality. Staff has obtained funding through the Truckee River Fund and the Carson Truckee Water Conservation District to construct such a channel within a portion of Downtown and requests Council direction to proceed.

**Background:** In the past, the CTWCD has used wholesale excavation of the downtown reach of the river to maintain flow capacity. This resulted in significant loss of aquatic habitat in a reach that was already impaired. Agencies like the Nevada Division of Environmental Protection (NDEP), the Nevada Division of Wildlife (NDOW), the US Fish and Wildlife Service (USFWS) and other organizations expressed concern over this practice. CTWCD staff and City staff determined that the excavation of a low-flow channel only half the width of the current channel could preserve the aquatic habitat and still provide flow capacity. A conceptual design and location of the channel is shown in Figure 1.

**Discussion:** The concept of the eco-channel was presented to the CTWCD Board and the TMWA-Truckee River Fund Advisory Group (TRF) for funding. Both these entities have agreed to fund the design, development, facilitation and construction of this project. City and CTWCD staff are currently developing a Technical Advisory Committee (TAC) that will participate hands-on in the development of the design of the eco-channel. Members of the TAC

will consist of agencies and organizations interested in furthering the water quality and recreational aspects of the Truckee River. Because of the size of the TAC, a professional facilitator will be used to further the collaborative process.

The baseline objectives for the project have been developed and are as follows:

- Increase and maintain flood stage capacity
- Increase water-contact recreational opportunities
- Improve visual aesthetics
- Improve aquatic habitat
- Increase assimilative capacity (nutrient processing)
- Improve water quality
- Improve fish passage
- Improve fish habitat for recreational fisheries

One of the specific functions of the eco-channel is to reduce in-stream water temperatures. At low-flow, water will only flow in the eco-channel and the rest of the channel will be relatively dry.

A significant constraint to this project is the maintenance of the channel after a flood event due to deposition of rock cobbles. It is expected that at least some of the eco-channel will become filled in with gravel and cobbles which would have to be removed to maintain the eco-channel. CTWCD and City staff are working to develop a funding source for long-term maintenance.

FIGURE 1: Downtown eco-channel location and concept



The eco-channel will most likely be about 62 feet wide (half the width of the existing channel) and may be two feet to five feet deep. The channel will begin at the last whitewater park fall and end about 120 feet downstream of the Lake St. Bridge. Kayakers, rafters and tubers will be able to speed down the eco-channel to a future below-Lake St. Bridge whitewater section. Staff and

consultants considered an extension of an environmentally friendly whitewater park in the downtown section, but the lack of gradient and constriction of the channel makes it infeasible. An environmentally friendly whitewater park below the Lake St. Bridge appears feasible, but needs additional study. It should be noted that the eco-channel will lend itself to recreation as a racecourse for kayakers; a circuit for tubers who can put in at the existing whitewater park, take-out below the Automobile Museum and walk back to do it again; to waders and loafers looking for some quiet time “in the River”; as a connector between the upper and lower whitewater park, once developed; and to fisherman wanting to enjoy some quality water.

**Financial Implications:** Total project budget is \$935,000 of which \$30,000 is for project management as an in-kind service (not cash). For developing design, permitting and bidding, \$120,000 are being reserved, and the remaining \$785,000 is for site construction. The planning level budget is provided below.

➤ Geomorphic survey	\$15,000
➤ Modeling (capacity, velocity & etc)	\$25,000
➤ TAC	\$10,000
➤ Plans, specs, bid package	\$50,000
➤ Permitting	\$10,000
➤ Facilitation & coordination	\$10,000
➤ Construction (estimated)	\$785,000
➤ Project Management	\$30,000
➤ <b>TOTAL</b>	<b>\$935,000</b>

To date, we have received communications that the Carson Truckee Water Conservation District will fund \$505,000, the Truckee River Fund (from TMWA) will provide \$370,000 and the City will provide \$30,000 through in-kind services. The project is lacking \$30,000 which may be through donations from others or the sewer enterprise fund.

**Recommendation:** Staff recommends that Council direct staff to proceed with the implementation of the Eco-Channel Project for the Downtown River Reach and bring forward required agreements at a subsequent meeting.

**Proposed Motion:** I move to approve the staff recommendation.