Ivins City
Engineering Report to City Council
December 11, 2014

NRCS Mitigation Main Street Outfall: The project was completed on December 4th. However, there are concerns that the partially grouted rip rap is not fully protecting the structure from scour since the perpetual low flows discharging from the storm drain does not stay visible. Staff is requesting that Council authorize additional expenditure to fully grout the structure. See agenda item report for additional details.

NRCS Repair of Culverts in Tuacahn Wash Service Road: In the Tuacahn Wash, culverts were damaged that need repair and NRCS funds are available for this repair. Staff authorized JP Excavating to start this work with the permission of NRCS as a change order to the outfall mitigation project since many of the unit prices could be carried forward into this project. JP Excavating started the work on Wednesday, December 10th.

Red Mountain Dams Rehabilitation Evaluation: This project has been held up now for months on what appears to be a technical problem. The NRCS headquarters has not been willing to waive a standard on minimum pipe sizes for dams. Our dams have 15-inch diameter pipes for outlets and NRCS carries a standard of 30-inch diameter pipes. Despite having technical analysis showing that the 15-inch diameter pipes are adequate, so far the standard has not yet been waived. This is holding up a release of the Draft Environmental Assessment. We thought we would have already released the document at this point and there was even a public open house scheduled for December 15th, but it had to be cancelled until we can get the authorization to proceed per the current plan. Best case scenario would be 6 months before we can start preparing the design drawings.

Regarding a recent letter from the Fulde residence on Agave Lane with complaints about storm water runoff and erosion off the face of the dam, I am providing a partial response in this report and will provide additional information in my presentation of this report to Council next Thursday. The Fulde's have identified a problem because of their close proximity to our dam structure and the way that the Kayenta style home sits low and becomes a trap for water running off. It does appear that recent major floods have changed the soil matrix of the dam such that there has been increased erosion even in smaller rain events. However, over time if we can experience some storm seasons of lower intensity storms that soil matrix will likely improve, at least until the next major event. In preparation of the rehab plan with the NRCS, staff has purposefully avoided rock facing surface treatments because of cost and aesthetics. Aesthetics was considered because of the close proximity of the homes. Council may want to discuss this further and perhaps move to rock face the dams. In my presentation of this report I will provide additional information on costs of such treatments. The cost is somewhat mitigated by the fact that the NRCS is willing to use federal funds at a 65% funding rate.

Pumping Station Upgrades: The Taviawk Pumping Station is operating at the limits of its capabilities and needs to be upgraded this winter. The Tuacahn Pumping Station needs a redundant pump. Alpha Engineering is working on the design and is expected to have the design ready for bid in January.

Taviawk Tank Overcoat: Last winter, the Taviawk Tank was recoated on the interior. We were lacking enough budget to complete the overcoat that is needed. Staff is working to solicit bids to complete the overcoat this winter.

Irrigation Master Plan: Staff is working on updating the irrigation master plan and to improve the implementation plan of bringing the system online over the upcoming few years.

Storm Drain Master Plan: Based on recent flooding, staff is seeking to revise the storm drain master plan to identify how the City can adapt the storm drain system to handle larger storm events then previously planned for. A request for proposals was issued to acquire the services of a consultant. See staff report for agenda item to authorize expenditure for the work for more details.

City Wide Drainage Improvements: As a result of recent flooding staff has been working on the following projects as a means to make some improvement to drainage systems.

- Add inlets at 500 East Center Street – done
- Tie together storm drain pipelines at 200 North – done
- Construct berm at 550 West Center Street – done
- Extend curb and gutter down west side of 100 West past Best home – seeking bids
- Add inlets at 400 South Street at approximately 130 West – to be completed by Public Works crew when available.
- Repair berm/ditch on north side of Vermilion Cliffs in the Reserve – To be completed in January.
- Remove sediments and repair outlet on Tuacahn Wash Detention Dam – To be completed in January
- Adding inlets to east side of Wintook Drive (shared cost between HOA and adjacent lot owner) – Done
- Adding inlets to west side of Taviawk Drive (shared cost between HOA and adjacent lot owners) – Done
- Kayenta Debris Basins on Coyote Gulch – request for funding submitted to NRCS
- Improve inlet efficiency at 600 West Center Street – Terry Marten has indicated that Kayenta is willing to provide temporary detention at 100 N 600 W. We believe that the 48 inch storm drain pipeline is not filling to capacity at 600 W Center Street and that we could extend a 36-inch pipeline to the temporary detention basin that we could remove a significant amount of flood water from the drainage system and discharge it to the Kayenta Wash. Project costs, however, could be significant (~$120,000), and funding sources are unknown at this point.
- Improve inlet efficiency at 450 North 400 West (and 600 West) – Looking at this area to see if more water can be diverted to the Kayenta Wash in the existing 24-inch pipeline in 450 North.
- Upsize culverts at Highway 91 / Kayenta Wash Crossing – working on a design with NRCS.
- 500 E Center Street Flood Retention Wall – construct wall on Center Street to divert water to Puerto Drive rather than wash behind homes. City is working on a design with an intent to construct this winter.

- 400 E Storm Drain Extension from Center St to 200 N – City is looking to extend the storm drain 1200 feet to reduce erosion in the existing channel from runoff by the upstream developments.
- 200 North Berm at 400 West – Property owner Val Walton has indicated that he would be willing to construct a berm to cut off storm runoff that is passing through Tenaya Sands and then dedicate the remaining part of 200 North Street and the City would then take over maintenance of the berm.
- Taviawk Diversions to Kayenta Wash – Kayenta Developer is working with City to identify opportunities to divert water to the Kayenta Wash through the Kwavasa Drive cut. This requires a SITLA drainage easement which Kayenta is working to acquire. Kayenta is also considering providing an additional detention basin not previously considered.



2014.12.11 16:40:03 -07'00'

Charles Gillette P.E., City Engineer Date