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MEMORANDUM

To: Evan Ela, Collins Cockrel & Cole, P.C.
From: Tom Pippin and Scott Kitchens, BBC Research & Consulting
Re: Pagosa Area Water and Sanitation District Fee Calculation – Final Memorandum
Date: January 23, 2009

The Pagosa Area Water and Sanitation District (PAWSD) hired BBC Research & Consulting (BBC) in October 2008 to update the District's Water Resource Fee (WRF) and Capital Investment Fees (CIF). The WRF relates to the District's raw water resources and supply, while the CIF includes separate fees for the District's water treatment and distribution system and the District's wastewater collection and treatment system. Our research goal was to first review the documents provided by PAWSD detailing future District growth projections and the costs of future capital improvements and then calculate a WRF and two CIFs for the District using the available data.

General Observations

After a thorough review of PAWSD's documents and several discussions with District staff, we are confident the District has a sound understanding of the steps and level of detail required to calculate accurate and equitable fees. In particular, we were impressed with the following:

- **Transparency** – The underlying PAWSD data that our WRF and CIF calculations are based upon is very well organized and easy to follow;
- **Detail** – PAWSD has done an excellent job providing detailed notes and narrative describing and justifying each project listed in the WRF and CIF capital improvement plans (CIP). This detail provided us with a level of faith in our client's intentions that can often be lacking; and,
- **Cost Allocation** – Unlike other districts for which we have worked, PAWSD provided us with recommended cost allocations (i.e., between new development and existing customers) for each project on the WRF and CIF capital improvement plans, including a rationale for each recommendation. This is an extraordinary and rarely seen level of staff work.

Overall, we are pleased to report that PAWSD has approached their WRF and CIF CIPs in a manner consistent with, and in many cases superior to, the best practices of other water and sanitation districts.

Debt-Service for Water Projects

It is our understanding that PAWSD is currently exploring the use of bonds to finance certain projects in the WRF and CIF CIPs. It is allowable in Colorado to include the present value of interest payments incurred from such bonds in both the WRF and CIF. Should PAWSD decide to issue bonds, it is recommended that the WRF and CIF calculations in this report be updated to reflect debt service. This update will increase the calculated WRF and CIF, as both would then include the costs of projects listed in their respective CIPs as well as the present value of interest payments associated with the bond. PAWSD should revisit this issue once the final details of the bond are determined.

PAWSD Growth Projections

A key component of any WRF and CIF calculation is an accurate projection of future growth. For our purposes, we are interested in the number of Equivalent Units (EUs) PAWSD expects to serve in the future for both its water and wastewater operations.¹ These projections not only provide PAWSD with an estimate of future water and wastewater service demand, but allow PAWSD to pro-rate the costs of future capital purchases to ensure future customers only pay their proportionate share.

PAWSD has developed its own growth projections through the year 2055. PAWSD anticipates 7,227 EUs will be connected to its water system by the end of 2008. By 2055, the PAWSD water system will serve an estimated 43,640 EUs, representing a net increase of 36,413.

Similarly, PAWSD anticipates 4,209 EUs will be connected to its wastewater system by the end of 2008. By 2055, the PAWSD wastewater system will serve an estimated 25,416 EUs, representing a net increase of 21,207 EUs.

To arrive at these final projections, PAWSD utilized two data sources: 1) PAWSD historical records of actual new EU connections between 1999 and 2008 and 2) Colorado State Demographer's Office population estimates from 1999 to 2008. A combination of these two data sources resulted in an average annual growth rate of 3.9 percent.

After a review of the underlying calculations, we agree with the soundness of these growth projections. Simply stated, demographics is an inexact science. We also often combine multiple data sources for our clients to produce a more "robust" growth estimate. In this sense, the work of

¹ From PAWSD Growth Report dated December 31, 2008: "EUs, as opposed to permanent population, are used for the purposes of future demand and storage projections because EUs are a quantifiable known amount; permanent population does not represent transient, irrigation, or commercial users; the exact permanent population of PAWSD service area cannot be determined."

PAWSD staff is consistent with other districts in Colorado and throughout the Rocky Mountain West.

Water Resource Fee CIP

PAWSD provided BBC with a list of anticipated water resource fee (WRF) capital purchases based on an estimated growth of 36,413 EUs by 2055. The WRF is intended to pay for the growth-related portion of needed water supply projects including the new 19,000 acre foot Dry Gulch Reservoir and supporting infrastructure. The latter includes a new Stage 1 Dry Gulch Pump Plant and a second San Juan Pump and Pipeline.

The total cost of all items on the WRF capital improvement plan (CIP) is \$216,587,000. However, after subtracting the amounts to be paid for by existing customers, the total cost attributable to future growth equals \$214,546,000.

The San Juan Water Conservancy District (SJWCD), working collaboratively with PAWSD, has offered to contribute approximately \$10 million to fund the “Environmental Accommodations” portion of the Dry Gulch Project. From the SJWCD “Impact Fee Position Statement” dated January 2009:

“Environmental Accommodations is the project component that is best aligned with the mission of the [San Juan Water Conservancy] District. This project component includes, without limitation:

- Wetlands development
- Public access easements
- Boat and fish by-pass accommodations at the San Juan River diversion
- Studies for potential boat ramp, handicap access, and other public access amenities
- Studies for fish and wildlife mitigation and enhancements
- Biological and cultural studies

In addition, the [San Juan Water Conservancy] District will continue to contribute its water rights interests and the associated legal costs.”

After accounting for the \$10 million SJWCD contribution, the total value of the WRF CIP equals \$204,519,000. The WRF calculation will be based on this amount.

Water Resource Fee Calculation

Using the projected EU growth for the District and planned capital purchases listed in the WRF CIP, we can calculate the PAWSD WRF.

**Exhibit 1.
PAWSD Water Resource
Fee Calculation**

Note:

(1) Includes amount to be paid by existing customers and the San Juan Water Conservancy District's \$10 million contribution.

The calculated fee will change if we include the growth-related share of planned debt-service in the CIP.

Total CIP Value	\$ 216,587,000
Total Deductions ⁽¹⁾	\$ 12,068,000
Net CIP Value	\$ 204,519,000
EU Growth 2008-2055	36,413
Cost per EU	\$ 5,617

Source:

PAWSD and BBC Research & Consulting.

As seen above, we have calculated a Water Resource Fee of \$5,617 per EU for PAWSD. This amount will be compared to the PAWSD existing WRF in the summary of this memo.

As noted earlier, the WRF calculated in Exhibit 1 will increase if PAWSD issues bonds and decides to include the associated interest payments in the WRF.

Water System Capital Investment Fee CIP

PAWSD provided BBC with a list of anticipated water system capital investment fee (CIF) capital purchases based on an estimated growth of 36,413 water system EUs by 2055. Unlike the above WRF that focuses on *raw water resources and supply*, the water system CIF is intended to pay for the growth-related share of *water treatment and distribution* projects. These capital purchases included a new treatment plant, boosters, transmission pipelines and Master Plan updates.

The total cost of all items on the water system capital improvement plan (CIP) is \$139,681,000. However, after subtracting the amounts to be paid for by existing customers, the total cost attributable to future growth equals \$130,309,912. This amount will be used in our calculation of the PAWSD water system CIF.

After a review of the supporting materials provided by PAWSD, we understand the methodology used to derive growth's pro-rated share of the total cost of the water system CIF CIP. For each of the 118 capital projects listed on the water CIF CIP, PAWSD staff pro-rated costs between existing customers and future growth using one of three different ratios: a) 100 percent growth, b) 75 percent growth, and c) "50/50." These ratios are based on estimates provided by the general knowledge of PAWSD staff of its existing water system and anticipated water system demands. Moreover, PAWSD staff appropriately added a 20 percent cost allowance for minor capital projects not yet anticipated or included in the 118-item master list. Harris Water Engineering and Davis Engineering Services, Inc. assisted PAWSD in the creation of the CIF CIP.

Water System Capital Investment Fee Calculation

Using the projected water system EU growth for the District and planned capital purchases listed in the water system CIF CIP, we can calculate the PAWSD water system CIF.

Exhibit 2. PAWSD Water System Capital Investment Fee Calculation without Debt-Service

Note:

(1) Includes amount to be paid for by existing customers.

The calculated fee will change if we include the growth-related portion of planned debt-service in the CIP.

Source:

PAWSD and BBC Research & Consulting.

Total CIP Value	\$ 139,681,000
Total Deductions ⁽¹⁾	\$ 9,371,088
Net CIP Value	\$ 130,309,912
EU Growth 2008-2055	36,413
Cost per EU	\$ 3,579

As seen above, we have calculated a water system CIF of \$3,579 per EU for PAWSD. This amount will be compared to the PAWSD existing water system CIF in the summary of this memo.

As noted earlier, the CIF calculated in Exhibit 2 will increase if PAWSD issues a bond and decides to include the associated interest payments in the CIF.

Wastewater System Capital Investment Fee CIP

Similar to the PAWSD Water System Capital Investment Fee CIP, PAWSD provided BBC with a list of anticipated wastewater system capital investment fee (CIF) capital purchases based on an estimated growth of 21,207 wastewater system EUs by 2055. These capital purchases included a new wastewater treatment plant, collection system improvements and additional lift stations.

The total cost of all items on the wastewater system CIF capital improvement plan (CIP) is \$115,949,646. However, after subtracting the amounts to be paid for by existing customers, the total cost attributable to future growth equals \$90,171,886. This amount will be used in our calculation of the PAWSD wastewater system CIF.

After a review of the supporting materials provided by PAWSD, we understand the methodology used to derive growth's pro-rated share of the total cost of the wastewater system CIF CIP. For each of the 41 capital projects listed on the wastewater CIF CIP, PAWSD staff pro-rated costs between existing customers and future growth using a ratio ranging from 50/50 to 0/100 (existing customers/future customers), with the most commonly used ratios being 50/50 and 8/92. Similar to the water system CIF CIP, these ratios are based on engineering estimates provided by Camp, Dresser and McKee Incorporated, Briliam Engineering and the general knowledge of PAWSD staff of its existing wastewater system and anticipated wastewater system demands. Moreover, PAWSD staff

appropriately added a 20 percent cost allowance for minor capital projects not yet anticipated or included in the 41-item master list.

The calculations above do not include the present value of debt-service for any of the items listed in the CIF CIP. However, PAWSD staff anticipates some items on the wastewater system CIF CIP will be funded through bonds.

Wastewater System Capital Investment Fee Calculation

Using the projected wastewater system EU growth for the District and planned capital purchases listed in the wastewater system CIF CIP, we can calculate the PAWSD wastewater system CIF.

**Exhibit 3.
PAWSD Wastewater
System Capital
Investment Fee
Calculation**

Note:

(1) Includes amount to be paid for by existing customers.

The calculated fee will change if we include the growth-related portion of planned debt-service in the CIP.

Source:

PAWSD and BBC Research & Consulting.

Total CIP Value	\$ 115,949,646
Total Deductions ⁽¹⁾	\$ 25,777,761
Net CIP Value	\$ 90,171,886
EU Growth 2008-2055	21,207
Cost per EU	\$ 4,252

As seen above, we have calculated a wastewater system CIF of \$4,252 per EU for PAWSD. This amount will be compared to the existing PAWSD wastewater system CIF in the summary of this memo.

Summary

Based on growth projections and cost estimates provided by PAWSD, we have calculated a WRF of \$5,617 per EU (Exhibit 1) and a water system CIF of \$3,579 per EU (Exhibit 2). In Exhibit 4 below, we have compared our calculated WRF and water system CIF with PAWSD’s existing fees.

Exhibit 4.
PAWSD Water System Fee Comparison

	Current Fee	New Fee	Difference
Water Resource Fee	\$ 7,210	\$ 5,617	\$ (1,593)
Water System Capital Investment Fee	\$ 2,575	\$ 3,579	\$ 1,004
Total Fee	\$ 9,785	\$ 9,195	\$ (590)

Source: PAWSD and BBC Research & Consulting.

The water system CIF increases by \$1,004 and the WRF decreases by \$1,593, resulting in a combined water system fee decrease of \$590 per EU. As we noted earlier, if PAWSD issues bonds and decides to include the associated interest payments in the WRF and CIF, these values will increase.

Similarly, we have calculated a wastewater system CIF for the PAWSD wastewater system of \$4,252 per EU. Exhibit 5 below compares the new wastewater CIF with the existing wastewater CIF.

Exhibit 5.
PAWSD Wastewater System Fee Comparison

	Current Fee	New Fee	Difference
Wastewater System Capital Investment Fee	\$ 3,195	\$ 4,252	\$ 1,057

Source:
PAWSD and BBC Research & Consulting.

The new PAWSD wastewater system CIF represents an increase of \$1,057 per EU when compared to the existing wastewater system CIF.

Finally, please note that if PAWSD decides to adopt these fees, they should be re-evaluated annually to account for potential cost increases in the CIP projects. This is necessary because both the WRF and CIF capital improvement plans are denominated in current (2008) dollar figures. This re-evaluation could be conducted on a project-by-project basis or through the use of an infrastructure cost index such as the *Engineering News Record*, Means Construction Costs or U.S. Army Corps of Engineers. These cost indices provide the basis for potential, future fee increases. For example, the *Engineering News Record* has recorded annual cost increases ranging from 2.85 percent to 6.28 percent over the last five years; the average over this five-year period is 4.43 percent. Each year, PAWSD would inflate the cost of every project listed on their CIPs based on the *Engineering News Record* index; this could account for natural cost increases for materials, labor costs and other related expenses.