

Summary of Findings for the Amole Del Norte Dam and the 98th and Central Basin (9-25-2015) :

1. Dams consist of 2 interconnected ponds, a north pond and a south pond.
 - a. 30" pipe between both ponds
 - b. 36" discharge pipe out of South Pond to the City SD system
 - c. An 84" inch pipe discharges directly to the South pond (335 cfs per the T.B. Phase IIIC report (1995) ; collects flows from basins along the west side of 98th St.)
 - d. Basins South of Volcano discharge directly to South Pond
2. Dams were designed and sized based on the Tierra Bayita Drainage Facilities PHASE IIIC - Design Report for Amole Del Norte Storm Diversion Facilities, 1995 by Greiner [T.B. Phase IIIC (1995)]
 - a. Application for Dam permit states:
 - i. 98cfs discharge capacity out of the South Pond. (ultimate cond) (97 cfs on AHYMO output)
 - ii. 70 cfs discharge capacity out of the North Pond
 - iii. S.Pond: Spillway elevation = 5212, Storage Capacity = 31.465 Ac. -Ft
 - iv. N.Pond: Spillway elevation = 5223, Storage Capacity = 46.197 Ac. -F
 - b. The discharge directly into the North Pond is 1495 cfs, and 765 cfs into the South Pond, total area of analysis being 1.06 SQ. Mi. (Ultimate condition)
 - c. An orifice plate was installed in the South Pond outfall to limit the discharge to 13 cfs, the capacity of downstream culverts. Orifice plate was intended to be removed after downstream culverts were upsized with PHASE IIID
 - d. Basins include 2 basins north of I-40. 5 % Bulking factors were included.
 - e. Land treatments used averaged 65%D for 108 numbered basins, and 85% D for 109 numbered basins. Note: 108 numbered basins are generally in the County.
3. The Tierra Bayita Final Design Report, March 1998 by Greiner re-ran the dam analysis:
 - a. Volume of North pond decreased slightly due to addition of the access road.
 - b. This resulted in an increase in output out of the South pond to 101 cfs. (ultimate condition)
 - c. Storm Sewer analysis shows 97 cfs used as outflow from dam. (see Report Appendix)
4. The Amole-Hubbell DMP, July 1999 by Leedshill-Herkenhoff re-ran the analysis.
 - a. The analysis for the **98th and Central Basin** did not include basins north of I-40, and the bulking factors were removed.
 - b. The discharge directly into the North Pond is 1045 cfs, and 701 cfs into the South Pond, total area of analysis being 0.75 SQ. Mi. (Ultimate Condition)
 - c. The discharge out of the South Pond is 69 cfs (Ultimate Condition) .
 - d. The analysis used the older N. Pond volume out of the T.B. Phase IIIC- 1995 and doesn't not use the lesser volume from the T.B. Final III report (1998) which includes access road
 - e. This report is vague about this basin since it was under the City's jurisdiction, and relies on the City to control discharge to the present facilities.
5. The Amole-Hubbell 2013 report by Wilson is not in its Final version (per AMAFCA).
 - a. It suggested limiting the output of the Dam to 21.8 cfs due to downstream deficiencies, and recommended reinstalling an 18" orifice place to limit the flow.

- b. This is not reasonable since a permanent orifice plate with such limitations would cause the dam to overtop for a fully developed condition.
 - c. This report uses AHYMO S4 which is known to have a significantly larger peak flow for impervious areas.
- 6. AMAFCA correspondence (email with Brad Bingham, July 23-27, 2015)
 - a. The suggested limit of 22 cfs out of the South Pond by the 2013 Amole-Hubbell report was based on the capacity of the N-S Coors Dam that the consultant determined may spill. The 22 cfs discharge was one of a couple of recommendations to keep the N-S Coors Dam from overtopping. Another is to raise the N-S Coors dam spillway or make it bigger.
 - b. AMAFCA is remodeling the entire Amole Hubbell watershed in HEC_HMS because it is said that AHYMO overestimates flow by 10-15%. Reducing the flows out of the Amole del Norte dam is not the best course of action to “fix” the system.
 - c. The system will be analyzed for contributing basins between the Amole Del Norte Dam and the N-S Coors Dam.
 - d. AMAFCA believes the 75 cfs difference between the design discharge and that recommended by the 2013 Amole-Hubbell report will be resolved once the HMS model is run. It is likely that flows entering the N-S Coors Dam, modeled in HMS, will be at least 75 cfs less. If it is not, the City and AMAFCA would work together to improve the dam.
 - e. The Paradise RV Park Drainage Report, 2015 by Ron Hensley (below) establishes that the discharge out of the dam in the ultimate condition is 70 cfs. Therefore 48 cfs, rather than 75 cfs, will need to be absorbed by the new HEC-HMS study.
- 7. Paradise RV Park Drainage Report, 2015 by Ron Hensley
 - a. This report re-analyzes the **98th and Central Basin** and is to be used as the Master Drainage Plan for development in this basin. Almost all of the undeveloped land is in the County’s Jurisdiction.
 - b. This report uses
 - i. land treatments similar to those used in the T.B. Phase IIIC (1995) report.
 - ii. 6% Bulking Factor for Existing, Interim, and Final Condition
 - iii. Staged Discharge Curve used in the T.B. Final III report (1998) – North Pond with Access Road
 - iv. 24 Hr. Storm, (Peak Flows for 6-hr storm equal those from 24 Hr. storm)
 - c. This report calculates 353 cfs to the 84” storm drain discharging directly to the South Pond. (an increase from the original report of 335 cfs)
 - i. Future developments of Basins 205.12 and 205.2 (NE of Bluewater and 106th St) may need to limit discharge if the HGL is above the inlets at 98th and Volcano. Developer’s engineer will need to verify.
 - d. The discharge directly into the North Pond is 1124 cfs, and 677 cfs into the South Pond, total area of analysis being 0.84 SQ. Mi. (Ultimate Condition)
 - i. The discrepancy in the Area from the 1998 Amole-Hubbell report (0.75 Sq. Mi.) may be due to the fact that Basins 205.12 and 205.2 originally extended to I-25. Although the Basin boundary was revised, the area in the analysis was not.
 - e. The discharge out of the South Pond is 70 cfs (Ultimate Condition) .
 - f. The discharge out of the South Pond is 54 cfs (Interim Condition – with the development of this site and a Temporary Pond in Basin 109.1) .
 - g. Developer will Financially Guarantee the following:
 - i. 84” Storm Drain in Volcano

- ii. 108" Storm Drain into Pond (Ultimate Condition)
- iii. 42" Storm Drain into Pond (Interim Condition), to be built with this project.
- iv. MH large enough to support the above Storm Drain
- v. Gravel V-ditch on South side of Volcano up to 102nd St., to be built with this project.
- vi. Repairing the present rundown, to be built with this project

8. Coordination with Bernalillo County

- a. A copy of the Paradise RV Park Drainage Report, 2015 by Ron Hensley is being provided to the County to serve as a Master Drainage Plan for this Basin. Development within the County's jurisdiction will need to adhere to this report.
- b. Discussions with the County Planner Catherine VerEecke indicated that while Zoned A-1 (1 dwelling unit per Acre) that it is anticipated this undeveloped property will be much denser. A new zoning plan is in the works.
- c. The City recommends using the Paradise RV Park Drainage Report, 2015 by Ron Hensley to establish appropriate use.