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Dear Interested Party:

This letter is intended as a preface to this report prepared for the Interstate Stream Commission by its expert contractor. The report summarizes the most comprehensive study of the Middle Rio Grande Conservancy District (MRGCD) since the 1950s, when studies conducted by the U.S. Bureau of Reclamation led to the rehabilitation of the MRGCD as part of the Middle Rio Grande Project authorized by the U.S. Congress in the Flood Control Acts of 1948 and 1950. The main purpose of this report is to determine how the efficiency of the MRGCD can be improved. The report attempts to determine where and why inefficiencies exist in the MRGCD, what steps would be required to improve the efficiency, which is equivalent to reducing the quantity of water diverted per irrigated acre, and the locations and priorities for efficiency improvements.

The New Mexico Interstate Stream Commission determined the need for this study and funded it. Its context includes accountability issues, as explained below, and the fact that as New Mexico enters what may be an extended drought cycle, available water supplies within the fully appropriated middle Rio Grande are dwindling while both human and non-human water demands are increasing. The study was performed and the attached report was prepared by Interstate Stream Commission contractor S.S. Papadopoulos and Associates, Inc., of Boulder, Colorado. Dr. Ramchand Oad, Professor of Irrigation Engineering in the Department of Civil Engineering of Colorado State University, was a subcontractor and assisted in the investigation and the preparation of the report.

The New Mexico Interstate Stream Commission, which is authorized by statute to investigate, develop, conserve and protect the waters of the state of New Mexico, thanks MRGCD for its cooperation in the investigations that are reported herein. The MRGCD provided a review of the final draft of the report to which the Interstate Stream Commission and its contractor responded (these comments and responses are Appendix J). MRGCD did not participate in the analyses and preparation of the report. The Interstate Stream Commission extends its appreciation and gratitude to the MRGCD for making its staff and records available to the project team during the course of this project.

The MRGCD has been criticized in recent years as being very inefficient in its use of the waters of the middle Rio Grande that it is entitled to use under New Mexico water law. That criticism stems in part from the extended failure of the MRGCD to complete a Proof of Beneficial Use

(PBU), which is a requirement of state water law. Specifically, the MRGCD has not complied with a State Engineer directive to document, in a PBU submitted to the Office of the State Engineer, the quantity of water that it has put to beneficial use under its circa 1930 permits #620 and #1690. The MRGCD provides irrigation water to substantially less acreage than it historically has claimed the right to irrigate: 53,926 acres that predate the establishment of the MRGCD, 26,859 acres that the MRGCD claimed in its 1930 survey but were not irrigated due to high groundwater tables, and 42,482 “new” acres—new as of 1930—that it intended to develop and irrigate. MRGCD is obligated, as part of the PBU process, to document the maximum irrigation use under its permits.

The quantity of water that MRGCD diverts is very large compared to the acreage that it irrigates—two or more times as much water per acre as the other irrigation and conservancy districts in New Mexico. No other irrigation district in New Mexico attempts to provide unlimited access to water to its members while having no mechanisms to measure or estimate its water deliveries to its members.

It is enlightening to compare the operations of the MRGCD with that of the Elephant Butte Irrigation District (EBID) on the lower Rio Grande in southern New Mexico. EBID diverts from three river diversion dams to four major canals. The MRGCD diverts from three river diversion dams and directly from Cochiti Reservoir to six major canals. In both EBID and MRGCD, surface returns to the Rio Grande of excess diversions through “wasteways” and drain flows return significant amounts of diverted water to the river. A memorandum comparing and contrasting the river diversion accounting methods employed by EBID and the MRGCD is provided in the report in Appendix A. It concludes that EBID diverts on average about six acre-feet per acre of irrigated land while the MRGCD diverts on average between eight and 12 acre-feet per acre of irrigated land. While there are differences in the irrigation infrastructure of the two districts, the major difference between them is that EBID carefully monitors and accounts for its deliveries of water to its members. MRGCD does not. EBID’s member irrigators must order their irrigation deliveries from EBID far in advance, must be ready to take the water when it is delivered, and are limited to an annual allotment of irrigation water. MRGCD’s member irrigators have no such requirements or restrictions.

It is clear that the MRGCD can be more efficient. The drought year of 2002, one of the worst hydrologic droughts on record on the middle Rio Grande, and the operations of the MRGCD in response to that drought, provided clear evidence that greater efficiencies are achievable and sustainable. A key to the efficiencies achieved by the MRGCD in 2002 was the unprecedented cooperation on water operations during the drought between the MRGCD, the Interstate Stream Commission, the Bureau of Reclamation, the US Army Corps of Engineers, the US Fish and Wildlife Service, the City of Albuquerque and the six middle Rio Grande Pueblos. Given the trends of lower water supply and increased water demand in the middle Rio Grande, continued effective cooperation is essential.

The Interstate Stream Commission expects the water supply available to the MRGCD in 2003, and probably in the years that follow, to be much less than the MRGCD has experienced recently. In 2002, MRGCD used more than 180,000 acre-feet of releases of water from

upstream reservoirs to meet its irrigation demands. That storage is now depleted and under requirements of the Rio Grande Compact, will not be refilled for use in 2003. Article VII of the Rio Grande Compact, which went into effect on July 2, 2002 for the first time in 23 years, now prohibits storage of native Rio Grande basin waters in the MRGCD's El Vado Reservoir. This compact storage prohibition will continue until "usable" stored water in Elephant Butte and Caballo Reservoirs—water that is legally available and obligated to meet downstream water demands in New Mexico, Texas, and Mexico—increases to more than 400,000 acre feet. As long as Article VII of the Rio Grande Compact remains in effect, the MRGCD will not be allowed to store water in El Vado Reservoir for its later irrigation uses after the snowmelt runoff season is over. [Note that this limitation historically has not applied to water storage by the United States to guarantee sufficient water supply for the six middle Rio Grande Pueblos' prior and paramount water rights. The United States has informed the Rio Grande Compact Commission that it will do so again in 2003.] Historically, Article VII storage limitations have persisted for many years. Consequently, the MRGCD will need to redouble its efforts at improving its efficiency if it is to stretch its available water for its members' uses. We hope that a number of the recommendations contained in this report can be implemented in a timely manner so as to help the MRGCD rise to meet this significant challenge.

Finally, any discussion of the operations and efficiencies of the MRGCD must consider the complex cultural setting within which the MRGCD operates. The MRGCD incorporates numerous pre-existing acequias and serves six Pueblos. Prevalent within the social heritage associated with these Pueblos and former acequias is the philosophy that all irrigation ditches must run full all the time. This philosophy extends to claims that the District and its individual irrigators need not be accountable for either the quantities of water diverted nor the amounts of water delivered to the MRGCD's irrigator members. That philosophy is at odds with the New Mexico Constitution, New Mexico water law, Reclamation law, and concepts of water conservation and advancement of the public welfare. In addition, the recent practice of the Pueblos has been to irrigate primarily during daylight hours and to require continuing diversions after normal irrigation demand has ceased. Since the Pueblos are at the head of most of the MRGCD's river diversions, such practices make efficient irrigation in downstream locations more difficult.

In March 2001 the State Engineer wrote to the MRGCD and to the Bureau of Reclamation (Reclamation) regarding the MRGCD's legitimate irrigation diversion requirements (Appendix A of the report). The State Engineer stated his preliminary finding that the MRGCD should not need more than 7.2 acre-feet of diversion per acre of irrigated land per year. Amounts greater than 7.2 acre-feet of diversion per acre of irrigated land per year may be considered wasteful. The letter asked the MRGCD for any information it may have that would explain or clarify its irrigation diversion requirements. It asked Reclamation to determine the proper maximum diversion for the six middle Rio Grande Pueblos that are located within the MRGCD and are served by its facilities so that the State Engineer could take this information into account in determining the maximum allowable diversions for non-Pueblo users. Neither the MRGCD nor Reclamation has provided a written reply to the State Engineer's letter as of the issuance of this report.

The steps that should be taken, based on this report, to improve water management within the MRGCD include both short-term (1-3 years) and longer-term activities. In the short-term, operational improvements that can significantly reduce the District's river diversion demands, perhaps as early as next year, include:

- providing training to appropriate District water operations staff in the principles of irrigation scheduling and rotation;
- using that training to develop and implement consistent rotation methodologies and standard operating procedures within MRGCD divisions and between divisions;
- improving coordination between the District and the Pueblos regarding irrigation scheduling and rotation; and
- implementing selected infrastructure improvements.

In addition, it is essential to definitively establish the quantity of irrigated acreage in the District and its associated consumptive use water rights. This is necessary to determine the legal limits of MRGCD's river diversions. Longer-term activities include continued improvement of the District's water measurement program and evaluation of the data gathered in the program; installation of automated gates and water metering instrumentation at the Isleta and San Acacia Diversions and at key control points throughout the district; and concrete lining of particular canal reaches. Longer-term steps also include establishing accountability for and limits to irrigation deliveries to irrigated land and other uses served by the MRGCD.

Please direct any comments or questions regarding this report to the Interstate Stream Commission's Albuquerque District Office at 505 764-3880.

Sincerely,

/s/ Norman Gaume

Norman Gaume, P.E.
Director