Meeting Date: March 15, 2021

TOWN OF MORAGA **STAFF REPORT**

To: **Members of the Park & Recreation Commission**

From: **Mark Summers, Associate Civil Engineer**

Subject: **Receive Update on Laguna Creek Restoration Project (CIP 16-201) and Provide Feedback to Staff**

Introduction

The primary purpose of this agenda item is to provide an opportunity for the Park & Recreation Commission to receive an informational presentation on the Laguna Creek Restoration Project (Project) and to provide feedback to staff.

The proposed Laguna Creek Restoration Project is located at the Town-owned Hacienda de las Flores property (Hacienda) at 2100 Donald Drive. The Project consists of removing an underground culvert near the Pavilion building and restoring a natural channel in its place in order to provide improved flood protection for the Pavilion and other adjacent facilities at the Hacienda.

Background

The contributing watershed at this location is about two square miles and includes the neighborhoods of Campolindo, Carol Ranch, and Rheem Valley, among others. Laguna Creek generally flows southward, variably within large underground storm drain pipes or in open channel creeks, eventually discharging into the Upper San Leandro Reservoir.

Upstream of the culvert at the Hacienda, Laguna Creek flows as an open channel creek where it is joined by a tributary creek from Donald Drive. Downstream of this confluence, Laguna Creek flows into an 8-foot diameter corrugated metal culvert (to be removed) near the Pavilion. After traveling through the 240-foot long culvert, the creek "daylights" into an open channeled creek again for about 100 feet before entering a 12-foot by 14-foot rectangular culvert that flows beneath Devin Drive.

The 8-foot diameter culvert has been subject to flooding over the years as it is not adequately sized to handle large peak flows. For example, during the 2005-2006 winter storms, heavy rains caused Laguna Creek to rise and flow over the banks in the vicinity of the Pavilion. This resulted in significant damage to the Pavilion building itself, as well

as damage to the wooden footbridge and walkways, a wrought iron gate, more than 200 feet of chain link fence, and the retaining walls, headwalls, wing walls, and banks were washed out and damaged.

On December 5, 2012, the Town entered into a consultant services agreement with WRECO to evaluate alternatives to protect the Hacienda facilities against flood risk from a 100-year flood event. WRECO provided engineering services to assess the existing conditions of Laguna Creek within the Hacienda property and recommendations to protect the Pavilion and adjacent facilities.

On April 23, 2014, the Council received a Hydraulic Study and Alternatives Analysis (Attachment A) and presentation (Attachment B) from WRECO outlining ten alternatives that were studied to relieve flooding at the Pavilion. The alternatives were:

1. No build
2. Line the inside of the existing culvert with a smooth lining
3. Construct a parallel 9-foot diameter reinforced concrete pipe culvert
4. Construct a 9-foot diameter reinforced concrete pipe culvert and relocate the existing sewer main
5. Replace the existing culvert with a larger 14-ft by 12-ft reinforced concrete box (RCB) culvert
6. Install an upstream detention basin
7. Raise the Pavilion floor elevation above 100-year flood elevation
8. Relocate the entire Pavilion structure outside of the 100-year floodplain
9. Construct a flood wall around the Pavilion
10. Daylight and restore Laguna Creek to contain the 100-year flow within the banks by removing the existing culvert

Only two of the alternatives (Alternatives 5 and 10) adequately improved the channel capacity to convey the 100-year flow of Laguna Creek and provided flood protection to the Pavilion during the 100-year storm event. WRECO determined that restoring the natural channel (Alternative 10) would have a lower cost than the box culvert (Alternative 5). Additionally, they determined Alternative ten may be eligible for grant funding as a channel restoration project. Alternative 10 – daylighting and restoring Laguna Creek – was therefore recommended to Council.

Council adopted Resolution 34-2014 to accept the Hydraulic Study and chose the recommendation to restore the natural channel (Alternative 10) based on the study and the presentation. Council directed staff to prepare the recommended natural channel restoration project documentation to be “shovel ready” and to pursue grant funding for the Project.

Preferred Alternative

The Council-preferred Creek Daylighting project generally entails: removing the existing 8-foot diameter pipe; removing the existing inlet headwall; and restoring an open channel that mimics a natural stream. The project would require relocating an existing sewer main and installing a natural-bottom arch culvert bridge in order to maintain connectivity to the existing Moraga Road entrance. The removal of the culvert and creation of the channel

is intended to provide sufficient capacity to convey the 100-year storm event, prevent flooding to the Pavilion building, provide a natural amenity to the public, and restore aquatic and riparian habitat.

Hydrology

As discussed in the 2014 WRECO Hydraulic Study, there are two sources of peak flow data: 1) FEMA; and 2) Contra Costa County Flood Control District (CCCFD). The FEMA peak flow data (last revised in March 2017) are included in the Contra Costa County Flood Insurance Study and were calculated based on approximate methods using data from nearby watersheds. The CCCFD peak flow data (see Attachment C) were calculated in 1992 and assumed "full buildout of the Town." This means they assumed 100 percent development per the General Plan that was in effect in 1992 and are therefore much higher than the FEMA peak flow rates as shown below:

Recurrence Interval	FEMA	CCCFD
10-year Peak Flow	660 CFS	1,100 CFS
50-year Peak Flow	1,100 CFS	1,560 CFS
100-year Peak Flow	1,300 CFS	1,720 CFS

Since 1992 the Moraga Open Space Ordinance (MOSO) has limited development in certain areas. For these reasons, staff believes that the 1992 CCCFD data may reflect overly conservative peak flow rates. As part of the project, a hydraulic study is being conducted to determine the appropriate design criteria.

Grant Funding Sources

Town Council provided direction to staff to pursue grant funding. Over the years, staff applied for multiple grants. The Town was successful in being awarded three Project grants[1]:

1. California Natural Resources Agency River Parkways $399,980
2. East Bay Regional Parks District Measure WW Urban Creeks $599,743
3. FEMA Hazard Mitigation Grant Program $803,331

The California Natural Resources Agency (CNRA) River Parkways grant was prepared by WRECO, submitted in September 2015, and awarded in June 2018. This grant expires on May 1, 2025.

The East Bay Regional Park District (EBRPD) Measure WW Urban Creeks grant was prepared by staff, submitted in February 2018, and awarded in May 2018. This grant expires on December 31, 2025.

The Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant Program grant was prepared by WRECO, submitted in November 2017, and awarded in March 2020. The award was based on an estimated Project cost of $1.2 million, with FEMA to cover 66 percent of the total, or $803,331.

FEMA releases funding in phases: Phase 1 – Preliminary Engineering; Phase 2 – Final

[1] Grant Application packages are available for inspection upon request.

Engineering; and Phase 3 - Construction. The Town must complete each phase successfully before funds are released for the next phase.

FEMA has approved the Town to proceed with Phase 1, which includes the following tasks:

a. Project Management
b. Field Investigation and Survey
c. Hydraulic Study
d. Biological Resources Study
e. Environmental and technical studies (including preparation of CEQA documentation)
f. Sixty-five percent complete *Plans, Specifications, and Estimates* (PS&E)

Engineering Design Process

A *Request for Qualifications and Proposal* (RFP/Q) was advertised on July 7, 2020, for the Phase 1 preliminary engineering tasks described above.

On November 2, 2020, Council awarded a contract to BKF Engineers (BKF) for $192K. BKF is a full-service consulting engineering firm located in Walnut Creek, specializing in providing a wide range of technical services related to the Laguna Creek Restoration Project. BKF has successfully performed on past projects with the Town.

In addition to the Phase 1 tasks described above, BKF's contract includes: preparing 15 percent design documents and presenting them at a public meeting[2] to elicit feedback from the community; and providing updates to Council at the 15 percent, 30 percent and 65 percent progress designs.

At the completion of Phase 1, FEMA will determine whether to fund additional phases of work. Should FEMA agree to fund Phase 2, the Town Council can evaluate the project's merits in order to determine whether to continue with Phase 2. If Council decides to proceed with Phase 2, a design services contract amendment would be issued to BKF to complete the design and to prepare construction documentation.

BKF's total negotiated proposal price is $354,300, consisting of $192,000 for Phase 1 and $162,300 for Phase 2. The FEMA Phase 2 project scope will include the following tasks:

a) Obtain necessary environmental permits
b) Coordinate with Utility Agencies for any needed relocation work
c) Complete 100 percent complete Plans, Specifications, and Estimates
d) Provide technical support during Bidding
e) Provide technical support during Construction

[2] The public meeting is scheduled for February 23, 2021 at 6:00 PM. More information can be found at https://www.moraga.ca.us/465/Laguna-Creek-Restoration-Project

Discussion

BKF has prepared an initial 15 percent engineering design, and the Town is seeking public input and feedback on the project. A number of Laguna Creek Restoration Project informational presentation meetings via ZOOM have been scheduled, starting with a public meeting on February 23, 2021, followed by a presentation to the Planning Commission on March 2, 2021, and a presentation to the Park & Recreation Commission on March 15, 2021.

On March 24, 2021, staff will provide a presentation to Town Council, summarize the feedback received from the meetings described above, and seek Town Council's direction. For additional information on the project and presentation schedules, please see the project web page at https://www.moraga.ca.us/lagunacreek.

Request

Receive the presentation and provide feedback to staff.