



WASHOE COUNTY

Integrity Communication Service

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STAFF REPORT

BOARD MEETING DATE: July 14, 2020

DATE: May 25, 2020

TO: Board of County Commissioners

FROM: Dylan Menes, S.E., P.E., Senior Licensed Engineer,
Community Services Department, 328-2054, dmenes@washoecounty.us,

THROUGH: Dwayne Smith, P.E., Division Director, Engineering and Capital Projects
Community Services Department, 328-2043, desmith@washoecounty.us

SUBJECT: Recommendation to approve an Agreement for Professional Services between Washoe County and Cardno Incorporated for the Swan Lake Flood Mitigation Strategy Analysis feasibility study to evaluate potential long-term mitigation options for the East Lemmon Valley Closed Hydrobasin for the possible diversion of upstream flows and to contain floodwater within the Swan Lake boundary [not to exceed \$107,460]. (Commission District 5.)

SUMMARY

Due to stormwater runoff and resultant flood impacts within the Swan Lake in Lemmon Valley, at the direction of the Commission (Board), the Washoe County Community Services Department (CSD) Engineering Division continues to actively respond to and maintain flood protections while at the same time continues to identify and develop long-term options to mitigate potential future flood events associated with this closed basin as well as all closed basins in Washoe County.

The Board recently adopted the 2020 Update of the Washoe County Regional Hazard Mitigation Plan (RHMP) which was expanded to include mitigation strategies specific to closed-basin flooding hazards, focused on the Board directives to provide life-safety, maintain emergency vehicle access, and protect structures. After a rigorous identification and screening process to evaluate over 16 alternatives, the RHMP identified four possible strategies for further review and analysis including the diversion of upstream inflows within the basin, maintaining the lake within a defined and managed barrier system, exporting the storm and flood waters from the closed basin, and potentially purchasing certain homes located within areas that may be impacted in the future from flood events.

In response to staff's requests, Cardno Incorporated Consulting Engineers (Cardno Incorporated) has submitted a scope of work for the next phase of analysis which focuses on the potential diversion of upstream flows and how permanent barrier systems may be incorporated into a basin mitigation plan. The proposal includes a budget in an amount not to exceed \$107,460 and a timeline for completion by October 2020. This work is being done in parallel with analysis work with respect to the other options and based on the outcomes, staff anticipates providing the Board with a basin-wide comprehensive

AGENDA ITEM # _____

recommendation that is in alignment with the needs of the area and with a recommendation for funding options.

Washoe County Strategic Objective supported by this item: Stewardship of our community.

PREVIOUS ACTION

February 25, 2020 – The Board of County Commissioners (Board) adopted the 2020 Washoe County Multi-Hazard Mitigation Plan and executed a Resolution to continue to inform the public and community of the hazard mitigation strategies recommended by the plan.

September 24, 2019 – The Board approved a Resolution to augment the Capital Improvement Fund in the amount of \$2,500,000 to increase Fiscal Year 2020 budget authority for projects related to current and future mitigation of flood water impacts in the North Valleys.

August 7, 2019 – The Board acknowledged receipt of a presentation on the current status of Swan Lake directed staff to mitigate flood/storm water impacts and remove water from Swan Lake by: 1) Funding continued operation and maintenance of existing barrier systems and stormwater pumping; 2) Design and bid of projects such as alternative pumping and barrier systems, enhanced aeration, and land application; 3) Development of property use agreements; 4) Entering into consultant agreements for feasibility studies evaluating long-term options; and, 5) Bring to the Board of County Commissioners for consideration any matters exceeding \$100,000 pursuant to applicable provisions of state law and Washoe County Code section 15.495

BACKGROUND

Current direction by the Board includes the continued upkeep, maintenance, and response focused on providing for life-safety of the residents who live in the closed hydrographic basin known as the East Lemmon Valley within Washoe County. The protections were put into place during the 2017 flood response and have been maintained in place since that time. A series of storms (atmospheric rivers) beginning in October 2016 and continuing through the first few months of 2017 impacted our entire region with record level rains and snows. The continued rain events in the lower elevations resulted in saturated soil conditions and extensive runoff of stormwater which directly led to regional flooding and two presidentially declared flood disasters (4303 and 4307).

Since that time staff has continued to respond to the Board's direction to:

- Continue flood response activities related to the 2017 January and February floods;
- Initiate the development of a flood response plan for North Valleys closed hydro-basins;
- Initiate a flood mitigation plan for North Valleys closed hydrographic basins; and
- Pursue the application process for a Federal Emergency Management Agency Hazard Mitigation Grant, for the possible purchase of specific residences located within the Swan Lake floodplain that were impacted by the 2017 presidentially declared February flood.

Additionally, as part of the 2020 Update of the Washoe County Regional Hazard Mitigation Plan, Washoe County developed the “Lemmon Valley Closed-Basin Flooding Mitigation Action Alternatives Screening Evaluation.” The process was facilitated by the County Emergency Management and Homeland Security Program through a series of workshops designed to allow area engineers and subject matter experts to collaborate in identifying and prioritizing long-term, cost-effective solutions. The first workshop focused on identifying potential mitigation actions, which were subsequently evaluated for long-term effectiveness, ability to implement, and cost. The second workshop focused on prioritizing the list of potential mitigation actions based on the evaluation criteria. Through this exercise, 16 alternatives were identified, prioritized, and categorized into one of four primary mitigation strategies, including:

1. Remove residences from the lake;
2. Remove water from the lake;
3. Divert water upstream of the lake; and,
4. Contain floodwater within the lake.

Given these primary mitigation strategies, this proposed engineering study with Cardno Incorporated seeks to evaluate and study the feasibility of specific projects to divert stormwater upstream and out of the lake and to contain floodwater within the lake.

FISCAL IMPACT

FY20 budget authority for this Professional Services Agreement exists in the Capital Improvements Fund (402) North Valley’s Mitigation Strategy (PW920506).

RECOMMENDATION

It is recommended that the Board of County Commissioners approve an Agreement for Professional Services between Washoe County and Cardno Incorporated for the Swan Lake Flood Mitigation Strategy Analysis feasibility study to evaluate potential long-term mitigation options for the East Lemmon Valley Closed Hydrobasin for the possible diversion of upstream flows and to contain floodwater within the Swan Lake boundary [not to exceed \$107,460].

POSSIBLE MOTION

Should the Board of County Commissioners agree with staff’s recommendation a possible motion would be: “Move to approve an Agreement for Professional Services between Washoe County and Cardno Incorporated for the Swan Lake Flood Mitigation Strategy Analysis feasibility study to evaluate potential long-term mitigation options for the East Lemmon Valley Closed Hydrobasin for the possible diversion of upstream flows and to contain floodwater within the Swan Lake boundary [not to exceed \$107,460].”