

Appendix E

Water Projects List

As of March, 2004

The City of Albuquerque Drinking Water Project

is part of the Water Resources Management Strategy and can be found beginning with the Water Resources at <http://www.cabq.gov/waterresources/strategyindex.html>.

SSCAFCA HIGH PRIORITY PROJECTS*

MONTOYAS ARROYO WATERSHED

<i>Facility</i>	<i>Location</i>	<i>Description</i>	<i>Estimated Costs \$X000</i>
Lomitas Negras Arroyo	Enchanted Hills Elementary School	Soil cement conveyance from NM 528 to Saratoga Road	\$3,000
Channel Crossing Structure	HJC Inlet to Village limits	HJC Sediment Pond to Straighten Section	\$300
Channel Crossing Structure	West of NM 528	Soil cement conveyance from NM 528 to Rio Rancho Sports Plex	\$300
Dam	Sports Plex	Sports Plex Dam	\$5,000

Total \$8,600

VENADA ARROYO WATERSHED

<i>Facility</i>	<i>Location</i>	<i>Description</i>	<i>Estimated Costs \$X000</i>
Unser Dam ROW	West Side of Unser Blvd. in Section 19	ROW for Earthen dam with integrated SWQ BMP.	(\$600) ¹
ROW for Venada SWQ-Paseo del Volcan	On Venada Arroyo, upstream of Paseo del Volcan	SWQ facility	(\$398)

Total (\$998)

BLACK ARROYO WATERSHED

<i>Facility</i>	<i>Location</i>	<i>Description</i>	<i>Estimated Costs \$X000</i>
Sugar Diversion	Sugar Ch. to Sunset Dam	Storm Drain	\$763
Sunset Dam & SWQ	Sunset Arroyo at Inca / Idalia / Tulip Road	Earthen dam with integrated SWQ BMP	\$668 (\$270)

Lisbon Dam & SWQ	Lisbon Arroyo at Inca / Idalia / Tulip Road	Dam with integrated SWQ BMP. Protects undersized downstream facilities.	\$1160 (\$570)
Tributary 'A' Dam ROW	Tributary 'A' at 11 th Street	ROW for dam and SWQ facility prior to significant development	(\$450)
Park SWQ Detention Dam Phase 1 ROW	Confluence of Ivory and Lisbon Channels	ROW for Stormwater Quality detention at confluence. Property shown as "park" on plats potentially available.	(\$420)
Unser SWQ Detention Dam Phase I ROW	Confluence of West Branch, Unser Channel & Tributary 'A' east of Unser Blvd. north of 19 th Ave.	ROW for SWQ detention on West Branch, Unser Channel and Tributary 'A' confluence at Unser	(\$390)

Total \$2,591

*Taken From Approved Watershed Management Plans

(\$2,100) ROW Costs shown in ()

Subtotal \$4,691

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Middle Rio Grande Regional Water Planning Entities
Capital Outlay Water & Related Projects (2003-2007)

Revised 12-18-03

	<i>Project Title</i>	<i>Funding Source</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>
Albuquerque							
2003-01	Intercep&Trenchless Swr Rehab	LBonds	2,720,000	2,460,000	2,800,000	6,280,000	3,000,000
2003-01	NPDES Strm Wtr Mntrg/Testing	LBonds	125,000	125,000	125,000	125,000	125,000
2003-01	Wtr Resource Strategy Imple	LBonds	13,000,000	48,000,000	61,000,000	50,200,000	4,800,000
2003-02	47th Av & W Central Av Strm Drain	LBonds	500,000	750,000	750,000	0	0
2003-02	Rio Grande River Delta	LBonds	200,000	150,000	150,000	0	0
2003-02	Treatment Plant Renovation	LBonds	200,000	1,500,000	700,000	1,800,000	200,000
2003-02	Water Facility Renovation	LBonds	3,500,000	1,800,000	2,800,000	1,800,000	2,500,000
2003-03	Service Line Rpl	LBonds	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
2003-03	Sewer Line Rpl	LBonds	2,000,000	3,000,000	3,000,000	3,000,000	3,000,000
2003-03	South Brdwy/San Jose Drain Reh	LBonds	500,000	300,000	300,000	900,000	900,000
2003-04	Cooperative Sewer Rehab	LBonds	695,000	1,500,000	1,500,000	1,500,000	1,500,000
2003-04	Cooperative Water Rehab	LBonds	1,500,000	1,500,000	2,000,000	2,000,000	2,000,000
2003-04	Valley Drainage Interconnect	LBonds	250,000	0	0	0	0
2003-04	Water System Metering	LBonds	300,000	300,000	300,000	300,000	300,000
2003-05	Storm Drainage Facility Rehab	LBonds	200,000	250,000	250,000	500,000	500,000
2003-05	Water Line Rpl	LBonds	2,600,000	2,700,000	2,700,000	2,700,000	2,700,000
2003-06	Odor Ctrl Rehabilitation	LBonds	1,000,000	0	0	700,000	0
2003-06	Public Works Funding	LBonds	250,000	250,000	250,000	250,000	250,000
2003-07	Advanced Planning and Eng	LBonds	150,000	150,000	150,000	150,000	150,000
2003-07	Meter Box Rpl	LBonds	300,000	300,000	300,000	400,000	400,000
2003-07	Wastewater Automated Systems	LBonds	1,105,000	630,000	705,000	605,000	750,000
2003-08	AWOMS/SCADA System	LBonds	3,700,000	3,500,000	1,500,000	800,000	0
2003-08	Special Assessment District	LBonds	50,000	250,000	250,000	250,000	250,000
2003-08	Wastewater Advance Plng & Eng	LBonds	200,000	200,000	200,000	200,000	200,000
2003-09	Rio Grande Valley State Prk	LBondsFGGrant	125,000	375,000	375,000	250,000	250,000
2003-09	W Mesa Diversion, I-40 to Bluewtr	LBonds	892,850	500,000	500,000	0	0
2003-09	Wastewater Policy Line Ext	LBonds	100,000	100,000	100,000	100,000	100,000
2003-09	Water Utility Plan	LBonds	500,000	500,000	500,000	400,000	300,000
2003-10	Dip Rpl Crossing Structures	LBonds	250,000	250,000	250,000	250,000	250,000
2003-10	Water Reduction (UAW)	LBonds	200,000	200,000	200,000	200,000	200,000
2003-11	Domingo Baca Arroyo, I-25 & Vicinity	LBondsLocal	750,000	625,000	625,000	0	0
2003-11	Large Water Valve Rpl	LBonds	300,000	300,000	300,000	300,000	300,000
2003-12	SouthEubank Storm Drainage Sys	LBonds	1,000,000	1,250,000	1,250,000	0	0
2003-12	Water Policy Line Extensions	LBonds	700,000	0	0	300,000	300,000
2003-13	Bear Cyn Arroyo, W of Wyo Blvd	LBonds	200,000	0	0	0	0
2003-13	Canada Reservoir & Transmission Line	LBonds	100,000	100,000	100,000	100,000	100,000
2003-14	Pino Arroyo at wyo Blvd & at Ventura	LBonds	250,000	0	0	200,000	200,000
2003-14	Water Rights Enhancement	LBonds	400,000	400,000	400,000	400,000	400,000
2003-15	Louisiana @ I-40	LBonds	210,000	0	0	0	0

2003-15	Water Facilities Landscaping	LBonds	100,000	100,000	100,000	100,000	100,000
2003-16	Gibson/S Diversion Channel to Yale	LBonds	350,000	0	0	0	0
2003-16	Water Automated Systems	LBonds	425,000	855,000	655,000	410,000	580,000
2003-17	Improv to Balloon Fiesta Prk Area	LBonds	500,000	0	0	0	0
2003-17	Infrastructure GIS	LBonds	450,000	375,000	170,000	175,000	150,000
2003-18	Infill/Comm. Vitality Hydrology Defic.	LBonds	1,000,000	0	0	0	0
2003-18	Water Advance Planning & Eng	LBonds	200,000	200,000	200,000	200,000	200,000
2006-02	Lift Stn Rehab and Expansion	LBonds	0	0	0	500,000	500,000
2006-03	Alameda 6/7/8E Facilities	LBonds	0	0	0	100,000	1,800,000
			46,047,850	77,745,000	89,455,000	80,445,000	31,255,000

Belen

2003-01	Wastewater Infrastructure Improvmts	FLoanSGrantFGrant	2,402,000	3,458,000	2,358,000	2,046,000	1,664,000
2003-05	Water Well #4	Local SGrant	500,000	380,000	0	0	0
2003-06	Booster Pump West Mesa	SGrant Local	400,000	0	0	0	0
2004-02	Drainage Master Plan	SGrant	0	140,000	140,000	140,000	0
2004-03	Water Plan	CDBG Local	0	25,000	0	0	0
2004-06	Storage Tank-Industrial Prk	SGrant Local	0	500,000	0	0	0
2005-02	Bernard Infra Improvement	FGrant SGrant	0	0	287,500	287,500	287,500
2005-04	Eastside Water Improvements	SGrant Local	0	0	800,000	800,000	0
2005-06	South Mesa Rd Water/Sewer Line	SGrant FGrant	0	0	1,200,000	1,200,000	1,200,000
2006-02	Water Master Plan	Local	0	0	0	60,000	0
2006-03	City Wide Waterlines	SGrant	0	0	0	900,000	0
2006-03	Drainage-Camino del Llano	FGrant SGrant	0	0	0	500,000	600,000
2007-02	Bosque Drain Improvements	SGrant	0	0	0	0	500,000
			3,302,000	4,503,000	4,785,500	5,933,500	4,251,500

Bernalillo

2003-01	Wastewater Treatment Plnt Improv	LGrant SGrant SLoan	1,230,000	1,892,000	1,800,000	1,800,000	0
2003-03	Municipal Water/Sewer Sys Improv	FGrant SLoan	780,000	0	0	0	0
2003-12	Municipal Water Well Improv	FLoan SLoan FGrant	3,250,000	3,250,000	3,250,000	3,250,000	0
			5,260,000	5,142,000	5,050,000	5,050,000	0

Bernalillo County

2003-10	NPDES Phase II	LBonds FGrant Local	190,000	0	0	0	0
2003-12	Far North Edith Flood Prevention	LBonds SGrant FGrant	5,000,000	1,000,000	0	0	0
2003-21	Southwest Valley Flood Reduc Proj	FGrant Local LBonds	14,780,000	830,000	1,750,000	1,750,000	3,500,000
2003-34	S & N Valley Water & Wstwtwr Infra	CDBG FGrant SGrant	79,000,000	0	0	0	0
2003-37	Water Tanks	LBonds	105,000	0	0	0	0
2003-47	Water and Sewer Hook-ups	Local	190,000	0	0	0	0
2003-53	Barcelona Elementary Crosswalks	LBonds FGrant Local	2,254,000	0	0	0	0
2003-65	Rinconado Lane SW	LBonds	22,000	0	0	0	0
2003-66	Campo Rd from Forrest to Tablazon	LBonds	228,000	0	0	0	0
2003-68	Entranosa Rd	LBonds	285,000	0	0	0	0
2003-75	School Zone Stdy/Osuna & 2nd St	LBonds	12,000	0	0	0	0

2003-84	RailRd Crossing Osuna Wbound	LBonds	272,000	0	0	0	0
2003-86	Buena Vista St SE Resurfacing	LBonds	577,000	0	0	0	0
2003-89	Buena Vista St SE Sidewalk Constr	LBonds	34,000	0	0	0	0
2004-06	4-Year Water Rights Plan	LBonds Local	30,000	0	0	0	0
			102,979,000	1,830,000	1,750,000	1,750,000	3,500,000

Bosque Farms

2003-02	Wastewater Collection System	Local LGrant SGrant FGrant	175,000	0	0	0	0
2003-03	Water Quality	Local	80,000	100,000	50,000	50,000	50,000
			255,000	100,000	50,000	50,000	50,000

Corrales

2003-02	Rdway Drainage	Local SGrant	155,000	175,500	55,500	55,500	55,500
2003-04	Wastewater System	Local LGrant SGrant FGrant	250,000	1,750,000	0	0	0
			405,000	1,925,500	55,500	55,500	55,500

Cuba

2003-01	Water System Improvements	CDBG LGrant	525,000	500,000	0	0	0
2005-01	Sewer system Improvements	CDBG LGrant	0	0	500,000	500,000	0
			525,000	500,000	500,000	500,000	0

Jemez Springs

2004-03	Flood Ctrl	LGrant SGrant FGrant	0	175,000	175,000	175,000	0
2004-03	Village Draining, Paving & Gravel	SGrant FGrant Local	0	64,000	74,000	75,000	100,000
2005-03	Bathhouse Upgr	CDBG	0	0	500,000	0	0
2005-03	Sewer Line Upgr	FGrant SGrant	0	0	1,000,000	0	0
			0	239,000	1,749,000	250,000	100,000

Los Lunas

2003-02	Downtown Sewer Line Rpl	SLoan	694,500	723,438	578,750	0	0
2003-03	North Loop Water Improv Proj	Local SGrant SLoan	403,000	0	0	0	0
2003-04	Hillside Sewer/Storm/St/Wter Proj	SLoan Local FGrant	1,500,000	3,244,489	0	0	0
2003-05	WWTP Land Acquisition	Local	350,000	0	0	0	0
2003-07	New Water Well #6	Local SGrant SLoan	996,000	0	0	0	0
2003-08	New Water Tank #6	Local SGrant SLoan	423,000	0	0	0	0
2004-04	Carson Drive Drainage Improvements	LGrant	0	308,675	0	0	0
2004-12	Sewer-Tondre Rd/SR6 on Don Pasqual	SGrant Local	0	1,830,000	0	0	0
2004-13	West I-25 Lift Stn	SGrant Local	0	746,000	0	0	0
2004-19	N Los Lentos Sidest Infra St Improv	SGrant Local	0	300,000	0	0	0
2004-20	Colonial Av Drnge-Acq Prop/Construct	Local	0	100,000	100,000	0	0
2004-22	Lift Stn #4	Local	0	550,000	0	0	0
2005-01	Wastewater Plant Expansion	SLoan	0	0	6,530,000	0	0
2005-02	Wtr Sys Improv/Arsenic Requiremnts	LBonds FLoan SGrant	0	0	10,000,000	4,000,000	0

		Local						
2005-03	Sewer Interceptor Line 402	SGrant Local	0	0	4,000,000	0	0	0
2005-06	Morris Rd/SR 314 Water Loop	SLoan Local SGrant	0	0	746,000	0	0	0
2006-01	Sludge Site Improvements	SGrant Local	0	0	0	65,000	0	0
2007-05	SR 6 Interceptor Near NM 314	SGrant Local	0	0	0	0	270,000	0
2007-06	Morris Rd Sewer Extension	SGrant SLoan	0	0	0	0	1,154,000	0
2007-07	Storm Water Management	SGrant Local	0	0	0	0	0	500,000
			4,366,500	7,802,602	21,954,750	4,065,000	1,924,000	0

Los Ranchos de Albuquerque

2003-02	Sanitary Sewers	SGrant	70,000	900,000	0	0	0	0
			70,000	900,000	0	0	0	0

Rio Rancho

2003-01	La Barranta Improvements	Local	290,000	250,000	0	0	0	0
2003-01	Water Rights Acquisition	Local	810,000	1,000,000	1,000,000	1,000,000	1,000,000	0
2003-02	Enchanted Hills Channel Lining	FGrant Local	20,000	520,000	0	0	0	0
2003-02	Well 20	Local	1,500,000	0	0	0	0	0
2003-03	Rainbow/Tulip Flood Ctrl	Local	80,000	100,000	60,000	200,000	0	0
2003-03	Well Site Security	Local	30,000	710,000	0	0	0	0
2003-04	Effluent Re-Use Facilities	Local	400,000	400,000	4,400,000	0	0	0
2003-04	Unit 17 Drainage Plan	Local	220,000	220,000	220,000	220,000	220,000	220,000
2003-05	Citywide Drainage ROW	Local	100,000	95,000	95,000	95,000	95,000	95,000
2003-06	Arsenic Treatment Plant	Local	710,000	7,100,000	7,100,000	7,100,000	0	0
2003-06	Various Drainage Improvements	Local	175,000	175,000	175,000	175,000	175,000	175,000
2003-07	Mariposa Well 24	Local	1,825,000	0	0	0	0	0
2003-07	Saratoga Crossing	Local	55,000	0	0	0	0	0
2003-08	Ivory/Spur Channel	Local	120,000	1,500,000	0	0	0	0
2003-08	Mariposa Water System Improv	Local	2,900,000	0	0	0	0	2,484,000
2003-09	Chessman Drainage Plan	Local	20,000	130,000	130,000	0	0	0
2003-09	WWTP #5 Mariposa/Hawksite	Local	5,000,000	1,000,000	0	0	0	0
2003-10	Upgr UV System at WWTP #3	Local	100,000	0	0	0	0	0
2003-11	Unit 20 Sewer Line and Lift Stn	Local	780,000	0	0	0	0	0
2003-12	Polyethylene Services	Local	130,000	130,000	130,000	130,000	130,000	130,000
2003-13	Sewer Manhole Improvements	Local	50,000	50,000	50,000	50,000	50,000	50,000
2003-14	Fire Hydrant Installation	Local	50,000	50,000	50,000	50,000	50,000	50,000
2003-15	Rehabilitation of Two Water Wells	Local	250,000	250,000	0	0	0	0
2003-16	Well #19 Water Line	Local	400,000	0	0	0	0	0
2003-17	Chlorine Generation System	Local	150,000	0	0	0	0	0
2003-18	High Resort Pressure Valves	Local	60,000	0	0	0	0	0
2003-19	Lift Stn at WWTP #1	Local	500,000	0	0	0	0	0
2004-01	Arsenic and Other Substance Removal	Local	0	500,000	3,100,000	16,350,000	10,050,000	0
2004-01	Rolling Hills Drainage	Local	0	250,000	0	0	0	0
2004-02	Reservoir 12E	Local	0	750,000	0	0	0	0

2004-03	2 MG Reservoir at Well 9	Local		568,000		0		0
2004-04	4 MG Reservoir	Local	0	1,080,000		0	0	0
2004-05	New Well	Local	0	1,800,000		0	0	0
2006-01	WWTP #2 Expansion	Local	0	0		0	4,000,000	4,000,000
			16,725,000	18,628,000		16,510,000	29,370,000	18,254,000

San Ysidro

2003-01	Water Treatment Plant Constr	CDBG SLoan	166,416	0		0	0	0
2007-01	Wastewater Treatment Plant Constr	CDBG LGrant Local	0	0		0	0	1,516,500
			166,416	0		0	0	1,516,500

Sandoval County

2003-01	Bernalillo Bosque Sewer	Local SGrant FGrant	250,000	1,250,000	1,100,000		0	0
2003-01	Pena Blanca Water & Sewer Sys	Local FGrant SGrant	1,200,000	1,380,000		0	0	0
2003-01	Placitas Water System Upgr	SGrant Local	250,000	0		0	0	0
2003-01	Ponderosa Water	SGrant	200,000	0		0	0	0
2003-01	Rehabilitate Acequia Sys-Cuba	Local SGrant FGrant	160,000	400,000	200,000		0	0
2003-01	Sile Water & Sewer System	Local SGrant FGrant	150,000	1,500,000		0	0	0
2003-01	Upgr Algodones Water System	Local SGrant	200,000	50,000		0	0	0
2004-01	Countywide Sewer Treatment Study	Local SGrant	0	500,000		0	0	0
2005-01	Algodones Back-up Well & Storage	Local SGrant FGrant	0	0	219,000		0	0
2005-01	Canon Water System	Local SGrant FGrant	0	0	1,000,000		0	0
2005-01	La Jara Water System	SGrant FGrant Local	0	0	1,008,000		0	0
			2,410,000	5,080,000	3,527,000		0	0

Tijeras

2003-01	Municipal Water System	Local LGrant CDBG FGrant FLoan	400,000	400,000	400,000		400,000	400,000
2003-07	Tijeras Arroyo Stabilization	Local	22,500	22,500	22,500		22,500	22,500
2003-09	Municipal Sewer System	SGrant CDBG Local LGrant	390,000	390,000	390,000		390,000	390,000
			812,500	812,500	812,500		812,500	812,500

Valencia County

2005-02	Master Wtr and WasteWtr Sys	LGrant SGrant	0	0	85,000		0	0
			0	0	85000		0	0

Southern Sandoval County Arroyo Flood Control Authority

Montoyas Arroyo Watershed

Lomitas Negras Arroyo - Conveyance Channel Soil Cementing	Local SGrant FGrant	3,000,000
Channel Crossing Structure - HJC Sediment Pond	Local SGrant FGrant	300,000
Channel Crossing Structure - Sports Plex to NM 528	Local SGrant FGrant	300,000

Dam @ Sports Plex	Local SGrant FGrant		5,000,000		
<i>Venada Arroyo Watershed</i>					
Unser Dam ROW	Local SGrant FGrant	1	600,000		
ROW for Venda SWQ - Volcan	Local SGrant FGrant	1	398,000		
<i>Black Arroyo Watershed</i>					
Sugar Diversion Storm Drain	Local SGrant FGrant		763,000		
Sunset Dam & SWQ	Local SGrant FGrant	1	938,000	[270,000 ROW]	
Lisbon Dam & SWQ	Local SGrant FGrant	1	1,730,000	[570,000 ROW]	
Tributary 'A' Dam ROW	Local SGrant FGrant	1	450,000		
Park SWQ Detention Dam Ph 1 ROW	Local SGrant FGrant	1	420,000		
Unser SWQ Detention Dam Ph 1 ROW	Local SGrant FGrant	1	390,000		
			14,289,000		
Grand Total All Projects			197,613,266	125,207,602	146,284,250 128,281,500 61,719,000

MIDDLE RIO GRANDE WATER ASSEMBLY

Proposed Projects Directly Related to the Recommendations in Section 10.2

As stated in Section 10.1 cost and schedule data for individual recommendations is to be developed and provided as a table during update cycles of the water plan.

- ***R1-1—Establish a Domestic Well Policy***

- Provide funds to the State Engineer for appropriate technical analysis to establish a reasonable policy for restricting drilling of domestic wells where surface waters or the aquifer could be impaired.

- ***R1-2—Outdoor Conservation Programs***

- Provide funding to local governments to contract for a study leading to the establishment of template programs which may be used by local governments to implement incentive, regulatory, and/or public education policies to reduce the urban and suburban consumptive use of water.

- Provide funding to local governments to implement incentive, regulatory, and/or public education policies to reduce the urban and suburban consumptive use of water.

- ***R1-3—Rainwater Harvesting***

- Provide funding to local governments to contract for a study leading to the establishment of template programs which may be used by local governments to implement incentive, regulatory, and/or public education policies that will encourage rain water harvesting.

- Provide funding to local governments to implement incentive, regulatory, and/or public education policies that will encourage rain water harvesting.

- ***R1-4—Conversion to Low Flow Appliances***

- Provide funding to local governments to contract for a study leading to the establishment of template programs which may be used by local governments to implement incentive, regulatory, and/or public education policies that will encourage conversion of all construction, new and old, to utilize effective low flow appliances such as toilets, clothes washing machines, dishwashing machines, showers, automatic shutoff faucets, and broken sprinkler cutoffs.

- Provide funding to local governments to implement incentive, regulatory, and/or public education policies that will encourage conversion of all construction, new and old, to utilize effective low flow appliances.

- ***R1-5—Urban Water Pricing***

- Provide funding to local governments to contract for a study to identify water pricing mechanisms that local governments may examine and identify as those that will be most effective at conserving water in individual jurisdictions.

- Provide funding to aid local governments institute appropriate water pricing mechanisms.

- ***R1-6—Greywater Reuse***

- Provide funding to local governments to contract for a study leading to the establishment of template programs which may be used by local governments to implement incentive, regulatory, and/or public education policies that will encourage safe and effective greywater reuse.

MIDDLE RIO GRANDE WATER ASSEMBLY

- Provide funding to local governments to implement incentive, regulatory, and/or public education policies that will encourage safe and effective greywater reuse.

- Provide funding to local governments to contract for installation of dual piping systems for grey water reuse in all new government buildings and retrofit existing government buildings.

- ***R1-7—Treated Effluent Re-use***

- Provide funding to local governments to contract for a study leading to the establishment of template programs which may be used by local governments to implement incentive, regulatory, and/or public education policies that will encourage safe and effective treated effluent reuse.

- Provide funding to local governments to implement incentive, regulatory, and/or public education policies that will encourage safe and effective treated effluent reuse.

- Provide funding to local governments to contract for the installation of dual piping systems for treated effluent reuse in all new government buildings and retrofit existing government buildings throughout the as appropriate.

- ***R1-8—Growth of Parks and Golf Courses***

- Provide funding to local governments to develop reduced water use landscape design principles and technologies to be used by local governments and developers in the construction and remodeling of parks and golf courses.

- Provide funding to local governments to contract for retrofitting publicly owned parks and golf courses using develop reduced water use landscape design principles and technologies.

- ***R1-9—Recognize Urban and Economic Vitality in the Region (Goal D)***

No Projects

- ***R2-1—Adjudication and Water Rights Settlement***

- Provide funding to the State Engineer to contract for a study to identify and create more expedient, equitable, and less costly processes, including alternative dispute resolution for adjudication of water rights.

- Provide funding to the State Engineer to contract for the preparation of the necessary information, including hydrographic surveys, to assist in the identification, quantification and resolution of priority ownership rights.

- Provide funding to the State Engineer to contract for sufficient legal services to adjudicate or otherwise determine priority ownership rights..

- ***R2-2—Conjunctive Use Management***

- Provide funding to the State Engineer to contract for studies to develop appropriate technical and public participation programs to implement conjunctive use management.

- Provide funding to the State Engineer and local governments to conduct develop appropriate technical and public participation programs to implement conjunctive use management.

- ***R2-3—Funding Source for Water Activities***

- Establish a funding source to provide a dedicated and reliable recurring revenue stream, augmented with federal funds, for water projects, planning and conservation.

MIDDLE RIO GRANDE WATER ASSEMBLY

- ***R2-4—Elephant Butte Loss Accounting***

- Provide funds to the State Engineer and the Interstate Stream Commission for appropriate technical analysis to apportion evaporative losses from Elephant Butte Reservoir fairly between the two water-planning regions, Socorro-Sierra and Middle Rio Grande.

- ***R2-5—Active Administration***

- Provide funds to the State Engineer to contract for monitoring and enforcement to assure that only that allowable and necessary water is drawn for municipal uses, agriculture, and other use and assure that land whose water rights have been retired, transferred or leased not continue to use part or all wet water for which it had been previously entitled.

- ***R2-6—Water Resource Database***

- Provide funds to the State Engineer to contract for development of a regional water resource database to be established and maintained as a basis for historical trend analysis, current conditions profile, and future projections of water supply and demand and made accessible to any water management entity.

- Provide funds to the State Engineer to contract for the expansion and coordination of existing GIS data by establishing an integrated water use and water budget database compiled into a regional database organized according to standards that would allow for ready exchange of information. The data should include; but not be limited to; surface water gauging, ground water levels, public water supply, irrigation flows and returns, domestic wells, flood, and water quality data.

- Provide funding to contract for further studies to enhance the credibility of the results and recommendations of the Middle Rio Grande Regional Water Plan, to help appraise the success in solving the region's water problems, and to guide the region to improve remedial actions.

- ***R2-7—Watershed Management Plans***

- Provide funding to local governments to contract for the development of watershed management plans to achieve common objectives such as: increasing water yield; reducing storm water runoff and preventing soil erosion; improving woodland and rangeland health; increasing infiltration and protecting aquifer recharge zones, and ensuring water quality protection from non-point source pollution.

- ***R2-8—Comprehensive, Integrated, and Continued Water Planning***

- Provide funding to contract for the development of template programs for use by local government jurisdictions and regional planning agencies to cooperatively integrate water plans with planning for land use, transportation, economic development, and other planning efforts of regional significance.

- Provide funding to contract for continued study of the inflows, consumptive uses, and interaction between ground water and surface water in the region to enhance the credibility of existing results and recommendations; to help appraise success in solving the region's water problems; and provide a guide to improved remedial actions.

- ***R2-9—Storm Water Management Plans***

- Provide funding to local governments to contract for the development of template programs for enhancement and expansion of local government storm water plans to control runoff, using swales, terraces and retention structures to minimize erosion, enhance infiltration, and recharge, and prevent pollution of surface and ground water.

MIDDLE RIO GRANDE WATER ASSEMBLY

- ***R2-10—Cooperative Regional Water Management***
 - Provide funding to contract for technical assistance to local government jurisdictions to design implementation mechanisms to share the task of balancing the regional water use with renewable supply and implement sustainable water resource management to reduce water consumption, minimize impact on water resources, encourage conservation-oriented economic development; ensure adequate water supplies for any proposed development, protect and enhance the environment, and consider the carrying capacity and location of development, integrate with other major plans in the region.
- ***R2-11—Water Banking***
 - Provide funding to the State Engineer to contract for the development of a clearly defined policy for leasing water through a water-banking system.
- ***R2-12—Land Use Management Planning***
 - Provide funding to contract for the development of a program to encourage local jurisdictions to integrate the land use, transportation, economic development, and water components of each of their comprehensive plans; and to integrate their comprehensive plans with the regional water plan in accordance with this recommendation.
- ***R3-1—Measure All Water Uses***
 - Provide funding to the State Engineer to contract for the development of a policy for acquiring and installing appropriate measuring devices on all individual water uses and to establish a cost-effective method for monitoring the indications from these devices.
- ***R4-1—Upgrade Agricultural Conveyance Systems***
 - Provide funding to contract for the development of a system for individual farmers and/or the Middle Rio Grande Conservancy District to identify appropriate ditches and canals to line or pipe and to finance the construction.
- ***R4-2—Level Irrigated Fields***
 - Provide funding to contract for a survey to identify incentive programs to provide funding to individual farmers for laser leveling and/or a change in grade to facilitate water delivery.
- ***R4-3—Establish a Local Marketing Infrastructure***
 - Provide funding to contract for research to identify crops, markets and a transition plan for development of a marketing infrastructure for locally-grown produce, value added products and low-water use alternative crops.
- ***R4-4—Acequia Efficiency Programs***
 - Provide funding to contract for a survey to identify incentive programs which will provide funding for traditional acequias for the purposes of increasing water efficiency within the local acequia system.
- ***R4-5—Recognize Agricultural Traditions in the Region***
 - Provide funds to share in supporting the goals of the Federal Farmland Protection Policy Act, as well as any programs that preserve the region's agricultural heritage.
- ***R5-1—Mitigate Septic Tank Impacts***

MIDDLE RIO GRANDE WATER ASSEMBLY

- Provide funds to contract for a survey to identify incentive programs that will fund the replacement of conventional septic systems by new or expanded centralized or distributed wastewater treatment systems,

- ***R5-2—Improved Water Quality Sampling and Testing (A-47)***

- Provide funding to significantly upgrade water testing and sampling capabilities to identify all of the biological, chemical and radiological threats to public and environmental health that are described in existing state and national water quality guides; to provide special sampling and testing programs needed to identify any contaminants that may be introduced into the water supply system; and, in addition to upgrading the quality of testing of potable water, improve the quality of testing of wastewater, storm water, and large-scale greywater.

- ***R5-3—Protect Water from Contamination***

- Provide funding to contract for a study leading to the establishment of template programs which may be used by local governments to protect the region's water from contamination and to ensure compliance with federal, tribal, state and local standards for water quality pertaining to surface waters, drinking water, storm water, and wastewater and to enforce and protect wellheads from contamination on all public water supply wells within local government jurisdictions.

- ***R6-1—Riparian Habitat Restoration***

- Provide funding for contracts to restore and manage the Bosque and other riparian habitat to reduce evapotranspiration and improve habitat by selectively removing non-native vegetation and promoting native plants.

- ***R6-2—Constructed Wetlands***

- Provide funding to contract for research to identify appropriate methods for creation of constructed wetlands for ground-water recharge, storm water capturing, habitat improvement, and hydrological management of riparian areas.
- Provide funding to contract to construct wetlands for ground-water recharge, storm water capturing, habitat improvement, and hydrological management of riparian areas.

- ***R6-3—River Restoration***

- Provide funding to contract for the development of template programs for restoring the ecological functioning of the region's rivers and floodplains, including replication of the natural hydrograph of the rivers within the levees.
- Provide the necessary funds, including federal cost sharing, to contract for restoring the ecological functioning of the region's rivers and floodplains, including replication of the natural hydrograph of the rivers within the levees.

- ***R6-4—Recognize the Importance of Healthy Native Ecosystems of the Rio Grande and its Tributaries***

- Provide funding to contract for the development of programs to encourage local jurisdictions to actively maintain a clean and healthy Rio Grande and its tributaries.
- Provide funding to local jurisdictions to actively maintain a clean and healthy Rio Grande and its tributaries.

- ***R7-1—Implement Upstream Surface Water Storage***

MIDDLE RIO GRANDE WATER ASSEMBLY

- Provide funding to the State Engineer to contract for research and development leading to obtaining the necessary permissions to store water in upstream reservoirs with lower evaporation rates without significant harm to the riparian environment.

- ***R7-2—Implement Upstream Aquifer Water Storage***

- Provide funding to contract for technology assessment and engineering feasibility for pumping surplus water into the aquifer so as to supplant the requirements to store large quantities in Elephant Butte Reservoir.
- Provide funding to contract for the necessary facilities design and construction to pump water into the aquifer.

- ***R7-3—Implement Aquifer Storage and Recovery for Drought***

- Provide funding to contract for technology assessment and engineering feasibility for pumping surplus water into the depleted aquifers during wet years, and retrieving for use during dry years

-

- ***R7-4—Water Modeling***

- Provide funding to the State Engineer for cost sharing with appropriate federal, agencies to improve and increase monitoring and modeling of the surface water system, improve water management at the watershed level, and retain excess water flow from EBR during wet cycles

- ***R8-1—Develop New Water Supplies through Desalination***

- Provide funding to contract for research and development to explore cost effective technological advances for developing brackish and saline water supplies, both from sources within and outside of the region.
- Provide funding to contract for the design and construction of facilities to make desalinated water available for use within the region or provide the region with appropriate Rio Grande Compact credits.

- ***R8-2—Investigate the Potential for Importing Water***

- Provide funding to contract for studies to examine the potential of securing and importing large volumes of water from currently unused sources such as abandoned mines, and desalinated seawater.
- Provide funding to contract for the design and construction of facilities necessary to secure and import large volumes of water from currently unused sources such as abandoned mines, and desalinated seawater.

- ***R8-3—Undeclared Water***

- Provide funds to the State Engineer for appropriate technical analysis to declare all waters in the state, regardless of depth and quality, so as to enable proper administration and protection of all of the waters in the state.

- ***R9-1—Develop a Water Education Curriculum for Schools***

- Provide funding to contract for the development of school curricula and projects to teach children the importance and value of water in the region. including issues of water conservation, where water comes from, and cultural values associated with water.

MIDDLE RIO GRANDE WATER ASSEMBLY

- ***R9-2—Implement Adult Public Education Programs***
 - Provide funding to contract for the development of region-wide and local public education programs to encourage a more complete awareness of the full range of water related subjects among the citizenry, and to enhance voluntary water conservation programs.

Tohajiilee Chapter Water Supply Project

The following is a summary. For the full study, see Supporting Document T.

Final Draft
Technical Memorandum

Tohajilee Chapter Water Supply Project

Prepared by
Navajo Nation Department of Water Resources
Water Management Branch
April 04, 2002

Introduction - Objective of the Technical Memorandum is to develop a conceptual design and appraisal level cost estimate for a public water system. The proposed project will convey municipal water from either the existing Albuquerque municipal water supply system, a proposed Rio Grande intake or a proposed Jemez Reservoir intake.

Water Demand

Year	2000	2010	2020	2030	2040
Population [1]	1,727	2,207	2,819	3,602	4,601
Water Demand					
Annual Demand (acre-feet) [2]	310	395	505	646	825
Average Flow (gallons per day)	276,346	353,057	451,061	576,271	736,237
Average Flow (cubic feet/second)	0.43	0.55	7	0.89	1.14
Peak Demand (cubic feet/second) [3]	0.56	0.71	0.91	1.16	1.48
Five-day Storage (gallons) [4]	1,381,730	1,765,283	2,255,306	2,881,355	3,681,187

[1] 2000 Census adjusted for 4.74% undercount; annual growth is 2.48%

[2] Per capita water use is 160 gallons/day

[3] Peak demand is 1.3*(average flow)

[4] Storage = population*5 days * 160 gallons

Existing Facilities

Current facility (three wells) has an estimated pumping capacity of 196 gallons per minute - hardly sufficient to meet the 2000 demand. In 1994, the system had 271 connections with 328,000 gallons of storage.

Well #1	23 gpm	850' depth
Well #2	45 gpm	525' depth
Well #3	126 gpm	763' depth

Proposed Alternatives

- a. existing Albuquerque municipal water supply system - diverted from a storage tank on the west side; no water treatment needed but pumps, regulating tanks, and storage tanks in addition to pipeline.
- b. proposed Rio Grande intake (two configurations) - water treatment plus pumps, regulating tanks, and storage tanks in addition to pipeline.

c. proposed Jemez Reservoir intake (two configurations) - water treatment plus pumps, regulating tanks, and storage tanks in addition to pipeline.

Total Estimated Costs

Alternative	Total Capital Cost	Annual Amortized Total Cost at 5% over 40 years	Annual Power, O&M, Cost of Water, and Water Treatment	Unit Cost /acre foot	Unit cost/ 1000 gallons
Albuquerque	\$7,481,200	\$199,500	\$555,000	\$914	\$2.81
Rio Grande 1	\$11,632,300	\$310,100	\$599,600	\$1,103	\$3.38
Rio Grande 2	\$11,497,500	\$306,500	\$597,200	\$1,095	\$3.28
Jemez River 1	\$15,199,800	\$405,200	\$655,800	\$1,286	\$3.87
Jemez River 2	\$15,211,400	\$405,600	\$656,000	\$1,287	\$3.87

for every one million dollars of capital expenditures, the annual amortized capital cost over a forty-year period at 6 percent is \$66,461. At 6 percent the annualized costs range from \$195,100 for the Albuquerque Alternative to \$405,000 for the Jemez River Alternative.

Conclusion

The Albuquerque Alternative is the least expensive alternative in both capital and annual cost. Based on the unit cost of other comparable water projects, the estimated unit cost of \$2.90 per thousand gallons is affordable to the consumer. Finally, the Albuquerque Alternative will encounter fewer environmental issues related to new diversions on the Rio Grande of Jemez River, factors which could delay the project and increase the costs significantly. The Albuquerque Alternative is the preferred alternative to provide a long term, high quality and sustainable water supply to Tohajilee.

Las Huertas Creek Watershed Project

The following is a summary. For the full study, see Supporting Document U.

PROJECT TITLE: Las Huertas Creek Watershed Project

PROJECT APPLICANT: Las Placitas Association is a non-profit New Mexico Corporation with a 501(c)(3) status from the Internal Revenue Service. Our purpose is to preserve and protect the quality of life in the Placitas area. In doing so, we pledge to promote the value of open space; dark skies; recreational, educational, and rural activities; and environmental and cultural preservation, for the enrichment of present and future generations.

Early in 2003 Las Placitas Association began the Las Huertas Creek Watershed Project (LHCWP). The project mission is *to organize, coordinate, and facilitate community efforts toward the protection, restoration, and management of the Las Huertas Creek watershed. Working cooperatively with all stakeholders, including private property owners, Pueblos, acequia systems, as well as city, county, and state governments and Federal land management agencies, Las Placitas Association aims to ensure the health and sustainability of the watershed that has served as a lifeline for generations of Placitas residents*

Lolly Jones, Chair
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PROJECT AREA: Las Huertas Creek comprises the largest of the three major drainages of the Placitas area, draining approximately 31 square miles, including the northern end of the Sandia Mountains (Johnson, 2000). The Creek flows from its headwaters in the Sandia Mountains, north to Placitas, thence northwest to join the Rio Grande northeast of Bernalillo. The creek is generally an intermittent stream, but is perennial through spring-fed reaches in its upper reach, and in its lower reach below Tecolote. As such, flow in Las Huertas Creek generally only reaches the Rio Grande in periods of snowmelt runoff during high snowpack years. As a result of losing its flow via fault systems in the Madera Limestone formation (upper reach), and to infiltration to alluvial deposits connected with the Santa Fe Formation (lower reach), **Las Huertas Creek is an important source of groundwater recharge throughout its course. Together with its major Placitas-area tributary, Arroyo del Ojo del Orno, Las Huertas Creek is a significant source of recharge to the Rio Grande/Albuquerque Basin aquifer.** Figure 1

LAND OWNERSHIP: The U.S. Forest Service manages the forest headwaters and the Las Huertas Creek Picnic Area. This portion of the watershed is also included in the T'uf Shur Bien Preservation Trust held in trust by the federal government for the Pueblo of Sandia. The creek then flows through **private properties** through Placitas until it reaches the Placitas Open Space. That is a **City of Albuquerque** owned property. The **Bureau of Land Management** is the property owner heading west of the City-owned property. **Santa Ana Reservation** lands are then adjacent to the BLM land heading west and continuing toward the river where it then meets the Santa Ana Ditch and the Albuquerque Main Canal and flows through these into the Rio Grande.

START AND END DATES: - We propose to complete the watershed group formation process and write a draft Watershed Management Plan within two years.

PROBLEM STATEMENT: As shown in the above under LAND OWNERSHIP, there are multiple "owners" of the Las Huertas Creek Watershed. **There is no current watershed group with broad watershed-wide stakeholder participation to foster the protection and restoration of all aspects of a healthy watershed.** The development of a watershed group **has begun** with current LPA activities. A town meeting and watershed tour were held in the spring of 2003. Based on input from community members and advisors, a series of free workshops are scheduled for the first 6 months of 2004. Public participation will be encouraged through advertising monthly watershed project meetings in local papers

and on the website. Through these widely advertised workshops we expect to identify community stakeholders and to engage them in the watershed group formation.

Las Huertas Creek is listed on NM CWA 2002-2004 303(d) list for stream bottom deposits. Causes of non-point source pollution in this watershed are numerous due to various types of land use and land ownership. Ever increasing human disturbances occur as traffic on Highway 165 and recreational uses intensify. New urban development has caused detrimental changes in native vegetation cover. Sediment levels also increased with past livestock overgrazing of riparian plant communities. These unnatural disturbances have led to streambank erosion and sedimentation deposition directly into stream channels. Historic road building, mining, fires and other disturbances have led to the loss of native protective vegetation, and replacement with exotic/invasive species. Water quality has been impacted for multiple reasons within the watershed.

The focus of this project will be to:

1. Prepare extensive mapping documenting watershed boundaries, tributaries, land use, land ownership. Vegetation, slope, soils and animal biodiversity maps will be created from surveys and USGS metadata.
2. Construct the public outreach structure to engage and maintain public and governmental involvement.
3. Create a library with a collection of any existing documentation including cultural resources, geology, hydrology, land use, precipitation, soils, wildlife and vegetation. Historic "how it used to be" stories and photos will be collected.
4. Characterize the monitoring, analysis and evaluation activities needed.
5. Identify the specific water quality problems to be addressed.
6. Construct actions to be taken and the desired water quality goals and outcomes.
7. Generate a schedule for implementation.
8. Define the funding needs to support the implementation and maintenance of restoration measures.
9. Identify funding sources for on-the-ground watershed projects.
10. Prepare applications/proposals for grant funding.

BUDGET - The total two year project cost is \$47,000.