8.0 IMPLEMENTATION OF TMDLS

8.1 NPDES Permitting

The Village of Cuba's current WWTP is an aerated lagoon system that is not designed to treat wastewater for TP or TN removal. The Village contracted with an engineering firm to develop a Preliminary Engineering Review (PER) to design a wastewater treatment plant to improve the water quality of the discharge as a result of an Administrative Order issued by the EPA for effluent violations December 16, 2004 (Village of Cuba, 2006). While the proposed facility is still designed as secondary treatment (i.e., not expressly designed as tertiary treatment to remove nutrients), considerable improvements in nutrient removal are expected if the new facility is constructed as described in the PER. The PER states the effluent quality that would be produced with the proposed facility is TP = 1.0 mg/L (approximately 73% less than the existing lagoons) and TN = 10.0 mg/L (approximately 59% less than the existing lagoons) including reduction of ammonia to 1.0 mg/L or less. These values represent the technologically achievable limits for the proposed extended aeration treatment system as found in Table 10 of the PER (page 15).

Funding of treatment facility modification or replacement needs some consideration in this TMDL. One potential source of funding to carry out a project that embraces the intent of the WLA is the New Mexico Clean Water State Revolving Loan Fund program administered by NMED's Construction Program Bureau. The State of New Mexico Statewide Water Quality Management Plan Work Element 5 (adopted by the WQCC December 17, 2002 and approved by the USEPA April 16, 2003) notes that "…[a]s specified at 40 CFR 130.12(b), CWA Section 201 funding can only be awarded to DMAs [Designated Management Agencies] that are in conformance with the statewide WQMP." The Village of Cuba is a Designated Management Agency (WQMP Work Element 5), thus the first part above requirement has been met. As this WLA is a part of the WQMP, funding will among other factors, be contingent on conformance with this part of the plan as well. This WLA recognizes the technological and economic challenge of meeting the nutrient effluent limitations presented herein and as discussed below and therefore provides three options for the Village of Cuba WWTP.

As noted above the facility discharges to the Rio Puerco under authorization of an NPDES permit. Federal regulations (40 CFR 130.12(a) and 40 CFR 122.44(d)(1)(vii)) clearly require that NPDES permits must be consistent with the WLA of an adopted and approved TMDL. Thus it important to provide direction on implementation of the WLA such that effluent limits and schedules can be readily incorporated within the structure of a permit.

The New Mexico WQS (Subsection J of 20.6.4.12 NMAC) states it is the policy of the WQCC to allow schedules of compliance in NPDES permits where facility modifications need to be made to meet new water quality based requirements.

OPTION 1
The Village of Cuba would replace the existing aerated lagoon system of wastewater treatment with a new system (as discussed in the existing PER) to improve the effluent quality. The

following limits are based on the technological design specifications stated as achievable (with manufacturer guarantees) in the PER (Section 7.a, page 23). Even though the effluent quality that can be achieved by the proposed facility would not be sufficient to meet the target concentrations of the WLA, the overall load would be mitigated in addition to the previously described improved treatment by restricting the Village to discharge to the Rio Puerco as follows:

- Interim Effluent Limits from the date of permit issuance through the completion of construction (not to exceed 3-years)
    - Monitor and report TP, TN, and Total Ammonia by 3-hour composite, not less than once per two weeks
- Final Effluent Limits after completion of construction of new WWTP where the 30-day average loading effluent limit (lbs/day) is calculated by multiplying the 30-day average concentration based limit (mg/L) by the facility design flow (MGD) x 8.34:
    - From November 1 through March 31 each year, when instream biological activity is generally at it's lowest due to lower temperatures and shorter periods of daylight the WWTP would be allowed to discharge to the Rio Puerco. The effluent limits would be the design parameters expressed in the PER.
        - TP = 1.2 lbs/day (30-day average), 1.0 mg/L (30-day average), 1.5 mg/L (daily max) measured by 3-hour composite, not less than once per two weeks
        - TN = 12.0 lbs/day (30-day average), 10.0 mg/L (30-day average), 1.5 mg/L (daily max) measured by 3-hour composite, not less than once per two weeks
        - Total Ammonia = 1.0 mg/L (30-day average), 1.5 mg/L (daily max) measured by 3-hour composite, not less than once per two weeks
    - From April 1 through October 31 each year, when instream biological activity is generally at its highest, the WWTP would not be allowed to discharge to the Rio Puerco.
        - Instead of discharging to the Rio Puerco at this time, the WWTP effluent would be stored or disposed through other means (e.g., evaporation, agricultural reuse etc.) in accordance with the State Ground and Surface Water Protection Regulations (20.6.2 NMAC). Note: Ground Water Protection is addressed in the WQMP in Work Element 9.
        - The Village would need to implement Best Management Practices during the time of agricultural reuse to prevent the treated wastewater from draining back into the Rio Puerco as runoff from the irrigated land.

Although the effluent limits would not meet the targets of the TMDL, these restrictions would significantly reduce the load of TP and TN that are introduced into the Rio Puerco. After implementation of these technology based limits and enough time to allow the aquatic to system to respond, NMED would then reevaluate the condition of the Rio Puerco and the Nutrient TMDL. At the time that NMED reevaluates the conditions in the Rio Puerco, if it is found to still be impaired for Total Plant Nutrients, the Village of Cuba WWTP would be required to increase the treatment of the effluent by adding tertiary treatment to remove the nutrients from the effluent or find other means of disposal not in the Rio Puerco.

OPTION 2
The WWTP would be required to meet the TMDL WLA as stated in table 5.7 year round. This would require the Village of Cuba to build an advanced tertiary WWTP (e.g. one that has both biological and chemical treatment processes). A schedule of compliance would be allowed similar to Option 1 above.

- Interim Effluent Limits from the date of permit issuance through the through completion of construction (not to exceed 3-years)
    - Monitor and report TP, TN, and Total Ammonia by 3-hour composite, not less than once per two weeks
- Effluent Limits after completion of construction of new WWTP
    - Year round
        - TP = 0.447 lbs/day (30-day average), 0.375 mg/L (30-day average), 0.56 mg/L (daily max) measured by 3-hour composite, not less than once per two weeks
        - TN = 1.36 lbs/day (30-day average), 1.13 mg/L (30-day average), 1.7 mg/L (daily max) measured by 3-hour composite, not less than once per two weeks

OPTION 3
The WWTP would discontinue discharge to the Rio Puerco entirely.

It is acknowledged that the Village of Cuba WWTP design flow referenced in Tables 5.4, 5.6, and 5.7 and used in Equation 2 has the potential to change given the plans in the PER currently on record with the Village of Cuba. In the event that a new design flow is initiated, the calculated WLA will change; this fact should be noted when developing upcoming permits for the facility. Subsequently, the WLA will also change in Table 5.8 and 5.9.

8.2 WRAS and BMP Coordination

Watershed public awareness and involvement will be crucial to the successful implementation of these plans to improve water quality. Staff from SWQB have worked with stakeholders to develop a WRAS for the Río Puerco Watershed (RPMC 2001). The WRAS is a written plan intended to provide a long-range vision for various activities and management of resources in a watershed. It details opportunities for private landowners and public agencies to reduce and prevent impacts to water quality. This long-range strategy will become instrumental in coordinating and achieving constituent levels consistent with New Mexico's WQS, and will be used to prevent water quality impacts in the watershed. The WRAS is essentially the Implementation Plan, or Phase Two of the TMDL process. The completion of the TMDLs and WRAS leads directly to the development of on-the-ground projects to address surface water impairments in the watershed.

SWQB staff will continue to assist with technical assistance such as selection and application of BMPs needed to meet WRAS goals. Stakeholder public outreach and involvement in the implementation of this TMDL will be ongoing. Stakeholders in this process will include SWQB

and members of the Río Puerco Management Committee. SWQB will actively pursue engagement with land owners, ranchers and acequia associations as stakeholders in the implementation of this TMDL.

Implementation of BMPs within the watershed to reduce pollutant loading from nonpoint sources will be encouraged. Reductions from point sources will be addressed in revisions to NPDES discharge permits. SWQB will communicate to designated federal land management agencies the intent of the TMDL and desire that BMPs be developed through the above coordination process.

8.3 Time Line

The Río Puerco Management Committee (RPMC) was established in 1997 by direction from the Congress of the United States, under the *Río Puerco Watershed Act*, Section 401 of the *Omnibus Parks and Land Management Act of 1996*. Therefore watershed group formation was completed prior to the planning stages for the 2004 intensive survey, and thus prior to any impairment determinations/verifications or TMDL development. As a result, the WRAS was developed and finalized before preparation of these TMDLs. The modified general implementation timeline is detailed below (Table 8.1).

8.4 Clean Water Act §319(h) Funding Opportunities

The Watershed Protection Section of the SWQB manages a grant program of CWA §319(h) funding to assist in implementation of BMPs to address water quality problems on reaches listed as category 4 or 5 waters on the Integrated CWA §303(d)/§305(b) list. These monies are available to all private, for profit and nonprofit organizations that are authenticated legal entities, or governmental jurisdictions including: municipalities, counties, tribal entities, Federal agencies, or agencies of the State. Proposals are submitted by applicants at least once a year through a Request for Proposal (RFP) process and require a non-federal match of 40% of the total project cost consisting of funds and/or in-kind services. Funding is available for both watershed group formation (which includes WRAS development) and on-the-ground projects to improve surface water quality and associated habitat. Further information on funding from the CWA §319 (h) can be found at the SWQB website: http://www.nmenv.state.nm.us/swqb/.

Table 8.1 Proposed Implementation Timeline

Implementation Actions	Year 1 (1997)	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10 (2006)
Public Outreach and Involvement	X	X	X	X	X	X	X	X	X	X
Form watershed groups	X									
TMDL Development								X	X	X
WRAS Development				X	X					
Revise any NPDES permits as necessary (currently USEPA Region 6)				X					X	
Establish Performance Targets		X	X	X						
Secure Funding		X	X	X						
Implement Management Measures (BMPs)				X	X	X	X	X	X	X
Monitor BMPs					X	X	X	X	X	X
Determine BMP Effectiveness					X	X	X	X	X	X
Reevaluate Performance Targets						X	X	X	X	X

8.5 Other Funding Opportunities and Restoration Efforts in the Río Puerco Basin

Several other sources of funding existing to address impairments discussed in this TMDL document. NMED's Construction Programs Bureau assists communities in need of funding for WWTP upgrades and improvements to septic tank configurations (such as the design of cluster systems). The Construction Programs Bureau can also provide matching funds for appropriate CWA §319(h) projects using state revolving fund monies. The United States Department of Agriculture (USDA) Environmental Quality Incentive Program (EQIP) program can provide assistance to private land owners in the basin. The USDA Forest Service aligns its mission to protect lands it manages with the TMDL process, and is another source of assistance. Also, the BLM has several programs in place to provide assistance to improve unpaved roads and grazing allotments.