Ivins City Staff Report
City Council Meeting 6/15/17

Agenda Item: Approve Expenditure for Revised Design Fees for Kayenta Debris Basins

Submitted by: Thomas Jorgensen, P.E., Assistant Public Works Director

Recommended City Council Action:
Approve expenditure for revised design fees for Kayenta Debris Basins for engineering services to construct Kayenta Debris Basin not to exceed $74,041.

BACKGROUND:
In 2014, two major storm events caused severe flooding in the Coyote Gulch Wash, resulting in major property damage. Ivins City requested assistance and has received Emergency Watershed Program (EWP) funding from the Natural Resources Conservation Service (NRCS) to construct debris basins on the Coyote Gulch Wash.

We've been working with Jones & DeMille on the design for the project, and while the design is nearly complete, the design engineers have requested an additional $11,097 to compensate for multiple iterations to the plans, calculations and schedule to meet the needs of the various stakeholders during the design process. These services were intended to be covered under the original agreement, but the engineers are asking to be compensated since the amount of coordination between the various stake holders and the amount of rework associated with that coordination was more than they had originally planned. Their overage for this work was $14,212, but there was a difference between the City's contract with Jones and DeMille ($106,400) and the agreement between the City and NRCS ($103,284.95). This difference of $3,115 did cover some of that extra cost, thus Jones & DeMille is asking for $11,097 because they feel contractually the City was already compensating them up to $106,400.

In addition to the compensation for design rework, Jones & DeMille is requesting compensation for additional services that they provided during the design that were not under the original scope of work and agreement. These additional services are outlined in the Contract Adjustment Letter provided by Jones & DeMille. These services totaled $62,944.

Therefore, the total cost that Jones & DeMille is requesting compensation for is $74,041. The Council should be aware that NRCS will be reimbursing the City for 75% of that cost and consequently Ivins maximum out of pocket cost would be $18,510.25. Jones & DeMille has submitted a letter explaining the contract adjustments and the justifications detailing the additional design services.

FINDINGS AND ANALYSIS:
Staff has reviewed the letter from Jones & DeMille and is requesting that the council approve the additional $74,041 for the revised design fees being proposed by the engineers, of which the NRCS will be reimbursing the City for 75% of that cost.

The previous agreement for Technical Assistance funds was $103,284.95, where NRCS would reimburse the City at 100% of that cost. This addition compensation increases that amount by $74,041 to $177,326.00. NRCS is still covering the original amount at 100%, it is just the $74,041 that they will be reimbursing the City for 75% of the cost. Ivins City potential out of pocket costs is $18,510.25.

SUPPORT MATERIALS:

- Ivins Contract Adjustment Letter – Jones & DeMille

FINANCIAL IMPACT:

The expense has been budgeted.
GL 53-42-878: Not to exceed $74,041 (75% of this expense to be reimbursed by NRCS funding)

Respectfully Submitted:

Thomas Jorgensen, P.E., Assistant Public Works Director

Content Review:

Dale Coulam, City Manager

Jones & DeMille Engineering

800.748.5275
www.jonesanddemille.com
infrastructure professionals

CORPORATE
1535 South 100 West
Richfield, UT 84701
435.896.8266

50 South Main, Suite 4
Manti, UT 84642
435.835.4540

1675 South Highway 10
Price, UT 84501
435.637.8266

45 South 200 West (45-13)
Roosevelt, UT 84066
435.722.8267

775 West 1200 North
Suite 200A
Springville, UT 84663
801.692.0219

435 East Tabernacle, Suite 302
St. George, UT 84770
435.986.3622

16 East 300 South
PO Box 577
Monticello, UT 84535
1.800.748.5275

38 West 100 North
Vernal, UT 84078
435.781.1988

Dear Council,

The Kayenta Debris Basins design is nearly complete. We look forward to seeing these amazing structures built in such a beautiful location and provide the relief needed during flooding. The design of these basins have been far from typical due to the unique constraints due to their location within the Kayenta development and Tortoise Reserve. Although falling under our contract services, coordination with the different stakeholders (NRCS, the City, Kayenta, and the Reserve) required multiple iterations to plans, calculations and schedule to meet each of their needs. J&DE is requesting an additional $11,097 (75% paid by NRCS) to help recover that cost.

In addition to that cost additional design services, outside the original scope, were required by the different stakeholders and primarily by NRCS. Below is a summary of the additional design services.

Additional Design Services:

Old Highway 91 Box Culvert Crossing **($2,295)**
Design and detailing of a 4' x 10' precast box culvert to accommodate flood waters released by the debris basins and passing under Old Highway 91 near 3 Mile Lane.

Culvert Headwalls **($2,475)**
Design and detailing of four additional headwalls to protect culvert end and prevent clogging downstream from the debris basins. The headwalls are located on exiting culverts under Kayenta Parkway and Kwavasa Drive.

Environmental Disturbance Delineation **($1,455)**
The project is located within the Tortoise Reserve. Fish and Wildlife Services encouraged a specific boundary and fencing, to reduce the mitigation requirements and which will reduce the overall construction cost of the project.

Easement Design and Description and Roadway Corridor Design **($9,889)**
Per requirements set forth by the NRCS, the property where the new basins will be located, must be controlled through ownership or an easement by the City. This work includes staking, locating, writing legal descriptions, and coordination with Kayenta.

East Basin Retaining Walls Structural Design **($14,910)**
The east basin was located in an area to get the most possible natural storage area available. To fit the basin within this location retaining walls were utilized. The basin height is 23.5 ft and three retaining walls will be used to fortify the north side of the basin. All designs, and details follow the NRCS TR-67 code requirements.

West Basin Retaining Walls Structural Design **($6,875)**
The west basin location lacked the necessary storage needs for the design floods. Two retaining walls were used to increase the vertical height of the basin increasing the storage

necessary to accommodate the required floods. All designs, and details follow the NRCS TR-67 code requirements.

Revegetation Plan and Landscaping Design **($1,325)**
Typically the NRCS provides a general seeding plan to protect against erosion and other damaging elements. Due to the basins location within the Tortoise Reserve, a more in-depth plan with specific seeding/planting locations was required by Fish and Wildlife Services (FWS). By using native plants and grasses the environmental impacts change from being "permanent" to "temporary" impacts to the tortoise reserve.

Fill/Clay Source Coordination **($680)**
To reduce cost, and provide City in-kind match, existing clay sources within the City were analyzed. The cost includes on-site evaluation/quantity measurements, developer and geotechnical coordination.

East Basin Realignment and Survey **($3,515)**
Due to the unique location of the basin within an established subdivision and standards, the basin dam was relocated, field staked, and field verified multiple times. This insured roadway tie-ins, environmental issues, landscaping conflicts and future development concerns would be minimal. This coordination was key in meeting the needs and mitigating concerns of Kayenta and ultimately leading to the land agreement.

West Basin Realignment and Survey **($8,150)**
Due to the unique location of the basin within an established subdivision and standards, the basin dam was relocated, field staked, and field verified multiple times. This insured roadway tie-ins, environmental issues, landscaping conflicts and future development concerns would be minimal. This coordination was key in meeting the needs and mitigating concerns of Kayenta and ultimately leading to the land agreement.

Energy Dissipation Structures **($8,260)**
The debris basins are design to store runoff water. When the basins fill, the pressures in the primary spillway will increase, resulting in higher velocities. The hydraulic analysis determined that resulting velocity and it was found to be too fast to dissipate freely in the existing channel downstream. Because of its speed, major scouring and erosion would occur downstream of the basins Dissipation structures for both dams will eliminate scour by slowing the velocity as the runoff leaves the basin.

In summary, these increases in cost and additional design requirements increased the budget to $177,326. Of that total design fee, $103,285 will be reimbursed to the City through the NRCS Emergency Watershed Protection Technical Assistance (TA) fund. The remaining fee will be reimbursed to the City under the Financial Assistance (FA) fund at 75% of the total remaining cost. Therefore, the total cost out of pocket for the City is $18,510.25

Sincerely,

Kayde Roberts PE
Office Manager
JONES & DeMILLE ENGINEERING, INC.