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Memorandum

Department of Public Services

To: Mike Herring, CA

From: Mike Geisel, DPS

Date: 8/26/2013

Re: Riparian Trail – Capital Project

Over the course of the last several months, the creek channel adjacent to the Riparian Trail has eroded significantly in areas, to the extent that the trail itself is jeopardized. As you are also aware, the location of this trail, as well as the means and methods used to construct the trail within the "conservation easement" was heavily restricted by the Corps of Engineers. We have inspected the current conditions and identified multiple areas that should be addressed in an ongoing effort to preserve and protect our Riparian Trail investment.

As you know, the Riparian Trail construction was initially funded in 2010 by a combination of revenue sources. Funding was provided by a Department of Energy grant through the stimulus program, by the Municipal Parks Grant Commission, and by the revenues generated by Proposition P. This trail project was also intimately linked with the construction of the Lydia Hill\August Hill road connection. The road connection itself was necessary to complete the trail, and the stormwater channel improvements were mandated by the Corps in conjunction with both the road and trail improvements.

Creek channels are dynamic ecosystems that are sensitive to minor changes. What appears to be a minor alteration can result in unintended reactions of the creek in its continual efforts to achieve a stable channel base and cross section. The damage and current conditions are more clearly described in the attached memorandum from Public Works Director\City Engineer, Jim Eckrich. The channel stabilization that is necessary is much more comprehensive and complicated than a simple placement of "rubble" to protect a channel wall. Such a repair would simply shift the damage to an alternative location along the channel, likely exacerbating the problem significantly. As such, it is necessary to contract with a design specialist who is well versed in "fluvial geomorphology". Fortunately, we have had direct experience with multiple civil and environmental design firms in the area with exactly that type of skill. This skill set is beyond our internal capabilities and certainly the work involved is outside of the time available from our in-house engineers. Finally, given the initial and ongoing involvement of the Corps of Engineers in the "conservation easement", and the environmental permitting which will be required, it is very desirable to engage a design professional with a strong reputation and work history with the Corps of Engineers.

Accordingly, I believe we should engage an engineering consultant to review existing conditions, propose repair alternatives, prepare permitting documents, and assist in the preparation of bid documents if necessary. Fortunately, due to savings achieved

elsewhere during 2013, we have sufficient funding in the capital projects fund to contract for these professional services. We estimate the cost of these professional services to be $60,000, but that figure will be dependent upon the final scope of work and negotiations with the selected professional services firm. As such, **I request that this information and recommendation be forwarded to the Planning and Public Works Committee of Council to authorize staff to initiate the process for procurement of professional services using existing budgeted funds in the capital projects fund.**

Once a contract and associated fee is negotiated, staff will forward a recommendation to City Council, requesting authorization to enter into a contract with the successful firm. If you have any questions, or require additional information, please advise.

Attachment

→ ok'd to forward to PARKS/REC COMMITTEE 9/16/13

9/1/13

Cc Jim Eckrich, Public Works Director\City Engineer
Tom McCarthy, Parks and Recreation Director
Jeff Paskiewicz, Senior Civil Engineer

MEMORANDUM

DATE: August 15, 2013

TO: Michael O. Geisel, P.E.
Director of Public Services

FROM: James A. Eckrich, P.E.
Public Works Director / City Engineer

RE: Riparian Trail

As you know, there is significant channel erosion and bank incising occurring along Chesterfield Creek in the vicinity of the Riparian Trail. Visual inspection reveals that the flowline of the channel has been incised up to eight feet in certain areas. The erosion and incision are threatening sanitary sewers which cross the creek, the creek bank, and the Riparian Trail itself.

The erosion and incision occurring in this area clearly indicate that Chesterfield Creek is actively evolving in an effort to achieve a stable channel base and cross section. Both sides of the creek contain nearly vertical banks between eight and fifteen feet in height. If corrective action is not taken, the creek will continue to incise and more and more of the bank will slough off into the creek. As the banks erode, any structures supported by the bank will fail. Of course, one of these structures in the Riparian Trail.

In cases like this, the first action many agencies would take would be to solely address the areas where erosion is occurring. However, when a channel is actively incising, individual efforts to address erosion can often cause a more harmful result upstream or downstream. When this is occurring, it is important to secure the services of an expert who understands geomorphology and how to comprehensively address a section of stream. Accordingly, I recommend that the City of Chesterfield secure the services of an engineering firm to perform field inspections, study the stream, and design a course of action which will responsibly correct the erosion / incision of Chesterfield Creek while protecting the Riparian Trail. Preliminary estimates indicate that design services will cost around $60,000, with construction ranging from $200,000 to $400,000. Of course, it is difficult to estimate construction costs until a scope is defined.

On the next page you will find three photographs of Chesterfield Creek in close vicinity of the Riparian Trail. These are just a sample of what is occurring, but provide some visual indication of the active incision, utility exposure, and near vertical creek banks.

Action Recommended
This matter should be forwarded to the Parks and Recreation Committee, which should authorize Staff to secure the services of an engineering firm to design a solution to the problems occurring on Chesterfield Creek, including a comprehensive cost estimate.