



**2009 Recalibration
of
Future Water and Wastewater Needs and Fees**

Executive Summary

Prepared March 24, 2009

Introduction

In August 2008, the Pagosa Area Water and Sanitation District (PAWSD) Board began a several months-long process to reassess and plan for future District infrastructure needs. PAWSD staff worked closely with the following consultants to arrive at new growth, water and wastewater services demand projections, to develop Capital Improvement Plans for water and wastewater infrastructure needs, and to develop total cost projections for these infrastructure needs through the year 2055:

- Harris Water Engineering, Inc.
- MWH Americas, Inc.
- Briliam Engineering
- Davis Engineering Services, Inc.
- Aqua-Hab, Inc
- Ecosphere Environmental Services
- BBC Research and Consulting

The results of this process are described by several reports, as listed in the “References” section at the conclusion of this Executive Summary. On February 23, 2009, a presentation was held to summarize these results for and solicit questions from the public. What follows is an Executive Summary of both the presentation and the results of this detailed 2008-2009 planning process.

It should be noted that long-term planning for large-scale water and sewer infrastructure is an extremely complex process that by definition is based on variables that will change over time. Regardless of these limitations, the PAWSD Board and staff believe that it is important to have a plan in place, to follow that plan, and to re-evaluate the plan variables (such as growth projections) from time to time in order to realign District activities as necessary to ensure future dependable water supply and treatment and wastewater treatment services.

Abstract

- The prosperity of the Pagosa Springs community rests on maintaining a dependable water supply.
- The District will build what it can afford to, when it can afford to and when demand requires it to.
- The Dry Gulch Project is more than just a reservoir: it is also planning for the raw water diversion and treatment infrastructure required to meet future water demand.
- Growth and cost projections for water and wastewater may be re-evaluated annually, or as otherwise determined, and associated fees are therefore subject to change.
- The land purchases, planning and studies being conducted for the Dry Gulch Project are necessary in order to have any future water storage and delivery system options. No matter what the ultimate water demand, the current work will provide future water security.

- The District needs to continue collecting revenue for future infrastructure now so that it has the funding it needs when the community requires that infrastructure.
- Despite an aggressive water conservation program, without long term water supply planning, the PAWSD community may:
 - 1) have few, if any, options for adequate water supply,
 - 2) have severe water restrictions,
 - 3) experience vastly increased costs in meeting future water needs, and
 - 4) experience limited economic growth.

Planning Fundamentals

- Planning for PAWSD water and wastewater needs is done on the basis of projected demand, not on the basis of permanent population:
 - Includes needs of seasonal residents, tourists, commercial services, fire protection, irrigation and PAWSD in-house uses.
 - Water and wastewater requirements are measured in Equivalent Units (E.U.s). One E.U. equals the typical level of water demand of a single-family residence.
- PAWSD is using a 50-year planning horizon as advised by the September 2008 water rights decree.
- Based on historical growth data, the projected increase in water and wastewater demands between now and 2055 is an average 3.9% per year.
- Based on the 2055 future water demand calculated from a 3.9% average growth rate, historical water use, and water conservation measures, projections have been developed for raw water treatment and diversion needs and a new reservoir requirement of 19,000 acre feet.
- All planning parameters and timelines are elastic – the District will build what it can afford to WHEN it can afford to and WHEN demand requires it to.

Dry Gulch Project (Future Water Infrastructure) Build Out Plan

- First: Replace the 40-year old, obsolete, at-capacity Snowball Water Treatment Plant:
- Build a new pump station and new larger treatment plant at the Dry Gulch site adjacent to the San Juan River.
 - Abandon the Snowball pipeline along the Jackson Mountain slide area.
- Second: Expand the diversion capacity of the San Juan Water Treatment Plant with a second raw water pump and pipeline.
- Third: Construct a new reservoir at the Dry Gulch site in anticipation of meeting projected water needs, including prolonged drought safety measures, in 2055.

Infrastructure Financing

Costs

- The total cost of the 50-year Dry Gulch Project plan described herein is approximately \$356 million (in 2008 dollars).
- The total cost of the 50-year Wastewater Capital Improvement Plan is approximately \$116 million (in 2008 dollars)
- The project costs were determined by a technical team of consulting engineers and environmental scientists.
- Growth projections and costs may be re-evaluated annually or as otherwise determined.
- Inflation will likely occur over the 50-year CIP planning period.
- The Capital Investment and Water Resource Fees were calculated by BBC Research and Consulting, based on the project costs and future growth projections.
- Projects within the \$356 million Dry Gulch Project plan include:
 - Land acquisition and Forest Service Special Use Permit
 - A new pump station and treatment plant at the Dry Gulch site
 - Expansion of the San Juan intake pump station, pipeline and treatment plant
 - Multiple design and engineering contracts
 - Required environmental studies (federal/state)
 - Permitting procedures and legal fees
 - Dam construction in 2020 or thereafter
 - Increased treatment plant capacity over the next 50 years

Sources of Revenue

Source One: Growth

- In 2002 the PAWSD Board of Directors, with input from a Citizens' Advisory Committee, adopted the position that growth should pay a significant portion of the cost of meeting future increased water and wastewater demands.
- A Capital Investment Fee (CIF), evolving from the Facilities Upgrade Fee, was initiated in 2002.
 - Effective March 24, 2009, the water CIF is \$3,579 and the wastewater CIF is \$4,252 per new residential or commercial E.U.
 - E.U.s are determined by the size of water meter installed.
 - CIF funds can be used for improvements and additions to the current water treatment and distribution infrastructure or wastewater collection and treatment infrastructure.
- A Water Resource Fee (WRF) component of the water CIF was initiated in 2006.
 - Effective March 24, 2009, the WRF became a fee distinct from the CIF

- and is currently \$5,617 per new residential or commercial EU.
- The WRF is assessed on new homes or new commercial facilities, or enlarged water use at existing facilities.
 - For 2009, the PAWSD Board has pledged by policy to consider WRF payment mitigation proposals on a case by case basis by appeal.
 - WRF funds can only be used for future raw water facilities, diversion facilities and water rights required by growth.

Source Two: Existing Customers

- Through service charges, taxes and other fees, existing customers will pay for routine maintenance and, as required by new state or federal regulations, replacement and technological upgrades of existing infrastructure.
- If the CIF/WRF is not applied, the entire cost of meeting future water or wastewater needs required by growth will be borne by revenue bond issues repaid by increased monthly rates for all PAWSD customers.
- Voters may approve a property tax-supported general obligation bond issue to fund the Dry Gulch Reservoir.

Source Three: Teaming

- Acknowledging that water security is a community issue, PAWSD is teaming with the San Juan Water Conservancy District to explore and obtain alternate sources of raw water infrastructure funding.
- The SJWCD has committed to funding over \$10 million for environmental work and studies related to the Dry Gulch Project.
- SJWCD has secured over \$1 million in grants for the Dry Gulch Reservoir, and both PAWSD and SJWCD continue to pursue grant and federal appropriations opportunities.

Dry Gulch Project Decisions and Timeline

Decision: The Dry Gulch Reservoir is planned to be a public, community amenity. What are the best mechanisms for PAWSD, within its mission as a water and sanitation district, to commit to and preserve public access?

Decision: Should construction of the reservoir actually begin in 2020? All projections and timelines are elastic.

Decision: How will the new Snowball Water Treatment Plant and Pump Station be funded? Regardless of projections, a new and enlarged treatment plant and pump station must be built to replace the 40-year old Snowball system in order to meet current state and federal regulations and current peak demand. If CIF/WRF or any other sources of funds are not sufficient, a bond issue will be required to be repaid by a water rate increase or a voter-approved property tax increase.

Decision: Reservoir size must be determined prior to 2020 or a later construction date.

- The decision will be based on future water need projections and financing capabilities at that time.
- The fixed cost of the smallest dam will be substantial.
- The incremental cost of adding storage beyond the minimum reservoir size will be relatively little.

Decision: How will the reservoir be funded? If CIF/WRF or any other sources of funds are not sufficient, a bond issue will be required to be repaid by a water rate increase, a voter-approved property tax increase or a combination of these.

References

February 23, 2009 Power Point Presentation (PAWSD staff)

Concerning the Application for Water Rights of the Pagosa Area Water and Sanitation District and the San Juan Water Conservancy District: Findings of Fact, Conclusions of Law and Decree (District Court, Water Division 7, State of Colorado) – Judge Lyman’s decision for 25,300 acre feet of storage and basis for PAWSD capital improvement planning horizon.

Current Projections for Future Growth, Water Demand and Storage Needs (PAWSD staff) - This report describes the methodology of calculating growth projections, future demand, and reservoir sizing.

Pagosa Area Water and Sanitation District Fee Calculation (BBC Research and Consulting) - This memorandum details the calculation of the Capital Investment and Water Resource Fees.

2055 Capital Improvement Plan for Water (PAWSD staff) - This is the basis for the water Capital Investment Fee calculation.

2055 Capital Improvement Plan for Wastewater (PAWSD staff) - This is the basis for the wastewater Capital Investment Fee calculation.

Dry Gulch Reservoir and San Juan River Diversion Projects: Conceptual Level Opinion of Probable Construction Cost for Raw Water Supply Facilities (MWH Americas, Inc.) - This is the basis for the Water Resource Fee calculation

Conceptual Level Estimates of Probable Cost for the Dry Gulch and Snowball Water Treatment Facilities (Briliam Engineering) - This is partially the basis of the 2055 Capital Improvement Plan for Water.